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Food Protection Trends

Science and News from the International Association for Food Protection

The Summer of Salmonella in Salsa

Consumer Food Safety Perceptions
of Ready-to-Eat Deli Foods

IAFP 2010 in Review



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FOOD PROTECTION TRENDS

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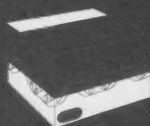
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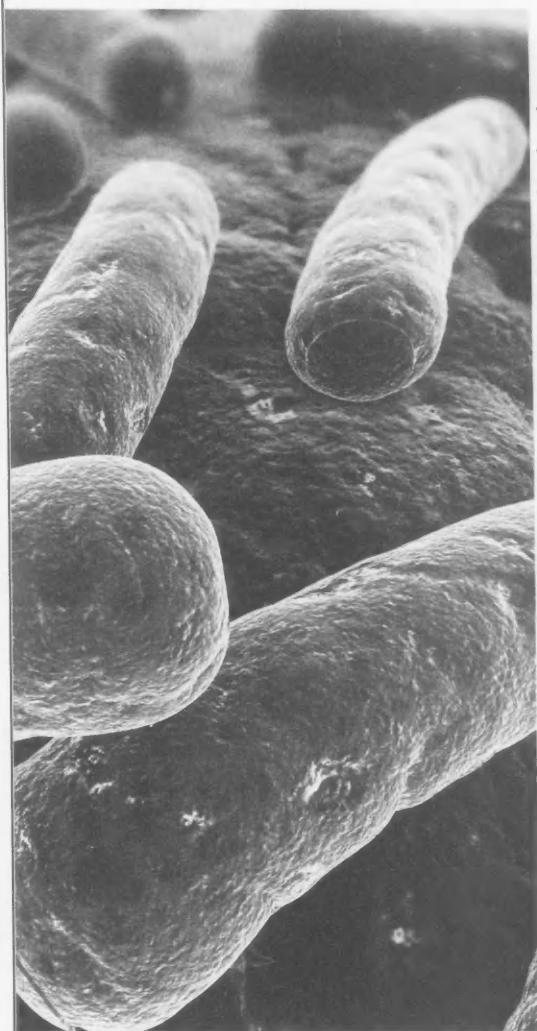
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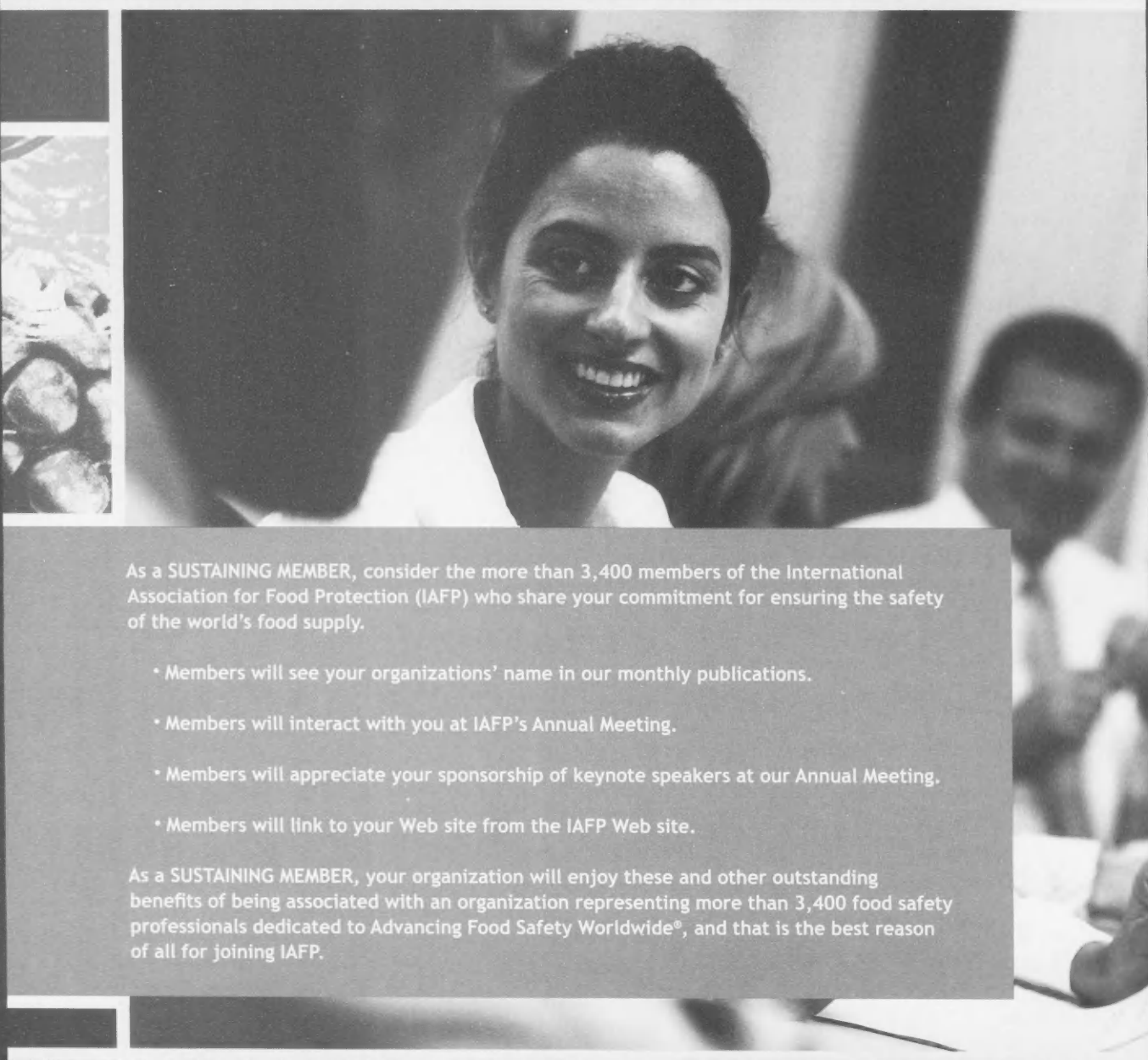


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"REFLECTIONS" OF YOUR PRESIDENT

As I sit in the Miami International Airport on my way back from Bogota, Colombia, I cannot help but relish the memories of the past week. My last (and only) time in Latin America was during the summer of 1974 at the age of 17, when I served as an exchange student in Cusco, Peru. Thirty-five years later, the experience was no less magical. This time, it was to attend IAFP's 2nd Latin American Symposium, which was a resounding success! The meeting was held in conjunction with the 10^o Congreso Nacional de Ciencia and Tecnologia de Alimentos (sponsored by the Asociacion Colombiana de Alimentos [ACTA]) and the XVI Seminario Latinoamericano de Ciencia y Tecnologia de Alimentos (sponsored by the Asociacion Latinoamericana y del Caribe de Ciencia y Tecnologia de Alimentos [ALACCTA], the Latin American/Caribbean regional body for the International Union of Food Science and Technology [IUFOST]). As such, there was representation from ACTA, ALACCTA, IUFOST, and IAFP; what a combination! A few of the scientific highlights:

- The relevance and excellence of the program: Food safety sessions in the joint ACTA-ALACCTA meeting focused on laboratory methods, including best practices, validation and accreditation; global food safety initiatives in legislation, certification, harmonization; and pathogen control. The meeting culminated with a full day of food safety sessions sponsored by IAFP. These sessions covered issues such as food safety initiatives in Latin America, emerging concerns like global climate



By **LEE-ANN JAYKUS**
PRESIDENT

"Una semana perfecta en Bogotá (y muchas gracias a Blanca Escudero-Abarca para la traducción)"

change, and food safety culture.

- Excellent representation by IAFP members: Many of our U.S. members traveled to Bogota to participate in the program. Besides myself, former IAFP presidents attending included Bob Gravani of Cornell (Bob is currently serving as

president of the Institute of Food Technologists), Paul Hall (representing 3M), Stan Bailey (bioMérieux), and Frank Yiannas (Walmart). Other presenters included Maria Teresa Destro (Universidade de Sao Paulo, Brazil), Dan Engeljohn (USDA-FSIS), Randy Huffman (Maple Leaf Foods), Katie Swanson (Ecolab) and Alex Castillo (Texas A&M University), and this is just to name a few!

- The opportunity to network, see old friends and meet new ones: Certainly, the IAFP spirit is alive and well in Latin America! Classic IAFP, all 600+ attendees shared experiences, expertise, and camaraderie. It was clear that we all gathered together with the common purpose of improving the safety of the world's food supply. Particularly impressive was the 100 or so students representing a single university—Universidad del Valle. It was a pleasure to meet so many bright, young faces!
- Celebration of an anniversary: ACTA celebrated its 35th year anniversary, which included a wonderful celebration (replete with music, wine and cheese; and dancing during the Colombian night part!). Congratulations, ACTA!

However, on a more personal note, there are other things that I will remember long after the presentations fade from my memory. Specifically, the Latin American spirit of service, evidenced by interest in

addressing the food safety needs of the developing world, including emerging issues such as sustainable agriculture and climate change. I was struck by the warmth, friendliness, and hospitality of the Colombian people, and their thirst for knowledge that puts us North Americans to shame. Their contagious enthusiasm was apparent everywhere. For me, this meeting was different from most, and I take home with me much more than I brought to Colombia. Specifically, I return to the US with a renewed passion for food safety and a conviction of the need to reach out to the developing world. I have an increased appreciation for hospitality (and yes, dancing!). I have fallen in love with Latin America and am humbled by the optimism I experienced in Colombia, especially that of the young people.

It is also clear that this meeting could never have occurred without the hard work of many, many people. So, I would like to take this opportunity to thank just a few of them. First and foremost, Jairo Romero (president of ACTA), Ana Lucia Cortes, and the rest of the staff who managed all the arrangements, including all those volunteers in the orange vests! I also thank ALACCTA and IUFOST for being willing to include IAFP in their event. To the IAFP members

who shared their time and energy to provide information and networking opportunities, many thanks. Likewise, to our industrial sponsors who provide both relevance and funding for our food safety mission. To the receptive and participatory audience, and excellent translator, we could not have done this without you all!

It is clear that there are many opportunities for IAFP in Latin America. This is not about "gaining membership," although more members is always a good thing. Rather, this is about embracing our common interests in **Advancing Food Safety Worldwide®**, by providing a forum to exchange information on protecting the global food supply. We currently have 3 Latin American Affiliates (Colombia, Brazil, and Mexico), but there is certainly room for more, and apparently, interest as well. Indeed, there are many food safety professionals in other Central and South American countries who share our passion. Personally, one of my major initiatives as your president is to increase our international scope, and Latin America seems a logical place to start. So, I encourage our Latin American colleagues to join our Association and participate in our activities. And a great way to do this is through our affiliate organizations, so I also encourage our Latin American sisters and brothers to look into the affiliate process.

All you really need is a core group of food safety professionals in your country, a "champion" (in other words, someone to take on the initial organizational tasks), and some enthusiasm and patience. I certainly saw all of these skills among attendees in Colombia. The IAFP staff is always available to help move the affiliate application process forward, and once established, they are so helpful in making your affiliate successful. In addition, for those of us having a company or institutional presence in Latin America, please begin spreading the word about IAFP; offer your support and your expertise to our neighbors and colleagues.

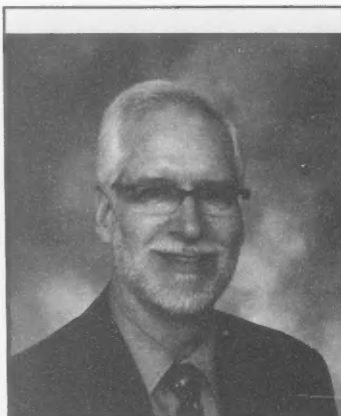
Para despedirme, les digo que estoy feliz de que el espíritu contagioso de la IAFP está presente en Centro y Sur América. Tenemos ganas de verlos en el 3er Simposio de América Latina en el 2012, y en todos los que vengan después. Particularmente tendré recuerdos cariñosos del tiempo que pase en Colombia. Y el aspecto notable no oficial... porque ningún otro como Andrés Carne de Res en Chía; el MEJOR tiempo que he pasado en muchos años. Gracias a todos por compartir su cultura conmigo. Mis amigos colombianos, ustedes seguro que saben cómo trabajar y cómo jugar. Regresaré pronto para tomar algunas lecciones de vida de ustedes. Mientras tanto, mantengámonos en comunicación...

"COMMENTARY" FROM THE EXECUTIVE DIRECTOR

This month's issue of *Food Protection Trends* is dedicated to coverage of IAFP 2010 held last August in Anaheim, California. We invite you to review and relive the Annual Meeting beginning on page 644. There are pictures, along with a narrative – both to jog your memories, or to provide a glimpse into the happenings at IAFP 2010. We hope you enjoy this recap.

There are a great number of people and groups who deserve recognition for the success achieved at the Annual Meeting. I'll take a run at including everyone with the hopes that I don't miss anyone! First off, without our speakers and presenters, there would not be an attraction for food safety professionals to come together – so, we send our appreciation to everyone making presentations, whether orally or through posters. Your dedication to sharing information on protecting the food supply is really what makes IAFP's Annual Meeting THE MEETING to attend!!! There were more than 500 presentations over the three days and the vast majority of those presentations are sponsored by the employers of individuals making the presentations. We recognize the commitment of those employers and of the individuals in making all these presentations possible.

The Program Committee puts forth an enormous amount of work to organize and schedule the presentations taking place each year at IAFP's Annual Meeting. Faye Feldstein, Chair for the Committee, and the additional eleven Committee members should be recognized for the work they do throughout the year to ensure the program is unsurpassed. From the comments received on our after-meeting survey, they met and exceeded the goal of producing a well-rounded meeting. Randy Phebus and the 2011 Program Committee have their work ahead of them to establish a program for IAFP 2011 that will rival that of IAFP 2010! Our appreciation is extended to the Program Committee members for their fine work.



By **DAVID W. THARP, CAE**
EXECUTIVE DIRECTOR

***"Over the years,
the magnitude
of IAFP's Annual
Meeting has grown
beyond belief"***

Over the years, the magnitude of IAFP's Annual Meeting has grown beyond belief. Less than 20 years ago, we experienced one-third the attendance and one-third the numbers of exhibitors. At that time, we did not even have a sponsorship program for funding by our corporate supporters! So, it is of vital importance that we recognize the financial support provided through our exhibitors, our sponsors and the number of attendees paying registration fees.

Each of these "revenue streams" allows IAFP to produce a superior meeting experience for everyone involved. We are especially appreciative of the special contributors (listing on page 613) who provide extra support annually to the meeting. These companies help to defray Association expenditures on each of the events throughout the Annual Meeting which in turn allows IAFP to keep the registration fee reasonable for attendees. Of course our exhibitors pay a rental fee for the space they occupy in the exhibit hall and this helps to support Annual Meeting activities, too. We encourage you to make it known to each of our sponsors and exhibitors how much their support of IAFP means to you. Without their financial support, registration fees for our meeting would easily double and might even triple. Do your part and simply say "thank you!"

Each year we call on a group we refer to as our "Local Arrangements Committee" to assist us with many "behind the scenes" details that help make IAFP's Annual Meeting an outstanding experience for everyone attending. This year, our Southern California Association for Food Protection Affiliate (SCAFP) served in this capacity. They assisted at the registration desk, provided a welcome pack for each attendee, arranged for the dairy products available in the exhibit hall and they helped direct attendees to session rooms and other locations throughout the Annual Meeting. Under the direction of Turonda Crumpler and Margaret Burton, the Local Arrangements Committee was always there when we needed them! We had an incredible time working together with all the SCAFP volunteers. They were so willing to help in every way possible! With this note, we want to recognize their outstanding contribution to IAFP 2010.

The IAFP Student PDG has been supporting the IAFP Annual Meeting for many years now. At IAFP 2010, the PDG celebrated their 10th

Anniversary! Years ago, we asked IAFP students to help in the session rooms to keep things organized and running smoothly. Each year, the PDG leadership schedules two students for each room to stand in as audiovisual assistants and to write up a session summary. The session summaries are presented beginning on page 686 and provide insight to the presentations delivered and topics discussed. We hope you enjoy the review of the sessions and all events at IAFP 2010. Our thanks go to the students who served as session monitors and who wrote up the summaries.

The last two groups I want to thank are the IAFP Board members and the IAFP staff. The Board becomes involved in Annual Meeting planning years in advance of the actual meeting in selecting the location for the meeting (we are working on 2015 right now). They then come back into play about one-year prior when decisions are made to shape the coming Annual Meeting. Board members also provide guidance to the Program Committee along the way in developing the

program. We are fortunate to have Board members who have good foresight on the direction of the Association and the Annual Meeting to give us direction in those respects.

Once the "macro" decisions are made, the details are carried out by the IAFP staff. Our planning timeline for each Annual Meeting begins about 18 months prior to the meeting start up. There are so many details to cover and to be sure of so everything is in place and comes together at the right time. We are privileged to have a staff with long-term employment at IAFP who carry out their duties in a most responsible fashion. I am proud to work with everyone here in the office to make the IAFP Annual Meeting the best possible meeting for our participants from all around the world! Allow me to make a special thanks to our staff for their personal sacrifices related to the Annual Meeting. Taking time away from home and family is difficult at best, but the dedication of our IAFP staff comes through year in and year out!

Next year, we look forward to welcoming you to IAFP 2011 in Milwaukee where we will celebrate the Association's 100-Year Anniversary! It will surely be a special year in the Association's history, so we hope you begin planning now to be with us. More information will follow about the 100-Year celebration in coming issues.

I have two additional items in closing for this month. First is to point out there are additional pictures from IAFP 2010 on IAFP's Facebook page – more than 100 photos – so be sure to take a look! Secondly, I would be remiss if I did not make mention of the 2nd IAFP Latin America Symposium on Food Safety that was held in Bogota, Colombia in September. President Lee-Ann Jaykus provided an excellent summary in her column this month, but I also want to thank the organizers for their hospitality and an enlightening time in Bogota. Photos are now available on IAFP's Facebook page and we will provide a symposium summary and pictures in the December issue of *Food Protection Trends*.



CALL FOR ABSTRACTS

Call for Technical and Poster Abstracts

Technical – Scheduled, 15-minute oral presentations, including a two- to four-minute discussion.

Poster – Permits the author and attendees to discuss research presented.

Note: The Program Committee reserves the right to make the final determination on which format will be used for each presentation

Developing Scientist Awards Competition

The Developing Scientist Awards Competition is open to graduate students (enrolled or recent graduates) from M.S. or Ph.D. programs or undergraduate students at accredited universities or colleges in both Technical and Poster categories.

Deadlines and Notification

Abstract Submission Deadline: January 19, 2011

Submission Confirmations: Automatic

Acceptance/Rejection Notification: March 7, 2011

Questions regarding abstract submission can be directed to Terri Huffman

+1 515.276.3344 or +1 800.369.6337;

E-mail: thuffman@foodprotection.org

Call for Abstract Instructions and Submission Form

Available at www.foodprotection.org

The Summer of *Salmonella* in Salsa: A Framing Analysis of the 2008 *Salmonella* Outbreak Linked to Tomatoes and Jalapenos

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ABSTRACT

The purpose of this study was to examine television news coverage of the 2008 *Salmonella* outbreak linked to tomatoes and jalapenos through the scope of framing theory. Transcripts of news broadcasts on ABC, CBS, CNN, and NBC from May 1, 2008 to October 1, 2008 were researched, using a qualitative content analysis. A Lexis-Nexis (news search engine) search using the search term "*Salmonella*" revealed 71 usable transcripts.

Researchers found anti-government, pro-agricultural producer, and anti-Mexican produce imports were the most common frames presented by the networks. Specifically, CNN voiced strong disapproval for the manner in which the United States Food and Drug Administration and the Congress handled the crisis. CNN was also very supportive of tomato growers' financial distress while they were unable to market their crop. Many of the stories were simple, informational pieces informing the public about *Salmonella*'s symptoms and prevention methods, varieties of tomatoes and peppers to avoid, and number of illnesses. In all, the researchers found most of the news coverage was based on the facts that were available at the time; however, some networks provided personal opinions and speculation.

INTRODUCTION

In April 2008, 57 reported cases of *Salmonella* in Texas and New Mexico put the Food and Drug Administration (FDA) on alert for a possible foodborne illness outbreak (15). By the end of August 2008, a reported 1,440 Americans in 43 states and Washington, D.C. had become ill because of the outbreak (1).

In late July, the FDA stated that jalapeno and serrano peppers grown in Mexico were the likely cause of the outbreak; however, the government had initially thought that tomatoes were the culprit (1). By the end of the outbreak, the United States tomato industry had lost a reported \$250 million and blamed the government for being singled out on the basis of "flimsy evidence" (1).

This study examined how television news media told this food recall story through the scope of framing theory to understand how the media framed this well-known agricultural issue.

A peer-reviewed article

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Timeline

According to news releases posted on the FDA's Web site, the agency began warning the public about raw red plum, red Roma, or round red tomatoes, citing them as the cause of the outbreak on June 3, 2008 (15). On June 5, 2008, the FDA stated that tomatoes grown in Arkansas, California, Georgia, Hawaii, North Carolina, South Carolina, Tennessee, Texas, Belgium, Canada, Dominican Republic, Guatemala, Israel, Netherlands, and Puerto Rico were not associated with the outbreak (16). On July 1, 2008, the FDA began to suspect foods that could be served alongside tomatoes, and thus began the query into peppers (14). On July 17, 2008, the FDA lifted the warning on tomatoes, citing no decrease in the number of illnesses since mid-June; they also stated that consumers should eat jalapeno and serrano peppers with extreme caution (17). Agricola Zaragoza, a produce distributor in McAllen, Texas voluntarily recalled jalapeno peppers on July 21, 2008 because the FDA suspected peppers being transported through that facility could be contaminated with *Salmonella* (18). On July 25, the FDA concluded that the contaminated peppers were grown in Mexico and not the United States, and on July 30 the agency added serrano peppers to the warning (14). Finally, on August 28, the Centers for Disease Control and Prevention (CDC) lifted the warning on all produce (1).

Media coverage of food safety issues

Anderson (2) found that in a food safety situation, environmental or health activists were quoted five times as often as food scientists. Riddle (11) determined that food safety stories stay in the spotlight because every major or minor foodborne illness outbreak is reported in the media. The FDA's assistant commissioner for food protection noted that the outbreak caused by *E. coli* in spinach had sparked media interest, and the media has paid particular attention to food safety stories ever since (8). Anderson (2) concluded that few reporters have science training and few scientists have training in communicating with the media in simple and clear language, which creates a problem when trying to tell food safety stories.

Framing theory

Framing theory is "a central organizing idea or story line that provides meaning to an unfolding strip of events" (7). Entman (6) argued that journalists choose aspects of a perceived reality and place those aspects in a more prominent place within the text to promote a problem, interpretation, or recommendation. Simply stated, frames are how journalists tell a story, and frames frequently tell the public how to think about an issue. Any given story can include more than one frame.

Neuman, Just, and Crigler (10) argued that reporters do not intentionally frame stories; instead, constraints from a news organization's management, professional judgment, and opinions about the audience and the situation can lead a writer to give a story a certain angle or tone. Additionally, interest groups, social institutions, and activists are experts at getting journalists to present their frame (4). Many of these groups can involve journalists in constructing news drama, which in turn promotes a frame.

For example, a news director may allow only a short amount of time in a newscast to tell a story; the reporter then has to narrow the number of sources and soundbites to tell the story. In addition, the reporter may think that informing the public of the symptoms of *Salmonella* is more important than which types of tomatoes are potentially dangerous. The station may have research that indicates they have a strong viewership of stay-at-home moms; therefore, the reporter may think it is most important to focus on the effects *Salmonella* has on children to keep parents informed. An interest group for the tomato industry may encourage a reporter to write about the dollars lost by tomato farmers. These are different examples of how frames can be influenced without a reporter realizing he or she constructed a frame.

This study analyzed the frames and tones of frames presented—the frames that journalists created to make sense of the information. This study also analyzed the sources used by the media and how those sources could have influenced the frames presented—what Scheufele (13) would call "external sources of influence." These sources could be political actors or interest groups.

Research objectives

The purpose of this study was to examine coverage of the *Salmonella* outbreak in 2008 through the scope of framing theory (13). By understanding how the media frame an agricultural issue, agricultural communicators can more effectively communicate and promote messages to the mainstream media. Television rather than print sources were analyzed because most of the recent content analyses in agricultural communications involved print media (3, 12), and much can be learned from television news. The networks chosen for this study were the four major United States news networks: ABC, CBS, CNN, and NBC.

Two research objectives guided this study:

1. Determine how the 2008 *Salmonella* outbreak was framed by ABC, CBS, CNN, and NBC.
2. Determine how the sources used by individual networks played into the framing of the issue.

Certain interest groups and organizations can help promote a frame; therefore, it was important to determine which sources were used, and what, if any, frame those sources promoted.

MATERIALS AND METHODS

To address the research objectives, this study employed qualitative content analysis methodology. The methodology closely fits with Berg's (5) definition of a directed content analysis. Categories had already been established by a previous study involving an agricultural crisis in the media (3); however, the categories served as guidelines as new themes and categories emerged from the data. Although the first FDA warning was released in early June, the time frame for this study was from May 1, 2008 to October 1, 2008, to ensure that all stories reported about the tomato and jalapeno recall were collected. The researchers utilized a Lexis-Nexis search with the keywords "*Salmonella*." Transcripts from ABC, CBS, CNN, and NBC were collected. Since this recall encompassed numerous states and several foreign countries, a national news source was appropriate. Duplicated stories were removed from the data set. Because of the relatively small number ($n = 71$) of *Salmonella* stories airing on television, the researchers analyzed each story.

TABLE 1. List of frames and themes by tone and network (Pos. = Positive; Neg. = Negative; Neu. = Neutral)

	ABC			CBS			CNN			NBC			Total
Frames	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	
Government		7		1	4		1	13	13		3		42
Farmers	4			5	2		11	1					23
Mexico								4				1	5
Themes													
Information			3			7			4			5	19
Tomato	1	5			4			2		1	4		17
Peppers		4			1			4					9
Supply chain					1			1		1			3

The unit of analysis for the study was each individual story. Two separate researchers examined each story, using a researcher-created coding sheet. Categories on the sheet were loosely based on the Ashlock et al. (3) study of the mad cow disease crisis and included the network, total number of words in the story, air date, types of sources, overall tone (positive, negative, or neutral), and prominent frame(s). The researchers kept track of frames as they emerged.

Two researchers independently coded each article and then met to reach consensus on all stories. In all, the researchers agreed on approximately 95% of the stories and then through discussion and explanation of methods, came to an agreement so that all findings were consistent with both researchers. Accountability was maintained by making an audit trail that consisted of all news transcripts and coding spreadsheets.

The researchers both are from agricultural backgrounds and consider themselves to be proponents of American farmers. Although the researchers acknowledged this bias a priori, they made conscious efforts to prevent this bias from making them overly sensitive to stories that may have been negative toward farmers. The researchers also note they both watch at least one national newscast per day and acknowledge that they prefer certain networks; however, each researcher preferred a different network, and those differing opinions kept favoritism in check.

ABC News aired 17 stories, CBS News aired 16 stories, CNN aired 24 stories, and NBC News aired 14 stories; however, the network aired the same stories on the Nightly News and The Today Show on six different occasions, which lowered NBC's story count.

Of the 71 stories, 36 were packages; four were packages followed by live interviews; nine were live interviews; 16 were readers (no interview or cover video); and eight were voice-over videos, two of which were accompanied by a sound bite and six of which were not.

RESULTS

Findings related to research objective 1 – determine how the 2008 *Salmonella* outbreak was framed by ABC News, CBS News, CNN and NBC News

The mystery of not knowing the true source of the *Salmonella* was a common element on all four networks. In 50 of the 71 stories, the unknown source of the *Salmonella* was a part of the story.

As a result of analyzing the stories, several frames emerged. Some were presented with negative tones, some positive, and some neutral. The most common frame was criticism of government entities ($n = 29$), mostly the FDA, but the President of the United States and government import regulations were also disapproved of in several stories. CNN aired the highest number of negative

stories, with 13 stories, condemning the government, even stating that FDA directors were "overpaid."

During the *Salmonella* investigation, 23 stories were aired about tomato growers; all but three were positive, meaning the stories were in support of the farmers. CNN aired the most ($n = 12$); all were positive but one. Some stories emphasized how upset tomato growers were with the FDA; others presented the frame of financially distressed farmers who were unable to sell their crop.

CNN aired four negative stories that negatively framed Mexican produce imports, while NBC aired one story that was presented in a neutral manner. A CNN anchor specifically recommended country-of-origin labeling. CNN also stated that a food tracking system could have stopped the outbreak sooner.

During data coding, themes emerged that could not be considered true frames. Informational stories ($n = 19$) were very common. Each network frequently presented information notifying the public of a *Salmonella* warning from the FDA, informing viewers of *Salmonella* symptoms, explaining how to prepare foods to avoid illness caused by the bacterium, listing the types of tomatoes to avoid, listing the states that grew safe tomatoes, and listing the number of people ill with *Salmonella*. All of the informational stories had a neutral tone.

General stories about tomatoes had a negative tone in the early weeks of the warning ($n = 15$ negative, two positive).

TABLE 2. Timeline of news events

Date	News Event
June 3	FDA issued first warning.
5	FDA identified which states were not associated with the outbreak.
9	First CNN report. Identified the produce as coming from Mexico. First CBS report. Identified produce from certain states and countries as safe.
10	CBS reported the FDA ruled out Florida.
17	ABC reported that jalapenos and cilantro were also being considered.
20	CNN reported FDA inspectors were going to Florida and Mexico. Somewhat blamed produce from Mexico.
21	NBC suggested Mexican produce may have played a role in outbreak.
22	CNN reported that Mexico may have found <i>Salmonella</i> cases.
28	CNN reported that investigators were in Mexico.
July 1	FDA announced jalapenos and cilantro were suspicious. NBC reported that tomatoes were still suspected, but FDA was looking into foods served with tomatoes.
2	CNN reported that no tomatoes had been found with <i>Salmonella</i> on them. CBS reported other produce was being tested.
3	CNN reported a strong possible Mexico link and tomato shipments from Mexico were being halted.
10	CBS reported that tomatoes and some varieties of peppers were still suspected. CNN reported the investigation was shifting to jalapenos, serrano peppers, and cilantro. Reported the FDA was inspecting imports at the Mexican border.
13	FDA lifted warning on tomatoes. ABC, CBS, and NBC reported that tomatoes were safe.
17	CBS reported that inspectors were being sent to Mexico. ABC reported that peppers were not cleared but tomatoes were.
18	Agricola Zaragoza voluntarily recalled jalapenos. CNN and NBC reported <i>Salmonella</i> was found on a jalapeno in McAllen, TX. CNN said they knew all along it came from Mexico.
21	CNN reported the contaminated pepper was raised in Mexico. ABC and CBS reported a pepper was the culprit.
22	FDA declared the contaminated peppers were not grown in the United States. NBC reported the pepper came from Mexico, tomatoes were clear.
25	FDA announced serrano peppers were added to the warning.
26	CNN reported the contaminated pepper was grown in Nueva Leonne, Mexico, and that <i>Salmonella</i> was found in irrigation water.
30	ABC suggested avoiding peppers from Mexico and reported that serrano peppers were the likely culprit from Mexico due to contaminated irrigation water.
31	NBC reported the <i>Salmonella</i> came from irrigation water in Mexico, but the Mexican government was denying it.
Aug. 2	CNN reported the FDA was not admitting to mistakes.
28	CDC lifted warning on all produce.

TABLE 3. Interview sources utilized by network and total number of sources

	ABC	CBS	CNN	NBC	Total
FDA	4	6	13	5	28
Farmer/Grower	3	2	4	3	12
Consumer	2	4		3	9
Politician	1		8		9
Center for Science in the Public Interest	4	1	3		8
Supply chain		3	2	3	8
Other	3	1	3	1	8
Food safety expert			5	2	7
Center for Food Safety (based in Washington, D.C.)	2	2		2	6
CDC			4	1	5
Medical doctor/medical professional	1	1	2		4
Attorney	1		2		3
Government, other	1		1		2
Victim	1	1			2
Health Department	1				1

As the investigation shifted to peppers, the negative tone switched to stories concerning jalapenos and serranos ($n = 9$). Table 1 is a complete list of frames and themes by network and tone.

Timeline

The researchers found some interesting differences in when and how certain pieces of the story were reported. The FDA released information about the warning on June 3, 2008 and then again on June 5, but none of the networks reported the information until June 9. On June 10, CBS reported that the FDA had ruled out tomatoes grown in Florida as a source of *Salmonella*; however, on June 20, CNN reported that FDA inspectors were going to Florida and Mexico. Another inconsistency occurred on June 17, when ABC reported that jalapenos and cilantro were being considered as culprits, yet the FDA did not release that information until July 1.

CNN began blaming produce from Mexico very early in the investigation (June 9). NBC was the only other network to report that Mexican produce

could be the culprit, but that report was not released until June 21, and the FDA did not announce that the contaminated produce was not grown in the United States until a month later. Curiously, CNN did not report the story when the FDA lifted the warning on tomatoes. No network aired reports when the CDC lifted the warning on all produce on August 28.

Because this story combined many events, and each network reported the events differently, Table 2 is a detailed timeline of events beginning in June to help the reader more clearly understand the events that occurred in 2008. Information released by the FDA is printed in bold font.

Findings related to research objective 2 – analyze the sources used by individual networks and how those sources played into the framing of the issue

The sources interviewed can influence the frames presented by the me-

dia. The FDA was the most frequently used source ($n = 28$), and David Acheson, FDA's assistant commissioner for food protection, was interviewed the most, at 23 times. The second most popular interviewee was Caroline Smith DeWaal, food safety director of the Center for Science in the Public Interest, a nutrition, health, and food safety advocacy group, with five interviews. A complete list of sources and networks can be found in Table 3.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions related to research objective 1

Research Objective 1 sought to determine how the 2008 *Salmonella* outbreak was framed by ABC, CBS, CNN, and NBC. Prior studies had led researchers to speculate that agriculture would be framed in a negative manner (3, 12). In fact, only three stories aired that were negative toward farmers. CNN was most supportive, with 11 stories that framed the plight of the tomato farmer during this crisis.

The researchers found that CNN began implicating Mexico only seven days after the FDA announced the warning on tomatoes. On several occasions CNN showed support for country-of-origin labeling, almost implying that if consumers had known that produce was grown in Mexico, this incident would not have occurred. In the end, CNN was correct about the *Salmonella* originating in Mexico; however, this was well before the FDA made that claim. CNN did air some stories that were responsibly reported and based on the known facts at the time; most of the speculative stories were on *Lou Dobbs Tonight*.

Lou Dobbs also presented a strong anti-government frame and even suggested that the president be impeached over the incident. Stories on CNN as well as CBS were extremely critical of the FDA and the United States' food tracking system. On the other hand, CNN was very sympathetic to the tomato farmers who were unable to sell their products, ultimately because of a problem that did not involve their crop. In relation to framing theory, the aspects of the perceived reality (6) of this story that were most commonly reported were the mystery of the *Salmonella* source, the performance of the FDA, and the plight of tomato farmers. It is important to note that CNN has 24 hours of news a day and has more time to dedicate to live interviews and news talk formats that allowed hosts and guests to make speculations and voice opinions. CNN was especially opinionated and critical of President Bush's handling of the incident.

ABC reported on July 31 that serrano peppers were the culprit; however, serrano peppers were only part of the warning, not the declared cause. The FDA made the announcement about serrano peppers six days before ABC aired the story.

Conclusions related to research objective 2

Research Objective 2 sought to analyze the sources used by individual networks and the ways in which those sources played into the framing of the issue. Baran and Davis (4) stated that interest groups are experts at getting their frames presented. Anderson (2) argued that many reporters do not have science

training, and few scientists have training in communicating with the media. Therefore, finding sources that provide information in a manner that is easy for reporters and the viewers to understand can be difficult. Sometimes the sources the media use may present the information well, but the information might not be scientifically accurate. For example, research found that Caroline Smith DeWaal, a frequent interviewee during the 2008 *Salmonella* crisis, presented inaccurate information during the Wendy's crisis when a human finger was allegedly found in a bowl of chili (9). During the 2008 *Salmonella* crisis, DeWaal appeared to be negatively biased in her views about the safety of the United States' food supply; however, her information was accurate. The researchers did not find any other inaccuracies based upon information from interview sources, and the farmers who were interviewed were generally articulate and provided good information. However, using sources that have provided poor information in previous stories can reduce the credibility of the news organization.

As Anderson (3) argued, many reporters may not have a science background. In the *Salmonella* stories, most of the reporters were general assignments reporters or anchors, and typically, the anchors read the information written by a news producer or reporter. Two medical reporters covered the story. However, a lack of a science background did not seem to reduce the accuracy or understandability of the stories. The researchers note they are not familiar with the amount of scientific or agricultural knowledge the general assignment reporters had.

Although food safety stories are never good for the commodity at the center of the investigation, the reporting of the *Salmonella* cases in the summer of 2008 was, for the most part, fair and accurate toward farmers and agriculture in general. It is unfortunate that the tomato industry lost \$250 million dollars due to the incident, but poor or biased reporting did not cause the losses. It was true the FDA was investigating tomatoes, and tomatoes were the supposed source of the *Salmonella* until July 1. With the exception of speculation about the tainted produce originating in Mexico, broadcast media reported the information that was based on fact at the time.

Recommendations for future research

This research looked at how the media presented frames on an agricultural story. The researchers are currently investigating how the media built the frames for this story, by interviewing those who most commonly reported this story.

Another planned study is a risk and crisis communications case study building upon this research. The researchers plan to interview those who were frequently interviewed and those who spent significant time communicating with the media, such as the FDA, CDC, Florida Tomato Growers Exchange, and others. This case study will also seek to determine what the tomato industry could have done differently in this situation. Another objective will be to develop a model to help an industry when it is under an investigation; such a model could have been helpful to the spinach and lettuce industries during the *E. coli* investigation in 2006.

In addition, analyzing how the FDA and CDC handle crisis communications from situation to situation would be interesting to see how they deal with the different situations.

The findings of this study are limited to the 2008 *Salmonella* outbreak; however, these findings will be used to contribute to a similar research study that will analyze the television stories during the peanut butter recall that occurred in early 2009 to see if other food industries were treated differently than produce.

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Consumer Food Safety Perceptions of Ready-to-Eat Deli Foods in Northwest Arkansas

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ABSTRACT

Ready-to-eat (RTE) foods are convenient and have increased in popularity over the past 20 years. Questions about the safety of RTE foods arose after numerous outbreaks of *Listeria monocytogenes* were linked to the consumption of RTE foods, mostly deli meats. To assess current consumers' food safety perceptions as well as shopping preferences in Northwest Arkansas, 213 consumers were surveyed. Consumers responded that the primary reasons for purchasing deli foods were convenience (37%), taste (32%) and nutritional value (11%). Most of the respondents (68%) believed that deli foods are more nutritious than restaurant foods. A majority responded that deli foods are "as safe as" (66%) or "safer than" (32%) restaurant foods. The food safety perception depended on shopping frequency at delis as well as formal education level. With an increasing frequency of shopping at stand-alone delis, consumers were more likely to perceive deli foods as "safer than" restaurant foods. Consumers with a post-secondary degree were more likely to categorize deli foods as "as safe as" restaurant foods. In conclusion, it appears that Northwest Arkansas deli customers generally are not highly concerned about deli food safety and are only marginally aware of risks associated with these products.

INTRODUCTION

Ready-to-eat (RTE) foods are food products that may be safely consumed without any further preparation (such as cooking or reheating) by the consumer (34). They are convenient and quick; therefore, they have increased in popularity in the last 20 years (10, 22). Deli meats are RTE meat or poultry products that are usually sliced, either in the processing facility or after distribution, and typically assembled in a sandwich for consumption (14). Deli meats can be bought at the grocery store deli counter or at a stand-alone deli, with stand-alone delis defined as commercial establishments that are not part of a larger store.

Questions about the safety of RTE foods arose after the occurrence of numerous outbreaks of disease linked to *Listeria monocytogenes* (4, 6, 7, 8, 31), often linked to the consumption of RTE foods, mostly RTE deli meats (18, 23, 28, 32, 37). According to the Centers for Disease Control and Prevention, every year approximately 2,500 people in the United States get listeriosis, resulting in approximately 2,300 hospitalizations and 500 deaths (5, 13, 26). The high rates of hospitalization and death from listeriosis show that when cases do occur, the illness is severe compared with that caused by most other foodborne pathogens. Primarily, the elderly, pregnant women, newborns and immunocompro-

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TABLE 1. Survey of deli/grocery store customers: survey instrument questions

1. How often do you shop at stand-alone delis (other than the grocery store deli)? (Please Circle one)
Never 1-2 times per week 1-2 times per month 1-2 times per year
 2. How often do you shop at the deli counter at the grocery store? (Circle one)
Never 1-2 times per week 1-2 times per month 1-2 times per year
 3. At stand-alone delis, which type of food do you purchase most often? (Circle one)
Sandwiches Salads Other prepared foods NA
 4. At grocery store deli counters, which type of food do you purchase most often? (Circle one)
Deli meats Cheese Sandwiches Salads Other prepared foods NA
 5. In general, I feel food from the deli is _____ restaurant foods. (Fill in the blank)
less safe than / as safe as / more safe than (Circle one)
 6. Where do you purchase most of your deli foods? (Circle one)
Local stand-alone delis Chain stand-alone delis Grocery Store deli counter NA
 7. I believe that food purchased from a deli or served at a restaurant have about the same nutritional value.
Yes No
 8. Which statement **best explains** why you purchase deli foods? (Circle one)
a. Taste b. Nutritional quality c. Safety
d. Convenience e. Quality of service f. Selection
g. Cost h. NA
 9. Which of these do you think is least likely to cause food poisoning? (Circle one)
Hot sandwiches Cold sandwiches Salads
 10. In comparison to conventional deli items, would you be willing to pay more for _____? (Circle one)
Organic deli items All natural deli items Neither of these
 11. Which of these do you think is least likely to cause food poisoning? (Circle one)
Organic deli items All natural deli items Conventional deli items
- To help ensure that our survey reflects a cross-section of the population, please answer the following:**
12. Please circle your age group: 18-25 26-35 36-45 46-55 56-65 >65
 13. Please circle the gender you most identify with: Male Female
 14. Please circle the ethnic group you most identify with:
Hispanic/Latino White Black Asian Other _____
 15. Please circle your highest education level:
a. Fewer than 12 years of schooling d. Bachelor's degree
b. High school graduate or GED e. Master's degree
c. Associate's or technical degree f. Professional degree or Ph.D.

mised individuals are affected (5, 21). In 2003, the Food and Drug Administration (FDA) and the Food Safety and Inspection Service (FSIS) developed a comparative risk assessment of *L. monocytogenes* in 23 categories of RTE foods. As a conclusion of this study, deli meats were categorized as the RTE food category with the highest risk level, causing an estimated 1,600 cases of listeriosis per year (37).

Two distinct forms of sliced deli meats are available. The first type is

pre-sliced and packaged under continuous federal inspection and purchased by consumers in retail outlets such as grocery stores. The second type of RTE deli meats are those that are produced in bulk and then sliced fresh in retail facilities. A higher incidence of *L. monocytogenes* contamination has been observed in the in-store sliced deli meats than in the pre-sliced, packaged deli meat products (13, 16, 17). This indicates in-store product contamination of the in-store sliced RTE deli meats. The current *Listeria* risk

assessment estimates that in-store sliced deli meats could contribute to a high percentage (83%) of all the listeriosis caused by deli meats (13).

During production, RTE meats are subject to a thermal process that is designed to kill any *L. monocytogenes* present; however, the organism can be present because of a processing error, such as inadequate temperature or processing time that did not eliminate all of the *L. monocytogenes* present in the product. Most often, its presence in finished foods

TABLE 2. Socio-demographic characteristics of the sample, sample size (N) = 213

Socio-demographic characteristic	% of total
Gender	
Male	42.3
Female	57.7
Age group	
18–25	8.5
26–35	16.9
36–45	23.9
46–55	23.0
56–65	13.6
>65	14.1
Educational level	
Fewer than 12 years of schooling	4.7
High school graduate or GED	30.5
Associate's or technical degree	17.8
Bachelor's degree	28.2
Master's degree	8.0
Professional degree or Ph.D.	10.8
Ethnicity	
Caucasian	89.2
Hispanic/Latino	5.6
African-Americans	3.3
Asian	0.5
Other	1.4

is due to post-processing contamination (5, 15). Even after adequate heat treatment, food products can be contaminated by biofilms present on the surfaces of various equipment, by environmental contamination, or by cross-contamination (15). Multiple reports have suggested that *L. monocytogenes* contamination is most likely due to recontamination or cross-contamination in the retail environment during handling steps such as peeling, slicing and repacking (23, 30, 38).

Food handlers, customers, and the environment are potential sources of *L. monocytogenes* (23). Safe food-handling behavior is very important to reduce the risk and incidence of foodborne disease (29). A recent survey revealed that most food handlers (95%) were aware of food safety behaviors; however, a majority of the respondents (63%) admitted that they do not always carry them out (9). Less is known about the food safety knowledge

of customers who frequent deli establishments. Therefore, the overall focus of this study was to assess customers' awareness of food safety issues associated with delis. Current food safety perceptions of deli foods among customers at commercial grocery establishments with in-store deli operations were assessed by use of a survey instrument that also included inquiries on shopping habits, such as frequency of shopping at a deli and type of products bought (including organic and natural products) as well as the motives for purchasing deli foods. In addition, the perception of the nutritional value of deli foods was estimated.

MATERIALS AND METHODS

Survey instrument

A 15-question survey (Table 1) and the protocol to be used were approved by the Human Subjects Committee of the

Institutional Review Board of the University of Arkansas (Fayetteville, AR). Initially, respondents were asked about their shopping habits: the frequency of shopping at a deli, stand-alone delis and grocery store deli counters (Questions 1, 2, 6), the types of products bought at those delis (Questions 3 and 4) and reasons for purchasing deli foods (Question 8). The second component focused on the customers' opinions about the food quality at the deli counter, such as the foods' safety (Question 5 and 9) and nutritional value (Question 7). In the final section, questions about organic and all natural deli items (Questions 10 and 11) were asked, such as questions regarding food safety and willingness to pay more for organic or all-natural deli items than for conventional deli items. In addition, demographic information (Questions 12 – 15) was collected, such as the respondent's age group, gender, ethnicity and educational level.

FIGURE 1. Food safety perception of deli foods compared with restaurant foods (deli food is "less safe than"/"as safe as"/"more safe than" restaurant food) of 213 retail grocery shoppers

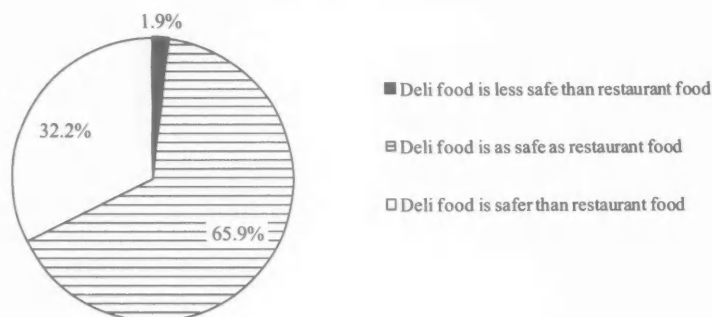
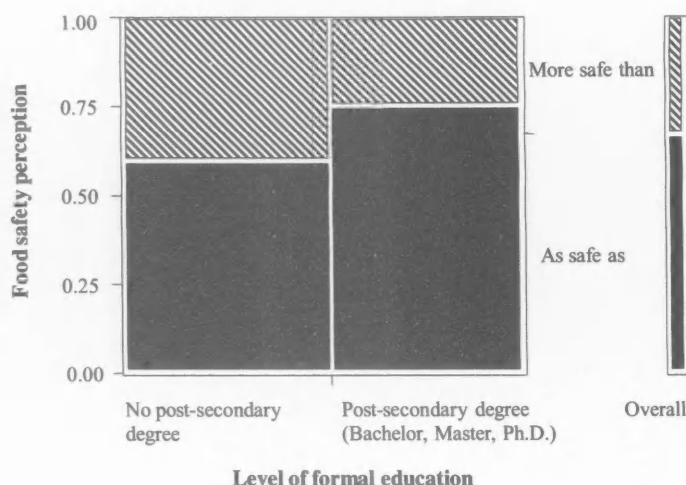


FIGURE 2. Contingency Analysis comparing food safety perception of deli foods compared with restaurant foods (deli food is "as safe as"/"more safe than" restaurant food) versus level of formal education in a Mosaic plot of 213 retail grocery shoppers (Chi²-test: $P = 0.019$, significant at level 0.05)



Survey procedures

Questions for the questionnaire were developed on the basis of the specific needs of the study. The questionnaire was field-tested with a small group of individuals. Each question was evaluated for clarity and examined to determine whether it provided the desired information. The length of the survey was evaluated as well. Discussion among group participants about the questionnaire

further improved it. The surveys were conducted during February and March 2009 in three different retail grocery store locations in Northwest Arkansas, one in Fayetteville and two in Springdale. At each location, the surveys were carried out for 3 hours on two different days corresponding to one weekday (Mon/Tues/Wed/Thurs) and one day in the weekend (Saturday), during the high-traffic time as defined by the respective store manager. To motivate the custom-

ers to participate in the study, University of Arkansas mascot cups were provided as gifts of appreciation for completing the survey form. In order to increase the diversity of respondents, one of the surveys was conducted at a store in a neighborhood with a higher proportion of Hispanic residents. A Spanish translation of the survey was provided for any customers for whom communication in Spanish might be preferable.

Statistical analysis

The survey data were entered and analyzed in JMP (release 7.0.2; SAS Institute, Inc.). Each respondent was given a corresponding number and his/her answers to each question were entered in JMP with a specific code. It was cross checked twice for accuracy. Once all the data were entered into JMP, relationships between two variables were identified by use of a bivariate analysis of frequencies with the contingency analysis in JMP. To test the independence of cross tabular data, a chi-square test was performed in JMP. In all statistical tests, a significance level of 0.05 was used to identify significant differences.

RESULTS

A total of 213 respondents completed the survey in three different retail grocery stores. The overall demographic analysis revealed the gender split of the respondents to be 42% male and 58% female. An overview of the socio-demographic characteristics of our sample is shown in Table 2 and illustrates that each age group of interest was represented. For most respondents, the highest level of education selected was high school or GED (30.5%), associates or technical degree (17.8%) or bachelor's degree (28.2%). Most participants (89%) identified themselves as Caucasian, with slightly over 10% of the respondents identifying with other ethnicities.

Food safety perception

A majority of the respondents perceived deli foods as being "as safe as" (66%) or "safer than" (32%) restaurant foods and only 2% perceived deli foods as being "less safe than" restaurant food (Fig. 1). Whether consumers answered

FIGURE 3. Contingency Analysis comparing food safety perception of deli foods compared with restaurant foods (deli food is "as safe as" / "more safe than" restaurant food) versus stand-alone deli shopping frequency of 213 surveyed grocery-store shoppers in a Mosaic Plot (Chi²-test: $P = 0.001$, significant at level 0.05)

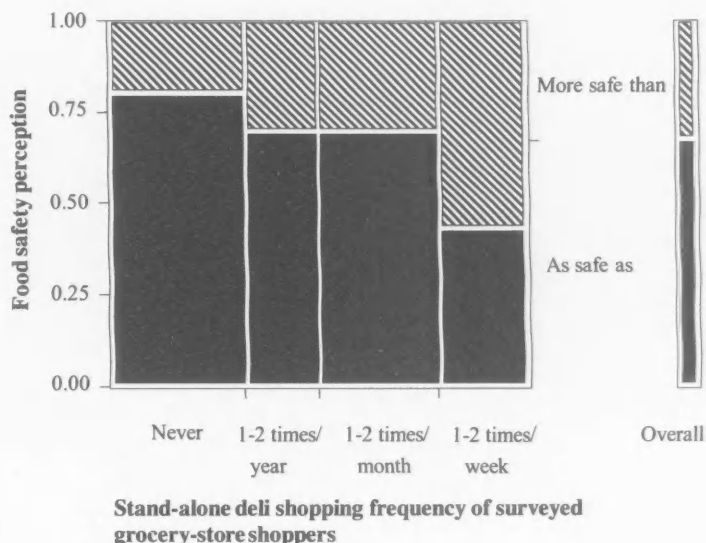
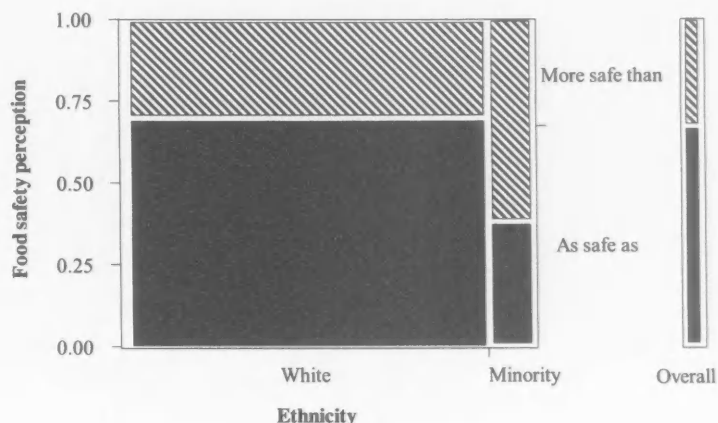


FIGURE 4. Contingency Analysis comparing food safety perception of deli foods compared with restaurant foods (deli food is "as safe as" / "more safe than" restaurant food) versus ethnicity in a Mosaic Plot of 213 retail grocery shoppers (Chi²-test: $P = 0.003$, significant at level 0.05)



"as safe as" or "safer than" was independent of their age group ($P = 0.837$) and gender ($P = 0.257$) but did depend on their level of formal education, i.e., whether they had a university degree or not ($P = 0.019$), and on the frequency of their shopping at the stand-alone deli

($P = 0.001$) or grocery store deli counter ($P = 0.007$). Respondents with a post-secondary degree (Bachelor, Master or Ph.D.) tended to perceive deli foods in the "as safe as restaurants foods" category more than did respondents without a post-secondary degree, who perceived

deli foods as more likely to be "safer than restaurant foods" (Fig. 2). Food safety perception also depended on the frequency of shopping at delis; with an increasing frequency of shopping at stand-alone delis, respondents were more likely to perceive deli foods as "safer than" restaurant foods (Fig. 3).

The perception of safety tended to depend on the ethnicity of the respondent (Caucasian or otherwise) ($P = 0.003$) (Fig. 4). Respondents who identified themselves as Caucasian tended to perceive deli foods primarily as "as safe as" restaurant foods, compared with the non-Caucasian respondents, who perceived deli foods as more likely to be "safer than" restaurant foods. However, caution should be exercised when evaluating these data, because all but 23 of the 213 respondents were Caucasian. Future research needs to address the effect of ethnic differences by performing more surveys in areas with greater ethnic diversity and by incorporating additional features into the survey instruments that encourage responses, such as having a language translator present during the survey. This could elicit more responses from respondents who are not comfortable reading or speaking in English.

Shopping habits, motives and perception of nutritional value

The respondents were asked about their deli shopping habits and motives. A large portion of the respondents (81%) answered that they bought most of their deli foods at the grocery deli counter, not at local or chain stand-alone delis. One-third of the respondents (33%) never shopped at stand-alone delis, whereas only 6% never shopped at the grocery store deli counter (Fig. 5). About 85% of the respondents regularly (weekly or monthly) purchased deli items at the grocery deli counter, compared with only 49% of the respondents who regularly shopped at a stand-alone deli (Fig. 5).

We recognize that the types of food purchased at stand-alone and grocery store delis cannot be compared directly, since the items offered differ. However, these data can potentially help identify shopping habits at all places selling foods using deli ingredients. Most customers responding to our survey replied that

FIGURE 5. Shopping frequency at delis of 213 retail grocery shoppers

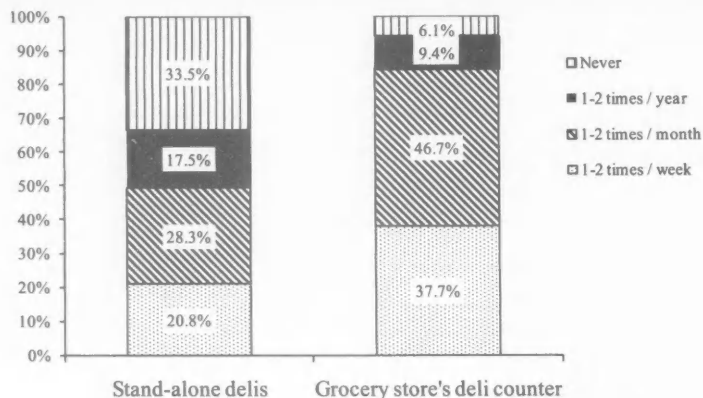


FIGURE 6. Types of food most often bought at delis by 213 retail grocery shoppers



they shop at stand-alone delis to buy sandwiches (41%) but also purchase other prepared food (20%) and salads (9%). However, when they shop at the grocery store deli counter, deli meats (64%) are the predominant purchase (Fig. 6). The primary reasons for the purchase of deli foods were convenience and taste; the different reasons were (in decreasing order of importance): convenience (37%), taste (32%), nutritional value (11%), selection (9%), safety (3%), quality of the service (3%), cost (2%) and other (5%).

Most of the respondents (68%) also believed that deli foods are more nutritious than restaurant foods. This perception of the greater nutritional value of deli foods compared with restaurant

foods seems to be consistent for the different demographic groups, because it did not depend on age ($P = 0.175$), gender ($P = 0.982$), level of formal education ($P = 0.501$), ethnicity ($P = 0.150$) or the frequency of shopping at a stand-alone ($P = 0.662$) or grocery store deli counter ($P = 0.712$).

Organic and all-natural deli foods

When respondents compared the willingness to pay for organic versus all-natural deli products, 35% stated that they would be willing to pay more for all-natural deli foods and 24% would pay more for organic deli foods. However, most respondents (41%) would not

be willing to pay more for either organic or all-natural deli products than for conventional deli products. Nevertheless, stated willingness to pay more for organic and all-natural deli foods may be subject to hypothetical bias. Individuals may respond differently to hypothetical questions than to a situation of real payment; therefore, their stated willingness to pay may be different from their actual willingness to pay in real market situations.

DISCUSSION

Food safety perception

Our study showed that most consumers perceived deli foods as being "as safe as" (66%) or "safer than" (32%) restaurant foods. This result is consistent with a Food Safety Survey from the FDA and FSIS (36) that showed that consumers think that foodborne illness most likely stems from food-handling procedures at food processing plants (43%) and restaurants (20%). Fewer respondents indicated that most food safety problems occur at supermarkets (6%) or at home (15%). A similar study from the Food Marketing Institute (11) revealed that over the past few years, the concern of food safety problems in supermarkets and homes has steadily declined. Only 3% and 4% of consumers think that food safety problems are most likely to occur at supermarkets and homes, respectively. In addition, the International Dairy-Deli-Bakery Association (IDDBA) reported that 96% of consumers believe that food in the supermarket delis is handled safely (20).

The food safety perception that food at the deli counter is relatively safe might be due to the low awareness of *Listeria* and unfamiliarity with the frequency of problems it can cause in deli foods. The FDA/FSIS Food Safety Survey (35, 36), which measured changes in consumer knowledge, safe handling practices and confidence in the safety of poultry and meat, revealed that most consumers are aware of *Salmonella* (86%) and *E. coli* (85%) but not of *Listeria* (30%). Although awareness of *Listeria* has grown from 9% in 1993 to 14% in 1998 and 31% in 2001, it appears that awareness has not increased since 2001, given that in 2006 only 30% of the people had heard of *Listeria* as a problem in food. Similarly, Cates et al. (3) reported that

less than half of consumers are familiar with *Listeria*, compared with 94% for *Salmonella* and *E. coli*. Additionally, care must be taken with regard to self-reported awareness, because this might be lower than actual awareness. Indeed, over two-thirds of consumers who reported being aware of *Listeria* were not able to identify possible food vehicles (3). Respondents without a post-secondary degree were more likely than those with such a degree to perceive deli foods as "safer than" restaurant foods, which might be explained by a lower awareness of *Listeria*. Awareness of *Listeria* has been reported to be generally lower among respondents with relatively low education and incomes (3, 24).

The perception of delis being relatively safe is of concern, given the inconsistent levels of regulatory food safety oversight currently prevalent in delis. Federal inspectors enforce Good Manufacturing Practices (GMPs) and Sanitation Standard Operating Procedures (SSOP; a part of the HACCP) at production plants, but GMPs and SSOP are not mandatory at the retail deli. It is up to the supermarkets and local health department inspectors to ensure that deli departments develop and implement SSOP. Martin et al. (25) reported that the retail and food service industries are being inspected less frequently than production plants and often do not implement HACCP-based food safety principles. According to Lianou and Sofos (23), the combination of limited control interventions and lack of a regulatory framework increases the risk of *L. monocytogenes* contamination of RTE foods in retail and food service environments. Suitable cleaning, sanitation and hygiene as well as temperature control are necessary to prevent or inhibit contamination with and growth of *L. monocytogenes*. Therefore, it is important that there be sufficient and consistent control interventions as well as regulation of delis (23). Temperature control during slicing, packaging and storage, although important, is lacking at most grocery deli counters (19). In federally inspected processing plants producing deli foods, the operations take place at temperatures below 55°F and storage occurs below 40°F. At most grocery store deli counters; however, there is no temperature control: operations such as slicing take place at room temperature, and the temperature at the deli showcase can be above 40°F (19).

Shopping habits

Our study shows that about half of the respondents shop weekly or monthly at the grocery store deli counter. This result is similar to the results reported by the Food Marketing Institute (12), which found that 60% of the respondents purchase fresh cut deli items from supermarkets on a monthly basis. As for the items bought at delis, our results are consistent with those reported by IDDBA (20), which listed the top 12 most consumed deli products for households. Based on this report, sliced-to-order luncheon meat is the deli item most often consumed (on average 2.9 times/week), followed by sandwiches (2.7 times/week). Pre-sliced packaged deli meats have an average weekly household consumption of 1 time/week (20), which is only one-third of the consumption of retail sliced deli meats.

Our results support the conclusions of IDDBA (20) and Mitchell (27), who reported convenience as the most common reason for purchasing at the in-store deli counter. Many consumers are seeking convenient meals, which likely contributes to increased deli purchases. In addition, Mitchell (2009) suggests that the slowdown in consumer spending due to the economic situation is beneficial to the deli; consumers have become more cost-minded, resulting in a shift from food purchases at a fast-casual restaurant to a cheaper alternative such as a deli. However, in our study, only 2% of the respondents purchased deli foods because of cost considerations.

Limitations of the study

One of the limitations of the study is the sample size. A sample size of 213 is sufficient for a survey study, but caution is necessary when generalizing the results to a larger population. The respondents who participated were not selected randomly, since we approached the shoppers and asked them to participate voluntarily, after we had selected specific grocery stores. This might result in sample selection bias. The stores were all located fairly close together, in neighboring cities. In addition, only shoppers who chose to participate were questioned (volunteer bias). We provided University of Arkansas mascot cups as gifts of appreciation for completing the survey, in an attempt to motivate more shoppers to participate;

however, this is only a small reward. Payment awards with a value high enough to offset the time spent for all shoppers would have resulted in less bias in selection of participants but would greatly affect the cost of the study.

CONCLUSIONS

Most consumers are not aware of the danger of RTE deli meats and *Listeria* contamination, and this lack of awareness may prevent consumers from taking proper precautions when handling RTE foods. Unfortunately, we do not know where most foodborne illness originates, but people's belief that it is somewhere other than the grocery store or their own home might reduce their concern for food safety at the grocery store or at home. In the future, there is a need not only to continue educating consumers about possible food safety problems and foodborne pathogens such as *Listeria* but also to help them develop more understanding of safe food-handling practices to help prevent foodborne illness (36). From the results of multiple studies (1, 22), we can conclude that consumers often do not know about the recommended refrigerator temperature of 40°F or below. It is necessary to educate consumers about the consequences of unsafe practices so as to motivate them to follow food safety guidelines.

According to Bruhn (2), not only the consumer but also the health community, food industry regulators and the media are responsible for educating consumers so as to ensure that they handle foods correctly. When consumers do not follow the guidelines (insufficient temperature control, poor hygiene), this means that the food safety message has not been delivered effectively, and more or different means of education are necessary. Supermarket delis can provide food safety information. In 2004, 43% of in-store delis provided information about how long the food can be stored; this figure is only marginally higher than it was in 1999 (40%) (20). In addition, because most consumers get information about food safety from the media, it will be important to continue working with the media to get food safety information out to the consumer most effectively. The use of food labels is another efficient mechanism that is used to provide

food safety information to the consumer (33, 36). A possible strategy to increase the consumer's knowledge is obligating pre-sliced as well as in-store sliced deli meats to have product labels containing safe food-handling information as well as warnings for the more susceptible population groups.

Consumers may not be well informed, and food handlers may need to become better educated about food safety principles to adopt appropriate oversight in the deli. Given the inconsistent quality of food safety regulatory control, better food safety training and education of food handlers are needed. The food handlers should not just be told what to do but, to be effective, they should be encouraged to learn about the consequences of their handling. Perhaps handlers might become more willing to change behaviors as a result of better understanding of consequences than as a result of someone directing them to do something without explaining why it is important. We can conclude that a combined effort throughout the entire food chain (that includes not only the processing company and the retailer but the consumer as well) will be necessary for further reduction in the risk of listeriosis.

ACKNOWLEDGMENTS

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CONGRATULATIONS...

At IAFP 2010, we offered a drawing for a one-year membership with our Association. We are pleased to announce the following winner of the drawing.

IAFP Membership
Eb Chiarini
University of São Paulo
São Paulo, Brazil

IAFP 2010 in Review



While August is normally considered hot and humid throughout much of the U.S. and other parts of the world, nothing said "perfect weather" more than Anaheim, California, location of IAFP 2010, August 1-4. With temps hovering around 80 degrees each day amid sunny skies, light breezes, and swaying palm trees, picturesque Anaheim and all its amenities proved to be the perfect host to a record-breaking crowd of more than 2,170 food safety professionals from around the globe. Even with a packed agenda of presentations, lectures, and workshops, many attendees still found time in their busy schedules to become a kid again and sneak in a few moments of fun at nearby Disneyland, Anaheim's largest tourist attraction.

Each year's IAFP Annual Meeting is molded by the efforts and expertise of the Program Committee and the generous, innovative sponsoring companies whose products and corporate advantages are touted by devoted representatives.

Exhibitors outshone themselves in numbers this year displaying their wares and corporate advantages between meetings and during scheduled events. An all-time high of 130 new and returning exhibitors and 156 booths, plus our valuable sponsors, beckoned attendees with giveaways and networking events throughout the three-day meeting.

IAFP 2010 kicked off for early-arriving attendees with two popular pre-meeting workshops on Friday and Saturday, conducted by prominent industry professionals. *Characterization and Identification of Spoilage-causing Fungi: A Hands-on Workshop* was organized by representatives from PepsiCo and Kraft Foods, Inc. This workshop provided attendees a unique opportunity to interact first-hand with experts from BCN Research Laboratories, Inc.; DuPont Qualicon; Universal Sanitizers, Inc.; and bioMérieux, Inc. to learn best practices for isolating different fungi, as well as the basics of classical identification methods.





A full-capacity crowd attended *Microbial Challenge Testing for Foods*, organized by Dr. Donald Schaffner, and conducted by Dr. Schaffner, Dr. Kathy Glass and Dr. Linda Harris. This workshop presented information and guidance from the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) regarding the topic of challenge studies and their appropriate use. NACMCF instructors guided the workshop attendees through the use of the material in their report to develop actual challenge study protocols based on NACMCF recommendations.

Saturday's late afternoon Welcome Reception was the first real chance for active Association Members, new Members, colleagues, students, and first-time attendees to become acquainted, reconnect, and network. Entertainment

included hundred dollar bills given away to those who could answer random questions taken from the presentation shown at the reception by our sponsor, Eurofins Scientific. Great conversation and a casual setting provided the perfect transition into Sunday's full day of committee and professional development group meetings. Review the minutes from Sunday's meetings (beginning on page 712) and let us know how IAFP can assist you in becoming involved with the group that best fits your interests and goals.

Sunday evening's Opening Session in the Anaheim Convention Center played host to an attentive audience, with President Vickie Lewandowski welcoming attendees and introducing Local Arrangements Committee Co-Chairs Margaret Burton and Turonda Crumpler of the Southern California Association for Food Protection (SCAFP). Together, they enthusiastically provided plenty of information regarding upcoming meeting activities and a light-hearted description of area attractions. President Lewandowski then proudly announced the establishment of two new IAFP Affiliates during the past year and presented Charters to representatives of each: Wendy Maduff of the Nebraska Association for Food





Protection; and Zhinong Yan and Tong-Jen Fu of the Chinese Association for Food Protection in North America.

Gale Prince, IAFP Foundation Chair, stepped to the stage to offer an overview of the Foundation's accomplishments and goals, and once again announced his generous donation match against all monies collected from meeting attendees throughout IAFP 2010. The challenge was immediately jump-started by President Lewandowski's donation from Saturday's Foundation Fundraiser golf tournament. Mr. Prince and President Lewandowski then welcomed to the stage this year's proud recipients of the IAFP 2010 Student Travel Scholarship Awards: Mary Pia Cuervo of Texas A&M in College Station; Vania Borges Ferreira of the Portugese Catholic University, Portugal; Clyde Simmons Manuel of Colorado State University in Ft. Collins; Csaba Nemeth of Corvinus University of Budapest in Hungary; Anh Linh Nguyen of the University of New South Wales in

Australia; Iryna Sybirtseva of North Carolina State University in Raleigh; and Duygu Tosun of Ege University in Turkey. (An eighth student scholarship recipient, Abel Atukwase of Makerere University in Uganda, was recognized but unable to attend the meeting.)

Presentation of the Fellow Awards by President Lewandowski and Past President Stan Bailey followed with five recipients being honored this year, including: Russell S. Flowers of the Silliker Group Corporation in Homewood, Illinois (who was unable to attend Sunday night's presentation); Deog-Hwan Oh of Kangwon National University in Korea; Elliot T. Ryser of Michigan State University in East Lansing; Robert L. (Bob) Sanders, retired and living in Pensacola, Florida; and Purnendu C. Vasavada of the University of Wisconsin-River Falls. President-Elect Lee-Ann Jaykus then introduced this year's Ivan Parkin Lecturer, Michael R. Taylor, Deputy Commissioner for



Foods, U.S. Food and Drug Administration, Washington, D.C. His speech, *Improving Food Safety from Farm to Table: Fostering Prevention and Building Partnerships*, shone light on what the FDA's approach to the food safety role must be pertaining to farm producers, food processors, transporters, retailers, and consumers. The Opening Session concluded with an energized crowd ready to network and relax at the Cheese

events, and breaks throughout IAFP 2010, and Exhibit Hall lunches on Monday and Tuesday. These refreshing and tasty events gave attendees many chances to replenish their energy levels throughout the often-overlapping conference sessions.

Students are a valuable part of the ever-increasing force in IAFP's Membership base. As in past years, student involvement continued to be an important piece of IAFP



and Wine Reception in the Exhibit Hall, made possible by longtime sponsor Kraft.

A plethora of prime symposia and technical presentations followed on Monday, marking the start of three days of detailed and careful planning by the dedicated Program Committee. This year's Committee Chair, Faye Feldstein, Vice Chair Randall Phebus, and their team of members representing leaders in all aspects of food safety, had worked diligently throughout the past twelve months to retain IAFP's reputation as the world's leading food safety conference. Please help us express our sincere appreciation to each person who served on the Program Committee, as well as the many companies that graciously sponsored food and beverages for meetings,

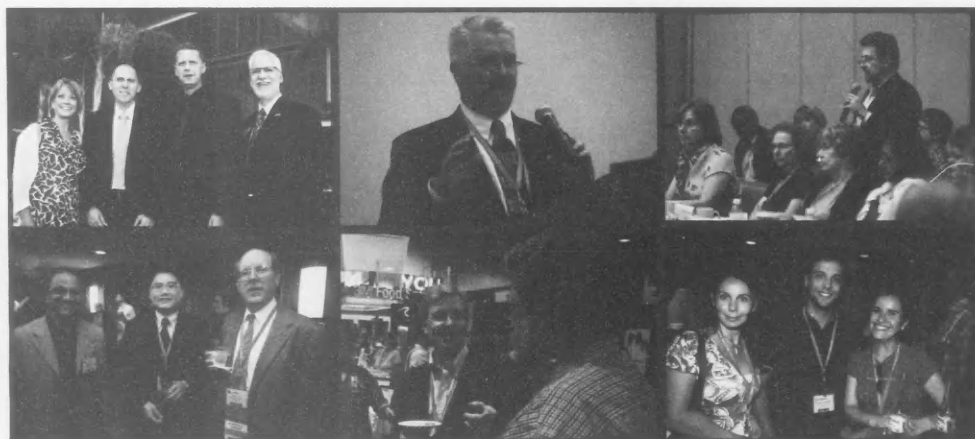
2010 as developing scientists, scholarship recipients, and session monitors proved that young leaders are indeed the future of food safety. The support of each other's careers and goals was evident at both the Student PDG booth and the Job Fair, where students could mingle, network, and distribute information. Both Sunday's Student Luncheon, featuring guest speaker Dr. Michelle Danyluk, and Tuesday evening's ever-popular Student Mixer brought young professionals together to learn, laugh, and interact.

At Tuesday's Business Meeting, President Vickie Lewandowski reviewed the Association's accomplishments and goals of the past fiscal year, and presented President's Recognition Awards to IAFP

Members Edmund Zottola, Paul Hall, and Julie Larson Bricher, along with IAFP Executive Director David Tharp. Standing committee chairs delivered brief reports on their activities, and Affiliate Council Chair Dan Erickson reported on the growth and efforts of the Association's Affiliate organizations. And, as in years past, the Florida Association for Food Protection 'rode the wave' into the room with their 'surfer dude' skit that tied into the locale, tossed fun and spoof toward various Members and attendees, and ended with

displayed throughout the rows of auction tables, as well as other popular items such as gift cards, wines, cheeses, sports paraphernalia, and books. As is tradition each year at the auction, bidding became a frenzy of last-moment decisions during its final minutes, and overall donation results—including those who pledged cash contributions throughout our meeting—netted a grand total of \$7,880 toward supporting the Foundation's important programs.

The Closing Session on Wednesday afternoon ended three days of innovative



their traditional \$1,000 contribution to the IAFP Foundation. Thank you, FAFP – and surfer dudes – for your generous contribution!

This year's Silent Auction showcased a record-number of goods donated from around the world by our generous contributors. With funds benefitting the IAFP Foundation, these donations included popular and unusual items that drew attendees, spouses, and kids alike to outbid each other for their favorite souvenir. The location of this year's meeting was a given for several donated Disney-related items

meetings with the John H. Silliker Lecture, featuring guest speaker, Dr. Robert L. Buchanan of the Center for Food Safety and Security Systems at the University of Maryland, who spoke on *Understanding Foodborne Microorganisms, A Matter of Perspective*. A summary of Dr. Buchanan's engaging presentation appears on page 679. We gratefully acknowledge Silliker, Inc.'s annual contribution toward funding this key lecture series.

The beautifully decorated Pacific Ballroom at the Anaheim Hilton brought perfect closure to IAFP 2010 where



Wednesday evening's Awards Banquet, IAFP's traditional grand finale social event, was held. Over six hundred attendees sparkled and shone in their best apparel to gather and toast their collective professional contributions and endeavors over the past year, as well as to honor fellow colleagues receiving the many prestigious IAFP Awards throughout the evening. President Vickie Lewandowski, the banquet's emcee, kept a smooth pace throughout the ceremony, ending with her final comments before passing the President's gavel to Lee-Ann Jaykus, who thanked President Lewandowski for her leadership. Dr. Jaykus closed the evening by stressing the importance of maintaining the reputation of IAFP as a

world leader in the food safety profession and the strides we've made throughout our nearly 100 years.

We sincerely thank all of you who made IAFP 2010 in Anaheim our most well-attended and successful Annual Meeting to date. By juggling workloads, distances, finances, and personal commitments, you continued to support the Association with your valuable knowledge and leadership; your donations of time and money; and your dedication to protecting food safety around the world. We look forward to celebrating the 100th Anniversary of IAFP throughout 2011 and in the city of our roots, Milwaukee, Wisconsin during IAFP 2011 next July 31–August 3. See you there!



IAFP 2010 Award Winners

Fresh Express, Inc.

A subsidiary of Chiquita Brands International

Salinas, California



Black Pearl Award Winner Fresh Express (left to right) Grace Ho, Cuong Phan, Joan Rosen, Courtney Parker, Mike Burness, Verlea Kellogg, Sharan Lanini and IAFP Board representative Stan Bailey.

Each year, the International Association for Food Protection honors a single company with its most prestigious award, the Black Pearl, in recognition of that company's efforts in advancing food safety and quality through consumer programs, employee relations, educational activities, adherence to standards, and support of the goals and objectives of IAFP. The recipient of the 2010 IAFP Black Pearl Award is Fresh Express, Inc.

Headquartered in Cincinnati and known the world over for quality, Chiquita Brands International employs 23,000 employees and has operations on six continents, with most employees based in Central America. The company markets its products under the Chiquita® and Fresh Express® premium brands. Fresh Express is dedicated to providing fresh and nutritious salads to America's tables for over 80 years. With the invention and introduction of the Keep Crisp® bag, Fresh Express was the creator of the retail-packaged salad category and the first to make ready-to-eat salads available to consumers nationwide.

Food safety is not only part of their strategy, it is in the company DNA. In 2006, prior to the tragic fresh spinach *E. coli* outbreak, Fresh Express formed a Scientific Advisory Panel comprised of nationally-respected food safety experts to help guide the company in learning more about the little-understood *E. coli* O157:H7 pathogen and its potential impact on lettuce and leafy greens. Despite having no connection with the outbreak, Chiquita Fresh Express allocated \$2 million in research funds to continue the pathogen study.

Fresh Express appreciates that their commitment to food safety has been recognized by the IAFP organization and the global food safety leaders within it. In their words, this award "is a true testament to the diligence, dedication, and hard work of the Fresh Express team that 'lives' food safety every day." Fresh Express remains committed to always strive to "do the right thing" to protect the health and well-being of their consumers, employees, and communities, with this milestone as incentive to continue the research and innovation toward even higher standards of effectiveness.

Sponsored by Wilbur Feagan and



FELLOW AWARD

Deog-Hwan Oh

Chunchon, Kangwondo, South Korea



Stan Bailey (left) presents Deog-Hwan Oh with the IAFP Fellow Award.

Dr. Deog-Hwan Oh is a recipient of the 2010 IAFP Fellow Award, which recognizes professionals who have contributed to IAFP and its Affiliates with distinction over an extended period of time. His dedication and knowledge have rendered him distinguished leadership among his Affiliate Members, as well as numerous other organizations.

Dr. Oh received his B.S. and M.S. with Honors and Distinction in Food Science from Kangwon National University (KNU), Korea, and his Ph.D. in Food Microbiology from Louisiana State University. His post-doctoral fellowship in Food Microbiology was with the University of Wisconsin. Dr. Oh joined the Department of Food Science and Biotechnology at KNU in 1995, and became a Professor in 2004.

During his 15-year professional career at KNU, Dr. Oh has served as Secretary of the Professor Council Association, Dean of the School of Biotechnology and Bioengineering and Department Head. Other positions he has held are council member on the Committee of Food Safety at the Korean Food and Drug Administration, General Secretary and Chairman of the Korea Society of Food Science and Nutrition (KFN), Chair of Planning Secretary for the Korean Association of Food Hygiene and Safety and Advisory Committee Member for several government organizations.

Dr. Oh has published approximately 150 refereed journal articles and book chapters, along with 10 patents, all since 1995 and primarily in the food safety field. Most papers were closely related to his interested field, with many offering highly valuable and creative information regarding food safety. Dr. Oh received the Distinguished Academic Award at KFN in 2003 and was listed as a member of biographical record of Marquis Who's Who in 2009.

An IAFP Member since 1991, Dr. Oh has also been an active Member of the Korean IAFP Affiliate since its 1997 inception, serving as Delegate, Secretary and President. Dr. Oh also played a key part in conducting the Asia Pacific Symposium of Food Safety in Seoul in November 2009, serving as Secretary General of the Organizing Committee.

FELLOW AWARD

Elliot T. Ryser

East Lansing, Michigan



Stan Bailey (left) presents Elliot Ryser with the IAFP Fellow Award.

Dr. Elliot T. Ryser is a 2010 recipient of the IAFP Fellow Award, which recognizes professionals who have contributed to IAFP and its Affiliates with distinction over an extended period of time.

Dr. Ryser is a 30-year member of IAFP and a past recipient of the Elmer Marth Educator Award.

Currently a Professor at Michigan State University, Dr. Ryser joined the University's Department of Food Science and Human Nutrition in 1998. Prior to that, he held research positions with the French National Institute for Agricultural Research in Jouy-en-Josas, France; Silliker Laboratories in Chicago Heights, IL; and the University of Vermont in Burlington. Dr. Ryser received his M.S. and Ph.D. degrees in Food Science from the University of Wisconsin-Madison, where he trained as a dairy microbiologist under the leadership of the late Dr. Elmer Marth.

Dr. Ryser's research now focuses on cross-contamination and quantitative bacterial transfer during handling of deli meats and leafy greens. An internationally-recognized authority on *Listeria* and co-author/co-editor of the well-known book, *Listeria, Listeriosis and Food Safety*, his findings are now being used to refine several risk assessments. Together with more than 20 students, post-doctoral research associates, and visiting scholars, Dr. Ryser has authored 23 book chapters, 64 peer-reviewed publications—over 30 appearing in IAFP's *Journal of Food Protection*—and 137 abstracts, of which 63 have been presented at IAFP Annual Meetings. He is also one of four co-scientific editors for *JFP* and a staunch supporter of the IAFP ideals at both the national and local levels.

FELLOW AWARD

Robert L. Sanders

Pensacola, Florida



Stan Bailey (left) presents Robert Sanders with the IAFP Fellow Award.

Mr. Robert L. (Bob) Sanders is a 2010 recipient of the IAFP Fellow Award. As a professional who has contributed to IAFP and its Affiliates with distinction over an extended period of time, Mr. Sanders is recognized for his many years of involvement and dedicated service to IAFP.

Currently retired in Pensacola, Florida, Mr. Sanders has been an active member in IAFP (and formerly in IAMFES) since 1954. He attended his first IAMFES Annual Meeting in 1957 in Louisville, KY, beginning a 44-year history of Annual Meeting attendance, missing only seven in 52 years. From 1985–1991, he served on the IAMFES Board of Directors, becoming President in 1990.

Born and raised in Gilbert, Iowa, Mr. Sanders graduated from Iowa State University in 1950 and took a position with the City of Des Moines as a milk inspector that same year. After his promotion to Chief Milk Sanitarian, he joined the Iowa Milk Association and the International Association in 1954. He eventually moved to the State Health Department as a State Milk Sanitation Rating Officer before joining the U.S. Public Health Service as a Reserve Officer. Called to active duty in 1963, Mr. Sanders was assigned to the Chicago regional office and was eventually sent to the University of Michigan, where he received his Master's in Public Health. After an assignment in New York, he spent the next 20 years working in Washington, D.C. Throughout his various careers, he has been a member of the Iowa, Illinois and New York Affiliates.

In 2000, Mr. Sanders was awarded the IAFP Honorary Life Membership Award for his dedication and service to the high ideals and objectives of the Association. Throughout the years, he has also served on the Management Committees for the *Journal of Food Protection* and for what eventually became known as *Food Protection Trends*, the Audiovisual Library Committee, the Past Presidents Committee and the Constitution and Bylaws Committee.

FELLOW AWARD

Purnendu C. Vasavada

River Falls, Wisconsin



Stan Bailey (left) presents Purnendu C. Vasavada with the IAFP Fellow Award.

Dr. Purnendu C. Vasavada is a 2010 recipient of the IAFP Fellow Award. Fellows are professionals who have contributed to IAFP and its Affiliates with distinction over an extended period of time. Dr. Vasavada is being recognized for his teaching, applied research, innovative training programs, and active consultation in the areas of food safety and microbiology and rapid methods and automation in food microbiology.

Currently a Professor of Food Science at the University of Wisconsin-River Falls, Dr. Vasavada is also the Extension State Specialist for Food Safety and Microbiology. His teaching and research interests include food safety and microbiology, emerging pathogens, and application of rapid methods in food safety and quality. He earned his B.S., M.S. and M.Sc. degrees in Microbiology from India and his Ph.D. in Food Science and Dairy Technology from the University of Georgia. Dr. Vasavada has organized the UWRF Food Microbiology Symposium since 1980 and is the author and co-author of over 100 publications, including technical abstracts, peer-reviewed research papers and trade magazine articles.

A member of IAFP since 1985, Dr. Vasavada is also a member of the Wisconsin Association for Food Protection. His numerous awards over the years include the Wisconsin Laboratory Association's Laboratorian of the Year Award (1987), Fellow of the American Academy of Microbiology (1990), the IAFP Educator Award (1997), the WAFP Sanitarian of the Year Award (1998), the Minnesota IFT Chairman's Award (1999), an Honorary Life Member of the Hungarian Society for Microbiology (2007) and Fellow of the Institute of Food Technologist (2009).

PRESIDENT'S LIFETIME ACHIEVEMENT AWARD

Wilbur S. Feagan

Springfield, Missouri



Mr. Wilbur S. Feagan is the recipient of the 2010 President's Lifetime Achievement Award. This award is given at the discretion of the Association President to recognize an individual who has made a lasting impact on "Advancing Food Safety Worldwide" through a lifetime of professional achievements in food protection. Mr. Feagan has distinguished himself as a leader of public service through his contributions to the food and dairy industries.

After earning his B.S. in Civil Engineering, majoring in Sanitary Engineering from the University of Illinois, Mr. Feagan became Milk Inspector for the St. Louis Health Department in Cabool, Missouri. Shortly after, he returned to St. Louis to assume the position of Dairy Plant Engineer, assisting with pasteurization plant compliance with the U.S. Public Health Service Milk Ordinance adopted by St. Louis. He then moved to Michigan as Milk Specialist with the Michigan State Health Department.

Mr. Feagan returned to Kansas City, Missouri after the state's adoption of the U.S. Public Health Service Ordinance in 1941, assuming responsibility for all ice cream and milk inspections. During World War II, he coordinated the work of inspection of the Health Department and the Army, assuring safe and adequate supplies to army posts and related needs in the Kansas City area.

Following the war, Mr. Feagan assumed management of the Bonne Terre Farming and Cattle Company, a division of the St. Joseph Lead Company. He later returned to milk sanitation work with the late C.B. Shogren at Klenzade Company, marketing cleaners and sanitary supplies. Seeking more active equipment exposure, he then joined the Midwest Creamery and Dairy Supply as Sales Manager.

Mr. Feagan was a founder of the F&H Food Equipment Company, along with Paul Higley. For over fifty years, this Springfield, Missouri company has contributed to consumer confidence through their focus on the safety and quality of food products and knowledge of equipment and processes. These contributions led to the 1994 creation of the Black Pearl Award, sponsored by Mr. Feagan and F&H Food Equipment Company and given annually by IAFP to an outstanding company meeting these standards.

A Member of IAFP for several decades, Mr. Feagan received the Honorary Life Membership Award in 2005. He remains active in his company, currently serving as Chairman of the Board.

HONORARY LIFE MEMBERSHIP AWARD

Ronald H. Schmidt

Gainesville, Florida



Vickie Lewandowski presents Ronald H. Schmidt with the IAFP 2010 Honorary Life Membership Award.

Dr. Ronald H. Schmidt is the recipient of the 2010 Honorary Life Membership Award, which recognizes his dedication and service to the high ideals and objectives of the Association. An IAFP Member since 1986, Dr. Schmidt received the 1998 Elmer Marth Educator Award.

Dr. Schmidt earned his undergraduate degree in Dairy Industries, his M.S. in Food Science – Analytical Chemistry, and his Ph.D. in Food Science and Nutrition – Biochemistry, all from the University of Minnesota. As Professor Emeritus, Food Science and Human Nutrition at the University of Florida, Gainesville, Dr. Schmidt has been active in teaching, research, and extension programs throughout his 36-year career there. His research emphasis is in biogenesis of flavor in lactic acid bacteria related to cultured dairy products, spoilage mechanisms and reactions in fluid milk products, and physiological interactions between spoilage and pathogenic microorganisms. Through his dairy extension programs, Dr. Schmidt has provided assistance in both production and processing which include in-state, national, and international programs.

Internationally, Dr. Schmidt has provided dairy and food regulatory assistance in South and Central America, Cape Verde, and Morocco. He has served in leadership roles in numerous professional organizations, including the Institute of Food Technologists (IFT), IAFP, the American Dairy Science Association (ADSA), the Southern Association of Agricultural Scientists (SAS), the South Florida Dairy Industries Association (SFDA), and the Florida Dairy Products Association (FDPA).

Dr. Schmidt is an IFT Fellow and has received the Florida Association for Food Protection (FAFP) Lifetime Achievement – Bronson Lane Award; the Florida Section IFT Sparkle Award and the Bob Olson Award; and the South Florida Dairy Industry Association Honor Member Award. He is the author of more than 150 scientific publications, book chapters, and presentations in dairy and food science technology, food safety, and microbiology, and is the co-editor of *Food Safety Handbook*.

As a long-time participant in 3-A Sanitary Standards, Inc. (3A SSI), Dr. Schmidt currently serves on their Board of Directors. He is also on the Board of Directors for the National Conference on Interstate Milk Shipments (NCIMS).

HARRY HAVERLAND CITATION AWARD

Michael H. Brodsky

Thornhill, Ontario, Canada



Joan Menke-Schaenzer (left) and Lee-Ann Jaykus (right) present Michael Brodsky with the IAFP 2010 Harry Haverland Citation Award.

As recipient of the 2010 Harry Haverland Citation Award, Mr. Michael H. Brodsky is recognized for his years of dedication and devotion to the Association's ideals and objectives.

Mr. Brodsky has been an Environmental Microbiologist for 38 years. After graduating from the University of Toronto's School of Hygiene, he joined the Laboratory Services Branch of the Ontario Ministry of Health as a research scientist. In 1980, Mr. Brodsky ventured into the private sector and two years later accepted the position as Chief, Environmental Microbiology, which he held until changing career paths in 1999.

From 1999 to 2000, Mr. Brodsky was under contract to Silliker Laboratories Group as General Manager of Silliker Laboratories of Canada in Mississauga. He currently operates Brodsky Consultants as an independent microbiological consultant in food and water safety, laboratory accreditation, and quality assurance. Mr. Brodsky is also a technical assessor in food microbiology for the Standards Council of Canada, Laboratory Accreditation Program (PALCAN), and a lead auditor/assessor in water microbiology for the Canadian Association for Analytical Laboratories (CALA).

Mr. Brodsky is Past President of the International Association for Food Protection (IAFP), AOAC International, and a two-time Past President of the Ontario Food Protection Association (OFPA). He continues to serve as a scientific reviewer on the Methods Committee for Microbiology for the AOAC Official Methods Program and for the AOAC Research Institute. Mr. Brodsky also plays an active role in IAFP through various Professional Development Groups (PDGs) and other committees.

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FOOD SAFETY INNOVATION AWARD

Hyglos GmbH
Regensburg, Germany



Isabel Walls (left) and Frank Yiannas (right) present Monika Walter with the IAFP 2010 Food Safety Innovation Award.

The Hyglos GmbH group is the recipient of the 2010 Food Safety Innovation Award. Located in Regensburg, Germany, Hyglos GmbH is an established Biotech company whose core competency is to exploit the biochemical principles evolved by bacteriophages and the expert use of the proprietary phage-protein technology for food safety, human diagnostics, and research applications. The company's name is a 2009 result of the acquirement of the German biotech company, Profos, by Hyglos Invest GmbH, German and Institut Merieux.

Members of the Hyglos GmbH group include the following:

Dr. Stefan Miller was born in Regensburg, Germany and holds a Ph.D. in Biology from the University of Regensburg. His scientific focus was structure, stability, folding, and assemblage of bacteriophage proteins at the University of Regensburg and the Max-Planck-Institute for Biology in Tübingen, Germany. Dr. Miller co-founded Profos AG in 2000 and, as Chief Scientific Officer, was responsible for addressing the industrial applications of phage proteins for food microbiology. In 2009, Profos was acquired by private investors and changed its name to Hyglos GmbH.

Dr. Manfred Biebl, a Weldon, Germany native, is a microbiologist who began his career with the examination of hyperthermophilic archaeobacteria. He joined Profos (now Hyglos GmbH) in 2001 as head of the microbiology group. In 2006, Dr. Biebl was appointed as R&D Director and assumed responsibility for the identification of phage-derived binding molecules (e.g., *E. coli* O157 binding ligand).

Dr. Monika Walter, Augsburg, Germany, holds an M.S. in Biology from Ludwig Maximilian University in Munich and a Ph.D. from the University of Potsdam. She joined Hyglos GmbH (then Profos AG) in 2003 as Project Manager in the phage protein development and has also overseen setting up the quality control program and production development. Dr. Walter is currently responsible for the production unit at Hyglos GmbH.

Dr. Renate Grassl was born in Waldmünchen, Germany. She obtained her M.S. in Biology at the University of Regensburg and holds a Ph.D. in Cell Biology and Plant Physiology. Dr. Grassl joined the bacteriophage protein development group in 2000 as a Development Scientist and was active in the group until 2008.

Dr. Jan Kretzer, a Cologne, Germany native, holds a Ph.D. in Food Microbiology awarded by the Swiss Federal Institute of Technology in Zurich. Dr. Kretzer began his career as a development scientist of rapid tests at Securetec AG and subsequently became involved in the Hyglos group in 2007. He participated as a speaker at the IAFP 2008 Annual Meeting with his speech on "Innovative Applications of Bacteriophages in Rapid Enrichment, Detection and Identification of Foodborne Pathogens."

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INTERNATIONAL LEADERSHIP AWARD

Maria Teresa Destro

São Paulo, Brazil



Stan Bailey (left) and Pam Wilger (right) present Maria Teresa Destro with the IAFP 2010 International Leadership Award.

The 2010 International Leadership Award goes to Dr. Maria Teresa Destro for her dedication to the high ideals and objectives of IAFP, and for promotion of the mission of the Association in countries outside of the U.S. and Canada. Dr. Destro is an Associate Professor of Food Microbiology in the Department of Food and Experimental Nutrition at the University of São Paulo (USP), Brazil. She earned her B.S. degree in Biological Sciences at the University of São Carlos, her M.S. degree from the University of Campinas (UNICAMP), and her Ph.D. in Food Science from USP in 1995.

As a professor at USP, Dr. Destro dedicates her time to three areas: teaching, research, and extension. As a professor, she teaches food microbiology to undergraduates and studies on Gram-positive foodborne pathogens to graduate students. She also delivers regular courses at several universities in Brazil and in other South American countries. To date, she has supervised 11 M.S. and 10 Ph.D. graduate student candidates, many whom have studied abroad.

Dr. Destro joined IAFP in 1994 and has attended the association's Annual Meetings since 1999. She has served as Member, Vice Chair, and Chair of the *Journal of Food Protection* Management Committee (2000–2008); and Vice Chair and Chair of the Awards Committee (2007–2008). Serving as Affiliate Council Secretary and moving to Affiliate Council Chair (2005–2007), she had the opportunity to join the IAFP Executive Board as the first non-North American Member of the Board. Dr. Destro is currently a member of both the IAFP Program Committee (2008–2011) and the Meat and Poultry Safety Quality PDG. Together with Dr. Mariza Landgraf, she was responsible for the establishment of the Brazil Association for Food Protection, the first IAFP Affiliate organization in South America. Dr. Destro also acts as an ambassador for IAFP in different Latin America countries, always committed to spreading the IAFP objective: **Advancing Food Safety Worldwide®**.

In addition to IAFP, Dr. Destro has been very active in Brazilian scientific associations. She served as Treasurer of the Brazilian Society of Microbiology, Director of Courses for the Brazilian Society for Food Science and Technology, and President of the Brazil Association for Food Protection.

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GROCERY MANUFACTURERS ASSOCIATION FOOD SAFETY AWARD

Cornell Institute of Food Science
Ithaca, New York



Glenn Black (left) presents Robert Gravani, Elizabeth Bihn, Steven Murphy and Randy Worobo from Cornell Institute of Food Science with the IAFP 2010 GMA Food Safety Award.

The recipient of the 2010 GMA Food Safety Award is the Cornell Institute of Food Science (CIFS). This year's award honors an institution's preeminence in and outstanding contributions to food safety. CIFS is recognized as a multidisciplinary team of faculty, staff, and students working together to integrate and advance scientific frontiers in food science through education, research, and outreach to support a safe, sustainable, healthful, palatable, and affordable food supply for New York, the nation, and the world.

CIFS is an umbrella program with members from Cornell's two food science departments, one on the main campus in Ithaca, and the other at the New York State Agricultural Experiment Station in Geneva, as well as from other departments with food science interests.

CIFS was formed in 1970 to coordinate activities pertaining to food science and food technology at Cornell University. Membership currently numbers approximately 60 faculty and staff from multiple units. Those include Food Science on the main campus in Ithaca; Food Science and Technology at the New York State Agricultural Experiment Station in Geneva; Biological and Environmental Engineering; Applied Economics and Management; Animal Science; Chemical Engineering; Horticultural Sciences; Nutritional Sciences; Plant Breeding/Psychology; Population Medicine and Diagnostic Sciences; and the U.S. Plant, Soil, and Nutrition Laboratory.

Three distinct programs (Food Protection; Food and Health; and Food and Biomaterials Science and Processing) encompass CIFS teaching, research, and extension efforts. In cooperation with the global food industry and regulatory agencies of New York State, the northeast, and the nation, the CIFS Food Protection program focuses on understanding chemical, microbial, and environmental factors affecting the safety of foods and on designing and validating strategies for enhancing food safety.

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FROZEN FOOD FOUNDATION FREEZING RESEARCH AWARD

Linda J. Harris
Davis, California



Linda Ziglar (left) and Kurt Buckman present Linda J. Harris with the IAFP 2010 Frozen Food Foundation Freezing Research Award.

Dr. Linda J. Harris is the 2010 Frozen Food Foundation Freezing Research Award recipient. New this year, this award honors an individual, group, or organization for preeminence and outstanding contributions in research that impacts food safety attributes of freezing.

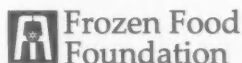
Dr. Harris has worked in the food science area for 30 years, the past 19 years spent in the area of food safety. She joined the Department of Food Science and Technology at the University of California-Davis in 1996 as a Specialist in Cooperative Extension in Microbial Food Safety. In 2006, Dr. Harris was appointed Associate Director at the Western Institute for Food Safety and Security (WIFSS). Her research has spanned fermented vegetables, meat and poultry, fresh and frozen fruits, fruit juices, vegetables and tree nuts—all of which have been directed by her interest in solving real-world food safety problems. Her role as an extension specialist is to communicate these findings in a wide range of formats and to a diverse audience.

Dr. Harris' research in the field of frozen food safety has included studying the behavior of foodborne pathogens in frozen juices, strawberries, and tree nuts. She has authored consumer education materials related to safe handling of frozen foods and is a member of the Scientific Advisory Committee for the American Frozen Food Institute. As a member of the National Advisory Committee on the Microbiological Criteria for Food, she helped develop a report on safe cooking of poultry products. This report was subsequently used by the U.S. Department of Agriculture to develop new guidelines for the poultry industry, particularly with respect to labeling of frozen foods and validating cooking instructions.

An active member of IAFP since 1988, Dr. Harris has served on the Editorial Board for the *Journal of Food Protection*; and chaired and served on several committees, including Program, Nominations, and the Awards Committees. She is a member of several PDGs and helped establish the Fruit and Vegetable Safety and Quality PDG. She was awarded the Elmer Marth Educator Award in 2004 in recognition of her academic contributions to the field of food protection.

Dr. Harris holds a Doctor of Philosophy, Microbiology, from North Carolina State University in Raleigh. She earned her M.S. in Food Microbiology and her undergraduate degree in Food Science from the University of Alberta, Edmonton.

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MAURICE WEBER LABORATORIAN AWARD

Russell S. Flowers

Homewood, Illinois



Katie Swanson and Fred Weber present Russell S. Flowers with the IAFP 2010 Maurice Weber Laboratorian Award.

Dr. Russell S. Flowers is the 2010 recipient of the Maurice Weber Laboratorian Award. This Award recognizes an IAFP Member for dedicated and exceptional contributions in the laboratory, and commitment to the development and/or application of innovative and practical analytical approaches in support of food safety.

Dr. Flowers is currently Chairman of the Board and Chief Scientific Officer for the Silliker Group Corporation in Homewood, Illinois. He received his B.S. and M.S. degrees from North Carolina State University and earned his Ph.D. from the University of Illinois. Prior to joining Silliker in 1979, Dr. Flowers was an Assistant Professor at the University of Arizona. He began his career as Director of Silliker's Illinois laboratory and advanced to company President in 1990, a position he held for the next 17 years. Under his leadership, Silliker expanded from a small collection of North American laboratories into an integrated international network with more than 45 locations worldwide. Dr. Flowers was named to his current position in 2007.

Throughout his career, Dr. Flowers has been an active researcher in the field of food microbiology, with emphasis on the development of rapid analytical methods, method validation studies, and laboratory performance programs. He served as Study Director for the validation of the first Enzyme Immuno-Assay and Nucleic Acid Hybridization Assay approved by AOAC, as well as many subsequent studies that led to the industry-wide implementation of a new generation of detection methods. He has also chaired the Food Laboratory Accreditation Working Group, which developed specific accreditation criteria for food testing laboratories. These standards were later adopted by AOAC and A2LA.

Dr. Flowers is an active member in several professional organizations and societies, including the Institute of Food Technologists, serving as board member and fellow; AOAC International, serving as board member and fellow; the American Meat Institute, serving as board member; the International Commission on Microbiological Specifications for Foods; and IAFP.

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WEBER SCIENTIFIC

LARRY BEUCHAT YOUNG RESEARCHER AWARD

Michelle Danyluk

Lake Alfred, Florida



Lee-Ann Jaykus (left) and Stan Bailey present Michelle Danyluk with the IAFP 2010 Larry Beuchat Young Researcher Award.

Dr. Michelle Danyluk is the recipient of the 2010 Larry Beuchat Young Researcher Award, which recognizes a young researcher who has shown outstanding ability and professional promise in the early years of their career. As a young professor, Dr. Danyluk's research broadly addresses the ecology of foodborne pathogens in foods and the food production environment, primarily focused on *Salmonella* in produce and produce production environments, and its subsequent implication to public health.

Dr. Danyluk is an Assistant Professor in the Department of Food Science and Human Nutrition, housed in the Citrus Research and Education Center at the University of Florida in Gainesville. She holds a B.S. in Biological Sciences, with a Specialization in Microbiology from the University of Alberta. While earning her M.S. in Food Science at the University of Georgia, she surveyed cattle for the presence of *Salmonella* and evaluated potential probiotics aimed at preventing prolonged carriage of *Salmonella* in cattle. During her doctorate program at the University of California-Davis, she evaluated risk factors surrounding the contamination of almonds with *Salmonella* and assessed the risk of salmonellosis from almond consumption. Her Ph.D. dissertation resulted in a report ultimately reviewed by the FDA, which, based on her research, criticized the allowance of bulk almonds receiving PPO treatment to be labeled as pasteurized.

Dr. Danyluk's research and extension program at the University of Florida has a strong emphasis on food safety efforts addressing pathogen ecology of field-based nuts and produce, packing environments, fresh and fresh-cut produce, and mitigation steps for pathogen control. This program also addresses issues such as *Alicyclobacillus* spoilage of juices/beverages and sanitation efforts in processing environments.

Dr. Danyluk has won research awards at the local, regional, and national levels, including the IAFP Developing Scientist Award in the Oral Division in 2006. She has an active service portfolio, volunteering for IFT, ASM, and other national and local organizations, in addition to her service to IAFP. Dr. Danyluk is currently Vice Chair for the *Food Protection Trends* Management Committee, serves on the Editorial Board for *FPT*, and is President-Elect for the Florida Association for Food Protection.

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SANITARIAN AWARD

Jeffrey L. Kornacki

Madison, Wisconsin



Katie Swanson (left) and Isabel Walls present Jeffrey L. Kornacki with the IAFP 2010 Sanitarian Award.

The 2010 Sanitarian Award goes to Dr. Jeffrey L. Kornacki. The Sanitarian Award honors an IAFP Member for dedication and exceptional service to the profession of sanitarian, serving the public and the food industry. With over 30 years of professional food safety microbiology experience, Dr. Kornacki's primary career focus has been solving practical microbiology problems within the food industry.

While obtaining his M.S. and Ph.D. from the University of Wisconsin-Madison in the Food Science Department, Dr. Kornacki investigated the impact of cheese manufacturing and milk ultrafiltration on dairy product safety, under the late Professor Elmer Marth. He briefly managed the UW dairy testing laboratory during this time and was subsequently employed as a Research Scientist with Schreiber Foods for four years, during which he co-authored a patent dealing with cheese production from ultrafiltered milk.

Over the next twelve years, Dr. Kornacki was involved with microbiological troubleshooting, technical writing and editing, and laboratory management at several Silliker Laboratory locations. In 2001, he joined the faculty at the University of Georgia's Food Science Department and Center for Food Safety before founding and directing Kornacki Food Safety Associates (now Kornacki Microbiology Solutions) in 2003.

Dr. Kornacki has assisted various companies in the midst of FDA and USDA product recalls, making over 500 troubleshooting-related plant visits throughout his career. He has investigated the role of airborne microbes to food contamination, validated harmless thermal surrogate organisms for use with in-factory CCP validations, research *Enterobacter sakazakii* (*Cronobacter*), studied pathogen survival on industrial surfaces, and developed approaches to detection and enumeration of *Mycobacterium avium* subsp. *paratuberculosis* in foods.

Dr. Kornacki remains an adjunct faculty member at UGA's Department of Food Science and with Michigan State University's National Center for Food Safety & Toxicology. He is a published author of topics including butter microbiology, enteric pathogens, *Listeria monocytogenes*, bacterial heat resistance, and investigation and control of pathogens in food processing environments, a topic upon which he frequently lectures. Dr. Kornacki has been an active member of IAFP since 1979.

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ELMER MARTH EDUCATOR AWARD

David A. Golden

Knoxville, Tennessee



Lee-Ann Jaykus (left) and Fritz Buss present David A. Golden with the IAFP 2010 Elmer Marth Educator Award.

Dr. David A. Golden is the recipient of the IAFP 2010 Elmer Marth Educator Award, which recognizes an IAFP Member for dedicated and exceptional contributions to the profession of educator. Dr. Golden is noted for his professional competence, magnitude of service, and exceptional efforts as a student mentor.

Dr. Golden is a Professor of Food Microbiology with the Department of Food Science and Technology and Faculty Fellow with the Haslam Scholars Program at The University of Tennessee, Knoxville. He has served as a major professor for 18 M.S. and six Ph.D. students and been a member of the advisory committees for 30 M.S. and Ph.D. students, seven of whom have placed in IAFP's Developing Scientist Award competition. He has received several awards for excellence in teaching and student advising and is actively involved in student recruitment, advising, and promotion of student development.

As an author, Dr. Golden has reached out to countless students and food safety professionals through his textbook *Modern Food Microbiology*, (co-authored with the late Dr. James Jay and Dr. Martin Loessner), which has been published in four languages. He is Scientific Editor for *Food Protection Trends* and serves on the Editorial Board for *Foodborne Pathogens and Disease*. He has also served on several IAFP committees, including Chair for the 2000 Annual Meeting Program Committee.

Dr. Golden holds a B.S. in Microbiology and M.S. and Ph.D. degrees in Food Science and Technology, with a focus on food microbiology, all from the University of Georgia.

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HAROLD BARNUM INDUSTRY AWARD

Frank Yiannas

Bentonville, Arkansas



Katie Swanson presents Frank Yiannas with the IAFP 2010 Harold Barnum Industry Award.

As recipient of the 2010 Harold Barnum Industry Award, Mr. Frank Yiannas is being honored for his dedication and exceptional service to IAFP, the public and the food industry. He oversees all food safety, as well as other public health functions, for Walmart, the world's largest food retailer, and its related affiliates, Neighborhood Market and Sam's Club.

Prior to joining Walmart in 2008, Mr. Yiannas was Director of Safety & Health for the Walt Disney World Company where he worked for 19 years. In 2001, under his tenure, Walt Disney World Company received IAFP's prestigious Black Pearl Award for corporate excellence in food safety.

A frequent speaker at national and international conferences, Mr. Yiannas is known for his ability to build partnerships and for his innovative approaches to food safety. In 2007, he received the NSF International Lifetime Achievement Award for Leadership in Food Safety and in 2008 earned the Collaboration Award from the U.S. Food and Drug Administration. He is a Past President of IAFP and Past Chair of the Food Allergy and Anaphylaxis Network's Board of Directors.

Mr. Yiannas received his B.S. in Microbiology from the University of Central Florida and his Master's of Public Health (MPH) from the University of South Florida. He is a Registered Microbiologist with the American Academy of Microbiology and the author of *Food Safety Culture, Creating a Behavior-based Food Safety Management System*.

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STUDENT TRAVEL SCHOLARSHIP AWARDS



Vickie Lewandowski (left) and Gale Prince (right) present Duygu Tosun, Iryna Sybirtseva, Anh Linh Nguyen, Csaba Nemeth, Clyde Simmons Manuel, Vania Borges Ferreira and Mary Pia Cuervo with the IAFP 2010 Student Travel Scholarship Awards.

Abel Atukwase

Makerere University
Kampala, Uganda

Abel Atukwase, a native of Western Uganda, is currently studying for his Ph.D. in Food Science and Technology at Makerere University in Uganda, where he completed his undergraduate studies.

Mr. Atukwase's interest in food safety developed while working on a USAID project assisting rural farmers on how to improve cereal storage. After completion of the project, he became a teaching assistant for the Department of Food Science and Technology at Makerere University, allowing him valuable opportunities to conduct research in post-harvest contamination of cereals with mycotoxins.

While enrolled in the Master's program at Ghent University, Belgium, Mr. Atukwase participated in research that investigated the effect of modified atmosphere packaging on fumonisin production in yellow dent corn. Findings from this study motivated him to conduct further research that focused on occurrence of *Fusarium* spp. in maize (corn) and subsequent contamination with fumonisins in Uganda. This study was aimed at identifying the agronomic practices that predisposed maize to fumonisin contamination in Uganda, as well as designing control strategies.

Mr. Atukwase believes that the opportunities to network at IAFP 2010 with renowned food safety specialists from around the world will help meet his career aspirations of ensuring that the rural poor feed on mycotoxin-free cereal meals.

Mary Pia Cuervo

Texas A&M
College Station, Texas

Mary Pia Cuervo is currently pursuing a Ph.D. in Food Science at Texas A&M, under the direction of Dr. Alex Castillo, and sponsored by CONACYT (Science and Technology Council of Mexico).

Ms. Cuervo received her undergraduate degree in Food Engineering from Monterrey Tech in Mexico. In 2005, she accepted a Teaching/Research Assistant position at Texas A&M, teaching courses in Food Chemistry, Food Analysis, and Food Bacteriology Laboratories. Ms. Cuervo received her M.S. in Food Science from Texas A&M in 2007.

Throughout her Ph.D. education, Ms. Cuervo achieved first place in oral presentation, "Reduction of *Salmonella* Enteritidis PT 30 in Raw Almonds by Electron Beam Irradiation," at the Mexico Association for Food Protection Meeting in Puerto Vallarta. She also garnered first place honors in the poster competition at the 2009 IAFP European Symposium in Berlin, Germany, for her poster entitled "Use of a Novel Device to Irradiate Fresh Cantaloupes by Electron Beam."

An active member of the Texas Association for Food Protection, Ms. Cuervo has contributed to their annual meeting development since 2005. She has interned at Schreiber Foods in the U.S. and at Qaltia Alimentos and Cuauhtemoc Moctezuma Brewery, both in Mexico.

Ms. Cuervo graduates in December 2010 and is pursuing Food Safety Scientist positions.

STUDENT TRAVEL SCHOLARSHIP AWARDS

Vania Borges Ferreira

Portuguese Catholic University
Porto, Portugal

Vania Borges Ferreira is currently pursuing her Ph.D. in Biotechnology and Food Science at Portuguese Catholic University. With an undergraduate degree in Microbiology, also from Portuguese Catholic University, Ms. Ferreira earned a research fellowship shortly after graduation to investigate the chemical and microbiological characteristics of traditional fermented meat sausages produced in northern Portugal. It was at this time that her interest in food safety and quality grew, motivating her to enroll in their Food Safety post-graduate program.

Her thesis research project addresses this serious contamination issue surrounding the pathogen *Listeria monocytogenes*. Ms. Ferreira's work focuses on identifying the sources and routes of this pathogen in processing plants and better understanding the characteristics associated with specific strains, allowing for the development of new methods of production and quality control.

During her Ph.D. program in 2009, Ms. Ferreira spent a year at the Food Safety Lab, Department of Food Science at Cornell University, New York. Upon her 2010 graduation, she plans to continue her research in food safety and the transmission of foodborne pathogens through food production systems.

Clyde Simmons Manuel

Colorado State University
Fort Collins, Colorado

Born and raised in South Carolina, Clyde "Chip" Simmons Manuel is seeking his Master's degree in the Meat Science/Food Safety program at Colorado State University. While earning his B.S. degree in Food Science and Technology at Clemson University, Clemson, South Carolina, Mr. Manuel gained an interest in food safety while conducting undergraduate research concerning various microbiological aspects of food. During this time, he also completed two industry internships, experiencing firsthand the importance of food safety in the production system.

Mr. Manuel is currently working on several research projects, including single nucleotide polymorphism subtyping of *Listeria monocytogenes* isolates from delicatessens, characterization of a set of novel *Listeria* isolates by full genome sequencing, and isolation and molecular characterization of foodborne pathogens from agricultural environments. Mr. Manuel also serves as a teaching assistant for a newly-developed series of workshops called "Molecular Methods in Food Microbiology," and teaches a graduate level course entitled "Molecular Approaches to Food Safety."

Upon completion of his Master's degree, Mr. Manuel plans to continue his education in the area of food microbiology to achieve his career goal as a food safety researcher at the university level or with a regulatory agency. He hopes to conduct further research in molecular approaches to food safety to help reduce foodborne illness incidence and facilitate efficient disease control and prevention.

STUDENT TRAVEL SCHOLARSHIP AWARDS

Csaba Nemeth

Corvinus University of Budapest
Budapest, Hungary

Csaba Nemeth was born in Budapest and has lived in Szigetcsép since age two. He is a Ph.D. candidate in the Department of Refrigeration and Livestock Products Technology at Corvinus University of Budapest in Hungary. During his undergraduate studies there, he achieved first place at the university students' Scientific Association (TDK) competition, and first place and third place, respectively, in the Food Technology section and in the Food Microbiology section at the national students' Scientific Association competition.

After graduation, Mr. Nemeth won a place at the Doctors' School of Food Science. He is currently working on the development of technologies to increase the shelf life of liquid egg products under the supervision of Professor Csaba Balla. Mr. Nemeth's primary investigations include the microbiological, organoleptic, physical, and chemical effects of long-term heat treatment at temperatures lower than the current pasteurization technologies. His work's purpose is to develop technologically simple procedures without food safety risks to avoid damaging the beneficial features of native eggs.

During his studies, Mr. Nemeth has authored and co-authored numerous journal and conference publications. Since 2008, he has acted as representative of doctoral students on the Council of the Faculty of Food Science at Corvinus University of Budapest. Mr. Nemeth has been a member of the Hungarian Association for Food Protection since its 2009 inception and is also a member of the Association of Hungarian Microbiologists and the Hungarian Fellowship of Food Science. His goal is to obtain a full-time position with Corvinus University.

Anh Linh Nguyen

University of New South Wales
Sydney, Australia

Anh Linh Nguyen is currently a Ph.D. candidate in Food Science and Technology at the University of New South Wales in Sydney, Australia. Mr. Nguyen also received his B.S. in Food Science and Technology from UNSW, earning first class honors and the University Medal for best student in the program. His undergraduate studies were financed under the Australian Development Scholarship (ADS) program and he has been offered a University International Postgraduate Award (UIPA) for his doctoral program.

While an undergraduate student under the supervision of Professor Graham Fleet, Mr. Nguyen completed research on a project detecting lactic acid bacteria in molasses used in rum fermentation by denaturing gradient gel electrophoresis (DGGE). His passion for food microbiology carried him into his doctorate program where his current research project surrounds investigating mechanisms behind heat resistance of ascospores of *Byssoschlamys fulva* and *Byssoschlamys nivea*, two important fruit juice and canned fruit spoilage and mycotoxigenic molds. This project is funded by the Division of Food and Nutritional Sciences (FNS) and the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Mr. Nguyen continues to work under Professor Fleet, as well as Dr. Nai Tran-Dinh and Dr. Ailsa Hocking, two mycologists from CSIRO FNS.

In addition to IAFP, Mr. Nguyen is an active member of the Australian Institute of Food Science and Technology (AIFST), Australasia Mycological Society (AMS), and Australian Association of Food Protection (AAFP). His goal is a career in food microbiology and safety in industries, contributing to better management of food production and quality in his native country, Vietnam, while possibly pursuing a late academic career.

STUDENT TRAVEL SCHOLARSHIP AWARDS

Iryna Sybirtseva

North Carolina State University
Raleigh, North Carolina

Iryna Sybirtseva, a Ukraine native, is currently a Ph.D. candidate in the Department of Food, Bioprocessing and Nutrition Sciences at North Carolina State University in Raleigh. Mrs. Sybirtseva's passion for food safety resulted from her native country's lack of food safety education, based upon the open air bazaars and markets where unrefrigerated meat, poultry and dairy continue to be sold to patrons.

While earning her Master's degree in Food Technology and Engineering at the Ukrainian State University of Food Technologies in Kiev, Mrs. Sybirtseva was part of a research team contributing to the creation of the enriched grain products designed for diabetes patients. Prior to her move to the U.S., she also worked as a food technologist and college instructor.

Before joining the Ph.D. program at NCSU, Mrs. Sybirtseva was a quality assurance technician and quality assurance supervisor for the meat processing industry, as well as a safety and sanitation workshop developer. Currently, her doctoral research is concentrated on efficacy of naturally occurring antimicrobials to reduce pathogenic microorganisms associated with poultry at various stages of processing. Parallel to her studies, Mrs. Sybirtseva has obtained certification as an HACCP trainer and provided consulting services to various domestic and foreign companies.

While balancing her academic endeavors, career, and family, Mrs. Sybirtseva also serves on the board of the CMP, a non-profit organization facilitating educational cross-cultural exchanges between the U.S. and Eastern European states. She is also an active member of IAFP, IFT, AMSA, Phi Tau Sigma Honorary Society and the NCSU Food Science Club. Other interests include statistical analysis, professional leadership, and business ethics.

Duygu Tosun

Ege University
Bornova, Izmir, Turkey

Duygu Tosun is currently a doctorate student in the Department of Agricultural Economics at Ege University in Turkey. A research assistant since 2005, Ms. Tosun completed her Master's degree in 2007 from the Agricultural Policy and Extension of Ege University's Graduate School of Natural and Applied Sciences. She also studied for a semester in 2009 at the University of Hohenheim in Germany as part of the Erasmus Programme.

Ms. Tosun has attended and presented scientific posters at national and international food safety symposia. She is a published author of national and international journal articles and presentations regarding food safety and food economics. As a research project assistant under Professor Nevin Demirbas in 2007, Ms. Tosun worked on "The Role of Milk Collection Centers for Providing Food Safety in Dairy Sector and Effects on Development Potential of the Sector: The Case Study of Izmir," supported by the Scientific and Technological Research Council of Turkey.

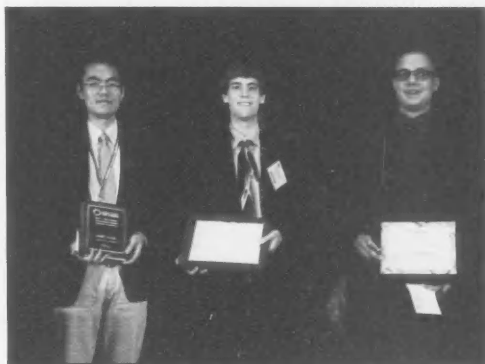
Ms. Tosun has been a board member of the Turkish Agricultural Economics Association since 2007. She is currently studying economic analyses of the Turkish red meat sector, and, while at IAFP 2010, hopes to share information with leading food scientists from around the world regarding food safety in Turkey.

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J. Mac Geopfert Developing Scientist Awards

The Developing Scientist Awards Program encourages and recognizes the work of students and recent graduates in the field of food safety research. The program was established in 1986 to foster professionalism in students through contact with peers and professional Members of the Association. It also encourages student participation in the Association and the Annual Meeting.



Yi-Tien Chen (left to right), Matt Stasiewicz and Gordon Davidson receive the J. Mac Geopfert Developing Scientist Technical Award.



Randhir Singh (left to right), Eduardo Gutierrez-Rodriguez and Fenyun Liu receive the J. Mac Geopfert Developing Scientist Poster Award.

TECHNICAL

1st Place – Yi-Tien Chen

2nd Place – Matt Stasiewicz

3rd Place – Gordon Davidson

POSTER

1st Place – Randhir Singh

2nd Place – Eduardo Gutierrez-Rodriguez

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Affiliate Awards



Dan Erickson presents the 2010 Affiliate Awards to (left to right), Turonda Crumpler, Judy Harrison, Margaret Burton, Gloria Swick-Brown and Christina Wilson.

BEST AFFILIATE OVERALL MEETING

Upper Midwest Dairy Industry Association

BEST AFFILIATE EDUCATIONAL MEETING

North Dakota Environmental Health Association

BEST AFFILIATE COMMUNICATION MATERIALS

Southern California Association for Food Protection

AFFILIATE MEMBERSHIP ACHIEVEMENT

Ohio Association for Food Protection

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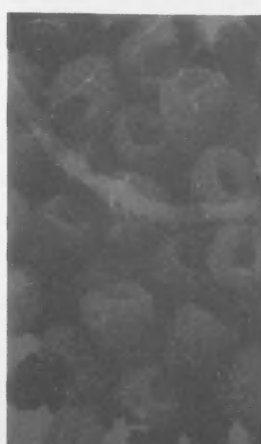


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IAFP 2010 Black Pearl Winner

Fresh Express, Inc.

A Subsidiary of Chiquita Brands
Salinas, California



Commitment to Food Protection

It All Began with a Promise...

Ever since Fresh Express created the world's first packaged salads over 30 years ago for the food service industry and then several years later for retail consumers, we have chosen to place our greatest promise—and unwavering commitment—on delivering safety and quality. Today, more than 20 million consumers enjoy our fresh value-added produce each week and look to us to provide the safety and quality they expect and deserve.

Our food safety practices consistently exceed industry standards and government guidelines. In fact, as creators of the value-added salad category, we also originated many of the stringent food safety practices that guide us, and the industry, today. We work with the Food and Drug Administration (FDA), U.S. Department of Agriculture (USDA) and other regulatory agencies to share our research, knowledge, and best practices. We also collaborate in the development of new quality and food safety strategies. We frequently collaborate with industry as well as competitors through trade associations in order to ensure that the bar on food protection remains high. We invest in research and development to identify new solutions and technical advancements in the food safety arena.

From planting and growing to every single step our lettuces, leafy greens, fruits and other

vegetables take along the way to reaching consumers, we insist on unparalleled excellence in food safety. We're very proud that our comprehensive food safety program and track record of success have become widely recognized throughout the produce and fresh foods industries. (See *USA Today* multi-page feature story dated October 23, 2006, entitled "Fresh Express Leads the Pack in Produce Safety" and *GMA Forum Magazine* feature story mid-winter 2008 entitled "Prevention: The Food Safety Fundamental.")

We believe that the relentless effort we make to exceed our original food safety promise is worthwhile many times over when we receive our consumers' rave reviews and hear over and over again how pleased they are to be able to place their full trust in our fresh foods.

Prevention is First, Always

At Fresh Express, we believe rigorous prevention-based practices must be in place at all junctures of the supply chain to address any potential issues before they occur. Before the first seed is even planted, sound food safety and agricultural practices are already in place. We begin with the careful selection of the ground where the seed will be planted and continue our preventive food safety measures all the way through growing, harvesting, and processing until our fresh salads and other fresh produce items are delivered to store shelves or local restaurants.

Sound, Safe Agricultural Practices

Fresh Express growers and harvesters must meet the high standards we have developed for growing and field practices, irrigation and water quality, resource management, sanitation, harvesting, and much more—all set forth in a comprehensive Good Agricultural Practices Manual. We are currently using Version 5.0 as the Manual has been updated and improved over the years. They must comply with all government regulations. Fields are audited every season throughout the growing cycle. Our specialist teams conduct thorough audit-inspections to examine field conditions at multiple times prior to harvest and at harvest time to approve the quality and food safety compliance of each individual field and crop, focusing on lettuce/leafy greens prior

to growing and during production and harvest. Each year, our Food Safety specialists inspect over 180,000 acres and complete more than 2,000 individual audit surveys. This rigorous approach allows us to address potential problems before they occur, to identify and correct issues prior to harvest, and to halt harvest if necessary to protect the food supply and our consumers.

Fresh Express growers are also audited for compliance to our strict standards, and lettuce/leafy greens suppliers receive a pre-planting certification confirming their qualifications, their understanding of important food safety principles, and their ability to meet food safety requirements and compliance expectations.

Manufacturing with Care and Food Safety Excellence

All of our lettuces, leafy greens, and value-added produce items are carefully and thoroughly washed or specially prepared using our custom processes. Then they are gently packaged using our specially-developed breathable bags and containers designed to maintain freshness longer. Each type of lettuce, custom salad mix, or other value-added product receives its own packaging system adjusted for optimal freshness—all to ensure the most enjoyable experience for our consumers.

We have instituted over 100 individual food safety standardized operating procedures across each of the Fresh Express facilities to address any potential food safety hazards. We insist on full compliance to our tailored Good Manufacturing Practices and HACCP system. Just as in growing the crop, prevention is a primary focal point in our plants. Our Quality and Food Safety team conducts over 200,000 safety and quality tests in our plants every year. In fact, multiple tests are performed all day long. Our plants and all of our safety practices are reviewed and evaluated by third-party auditors to ensure our food safety systems are continuously being executed to our high standards.

Sharing Food Safety Knowledge

Continuous research and education are important components of our overall food safety program—for all of our internal teams, our consumers, regulators, broad industry representatives, and consumers. We invest heavily in training initiatives, employee education, and grower and harvester advancement. We also invest in research and innovation. Most recently, Chiquita Brands International and Fresh Express invested \$2 million to fund nine independent research projects on the little-understood *E. coli* O157:H7 pathogen, sharing the findings with the entire industry. We also established an independent Scientific Advisory Panel made up of top food safety experts to guide our efforts. We held a food safety summit, The Fresh Express Fresh Produce Safety Research Conference—an open forum attended by hundreds of interested growers and representatives of the

produce industry, academia, the scientific community, competitors, advocacy groups, and the general public.

Full Traceability

Every field that is harvested received identification codes that tell where the product was grown, when it was harvested and who harvested it. Our detailed ID information follows our produce through every stage all the way to the grocer's distribution center. This extensive traceability system has been in place for many years, long before the industry's current discussions about the need for full traceability. We have a proven track record of success with meeting regulatory expectations, as well as our own, for complete accountability and traceability.

We are proud of our food safety programs and standards that we have in place. Most importantly, we are proud to offer products that consumers can enjoy with utmost confidence in their freshness and safety.

Security Goes Hand-in-Hand with Safety

Fresh Express has carefully evaluated all 135 recommendations made by the FDA to safeguard and defend the food supply against acts of domestic or international terrorism. An inter-disciplinary team was assembled for this process and all recommendations that were relevant for our operations, whether in the fields, in our plants, or during transportation, were adopted with standard operating procedures customized to each location. Fresh Express also uses a "truck seal" program that prevents tampering from the time our products leave our facilities to the time they reach their final destination. Each Fresh Express location has trained staff who specialize in ensuring that security measures are continuously in place.

A Focus on Training and Education Drive Ongoing Vigilance

At Fresh Express, we are firm believers that continual training and ongoing education at all levels are critical to food safety vigilance. We conduct hundreds of training sessions, seminars, and summits for our employee teams every year to achieve our food safety goals. We also conduct special sessions for our alliance of growers, on a worldwide basis, to ensure they are adept at all of our enhanced requirements and that their teams and crews are equally prepared to fulfill their food safety obligations each and every day. We employ a large food safety and quality team with over 60 specially trained professionals, including microbiologists, agronomists, soil scientists, and other experts, to make sure our programs and efforts always stay at the forefront of food safety excellence.

Ivan Parkin Lecture

Improving Food Safety from Farm to Table: A Prevention-, Science-, and Risk-based Approach Grounded in Partnership

Michael R. Taylor

Deputy Commissioner for Foods
U.S. Food and Drug Administration
Washington, D.C.



It's a great pleasure to be here at your annual conference and a great honor to be selected to deliver this year's Ivan Parkin Lecture. IAFP and this conference play important

roles in the food safety community, and we are all grateful for that.

I'm honored to be back at FDA, working with many great colleagues. Over the last 10 years in academia, I spent a lot of time thinking about ways our food safety system can be strengthened. Being back at FDA, with responsibility for implementing the paradigm shift to comprehensive prevention as the hallmark of the system, I've been reminded how much easier it is to generate ideas than to put them into practice.

But we are on our way, and I'm very glad to be able to share with you some of what we are doing at FDA, how FDA envisions making a difference in food safety, and the reliance we place on partnership with the food safety community, including IAFP.

Opportune Time for Progress

This is a great time to make significant progress. We have broad political, stakeholder and expert consensus on the need to modernize the food safety system and on the broad principles that should guide the system. These principles are familiar to most of us. We need a system that is prevention oriented – the key to public health and public confidence. It must be science – and risk-based – which is essential to being effective and efficient in reducing foodborne illness. The system must address food safety comprehensively – from farm-to-table, and it must hold imports to the same standards we set for domestic facilities.

Legislation is pending in Congress that embraces these principles. It would make the science-based

prevention paradigm national policy and give FDA new authorities to make it happen. The legislation is important for many reasons, and we remain optimistic that it will pass this year. But there is much we can and will do to make progress on prevention as Congress does its work.

How Food Gets Safer

Let me set the stage by asking two basic questions: How does food get safer, and how does FDA contribute to food getting safer? At a high level, the answers are simple. First, food gets safer when everyone all across the food system does their part to prevent problems. We all know that most of the actions that directly affect food safety aren't government actions, but rather the actions of agricultural producers, food processors, transporters, retailers, and consumers. This just reflects the fact that opportunities to prevent problems lie at every step along the farm-to-table chain and that food safety solutions ultimately have to be implemented by the private sector and be food system solutions.

At FDA, we see ourselves playing a unique role in the system as a science-based, public health regulatory agency. Our core job is not to make food safe ourselves, but to set modern, prevention-oriented food safety standards and ensure high rates of compliance with them. It sounds simple, but we all know it's not, and we can't be successful in our role without a robust set of partnerships across the food system.

At a government level, we have to continue building strong partnerships with our state and local counterparts and the national integrated food safety system that the President's Food Safety Working Group calls for. In addition, we have to work closely with private entities throughout the food system.

FDA's Reliance on Partnerships—Farm to Table

The best way to back up these assertions – and give you a sense of FDA's food safety agenda – is a whirlwind tour of the farm-to-table spectrum and things FDA is planning and doing to implement the prevention paradigm.

At the production stage, FDA has long been active on the farm through our oversight of animal drugs and animal feeds, the egg safety rules we issued last summer, and increasingly in response to the outbreaks that have put produce safety high on the agenda. Produce safety is one of the most challenging food safety tasks FDA has ever faced, due in large part to the diversity of crops, regions, growing and packing practices, scale of operations, and markets.

Despite this complexity, the public, industry and Congress have high expectations. They are looking to FDA to provide leadership on produce safety by setting standards that can provide the common, enforceable benchmark for safe growing, harvesting and packing.

The only way we will get this right is through intense and sustained interaction with a wide range of participants in the produce sector. We have been doing a lot to foster that interaction long before we issue a proposed rule through listening sessions and by visiting farms, both large and small. We've worked with partners at USDA, in state and local governments, and extension; and we've sought the perspectives of a range of stakeholders, including groups representing sustainable and organic agriculture.

We've heard a lot about how our standards should address the key risk vectors of water, soil amendments, worker hygiene, and animal intrusion. They should be risk-based, scale appropriate, reflect current best practices, and be clear enough to be implemented and enforced. They should also include quantifiable performance standards wherever possible to define the standard of care for key risk factors, and they should be flexible enough to take into account emerging science.

We're impressed with the difficulty of getting the rules right, but we think the vastness and diversity of the produce sector means it will be even more challenging to achieve broad compliance with any standards we set. It won't happen just through business-as-usual inspection and enforcement. It will require a true community effort – including education, training, extension, the work of our state and local partners, and the collaboration of industry groups.

The second major point in the farm-to-table spectrum is food processing. Our goal is to assure that all food processing facilities implement preventive controls that are appropriate for their operations. FDA has done this on a selective basis for seafood and for juice. The challenge in implementing preventive controls more comprehensively will be akin to the one posed by produce: How do we discover and express the standard of care regarding preventive controls in the great diversity of food processing settings? How do we assess the adequacy of preventive controls if we don't know the potential hazards and the feasible interventions for minimizing them? To gain this understanding, we'll draw on our own expertise and research, but we also will learn from what practices many companies already implement and know work.

Transportation is another part of our focus on prevention throughout the food safety chain. It's an area that hasn't received a lot of attention, but food safety breakdowns during transportation can have wide ranging visibility and impact. We need more information, so we issued this spring an advance notice of proposed rulemaking to request information about the food and feed transportation industry. For example, we want to know what proportion of vehicles transport both food and nonfood products? What types of records are currently kept by transporters and what additional records would be useful? We need this input to decide how we can make a difference.

In retail, FDA's work has long been grounded in partnerships, such as the ones embodied in the Food Code and the Conference for Food Protection. FDA works especially closely with state and local governments, which exercise primary regulatory oversight and conduct inspection at retail. FDA's role is to promote science-based food safety principles to prevent foodborne illness. One way we do this, of course, is through our work with the Food Code—updating the document and encouraging state and local authorities to adopt the Food Code as the authoritative, science-based model code for preventing foodborne illness at retail. And we promote the Voluntary National Retail Food Regulatory Program Standards for state and local authorities.

But together—government and industry must do more. One of the things FDA has done over the years is survey practices in retail establishments and rates of compliance with key elements of the Food Code. In fact, FDA will soon release its 2009 report and a 10-year trend report that show progress in some areas but continued high rates of non-compliance on critical risk factors. We plan to work with our state and local partners and the retail industry to address these issues and promote even wider adoption of, and compliance with, the Food Code.

Consumers are the final preparers of food, and the last step before a potential case of foodborne illness. Of course, we don't regulate consumers, but we have to work with them as part of the solution to preventing foodborne illness. Just like anyone else along the farm-to-table spectrum, consumer behaviors can introduce hazards and minimize hazards. FDA has a long history of work in this area, but we are looking at a new commitment, working through the Partnership for Food Safety Education, to take consumer education to the next level. This includes investing in the research to know what works to improve consumer food safety behaviors, using new communication channels to reach consumers, and measuring progress.

So, that's the end of the whirlwind tour. We have a big agenda, but the "we" is a whole community of people and institutions who share the goal of a stronger food safety system and a safer food supply.

That's why the implementation task that lies ahead, though daunting, is doable - and why I have great confidence in our collective capacity to succeed.

Science as FDA's Foundation

I'd like to close by emphasizing the important role of science in everything we do as a community to make food safer. I can't emphasize enough the importance of bringing the best possible science to bear as we seek to identify and minimize hazards from farm to table. Science helps us understand the dimensions and causes of the foodborne illness problem. Science is how we discover the interventions that can be effective in preventing hazards. And science is needed to measure, evaluate and continuously improve what we are doing to reduce foodborne illness.

At FDA, we believe that science is the foundation, the critical underpinning, of everything we do. It's not that science alone provides neat solutions to all of our problems, and we know that the nature of our public health work routinely involves making decisions in the face of scientific uncertainty. But without a strong scientific foundation for what we do, FDA would be just another source of opinion in debates about how to prevent foodborne illness. With a strong scientific foundation, and a regulatory regime based on that foundation, we know we can make a difference.

That's why we are strengthening the scientific capacity and programs of the Foods Program at FDA. We have significant scientific resources, including subject matter experts and great research and methods development capacity. We have used some of the budget increases of recent years to add expertise and improve laboratory facilities.

But we must do more. We need to continue investing in the research, data collection, and analytical methods development required to understand the food safety problem and identify hazards and interventions. We also need to develop new tools and generate the data needed to set sound, risk-based priorities for our program and support risk-based allocation of our resources. The systematic incorporation of risk analysis into our priority setting and resources planning is essential to maximizing the public health benefit of what we do and is one of my highest priorities.

We are looking at ways to better coordinate and functionally integrate our scientific activities. But FDA is far from the sole source of the science needed to achieve a safer food supply - the food industry and academia play crucial roles. That's why we value so much our collaboration with federal, academic, and industry partners. Such collaborative efforts are one of the keys to meeting the scientific challenges that lie ahead.

Closing

I appreciate this opportunity to share my perspectives on where FDA is going on food safety and to express to the community gathered here how much we depend on you and appreciate what you do. We have plenty of ideas and broad consensus on where we need to be going on food safety. But I see us embarked on a challenging implementation journey that involves a long-term system building and system change within FDA and across the food system.

I look forward to moving down the pathway to a stronger food safety system in partnership with all of you.

John H. Silliker Lecture

Understanding Foodborne Microorganisms: A Matter of Perspective

Robert L. Buchanan

Center for Food Safety and Security Systems
University of Maryland
College Park, MD



Foods are fascinating!!! The subject is as interesting today as it was when I walked into my first food science course in 1967. Foods touch every aspect of mankind's past,

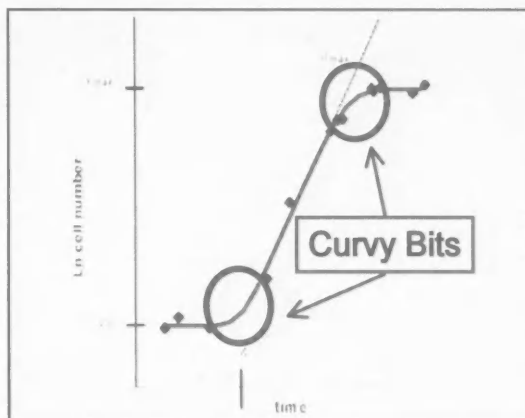
present, and future. There is virtually no part of the human experience that is not intimately connected to food. Not only are foods our source of sustenance, but they are a major factor in course of human history and culture, a measure of our economic well-being, and an integral part of family traditions. Access to a safe and secure food supply is a priority goal for families, communities, and nations alike. The science of food safety is equally fascinating, being uniquely complex and exquisitely diverse. For example, studying the microbiological safety of a food requires an understanding of the microorganism, the food, how the food was produced, processed and prepared, and the health status of the human who consumes the food. Over the course of my career, I have come to appreciate that to understand foodborne microorganisms, one must be able to view the world as microorganisms see it. Thus, it is not surprising that when given the unique honor of giving this year's Silliker Lecture that I opted to focus on seeing the world from a bacterium's perspective. As a means of doing this, I would like to provide several examples where I had personal epiphanies after "thinking like a bug."



The first example came about from work that Richard Whiting, William Damert and I did in the 1990s to develop a simplified primary growth kinetics model that was based the mechanism of bacterial reproduction, binary fission (Buchanan et al., 1997). The linear portions of the growth curve were easily explained but we were having difficulty in describing the "curvy bits" of

a growth curve, i.e., the transition periods between lag-log phases and log-stationary phases (Fig. 1). It is now apparent that what we were doing was looking at bacteria from a human perspective, i.e., a large population of identical cells that have the same characteristics. It wasn't until we remembered that we were trying to describe the behavior of a large population of independent, free-living microorganisms that it became apparent the curvy bits could be explained by bio-variability. By introducing variability terms into the lag phase duration and the exponential growth rates, we could explain the observed patterns of growth.

Figure 1. Generalized bacterial growth curve depicting the lag, log, and stationary growth phases and the transition periods between them.



One of the key breakthroughs in food microbiology was when James Jay introduced the concept that microbial growth in a food is a function of a limited number in intrinsic and extrinsic factors associated with foods. This environmental approach to food microbiology provided a logical framework for matching the characteristics of a food with those of a microorganism to determine growth potentials. However, in a number of instances growth occurred in foods where it was not expected. Two such instances that puzzled us at first was the growth of *Escherichia coli* O157:H7

and *Salmonella enterica* on fresh apples and oranges (Janisiewicz et al., 1999; Eblen et al., 2004). Apples and oranges are traditionally considered acidic foods with reported pH values of approximately 3.8. This is well below the pH of 4.5 which is usually considered the lower limit for growth of these pathogenic microorganisms. However, it is important to remember how the pH of fruits is determined. Typically, a sample of the fruit is mixed with a specific amount of water, homogenized, and the pH of the resulting liquid recorded. However, this is not what these pathogens see when they are introduced into an intact fruit. For example, in the orange, the acidic juice is isolated within juice sacs (Fig. 2), leaving the rest of the fruit at a non-acidic pH which can support the growth of *Salmonella* and *Escherichia coli*. However, this concept is not limited to fresh produce and/or pH. It also helps to explain microbial growth in a number of multi-phase foods such as the growth of *Listeria monocytogenes* in sweet butter (Olsen et al, 1988; Holliday et al., 2003) or the growth of *Staphylococcus aureus* at the interface between the meat and cheese phases of a novelty snack product (Rajkowski et al., 1994), where the structure of the food has to be

Figure 2. Juice sacs of an orange.



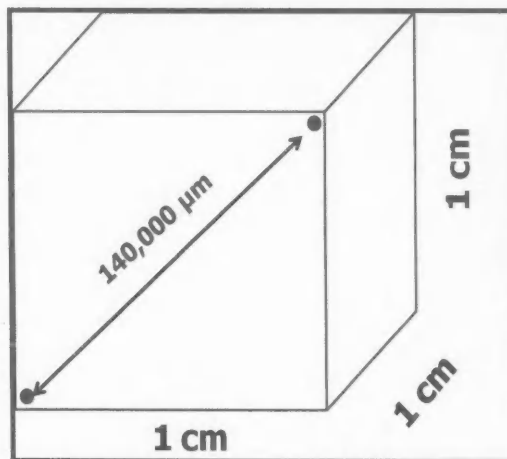
considered in assessing whether the food will support microbial growth.

Another phenomenon associated with many foodborne microorganisms is quorum sensing. This ability of cells to communicate with each other through extracellular chemical signals such as acyl-homoserine lactones affects a number of important characteristics of foodborne bacteria such as the expression of virulence genes, formation of biofilms, and the ability to resist various forms of stress. However, quorum sensing does not generally occur until the population density of the microorganism exceeds approximately 10^5 per gram or ml. Part of understanding why such levels are needed for quorum sensing to become influential is appreciating the scale from a microorganism's standpoint. If the average bacterium has a volume of $1 \mu\text{m}^3$ and 1 g or ml of food is equal to $10^{12} \mu\text{m}^3$, then 1 ml of bacteria would contain approxi-

mately 10^{12} cells. This also means that if you have a 1-g cube of food with two bacteria at the corners (Fig. 3), the distance between the two cells would be $1.4 \times 10^5 \mu\text{m}$. On a human scale this would be equivalent to a distance of approximately 140 miles or roughly the distance between Washington, D.C. and Philadelphia, PA. Thus, on a human scale, it would be the equivalent of a person applying perfume in Washington and you being able to smell it in Philadelphia. With this perspective it is not surprising that much higher population densities must be achieved before quorum sensing kicks in.

One of the characteristics of humans is that we tend to anthropomorphize the physical and biological factors that affect our lives. Thus, it is not surprising that we imbue microorganisms with intent. If you start to discuss food microbiology with students, you immediately recognize that they have already classified foodborne bacteria into "good guys" (e.g., *Lactobacillus* spp.) and "bad guys" (e.g., *Listeria monocytogenes*). These two examples are particularly interesting since if you compare the actual number of cases of septicemia cases in immune-compromised patients that are associated with these two microorganisms, they are not too dissimilar. It is always important to remember when dealing with pathogenic microorganisms that their motive is not to hurt the host; they do not even know that the host exists. Instead, their prime directive is to grow and/or survive in the environment in which they find themselves. Keeping this in mind helps avoid the trap of

Figure 3. Example of the distances that may exist between individual bacterial cells within a 1-g food sample. Assuming that the bacteria have a volume of $1 \mu\text{m}^3$, the two cells in the example are separated by 140,000 "body-lengths."



misunderstanding their "motives" and growth/survival strategies as they enter a new host.

In thinking about disease mechanisms from a microorganism's perspective as I prepared for this lecture, I was drawn to the big news story at the time, the BP oil spill. This led to my final example which poses the question "What do *E. coli* O157:H7 infections and the BP oil spill have in common?" The world is now intimately familiar with the details of offshore oil drilling where a drilling platform is anchored over a likely oil deposit, a drill is lowered to the seafloor, the oil deposit is tapped, the liberated oil is transported to the surface, and after initial processing the oil is transported for further refining. By looking at *E. coli* O157:H7 not as a "bad guy," but as a microorganism that is trying to thrive, this has led me to hypothesize that the microorganism's mechanism of disease is actually a highly efficient means of acquiring a limiting nutrient. To explain further, it is well recognized that iron is a key limiting nutrient for many microorganisms. Humans represent a vast reservoir of iron but it is safeguarded by numerous active and passive protective barriers, and is present in forms (e.g., hemoglobin, myoglobin) from which it is difficult to extract the iron atom. If we use the analogy of the drilling platform *E. coli* O157:H7 has the "equipment" that allows it to survive the passage through the dangerous waters of the stomach, enter the "iron fields" of the upper intestine, and drop anchor through the production of intimin and other attachment factors. It then has the biochemical equipment for delivering its drill (Shiga toxin) to the surface of the intestine where it taps into the rich iron sources just below the epithelial cells. Finally, as the iron begins to escape into the environment of the intestine, the microorganism has the biochemical machinery (enterohemolysin) to extract and refine the iron for its purposes. While this hypothesis is speculation and requires serious evaluation, it does point out how looking a microbiological process from the standpoint of the microorganism can lead to new ways at looking at microbiological food safety concerns.

In summary, being able to view microbial food safety problems from multiple perspectives is criti-

cal to advancing the overall goal of simultaneously providing consumers with a food supply that is safe, nutritious, abundant, affordable, and enjoyable. Food microbiology is moving from a largely qualitative art to a quantitative science as a result of a whole toolbox of new tools such as microbial genetics, microbial risk assessment, predictive microbiology, computational biology, and systems engineering. However, it will be even more critical to ensure that we remember to be able to view problems from a microbial perspective. Finally, I would like to express my sincere appreciation to the members of IAFP and the scientists with which I have had the honor of working for this opportunity to share my perspective.

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Our Experiences

By the IAFP 2010 Student Travel Scholarship Award Recipients

Mary Pia Cuervo

Texas A&M
College Station, Texas



I am honored to be a recipient of the Student Travel Scholarship for the 2010 IAFP Annual Meeting in Anaheim, California. It was a great opportunity to network with the most talented people in the food safety world. I encourage food safety professors to bring their

students to the IAFP Annual Meetings because, as you know, there is not a better place where they can stimulate their research creativity and gain perspective of the topics that are relevant in our field. The contacts I made at the meeting opened doors that will further propel my career as a food safety professional.

Attending the symposia, roundtables, and technical sessions gave me the opportunity to be exposed to the most current information in the industry, academia, and legislation. Some of the topics were very closely related to my research topic; others were about subjects I have not seen before. But either way, the learning and sharing experience was immense. I can say that these presentations either reaffirmed my knowledge, added a different point of view to an already known issue, or showed me a completely new trend. Lunches and coffee breaks at the Exhibit Hall promoted the networking experience that I was looking for.

As a last-year Ph.D. student in my search for a job, coming to this meeting was the best place to be. My attendance at IAFP 2010 was just the beginning of what I hope will be a long and lasting relationship between me and this prestigious organization.

Vania Borges Ferreira

Portuguese Catholic University
Porto, Portugal



I feel tremendously honored to have been awarded a Student Travel Scholarship to attend the International Association for Food Protection 2010 Annual Meeting in Anaheim, California. I sincerely thank the IAFP Foundation for their generosity in

providing the scholarships so that students from all over the world can be given this unparalleled opportunity to attend one of the most important conferences on food safety.

As this was my first IAFP Annual Meeting, I was amazed by the amount and wide range of scientific research topics presented, including technical oral presentations, posters, roundtables, symposia, committee meetings, professional development group activities, etc. Attending the Meeting was an excellent opportunity to learn from internationally-recognized academic, government, and industry food safety leaders who have contributed to food safety, and to update the current knowledge on novel approaches, technologies, and new findings on a variety of issues relating to safety and quality of food products.

In addition, having the opportunity to join a distinguished panel of speakers and to present my current research to a wider audience was an invaluable experience. This was not only a great venue to exchange knowledge and ideas with fellow researchers, but it also allowed me to network with food safety professionals from around the globe. The IAFP Annual Meeting provides experiences that are impossible to get

in other ways, including exposure to a wide array of scientific studies and knowledge from different countries, and useful contacts with food safety scientists with similar professional interests.

I am truly grateful to be afforded the opportunity to be a part of the IAFP Annual Meeting and I thank the Executive Board, staff, my mentor, Dr. Maria Teresa Destro, and all other participants for their hospitality, kindness, cheerful environment, and positive atmosphere. I look forward to attend future meetings and encourage other students to attend IAFP 2011 in Milwaukee, Wisconsin.

Clyde Simmons Manuel

Colorado State University
Fort Collins, Colorado



I can truly say that attending IAFP 2010 as a Student Travel Scholarship recipient has been one of the biggest honors of my academic career to date. I am very thankful to the IAFP Foundation and to its contributors for making this scholarship possible.

As a first-time IAFP Annual Meeting attendee, I quickly realized why so many of my peers hold the IAFP meeting in such high regard. I can think of no other forum in this field that presents information of higher quality or allows for so many networking opportunities. The large amount of information I received by attending the various symposia and poster sessions relevant to my research was very valuable and will help to guide me as I continue my education. In addition to the knowledge I gained from the wealth of information presented, I was amazed at all the networking opportunities handed to me. I made many new contacts and friends at IAFP 2010, and I must thank the countless individuals who approached me to congratulate me on my award. The networking I took part in at IAFP 2010 will no doubt help in my education and career advancement.

In addition to experiencing IAFP 2010 as an attendee, I was fortunate enough to present a poster on my research with isolating foodborne pathogens from agricultural environments. This allowed me to network with many professionals and students who share similar research interests.

In addition to presenting a poster, I also attended the Student Professional Development Group (SPDG) luncheon and mixer, where I took full advantage of the welcoming atmosphere and created new friendships with other aspiring students. I was also able to attend the SPDG committee meeting, serving as treasurer for 2010-2011. I am very excited about this position, as it is a great way to be active while giving back to both the SPDG committee and IAFP.

I was thoroughly impressed with IAFP 2010. Not only did I gain considerable knowledge on topics relevant to my food safety interests, but I was able to create new relationships with other students and professionals. These aspects of the IAFP Annual Meeting are invaluable and, because of this, I encourage all aspiring food safety scientists to attend. I am very much looking forward to attending future meetings and know without a doubt that these will help me reach my academic and professional goals.

Csaba Nemeth

Corvinus University of Budapest
Budapest, Hungary



The IAFP Annual Meeting in Anaheim was one of the greatest experiences in my life, and again, I want to say thank you to the organization for the Student Travel Scholarship Award. I especially thank the assistance of my mentor,

Professor John Sofos, who introduced me to a lot of people, about whom I could only read in the library of the University of Budapest, until now.

The conference was very interesting. I learned a lot from the lectures and I am sure that I will be able to use the knowledge I gained here in my Ph.D. work, i.e., the planning of my future experiments and presentation of results I am looking for with great devotion. Each lecture I attended helped me to understand the continuous development and the existing problems of food safety.

Fortunately, we also had some spare time and, besides the conference exploration of a wonderful part of the United States, the environment of Los Angeles was an amazing experience, an opportunity achievable for only a few Hungarians.

I do hope I will have the opportunity to present my work in many conferences organized by IAFP in the future, either in Europe, the United States, or other places in the world. Thus, I hope I can again meet these kind people in Milwaukee (whom I might not see at the European symposium) where hopefully a greater number of people from the HAFP (Hungarian Association for Food Protection) will be present.

Anh Linh Nguyen

University of New South Wales
Sydney, Australia



Food safety is diverse in nature and the food safety landscape is constantly changing on both national and international levels. That makes keeping up to date with all issues and developments in the area a great challenge for professionals and students.

Fortunately, the IAFP Annual Meeting is a perfect event for food safety-conscious people to meet and fulfill that purpose. Therefore, it was an honor for me to attend IAFP 2010 in Anaheim, California as a Student Travel Scholarship recipient. For this award, I am grateful to the IAFP Foundation for kindly providing the scholarship, David Tharp and Susan Smith for the organization and arrangements, and my mentor, Sean Leighton, for introducing me to many friends and acquaintances.

It was my first time attending an IAFP meeting and it has satisfied my interest in food safety in both quantity and quality. There were several oral sessions including lectures, symposia, technical meetings, and roundtables, as well as hundreds of posters that literally covered every facet of food safety such as toxins, microorganisms, regulations, and risk assessments. Overwhelmed by so many interesting opportunities, it was challenging to choose which sessions to attend. I was able to attend meetings of two well-established Professional Development Groups (PDGs) and one newly-formed PDG. Through these experiences, I have learned how professionally and effectively these groups were and how to set up a new group successfully. I also had a great experience when attending the 3M Symposia on "21st Century Food Safety – Key Trends" given by Frank Yiannas. My

attention was totally captured by the knowledge, information presented, and public speaking skills –and sense of humor—from Mr. Yiannas. I would definitely contemplate the ten key trends Mr. Yiannas mentioned so as to better understand them.

I also attended an unusual but interesting symposium, namely "Buy Local? Addressing the Safety Issues Behind Green Food Trends." The green and local food trends are developing very fast at the moment so this session was timely and raised the awareness and probably initiated future attention into this particular market. My other favorite session was the John Silliker Lecture titled "Understanding Foodborne Microorganisms—A Matter of Perspective," given by Dr. Robert Buchanan. His speech reminded me of a balance between subjectivity and objectivity when dealing with microorganisms.

Apart from attending speeches, I volunteered to monitor some sessions and I would recommend this task to any student attendees in the future. Networking was an indispensable part of the IAFP meeting and I had an opportunity to meet students from other universities, researchers from different institutions, and make contact with invaluable acquaintances from the industry.

IAFP 2010 has been a rewarding and enriching experience for me in both professional and real life aspects. It is a bonding event for members, students, and industry partners and a time that the food safety community has its voice heard. I would love to attend meetings in coming years and recommend students to do as well.

Iryna Sybirtseva

North Carolina State University
Raleigh, North Carolina



I was delighted to receive a 2010 IAFP Student Travel Scholarship Award, and to be recognized as a future food safety leader. The IAFP Annual Meeting in Anaheim, California provided me with a tremendous experience

that positively influenced my future goals and professional attention. It was a great place to meet other food safety-driven professionals,

establish professional contacts, and share my research findings with the conference attendees. I look forward to implementing the ideas and collaborating on some projects as a result of all conference deliberations.

The meeting's technical sessions were very informative and focused on arising food safety issues. One such session inspired me to continue my research as a post-doctoral student at North Carolina State University. Overall, this meeting was one of the strongest motivators to confirm my passion for food safety. The world can become a safer place through safer food!

Duygu Tosun

Ege University
Bornova, Izmir, Turkey



It was a great honor to be one of the recipients of the Student Travel Scholarship at IAFP 2010. I would like to thank the IAFP Foundation for the opportunity to attend the Annual Meeting in Anaheim. I am deeply grateful to the Executive Board for their support, hospitality and for

making such a successful meeting, Susan Smith for her kind assistance and her special way of making everything easier for me, and my mentor, Dr. Jinru Chen, for her interest and advice about the meeting and food safety.

I strongly believe that international relationships are very important in academic life and this is why it is very important to be a part of such an organization and to experience being in a setting with the people who share the same interests. This scholarship allowed me to meet with more than 2,100 food safety professionals from all over the world. Being in an international environment with food safety professionals and exchanging food safety experiences was very exciting and educational. Also, well-prepared presentations with well-selected topics in symposia, technical and poster sessions were very informative.

Besides this, I would like to thank the Program Committee, IAFP staff, and contributors for the Welcome Reception, Awards Banquet and Reception, Cheese and Wine Reception, Student Luncheon, and Student Mixer where I had the chance to meet with people and have a really good time.

I can truly say that this meeting helped me widen my horizon in food safety. After the short time I spent with the Association, I have realized that becoming a member will not only give me the opportunity to understand food safety at a global level, but it also benefits me to meet such wonderful people who I share common career interests with. I especially encourage students who are interested in food safety to attend the IAFP meetings. I hope to meet you all in Wisconsin in 2011.

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Session Summaries

Members of the IAFP Student Professional Development Group assisted the Convenors by serving as Session Monitors at IAFP 2010. Student Monitors prepared the following session summaries for presentation in *Food Protection Trends*.

SYMPOSIUM

S1 — Microbiological Environmental Testing and Validation: Leading Edge Issues for Low-moisture Foods Armitra Jackson and Winnie Chang

The first presentation, "Continuous/Extended Run Low-moisture Food Processes—Challenges for Environmental Monitoring Strategies," was presented by Jean-Louis Cordier (Operations/Quality Management, Nestle Nutrition, Vevey, Switzerland). Cordier began by discussing the sources and routes of contamination by *Salmonella*. Hygiene control measures and the hazard analysis of intrinsic risk were also examined. The different aspects of what should be monitored were addressed. The second presentation, "Environmental Sampling Sites Versus Food Contact Surfaces: If, When and Where to Sample (Industry Perspective)," was presented by Steven J. Goodfellow (Deibel Laboratories, Inc., Gainesville, FL, USA). The decision to sample is based on industry history, due diligence, and the awareness that results may be subject to review by auditors and regulatory agencies. The point was made that there is never a question of if a company will monitor, because monitoring must happen. Potential microbiological parameters include indicator organisms, total plate counts, coliforms, *Enterobacteriaceae* and specific pathogens. An examination of sampling methods, such as swabs, sponges, sample collectors and debris samples, were compared. The limitations of each were discussed.

The next presentation, "Environmental Sampling Sites Versus Food Contact Surfaces—If, When and Where to Sample (Regulatory Perspective)," was presented by Donald Zink (FDA, CFSAN, College Park, MD, USA). The difference between a regulatory perspective and an industry perspective were discussed. The following references were made to *Salmonella* and *Listeria*: (1) Look for them where they live, feed and breed (2) They are numerous where they live, but only wander about in small numbers and (3) They survive captivity poorly and recovery is better if you start with large numbers. "Validation of Low-moisture Process Cleaning/Sanitation Strategies—Redefining Validation Where There is a Lack of Defined Limits," was presented by Mark A. Moorman (Kellogg Company, Battle Creek, MI, USA). The tools and systems in low moisture food manufacturing that aid in lot designation were described. The question of "How much should I recall?" was posed and discussed in detail.

The final presentation, "Can Environmental Monitoring Coupled with Finished Product Testing Validate Adequacy of Food Safety Control Programs for Continuous Low-moisture Processes?" was presented by Robert Buchanan (University of Maryland, Center for

Food Safety and Security Systems, College Park, MD, USA). The question "How big of a recall would you like?" was posed to the audience. Different forms of testing, such as lot-by-lot (test and release) testing, less than lot-by-lot testing for verification, and process control testing, were examined. In response to the question posed by the title of the presentation, it was concluded that the answer is yes, but it is going to require that regulatory agencies work together with industry, academia and consumers. The symposia concluded with a panel discussion.

S2 — Data Deluge, Interacting Players and Complex Networks in Food Sciences—Computational Tools to Tackle Food-related Complexities Jack Ofori and Jie Wei

In every network, someone has to play a central role. Thus, in a network, it is not "whom you know but who whom you know knows." Typological parameters of network include path, distance and network diameter. Path describes how nodes are connected in a graph; distance refers to the length of the shortest path between nodes; and network diameter describes the longest of all paths between two nodes. In a network, size of node is related to the amount of information. Centrality defines the point that all shortest paths go through. Network in food science is akin to intracellular networks such as the genome, proteome and metabolism. It is therefore necessary to study network in food science to address future challenges and understand food complexities. According to the FAO, demand for food and water will rise by 50% and 30%, respectively, by the year 2030. The crisis resulting from these increases would be more disastrous than climate change. Studying network in food science puts us in a better position to address these future challenges. Fluxes on the international market in terms of food exports and imports, with their attendant problems and complexities, are better addressed with an understanding of networking in food science.

An example of a network system in the food science sector is Combase, which is a database of microorganisms' responses to different environments. It was designed to ensure a structured archive of microbial data, increase efficiency of model development, minimize redundant experimentation, and aid in food safety and quality risk management. Data from Combase come from organizations such as Unilever, Agricultural University of Athens, ARS, IFR, FSA, FSC, National Food Research Institute, etc. Combase is available in three forms, namely Excel, Access, and Combase browser. Going through Combase individually may become problematic if the volume of data increases. Because of this,

Combase currently puts many pieces of information together such that a pattern becomes obvious. This allows expected conditions to be used to create a model for predictions. In this respect, Microbial Responses Viewer is now linked to Combase so that more value is obtained from a data search. For example, *E. coli* growth in beef can be compared with the growth of other microorganisms in beef. Similarly, growth of *E. coli* in beef can be compared with its growth in other foods. There is thus more value for the same information available.

Food safety scenarios are complex, as they involve a large number of variables, uncertain or missing information, and conflicting views. We don't know everything, so we cannot say anything. Probabilistic network, another form of a network system, allows us to address many complexity issues and at least say something. Modeling complex systems prevents a dilemma. Probability is belief in that it gives an integral representation of uncertainties. Probabilistic networks are presented as flow diagrams consisting of nodes connected with arrows. Nodes represent uncertain variables and arrows represent dependencies or causality. Network structure comes from expertise and data mining with support from software tools. Bayesian networks, often involved in probabilistic networks, tell us that if we observe A, then B or C might have caused it. Source level inference provides a link between food chain management and food chain security from threats. No one is immune from the data deluge. Networks provide the only means of deciphering and understanding the huge amount of data available.

S3 — Converging Industry Initiatives on Traceability

Lillian Hsu and Angela Laury

The symposium "Converging Industry Initiatives on Traceability" focused on the difficulties facing the food industry in labeling products at every step of the food supply and processing chain and the consequent obstacles in rapidly conducting product tracebacks.

Dr. Dennis R. Heldman, of Heldman Associates, started with a talk titled "Advances in Food Traceability Technology." Food traceability is a system designed to assemble and distribute information about the product throughout the chain, from the origin of the raw food material until the final product reaches the consumer. The two main tools used in food traceability systems are barcodes and radio frequency identification (RFIDs). Improvements on barcode and RFID technologies include the use of sensors that can track temperature, moisture, oxygen, and other product or environmental parameters, including pathogens. The presence of sensors that can continuously monitor product quality and changes until the product reaches the consumer has the potential to sharply reduce food safety risks. However, improvements to the system are limited by several factors, including the cost, maintaining collaboration among various stages of production, consumer interpretation of information, and the lack of government regulation.

The second speaker was Dr. David E. Gombas, of the United Fresh Produce Association. His talk, "Produce Traceability Initiative," focused on an initiative that United Fresh, PMA, and CPMA worked on to address is-

suues facing the produce industry: the absence of packaging, because produce is sold in bulk; a convoluted supply chain; the practice of co-mingling and repacking to meet quality expectations; and non-uniform tracing practices. The initiative that United Fresh, PMA, and CPMA launched focused on the use of a 14-digit global trade identification number (GTIN) and a unique lot number to label all unique produce case configurations. After implementing this initiative, they found some problems that needed to be resolved: difficulty in physically labeling cases, bags, etc.; uncertainty of market commitment; cost and return on investment; and the absence of government regulations. Still, United Fresh, PMA, and CPMA stand by the GTIN and lot number approach, and are working with industry to troubleshoot obstacles to successfully adopting this approach.

The last speaker was Sherri A. McGarry, director of public health and biostatistics at the FDA CFSAN. Her talk, "Improving Product Tracing: FDA Perspective," focused on current challenges in product tracing and new policy initiatives being considered by FDA. The main challenges in a product traceback include: a time lapse between onset of illness and reporting; poor consumer recollection of food consumption history; multiple products with multiple ingredients identified as possible sources of contamination; lack of rapid connectivity; repackaging and co-mingling, absence of packaging altogether, and unavailability of the product. The FDA has proposed various food safety bills that it hopes will speed up the traceback process and are working to help implement preventive food safety policies based on lessons learned from previous outbreaks.

Overall, improvements have been made to the food traceability system, but work remains to be done to achieve a reliable and unified global food traceability system.

S4 — Human Pathogens Associated with Edible Plants

Claudia Bravo and Travis Chapin

Donald Zink (FDA-CFSAN) introduced the session by reviewing food safety studies in plants. In these studies, oversimplification and unforeseen complexity have often occurred. Bacteria have to be studied as parts of ecosystems. Food microbiologists still struggle with recovering pathogens from food; future food safety research will be multidisciplinary and multi-institutional.

Jacqueline Fletcher (Oklahoma State University) continued by speaking about plant pathology. To better understand syndromes in plants, plant pathologists use the disease triangle, which comprises three components: susceptible host, pathogen and conducive environment. There is interaction among the three components. The principle of the disease triangle leads to strategies for disease management. Plant pathologists will look at every step of the process (dissemination, infection, colonization, epidemiology, environmental conditions, and plant response mechanisms). Each state of a disease can be an opportunity for pathogen control.

Jeri Barak (University of Wisconsin) presented data on the ability of *Salmonella* and *E. coli* O157:H7 to grow in the sprouting environment; their results showed attachment differences between these two pathogens.

More experiments in plants showed that *E. coli* O157 cannot firmly attach after 24 h, while *Salmonella* attached very well. These two pathogens can produce curly and/or cellulose that enhance the initial attachment. *Salmonella*, to successfully colonize and survive in plants, need: swimming, swarming, high populations, coordinated motility across the surface, ability to form biofilms, and resistance to all classes of antimicrobials. These mechanisms are important for survival to bleach treatment and desiccation. In conclusion, it's important to continue to look at the genes and interactions of plant diseases and pathogens.

Lisa Gorski (USDA-ARS-WRCC) presented research concerning the "Distribution, Prevalence, and Diversity of *Salmonella enterica* in an Agricultural Region of California." The purpose of the study was to provide a baseline level of *Salmonella* prevalence in the Salinas Valley and to identify potential sources of pre-harvest contamination. Samples included plant material, water, soil/sediment and wildlife feces. Fifty-five samples from twenty-one locations were positive for *Salmonella*. Forty distinct strains of *Salmonella* were identified.

Melanie Ivey (Ohio State University) gave a presentation entitled "Lost in Translation: Communicating with Vegetable Producers about Good Agricultural Practices and Food Safety." She conducted a broad survey of producers' knowledge and implementation of Good Agricultural Practices. She concluded that producers are implementing GAPs inconsistently, research and outreach programs are needed on viruses, experts and non-experts need more knowledge on sources of contamination, and producers prefer to get the information from universities.

Steven Koike (University of California Cooperative Extension Service) presented an overview of the UC Cooperative Extension and its role in research and conveying information to growers. Recent research projects have involved field experiments with lettuce and spinach in the Salinas Valley. Significant findings included the fact that generic *E. coli* survived in the soil for twenty-one days and attenuated *E. coli* O157 survived in the soil for seven days. On disked spinach, *E. coli* survived in fallow soil for greater than 100 days. In conclusion, food safety extension is a long-term process and includes applied, problem-solving research, education and providing a local presence in the agricultural community.

S5 – Global Water Shortages – Their Impact on Water Safety and Quality

Jessica Butler and Kirsten Hirneisen

The first speaker, James Thebault from the Chronicles Group, Inc. in Los Angeles, CA, gave a talk titled "Global Water Shortages and Their Impact on the Food Chain." He showed a preview for a documentary film he wrote and produced, titled "Running Dry Beyond the Brink" (Web site is www.runningdry.org). The documentary was produced to raise awareness of the water crisis and highlights the problems the world is facing with water shortages. Some of the problems associated with water shortages include economic instability, effects on agriculture and ecosystem destruction. The preview discussed the drought conditions in Australia that had led to public policy regarding water resources. The Australia-

lian government hopes that Australia's problems with extreme drought and the policy changes made serve as a wake-up call to the rest of the world.

Mr. Thebault of The Chronicles Group, Inc., Dr. Octavia Conerly of USEPA and Dr. Richard Atwater of Inland Empire Utilities Agency spoke on the topic of national water shortages and their impact on water safety and quality. The emerging problem of water shortages seems to be lack of water to process foods. Mr. Thebault, a producer of the documentary "Running Dry," spoke about the amount of water on earth and how it has not increased over the years, although the number of people has increased significantly, thus causing a water shortage. Dr. Octavia Conerly discussed the potential for reusing water. Several food-processing plants currently utilize some type of water reuse program. Lastly, Dr. Atwater discussed the impact of pharmaceuticals in our water supply and their negative effects on our food systems.

Richard Atwater, from the Inland Empire Utilities Agency in Fontana, CA, spoke on "Water Reuse and the Impact on Food Safety and Quality." His talk highlighted the use of reclaimed wastewater as irrigation water for vegetable production. Examples of states using reclaimed wastewater include California and Florida. NASA and Singapore both use reclaimed wastewater as their drinking water. Treatment technologies for reclaimed wastewater vary depending upon the intended use. Emphasis was placed on educating the public to avoid dumping pharmaceuticals into the water system, and even if humans may not be highly sensitive to pharmaceuticals present in the water systems, aquatic wildlife is affected. For example, Seattle is concerned about the wildlife in Puget Sound, and waste-water from the city is reused. More research on water is needed to prevent future problems with water abundance.

S6 – Ripple or Tsunami? Riding the Regulatory Wave to Safer Bottled Water and Water Beverages

Hudaa Neetoo and Balasubramanyam Puli

Henry Kim, from the U.S. Food and Drug Administration, opened the session, speaking about the specific FDA regulations for bottled water, which is regarded as a processed food and regulated as per the FFDC Act. He highlighted the way in which US EPA standards for regular tap water are incorporated into standards for bottled water and also stressed the more stringent regulations for bottled water, compared to those for regular tap water. He also spoke about the different kinds of ingredients added to water and how they are regulated by FDA under the Food labeling regulations (21 CFR §101 & 21 CFR §110). Finally, he spoke briefly on the corrective action protocol for the bottled water industry in the event of microbial contamination found in the source water.

Bob Hirst, Vice President of the International Bottled Water Association (IBWA) then spoke about the impact of new FDA water regulations on the bottled water industry. Dr. Hirst began by giving a detailed overview of bottled water safety. He delineated the specific FDA regulations for bottled water as stipulated in Title 21 of the *Code of Federal Regulations* (21 CFR), including standard of

identity (21 CFR § 165.110[a]) and standard of quality regulations (21 CFR §165.110[b]). He also mentioned the established cGMP regulations set in place by FDA for the processing and bottling of bottled drinking water (21 CFR part 129). He then defined "bottled water" and listed the various products that also fall under the same definition of "bottled water." In addition, he described the different specialized processes unique to the different types of bottled water, their regulatory and technical issues as well as the challenges and opportunities faced by the bottled water industry. Before closing, he touched on the recently instated FDA regulations on the bottled water and water beverage industry, such as the "FDA Microbial rule" for bottled water, the health and safety regulations for new potential contaminants and the International Codex Alimentarius.

The last speaker of the session was Dr. Wilfredo Ocasio from the National Food Laboratory. As a process microbiologist, Dr. Ocasio stated that flavored and nutritionally-enhanced water beverages provide better tasting products, and enhanced nutrition, health, and performance, but they often face multiple challenges because of increased risk of microbial activity, which in turn increases the need for specific regulations and more stringent processing and packaging requirements. It was stressed that the bottled water ingredients of flavored and nutrient-added water beverages must meet the bottled water requirements if the term "water" is highlighted on the label as in, for example, a product named "Berry Flavored Spring Water Beverage." In addition, he emphasized that flavorings and nutrients added to these beverages should be in compliance with all applicable FDA safety requirements and must be identified in the ingredient list on the label. He then described the various control strategies in place that can be used to reduce the microbiological hazards associated with enhanced beverages.

S7 – Government, Academic and Industry Collaborations to Advance the Development and Use of Microbiological Risk Assessments *Nigel Harper and Achyut Adhikari*

Regis Pouillot reported on a collaborative effort between the USDA, FDA and CDC to develop a *Listeria* risk assessment model. The uniqueness of this governmental model comes from the collaborative effort of stakeholders from government, academia, and industry. Through this collaboration, many gaps have been filled, but many others remain to be filled.

David Oryang discussed the collaborative effort between FDA and NASA to form a predictive model based on GIS (Geographic Information System). Using GIS, researchers can evaluate and interpret large amounts of data, which previously was difficult. As an example, some studies have shown that there is little relationship between prevalence of *E. coli* O157:H7 infection and environmental factors. However, through GIS, a relationship has been established between the incidence of illness caused by *E. coli* O157:H7 and deviation from average rainfall. Further information is needed to strengthen this tool and add to its capabilities.

Steven Gendel of the FDA spoke of their Web-based comparative risk assessment tool, iRisk. This tool allows

risk assessments to take into account hazards, commodities, processing scenarios, and consumer populations. During the development of this tool, the FDA wanted to make it available online for public access with a user-friendly interface. The uniqueness of this tool is that it allows for the understanding of the health impacts through Quality Adjusted Life Years (QALY) and Disability Adjusted Life Years (DALY). While this model is extremely complex, it allows for many attributes to be assessed while a simple, user-friendly interface is maintained.

Building Capacity in Risk Analysis and Food Safety through Partnerships was discussed by Juliana M. Ruzante, JIFSAN, College Park, MD. Integration of risk analysis (RA) is crucial, and engaging stakeholders' partnership is a key step to success of RA. JIFSAN has increased its capacity by introducing FoodRisk.org and through partnership with different organization (e.g., FDA, CFSAN, USDS, and FSIS etc.). FoodRisk.org serves as a portal to disseminate information to various groups who are interested in conducting risk analysis. The collaborative effort that is built in partnerships between the different sectors helps in conducting workshops and symposia on risk prioritization.

In the presentation on Risk Assessment for the Public Health Impact of Highly Pathogenic Avian Influenza Virus in Poultry, Shell Eggs, and Egg Products. A Collaboration of APHIS, FDA and FSIS, presented by Denise Eblen, USDA, FSIS, Washington, D.C., a key question was to address the probability of undetected chicken infected by HPAIV. Two risk assessment models were developed: Poultry model and Egg model. Flock testing identified a diseased flock about 2 days earlier. In summary, inter-agency workshop group developed to identify needs of the agencies that could be impacted by and HPAIV outbreaks.

Use of the *Salmonella* on Almonds Risk Assessment to Guide Food Safety Decisions was discussed by Richard Whiting, Exponent, Inc., Bowie, MD, USA. Raw almond outbreaks in 2001 and 2004 indicate that extension process was not safe. Process risk assessment (e.g., Raw materials-processing-storage-consumption-illness) allows greater flexibility in achieving public health objectives. Risk assessment modeling can be used as a tool in developing sound food safety programs for microbial control.

S8 – Less Recognized and Presumptive Pathogens: What Now, What Next? *Sarah Markland and Claudia Bravo*

The first speaker, Purnendu Vasavada, began the session with a presentation on the "Less Recognized Members of the Family *Enterobacteriaceae*, *Arcobacter*, and *Helicobacter*." The speaker discussed the less recognized *Enterobacteriaceae*, including *Enterobacter*, *Klebsiella*, and *Citrobacter*, which cause concern about possible fecal contamination and may serve as potential indicator organisms. The speaker also discussed emerging pathogens such as *Cronobacter sakazakii* in infant formula, spiral bacteria that cause various gastrointestinal infections, spirochetes, *Mycobacterium*, and other zoonotic organisms.

Next, Kali Kniel provided a discussion on "Lesser Known Foodborne Viruses." This speaker discussed the prevalence of foodborne viruses, reasons why the field

of virology is expanding, and techniques currently used to reduce viruses in the environment. The speaker described many different foodborne viruses, including Norovirus, Hepatitis A virus, Hepatitis E virus, Coxsackievirus, Astrovirus, and Aichi virus – just to name a few. The speaker concluded that these viruses would continue to change and adapt over time.

The next speaker, Ynes Ortega, spoke about “Infrequently Identified Food and Waterborne Parasites.” The speaker explained how the human population has become increasingly exposed to foodborne parasites through travel, interaction with animals, and increased consumption of exotic foods. Imported foods from endemic areas and the role of migrant workers may also contribute to the increase in foodborne illness caused by parasites. Foodborne parasites, including protozoa, nematodes, cestodes, and trematodes, were also discussed in greater detail.

“Mycotoxins in Foods” was presented by Mary W. Trucksess. In this presentation, the speaker explained that mycotoxins are produced as metabolites by *Aspergillus*, *Fusarium*, and *Penicillium* species. Of these mycotoxins, 300–400 are identified as toxic to humans. Mycotoxins including aflatoxins, ochratoxins, and patulin were discussed in further detail. The speaker also discussed the classical and emerging technologies used to identify mycotoxins in foods and concluded that mycotoxins will continue to be an evolving problem in food science.

Scott Wells spoke about the organism *Mycobacterium avium paratuberculosis* and its relation to Crohn’s disease in humans and Johne’s disease in cattle. The speaker explained that research indicates that MAP is associated with Crohn’s disease; however, it is not certain whether MAP is the single cause of the disease, nor is it understood how MAP is involved in the etiology of the disease. The speaker concluded that control of this disease is feasible, but eradication will be very difficult.

The last speaker, Robert Dickey, spoke about “Marine and Seafood Toxins.” The speaker discussed how the changing oceans, climates, and human activities are contributing to eutrophication. The speaker also explained that the origin of seafood toxins is phytoplankton; however, only 1–2% of 5,000 species of phytoplankton produce toxin. The speaker went on to discuss the current detection methods for seafood toxins and the difficulty of acquiring such toxins for research. It was concluded that there is a need for better availability of toxins for research and risk assessment.

S9 – Buy Local? Addressing the Safety Issues Behind Green Food Trends

Anh Nguyen and Andrea Dow

The session was opened with a presentation titled “Living La Vida Locovore: Food Safety Concerns Associated with Emerging Food Trends” by Dr. Benjamin Chapman from the Department of 4-H Youth Development and Family and Consumer Sciences, North Carolina State University, and creator of Barf Blog. Dr. Chapman described the rapidly growing trend of purchasing local food products and produce, as shown by survey data on consumers’ belief that by buying locally grown products they were purchasing healthier, tastier products while

also supporting the economy of their local community. Though none of the surveys indicated that the choice was based on food safety concerns, when asked directly about food safety, most customers rated their local food an eight out of ten. However, this perception of providing safer food products is not accurate. Outbreaks of foodborne pathogens associated with local foods and markets have been reported since 2000. Dr. Chapman pointed out that safety has not received much attention in such a market. Therefore, it is critical to understand what the important risks are and how they should be managed.

Dr. Patricia Millner from USDA-ARS highlighted the growing local food trend and addressed the safety question of local food in her talk “Bringing Food Safety from Local Farms and Markets to Your Table.” Dr. Millner described the benefits of buying from local producers and various forms of green food production currently in place and ideas that may be seen in the future. She demonstrated how the availability of fresh produce in a community, especially an urban community, is beneficial to both producers and consumers. Regarding food safety, Dr. Millner focused on the prevalence of General Agricultural Practices (GAPs) certification among local farmers and local food producers that supplied food in the Farm to School program. She demonstrated a relatively large disparity between numbers of GAPs certified farms and numbers of schools involved in the program. Dr. Millner again stressed the importance of food safety principles regardless of food sources.

Joane Menke-Schaenzer from ConAgra Foods Inc. presented a corporate point of view on the food safety of local food supply in “Comparison of Local/Slow/Organic Food Safety Versus Commercial Food Manufacturing Food Safety.” She discussed her own personal viewpoint on why she frequently chooses to buy local, how she picks who she buys from and compared local foods with ConAgra’s approaches in those areas. She stressed the necessity for a dialogue between corporate food producers and growers to promote food safety awareness in the farmers’ communities. She also recommended the same dialogue for local consumers when shopping at local food markets. She described the types of questions consumers can ask producers before they decide to purchase from them. These questions were based on ones she personally uses and questions a corporate producer asks when choosing a farmer-supplier. She took examples from the relationship between ConAgra Foods Inc. and the farmers that are chosen to produce their tomatoes, potatoes and corn to further describe how ConAgra contracts farmers based on their food safety practices.

S10 – Good Agricultural Practices and the Small Scale Producer: What’s Really Going On Out There?

Pardeepinder Kaur Brar and Sean Beckman

“Understanding the Need and Value of GAPs Implementation to Small Scale Producers” was presented by Elizabeth Bihn, New York State Agricultural Experiment Station, Department of Food Science and Technology, Cornell University, Geneva, NY. Smaller farms tend to have smaller size and lower sales, and to be operated by growers who have occupations other than farming. Most

of the sales from small farmers include you-picks, farm stands, and farmers markets, and most of the markets do not require food safety plans or audits. Most small farmers are not aware of the risks, think they are farming correctly, and are faced by other problems such as fewer educators, shortage of time, and a focus on solving food production problems rather than food safety problems. So the key to implementation of food safety at the small-scale farmer level is outreach and education to the farmers to increase their understanding of food safety. Once they understand risk, initiate implementation.

"Considerations and Challenges of Implementing GAPs by Small Scale Growers" was presented by Melissa Mundo, Food Safety Coordinator, Duda Farm Fresh Foods, Oxnard, CA. There are three primary reasons that small scale growers would want to implement GAPs: first, to gain a greater share of the market; second, to avoid making people sick; and third, because, as the growers know, regulations at the small scale are inevitable. Primary roadblocks for small-scale growers to implement GAPs are lack of time, money, and motivation; and the growers have many other pressing topics such as production, labor, environment, etc. Small-scale farmers do not like to waste time and money and they do not like multiple audits. But once informed, small-scale farmers are always willing to do food safety programs with the help of experts. Giving valid data to small-scale farmers to make them understand the need for food safety programs is the best approach.

"Tomato GAPs – Mandatory vs. Voluntary: What's the Best Route?" was presented by Martha Roberts, North Florida Research and Education Center, University of Florida, Quincy, FL. Roberts started by reviewing the various foodborne outbreaks associated with fresh produce and then explained the stages of development of T-GAPs in the past years. The main focus was whether mandatory or voluntary regulations were better for achieving food safety. She pointed out that mandatory regulation has more credibility, is less controlled by the industry, and is more difficult to change. Voluntary regulation, on the other hand, has less credibility, is more controlled by the industry (no regulatory controls), and is easier to change or revise. Florida has become the only state with a mandatory food safety inspection program for produce, and California is the state where Voluntary T-GAPs are practiced. Since implementation, California has an increasingly good record of compliance and cooperation with partnering organizations.

S11 – What's Been Keeping You Up at Night? – Selected Unanswered Food Safety Questions *Clyde Manuel and Lillian Hsu*

Ron Schmidt of the University of Florida opened the symposium by discussing the increase in raw milk consumption, which many individuals feel to be a natural approach to nutrition. Many raw milk alliances exist, the largest of which is the Weston A. Price Foundation, which has put out a great deal of "propaganda type" material. Raw milk remains a risk. In 2010 alone, there have been 10 outbreaks in 6 months. The raw milk movement is not going away. Science groups are currently collaborating to determine how to cope with this movement.

Lee-Ann Jaykus of North Carolina State University discussed what's next concerning foodborne viruses. Human enteric viruses such as norovirus and hepatitis A virus are still of main concern. She noted that RNA viruses are prone to genetic diversity, which can lead to emergence of new (potentially more virulent) strains. Multiple strains of the same RNA virus have recently been implicated in several cases. She also indicated that there are many poorly understood agents implicated in food, and highlighted the need for additional research in this area.

Joe Meyer of Kellogg Company gave a presentation on auditors for food establishments. He began by discussing the differences and benefits of different audits. He then noted several things that impact audits, including auditor behavior and facility constraints. Next, he mentioned how audits can provide a snapshot of your facility but cannot provide a measure of employee engagement and company culture. Joe closed by noting the importance of trust when building a relationship with your auditor.

The fourth speaker, Loralyn Ledenbach from Kraft Foods, focused on what a certificate of analysis (COA) truly means. A COA guarantees that the specific sample tested is safe in terms of specified pathogen when a particular test methodology is used at a given time. Insufficient sampling, inappropriate testing methodology, or re-contamination after sampling may affect whether or not the bulk product is actually safe. Thus, COAs should be a confirmation of safety, not the only assessment of safety.

The fifth speaker, Dr. Robert V. Tauxe, CDC, addressed the difficulties in identifying emerging foodborne pathogens. Specifically, symptoms of foodborne illnesses are often similar despite different causative agents. Moreover, with intercontinental travel, new pathogens are introduced into environments where they previously did not exist. Additionally, some pathogens might have zoonotic origins. Therefore, it is difficult to identify a specific pathogen, and a systematic approach using public health methods, knowledge from outbreaks in other countries, and scientific collaboration is necessary.

The final speaker, Daniel Skrypee, from Kraft Foods, provided insight into the need for, and the difficulties in setting, appropriate allergen thresholds for food products. He recommended a science/biological-based approach to setting allergen thresholds, more effective sanitation methods to remove allergens and prevent cross-contamination, and more meaningful labeling of allergens that might be present in a food. These efforts might allow for fewer food recalls and increased confidence from the allergic consumer sector.

S12 – Flour Food Safety: The Changing Landscape – *E. coli* O157:H7 *Sommer Wild and Travis Chapin*

Joe Shebuski (Cargill, Plymouth, MN) opened the session with a presentation providing an overview of the flour milling process, "The microbiology of and risks from flour." As described, the standard milling process reduces flour's microbial load by 90–95%; however, no processing step specific to pathogen reduction has ever been designated. Pathogens, therefore, may be present

in raw flour. To date, no data has been published to support the presence of *E. coli* O157:H7 in flour; however, recent outbreak investigations have led to the necessary exploration of flour as a potential vector for foodborne illness. To address this concern directly, Nestlé recently underwent an investigation to determine the presence of *E. coli* O157:H7 in flour from over 32,000 samples. Results from Nestlé's investigation suggest routine testing for *E. coli* O157:H7 may not be particularly meaningful or practical; rather, guidelines supporting periodic monitoring of flour as a raw product may be more cost-effective and beneficial. In conclusion, flour is a safe food ingredient when consumed as intended but is not a ready-to-eat product.

Tim Jackson (Nestlé, Glendale, California) discussed the importance of product validation in both consumer safety and consumer confidence in "The transformation of specifications for flour and verification testing to ensure compliance." When flour is used in ready-to-cook products, the cooking instructions for consumer use must be validated. Thermal processing conditions must be validated when flour is used in ready-to-eat products. It is also important to recognize the flow of source pathogens in the processing environment and consider zoning, traffic flow, and exposure to moisture. During verification of flour, it is important to take into account both the organoleptic quality of flour and the safety of flour for use. An investigative sampling plan for untreated wheat flour revealed that coliforms and APC are not good indicators in flour, as the results were widely variable.

To close the session, Ben Warren (ConAgra Foods, Omaha, Nebraska) presented "One Solution: Manufacturing RTE Flour." There are several challenges involved in the microbiological testing of flour, including infrequent supplier testing, the presence of storage pests during holding, and the complexity associated with lot mixing. For this reason, various heat treatments for mitigating microbiological risks in wheat flour were discussed. Heat is used during the milling process, although not historically for pathogen reduction. In total, less than one percent of the total volume of flour is heat-treated for pathogen reduction. Applications for heat-treated flour include ready-to-eat foods and other products consumers may eat raw although they are intended to be cooked, such as frozen pizzas, cookie dough, and cake mix. To account for all flour used in ready-to-eat products and products that consumers may eat raw, it is estimated that 6.34% of the total volume of flour should undergo heat treatment. Post-treatment considerations should focus on maintaining the microbiological integrity through the process. In conclusion, both the demand for microbiological testing of flour and the demand for treated flour will increase.

S13 — 'Ingredient' is a Ten-letter Word for Financial Disaster

Jack Ofori and Gerardo Guzman

According to a survey by GMA and Deloitte involving 54 companies comprising both manufacturers and retailers, recalls resulted in a loss of \$500 billion in sales. Product recalls have doubled since 1999. For example, from 2007 to 2008, food and beverage recalls increased

by 60%. The increase in the number of recalls is as a result of tighter regulations and improved methods that allow for early pathogen detection. Cost of recalls in terms of brand damage and human costs are enormous. For example, after a recall, stock drops by as much as 22% within weeks, depending on how the recall is managed. It may take a company several years to recover their trust and identity. Implicated pathogens in these recalls are usually *Salmonella* and *E. coli*, with *E. coli* being the major culprit. Examples of outbreaks involving *Salmonella* are those related to peanut butter (Peter Pan brand, from ConAgra), and peanuts (Peanut Corporation of America). Examples of outbreaks involving *E. coli* are spinach (Dole), and contaminated lettuce (Wendy's). Over 25 *E. coli* outbreaks since 1995 have resulted in illnesses and several deaths. Some of the reasons for outbreaks are lack of control, insufficient HACCP and non-validated interventions.

Current trends in the consumer culture (convenience-orientation and health consciousness), industry evolution (centralization, ready-to-eat meals and a multi-player food chain), and demographics (aging and weaker populations), create a desirable recipe for foodborne infections and their attendant lawsuits. According to data, 76 to 300 million foodborne infections occur annually, with an estimated medical cost of \$64 billion. The thousands of food products available to the consumer leads to potential safety risks, compounded by lack of regulations and the scenario in which technology is ahead of regulations. There are 200 known diseases that can be transmitted via food, and as many as 80% of foodborne infections have unidentifiable agents. Ways in which companies can avoid outbreaks are to have state-of-the-art food safety practices; a strong inventory management program; certificate of analysis from suppliers; produce in discrete lots; and a bioterrorism act. Companies must strive for an agreement between their product and what they advertise. As far as the legal framework is concerned regarding suits against food manufacturers, retailers or service, the plaintiff must show one or more of four things, namely, duty, breach, injury and causation. For causation, some of the things the plaintiff must prove are simultaneous illness, the same symptoms, and microscopic examination results that correlate with the illness. In the case of breach, the plaintiff would have to prove such things as negligence and violation of law. The legal reality focuses on the product and not the conduct; hence, the only defense is prevention. The industry is liable if (1) the food is unsafe or defective and (2) the food causes injury. In the future, it is anticipated that there will be more aggressive use of legal theories, better DNA fingerprints, new causation links for chronic diseases and regulatory reforms. The way for a company to protect itself is to transfer risk.

S14 — National Institute of Food and Agriculture Showcase

Helen Barela and Achyut Adhikari

In an overview of National Institute of Food and Agriculture (NIFA) Food Safety-Related Programs and Activities, Isabel Walls, National Institute of Food and Agriculture, USDA, Washington, D.C., pointed out that

the mission of NIFA includes advancing knowledge in agriculture, environment and human health and well being by supporting and funding research in those fields. It funds not only food safety research but also a broad range of agriculture development work in the field of climate change, renewable biofuels, human nutrition and food security. In food safety, emphasis was given to projects working to reduce/eliminate pathogens and toxic chemicals in the food chain. In 2010, the Coordinated Agricultural Project (CAD) was started, which will fund research for up to five years in the fields of STEC and foodborne viruses.

In an example of Research Program Funded by NIFA. Understanding Foodborne Viruses: The Results of 15 Years of USDA CSREES Funding, Lee Ann Jaykus, Dept. of Food, Bioprocessing and Nutrition Sciences, NCSU, Raleigh, NC, discussed the funding used on design and validation of methods to detect viral contamination in a variety of food matrices. Some of the findings were: Long term persistence of novo viruses in foods, ease of transfer of viruses from surface of foods, poor efficacy of alcohol-based hand sanitizer to control human novo viruses and conceptualization of viruses transmission in the food preparation environment. Current projects involve identification and control of microbial hazards in imported fresh fruits and vegetables, and foodborne novo viruses in elder care facilities.

In an example of Education Program Funded by NIFA Development of Education Programs for Susceptible Populations and Their Caregivers, L. Medeiros, Dept. of Nutrition, Ohio State University, discussed a risk information seeking and processing model (more complex than Health Belief Model). This model can be used to teach consumers proper food safety practices, but there is no guarantee of behavior modification. Several developments of food safety Web pages, courses and focus group outcomes were discussed. Findings included the fact that participants preferred in-depth practical information and that people were most likely to go to their mother for food-related information. A key concern was not just training people but the sustainability of the training; in other words, the likelihood that participants will continually and consistently practice proper food safety behaviors after receiving training.

In an example of Extension Program Funded by NIFA-Successful Extension Program, B. Gravani, Dept. of Food Science, Cornell University, discussed a study that was conducted, along with creation of a growers' guide. This guide was a 28-page color booklet with specific recommendations, written in two languages—English and Spanish. Many growers did not feel comfortable teaching hygiene, nor did many of them view it as a part of their responsibility. During this presentation, a technique of curriculum was discussed with the purpose of appealing to various audiences. In particular, photo novels were used to educate farm workers about farm worker hygiene. In a survey, it was found this was a preferred and more effective method of delivery compared to traditional educational curriculum techniques that simply list facts/information.

S15 — Risk-based Design of Thermally Processed Foods — A Look into the Future *Oscar Rodriguez and Anh Nguyen*

Dr. Tim Jackson from Nestle North America (Glendale, CA, USA) opened the session with the talk "Risk Assessment Approaches to Setting Thermal Processes in Food Manufacturers." The presentation was developed from outcomes of the International Life Sciences Institute (ILSI) Europe workshop under a similar title. From the workshop, it was agreed that there is a consensus in the food industry about what Safe Processing Standards are. They provide manufacturers with "a safe harbor" to produce microbiologically safe food, with the potential to improve quality and efficiency by milder treatments. The International Commission for Microbiological Safety of Food (ICMSF) conceptual equation was used to illustrate how better management of each parameter may lead to less conservative estimates of Performance Objective (PO) and Food Safety Objectives (FSO). Therefore, Dr. Jackson concluded that a combination of more process parameters and modeling facilitates obtaining process estimates. The next step would be education and training of industry and regulatory authorities in the use of risk-based approaches.

Dr. Alejandro Amezcua from the Safety and Environmental Assurance Centre of Unilever (Bedford, UK) shared the company's trial in using a risk-based approach for wet soup, in a speech titled "Practical Application of a Risk-based Approach for Reduction of Thermal Processes for Wet Soup Products." The trial made use of the ICMSF conceptual equation, with a focus on spore inactivation, and took into account several variables, from microbiological quality of raw materials to practical conditions of the processing lines. By this approach, estimates from the model were much improved and thermal processing conditions of the soup products were decreased without compromising product safety. These positive results encourage the scaling-up study and pilot plant trials for wet soup products.

The last talk, by Dr. Nathan Anderson of the Division of Food Processing Science and Technology (NCFST/FDA, Washington, D.C., USA), was "NCFST/FDA White Paper on FSO Application for Low-acid Canned Foods (an Alternative to the 12D Concept)." The driving forces behind this work have been consumers' increasing demands for safe foods and development of novel processes. Dr. Anderson showed that it is possible to achieve new and microbiologically safe processes by looking more deeply into each term of the ICMSF equation. Therefore, this approach allows the comparison of different control measures to ensure commercial sterility; it is the basis that the authorities and industry can use to assess acceptability of existing and new processing techniques; and it establishes a roadmap for decision making.

S16 — Significance and Detection of STEC or Non-O157:H7 *E. coli* *Laura K. Strawn and Ravirajsinh Jadeja*

In a talk titled "The Epidemiology of Shiga Toxin-producing *Escherichia coli* as Human Pathogens," Dr. Fratamico discussed the importance of shiga toxin-producing *E. coli* other than *E. coli* O157:H7 and the

increasing number of outbreaks associated with them around the globe. Dr. Fratamico started her lecture with a brief description of various shiga toxin-producing *E. coli* and their virulence factors and then highlighted major sources associated with human and cattle infections. At the end Dr. Fratamico emphasized the need for further research in this area, as many virulence factors associated with these organisms are known but the combinations of factors which make some Shiga-toxin-producing *E. coli* so virulent are yet to be discovered.

Dr. L'Etoile from bioMérieux, in her presentation titled "Development of Novel Methods for the Detection of STEC," spoke on current and new methods available to detect STEC. She started with the current EU approach to identifying STEC, which involves serological testing for five major serological groups, followed by PCR. This traditional approach is labor-intensive and time consuming; bioMérieux is working on a phage-based immunoseparation technique that is very specific and can be utilized after enrichment to isolate target organisms from a large background flora. At the end, Dr. L'Etoile emphasized the need for development of new methods for STEC detection.

Alex Gil, of the Bureau of Microbial Standards, Health Canada, presented a brief review of Canada's approach to VTEC detection in his lecture titled "Canada's VTEC Research Network." In this lecture, he discussed Canada's VTEC research network and varieties of VTEC detection techniques developed and utilized by this network.

Stefano Morabito, from the Dipartimento di Sanita Pubblica Veterinaria e Sicurezza Alimentare, Istituto Superiore di Sanita in Rome, Italy, spoke on STEC in the EU. He began with a discussion of STEC's zoonotic origins. Overall, the talk stressed the importance of monitoring STEC and how that was key to controlling outbreaks.

The next talk, by Michael Cooley of the Western Regional Research Center, USDA, Albany, CA, gave an overview of his team's environmental sampling project that collects water, produce, and fecal and soil samples. Of the 4200 isolated STECs, 2/3 are generally stx II positive. Also, the researchers have noted some persistence in the soil. Mr. Cooley discussed what the initial sources of contamination could be.

The session concluded with a panel discussion led by Jeff Farber of Health Canada. The audience had many questions for the panel, which led to an interesting, lively debate on the future of looking at other STEC serogroups in industry, rather than just O157.

S17 – The *Salmonella* Smorgasbord: The Problem with Too Many Choices Martha Kimber and Armitra Jackson

Salmonella has been a persistent problem in the food industry. This symposium presented a variety of topics and conundrums surrounding *Salmonella* and food safety. Paula Fedorka-Cray and Roger Cook, who invited a wide range of researchers and industry professionals to weigh in on the topic, organized this session. The first talk, "Niche Displacement: Can You Really Find a Renter?" was presented by Paula Fedorka-Cray (USDA-ARS-BEAR, Athens, GA, USA), who discussed the need

for a session on this topic and some of the challenges involved in studying such a complex issue.

This talk was followed by "Country Specific Serotypes: Why Some *Salmonella* Never Seem to Travel," presented by Julian Cox (The University of New South Wales, Sydney, NSW, Australia), who discussed how some serovars seem to be indigenous to certain locales and offered a few hypotheses on how this might occur.

"The Slugfest – Why Some *Salmonella* Outcompete Others," presented by Jason Richardson (Coca Cola, Atlanta, GA, USA), continued the discussion of the wide variety of *Salmonella* serovars and the inherent difficulties and limitations in isolating them.

Bob Reinhard's (Sara Lee Corporation, Downer's Grove, IL, USA) presentation was entitled "*Salmonella* – A Regulatory Challenge for Industry?" This presentation focused on the public health significance of a *Salmonella* outbreak. The establishment of the White House Food Safety Working Group was discussed and an overview was given of its three principles (prevention of harm to consumers, enforcement and data analysis, and identification and stopping of outbreaks quickly). Reference was made to the primary objectives of industry as related to the control of *Salmonella*. These objectives were to: (1) produce a safe product, (2) validate operational conditions, and (3) identify changes in sanitary conditions (through environmental monitoring) that may lead to the contamination of product. Regulatory challenges such as regulation of environmental monitoring, sanitation and preventative controls were also discussed.

Shawn Bearson (USDA-ARS-NADC, Ames, IA, USA), in a talk entitled "A Blast from the Past? Why We Need to Build a Better Host," discussed why *Salmonella* contamination is such a difficult problem to solve. In addition, the prevalence of *Salmonella* in U.S. swine operations was discussed. Challenges associated with identifying which animals are carriers (and therefore can become shedders) were highlighted. A summary of research that involved low shedder swine versus high shedder swine was given.

The final presenter, Mark E. Berrand (USDA-ARS-BEAR, Athens, GA, USA), spoke on "*Salmonella* in Broiler Processing – Serotype and Chemical Processing Aids." This presentation focused on the role of USDA-FSIS in regulation of the presence of *Salmonella* on broiler carcasses. Some of the limitations associated with culture methods were discussed. In addition, allowable antibacterial chemical processing aids and research on the efficacy of these aids were described. An overview of a 2005–2006 study that involved the use of many different chemical inventions to control *Salmonella* was given.

S18 – European Concept on Hygiene Monitoring in the Food Supply Chain – "Farm-to-Fork" Concept in Practice Jack Ofori and Jessica Butler

The EU, which was formed in 1993, comprises 27 member states with 500 million inhabitants. The EU was set up to eliminate frontiers and to provide a common market for goods and services. Within the EU, there are 282 border inspection posts. The EU has a comprehensive food safety strategy that is responsible for ensuring

not only safe food but also animal health and welfare as well as and plant health. The system ensures that food is traced from the farm to the table. High standards are set for both domestic and imported foods. The food safety system is based on three core elements, which are legislation (safety of food and feed), sound science (advice on decision making) and enforcement and control. The system is based on a precautionary principle. The objective of the symposium was to discuss (1) EU legislative requirements and control and (2) how EU food producers fulfill the legislative requirements. Germany was used as an example to illustrate the food safety system within the EU. Emphasis was placed on Lower Saxony, a major agrarian center in Germany. Feed and food control in Germany is handled by two departments, namely (1) Federal Ministry of Nutrition, Agriculture and (2) Federal Office of Consumer Protection and Food Safety. The former deals with risk evaluation and communication whereas the latter handles risk management. Lower Saxony is the biggest agrarian location in Germany, with a population of 8 million. It has 2.7 million cattle, 9.7 million pigs, and 88 million poultry. The area has about 6000 farms and 3000 feed producers. Lower Saxony includes 42 local veterinary and food control authorities, which are responsible for the inspection of feed and food businesses, and slaughterhouses. These authorities perform three tasks: consulting and service tasks, execution tasks and analysis. Consulting and service tasks deal with the institution of concepts for consumer protection. Execution tasks handle surveillance issues and approval for such things as setting up of businesses and animal experiments. Analysis involves testing of products and the development of improved methods. Within Lower Saxony, 5 food products are sampled per 1000 inhabitants per year. Most of the samples tend to be fresh meat and meat products, which account for 18% of food samples investigated. Defects that are commonly observed are hygiene (major defect), HACCP problems (lack of staff training), mislabeling, poor layout, and defects other than microbiological in the composition of the product. Food items usually implicated in complaints are meat and meat products, alcohol, egg and egg products, sweets, and fats and oils. Some of the problems associated with meat and meat products are ham imitation, less meat, and added water. The German Institute of Food Technology also provides support to producers and regulators in terms of product and process development, quality management, chemical and microbial analysis, research and consulting. The watchword within the EU setting is that the onus is on the producer to ensure the safety of the food that it puts on the market.

S19 – International Food Safety Policies

Cancelled.

S20 – Food Packaging Technology: Opportunities and Challenges That Enhance Food Safety *Karleigh Huff and Srinivasarao Bandla*

This session covered food safety with respect to the world of food packaging. The first speaker, Joseph Hotchkiss of Michigan State University, discussed opportuni-

ties to enhance food safety using packaging technology. Food packaging may reduce the risk of hazards in food such as loss of nutritional value, presence of pathogens, trace toxicants, and physical hazards. For example, food packaging allows for a modified atmosphere to reduce growth of spoilage microorganisms and aerobic pathogens. Antimicrobial additives that absorb microorganisms or interfere with their growth may also be added to packages. Challenges in food safety also occur with some food packaging technology. For example, a package with a reduced oxygen atmosphere may suppress growth of aerobic pathogens, but also allow anaerobic pathogens to grow with little competition.

John Spink of Michigan State University spoke of current food packaging technologies and their impact on minimizing the risk of intentional tampering and bioterrorism. This presentation focused on food fraud, especially economically motivated crimes. Constructing countermeasures to intentional food adulteration is an involved and complicated process. It includes focusing on the root of criminal risk factors through intelligence, and harmonizing the efforts of the many parties involved with preventing, detecting, or responding to the crime.

Forrest Bayer of The Coca-Cola Company presented a seminar on packaging materials and associated risk assessments, challenges, and global regulatory approaches. Packaging migrants and their association with food was a major focus. So long as there is packaging, there will be migrants. Public perception of migrants in food is often formed through misinformation, and conclusions about migrants are shaped without scientific fact. The importance of educating the consumer was emphasized.

The regulatory process used by the FDA to ensure the safety of food packaging materials was discussed by Michelle Twaroski, from the Food Packaging Division of the FDA. Food packaging material is viewed as an indirect food additive, because materials in the packaging migrate into the food. The processes that must be followed when applying to the FDA with a new material include chemical assessments, exposure assessments, and toxicity assessments. This information is used to establish an acceptable daily intake amount that can be consumed with reasonable certainty that no harm will result.

The final speaker, Robert Brackett, Vice President and Director of the National Center for Food Safety and Technology, covered the future of nanotechnology in packaging. Dr. Brackett spoke specifically of nanoparticles and their potential in food packaging, including functionality, sustainability, and antimicrobial potential. Nanoparticles have unique properties that often differ from those of their larger counterparts. For this reason, more regulatory scrutiny is necessary to assure the safety of nanoparticles in packaging. Open communication is also important for nanotechnology to be accepted by the public.

The session concluded with a question-and-answer panel, with the guest speakers monitored by Albert Elboudwarej of the National Food Laboratory. The panel encouraged engaging consumers with issues involving food-packaging technology. Food safety is linked closely with food packaging, with great potential to have a positive impact.

S21 — Surveillance for Foodborne Diseases: Challenging Phases

Pardeepinder Kaur Brar and Jack Ofori

Marguerite Neill, of the Division of Infectious Disease, Brown Medical School, and Memorial Hospital of Rhode Island, Pawtucket, RI, defined surveillance as an on-going process in public health. Surveillance serves many purposes, as it describes disease patterns over time, identifies outbreaks or unusual occurrences, and aids in setting priorities for prevention and control. Starting from the time of John Snow, investigator of cholera in London, great progress and development have occurred in the methods of investigation. The use of computers has replaced the heavy paperwork done in past and has speeded up the process of surveillance.

Andrea Ellis, Dept. of Food Safety, Zoonoses and Foodborne Diseases, World Health Organization, Geneva, Switzerland, spoke on how globalization of the food supply introduces new challenges for food safety. Molecular subtyping and PulseNet, which helps greatly in solving major problems, are still unavailable in many countries; this affects all countries, as we are all interlinked. Some key areas that need to be considered are what diseases should be under surveillance, enhancing the capacity to do effective surveillance, and communication of information on foodborne threats to allow appropriate actions.

Timothy F. Jones, Dept. of Health, Tennessee, USA, explained the challenges faced by the Tennessee Health Department in foodborne investigation. Multistate outbreaks are increasing in number as compared to the past. Food coming from different parts of the world can be one cause. Changes in lifestyles of people and a preference for eating in restaurants are other factors indirectly affecting the number of outbreaks. Time is the major factor that affects surveillance. Pathogen-specific surveillance, notification and complaint systems, submitting all isolates, an outbreak net, and rapid response teams will help in resolving these issues.

John Besser, Centers for Disease Control and Prevention, Enteric Diseases Laboratory Branch, Atlanta, GA, mentioned various non-culture emerging methods. Pulse Net and molecular subtyping are remarkable revolutions, which have helped us in understanding various foodborne diseases and vehicle previously unknown. The Outbreak Net Sentinel Sites (OSS) system and Crypto Net, coming now, will play much bigger roles in food safety. Culture methods are still used in many developing countries because of their poor economic conditions. New subtyping methods will help in filling in knowledge about disease in different parts of the world.

G. Balakrishna, National Institute of Cholera and Enteric Diseases, Beliaghata, India, pointed out that the problem of cholera has started increasing again. Zimbabwe is a typical example of a country in which cholera is coming back. Choldl Net, started in March 2009, a network that helps in strengthening lab capacity for monitoring and rapid detection of cholera, a lab network for monitoring cholera and other diseases, which operates under the patronage of WHO. Challenges faced at this level include the fact that no single lab has the capacity to address all health hazards. To network labs, Choldl

Net establishes which is important as well. Problems of mixed pathogens and multidrug resistance are other issues in developing countries. Data show that around 8.795 million children died in 2008 in Africa and SE India and that the main reasons were pneumonia, malaria and diarrhea. Diarrhea has emerged as a major issue among children. Cholera portal is another network, that is on the way. The idea is to have all data from cholera researchers together at one place.

S22 — Food and Food Environment Test Considerations in View of Changing Regulations

Iryna Sybirtseva and Rachel McEgan

This symposium, on food and food environment test considerations in view of changing regulations, reviewed the present situation, looked at anticipated near-term regulatory changes, described consequences of pathogen and indicator testing, and provided important suggestions to the industry that would lead to a safer food supply and a less risky business environment. The session opened with Don Zink's (FDA) presentation on new and emerging food safety regulations related to testing, record access and the food registry. The speaker emphasized the importance of submitting the primary and subsequent reporting within 24 h. The 125 primary (industry and voluntary) report Reportable Food Registry (RFR) entries encompassed seven categories of food safety hazards: *Salmonella* (37%), undeclared allergens/intolerances (33%), *L. monocytogenes* (13%), uneviscerated fish (3%), foreign objects (2%), *E. coli* O157:H7 (2%) and other (7%).

Mark Moorman's (Kellogg's) presentation was devoted to the importance of science-based environmental testing programs. The targets for the environmental testing (non-microbial indicators and indicator microorganisms), testing sites, terminology and zones from 1 to 4 were discussed in detail. The wrong approach to environmental testing would result in greater consumer and business risk.

John Lemker (K & L Gates) discussed how new and anticipated regulations will impact industry-testing programs. The focus was mainly on FDA sources and regulatory authorities including statutes, regulations, FDA guidance document, compliance programs, inspections, and FDA enforcement, such as a warning letter and/or limitations.

Robert Brackett (Grocery Manufacturers Association) presented a discussion on whether or not to test in certain situations. He emphasized the importance of knowing why, what, how, when, and who before a sample is collected and tested. He also noted that it is important to consider how the data could be used, and that one should consider how the data could be used in the future, especially in relation to the Freedom of Information Act.

Timothy Freier (Cargill) discussed the usefulness of indicator organisms. He presented the argument that indicator organisms are good to use for watching trends, but that there is no such thing as a "perfect indicator." He elucidated many of the benefits of using indicator organisms, including: lower cost, safety, increased coverage, regulatory aspects, and decreased testing time.

Masi Rajabi (ABC Research) discussed the use of molecular assays for use with *Listeria* species. She described the usefulness of knowing the genetic fingerprint of a pathogen found within the processing facility; this can be used as a problem-solving tool.

The final speaker in this symposium was Jeffrey Kornacki (Kornacki Microbiology Solutions), who discussed possible indicators for screening for possible enteric contamination of foods. This talk focused primarily on dry foods and the use of thermotolerant *Enterobacteriaceae*. He suggested, as did many of the other speakers, that more testing is not always the best answer.

S23 – Way before the Fork: Impact of Pre-harvest Management Programs and Supply Chain Influences on the Control of Shiga Toxin-producing *E. coli* Contamination in Beef *Ravirajsinh Jadeja and Karleigh Huff*

Dr. Dickson of Iowa State University, Department of Animal Science and Interdepartmental Program in Microbiology, spoke on "Risk Assessment of *E. coli* O157:H7 and other STEC on the Farm." In his lecture, Dr. Dickson talked about inconsistencies between traditional and non-traditional farming methods, as a result of which it is very difficult to keep track of routine practices. Another important issue related to risk assessment is lack of knowledge, especially regarding prevalence of non *E. coli* O157:H7. There are many questions related to non *E. coli* O157:H7 survival and infections, such as populations in cattle, whether there are any seasonal patterns for shedding, etc. At the end, Dr. Dickson emphasized the need for comprehensive food safety programs, that cover all components of meat processing and stressed the need for further research in this area.

Dr. Loneragan, Texas Tech University presented an interesting talk on the topic "What's Working and What is Not Working to Reduce STEC Contamination of Beef with Pre-harvest Management Practices, and Knowledge Gaps." In this presentation, Dr. Loneragan referred to a decrease of *E. coli* O157:H7 infections and then an increase in outbreaks during the last 4 years. He highlighted the need for monitoring the whole process instead of the individual compartments.

Dr. Reid, Veterinary Medicine, University of Glasgow, discussed Scotland's approach to reduce STEC in his talk titled "Global Perspective on Pre-harvest Food Safety to Minimize the Risk of STEC Contamination of Beef Product." Dr. Reid mainly discussed how educational programs and increased traceability helped to reduce STEC prevalence in beef products.

David Smith of the University of Nebraska-Lincoln covered control strategies aimed at reducing the prevalence of *E. coli* O157:H7 in cattle feces. Emphasis was placed on the strong seasonal patterns that are observed in human infections, with shiga toxin-producing *E. coli* (STEC) in correlation with fecal shedding by cattle in the summer months. Reduction strategies are currently focused on reducing the duration of infection in cattle by making the gut unfavorable to STEC. Pre-harvest interventions may work, but effectiveness of interventions through the entire beef production process still needs more research before these interventions should be used.

The French approach to pre-harvest food safety programs to minimize the risk of STEC contamination in meat was discussed by Patrice Arbault of BioAdvantage Consulting. Regulations in France have emphasized the need for HACCP and a preventative approach based on good hygienic practices. Overall, there are no simple answers to this food safety issue, although France is putting an emphasis on education.

The final presenter, Patricia Griffin from the Centers for Disease Control and Prevention, explained the impact of *E. coli* O157:H7 on public health and the possible impact of pre-harvest control programs in cattle operations in decreasing human infections. Overall, beef is the most common vehicle for human infections of *E. coli* O157:H7, followed by leafy greens. Most outbreaks can be traced to the home (45%), followed by restaurants (20%). It was once again emphasized that STEC infections are most prevalent in the summer months and that pre-harvest control programs should focus on beef and leafy greens.

S24 – Advances in Detection Technologies to Address Food Safety and Food Defense Needs *Srinivasarao Bandla and Praveena Sunkara*

Alexander Simonian from the National Science Foundation, Arlington, studied evanescent wave-based sensors for detecting bio-threat agents and toxins. He says that these detection technologies are a key for prevention and identification of problems related to food safety. They take less time than the current methods (pre-enrichment, selective enrichment, isolation, and enumeration). Biosensor technology incorporates a biosensor in a physical sensor. There are two biorecognition strategies: enzyme based assays and affinity based assays (antibodies). Phages are more reliable than antibodies because antibodies are degraded with time. With the phage approach, 10^4 CFU/ml can be detected. *S. aureus* and *Campylobacter* were selected for this study because they have shorter incubation periods. He concluded that evanescent based biosensing is a powerful technology for biothreat agent and toxin detection. It can detect 10^3 – 10^4 CFU/ml without pre-enrichment. Further research is needed for efficient probes and detection.

Dr. Lim talked about Rapid Sample Processing and Detection of Foodborne Pathogens. He discussed sample preparation methods for different foods, such as ground meat, apple juice, produce wash, water (potable, recreational), environmental samples (powder) and human specimens (blood, saliva, feces). He talked about the rapid detection methods using handheld lateral flow immunoassays, Raptor (evanescent wave biosensor), MSD PR2 (electrochemiluminescence), GloMax (ATP-Bioluminescence), and Bio-Plex 200 (flow cytometry). He discussed the procedure of recovery of live bacteria and PCR confirmation after biosensor assays such as orthogonal testing. He found a detection method that requires 2.5 hours for lettuce retentate.

R. Taitt, from the US Naval Research Institute, Washington, D.C. demonstrated preparation and multiplexed analysis of bacterial and toxic targets in spiked food samples. Mycotoxins are major agriculture contaminants that cause cancer, possibly Alzheimer's disease, etc. He concluded that flow cytometry can be used for

analysis of foods. Sensitivity is still an issue (milk is one of the problems). There are significant issues with sample matrices, especially with solid samples.

Dr. Bhunia discussed biochip/cell based sensors and light scattering sensors for measuring pathogens and toxins, especially *Salmonella* Enteritidis PT-1 in raw chicken and peanut butter and *E. coli* O157:H7. Detection of these organisms took 6–8 hours with laser light technology. He showed a video on how the laser light captures the colony from the petri dish and used laser light to show many pictures of different organisms. His future work will be on micro colony detection.

Dr. Applegate talked mainly about molecular sensor technologies to detect different microorganisms in food products.

S25 — Human Noroviruses: Attribution, Transmission, and Control

Jie Wei and Visvalingam Jeyachandran

Dr. Judy Greig, from the Public Health Agency of Canada, the first speaker of this session, spoke on "Foodborne Attribution of Noroviruses." Dr. Greig illustrated how noroviruses, a leading cause of non-bacterial foodborne illnesses, have a low infectious dose and can be transmitted through several routes. Furthermore, she demonstrated how different methodologies used for estimating norovirus outbreak infections can influence the results.

Dr. Suresh D. Pillai from Texas A&M University replaced Nigel Cook of the CSL, UK, who was unable to attend the session, and delivered a talk on "Integrated Monitoring and Control of Foodborne Viruses in the US Food Supply Chain." Dr. Pillai described the contribution of different routes of transmission on foodborne virus illness outbreaks in the USA. He emphasized the importance of genetic classification of foodborne viruses, molecular identification of noroviruses from different regions or states and their relevance in identification of the source of infection. The necessity of monitoring viral indicators and critical control points in the food supply chain were also outlined in this presentation.

Dr. Cristobal Chaidez from the CIAD, Culiacan, Mexico, spoke about the "Transfer and Control of Enteric Viruses on the Farm." His presentation focused on how farm activities in general could affect the enteric virus contamination of produce, especially bell pepper. He also demonstrated that good manufacturing/farming practices could reduce farm level contamination of produce.

Dr. Alvin Lee, from the National Center for Food Safety and Technology, presented transfer data for murine norovirus (MNV) from surfaces commonly used in food preparation. It was shown that the transfer rate was 34.8% from contaminated spigot to hand and 0.61% from hand to spigot. Hand washing 5–20 s with only water rinse can reduce MNV by 0.81 log, while wash with liquid soap and with foam soap caused 0.95 and 0.81 log reductions, respectively. Future study will focus on transfer from hand to produce or produce to hand, and model development for critical control and application to a variety of environments such as cruiseships and houses.

Dr. Moshe Dreyfuss, from FSIS, that spoke on transmission of human norovirus. Person-to-person transmission may occur in hospitals, schools, day care centers, cruise ships, hotels, airplanes, restaurants and picnics, and the number 1 source is in households where dipper is changed. In his opinion, food is a less likely source of norovirus infections than is person-to-person transmission, and foodhandlers are not necessarily the source of infections or outbreaks.

Dr. David Macinga, from Gojo, talked about the impact of sanitizers on infections, hand transmission and produce washing. Hands are important vectors in the spread of norovirus, and foodhandlers are more important for norovirus transfer than for transfer of bacteria. Norovirus can be transferred from fingers to food and to multiple surfaces. Different sanitizers such as Quats, hypochlorite, and organic acids have been used for surface disinfection. Human norovirus is more resistant to sanitizers such as bleach and quaternary ammonium than other, surrogate, viruses. Gloving is also an effective barrier to microorganisms.

S26 — Global Issues and Impact of Gluten Allergy and Celiac Disease

Matthew Ranieri and Karleigh Huff

This session was aimed at addressing the impact of gluten allergy and celiac disease and issues that arise on a global scale. The first speaker, Suzanne Teuber of the University of California-Davis School of Medicine, focused on a general understanding of celiac disease versus wheat allergy. Diagnosis of celiac disease is increasing, and it is estimated that nearly 1% of the population is afflicted. The best management for those suffering from celiac disease and wheat allergy is avoidance, and data is needed to determine an appropriate threshold for tolerable consumption.

The analytical methods in use for measuring gluten in foods were discussed by Samuel Godefroy of Health Canada. Methodology available to assess gluten content of foods includes enzyme-linked immunosorbent assays (ELISA), of which two methods are readily available. The Skerritt test and the R-5 test. Each uses a different antibody for the ELISA. Mass spectroscopy may be an alternative approach for detection of gluten in foods, but more research is needed before it should be implemented.

Steve Taylor of the University of Nebraska-Lincoln discussed gluten detection and the assurance of gluten-free status. It was stressed that individuals with a gluten allergy must avoid foods that contain gluten, but there are a number of definitions for "gluten-free." The definition proposed by the FDA states that foods containing gluten at < 20 ppm can be labeled "gluten-free." Many limitations to gluten testing exist. It is important that all foods be analyzed for gluten before being labeled "gluten-free."

While the impact of gluten allergy and celiac disease was discussed in the first three talks, Rhonda Kane (Food Labeling and Standards, FDA) covered the progression of the FDA's gluten-free food labeling rulemaking. Notably, in the near future, domestic food processors will be responsible for ensuring that "gluten-free foods" do not contain any prohibited grains (i.e., those containing gluten, such as wheat, barley, and rye) or more than

20 ppm of gluten. Such regulations will benefit the consumer by providing truthful, accurate labeling to support informed purchases. In addition to highlighting domestic food safety policy regarding gluten, the presentation allowed the audience to gain insight into gluten policy.

Roland Poms (International Association for Cereal Science and Technology, Vienna, Austria) presented "Gluten-free Foods – From Regulation to Risk Management: An EU Perspective." Effective in 2012, the EU will enforce a 20 ppm detection threshold for gluten in products labeled "gluten-free." Unique to the EU, they will also allow the use of "very low gluten" for foods containing <100 ppm gluten.

The final presentation, by Glenn Black (Science Operations, GMA, Washington, D.C., USA), entitled, "Challenges of Gluten Risk Management by the Food Industry," highlighted the complexity of our food system, and some critical steps food processors must be actively involved in, including: control of the supply chain, internal Good Manufacturing Practices, and final product validation. As the gluten-free market continues to grow, food processors will be challenged with supplying consumers with wholesome foods that meet a high level of standards to ensure the safety of gluten free foods.

S27 – Food Safety in Developing Countries

Marianne Fatica and Debjani Mitra

This technical session was sponsored by the IAFP foundation, organized by Ewen Todd and convened by Judy Greig. The first presentation, on *Food Safety in U.A.E. and Dubai*, was given by Bobby Krishna from Dubai Municipality, Food Control Department, Dubai, U.A.E. The speaker stressed that food safety is a responsibility shared by all. Most food standards in Dubai are based on GCC (Gulf standards). Dubai has a well-established food inspection system and fully equipped food-testing laboratory, but epidemiological data and surveillance programs are lacking. In many food poisoning cases in Dubai, the cause is never confirmed; this is worsened by media speculations and confusion in the market. Dubai is currently working with WHO to look into these issues.

The second talk of the session was *Food Safety Issues in Egypt*, given by Cameron Smoak from Georgia Dept. of Agriculture, Madison, GA, USA. Critical problems in Egypt include lack of set standards, lack of clear administrative action against non-complying companies, and lack of standard sampling procedures, among others. Food inspectors are paid low wages and there is some corruption as well. Egypt needs enhanced food safety for the tourist industry and a single food safety agency. The push for food safety in Egypt is from companies that want to attract tourists.

The next talk was *Cholera in India*, given by G. Balakrish Nair from the National Institute of Cholera and Enteric Diseases, Kolkata, India. The speaker emphasized that cholera is an important disease and information about it needs to be spread. Poverty and unsafe water are the main drivers of cholera. The perception that cholera has been eradicated is not true. There is also a reservoir of *Vibrio cholera* in the gulf region in the US, where unhygienic conditions can trigger cases of cholera. Fifty-six countries reported cholera outbreaks to WHO in 2008.

The next talk was *Food Safety in Latin America and the Caribbean: Surveillance and Control*, presented by Raymond Dugas from the Pan American Health Organization (PAHO), which focuses on the disease surveillance, food safety, and animal health concerns of the Caribbean, Central America, and South America. The organization works to improve food safety through risk assessment, assessment of global and regional food policy, producer and vendor training, and foodborne disease surveillance. The future goals of PAHO include integration of food security issues, health education, and review of food safety strategies to further improve food safety in the regions.

The final presentation was *Food Safety Issues in China* by Peter Ben Embarak, WHO Dept. of Food Safety, Zoonoses and Foodborne Illness, Beijing, China. The presentation focused on improvements in food safety laws in response to deliberate contamination of milk powder with melamine in 2008. The 2009 Food Safety Laws involve risk-based approaches, allowing consumers to access information, and creating a National Food Safety Commission. Food producers are now also responsible for their product safety and required to be licensed, to have a food safety plan, and to maintain traceability and record keeping systems.

S28 – Foodborne Disease Outbreak Update

Ravirajsinh Jadeja and Sarah Markland

Jeffery High presented an overview of a rare *Salmonella* Rissen outbreak investigation in his talk titled "Multi-state Outbreak of *Salmonella* Rissen Associated with Ground White Pepper—The epi investigation." This investigation started when PulseNet reported a sudden spike in *Salmonella* Rissen infections in 5 states – California, Nevada, Oregon, Washington and Idaho. After a lengthy investigation and many individual interviews, agencies were able to associate this outbreak with Asian restaurants. After investigation of suspected restaurants, investigators found the same *Salmonella* Rissen strain in white pepper. In this interesting presentation, the speaker gave details on the methodology and approaches utilized by various agencies to identify the source of the outbreak.

Maha Hajmeer highlighted the details of the investigation of the suspected food processing facility, Union International, associated with the *Salmonella* Rissen Outbreak in her talk entitled "Multi-state Outbreak of *Salmonella* Rissen Associated with Ground White Pepper—the Environmental Investigation." In this combined investigation, government agencies and Union Foods tested the manufacturing plant and found over 50 positive samples. As a result of these discoveries, Union Foods ceased production and recalled contaminated spices. In this outbreak, more than 90 cases were reported, with 22 hospitalizations.

Mr. Cosgrove gave the details of investigation of two recent *Salmonella* outbreaks in his lecture titled "Multi-drug-resistant *Salmonella* in Ground Beef Outbreaks." These outbreaks, which were associated with ground beef sold in two different grocery stores, involved antibiotic-resistant *Salmonella* Typhimurium and Newport. Mr. Cosgrove also spoke about the role of various agencies and utilization of shopper card information to facilitate the recall.

The next speaker, Scott Seys, gave a presentation on the "FSIS Investigation of Multidrug-resistant *Salmonella* Outbreak." The speaker began by assessing the preliminary data given to the FSIS by the Colorado Health Department on the outbreak of a MDR strain of *S. Typhimurium* in ground beef. He also went through the traceback investigation to demonstrate how the bacterium was found in one of the processing plants.

A presentation was next given by Karen Niel on the "Outbreak of *E. coli* O157:H7 Associated with Raw Cookie Dough." The speaker explained how a specific trend in the epidemiological investigation of this outbreak led to the identification of raw cookie dough as the cause of the outbreak. The speaker then discussed the need to evaluate the feasibility and potential impact of the microbiological mitigation process to increase the safety of RTC products such as raw cookie dough.

The final speaker, Timothy Jackson, provided a presentation on the Nestlé Company investigation of the *E. coli* O157:H7 outbreak in raw cookie dough. He explained how the company tested ingredients of interest, the method of conducting audits of suppliers, and how all equipment was torn down for testing. Since no definitive cause of the outbreak was identified, changes and improvements were made by the company toward elimination of all possible contributing factors as well as continued sampling.

S29 – Maintaining Consumer and Market Continuity during Animal Disease Outbreaks

Iryna Sybirtseva and Ashley Predmore

This symposium highlights collaborative work of the egg industry, university experts, and state/federal regulatory professionals to contain a Highly Pathogenic Avian Influenza (HPAI) disease outbreak while maintaining market continuity.

Todd Mcaloon (Cargill) opened this symposium by discussing egg industry history, HPAI facts and the system approach to egg production. The Secure Egg Supply Plan (SES) is a science-based initiative developed by The Egg Sector Working Group. The goal of the SES plan is to safely move eggs and egg products from, into, or within a HPAI Control Area without endangering the health of uninfected flocks. The plan covers risk assessments, monitoring, RRT-PCR testing, and product-specific egg movement control procedures. The plan will be utilized by both the egg industry and USDA APHIS as part of emergency preparedness and response plans.

Tim Clouse (APHIS, CEAH) spoke about proactive risk assessments. He explained that assessments already exist for many egg products such as liquid eggs and shell eggs. Current work is being done on assessments for FMD in pork products and liquid milk, and there are plans for work on non-chicken poultry and some pork products. He also emphasized the importance of collaboration between government, academia, and industry on this matter, because all three would be affected in the event of an HPAI outbreak.

Darrell Trampel (Iowa State University) focused on the Federal and State Transport (FAST) Egg Plan, which was introduced on April 1, 2010 in Iowa. The purpose of this initiative is to allow egg production units that have high levels of biosecurity and that are free of cata-

strophic disease to ship eggs to market under intensified surveillance. The plan includes five components: biosecurity program, location verification using GPS, epidemiology data, RRT-PCR surveillance, and egg holding period. The FAST Egg Plan could serve as the model for a national program.

Howard Magwire (VP, Government Relations) discussed the industry's role in containing the disease, maintaining trade, and maintaining market continuity. He emphasized that the major challenges were to sensitize, prepare for an outbreak, educate, and establish confidence.

Jon Zack (USDA APHIS) discussed the government's role in containing disease, maintaining trade and protecting health. One of the main challenges of Foreign Animal Disease (FAD) response is the capability to scale up resources and trained personnel for veterinary activities during outbreaks as well as allocating resources and setting priorities for potential competing interests. Lessons learned from FAD outbreaks are the keys to future success.

William Hueston (U. of Minnesota, St. Paul) spoke about the collaboration of industry, government, and academia to achieve common goals. He stated that economic health, human health, animal health, and environmental health are all interdependent, and all needed for a healthy economy. He also made the point that food protection is a "wicked" problem, meaning it is too complex to be completely understood. This problem needs to be addressed by partnerships, communication, preparedness action plans, practice, and a feed-forward approach. He also summarized all the other speakers' main points.

S30 – A Practical Approach to Risk Communication: Engaging Stakeholders and the Public

Brita Ball and Clyde Manuel

In "Principles and Best Practices in Risk Communication: An Overview," Andy Benson, International Food Information Council, Washington D.C., defined risk communication (RC) as helping people understand facts in ways that are relevant to their own situations, including their feelings and their values, so they can put the risk in perspective and make more informed choices and decisions. Compared to risk assessment and risk management, RC has been given little attention; yet, if RC is not done well, there can be considerable miscommunication to the public. Best practices are to form partnerships with the public, build positive relationships with people before a crisis occurs, use the public as a resource, keep information flowing to journalists/media, and provide actions for consumers. Public panic is less likely with partnerships and when ambiguity and uncertainty are acknowledged.

"Risk Communication in Europe: Guidelines for Risk Communication," presented by Jean Kennedy and Kelly Dumke, European Food Information Council, Brussels, Belgium, focused on The Rapid Alert System for Food and Feed, which is the basis of the European approach to risk communication. Determinants of risk perception include: public's level of perceived control, voluntariness, catastrophic potential, character (natural vs. technological), transparency and trustworthiness of information sources, timeliness of messaging, and social amplification of risk.

In "Principles and Best Practices in Risk Communication: Part II," Andy Benson, International Food Information Council, Washington, D.C., stated that risk communicators must present information that consumers want in a way they understand it. Consumers feel, believe and consider risk from a values-based perspective; however, scientific experts know, think and present fact-based information.

"Communicating Food Risks in SE Asia: A Case Study" was presented by Peter Ben Embarek, World Health Organization, Dept. of Food Safety, Zoonoses and Food-borne Illness, Beijing, China. The Chinese infant formula melamine contamination event posed a significant challenge to food safety officials. Because of a company driven by greed, this contamination event increased food safety awareness in China tremendously. Traditional media as well as newer "social media" played an important role in spreading the news to such a large audience. Immense public outrage over the contamination event led to many changes being implemented by the Chinese government. This event really highlighted the importance of proper risk communication to a large population during an active outbreak.

"Risk Communication for South American Audiences" was not presented; the speaker, Genaro W. Garcia, Centro Panamericano de Fiebre Aftosa, Health Surveillance and Disease Management, São Bento, Brazil, was not present.

"Risk Communication: The U.S. FDA Perspective," presented by Marjorie Davidson, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD, emphasized that FDA recognizes the challenge of disseminating sound information to the public, as well as getting the public to adopt the practices. Work is being done to both re-examine and revamp old messages (FightBAC), as well as develop new messages. Work is being done with the Ad Council, WebMD, YouTube, and Twitter to greatly expand message range as well as target specific audiences. Consumer surveys are being utilized to determine efficacy of FDA's newer approaches to risk communication.

S31 — Setting the Science-based Agenda for Co-management of Watershed Quality and Produce Safety

Rachel McEgan

Trevor Suslow introduced the symposium by stating that the interests of both the food safety and the environment must be taken into account when policies or decisions are being made about field management practices. It was noted that these are not 'stand alone' issues and should not be dealt with as such.

The first speaker was Christina Fischer (The Nature Conservancy), who emphasized the importance of "striking a balance" between food safety and environmental concerns. This speaker discussed the issue of science-based risk management versus demands made by buyers based on perceived possible risk. The Leafy Greens Management Association requirements were compared to the requirements put forth by produce buyers.

Luana Kiger (USDA) discussed the role of non-crop vegetation in protecting crops from contamination with human pathogens. Several points were made in favor of keeping non-crop vegetation adjacent to fields.

Michelle Jay-Russell, University of California, spoke about the role of wildlife as vectors for foodborne pathogens. She indicated that there is some potential risk from wildlife, as they do carry pathogens; however, contamination from wildlife occurs at very low levels. It was noted that population density should be considered as a factor when determining field contamination risks.

Jeffery LeJeune, Ohio State University, discussed the use of microbial source tracking to determine the source of fecal contamination. Tracking sources of contamination was noted as a means of better understanding what needs to be excluded from fields in the future to avoid a reoccurrence of the contamination.

Don Schaffner, Rutgers, began by emphasizing the importance of microbial numeracy among food microbiologists and the notion that there is no such thing as "zero risk." The presentation then moved to a discussion of data management and online data sharing and their many benefits.

Tim York, Markon Cooperative, suggested that litigation fears and consumer expectations of perfect produce will continue to drive unwarranted, non-science based protective measures as producers continue to strive for brand protection by managing to a "zero risk." Liability law changes and better consumer education are the best methods to correct the current situation.

S32 — Bacterial Toxins: A Past or an Emerging Issue for Food and Beverage Safety?

Visvalingam Jeyachandran and Travis Chapin

Patrice Arbault, from the Food Safety and Analytical Methods group at BioAdvantage Consulting, Orléans, France, provided a brief introduction to the bacterial toxins. *Staphylococcus aureus* and *Bacillus cereus* were found to be most important foodborne pathogens in France, in contrast to the USA and Canada, where these two are no longer in the top five list of important foodborne pathogens.

Sandra Tallent, from FDA Division of Microbiology, College Park, MD, delivered a talk entitled "Staphylococcal Enterotoxins – An Underestimated Threat?" Staphylococcal enterotoxins (SEs) are heat stable enterotoxins that cause gastroenteritis as a result of consumption of contaminated foods that have been stored under abusive temperatures. Eighteen SEs have been identified to date and designated SEA-SEE, SEG-SER, and SEU. In 2003, more than 13,000 people became sick in Japan after consumption of dairy products contaminated with SEA and SEB. The same year, 8 people were affected by SEH in Norway due to the consumption of contaminated mashed potatoes. PCR based and ELISA techniques are the current methods employed to identify SEs.

Julian Cox of the University of New South Wales, Sydney, NSW, Australia, gave a presentation on "*Bacillus* – A Two-faced Toxigenic Foodborne Foe." *Bacillus* species can produce diarrhea toxin in proteinaceous foods and emetic toxins in starchy foods, with the production of toxin depending on the environment. The heat resistant emetic toxin is a non-ribosomally synthesized circular peptide that affects only humans and higher primates. Emetic toxin can be detected using cell culture assay or sperm movement assay. A prototype ELISA assay is in the development stage.

Stefano Morabito of the Istituto Superiore di Sanita, Rome, Italy, presented a talk entitled "Atypical EPEC – A Growing Public Concern." EPEC share with STEC the A/E lesion colonization mechanism, and by definition EPEC have A/E histopathology with the absence of a shiga toxin. Atypical EPEC are an emerging threat to human health, especially in industrialized countries. Most typical EPEC are isolated only from humans, while aEPEC are detected primarily in animals, although also in humans. Atypical EPEC are homogenous in serotypes, intimin, MLST, and carriage of virulence factors. STEC and EPEC are similar in the epidemiology of infections, natural reservoirs, and phylogenetics.

Eric Johnson of the University of Wisconsin-Madison, Department of Bacteriology, Food Research Institute, Madison, Wisconsin, had prepared a presentation entitled "Botulinum Toxins – A Rising Threat in Our Meals?" but was unable to attend; Donald Schaffner of Rutgers University, Department of Food Science, New Brunswick, New Jersey delivered the presentation. There has been a resurgence of botulism as well as several recent outbreaks linked to commercially produced food. Foods linked to recent outbreaks linked to commercial foods included carrot juice in 2006 and commercially canned chili sauce in 2007.

In conclusion, *Clostridium botulinum* is generally a poor competitor, and normal flora will prevent growth and toxin production. Minimal processing can eliminate or reduce vegetative competitors and enable *C. botulinum* to grow and produce toxin. Relying solely on refrigeration for control of *C. botulinum* is not recommended, and Good Manufacturing Practices should be rigorously adhered to.

S33 – Tools for Predictive Microbiology and Microbial Risk Assessment Matthew Stasiewicz and Fangfei Lou

Drs. Leon Gorris and Vijay Juneja organized a symposium on "Tools for Predictive Microbiology and Microbial Risk Assessment (S33, Wednesday PM)" in which four speakers presented new work on U.S. and E.U. efforts to develop predictive microbiological tools to inform industry and regulatory decision-making.

Vijay Juneja from USDA opened this session by presenting "An Update on USDA Predictive Microbiology Information Portal, Pathogen Modeling Program (PMP), and Combase," primarily focusing on the PMP. As a predictive microbiology information portal, PMP is a package of models that can predict the growth and inactivation of foodborne pathogens, under various processing and environmental conditions as well as being useful in development of HACCP plans. A thermal/cooling inactivation system was used as an example to show the practical applications of PMP. Dr. Juneja also mentioned that PMP has two types of models, the most widely used stand-alone version 7.0 and the newest Excel model. As center of excellence in microbial modeling and informatics, PMP can be widely used by food industries, risk assessors and managers, as well as scientists and students at academic institutions.

Lee-Ann Jaykus from the North Carolina State University spoke about "Emerging Decision Support Tools for Food Safety in the U.S." A risk-based decision can be divided into six steps, and she focused on developing comprehensive and efficient "comparative" risk assess-

ment tools for the second step, which is public health risk. Dr. Jaykus presented as an example the pathogen contamination of fresh produce, to describe the considerations for model design and the candidate criteria for risk ranking models. The processes for risk ranking assessment usually include pathogen-commodity pairs, dimension for risk ranking, risk ranking algorithm, risk ranking tool, and results. A "right" risk-ranking model is not intended to replace judgment, but rather to provide a customizable interface to test assumptions.

Sarah Cahill from the FAO in Italy discussed FAO/WHO Risk Assessment Tools, focusing efforts to develop flexible, Web-based tools to help risk managers explore the expected public health impacts of various safety interventions. She introduced the currently available Risk Assessment for *Cronobacter sakazakii* in Powered Infant Formula (www.mramodel.org), which assesses the effects of production, sampling, and product use, and then discussed current work on assessments related to poultry processing, particularly assessment of sampling plans. A recurring theme was the iterative nature of developing risk assessment tools according to feedback from risk assessors, to ensure that the Web-based tools produced can answer the questions of interest.

Panagiotis Sandamis from the Agricultural University of Athens presented results of work on "Prioritizing Foodborne Risks Using Risk Ranger for Risk Profiling." Risk Ranger is a tool that provides the user with 11 mostly qualitative questions to identify a foodborne risk of interest and then uses the answers to those questions to calculate both expected cases per annum and a log-scale risk level for the user. The program (www.foodsafetycentre.com.au/riskranger.php) is primarily intended to rank diverse food safety risks.

This session gave an update on microbial risk assessment and an introduction to how scientists are extending their analysis to the broader questions of relative risk and intervention identification.

S34 – WHO's Epidemiological Approach to Estimating Foodborne Diseases – WHO FERG Sommer Wild and Claudia Bravo

Claudia Stein (World Health Organization, Food Safety and Zoonoses, Geneva, Switzerland) and Tanja Kuchenmuller (World Health Organization, Geneva, Switzerland) spoke on the current status and progress of the World Health Organization's (WHO) initiative to estimate the global burden of foodborne disease (FBD) of bacterial, viral, chemical and parasitic origin. The WHO launched this initiative in response to the growing public health threat FBD presents worldwide, a threat that is rising with increases in rates of international travel, population size and globalization of our food supply. Although much is known about FBD, the full extent and economic impact of unsafe food has never been reliably described. This initiative seeks to provide reliable epidemiologic estimates on the global burden of FBD to bridge the existing data gap, in addition to enhancing country capacity to conduct FBD related studies and promote the development of FBD policies worldwide. To help implement the activities and goals of this initiative, an external, multi-disciplinary group of international experts was appointed by the WHO's director general:

the Foodborne Disease Burden Epidemiology Reference Group (FERG). The FERG and the WHO Secretariat, in the WHO Department of Food Safety, Zoonoses and Foodborne Disease, are in continual interaction and collaboration with the stakeholder community to advance the goals of the WHO's initiative, and the calculation of FBD burden estimates to foster international health security, promote economic growth and development, and strengthen evidence-based policy making.

Arie Havelaar, RIVM, Bilthoven, The Netherlands, continued this discussion by describing the importance of burden estimates and the calculation of DALYs, or Disability Adjusted Life Years, in shaping public health priorities and policies worldwide. DALYs represent a quantitative measure that compares the effects of various acute and chronic diseases. Calculation of DALYs caused by FBD will play a critical role in prioritizing risk and allocation of resources required to minimize the risk and impact of FBD globally.

Daniel Engeljohn, USDA OPD FSIS, Washington, D.C., USA, presented on the work of FSIS and FBD attribution, specifically on how food safety experts and policy makers can benefit from the work and progress of the WHO's initiative to estimate the global burden of FBD. He emphasized that results from the WHO's initiative could be coupled to current research in other institutions to enhance food safety research globally through the exchange of data, knowledge, and methodology.

Vanessa Cranford, Walt Disney Inc., Buena Vista, FL, USA, closed the session by describing the added value of the FERG's work in shaping food safety standards and guidelines in ways that will positively impact industry. It was acknowledged that the work completed by the FERG will promote cost effective, science-based and defensible decisions for various industries globally.

S35 — New Definitions in Imported Seafood Safety *Ravirajsinh Jadeja and Huda Neetoo*

Dr. Barbara Blakistone, from the NFI, opened the session with an overview of the statistics of seafood imports in the USA, the EU and Canada. She mentioned that 80% of seafood in the USA is actually sourced from offshore. She then addressed the issues of seafood safety, stating that causative agents of seafood outbreaks can be microbiological as well as chemical in nature. She also stated that different fishery products tend to be contaminated with particular agents, with finfish, crustaceans and mollusks being predominantly associated with chemical, bacterial and bacterial/viral agents, respectively.

Dr. Ben Embarek from WHO then spoke about the concerns of the EU with seafood imports and actions taken to assure seafood safety for the EU consumers. Dr. Embarek began his talk by giving a brief overview of the EU regulatory approach to seafood. He commented that the most common contaminants in seafood appear to be histamine (scombroid poisoning), seafood toxins and viruses. He also mentioned that the same commodities (mahi mahi, tuna fish and oysters) are recurrently contaminated with a limited number of agents or pathogens. Dr. Embarek also mentioned that adulteration of seafood with drug residues, antibiotics, heavy metals and select pathogens have recently become the reason for rejection or alert notifications.

Ms. Hooper, from Darden Restaurants, discussed Darden's strategy to provide safe seafood to its consumers. She gave a brief introduction on various restaurants in their chain and their operations and stated that restaurants serve large varieties of seafood from around the globe, so that maintaining the supply of safe seafood is a crucial part of their operations. To ensure safety, Darden utilizes a proactive risk-based approach in which product and process inspections are conducted at the source, with full traceability. Ms. Hooper also stated that timely problem identification and solution is a very important part of their food safety system.

Mr. David L. Moisan presented an informative seminar on the Seafood Inspection Program of NOAA. This program provides inspection services for fish, shellfish and fishery products to the industries, which ensure compliance with all applicable food regulations. Some of the major advantages of this program are to increase consumer confidence and enhance marketability of product, develop and improve quality system, provide product certification and create programs that can also help to develop processing specifications for non standardized seafood products.

Mr. Cruse, from FDA, spoke about the FDA's recent progress in ensuring the safety of imported seafood and seafood legislations currently in place. He reported that 40% of seafood is aquacultured, with salmon, tilapia, catfish and eel forming the dominating aquaculture segments. He also stated that aquaculture is sometimes the object of malpractice, and subsequently mentioned the different methods of control currently in place such as surveillance sampling, inspection of foreign processors, inspection of domestic and imported fishery products, importer alerts, importer bulletins and memoranda of understanding. Before closing his talk, he touched upon various outreach measures, including increasing awareness of good aquaculture practices through local assessments and trainings.

S36 — Risk Benefit Analysis of Food Production and Consumption

Anh Nguyen and Pardeepinder Kaur Brar

Cristina Tirado-Von der Pahlen, University of California-Los Angeles, School of Public Health, Los Angeles, CA, USA, spoke on the importance of environmental health. In light of new approaches to food with changing climate, the government of the UK has decided to label foods to show their associations with carbon footprints, green house emissions, animal welfare standards and country of origin. Swedish dietary recommendations include increased use of fruits and vegetables, less meat, more rapeseed and olive oil, and less palm oil. Livestock production has a great impact on climate, due to 5% of total emissions by intensive systems and 10-13% of emissions by extensive systems. To mitigate climate changes, reduction of emissions is important. Organic farming, which focuses more on greater soil health, disease prevention and animal welfare, has higher potential for offsetting global warming, compared to conventional farming, because of differences in land use and methane production. Very few life cycles of emissions have been studied. The scientific basis for assessing and communicating risks and benefits of food consumption and pro-

duction with respect to human health and environmental health needs to be broadened.

Kazuko Fukushima, Food Safety, WHO, Geneva, Switzerland, pointed out that the need for risk-benefit assessment is increasing. There are different ways to conduct risk-benefit assessments, such as qualitative, semi-qualitative, and qualitative. The development of internationally applicable risk benefit assessment methodology is needed. In the step-wise approach, the chemical residues of the most common disinfection practices are identified, their dietary exposure and potential health risks are estimated, and efficiency of treatment is evaluated. The outcome is classified into four categories. Several disinfectants fall into the second category, in which no health concerns are identified but benefits are identified. Disinfectant treatments are not recommended in poor hygiene conditions.

Dr. Benard Bottex from the Scientific Committee and Advisory Forum Unit, European Food Safety Authority EFSA, Parma, Italy, presented results of EFSA work in "Development of an Approach for the Risk Benefit Analysis of Foods and Food Components." There is a stepwise (3 steps) approach for risk-benefit analysis that EFSA developed and uses to assess risks and benefits of various food and food components, such as selenium. Risk-benefit analysis is very complex at each step, and the major stress is on problem formulation and iterative dialogue after each step between risk-benefit assessors and managers. Dr. Bottex also recommended further work to develop metrics to measure positive effects on health and well-being, to perform risk-benefit analysis for common diseases, and to promote harmonization and recognition of the assessment.

Dr. Stephane Vidry from ILSI Europe, Brussels, Belgium, introduced a project called Benefit Risk Analysis of Foods (BRAFO) in the speech "Risk Benefit Analysis: Results of the ILSI-BRAFO Case Studies." The detailed approach of BRAFO consists of a pre-assessment and problem formulation step, followed by activities divided into four main tiers. The policy of fortification of bread with folic acid was used to illustrate how to perform a risk-benefit analysis using BRAFO. Issues to consider are scope and objective of risk-benefit analysis, problem formulation, harmonization in communication, integration of many disciplines in the analysis, consideration of methodology, limitations of the methods and future applications.

S37 – Issues in the Production and Manufacture of Nuts and Nut-containing Products: Nuts to You

Rachel McEgan and Di Li

This symposium was a well-rounded discussion covering four areas of food safety for nuts and nut-containing products. The four speakers covered sanitation, bacterial contamination, mycotoxins, and regulatory issues.

The first speaker, Matilda Freund, Kraft Foods Global, discussed sanitation practices, focusing on nut roasting equipment. Her talk began with the fact that in the past, the heat step in nut processing was thought of as only a quality step, not a safety step. She continued by discussing sanitation issues caused by the older roasting equipment that had not been designed for wet

cleaning. Freund concluded her talk by emphasizing the importance of new roasting equipment being designed to enable wet cleaning and allow the separation of raw and processed product, and she pointed out that roasting should occur close to packaging to reduce the chance of recontamination.

Linda J. Harris (University of California-Davis) began with listing some recent nut recalls, noting that the most common is a result of *Salmonella*. She noted that few prevalence studies have been done on *Salmonella* contamination of nuts, and those that had been done typically used small sample sizes or did not present the sample size. The need for more information regarding levels of contamination was stressed. Low prevalence, long-term survival of *Salmonella* in products, and heat-resistance characteristics are the challenges that nuts industry are currently facing.

Dojin Ryu (Texas Women's University) discussed mycotoxins in relation to nuts. He began by describing the common fungi found in nuts. Two mycotoxins were then focused on: aflatoxins and ochratoxins. Issues of concern include: stability of toxins during processing, regulation and international trade, low amounts of toxins and the heterogeneous distribution of mycotoxins.

The symposium concluded with the presentation of Tim Birmingham, Almond Board of California, who focused on the Voluntary Aflatoxin Sampling Plan that is used for almonds shipped to the European Union. This plan is a means of reducing the number of rejected lots by the European Union, by testing the lot before it leaves the United States. He also talked about effectiveness of electronic and hand sorting for aflatoxin removal and pointed out that sorting technologies can remove more than 95 percent of aflatoxin in a given lot, using new tools that have been developed to predict lot concentration.

TECHNICAL SESSIONS

T1 – Applied Laboratory and Novel Laboratory Methods

Eb Chiarini and Yen Te Liao

Peter Rossmann, from the University of Veterinary Medicine, Vienna, opened the symposium by discussing the value of aspects of systems theory in the analysis of molecular-biological based detection methods and the qualification of food related to cutting-edge sampling and analyzing technology, such as real-time PCR. Additionally, he stated that systems theory provides scientists the direction to have better screening systems and provide safer food to people worldwide.

Peixuan Zhu, from Creatv MicroTech, Inc., gave an overview of the sensitive and rapid detection of *Escherichia coli* O157:H7 in food and water. He explained how "Signalyte" is superior to "Fluorescent Plate Reader," with more sensitivity, specificity and speed. In addition, he mentioned that the wavelength used in this system ranges from 350 nm to 800 nm, which is associated with low interference.

Adrian Parton from MATRIX Microscience Inc. presented a methodology capable to detecting *Listeria* spp. contamination in pooled food and environmental swabs within 24 hours, using Pathatrix automated re-circulating

IMS linked to Real-time PCR. Samples were inoculated at low levels (1–10 CFU/sample) with *Listeria* spp. and *L. monocytogenes*. *Listeria* spp. were successfully isolated from pooled food samples (0.004 CFU/g) and environmental contacts samples (1 CFU/100 cm²), showing that this method has the potential to enhance HACCP and pathogen testing regimes to reduce the incidence and spread of *Listeria* in food plants.

Patrice Chablain, from Pall GeneSystems, France, developed a multi-parametric tool for the detection and identification of the most prevalent genera and species of sporeforming bacteria in the food chain, with naturally and artificially contaminated samples. The reason for this study was the lack of diagnostic tools, the major obstacle to control of sporeformer contamination. Inclusivity and exclusivity studies have been conducted on more than 220 collected strains, mostly composed of food isolates. The *Bacillus* genus was systematically confirmed, while *Clostridium* detection could not always be confirmed on standard RCM medium, due to difficult recovery on agar medium. The development of ready-to-use multiple parametric tools enable detection, identification and traceability of 5 genera and 9 species in less than 24 h rather than quantification of a few species.

A study of differentiation and speciation of vibrios by PCR of 16S-23S rRNA intergenic spacer region (ISR) was presented by Maria Hoffmann from the US Food and Drug Administration, USA. 16S rRNA gene sequencing was accomplished for all strains analyzed and *Vibrio*-specific PCR primers were designed to amplify 16S-23S rRNA ISR targets. Capillary gel electrophoresis was used to analyze ISR amplicons. The ISR-typing system was shown to be reliable and efficient, taking advantage of capillary electrophoresis technology, which has been proven to be effective for identification of *Vibrio* at the species and subspecies level.

Frank Schlitt-Dittrich from Morinaga Milk Industry Co. Ltd., Japan, presented a new protocol to detect low numbers of only viable *Enterobacteriaceae* in inoculated pasteurized milk, using direct PCR after ethidium bromide monoazide (EMA) treatment, with the goal of minimizing time consuming and laborious culture methods. The direct PCR (DPCR) assay was applied to inoculated samples with up to 7-log CFU of viable and heat-killed bacteria. In 8 hours, viable cells of 13 *Enterobacteriaceae* strains were detected in milk at inoculation levels of 14 ± 8 CFU, in duplicate. Analysis time (< 8 h) was significantly shorter than with culturing methods (several days). The method could detect < 10 viable *Enterobacteriaceae* cells in 10 ml of milk.

T2 – Pathogens, Sanitation and Seafood

Di Li and Amit Morey

“Variation in Desiccation among *Salmonella* Strains” was presented by Regina C. Whitemarsh from the University of Wisconsin-Madison. It was concluded that Typhimurium strain LT2 had the poorest survival. Incubation at 15°C significantly increased survival compared with survival at 30°C. Heat shock of *Salmonella* for an hour at 45°C prior to inoculation of low-a_w solutions enhanced survival.

“Effect of Crust Freezing on the Survival of *Escherichia coli* and *Salmonella* Typhimurium in Raw Poultry

Products” was presented by Byon D. Chaves-Elizondo from Clemson University. The research showed no significant difference between crust- or completely frozen products, and skin was not a critical factor in determining survival, reduction, and injury of bacteria on products.

“Characterization of the *Listeria monocytogenes* Transcriptional Response to Synergistic Growth Inhibition by Potassium Lactate and Sodium Diacetate” presented by Matt Stasiewicz from Cornell University, discussed research showing significant interaction between lactate and diacetate treatments. Combined diacetate and lactate treatments have synergistic effects that suggest the physiological mechanisms used by *L. monocytogenes* to overcome the organic acid stress.

In “High Pressure Inactivation of Noroviruses in Vegetables and Fruits,” Fangfei Lou from the Ohio State University talked about the effect of pressure, pH and temperature during murine norovirus inactivation and concluded that noroviruses were more effectively inactivated at 4°C than at 20°C and more sensitive to high pressure at pH 7.0 than at pH 4.0. HPP has minimal impact on the quality of fresh produce.

“Phenotypic and Genotypic Characterization of Antimicrobial Resistance in *Salmonella* Serotypes Isolated from Retail Meats in Canada” was presented by Mueen Aslam from the Lacombe Research Centre, Canada. The study showed that the most common *Salmonella* serotypes identified in chicken and turkey were Heidelberg, Hadar, and Kentucky. The presence of resistance genes generally correlated with resistance phenotypes, and their prevalence differed among serotypes.

“Comparison of the rfb Cluster in 16 Rare *Salmonella* Serotypes” presented by Matthew Ranieri from Cornell University, showed that within *Salmonella* serogroups sharing a common antigenic factor, there was a high degree of similarity, especially with genes related to sugar biosynthesis, and that PCR can determine serogroups for untypeable strains. The finding of a common gene, responsible for transferring O-units across the cytoplasmic membrane may provide an alternative to traditional serotyping.

Mei Lok from Penn State University successfully used *comK* prophage junction fragment sequences to cluster epidemic clones and those associated with 2008 Canadian outbreak with respect to their origin (processing plants) and found 1998 and 2002 *comK* primer pairs on strains at each year but not in plant H, although this strain had *comK* prophage. Further research was suggested in the area of ascertaining the role of *comK* in colonization and persistence.

Xinna Zhu from Shanghai Jiao Tong University, China, presented his research on the ABC-Transporter and biofilm formation in *Listeria monocytogenes*. His results suggested that Im.G₁₇₇₁ plays a vital role in controlling the expression of biofilm-mediating proteins, along with others, thus ultimately regulating biofilm formation.

John Holah, representing Campden BRI, UK, presented some designs to minimize washroom contamination. His research focused on the placement of handwash stations, the flow of workers and the sequence in which they should enter and exit the washroom and processing hall. He also mentioned that commercial bootwashers do not fully clean the boots but with time can act as a source of contamination.

Yi-Tien Chen from Florida State University used MAb 8F5 antibodies to detect 36 kDa antigenic protein in different species of fish. The researcher found that the antibodies had an increased binding to the antigens in cooked compared with raw fish. Some attendees suggested that the lower binding in raw samples might be due to the presence of various other biochemical components in the fish, which might either denature or volatilize during cooking.

Joana Barbosa from Portugal and Michel Diop from Senegal were absent.

T3 — Antimicrobials and Microbial Food Spoilage Praveena Sunkara and Huda Neetoo

Walid Alali, from the University of Georgia, compared resistance profiles in organic and conventional broiler poultry farms and showed they have similar resistance profiles. Conventional farms have relatively high resistance of *Salmonella* compared to the certified farms.

Leonard Williams, from North Carolina State University, studied 360 broiler and rabbit samples and 113 *Staphylococcus* and *Salmonella* isolates, tested resistance to 16 different antibiotics, and found that 100% of the samples were resistant to ampicillin, 66% resistant to ceftriaxone and 67% resistant to multiple antibiotics. Source tracking was done using PFGE. Isolates found in South East processing facilities suggest cross contamination.

Shaoyua Zhao, from the U.S. Food and Drug Administration, studied the prevalence and antibiotic resistance of *Campylobacter* from NARMS retail meat. The highest prevalence was found in chicken breast (40%) followed by turkey, beef and pork. Two-thirds of *C. jejuni* isolated originated from chicken.

Grishma Kotwal, from the University of Georgia, studied the effect of heat on antimicrobial efficacy of cinnamaldehyde, carvacrol and eugenol and found carvacrol to be most effective among the three compounds. The efficacy of carvacrol decreased after 7 days. The efficacy levels of the compounds in vitro and in vivo are different due to interference by higher protein and fat levels in foods (example: milk).

Visvalingam Jeyachandran, from the University of Manitoba, Canada, explained cell elongation in *E. coli* O157:H7 by cinnamaldehyde, which can delay the growth of *E. coli* by targeting septum formation. This process is reversible at concentrations less than 400 mg.

Sarah Edmonds from GJO Industries demonstrated that hand hygiene regimens can offer reduced risk in food service environments. She explained that a combination of hand washes and ABHS (alcohol based hand sanitizer) is more effective than either of them alone.

Sarah Edmonds also demonstrated that a hand-hygiene solution named SaniTwice™ has the ability to reduce bacterial reductions on heavily soiled hands and its effectiveness is comparable to traditional hand washing.

Andrea Moreno Switt, from Cornell University, used full genome sequencing to demonstrate the existence of plasmids in various *Salmonella* serovars that harbor transmissible mobile elements carrying specific antimicrobial resistance genes.

Mark Powell, from the USDA, compared the statistical power of antimicrobial-efficacy experiments designed under the ANOVA model and the mixed model, showing that the latter model had a lower power.

Ian Jensen from University of Tasmania validated their in-house predictive model for the viability of total viable count (TVC) of lactic acid bacteria (LAB) on vacuum-packed beef primals against ComBase and published literature, and showed that their model over-estimated TVC and LAB levels.

Hossein Daryaei, from The Ohio State University, evaluated the efficacy of Pressure-assisted thermal processing (PATP) of *Bacillus coagulans* spores in tomato juice and showed the potential of PATP as a feasible alternative to inactivate *B. coagulans* spores in high acid foods such as tomato juice.

Peyman Fatemi, from Aurora Food Safety Solutions, demonstrated the effectiveness of aerosolized organic citrus bioflavonoid extract in achieving > 5-log reduction of *E. faecium* and *Salmonella* SEPT30 on almonds and pistachios.

T4 — Produce

Annemarie L. Buchholz and Kirsten Hirneisen

Dr. Trevor Suslow, from the University of California-Davis, presented, "Field Assessment of Surface Contamination and Systemic Transference of an Attenuated *Salmonella* Typhimurium to Melon Fruit from Controlled Contamination of Irrigation Water." *Salmonella* inoculated into melon fields was detected at the edges of the furrows, but was not internalized into melon crops.

Annemarie Buchholz, from Michigan State University, presented "Tracking an *Escherichia coli* O157:H7 Contaminated Batch of Leafy Greens through a Commercial Processing Line." By using Radicchio as a surrogate for contaminated leafy greens, Ms. Buchholz showed that *E. coli* O157:H7-contaminated leafy greens are able to perpetuate in a commercial scale processing line long after a contamination event.

Eduardo Gutierrez-Rodriguez, from the University of California-Davis, presented "Recovery of *Escherichia coli* O157:H7 from Inoculated Spinach Fields as Affected by Inoculum Dose, Plant Material and Environmental Conditions." Conclusions drawn from the study highlight that uniform contamination does not equal uniform survival and the variability in survival was dependent upon the part of the plant contaminated.

Christina Ahlstrom, of Colorado State University, presented the work "Molecular Ecology of *Listeria* spp., *Salmonella*, *Escherichia coli* O157:H7, and Non-O157 Shiga Toxin-producing *E. coli* in Northern Colorado Wilderness Areas." After soil, water, drag swabs and fecal samples had been obtained from 5 wilderness environments over the course of 3 seasons, only two samples tested positive for *L. monocytogenes* and eight samples for *L. welshimeri*, indicating rare presence of foodborne pathogens in pristine environments.

The "Development of a Simple Method to Detect Coliphages in Fresh Produce as Evidence of Fecal Contamination" was presented by Choi-iok R. Wong, of Scientific Methods Inc. Pectin-based media for coliphage detection was developed and used to test produce successfully.

Jie Wei, from the University of Delaware, discussed "Internalization of Murine Norovirus-1 to Romaine Lettuce." This is the first study that showed MNV could internalize into lettuce sprouts through the roots, demonstrating the importance of regular maintenance of septic systems to prevent high numbers of the virus existing in sewage.

Kirsten Hirneisen, from the University of Delaware, presented her research on the hydroponic internalization of enteric viruses into green onions and spinach. Hepatitis A virus and murine norovirus were shown to internalize into young green onion and spinach plants grown hydroponically. Both viruses were found to be present in the edible portions.

Carol D'Lima of the University of California-Davis, discussed "Controlled Environment Assessment of Pre-harvest Internalization and Transference of *Salmonella* into Melon Vines from Irrigation Water Using a Tube Nucleation Assay." This work showed that a high dose of *Salmonella* into the soil via irrigation water can result in immediate, but transient, transfer into melon vines.

David Ingram of the USDA ARS presented "The Effect of Total Organic Carbon Content and Repeated Irrigation on the Persistence of *Escherichia coli* O157:H7 on Baby Spinach." Spinach was inoculated at levels of *E. coli* O157:H7 in compost tea that are acceptable for coliform counts (26 CFU/100 mL) of irrigation water. After 24 hours, spinach was acceptable for harvest.

Manan Sharma of the USDA-ARS presented "Effect of Modified Atmosphere on Persistence and Virulence Expression of *Escherichia coli* O157:H7 on Shredded Lettuce." Dr. Sharma showed that the packaging atmospheres of fresh-cut lettuce may affect the ability of *E. coli* O157:H7 to cause illness.

Scott Moosekian, a graduate student at Michigan State University, discussed his work on the "Inactivation of *Escherichia coli* O157:H7 on Spinach and Parsley Using Low-energy X-ray Irradiation." Results indicate low-energy X-ray irradiation could be an effective method for inactivating *E. coli* O157:H7 on spinach and parsley.

"Inactivation of *Salmonella* on Tomato Surfaces Using Gaseous Chlorine Dioxide Treatment" was presented by Bassam Annous from the USDA-ARS-ERRC. Results showed that gaseous ClO₂ treatment was effective at reducing *Salmonella* on tomatoes.

T5 – Meat and Poultry

Claudia Bravo and Iryna Sybirtseva

Amit Morey, Auburn University, talked about growth patterns of *S. Typhimurium* and Heidelberg in BHI, non-sterile chicken slurry (CS) and on chicken carcasses stored for 6 days at various temperatures. There was no difference in *Salmonella* populations in BHI and CS over a storage period at all temperatures. An increase in *Salmonella* count was observed only when carcasses were stored at 10°C.

Tim B. Mohr, USDA-FSIS, analyzed ALLRTE and RTE001 sampling programs (2005–2008) for *Salmonella* species. Results showed low incidence (0–0.13%) of *Salmonella* samples with use of both programs.

Michael Musgrove, USDA-ARS, discussed *Salmonella* isolated from the shell egg processing environment, showing that improvements can be made with sanitation. Wash tanks and drains are the major reservoirs, and more effective sanitation is needed for washing equipment and eggs.

Vania Ferreira, Escola Superior de Biotecnologia, CBQF, discussed the incidence (60%) of persistent and sporadic *L. monocytogenes* strains in a Portugal fermented meat sausage facility, related to phage resistance; no significant association of strain persistence to lysogenicity was found.

Shiowshun Sheen, USDA-ARS, characterized the behavior of chlorine-exposed *L. monocytogenes* on RTE meat products stored at 4, 8, and 16°C. The growth rate of the pathogen increased with an increase in temperature and decreased with an increase in chlorine level.

Kristina Barlow, USDA-FSIS, presented a comparison of data from FSIS routine (RLM) and intensified sampling programs (IVT) for *L. monocytogenes* in RTE establishments. Positives percentages were higher for IVT programs than RLM programs. FSIS uses both sampling results to identify cross-contamination and protect public health.

Kevin Church, Microbial-Vac Systems, Inc., discussed the performance of the M-Vac method compared with methods using cellulose sponges. The device was successfully in recovering bacteria from the meat surfaces and may reduce the risk of spreading contamination.

Michael de la Zerda, IEH Laboratories, compared excision n60 pieces, surface sampling (SS) and core drilling (CD). SS recovered more microorganisms than core drilling and n60, the last two sampling methods being similar.

Jeef Bussey, Bureau of Microbial Hazards, showed data on *C. difficile* prevalence in ground meat (n = 368): veal, beef, pork, lamb and chicken. The highest prevalence was 7.5% in ground chicken and 22% in ground lamb. 11 of 12 isolates were toxigenic.

Anthony Pavic, University of New South Wales, discussed data on *Salmonella* vaccines; results showed that the vaccine decreased overall flock prevalence of *Salmonella* and that *S. Typhimurium* is titre dependant. Also, maternal antibody transfer offers moderate protection to the chicks, and extracted IgY is not harmful to chicks.

Jeremy W. Chenu, University of New South Wales, explained the difficulty in recovering spiked *C. jejuni* from chick paper under hatchery incubation conditions. Results indicated that *C. jejuni* became unculturable as the paper dried. The cells survive under modified atmosphere, as in humidity hatchery incubators *C. jejuni*, where persistence was shown.

Wendy Lauer, Bio-Rad Laboratories, closed the session with an overview about DNA extraction with the iQ PCR kit. The study was a modified DNA extraction protocol indicated by AOAC approved kit. Results showed a good performance of the kits.

T6 – Produce and Communication Outreach and Education

Helen Barela and Brita Ball

"Pathogen Presence and Indicator Organism Levels during Turned Pile Composting of Broiler Litter and Aerated, Static Pile Composting of Mixed Feedstocks" was presented by A. Adhikari, A. Bary, C. Cogger and K. Killinger, Washington State U, Pullman, WA. Active composting decreases indicator organism and pathogen counts. Composting to PFRP requirements does not prevent pathogen presence in the compost.

"Produce Microbial Quality is Associated with Surface Microbial Contamination in Packing Sheds: An Assessment of Risk Factors for Produce Contamination," was discussed by J. Leon, E. C. Ailles, K. A. Etienne, L. M. Johnston, L. A. Jaykus and C. L. Moe, Emory U, Atlanta, GA. Microbial levels in produce increase from farm to packing shed/box. Indicator organisms presence on equipment are associated with microbial levels on produce.

"Attachment, Persistence and Infectivity of *Cryptosporidium parvum* Oocysts in Fresh Produce," by D. Macarasin, M. Santin, G. Bauman and R. Fayer, USDA-ARS, Environmental Microbial and Food Safety Laboratory, Beltsville, MD, pointed out that *Cryptosporidium* oocysts attach/can infiltrate plant cells. Underreporting oocyst removal from vegetable matrices is likely when using EPA recommended buffers.

In "Efficacy of Commercial Produce Sanitizers Against *E. coli* O157:H7 in Pilot Scale Leafy Green Processing Line," by G. R. Davidson, A.L. Buchholz, P. J. Sirmeyer, E. C. Todd and E. T. Ryser, Michigan State U, East Lansing, MI, sanitizers were shown to be no more effective than water in reducing *E. coli* O157:H7 on lettuce.

"Enhanced Removal of Noroviruses from Fresh Fruits and Vegetables By Combination of Surfactants and Sanitizer," was reported by A. Predmore, C. Herbert and J. Li, Ohio State U, Columbus, OH; surfactants combined with chlorine enhanced removal of Norovirus from strawberries and lettuce.

"Columbus Public Health: 2009 Samuel J. Crumbine," by C.R. Wilson, Columbus, OH, reported that several new initiatives helped Columbus Public Health win the Crumbine Award.

In "Modifying Behavior: Food Employees Using Educational Materials and Methods Designed for Oral Culture Learners," by A. Tart and J. Pittman, FDA, Regulatory Affairs, Atlanta, GA, it was pointed out that academicians/governmental regulators tend to be print learners, while food employees typically are oral learners.

"Applying GFSI Recognized Management Systems to Peanut Industry-Case Study," by J. Surak, P. Archer, T. LORCA, R. Pierami and R. Starling, EcoSure (A Division of Ecolab Inc.), St. Paul, MN, a peanut recall was discussed. Ecolab and ConAgra representatives discussed modifications to GAPs, GMPs, and GFSI certification.

"The Economic Cost of Foodborne Illness from Contaminated Produce in the U.S.," by R.L. SCHARFF, Ohio State University, Columbus, OH, was discussed methods of attribution (outbreak, outbreak illnesses, expert elicitation) and economic cost of illness model. Detailed graphs/data were discussed.

"Overlapping Worlds; Approaches to Producing Healthy and Healthful Produce" by M. Ivey, Ohio State University, Columbus, OH, was a discussion of multidisciplinary work, focused on similarities of food microbiology to plant pathology.

"Knowledge and Behavior of Parents of Young Children Concerning Domestic Food Safety" by L. Fielding and A. O'Gorman, UWIC, Cardiff School of Health Sciences, Cardiff, UK, emphasized that food risk should concentrate on why consumers fail to act on correct practices.

"Examining Consumers' Perceptions of Nanotechnology for Food Safety: A Baseline Study" by M. Nucci and W. Hallman, Rutgers University, NJ, Food Policy Institute, discussed several topics, including a government brochure that does not mention food nanotechnology.

T7 – Risk Assessment and Epidemiology *Matthew Stasiewicz and Laura K. Strawn*

First, Ali M. Al-Sakkaf, from Massey University, in New Zealand, presented a talk entitled "Application of Kinetic Models to Describe Heat Inactivation of Selected

New Zealand Isolates of *Campylobacter jejuni*" for the Developing Scientist Competition. He used survival data rather than log linear data to describe the observation of heat inactivation.

Thomas P. Oscar, from USDA-ARS, then discussed "Modeling the Survival and Growth of *Salmonella* on Chicken Skin Stored at 4 to 12°C" using predictive microbiology and Monte Carlo simulations. He found that *Salmonella* Kentucky is a slower growing serotype than *Salmonella* Typhimurium.

Denis R. Eblen, presented the "FSIS *Escherichia coli* O157:H7 Beef Establishment Risk-assessment Project." *E. coli* O157:H7 outbreaks have not decreased since 2003, and comprises 85% of all beef-related illnesses, most of which occur from May to September. He noted that the 5% increase in servings could contribute to this observation.

Keith Vorst, from Col Poly State in California, presented "Predictive Modeling for *Listeria monocytogenes* Transfer during Slicing of Delicatessen Meats." The Vorst lab concluded that *L. monocytogenes* on slicers could be studied based on physiological data, and a non empirical approach could be more useful than a predictive approach.

Di Li, from Rutgers, New Jersey, presented "Evaluating the Factors Important in Norovirus Transmission in Foodservice Systems" for the Developing Scientist Competition. She concluded that only 10% of workers actually carry out handwashing correctly. Proper handwashing is key because it can prevent or greatly reduce contamination in the food service system.

Jozsef Baranyi, from the Institute of Food Research, in the UK, presented "Network Science Methods to Analyze Food Import Export Networks," which discussed international food export and import. He explained that we will need 50% more food in 2030 than at present, so food science is crucial to meeting this goal. We need a call to all math, physics and other science disciplines to build better databases and collaborations.

Dana Cole, from the CDC's Enteric Diseases Epidemiology Branch, presented "Sources and Settings: Contaminated Food Vehicles and the Settings of Foodborne Disease Outbreaks." Outbreaks attributed to complex foods and land animal foods have decreased since 1998, as well as outbreaks attributed to restaurant and deli (39% decrease) and catering (60% decrease).

Sandria Godwin, from Tennessee State's Family and Consumer Sciences Division, presented "The Potential for Cross-contamination of Foods through Improper Storage in Home Refrigerators." Visual inspection of consumer refrigerators showed at least 40% with the potential for cross contamination, particularly from improperly stored meat, and very few consumers actually clean their refrigerators.

Fernando Perez Rodriguez, from the University of Cordoba in Spain, presented "A Mathematical Survival Model for *Escherichia coli* O157:H7 and *Staphylococcus aureus* on Stainless Steel Surfaces." Viable *E. coli* and *S. aureus* can be recovered after 9 and 34 days, respectively, from stainless steel contaminated with meat slurry, and death is linear.

Sarah M. Cahill, from the Nutrition and Consumer Protection Division of the FAO, presented "The Value and Challenges of Providing Sound, Effective and Timely Risk-based Scientific Advice for International Food Safety

Standard Setting.” Linking risk-assessment objectives to clear risk-management goals decreases the time lag between assessment completion and regulatory action.

Eelco Franz, from RIVM in The Netherlands, presented “Modeling Logistics in Quantitative Microbial Risk Assessment for Salad Bars.” Increased storage time during food distribution increased the risk of infection with *Listeria monocytogenes*, but not other pathogens, highlighting both the critical role and limitations of the cold chain in controlling fresh produce pathogen load.

ROUNDTABLES

RT1 – Research Needs Roundtable: Retail and Foodservice Food Safety *Di Li and Helen Barela*

“What Is the Impact of the Food Desert on Food Safety?” by J. Quinlan, Drexel University, Philadelphia, PA, defined a Food Desert. This study addressed concerns about small stores and heavily concentrated minority population areas wherein no food microbiology topics are considered. Problems included unsafe transport, inadequate refrigeration/outdated equipment, improper/no storage of potentially hazardous foods, and cross-contamination problems with counter raw meats and utensils.

In “SAFETE,” L. Kohl, Food Marketing Institute, Arlington, VA, discussed the need for an emphasis on several areas and in their conjunction—Shoppers and Consumers, Associates Education, Food, Environment, Technology/Data Management and Equipment. There should be a more holistic approach wherein we incorporate all items and consider all of these areas. By accomplishing such, it will be possible to have better compliance with regard to the integral food safety concerns. A uniform following by states and local levels of the FDA food Code was briefly discussed and contemplated.

In “Retail Perspective,” A. McNamara, Jack in the Box, San Diego, CA, stated that he was primarily interested in seeing research that addresses several areas applicable to the retail/restaurant industry. He mentioned several needs: “Data Resource Depository,” indicator organisms that regulators consider acceptable, studies on efficacy of green cleaners, equipment that is easy to breakdown/clean, behavior modification training in retail settings, and best ways to help people retain food safety lessons in view of issues of ESL (English as Second Language) and employees who consider their job as only temporary rather than as a career.

“Data availability,” presented by Professor Donald Schaffner from Rutgers University, New Brunswick, NJ, explained that, to build risk assessment models, data such as holding temperature are needed; however, people have so many concerns of sharing their data that data cannot be accessed easily. Cross-contamination and handwashing compliance is another critical issue in the foodservice industry, but ethical concerns make it hard to collect information. Resolutions should be generated so that data can be shared and used for risk assessment and management.

In “Retail Food Safety,” presented by Dr. Kevin Smith from FDA, College Park, MD, five issues were addressed. 1. Risk assessment needs: it is hard to investigate and get data from retailers, 2. Understand hazard agency: how do pathogens/allergens transferred from one contact surface to another, 3. Improvement of technology: cleaning of the equipment; develop alternative technologies in sanitizing, cooking; data should be validated, 4. Human factors; hygiene is very important, should figure out effective ways to educate staff, 5. Impact of certain interventions. Also discussed were the roles of inspection in food safety practices and the fact that communication is important.

LATE BREAKING RT. – HACCP Validation – Current Issues and Future Direction *Di Li and Eb Chiarini*

The HACCP roundtable discussion started with a brief introductory talk by James Dickson of Iowa State University. Dr. Dickson mentioned that HACCP validation is the key component in industry and it helps to confirm that research in the lab is working in the real world. Following this talk, panelists Joe Harris from Southwest Meat Association, Daniel Engeljohn from USDA-FSIS, Frank Yannas from Walmart, Kerri Harris from Texas A&M University, Scott Goltry from American Meat Institute, Lon Doty from AFA Foods, and Gary R. Acuff from Texas A&M University talked in succession, followed by a panel discussion. The topics included the importance of product certification, why industry should focus on process rather than product itself, why validation should follow documented critical parameters instead of all parameters, misconceptions and miscommunication, challenges such as the process change, science change and how they stay relevant, and whether HACCP plans could effectively influence CCP. Panelists discussed the difference between validation and verification and concluded that validation refers to “correct or not” while the purpose of verification is to check whether the process was conducted as planned; the frequency of monitoring depends on what impacting it has on the quality of the product and needs to be done after the process is validated. Frank Yannas pointed out that the 20th century was the time to test, but the 21st century is the time to validate. The interaction of the panelists and the audience during the final 30-minute open discussion produced many good ideas. Human behavior has a huge impact on the HACCP plan, so employee and trainee behavior should be watched as much as possible. Education is the most important thing to work with.

HOT TOPIC – Whole Genome Sequencing as a Tool in Epidemiologic Investigations *Praveena Sunkara and Sean Beckman*

The first speaker demonstrated that next generation sequencing is practical for epidemiology. A nearly complete genome of *Bacillus anthracis* has been sequenced using Sanger’s method, which is time consuming. “Next generation” sequencing technologies generate vast amount of data without being so time consuming. The major next generation sequencing technologies

are Roche/454 FLX Polysequencer, Solexa/Illumina, and SOLID. Gilmour et al. (2010) used whole genome sequencing in a food processing plant. It was concluded that evolution in the natural environment is different from in the lab environment.

The second speaker explained that evolutionary relationships are based on SNP's in outbreak investigations. 454 technology is an important genome tool. Genomic sequences are highly conserved (> 99%) in *S. Montevideo*, including the reference (laboratory) strains. He concluded that whole genome sequencing can distinguish strains that cannot be distinguished by PFGE.

John Besser from CDC discussed whether the molecular analysis in foodborne disease outbreak investigation is better? Bacteria in the human gut are constantly changing at the genetic level (we can use them as proxies for epidemiological events). He explained that in using clusters (similarity/distance algorithms), our goal is to maximize the signal and minimize the noise. We need to strike a balance between sensitivity and specificity. If we are looking at global trends, then we need less specific studies. For specific problems, we need more specificity. He says MLVA gives higher quality analysis than PFGE. He also explained that the "454 method" is 23-fold whereas the Sanger method is 8-fold. This makes the 454 method more error free.

Genome sequencing for an epidemiological approach is a novel and rapidly developing method. Genome sequencing for *Bacillus anthracis* able to use compara-

tive genomics of *B. anthracis* to link subtypes Florida & Porton. Whole Genome Sequencing is next generation technology that is very versatile and fast. However, the price is still too high (\$15,000), although it may be a tool in the very near future as costs are driven lower.

Whole Genome Sequencing has been used in the FDA Foods Program to detect *Salmonella* subsp. *Montevideo*. In cases where the source or ingredient is unknown, whole genome sequencing can help track the origin of outbreaks and contamination. New technology must meet the 4 R's: robustness, repeatability, rapidity, and recognition. Whole genome sequencing is developing in all four categories and will be a major epidemiological tool in the future.

The concept of the more we know, the less we understand was outlined. Sub-typing plays a major role in cluster detection, hypothesis generation, testing of food and water/environment, and strengthening of the association between illness and exposure. Specificity and sensitivity of multiple lab procedures must be compared to be able to maximize signal and reduce background noise. Whole genome sequencing is less specific (compared with pulsed field gel electrophoresis). The interpretation of the closeness of various strains by use of whole genome sequencing needs further research. Research steps needed to carry forward with whole genome sequencing include being able to measure normal genetic variation and being able to measure effectiveness at answering the specificity or sensitivity question of interest.

Executive Board Meeting Topics

July 30 – August 5, 2010

Anaheim, California

Following is an unofficial summary of actions from the Executive Board Meeting held in Anaheim, California over the dates of July 30 to August 5, 2010:

Approved the following:

- Minutes of April 26–28, 2010 Executive Board meeting
- FYE August 31, 2011 Budget including price adjustments to dues, subscription rates and Annual Meeting fees

Discussed the following:

- Committee appointments for 2010
- Financial results of Sanitation PDG Webinar series
- Board schedule of commitments during IAFP 2010
- Banquet preparation review
- Board communications to PDG meetings
- Whether or not to set aside space on Annual Meeting program for each PDG
- 2014 contracts for Indianapolis
- 2015 site selection process
- Long-range plan for IAFP
- Program for International Symposium in Bogota, Colombia – September 2010
- China International Food Safety & Quality Conference; Shanghai, China – November 2010
- Dubai International Food Safety Conference in Dubai, U.A.E. – February 2011
- IAFP International Symposium on Food Safety for 2011 – Australia
- Financial results for the European Symposium – Dublin, June 2010

- Investment results for 2008, 2009 and year to date, 2010
- Coordination of efforts with American Phytopathological Society (APS)
- 100-Year Anniversary planning
- Journal aggregations for *JFP*
- Change "Board Highlights" to "Board Meeting Topics" when publishing in *FPT*
- Involvement with updating APHA Compendium
- ASM-National Registry of Certified Microbiologists (NRCM)
- 3-A Sanitary Standards

Reports received:

- *IAFP Report*
- *Food Protection Trends*
- *Journal of Food Protection*
- IAFP Web site
- Membership Numbers
- Financial statements
- Board Members attending Affiliate meetings
- *Affiliate View* newsletter
- Future Annual Meeting schedule
- Future Exhibiting by IAFP

Next Executive Board meeting – November 1–2, 2010

Minutes of the International Association for Food Protection 2010 Annual Business Meeting

August 3, 2010
Anaheim, California

President-Elect Lee-Ann Jaykus welcomed attendees to the Annual Business Meeting.

Moment of Silence

President Vickie Lewandowski asked those present to observe a moment of silence in memory of departed colleagues.

Call to Order

The Annual Business Meeting of the International Association for Food Protection was called to order at 12:23 p.m. at the Anaheim Convention Center in Anaheim, California. A quorum was present as defined by the IAFP Constitution.

With the approval of the Executive Board, President Lewandowski appointed Michael Brodsky as Parliamentarian for the Business Meeting.

Minutes

Minutes from the 2009 Annual Business Meeting which were published in the October 2009 issue of *Food Protection Trends* were presented and approved unanimously.

Fred Weber brought a point of order to inquire if a motion was needed for the minutes to be approved. Michael Brodsky responded that no motion was required if there were no changes to the minutes presented.

President's Report

President Lewandowski reported on programs and activities of IAFP taking place over the past year. She reported IAFP experienced a financial loss during the last fiscal year ending August 31, 2009, but that membership is strong and this year's Annual Meeting attendance is much stronger than was expected. Average membership for the calendar year was at 3,419 with 21% of IAFP Members residing outside of North America. United States and Canadian membership levels remain steady. There are currently 19 Gold Sustaining Members and 13 Silver Sustaining Members included within our total 106 Sustaining Members, which is an all-time high.

President Lewandowski reported that last year's Annual Meeting in Grapevine contributed to the financial loss due to lower attendance of 1,735 and high food and beverage costs and other expenses. The Anaheim meeting attendance is expected to top 2,170, a 25% increase from last year. Booth sales increased as well reaching 154 booths compared to 118 last year. The European Symposium in Berlin last October (2009) also contributed to our loss due to similar issues of high meeting costs. However the June 2010 symposium in

Dublin registered an increased attendance of 300 and is expected to show a profit after all invoices are received and paid. Plans are being made for the 2011 Symposium to be held in The Netherlands next May.

The International Symposium for Food Safety held in Seoul, Korea in November had more than 500 people in attendance. The next International Symposium (also known as the 2nd Latin America Symposium on Food Safety) will be held this September in Bogota, Colombia and is being organized by the Colombian Affiliate. Plans are underway for Australia to be the location for IAFP's 2011 International Symposium on Food Safety.

It was also reported that the Foundation is falling short of its goal to raise \$1 million by 2010. Although we are short of the goal, we did increase the Fund from \$100,000 to \$735,000. She noted that students are critical to the future of the organization and we need to support them. She encouraged members to purchase the t-shirts that were being sold by the Student PDG to help support their efforts. She also announced that IAFP 2011 will mark the 100th Anniversary for the Association. It will be celebrated in Milwaukee, Wisconsin, where the organization first formed in 1911. President Lewandowski encouraged members to submit ideas for activities to the Executive Board to assist in planning. She then commended David Tharp and the entire IAFP staff for all their hard work at the meeting and throughout the year.

President Lewandowski concluded her report by presenting four Presidential Recognition Awards. The first was to Ed Zottola her former professor for all of his support over the years. The second was presented to Paul Hall who has been her mentor for many years and for his constant encouragement and support. The next award was presented to Julie Bricher for her assistance with editing the President's Column for *FPT*. The final award was given to David Tharp for all of his support throughout her term on the Executive Board and his willingness to step in wherever needed, even at the last minute.

Tellers Committee Report

Linda Harris, Teller, reported on two votes taken since the last Business Meeting. The first was a vote to change the Constitution which passed with a 98.7% positive vote. The second was for the Secretary election. There were 697 ballots cast and Donald Schaffner was elected as Secretary for the 2010-2011 year. A motion by Gale Prince and seconded by Paul Hall to accept the report and destroy the ballots was approved.

FPT Management Committee Report

Julian Cox reported that the committee will be making three recommendations to the Executive Board. They are (1) To revise the *FPT* Instructions to Authors to include the statement "manuscripts not formatted correctly may be rejected without review at the discretion of the Scientific Editor," (2) Restructure the online indexing of *FPT* articles to increase accessibility and link directly to article PDFs and additionally, provide RSS feeds and E-mail alerts to notify of *FPT*'s publication and make these alerts/abstracts publicly accessible, and (3) Upload historic *DFES* publications as searchable PDFs by keyword and author to the *FPT* Web site. A readership survey conducted in 2009 indicated *FPT* should be more technical and that membership content should be transitioned to the online form.

A question was asked by Anna Lammerding regarding whether *FPT* will become more citable. Julian Cox responded that in its present form, the number of articles as opposed to the number of pages of general, Association information does not allow indexing services to have interest in providing such a service.

JFP Management Committee Report

Margaret Harding reported that recommendations will be made regarding open access of some *JFP* articles, preprint of accepted articles prior to final publication and the development of an award for a most cited *JFP* article, Elliot Ryser to continue as Scientific Editor for another four-year term and the election of Kendra Nightingale as Vice Chair. There was discussion about the need for more submissions on chemical hazards associated with food, the reprint purchasing process and a readership survey to be developed by a sub-committee.

Foundation Report

Gale Prince reported that there have been challenges to significantly grow the funds held by the Foundation. The committee looked at the investment portfolio and recommended some small changes. He told that students are excited about the organization and are even making contributions to the Foundation. Currently, there are three pages of contributors published in the Annual Meeting Program Book; with a little more effort, the committee believes it can increase to five. The Silent Auction is a good source of revenue so he recommended everyone bid high. So far, twenty-five student travel scholarships have been given. Gale challenged the Affiliate organizations to give to the Foundation and that he is hoping for a big check. The Florida Association for Food Protection asked to be recognized and then presented an entertaining "surfer skit" that was completed with a \$1,000 contribution to the Foundation.

Affiliate Council Report

Chairperson Dan Erickson reported there are 47 Affiliate organizations. Two new Affiliates were presented charters at the Opening Session: Nebraska Association for Food Protection and the Chinese Association for Food Protection of North America. Thirty-eight Affiliate reports were received this year. Dan welcomed David Lloyd as the Affiliate Council Chair and Gloria Swick-Brown as the Affiliate Council Secretary.

Executive Director's Report

David Tharp reported the Association has been very active and productive this year. Two European Symposia were held during this fiscal year. In October of 2009, a symposium was held in Berlin, Germany with attendance of 215 and then last May, the European Symposium was held in Dublin, Ireland with attendance of 300 (a 39% increase). The next European Symposium is being planned in The Netherlands in May or early June of 2011. The next Latin American Symposium will be in Bogota, Colombia in September 2010. The Association will also continue our presence in Dubai and China.

David reported the Association will end its year on August 31 this year with a positive General Fund balance. The past year has been very challenging with every expense being carefully analyzed. There was a loss of about \$400,000 for the year ending August 31, 2009. Most of this loss can be attributed to the reduced attendance and high expenses of the Texas meeting in July 2009; a loss taken on our investment accounts; and to increased expenses associated with the implementation of the new IAFP Web site and new online membership system. Our successes in Dublin and now, Anaheim should help the bottom line recover much of the 2009 loss. The final results for fiscal year ending August 31, 2010 will be pending payment of invoices related to Annual Meeting and will be reported to the Board at its November meeting. David thanked the IAFP Staff, the Executive Board and all IAFP Members for their efforts this past year.

Unfinished Business

There was no unfinished business.

New Business

There was no new business.

Adjournment

The meeting was adjourned at 1:13 p.m. by President Vickie Lewandowski.

Respectively Submitted,

Katherine M. J. Swanson, Secretary

Committee Minutes

STANDING COMMITTEES

Food Protection Trends Management Committee

Members Present: Julian Cox (Chairperson), Michelle Danyluk (Vice Chairperson), David Golden (Scientific Editor), Margaret Hardin (JFP Chairperson), Gary Acuff, Kristie Barlow, Mark Berrang, Ben Chapman, Beth Ann Crozier-Dodson, Denise Eblen, Andy Hwang, Susan McKnight, Michael Musgrove, Pat Rule, Manpreet Singh, Michelle Smith and Kelly Stevens.

Outgoing Members: Montserrat Hernandez Ituriagga, Kathleen Rajkowski and Peter Taormina.

Board and Staff Present: Vickie Lewandowski, Katie Swanson (Board Liaison), Donna Bahun (Staff Liaison), Lisa Hovey and David Tharp.

Visitors/Guests Present: Christine Bruhn, Jinru Chen, and Amy Simonne.

Meeting Called to Order: 2:05 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Michelle Danyluk.

Introductory Items of Business: Julian Cox welcomed everyone to the meeting and all persons in attendance. All persons in attendance at the commencement of the meeting introduced themselves, their affiliation, and their role on the committee. Thanks were given to those leaving the committee and new members of the committee were welcomed. Congratulations were given to Michelle Danyluk and David Golden, as the winners of the Young Researcher and Educator Awards, respectively.

Additions/Modifications to the Agenda: Confirmation of David Golden's term (confirmed as Scientific Editor through 2011) and Katie Swanson – report on IAFP strategic planning.

Minutes from the 2009 Committee Meeting:

The 2009 minutes were approved by the Committee without amendments or corrections. Motion by Katie Swanson; second by Susan McKnight.

Executive Board Report: Vickie Lewandowski gave a report indicating the success of the opening reception, the fact that IAFP membership is at an all-time high and that international membership has almost tripled since 2004. The 2010 Annual Meeting currently had over 2,000 registrations, and is poised to have the largest numbers of attendees and exhibitors ever. Vickie also spoke to the success of the two European symposia held in the past year, and the planned international symposia for 2010–2011.

Executive Director Report: David Tharp gave a report including the financial standing of the organization.

Scientific Editors Report: David Golden presenting information related to the numbers, authorship and sources of manuscripts received to *FPT*. In 2009, 39 manuscripts were submitted, 30 were accepted, 7 rejected, one withdrawn and one under revision. The majority (20) were from US academic

sources, however an increasing number from international, and non-academic institutions were submitted. Eight special/general interest non-peer reviewed were also published. To date in 2010, 23 manuscripts have been received of which 10 have been accepted. It was brought to the Board's attention that one manuscript was submitted and not yet sent for review due to formatting issues. This author has received in excess of 20 E-mail communication from IAFP staff and the scientific editor, and has been uncooperative in correctly formatting his manuscript, and disrespectful to staff and the scientific editor. Discussion followed on what to do to prevent this problem in the future. Denise motioned to recommend to the IAFP Board a change to the instructions to authors (see below), Katie seconded, all were in favor.

IAFP Long-range and Strategic Plan: Katie Swanson presented a brief overview of the implications for *FPT* from the planning session. As the Committee attempts to modernize *FPT*, the Board suggests we focus on the following four areas: (1) Increasing scientific submissions; (2) Review/revisiting content; (3) More visually appealing and (4) Increase circulation.

Old Business:

(1) *FPT* Subcommittee for determining the future directions of the journal:

The subcommittee distributed a survey in late 2009 that received ca. 700 (20–25%) responses. A summary was submitted for discussion at the April Board meeting. The responses confirm the identity crisis *FPT* is experiencing. Consensus among the responses and the subcommittee is a desire for more technical, opinion and position papers and less membership info and news content, which could be moved to an online format. A finalized report will be submitted from the committee by the end of 2010.

Discussion of how to increase submissions and indexing of the journal resulted in discussions of how to complement the *Journal of Food Protection* and not be considered "JFP light". It is thought the journal is the ideal location for "technology transfer" and "human based" research studies targeted for industry readership. In addition the committee would like to continue to encourage publications from PDGs.

In celebration of the centennial of IAFP, the committee is considering celebrating seminal historic manuscripts in food safety by republishing them in *FPT* accompanied with a ca. 800 word commentary as to how the work was influential and applicable today.

The next steps of this committee are to evaluate the mission, objectives and current title and tagline of the journal, and to evaluate whether changes are required in these to move the journal forward.

(2) Part-time "managing editor" appointment: The Board has shelved this item in 2010 given IAFP's financial position and because the image and needs of *FPT* continue to evolve. It is likely that this will be done on a contract basis only in the short term.

New Business:

(1) *FPT* Article Online Accessibility

The committee expressed concern as to the perceived difficulties of finding online *FPT* articles. A recommendation to the Board (see below) related to the accessibility of current (motion by Gary, second by Ben) and old *DFES* articles

(motion by Mike, seconded by Mike) and for this online content to be updated monthly. There was some discussion of Open Access, following on from similar discussions at the JFP Management Committee.

Recommendations to the Executive Board:

1. Revise *FPT* Instructions to Authors to include the statement "manuscripts not formatted correctly may be rejected without review at the discretion of the Scientific Editor."
2. Restructure the online indexing [Table of Contents] of *FPT* articles to increase accessibility and link directly to article PDFs. Additionally, provide RSS feeds and E-mail alerts to notify *FPT* publication and make these alerts/abstracts publically accessible.
3. Upload historic *DFES* publications as searchable PDFs by keyword and author to the *FPT* Web site.

Next Meeting Date: July 31, 2011.

Meeting Adjourned: 3:45 p.m.

Chairperson: Julian Cox.

Journal of Food Protection Management Committee

Members Present: Margaret Hardin (Chair), Julian Cox, Michelle Danyluk, Atin Datta, John Bassett, Tong-Jen Fu, Santos Garcia, Leon Gorris, Kendra Nightingale, Tim Jackson, Mangesh Palekar and Manan Sharma.

Editors Present: Michael Davidson, Joseph Frank, Elliot Ryser and John Sofos.

Board and Staff Present: Stan Bailey, Lee-Ann Jaykus, Vickie Lewandowski, Katie Swanson, Isabel Walls, David Tharp, Lisa Hovey and Didi Loynachan.

Visitors/Guests Present: Jinru Chen, Michelle Danyluk and Mark Harrison.

Meeting Called to Order: 10:00 a.m., Saturday, July 31, 2010.

Recording Secretary of Minutes: Kendra Nightingale.

Old Business: The agenda was reviewed and approved. The minutes of the 2009 meeting were reviewed and approved.

Report from IAFP President: The recent focus on international activities increased and international members increased two fold since 2004. In 2009, two European Symposia were held in Germany and Ireland along with an International Symposium for Food Safety in Korea. Currently, 21% of IAFP members reside outside the U.S., and total membership is approaching 3,500 with membership in the United States remaining constant. There are 105 Sustaining members, 19 Gold, and 13 Silver. The IAFP Foundation currently has close to \$735,000 in its account. The 2011 Annual Meeting will mark the 100th anniversary for the association and members are encouraged to submit ideas for activities to the executive board for planning purposes.

Report from IAFP Office: David Tharp thanked the four editors and the committee members. Approximately \$400,000 of IAFP's net reserve funds were used in the ending August 2009 year for operating costs, Web site development or diminished through investment losses. Tamara Ford left IAFP

and has been replaced by Terri Haffner who has assumed her duties with Programs. Didi Loynachan has assumed more of the *JFP* responsibilities.

Report from the *Journal of Food Protection* Scientific Editors:

(The complete report for Vol. 72 can be found in the January issue of the *JFP*.) Briefly, Vol. 72 of *JFP* contained 2,688 pages and 375 articles (365 research papers), compared to 2,636 pages and 369 articles in Vol. 72. So far, Vol. 73 (2010) contains 1,404 pages and 172 papers, compared to 1,592 pages and 194 papers in Vol. 72. The journal had excellent international (outside the US) contributions, with 61.6% of authors in Vol. 72 from outside the U.S. The editorial board in 2009 consisted of 148 members. Individuals interested in becoming a reviewer should submit a letter to the editors to show their interest.

New Business: A motion for the Executive Board to reappoint Elliot Ryser as scientific editor for another four-year term was approved. A motion to elect appoint Kendra Nightingale as Vice Chair of the *Journal of Food Protection* (*JFP*) Management Committee was made, seconded and approved.

There was a lengthy discussion about making an effort to increase the number of publications on chemical hazards associated with food in the *Journal of Food Protection*. Results of this discussion included promoting publication of articles on chemical food hazards by the Food Chemical Hazards and Food Allergy PDG through (i) announcements through AOAC meetings, (ii) incorporating sessions in IAFP Annual Meetings on chemical contamination, (iv) solicitation of submissions by the PDG and the PDG to provide co-editors with names of active researchers in the field of chemical hazards such as allergens for inclusion on the Editorial Board, and (v) delivering invitations to write review articles to leaders in the chemical hazard research field.

Didi Loynachan delivered an update on the IAFP Plagiarism Policy and the incorporation of this policy into the *JFP* Instructions for Authors. She also delivered updates on the journal impact factor and subscription (print and electronic) statistics. Specifically, the journal impact factor increased to 1.960 in 2010 from 1.763 in 2009. Details on subscriptions status were circulated in a separate document. In addition, Didi notified the group that *JFP* ranked in the top 10 titles at Ingenta Connect in full-text downloads for the months of March – June, 2010. Information was also mentioned about the 5 most popular *JFP* articles in 2009. The committee asked Didi to obtain information on the top 10 most popular articles and post the information on the IAFP Web site.

There was a lengthy discussion about open access to *Journal of Food Protection*. Based on a recommendation to the Executive Board from last year's discussion, the Board decided to set-up a mechanism to provide open access to for certain articles on an as needed basis, such as for NIH funded research that requires publication in open access journals. The fee for online access will be provided by the contributing authors. The rationale for the additional fee stemmed from revenue that would be lost from purchases on individual articles from non-subscribers and loss of print and online subscribers. It was requested that the IAFP staff further investigate the additional page charges for open access. Based on the results of this trial over the next year, the option may then be added for all articles submitted to *JFP*. In addition, the Editors discussed publishing 3–4 general interest papers per year and waiving the open access charges. In the final analysis, open access should increase the number of citations for the Journal. There was a discussion about the mechanism of reprint orders and it was determined that although hard copies of reprints are not commonly but are still requested; making reprints available to

authors (regardless of the mechanism) does not accrue costs to the journal. The consensus was to keep allowing authors to purchase reprints at anytime.

There was a discussion on establishing an award for high-impact articles and a recommendation will be made to the Executive Board to establish this type of award.

There was also a discussion about making accepted, but not published papers, available online prior to publication. It was thought that prepublication access might help increase the impact factor by providing more access to articles. However, the question of accepting a publication but not receiving payment for the page charges was raised. IAFP staff agreed to investigate a system to implement prepublication access to reviewed and accepted manuscripts.

The submission of microarray data, gene sequence data, and strains of microorganisms used in studies was discussed. The raw data from microarray studies and gene sequences should be deposited in the appropriate database (e.g., GEO), and guidance to authors to state this in the Materials and Methods section of papers will be issued. A checkbox on the submission form or added language to the instructions to authors will be used. Also, authors will be strongly encouraged to make strains available to other investigators.

A sub-committee was reappointed (pending Executive Board approval) to examine membership attitudes about modifying subscription rates, page charges, and feasibility of making *JFP* completely online. This sub-committee, if approved, will consist of Mark Harrison, Kendra Nightingale and John Bassett. Julian Cox will facilitate this effort by providing a similar recently completed survey to assess *Food Protection Trends'* readers attitudes.

Information Items to the Board:

1. The policy on plagiarism reviewed by the Committee in spring 2010 has been added to the Instructions to Authors.
2. Instructions to authors will be modified to address the following issues: (a) deposition of microarray data and gene sequences into appropriate database catalogs, and to include accession numbers in the materials and methods of submitted manuscripts, (b) authors will be encouraged to make available and share microorganisms in their studies to requesting parties.
3. The subcommittee, originally appointed in 2009, should develop and implement a survey this year to assess the attitude of journal readers regarding journal publication avenues (e.g., print vs. online, online access, and electronic publication ahead of print).

Recommendations to Executive Board:

1. Reappoint Elliot Ryser as Scientific Editor for another four-year term.
2. Approve the election of Kendra Nightingale as Vice Chair.
3. The journal should establish a mechanism for allowing online prepublication access of accepted manuscripts ahead of print through *JFP* online and should develop an appropriate mechanism to bill page charges for online publication ahead of print.
4. A mechanism for providing open access should be established for manuscripts to be supported by funds from the contributing authors. Over the next year the process will be tested for manuscripts requiring publication in open access journals, such as NIH funded research. The IAFP staff will investigate the additional fees necessary for open access. In addition, the journal should consider providing funds to allow open access for a limited number (3–4 per year) of general interest, high merit/impact papers selected by the co-Editors.

5. A Top Publication award should be developed for the most cited articles.

Next Meeting Date: IAFP 2011 Annual Meeting.

Meeting Adjourned: 12:05 p.m.

Chairperson: Margaret Hardin.

Program Committee

Members Present: Lou Tortorello, Faye Feldstein, Randy Phebus, Lee-Ann Jaykus, Joshua Gurtler, Vijay Juneja, Lori Ledenbach, Paula Fedorka-Cray, Eric Martin, Kali Kniel, Mindy Brashears, Scott Hood, Isabel Walls, David Tharp, Lisa Hovey, Terri Haffner and Alejandro Mazzotta.

Members Absent: Purnendu Vasavada and Maria Teresa Destro.

Meeting Called to Order: 7:15 a.m., Wednesday, August 4.

Recording Secretary: Terri Haffner.

Old Business: The meeting was called to order by Randy Phebus. Lee-Ann Jaykus (IAFP President-Elect) asked the committee to consider 100 year ideas for the 2011 meeting. She is chairing the 100 Year Celebration Committee for the Executive Board.

Faye Feldstein (chair, 2010) thanked the committee members for their effort and being innovative, in particular, Kali Kniel, as she is rotating off. She introduced new members Mindy Breashears, Joshua Gurtler, and Lou Tortorello (assigned to a second term).

Randy Phebus (chair, 2011) thanked Faye for her hard work the past year. Good quality program. Isabel Walls is the new Board liaison. Randy introduced Terri Haffner who is the new IAFP staff person who is our organization liaison.

Randy went through the IAFP Anti-trust policy.

New Business: Randy went through the mission/activities of the Program Committee for the benefit of new members, and the timeline for developing the 2011 meeting technical program. November conference call will occur. Send an E-mail for availability on selected days (discuss with David and Lisa).

Symposia – set up the review center so the committee can score them online prior to November call. Communications will come to all committee members via E-mail on the evaluation process and timeline.

This year we need to document notes well so we can let rejected symposia, or symposia that the committee suggests significant revisions or reformatting, know with more detail what the committee discussed or felt.

Sometimes more than one PDG sponsors a symposium. Sometimes it is not a PDG that submits. In Scholar One we need to allow for those things.

Try to encourage short symposia so that more proposals can be accepted, but not at the expense of symposia quality. People are already developing long symposia, so it may not work for this year.

The committee discussed ideas for types of preferred speakers and potential names for the Ivan Parkin and Siliker Lectures for the 2011 meeting. These ideas will be forwarded to the Executive Board.

2010 Meeting Recap:

Lori Ledenbach – is there a way to get more detail on speakers within each symposium in advance of the meeting to help with companies/individuals putting together travel plans? Itinerary planner link will be placed on the IAFP Web site.

Paula Fedorka-Cray – 2nd ILSI symposium. The title was wrong. Not good attendance.

Faye Feldstein – A couple of symposia had 7 speakers; thus, no break. Some committee members didn't mind. It gave people the option of either going on a break, but exhibitors don't like it. Don't encourage it.

Isabel Walls – some people had difficulty with online symposia submissions. It was slow and tedious. Lisa Hovey said IAFP office was working on improvements currently.

Recommendations to Executive Board:

1. The IAFP Bylaws state that the Chair of Developing Scientists Committee is to assign up to 5 additional judges. This needs to be updated to allow us to expand the number of judges since we now have many more poster and oral awards to evaluate.
2. Continue with the current system for submitting and evaluating symposia and workshops.

Meeting adjourned: 8:15 a.m.

Chairperson: Randall Phebus.

SPECIAL COMMITTEES

3-A Committee on Sanitary Procedures

Members Present: Philip Wolff (acting Chair), Steven Sims and Ron Schmidt.

Visitors/Guests: Yale Lary, Jr., Bob Sanders, David Herweyer, Bob Hagberg, Dennis Gaalswyk, Dan Erickson, Jeff Mitchell, Mark Drake and Jeff Kornacki.

Meeting Called to Order: 1:05 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Philip Wolff.

Old Business: No old business.

New Business:

1. Discussed Webinars.
2. Discussed symposia possibilities for the Milwaukee 2011 Annual Meeting.

Recommendations to the Executive Board: None.

Next Meeting Date: May 2011.

Meeting Adjourned: 3:00 p.m.

Chairperson: Philip Wolff (for Don Wilding).

Audiovisual Library Committee

Members Present: Bennett Armstrong, Lisa Hovey, Warren Clark, Robert Sanders, Don Schaffner and Dorothy Wrigley.

New Members: None.

Visitors/Guests: None.

Meeting Called to Order at: 10:05 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Dorothy Wrigley.

Old Business: Accepted notes from October 2009 *Food Protection Trends*, page 713.

New Business:

- (1) To have new students assigned to attend the Committees and the various PDGs so their involvement is expanded from merely presenting posters and new thoughts can be introduced.

- (2) To present the A/V Library history for our 100th anniversary as a focal point at the opening session for 2011.
- (3) Digitize the A/V Library material to the new technology to prevent it from being lost.

These three ideas were felt to increase the exposure of our lending library and increase the usage of the library and increase the material held in the library.

Read to the committee members were the Antitrust Guidelines for Association Meetings and the Web Page Guidelines.

Recommendations to the Executive Board:

1. To increase membership awareness and usage of the A/V Library by the achieving of Webinars that the PDGs and IAFP develop.
2. To ask exhibitors to provide items to A/V Library for server/Internet distribution for our members.
3. To ask our college/university members to provide items to the A/V Library for distribution to our members.
4. To investigate the digitizing of materials in 1, 2 and 3 above to have a valuable resource in the A/V Library for server/Internet usage.
5. To expand the "links" on the IAFP home page into the A/V Library and to structure into a "super-arch" library with heading tabs such as links, Food, Dairy, Meats, Bakery, Pre/Post Harvest, Government Agencies, College/University Food Science, etc.
6. At next Annual Meeting have presentation of the 100th year history through the A/V Library materials of the original tablets on "thou shall wash thy hands" through the early meetings of the first state members through the first "international" meeting to the FUTURE...

Next Meeting Date: July 31, 2011.

Meeting Adjourned: 11:03 a.m.

Chairperson: Bennett H. Armstrong.

Committee on Control of Foodborne Illness

Members Present: Ewen Todd, Judy Greig, Lee-Ann Jaykus, Kristina Barlow, Denise Eblen, Mitchell Gilgour, Jack Guzewish, Andrew Maccabe, Sherri McGarry, Maria Nazarowec-White, Thilde Peterson, Ruth Petran, Agnes Tan and Guodong Zhang.

New Members: Craig Henry, Oscar P. Snyder, Deborah Herr, Nate Bauer, Ali Al-Sakkaf, Yousef Alsaadi, Bobby Krishna, Muhammad Qamar and Phyllis Posy.

Visitors/Guests: Yale Lary, Moustapha Oke, Michael Michel, Masi Rajabi, Jairo Romero, Katherine Lyle, Judy O'Brien, Helen Barela, Michael Brodsky and Gordon Hayburn.

Meeting Called to Order: 8:15 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Judy D. Greig/Agnes Tan.

Old Business:

1. Approval of last year's minutes: moved by Tilde Peterson, seconded by Ruth Petran, and agreed unanimously.
2. *Symposia*: two issues arose. In 2009, for the October symposium approval deadline, it was required that speakers be asked and agreed to

come to the meeting before approval could be given. This took a considerable amount of time by the Committee compared to the past when speakers were suggested and then confirmed if the symposium was accepted. Last year the CCFI had six rejected symposia meaning 36 speakers had to be contacted and told that their presence and contribution would not be needed. This makes it difficult for them to be approached again for later symposia suggestions, and CCFI members will be discouraged from submitting proposals in the future. We were told that new speakers would be given a higher priority than those who had been heard year after year on the same subject. Our symposia have tried to get a mix of new (fresh ideas) and old (experience). Also, there are increasing number of late breakers that add to the approval process confusion. The Board really needs to a clear policy on how to get committee and PDG members to have meaningful input. Partnering with other committees/PDG should have a higher priority. The second point is that the CCFI would also like symposia and technical presentations to be put on an IAFP Web site. Another possibility is for the CCFI sponsored symposia to be put on the CCFI Web page. Can speaker presentations be put on the Web site now if we have speaker approval? For this, we would need a speaker release form.

3. *Procedures to Investigate Foodborne Illness*: The 6th edition is completed and forwarded to Springer Publishing. Reformatting the keys was the major activity in this edition with input by Kristin Delea (CDC), Jack Guzewish (lead), Ewen Todd and Bert Bartleson. Three issues arose for discussion from the release of this publication:
 - (a) Need to identify appropriate individuals to be responsible for updating the electronic version and we propose that the CCFI be responsible for this with a final review once a year; share files used by members would facilitate updates.
 - (b) Marketing of electronic document: how would releases be managed on the Web site and who would have access to this; the CCFI has been on record that this type of information should be freely available to all persons seeking information. One approach is to put it on the Internet so it will be found by search engines; the more links, the higher the Google rating. This approach reinforces the branding of the organization. However, the Committee will require help (via Board) to locate members or staff with Web site knowledge (maybe hire a part time student). CDC may want this on their Web site as well.
 - (c) The electronic 6th edition version tables and investigative forms need to be searchable by food type, pathogen, etc., like using Access, but this database format may not be practical because there needs to be a printable version with PDF forms available for use on site.
4. *CDC Diseases Transmitted by Foods* (1982 last edition): This would be as complete a list as possible of all pathogens associated with foodborne disease. However, a title change was suggested of "Agents of Acute Foodborne Disease" to limit its scope to acute agents only (discussion arising from where mycotoxins fitted in). The aim is to have symptoms, incubation period, sequelae, implicated food, etc., included. We may want to link this searchable document to be hyperlinked to other sites. The process was agreed to by Rob Tauxe (CDC) and the Board, with the Board providing funds for a student to prepare draft documents with member input. This would be best in an Access database format for ease of searching for specific data used in foodborne disease outbreak investigations (see above for searching electronic versions of databases of tables and keys). Members of CCFI have already self-identified to work on the updates, but others have to be approached. For instance, Guodong Zhang of FDA, who attended the CCFI meeting for the first time, will locate updates on *Shigella* and *Campylobacter*. The following persons at FDA could also be useful contributors: james.fear@fda.hhs.gov; allen.gelfius@fda.hhs.gov; janet.williams@fda.hhs.gov.
5. *Food worker papers in JFP*: Ewen Todd updated the Committee on the status of five new foodworker papers currently in press (August to December, 2010) be combined with the 6 already published (2007–2009) (total 11). A last paper (#12) should focus on practical aspects of hygiene. Attention was drawn to the fact that FDA retail section (Glenda Lewis, Kevin Smith) have published a similar paper on retail hygiene this year and they should be approached for input.
6. *Revisions to the Procedures to Investigate Waterborne Illness manual*: This will be initiated by the Committee in combination with the Water Safety and Quality PDG. Scope should include algal toxins and possibly natural disaster management. Contacts for revision process could be several, e.g., at CDC and FDA – Vince Radke – waterborne disease surveillance for states vradke@CDC.gov; Richard Gelting – environmental engineer rug7@CDC.gov, Michael Beach – Head waterborne disease at CDC mjb3@CDC.gov and at FDA – Thomas Hill Thomas.Hill@fda.hhs.gov and Jack Guzewish John.Guzewish@fda.hhs.gov, Christine Moe, Emory University. Larry Cohen, Kraft foods; Phyllis Posy (new Committee member), Israel have agreed to be involved. Marilyn Lee is coordinating the review team. Ewen as Chair is an ad hoc member.
7. *Foodborne crisis document*: Following on the recommendation from NAFSS to create a document or manual on "How to respond to a foodborne disease crisis," the CCFI will begin with a proposal for a symposium or Webinar to generate interest from the response side, followed by a possible workshop and a manual on crisis communication. Scope of document must be decided. More research needed before committing to an e-doc manual. Thilde Peterson and Michael Roberson are taking the lead.
8. *Other manuals to be considered for updates by CCFI in 2011*: Vector-borne disease, HACCP.
9. *Electronic version of manuals*: It was agreed that all manuals produced by this Committee should be available in an electronic format. Craig Henry volunteered to help with the set up with the Grocery Manufacturers Association (GMA) expertise for all electronic manuals.
10. *Committee history*: Frank Bryan completed a history of this Committee in 1999 and he requested that the Committee add to this for a 100-year history in 2014 (agreed to by the Board). Members should record information on publications, talks and symposia from 1999 to the special edition of *Food Protection Trends*.

11. *CCFI Web page*: the Committee will actively update the Web page with presentations, symposia ppts/ abstracts and publications with the help of IAFP staff. A list of items will be developed for regular updated, keeping the site current. Judy Greig agreed to forward the material to IAFP staff for posting. In the Members Only section, minutes, member lists, Board recommendations to the Committee, and how to join the Committee, could be included. It would also be useful to enter information to help generate the "history" project. We should have something on the general area of the IAFP Web page to generate interest in the Committee from non-members of IAFP.

New Business:

1. Sharing Committee expertise: Should the CCFI develop Webinars for either our own Committee or for a broader audience? Could be a method to deliver material from rejected symposia topics, demonstrate the usefulness of our manuals, or share information from the food worker outbreak and hygiene papers. Michael Roberson will look into how to develop Webinars.
2. Ideas for further work by this committee:
 - a. Agnes suggested that with migration, travel and food imports – health protection agencies and consumers are confronted with unfamiliar foods. An online resource that has photos of these foods, what they are called (ethnic names as well as common names), how they are manufactured, how they are meant to be consumed, what risks they pose to food safety, etc. would be useful. These could be put on the CCFI Web page with IAFP and other source hyperlinks.
 - b. We should work with presenters at our symposium and develop the presentations into short papers suitable for *Food Protection Trends*.

Ideas for new symposia for 2011:

- a. How does a new company create their food safety program to protect themselves and the public? Thilde Peterson has done some inquiries and industry public information officers (PIOs) people are keen to help. Craig Henry has led table top exercises on crisis management. There is often confusion as to which agency has the lead role; processes now in place after Canadian *Listeria* outbreaks. Need scenarios for educators of PIOs to run at local level.
- b. How does a new company select a lab, suppliers, co-packers etc.? Thilde Peterson will develop this further.
- c. How do you set up a new food business program with legal council? Co-develop with the Food Law group. Thilde Peterson will develop this further.
 Setting up a legal council – retail food safety/ general emerging issues.
 Need support from retail group as well.
 Need to be clearly international. Who can you trust? Legitimacy of information – membership in organizations, etc?
 Is the information communicated in a meaningful way – interpretation?
- d. HAV outbreaks associated with semi-dried tomatoes in Australia, France and

the Netherlands. New food vehicle. Test methodology for HAV detection is at a developmental level. This could perhaps be developed in conjunction with the Applied Laboratory Methods group. Agnes Tan to develop further.

- e. Roundtable on labeling – Can you hear us now? Food safety messaging. Is the product raw? "Use-by dates." Are we getting through to the consumer?
- f. Quick service situation could not determine what the food vehicle was in the quick service outbreak? Multi-ingredients on menu items. How useful for attribution?
- g. Workshop on the foodborne worker risk factors and hygiene based on the 11 published papers

Discussions with Board Liaison:

1. *Question: How can this committee increase the IAFP brand?* (1) We can put on workshops, affiliate talks, and discuss the Procedures manuals to market the work of the Committee, etc. (2) Thilde said that her company requires that at least one representative of a collaborating company be an active member of IAFP, and this approach could be suggested for other corporate members to consider. (3) Another suggestion was for IAFP having booths at other meetings – technical meetings lead to dual membership; this may occur for IFT and ASM but could be broadened to national meetings of organizations like NEHA and AAAS (IFT has representation at AAAS). (4) Also, for the IAFP Milwaukee meeting we could ask the local affiliates/chapters/members of local environmental associations to attend IAFP when in their state or to be approached to attend this 100th Annual Meeting.
2. *Question: What role should social media play at IAFP?* Facilitate social media within the committee. This can be done by a mentoring process where a student or younger professional with experience and work with these communication technologies coach the CCFI members. For example, the CCFI member could suggest a topic a week and the coach can facilitate how this would be put up so it becomes an IAFP CCFI blog or Facebook page. It is not only the initiating activity but the monitoring of responses that we need to consider. How do we locate and work such mentors/coaches?

Recommendations to the Executive Board:

1. The Board clarify symposia proposal approval process to avoid speaker embarrassments and committee member fatigue (see full discussion under item #2).
2. The Board consider mechanisms to make speaker presentations available after each Annual Meeting to IAFP members/attendees.
3. The Board create a policy for updating and release of electronic manuals and other CCFI documents.
4. The Board help tailor social media tools for use by the CCFI (Board Liaison issue).
5. The Board consider the CCFI suggestions for branding the organization (Board Liaison issue).

Next Meeting Date: July 31, 2011, Milwaukee, Wisconsin.

Meeting Adjourned: 5:15 p.m.

Chairperson: Ewen Todd.

Constitution and Bylaws Committee

Members Present: Zeb Blanton, Jenny Scott, Bob Sanders, Michael Brodsky, Steve Murphy, Kathy Glass, Randy Daggs and Don Schaffner (Board Liaison).

New Members: None.

Visitors/Guests: None.

Meeting Called to Order: 11:12 a.m., Sunday, August 1, 2010.

Approval of Minutes from 2009 Meeting: Motion by Bob Sanders; 2nd by Michael Brodsky.

Recording Secretary of Minutes: Kathleen Glass.

Old Business: None.

New Business: Action items for Committee:

1. Review C&B to ensure that current association practices, particularly with respect to electronic voting, are in compliance with C&B.
2. Determine mechanism by which inactivate committees or professional development groups are disbanded or merged with similar active committees.
3. Review and distinguish requirements for Standing Committees and Special Committees to determine if separate categories are still needed.

Recommendations to the Executive Board:

1. Appoint Randy Daggs as Vice-Chair.

Next Meeting Date: Conference call to be scheduled in Fall 2010.

Meeting Adjourned: 11:38 a.m. Motion: Randy Daggs, 2nd: Michael Brodsky.

Chairperson: Zeb Blanton.

Foundation Committee

Members Present: Gale Prince, Don Zink, Vicki Lewandowski, Lisa Hovey, Larry Cohen, LeeAnn Jackson, Lee-Ann Jaykus, Katherine Swanson, Richard Linton, Isabel Walls, Alvin Lee and Fred Weber.

Meeting Called to Order: 3:15 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Don Zink.

Old Business:

Minutes from 2009 meeting were accepted by voice vote. Discussed budget and income expense statement. Discussed funding budgeted for student travel scholarship.

The committee noted that \$10,000 had been budgeted this year to help cover the costs of international meetings. Money had been spent for these meetings in 2009, but had not been budgeted in that year.

Fred Weber discussed his analysis of our investment. Fred's financial advisor did a *pro bono* detailed analysis of our portfolio. The analysis indicates that the portfolio costs are fairly high.

The committee was impressed by Wells-Fargo's use of funds with experienced Fund Managers, excellent diversification, and blend of value and growth funds.

New Business:

Marketing plans for 2011: Silent auction idea: as we come to the 100th anniversary, ask for donations of collector items, e.g., IAMFES, IAFP or dairy-related items. The committee discussed at some length ideas for commemorative item ideas. Discussed the possibility of a historical exhibit, film or book. Could we get corporations to

make 100th year anniversary donations such as corporate 100 year history books? These could be offered in the silent auction.

Recommendations to the Executive Board:

1. The committee recommends that the name of the Student Travel Scholarship be changed to "Student Annual Meeting Travel Scholarship".
2. The committee recommends that the fund manager, Wells Fargo, move to 4 and 5 star funds when possible, eliminating the 3 star funds where warranted. Also, the committee recommends that load funds be eliminated from the portfolio. The portfolio is performing no better than the S&P 500, yet fund costs are significantly higher than what we could otherwise obtain in something like the Vanguard S&P 500 fund. The committee recommends that we negotiate with Wells Fargo for lower costs, asking for a 1% fee rather than 2%. The committee felt that the 24% investment in international funds was a bit high given current economic concerns. The committee recommends that Wells Fargo be asked to re-examine the portion of funds in international funds. The committee felt that the portfolio should be greater consideration to quality, including high quality corporate stocks. The committee recommends that Wells Fargo be asked to consider increasing the value funds while still maintaining a reasonable portion of growth funds.
3. The committee recommends that the golf fundraiser be continued and that the link to the Foundation Fund be more clearly advertised.
4. The committee recommends that we consider adding optional donation boxes of \$25, \$50, \$100 and "other" to the membership renewal form.
5. The committee recommends that the membership renewal form ask if member's employer has a matching donation program and whether or not it can be used for IAFP donations.

Next Meeting Date: July 31, 2011.

Meeting Adjourned: 4:45 p.m.

Chairperson: Gale Prince.

Membership Committee

Members Present: Crispin Philpott, Katie Swanson, Lisa Hovey, Zeb Blanton, Margaret Burton, Gordon Hayburn, Susan Linn and Ed Wellmeyer.

Visitors/Guests: Bob Sanders.

Meeting Called to Order: 3:00 p.m., Saturday, July 31, 2010.

Recording Secretary of Minutes: Crispin Philpott.

Old Business: Reviewed 2009 meeting minutes, recommendations & Board responses.

- Gordon Hayburn cited free UKFP membership to IAFP members.
- Effort to solicit Membership Committee participation by Exhibitors.

New Business: IAFP Secretary Katie Swanson reviewed focal points of IAFP's long-term strategic plan & correlation with Membership Committee mission:

- Engagement, Foundation, Meetings, Publications & Resources.
- Cited 3 Sanitation Webinars of 100 people each at \$25/line.
- Cost: \$500 ea, Free to Corp. Sponsors, Return: \$2,500 ea.

- Gordon Hayburn suggested future focus beyond microbial issues.
- Discussion on effective use of social media; reaching out to next generation.
- Zeb Blanton nominated & elected Committee Vice Chair.

Things to do:

1. For 2011 meeting, Committee to begin compiling "100 Food Safety Tips."
2. Committee to focus on recruiting International members (e.g., Bobby Krishna from Dubai).
3. Committee to recruit affiliate & student participation in Membership work.

Recommendations to the Executive Board:

1. Approve appointment of Zeb Blanton as Committee Vice Chair.

Next Meeting Date: July 30, 2011, Milwaukee, WI.

Meeting Adjourned: 4:30 p.m.

Chairperson: A. Crispin Philpott.

Nominating Committee

Members Present: David Tharp, Lee-Ann Jaykus, Gloria Swick-Brown (Chairperson) and Barbara Blakistone (Vice Chair). All Committee Members were in attendance.

Meeting Called to Order: 3:30 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Gloria Swick-Brown.

Old Business: None

New Business: Welcomed members and had introductions. The process and timelines were discussed and David Tharp discussed the general charge of the committee. Possible candidates were discussed.

Recommendations to the Executive Board: None.

Next Meeting Date: A teleconference will be scheduled in the near future.

Meeting Adjourned: 4:30 p.m.

Chairperson: Gloria Swick-Brown.

Past Presidents' Committee

Members Present: Gary Acuff (Chair), Stan Bailey, Bob Brackett, Michael Brodsky, Bob Gravani, Paul Hall, Anna Lammerding, Bob Sanders, Jack Guzewish, Gale Prince and Jenny Scott

Board and Staff Liason Present: Vickie Lewandowski and David Tharp.

Visitors/Guests Present: None.

Meeting Called to Order: 3:35 p.m., Saturday, July 31, 2010.

Recording Secretary of Minutes: Stan Bailey.

Old Business: Agenda approved. Minutes from 2009 meeting were approved.

Report from the President: Vickie Lewandowski provided a report summarizing activities and progress over the past year. Vickie reported that the IAFP is strong and overall had a good year. The membership is at an all time high with

about 3450 members and, with a preregistration of over 2000, there is a good chance that the final attendance to this year's meeting will be a record. The majority of the growth in membership and meeting attendance is from members outside of North America. About 21% of the membership and preregistrants are from outside of North America. Since the last IAFP Annual Meeting there have been two European meetings, the first in Berlin, Germany in the fall of 2009 and the second in Dublin, Ireland in June of 2010. The Dublin meeting was very successful with about 300 attendees and future European meetings will be held in the spring. A very successful International meeting was held in Seoul, Korea in fall of 2009. At the April IAFP Board meeting, a new strategic plan for IAFP was developed and Vickie shared the highlights of the new plan. The IAFP Foundation Fund stands at about \$730,000. The IAFP Annual Golf Tournament will be used as a Foundation Fundraiser this year and in coming years. Sustaining membership has increased, and currently there are 20 Gold Sustaining and 13 Silver Sustaining Members.

Executive Director, David Tharp reported on the financial condition of IAFP. The organization still has a positive fund balance, but the past year was very challenging. There was a loss of about \$400,000, attributable to reduced attendance and high expenses of the Texas meeting in 2009, to a loss in investments, and to increased expenses associated with the implementation of the new IAFP Web site and new online registration material. Manuscript submissions to *JFP* and to *Food Protection Trends* seem to have stabilized.

New Business: There was a brief discussion of the 2011 100th anniversary of the Association's first meeting in Milwaukee, WI. The committee was asked to provide suggestions for the meeting. Specifically, the committee was asked to contribute ideas to be included in the 100 top food safety tips.

Recommendations to the Board: None.

Meeting Adjourned: 4:35 p.m.

Chairperson: Gary Acuff.

PROFESSIONAL DEVELOPMENT GROUPS

Applied Laboratory Methods PDG

Members Present: Vanessa Cranford, Leslie Thompson, Christine M. Aleski, James Agin, Bassam A. Annous, Patrice Arbault, Daniel D. Belina, Reginald W. Bennett, Michael Brodsky, Mark Carter, Jinru Chen, Alessandra O. Chiareli, Jinru Chen, Stefano Colombo, Julian M. Cox, William C. Cray Jr., Hari Prakash Dwivedi, Hesham A. Elgaali, Elena Enache, Jeffrey M. Farber, Stephen Grove, Julie Kase, Sun K. Kim, Keith A. Lampel, Wendy McMahon, Indaue G. Mello-Hall, Molly F. Mills, Nandini Natrajan, Xiangwu Nou, Omar A. Oyarzabal, Patricia Rule, Amy B. Smith, L. Michele Smoot, Thierry Sofia, Sandra Tallent, Mary L. Tortorello, Erdal U. Tuncan, Purnendu C. Vasavada, Tamara L. Wood, Charles Young and Heidi G. Zaneckosky.

New Members: Denise Eblen, Nate Bauer, Dan Belina, Cindy Stewart, Yousef Alsaadi, Yi Chen, Michael Wendorf, Staci DeGeer, Tyler Berg, Patrice Chablain, Joe Meyer, Sa Xu and Robert Tebbs.

Visitors/Guests: Vishnu Patel, Denise Lindsay, Pancita Manalili, Alejandro Rojas, Deana DiCosimo, Anh Nguyen, Stan Bailey and Don Schaffner.

Meeting Called to Order: 9:00 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Leslie Thompson and Vanessa Cranford.

Old Business:

1. Symposia and Roundtable: The organizers discussed the following symposia and indicated the progress of the speaker presentations.
 - a. Mon., Aug. 2, p.m.: Less Recognized and Presumptive Pathogens: What Now, What Next? (Organized: Joshua Gurtler, Reginald Bennett and Purnendu Vasavada.)
 - b. Tues., Aug. 3, a.m.: Significance and Detection of STEC or Non-O157:H7 *E. coli* (Organized: Michael Brodsky and Beatriz Quinones).
 - c. Tues., Aug. 3, p.m.: Food and Food Environment Test Considerations in View of Changing Regulations (Organized: Jeffrey Kornacki).
 - d. Wed., Aug. 4, p.m.: Bacterial Toxins: A Past or an Emerging Issue for Food and Beverage Safety? (Organized: Patrice Arbault and Julian Cox).
 - e. Roundtable Wed., Aug. 4, a.m.: Non-O157 Shiga-toxin producing *E. coli* (STEC) current methodology and method development. (Developed by USDA FSIS and coordinated by the Applied Lab Methods PDG) Aug. 4 from 10:30 a.m. – 12:00 noon.
2. Sample Prep Update—Mary Lou Tortorello announced that the sample prep white paper was published in 2009 in the *Journal of Food Protection*. The white paper from the meats subgroup is still in progress.
3. Educational Webinars Offered—Vanessa Cranford updated the PDG on a summary of the Webinars that were offered during the past year.
 - a. The Webinar titled "Use of Predictive Microbiology Information Portal, the USDA-Pathogen Modeling Program and COMBASE" (Vijay Juneja USDA, ARS) had 41 attendants that participated. It discussed the following topics: PMIP <http://portal.arserrc.gov> – a comprehensive Web portal for predictive microbiology that includes food pathogen data, predictive models and other useful information about microbial food safety, ComBase <http://combase.arserrc.gov> – an international database of experimental data on the growth, inactivation and survival of food pathogens, and PMP <http://www.ars.usda.gov/Services/docs.htm?docid=6786> – Pathogen Modeling Program, a stand-alone windows application that can be used to make prediction on the growth, inactivation and survival of food pathogens.
 - b. The Webinar titled "*Clostridium perfringens* – An Overview, Impact, Current Methods for Detection and Areas of Concern to the Food Industry," (Vijay Juneja USDA, ARS and Keith Schneider, UF) had 34 attendants. It discussed the following topics: an overview of the organism *Clostridium perfringens*, transmission, impact, current methods for detection, and areas of concern to the food industry; including controlling growth during cooling of the cooked foods, USDA regulations, including of less than 1 log increase in case of cooling deviations, and FDA code - time\ temp for cooling; the latter part of the presentation would include predictive models

for *C. perfringens* applicable to the cooling of cooked products and how these models are developed.

- c. The Webinar titled "Campylobacters in Foods and Their Implications for Public Health" (Omar Oyarzabal, Alabama State University) had 48 attendants. It discussed the following topics: Module 1 will present information on the organism and epidemiology in general, Module 2 will present the latest on methods used for isolation, reviewing the protocol from the FDA and the USDA, and Module 3 will present the information on current Regulatory requirements and what may be on the horizon.
4. The upcoming meetings offered by members of the PDG were discussed:
 - i. Omar Oyarzabal announced the 4th Annual *Campylobacter* Workshop- Alabama State University, Fall 2010.
 - ii. Purnendu C. Vasavada announced the 30th Food Microbiology Symposium – University of Wisconsin, Oct. 17–20 <http://www2.uwrf.edu/afs-all/institutes/foodmicro/>.

Vanessa thanked the PDG symposia organizers and Webinar participants for their hard work, dedication and commitment to the PDG.

New Business:

It was discussed during the preparation teleconference call in July for the Annual Meeting that the time would be split for discussing topics for development of articles for *Food Protection Trends* and Symposia/Workshop/Roundtable topics.

1. Articles/ Papers:
 - a. The first paper discussed that the roundtable being held on Wednesday, Aug. 4, would be compiled and developed into a paper.
 - i. The United States Department of Agriculture Food Safety and Inspection Service (USDA FSIS) is trying to identify the most appropriate methodology for non-O157 STEC testing of raw ground beef and manufacturing trim. USDA FSIS will share expectations for method fitness-for-purpose, performance characteristics and method equivalence determination. The goal of this meeting of government scientists, academia, technology companies, and industry is to discuss the capabilities of existing methodologies and the feasibility for implementation of such methods by food testing laboratories.
 - ii. Denise Eblen, Leslie Thompson and Vanessa Cranford as points of paper.
 - b. The second paper discussed was pet food testing.
 - i. Indaue discussed that animal feed methods for both indicator and pathogens should be addressed. She also discussed that the *Salmonella* serotypes that are missed by current methods of detection should be included.
 - ii. Indaue informed the PDG that pet food is an issue because there are people who are buying pet food to eat.

- iii. Julian Cox stated that it is useful to publish hints and tips around methodology even if there are negative findings.
 - iv. Pat Rule suggested that this could be a 2-3 page paper with general overview of issues and concerns regarding testing.
 - v. Indaue Mello-Hall and Pat Rule will be points for the development of this paper. Symposia/Workshop/Roundtable:
- 2. It was shared with the PDG that October 18, 2010 is the deadline for symposia submissions. Therefore, this meeting will be used as a collaboration of ideas and all suggestions discussed will be developed. On the next meeting date, September 17, 2010, the PDG will decide which topics will move forward for final submission to the board. It was also recommended to use the Annual Meeting for determining what topics were not covered or where there were gaps in the program to focus on topic development.
 - a. From serotyping to molecular typing of pathogens—characterizing the needle in the haystack. Purnendu Vasavada submitted this topic prior to the meeting and the PDG agreed that this would be a topic of interest.
 - i. Purnendu Vasavada as point for symposium outline development.
 - b. Environmental Monitoring Validated Use
 - i. Pam Wilger discussed this topic on the last PDG call. She also indicated that this symposium will focus on methods available for indicator and pathogens, methods not validated, and sanitizer residue.
 - ii. Indaue suggested this would be best as a short symposium.
 - iii. Pam Wilger as point for symposium development.
 - c. Patrice suggested a symposium on *Campylobacter* for poultry to discuss regulations and methodology.
 - i. Patrice and Omar as point for symposium.
 - d. Spoilage microorganisms was a topic suggested to the PDG that could possibly be joint with another PDG.
 - e. Molly suggested pathogen modeling for limited scope models.
 - i. Molly as point for outline development.
 - f. Amy Smith suggested *S. Enteritidis* specifically for methodology of eggs. Dr. Brodsky mentioned that it would be an opportunity to partner with the meat and poultry PDG.
 - i. Amy Smith as point for outline development.
 - g. Indaue mentioned that method equivalence is a topic for development and what needs to be addressed for regulatory agencies to accept method.
 - i. Mark mentioned that what the regulatory agencies are looking for when performing a comparison should be considered.
 - ii. Nandini discussed that it should cover what are inspectors looking for to validate equivalence.
 - iii. It was mentioned to the PDG that FERN has methods that has been compared posted to their Web site.

- iv. Michael Brodsky will be point for symposia outline.
- h. Suitable surrogates was discussed for a symposium.
 - i. *Microbacterium avium paratuberculosis* (MAP) in milk and feed industry.
 - ii. Molly to discuss with the Dairy PDG.
- i. Antibiotic resistant *Salmonella* and what is on the horizon, it was mentioned that this should be discussed with the Meat and Poultry PDG.

It was agreed that the PDGs next meeting date will remain September 17th for discussing the development of symposia outlines.

Other Business:

It was requested if job postings could be shared with the PDG. Vanessa informed the PDG that IAFP has a job-posting site for sharing any open positions. Omar inquired about the use of the PDG logo for posters. Stan Bailey indicated it would be logistically difficult and the PDG indicated that the posters are not discussed with the PDG. The PDG had a fund raising donation during the meeting and raised \$187.00 for the IAFP Foundation. Pat Rule donated three books that were given to three random names that donated to the IAFP Foundation on behalf of the Applied Laboratory Methods PDG.

The PDG was informed that paid Webinars for \$25 per person are suggested. However, if Webinars were still held for the PDG members for discussion it does not have to be paid. The PDG should also consider increasing visibility of the IAFP brand and that the IAFP 100-year anniversary will be next year and they are looking for 100 food safety tips.

Recommendations to the Executive Board:

1. The PDG recommended that IAFP consider corporate sponsorship or the IAFP Foundation as the source of funding for the Webinars.
2. The PDG recommended having the Applied Laboratory Methods Annual Meeting commence as an afternoon session to enable PDG members to attend other PDG sessions usually scheduled in the morning also.

Next Meeting Date: September 17, 2010.

Meeting Adjourned: 11:04 a.m.

Chairperson: Vanessa Cranford.

Beverage PDG

Members Present: Frank R. Burns, Isabel Walls, Julie Castro, Mangesh Palekar, James D. Schuman and Joe Shebuski.

New Members: Sean Leighton, Melissa Gwinn, L. Jason Richardson, Gordon Hayburn, Emilia Rico, Shawn Johnson, Gregory Phillips, Jena Roberts, Eelco Heintz and Gregory Phillips.

Visitors/Guests: None.

Meeting Called to Order: 9:10 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Frank R. Burns.

Business: Jay Schuman reported to the committee that Vice Chair Kathy Lawlor was ill and would not be able to attend this morning's PDG meeting. The Association antitrust guidelines were reviewed.

Board Liaison Isabel Walls presented input from the board. The Board encourages the use of Webinars during the year. The IAFP contact for setting up Webinars is David Tharp. There was a request for ideas regarding social media to increase the visibility of IAFP. One proposal is for IAFP to collect a comprehensive list of training courses relevant to the food industry. Also, next year is the 100th anniversary of IAFP and the IAFP is interested in putting together a list of the top 100 safety tips.

Next, the committee reviewed the pre-meeting wet workshop and fungal identification. Mangesh Palekar and Julie Castro were the organizers and reported that the workshop had been well received and had 14 enrolled, with most being from outside the US.

A discussion of problems facing the beverage industry was used to generate potential symposia topics for IAFP 2011.

The impact that California Prop 65 is having on the beverage industry was raised by Jena Roberts. The discussion then broadened and it was recognized that hodgepodge of varying local laws would be a very burdensome. It was proposed that we develop a symposium, perhaps in conjunction with the Food Law PDG, dealing with national vs. local regulations and how industry should respond/deal with this issue.

This was led also to a discussion of laws directed to leaching of substances from packaging which then blossomed into a more general interest in beverage packaging. It was decided to pursue a beverage packaging sustainability symposia with the Packaging PDG.

Sean Leighton proposed a symposium on dispensed drink microbiology. This may be approached with the Retail Food Safety PDG.

Jay Schuman and Sean Leighton noted the concern with the greater potential for microbiological issues with lower-acid chilled beverages. This is even more concerning given the push for greater operational efficiency, and the goal of reducing water utilization, both of which result in less down time for cleaning of production facilities. This coupled with changing consumer preference for more microbiologically at risk beverages could be brewing a perfect storm. A symposium to address knowledge gaps in safety regarding non aseptic low acid beverage production was proposed.

Emilia Rico proposed a symposium on black yeast contamination in beverages.

Due to the early departure of the previous committee Chair and the current Chair moving into the position early there was some uncertainty if it was appropriate to change leadership and the Vice Chair move into the Chairman position and elect a new Vice Chair, or if the current Chair and Vice Chair should continue in position till 2011. If a new Vice Chair were needed Emilia Rico was the committee's choice to fill the position.

Recommendations to the Executive Board:

1. The committee commends the board for the change to October submission of symposia proposals, this enabled very positive discussion of issues at the PDG meeting that would not have been possible if the symposia proposals were due at the IAFP meeting as had been the case.
2. Approve Emilia Rico as Vice Chair to begin at IAFP 2011.

Next Meeting Date: Sunday, July 31 in Milwaukee, Wisconsin.

Meeting Adjourned: 10:50 a.m.

Chairperson: Frank R. Burns.

Dairy Quality and Safety PDG

Members Present: Allen Saylor, Joseph Odumeru, David Blomquist, Dennis Bogart, Don Breiner, John Bruhn, Nurliza Buyong, Heather Craven, Randall Daggs, Eugene Frey, Dennis Gaalswyk, Kathleen Glass, Kathy Gombas, Thomas Graham, Matthew Hall, Pheakdey Ith, David Laird, Linda Leake, Loralyn Ledenbach, Fritz Lembke, Thomas McCaskey, William Northeimer, Stephanie Olmsted, Gary Pruitt, Ravinder Reddy, Steven Sims, Larry Steenson, Dawn Terrell, Pernendu Vasavada, Fred Weber, Rudy Westervelt, Sharon Wilson and Philip Wolff.

New Members: Heidi Weinkauff, Bob Sander, Vidya Ananth, Jason Wan, Mary Cuervo, Debbie Cherney, Fritz Buss, Carrie Ferstl, Matthew Taylor, Amanda Matczynski, Mark Hetland, Danielle Spahn, Diana Stewart, Christa Schlosser, Rhonda Fraser and Monica Cerqueira.

Board Present: Stan Bailey, Dan Erickson and Vickie Lewandowski.

Meeting Called to Order: 9:00 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Joseph A. Odumeru.

Welcome and Role Call of Attendance: Chair Allen Saylor led with 53 members and visitors in attendance. Each meeting participant present was asked to give a brief introduction about themselves and their dairy background. An agenda for the meeting had been distributed electronically early the previous week and a hard copy was provided to all attendees along with the minutes of the 2009 meeting in Texas. Based on consultations with IAFP staff, the Chair noted he was at the end of his term and would serve until the beginning of the 2011 PDG meeting, but a new Chair would step in to run the meeting. The Deputy Chair, Dr. Odumeru, requested that he be considered to remain as Deputy Chair, but did not believe he could serve as the incoming Chair because of work commitments. The Chair encouraged PDG members to volunteer for a Nominating Committee, which he will name later in the meeting.

IAFP Board Update: Dr. Stan Bailey, Past President of IAFP, spoke about the IAFP 2011 Annual Meeting being the 100th anniversary of the IAFP. He asked Dairy PDG members to submit ideas for celebration as the origin of the organization focused on dairy. As part of the celebration, he encouraged PDG members to submit items that would become the "Top 100 Food Safety Tips" and will be selected for publication. Suggestions can be submitted to the IAFP Program Committee for consideration. Dr. Bailey spoke about the Strategic Long Range Planning Committee, stating IAFP has achieved 99% of its objectives. The PDG members were encouraged to identify gaps in information about food safety, identify new sources on information on food safety as well as groups that IAFP could coordinate with regarding its food safety mission. In addition, PDG members were requested to provide feedback to the IAFP Board on expanding IAFP information and communications into current social media outlets. IAFP membership is up, currently at 3,418. International membership (21% of total IAFP membership) accounts for a substantial part of the membership growth, while domestic membership remains fairly stable. There is also an increase in number of IAFP affiliates from international food safety organizations and this may account for growth in international membership. Approximately 21% of registered attendees at this year's meeting are international members. Food is a global commodity and brand recognition is key to IAFP success. IAFP provides a form for exchange of scientific information on food safety. Other comments from Dr. Bailey: IAFP has hosted three successful Webinars with

70, 120 and 150 participants in 1st, 2nd and 3rd Webinars. Participants were asked to pay \$25 to cover cost. He asked if PDG members see value in Webinars and the amount charged to cover costs. Members were to provide feedback on this to the IAFP Board. He counseled the PDG leadership to make sure that in the annual report to the IAFP Board, the content is entirely made up of actionable items, not just general recommendation or narrative about the meeting.

Comments from IAFP Program Committee: Dr. Bailey commented that he and the IAFP Board were aware of the concern by the PDG leadership and members regarding the Program Committee's lack of acceptance of symposia recommendations last year and the noticeable lack of dairy symposium topics in the 2010 Program. This issue has caused some PDG members to attend IFT this year in lieu of IAFP. The Chair noted that it is important to have a balance between pure research presentations and applied research/application presentations, which seems to be lacking this year. Dr. Bailey stated the Board had instructed the Program Committee and the new Program Chair (who was in the room) to have a more balanced program in the future between research and applied topics and to work with the various PDGs on submissions which had merit but might need more polishing. The Program Chair stated he would work with the leadership and members of the Dairy Quality & Safety PDG to assist in strengthening program proposals so the 2011 Annual Meeting program contains an appropriate amount of applied and dairy subject matter. The same commitment was expressed for proposals on processing sanitation from any PDG.

- **Action Item:** The PDG endorsed a member recommendation to request the IAFP staff consult with all PDG Chairs on the final schedule for the Annual Meeting PDG meetings prior to publication. This was the result of the Sanitation and Dairy Quality & Safety PDG being held at the same time for the past few years and many members of each have to choose one or the other.
- **Action Item:** The PDG endorsed requesting IAFP staff to schedule one or two conference calls per year between Annual Meetings with the Chairs and Deputy Chairs of the various PDGs to get updates and allow for sharing of information and to better coordinate activities and reduce duplicate efforts and to coordinate program submissions.

IAFP Foundation Donation: Gale Prince (Head of IAFP Foundation) spoke about donations to the IAFP foundation as a memorial for PDG members that passed away. Memorials can be done on one-time basis through scholarship funds or can be on an ongoing basis. Although the purpose of the donation can be specified, putting limitations on small donations need to be done with care to avoid creating financial difficulties for the Foundation and IAFP staff that has to manage the Fund. Dr. Bailey added that donation for the Foundation can be made via IAFP silent auction.

Student PDG: Student PDG representatives spoke about student PDG activities and an ongoing fundraising effort through sales of T shirts. Dairy PDG members were encouraged by the Chair to support this fund raising effort.

Guest Speaker on Raw Milk Consumption: Mary Martin served as the guest speaker to provide a personal viewpoint on the dangers of human raw milk consumption. Mary spoke about her family's difficult experience with their adopted son after feeding him raw milk from a certified raw milk producer in California. Her seven year old son became seriously ill with *E. coli* O157:H7 and was in intensive care for 2 months. She spoke about the lack of balanced information about pros and cons of consumption of raw milk and the need to have

information on the dangers of consuming unpasteurized milk. She and her husband ultimately sued the farm producer of the raw milk, with the help of Marler/Clark, a well-known food safety law firm. She is currently an advocate of the dangers of raw milk consumption and a public speaker on this issue. Ms. Martin stated that switching her son to pasteurized goat's milk appears to have solved some of her son's behavioral problems that appear to also be addressed by feeding him raw cow's milk. Her message recapped the last year where both the IAFP Dairy Quality & Safety PDG and the American Veterinarian Medical Association (AVMA) initiated efforts to develop a foundation for better public information on the dangers of raw milk consumption. AVMA took the lead and with input from PDG liaison members Dr. Ron Schmidt and the Chair, developed a Web site that now provides a balance to the extensive Internet misinformation found on Web sites promoting the consumption of raw milk. The Web site address is www.realrawmilkfacts.com. After a review of some of the information on the Web site, Mary played a victim impact video from the Web site on her family's experience with her son's illness. This one of many personal family stories captured as videos on the Web site.

- **Action Item:** PDG members recommended that the leadership work with IAFP staff and the IAFP Board of Directors to encourage the use of this Web site among IAFP members and that it be added as a link to IAFP affiliate Web sites.
- **Action Item:** PDG member Fred Weber suggested the PDG submit a recommendation for the public to avoid drinking unpasteurized raw milk to the IAFP Program Committee as one of the 100 Food Safety Tips to be released at the IAFP 2011 Annual Meeting.
- **Action Item:** The Chair was requested to work with the leadership of NADRO to encourage passage of a resolution opposing the legalization of raw milk sales for human consumption.

Old Business:

- a. PDG members Lori Ledenbach and Rudy Westervelt shared the title of their symposia and the date and times for the two program ideas accepted by the Program Committee for the 2010 Annual Meeting.
- b. Raw Milk Subcommittee Update: The Chair expressed a need for new energy for this PDG subcommittee as it was somewhat inactive in the last year. He also recommended that the subcommittee leadership schedule at least 3-4 conference calls per year. A number of PDG members either volunteered or were volunteered to become members of the Raw Milk Subcommittee: Dr. Christine Bruhn, Dr. Matt Taylor, Dave Blomquist, Steve Murphy, Rudy Westervelt, Larry Stinson, Dr. P.C. Vasavada, Margerie Davidson and Dennis Gaalswyk.
 - **Action Item:** Chair to confirm with IAFP staff after the Annual Meeting the publication status of the "Listeria Guideline" so it is publicized and available to IAFP members and the general public.
 - **Action Item:** The Chair is to work with Dawn Terrell to finalize poster content and layout on controlling and avoiding *Listeria* contamination in dairy plants.
- c. There was no discussion on updating the PDG's Web site.

New Business:

- a. The Chair announced that the nominating committee consisted of Phil Wolff, USDA; Steve Murphy, Cornell; and Dean Mahoney, FAO, UN, Bangladesh (international representative). The Chair will work with the members of the nominating committee to develop a short list of names for the Chair.
- b. NCIMS M-a, MI, IMS-a Question & Answer Compilation: Dairy PDG members supported the continuation of this project. Phil Wolff, who leads the Dairy Practices Council's (DPC) Working Group stated that DPC published a similar document approximately 4–6 years ago.
 - **Action Item:** The Chair suggested that Phil become part of the effort to update the IDFA and DPC documents and have them ready for publication no later than the 2011 IAFP meeting.
 - **Action Item:** The Chair was requested to send an electronic copy of the Word document complied by IDFA staff to FDA's Dennis Gaalswyk, who will assist in finalizing the document for public distribution. Others offering to assist included Bob Sanders and Steve Sims.
- c. Product Recall Guideline Brochure: The Chair requested PDG member views on whether this subject would merit a short publication. It was acknowledged by members that there already exists a significant amount of reference material on dairy product recalls, including detailed guidance on the FDA Web site.
 - **Action Item:** Kathy Gombas, Rudy Westervelt and the Chair volunteered to work on consolidating the various information on formal dairy product recalls into a tri-fold brochure format that could be published by IAFP as a reference.
- d. Allergen Guideline: Although not on the agenda, PDG member Dennis Bogart suggested a short tri-fold document on allergens would be a good investment of PDG time. Kathy Gombas from FDA stated that 35% of the reportable events in the FDA Reportable Food Registry had a root cause related to allergens and the main reason was putting product with allergens in the wrong package.
 - **Action Item:** Lori Ledenbach, Steve Murphy, Kathy Gombas and Dennis Gaalswyk volunteered to begin drafting a brochure on allergens titled, "Practical Aspects for Dealing with Allergens in the Dairy Industry."
- e. AOAC versus IDF/ISO Laboratory Methods Dilemma – The dairy export industry is facing a significant challenge with US regulations requiring compliance to criteria based primarily on AOAC testing methodology, while many foreign countries are referencing ISO/IDF testing methodology. This situation could result in dairy companies that export having to test finished products twice for the same criteria, once using AOAC method and a second based on ISO/IDF, which unnecessarily adds cost. Another issue is that the Grade "A" Pasteurized Milk Ordinance (PMO) sometimes recognizes AOAC validated methods and sometimes does not. The Chair request member views on whether this was an issue that the PDG should review in further detail. There was a short discussion on the subject.

- **Action Item:** Jim Agin from Q Lab, the only US lab accredited for ISO/IDF methods was volunteered to lead a subcommittee to further evaluate this issue, determine the extend of the problem and propose solutions to be reviewed the by PDG. It was noted that any effort by the subcommittee should be coordinated with the Applied Methods PDG. Additional PDG volunteers included Dr. Tom Graham, Fred Weber, Dr. P.C. Vasavada, and Debbie Cherney. The task also includes contacting AOAC staff to determine whether this issue is being addressed by their organization.

Ideas on symposia or workshops for 2011 IAFP Meeting in Milwaukee:

Program Committee requires cutting-edge ideas of a research or applied nature for symposia and workshops on food quality and safety for the 2011 Annual Meeting as well as ideas for Webinars and the same subject that could be developed throughout the year. The Chair convened a separate meeting if interested PDG members would like to solicit ideas and volunteers for symposia, workshops and Webinars for 2011. The Chair stated that volunteers for these ideas would be obligated to write-up a two paragraph description of the idea, but could certainly go beyond that to include potential titles, speaker sessions and potential speakers. He also stated that he and the Deputy Chair would schedule a PDG conference call in early Sept. specifically to work on finalizing the ideas and polishing them for submittal to the Program Committee in October 2010. Dave Bloomquist provided an information overview of his electronic survey of topics for symposia and agreed to complete the compilation and share the survey results with the Chair and Deputy Chair. He stated there was 83% support for another symposia on spores as well as strong support for a symposia on bacteriophage. Fritz Lemke agreed to be the PDG liaison with the Wisconsin Milk Marketing Board (WMMB) to coordinate any symposia or workshops so they do not conflict with WMMB efforts.

a. Previously discussed topics:

1. International Dairy Regulatory Programs – USDA, FDA (NCIMS), EU, ANZED, CFIA, etc. Presentations on international perspective on dairy regulatory programs in various countries. National comparability and equivalency related to food safety component of dairy programs. The Chair agreed to resubmit this idea since it was not accepted for the 2010 Annual Meeting.
2. Better Process Cheese Workshop. After extensive discussion, the PDG members decided that private parties are providing this workshop twice per year and IAFP does not need to compete with these private parties.
3. National Water Safety Regulatory Program Updates – USDA, FDA (NCIMS), EU, ANZED, CFIA, etc. – The Chair agreed to resubmit this idea since it was not accepted for the 2010 Annual Meeting and coordinate with the Water PDG.
4. International, National and Private Food Equipment Standards – Effective, Competitive or Conflicting (3-A, AMI, EHEG, DIN, NSP, ANSI, FDA, USDA, NRA, GMA, etc.). Bob Hagberg agreed to suggest this to the Committee on Sanitary Practice for their consideration with the understanding that the Dairy Quality & Safety PDG would assist, if requested.
5. FDA Core Dairy Training Workshop (Dairy Plant Inspection, Dairy Farm Inspection, Special Problems, Advanced Training, Pasteurization Controls, etc.). Although a

strong, but unsuccessful effort was made for the IAFP 2010 Annual Meeting, the Chair, with support of the PDG membership agreed to see if something could be coordinated with the FDA State Training Branch and the state of Wisconsin. Dennis Gaalswyk stated the FY2011 schedule was being finalized and the Chair should contact the FDA State Training Branch immediately.

6. Technical Requirements for Milk Heating Process – UHT, ESL, etc. The PDG members decided there is not been enough new information to support this topic for 2011.
 7. Behavior-based Food Safety – Key to Effective Employee Food Safety Training. Dennis Bogart agreed to work with the IAFP Education PDG to build symposia on new techniques, new training technology and new training psychology to get behavior changes resulting from proper training and reinforcement.
 8. Applications of Pathogen Risk Assessment in Low Moisture Dairy Product. Similar idea at the 2010 Annual Meeting so not supported for 2011.
 9. Workshop on Predictive Microbial Modeling for Dry Food Products. Supported by at least one PDG member, but no volunteers at this time to write up description of symposia. Also similar to 2010 Workshop.
 10. Mechanics and Accreditation of Automated Cleaning Systems. Bob Hagberg agreed to suggest this to the Committee on Sanitary Practice for their consideration with the understanding that the Dairy Quality & Safety PDG would assist, if requested.
 11. Trends after 15 Years of Data Collection: FDA's National Milk Drug Residue Data Base. After much discussion about whether this should be limited to a poster, an article in "Food Safety Trends" or a symposium, or all of these, the PDG members recommended that the Chair request Dennis Tidwell, FDA contractor that maintains the database as to whether he would or could to some multi-year trend analysis. Also tissue residue should be addressed. The outcome of this discussion was for the PDG to support both an article in *Food Protection Trends* as well as symposia. The Chair agreed to develop a paragraph describing such symposia.
- b. New Ideas:
1. Farm Hygiene Affects on End Product Shelf Life: Don Breiner and Bob Hagberg agreed to develop a description for this potential symposium and report back to Dairy PDG.
 2. Milk Sensory Evaluation Workshop: Strongly supported but no volunteers to write this up. Chair may attempt to write a description.
 3. Milk Quality in Milk Processing Plant, Regulatory Perspective. Lori Ledenbach and Fritz Buss agreed to develop a description for this potential symposium and report back to Dairy PDG.
 4. Use of Phage as Part of an Intervention Strategy for Food Quality & Safety: Dr. Larry Steenson, Dave Blomquist and Dr. Matt Taylor agreed to develop a description for this potential symposium and/or workshop and report back to Dairy PDG.
 5. Workshop on Detection and Effects of Spores in Raw Milk and Finished Milk Products. Dave Bloomquist and Dennis Bogart agreed to develop a description for this potential workshop and report back to Dairy PDG.
 6. An Update: What Do We Know about the Effects of *Mycobacterium paratuberculosis* (MAP) in Raw Milk. Dr. P.C. Vasavada and Dr. Joseph Odumeru agreed to develop a description for this potential symposium and report back to Dairy PDG.
 7. Highest Quality Raw Milk on a Very Low Budget. Don Breiner, Lori Ledenbach and Bob Hagberg agreed to develop a description for this potential symposium and report back to Dairy PDG.
 8. Workshop on Methods for Microbial Detection in Milk. Debbie Cherney agreed to develop a description for this potential symposium and report back to Dairy PDG and coordinate with the Laboratory PDG.
 9. On-farm Processes to Achieve Effective Cleaning of Raw Milk Harvesting Equipment.
 10. International Food Outbreak Statistics & Notable Outbreak Details – The Chair agreed to develop a description for this potential symposium and report back to Dairy PDG.
 11. Illiterate Bacteria; What Do You Do When They Do Not Read BAM? David Bloomquist agreed to develop a description for this potential symposium and report back to Dairy PDG or to roll in into one of the ideas above as a symposium or workshop.
 12. Two-day Workshop on Artisanal Cheese Making. Linda Leake, Dawn Terrel, Dennis Gaalswyk along with Fritz Lemke as WMMB coordinator, agreed to develop a description for this potential workshop and report back to Dairy PDG.
 13. On-farm Dairy Processing Alternatives. Dawn Terrel agreed to develop a description for this potential symposium and report back to Dairy PDG in cooperation with initiatives by Arla Foods.
 14. 100 Years of Dairyman Speak, a Look Back and a Look Forward. Lori Ledenbach agreed to develop a description for this potential symposium and report back to Dairy PDG.
 15. New Notes for the Choir – Raw Milk Consumption by Humans. Dr. P.C. Vasavada and Linda Leake agreed to develop a description for this potential symposium and report back to Dairy PDG.
 16. Update on Risks and Safety of Cheese Processing: Includes Raw Milk Cheeses, Soft Cheese and 60-day Aged Cheese. Linda Leake agreed to develop a description for this potential symposium and report back to Dairy PDG.
 17. Safety, Quality and Security – Wisconsin's Master Cheese Maker Program. Fritz Lemke as WMMB coordinator, agreed to develop a description for this potential workshop and report back to Dairy PDG.
 18. Nanotechnology and Its Impact on Food Safety. No volunteer agreed to write up a description for this potential symposium.

Don Breiner suggested that Dairy PDG should invite the Governor of Wisconsin to speak at our Dairy symposium in Wisconsin.

Recommendations to the Executive Board:

1. The PDG endorsed a member recommendation to request the IAFP staff consult with all PDG Chairs on the final schedule for the Annual Meeting PDG meetings prior to publication. This was the result of the Sanitation and Dairy Quality & Safety PDG being held at the same time for the past few years and many members of each have to choose one or the other. Members expressed a number of other issues resulting in conflicts with this year's PDG meeting schedule.
2. The PDG endorsed a member recommendation to request IAFP staff to schedule one or two conference calls per year between Annual Meetings with the Chairs and Vice Chairs of the various PDGs to get updates and allow for sharing of information and to better coordinate activities and reduce duplicate efforts and to coordinate program submissions.
3. The PDG endorsed a member recommendation to request IAFP staff and the IAFP Board of Directors make a strong recommendation to the IAFP affiliates and members to reference on their Web sites www.realmilkfacts.com in order to support the cooperative efforts of this PDG and a similar committee of the American Veterinary Medical Association, which developed a Web site containing factual information about the dangers of direct consumption of raw milk by humans. Prior to the development of this Web site, any Internet search about raw or pasteurized milk brought up Web sites containing misinformation and representing raw milk as safe and pasteurized milk as harmful.
4. The PDG endorsed a member recommendation that the statement, "The public should avoid the direct consumption of raw milk because of its current history of being the source of illness and potential long-term medical problems," as one of the 100 Food Safety Tips to be compiled by the IAFP Program Committee and released at the 2011 IAFP Meeting. We are willing to discuss modification of the wording, but the concept should be on the "Top 100" list.
5. The PDG endorsed a member recommendation to request support from the IAFP Board to work cooperatively with the leadership of the National Association of Dairy Regulatory Officials (NADRO), the Dairy Practices Council (DPC) and other related national organizations with an interest in the dairy industry to encourage their adoption of resolutions opposing the legalization of raw milk sales for human consumption.
6. The PDG endorsed a strongly supported recommendation that the IAFP Board of Directors direct the IAFP Program Committee to ensure that at the 2011 and future IAFP Annual Meetings, there is a balance of applied and research-based symposia as well as an expansion of dairy-focused symposia. The decisions made by the 2009 Program Committee resulted in almost no Dairy Quality & Safety PDG symposia recommendations being accepted and the program balance toward research caused some PDG members to attend IFT instead of IAFP this year. Since

the origins of IAFP were from the dairy sector and the 2011 Annual Meeting is the 100-year anniversary and the location is Wisconsin, one of the leading dairy states in the country, dairy-focused symposia and workshops should be encouraged and supported.

7. The PDG endorsed a member recommendation that the IAFP Board in cooperation with the IAFP Program Committee invite the Governor of Wisconsin to be one of the "keynote" speakers at the IAFP 2011 Annual Meeting in Milwaukee based on the courage he demonstrated in vetoing a bill that would have significantly expanded the public's access to raw milk in the state of Wisconsin.

Next Meeting Date: Conference Call on Thursday, September 9, 11:00 a.m. Eastern Time.

Meeting Adjourned: 12:00 p.m.

Chairperson: Allen Saylor.

Developing Food Safety Professionals PDG

New Members: Sean Leighton, Aaron Uesugi, Angelica O'Shaughnessy, Ben Chapman, Betsy Booren, Brenda Stahl, Brita Ball, Chris Conway, Chrissy Leopold Wager, Dan Belinn, Deann Akins, Di Li, Dumitru Macarisin, Heidi Weinkauff, Hongshun Yang, Hyun-Gyun Yuk, Jason Richardson, Jie Wei, Joshua Gurtler, Kali Kniel, Lacey Guillen, Louise Lee, Manan Sharma, Manpreet Wingham, Matthew Taylor, Melissa Gwinn, Michelle Danyluk, Peter Slade, Renee Boyer, Roxanne VonTayson, Scott Burnett, Shannon Dugan, Staci De Geer, Stephen Grove, Steve Kenney, Tyler Berg, Wendy Maduff, Wendy White and Yousef Alsaadi.

Board Present: Stan Bailey and Katie Swanson.

Meeting Called to Order: 4:00 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Matthew Taylor.

Meeting Called to Order by Sean Leighton (Coca-Cola Co.) and agenda passed around. Introduction provided for meeting and discussion surrounding PDG organization. Purpose of meeting discussed and vision for PDG outlined by Sean L.

Sean presented information on population pyramids and shifts towards younger generations in U.S. and potential impacts for IAFP members, discussed trend towards younger members (i.e., echo generation) and need for members to begin assuming leadership roles in IAFP and introduced possible mission statement and objectives of PDG.

Mission Statement: "To develop, connect, empower, and retain IAFP members who are in the early years of their food safety career."

Objectives Statements:

- Bring together young professionals to improve and strengthen networking opportunities.
- Recognize the importance of the younger food safety professionals to the sustainability of IAFP and the food industry.
- Establish an environment in which developing food safety experts can be recognized and leveraged.
- Recognize experienced food safety experts who have positively influenced developing scientists within the industry.

Comments by Stan Bailey (Executive Board): Support for concept of PDG and need for networking opportunities and for us to seek out networking.

***Comments by Katie Swanson** (Executive Board): Support for PDG and request for interested parties to volunteer to serve and nominate for committees.

*Following S.B. and K.S. comments, further discussion on the mission statement. Motion to accept mission statement as is with potential to change later. Motion seconded (M. Danyluk) and voted. Motion passed.

The PDG Name was debated/discussed. The options for the names were:

- Professional Leadership PDG
- Career Development PDG
- Leadership PDG
- Young Professionals PDG
- Future Leaders PDG
- Developing Leaders PDG
- Developing Food Professionals PDG
- New Professionals PDG
- Career Development for Young Food Professionals PDG

PDG name voted: Developing Food Safety Professionals won by simple majority (12 votes vs. 11 votes for Young Professionals PDG).

Chair and Vice-Chair Elections: Chair-nominee: Sean Leighton. Vice-Chair nominees: Angelica O'Shaunessy (bioMérieux USA) and Wendy White (Golden State Foods). Angelica O'Shaunessy was elected (12–11) as Vice Chair.

Recommendations to the Executive Board:

1. Approve official PDG name: Developing Food Safety Professionals.
2. Approve Chair and Vice-Chair Elections of Sean Leighton as Chair and Angelica O'Shaunessy as Vice Chair.

Sean opened floor for new business or concerns. None expressed. Sean adjourned meeting.

Chairperson: Sean Leighton.

Food Chemical Hazards and Food Allergy PDG

Members: Linda Leake, Isabel Walls, Timothy Adams, Patrice Arbault, Arun Bhunia, Rocelle Clavero, Charles Czuprynski, Ken Davenport, Anthony Flood, Tong-Jen Fu, Gary Pruitt, Peter Slade and Pamela Wilger.

New Members: Andy Benson, Kevin Edwards, Steven Gendel, Mitch Gilgour, Lauren Jackson, Shirley Jankowski, Grazia Perrella, Bizhan Pourkomaillian, Jason Wan and Zhinong Yan.

Visitors/Guests: Robert Dickey, Yang Chen, Rhonda Kane, Albert Elboudwarej, Julia Bradsher, Maria Angela Reyes, Kathy Gombas, Pamela Tom, Yukiko Kudo, Angelo DePaola, Tim Dambaugh, Kristin Woods, Katie Burns, Rhonda Kane and Na Wang.

Meeting Called to Order: 10:00 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Peter Slade and Ken Davenport.

Old Business: Linda Leake opened with a general welcome followed by introductions from each person in the room, led the group in a collective thank you to Peter for his service and leadership as Chair of this PDG, reviewed the antitrust

guidelines and housekeeping items and reviewed the Symposia generated by this PDG for the 2010 meeting:

- Packaging – Tony Flood
- Defense Testing Technologies – Arun Bhunia
- Gluten Allergy – Patrice Arbault
- Nuts – Linda Leake
- Risk Analysis – Linda Leake

New Business: Request for input on strategic planning by IAFP Board Liaison Isabel Walls:

- How the IAFP can best utilize social media such as Facebook, Twitter, etc.
- Identifying sources of information that can be used to position IAFP.
- The Board is requesting input from PDG and members for a list of "100 Tips for Food Safety" as a part of the 100 year anniversary of the IAFP at the 2011 meeting in Milwaukee.

Election of a new Vice Chair: Ken Davenport nominated by Rocelle Clavero, seconded by Tony Flood, elected by unanimous approval.

Guest Speaker: Albert Elboudwarej – What's new and exciting in the world of BPA: The very latest research developments regarding the chemical hazards to food and water associated with Bisphenol A in packaging materials.

Guest Speaker: Robert Dickey – The 2010 Deepwater Horizon Oil Spill: Concerns for the short-term and long-term safety of seafood from the Gulf of Mexico.

Additional New Business:

- Linda Leake asked Robert Dickey if he would be willing to serve as a resource of a symposium in 2011 regarding the lasting effects of the Deepwater Horizon Oil Spill. He agreed. Recommendation to the PDG by Chuck Czuprynski to involve the Society of Toxicology to augment the symposium as well as promote the IAFP.
- T.J. Fu requested journal articles focused on chemical hazards and toxicology be submitted to the *Journal of Food Protection*.

Announcements:

- Deadline for submission for the 2011 Symposium is October 18, 2010.
- Linda Leake promises to be in touch with the entire PDG membership to continue communication regarding the proposals for Symposium for the 2011 Annual Meeting.

Recommendations to the Executive Board:

1. Approve the election of Ken Davenport as Vice Chair.

Chairperson: Linda Leake.

Food Defense PDG

Members Present: Charles Young and Stan Bailey.

New Members: Pat Curtis, LeeAnne Jackson, Stephen Lumor, Francisco Diez, Emilio Esteban, Henry Nahmad, Melissa Gwinn, John Wendell, William Chaney, Craig Henry, Randall Phebus, Frank Busta, Robert Brackett, Maria Nazarowec-White, Gale Prince, Gordon Hayburn, Yale Lary, Vishnu Patel, Nigel Harper, Shaun Kennedy, Nate Bauer and Ronald Jech.

Visitors/Guests: Michael Dixon, David Luedeke, Staci DeGeer, Roxanne Von Tayson, Tejas Bhatt, William Northeimer, Kathy Gomas, Rekha Holtry and Jeff Mitchell.

Meeting Called to Order: 2:01 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Charles Young.

Old Business: N/A

New Business:

1. A discussion was held concerning whether or not there was a need for a Food Defense PDG and whether or not the topic would fit better into existing PDGs. During the discussion the following points were made in favor of creating a separate Food Defense PDG:
 - a. The thinking behind food defense can, in many instances, differ considerably from Food Safety.
 - b. Based on the number of individuals in attendance at the organizational meeting, there is clearly a number of different individuals interested in contributing to the effort.
 - c. Many other efforts in food safety have dwindled to the point that IAFP, if it steps up, can become a major contributor to efforts in food defense and can emerge as a leader in this area.
 - d. While there are clearly differences between food safety and food defense, there is clearly synergy between food defense and efforts in food safety that would allow collaboration between a Food Defense PDG and other, already established PDGs.
 - e. The Food Defense PDG will encourage collaboration between government agencies, industry and academics as evidenced by the broad representation of interests at this first organizational meeting.
 - f. Additionally, a Food Defense PDG would include additional members from academics, industry and government organizations that are not very well represented currently within IAFP. The formation of the Food Defense PDG will help expand IAFP membership by addressing the issues important to these underrepresented groups.
 - g. The issue of food defense is not specific to the U.S. Therefore, we envision a significant International emphasis within the PDG, if formed.

Based on this discussion, there was a unanimous sense from those present that forming a Food Defense PDG separate from the PDGs that are already in existence would contribute to a stronger IAFP. Therefore, the individuals present voted to make a recommendation to the IAFP Executive Board to form a Food Defense PDG.

2. A discussion was held concerning the development of a mission statement. We were unable to reach a specific agreement on the wording of a mission statement, there was unanimous agreement that it should contain some or all of the following concepts:
 - a. Education
 - b. Sharing of knowledge
 - c. Building a community
 - d. Communication

- e. A forum
- f. Identifying concerns and gaps/unknowns in food defense
- g. Standard development and consistency
- h. Informational activities

It was agreed by those present that current mission statements of other PDGs should be used as a benchmark for the Food Defense PDG while incorporating the above themes. It was further agreed that a mission statement will be drafted by the elected Chair of the PDG and E-mailed to the membership for additional discussion at the September conference call.

3. A unanimous consensus was reached by those present that Charles Young should assume the role of Chair for the Food Defense PDG and that Shaun Kennedy be Vice-Chair.
4. The following ideas were generated by those present concerning what the Food Defense PDG should focus on:
 - a. Investigate the potential for offering a Webinar series on food defense topics. Take advantage of other Webinars in Food Defense by informing members of upcoming Webinars available through other venues such as NCFPD.
 - b. Build relationships with other PDGs.
 - c. Review where current food defense research and activities are ongoing and try and identify gaps that can be filled.
 - d. Build existing definitions of food defense such as FDA and WHO into our efforts to leverage other activities.
 - e. List information sources and resources that are available.
 - f. Define the food defense expertise that already exists with IAFP.
5. A discussion was held concerning potential food defense symposia and workshops for next year's IAFP Meeting.
 - a. We would like to put together a full symposium focusing on what food defense is and how it differs from food safety and other areas. What is food defense all about? The lead for putting together this area is Gordon Hayburn.
 - b. An international food defense exercise that could be presented as a workshop proposal. Shaun Kennedy to lead.
 - c. Harnessing food defense tools at the local, state, federal and international levels. To include fusion centers. Craig Henry to take the lead with support from other members.

Recommendations to the Executive Board:

1. The individuals present at the Food Defense PDG Organizational meeting recommend formation of a Food Defense PDG within IAFP by unanimous vote.
2. The individuals present at the Food Defense PDG Organizational Meeting recommend that Charles Young be approved as the elected Chair of the Food Defense PDG by unanimous vote.
3. The individuals present at the Food Defense PDG Organizational Meeting recommend that Shaun Kennedy be approved as Vice Chair of the Food Defense PDG by unanimous vote.
4. The individuals present at the Food Defense PDG Organizational Meeting recommend that the Executive Board consider making PDG programs

such as Webinars available to the membership free of charge approximately 30 days after the date the event occurs to support students and scientists in developing countries who might not otherwise be able to afford these programs.

Next Meeting Date: On or about September 18th by phone conference.

Meeting Adjourned: 4:32 p.m.

Chairperson: Charles Young.

Food Hygiene and Sanitation PDG

Members Present: Todd Rossow, Jeffery Kornacki, Zeb Blanton, Rocelle Clavero, Todd Clark, Charles Giambrone, Dale Grinstead, Kenneth Janes, Yale Lary, Ema Maldonado-Siman, Thomas McCaskey, Mark Moorman, David Rasmussen, Amarat Simonne, Oscar Peter Snyder, Kelly Stevens, Toug-Jen Fu, Ken Davenport, Darren Toczko and Zhinong Yan.

New Members: Alex Josowitz, Luciana Luz, Andrew Clarke, Kevin Allen, Bizhan Pourkomailian, Mark Davis, Scott Burnett, Jeff Mitchell, Henry Nahmad, Gary Larsen, Fred Cook, Margaret Hardin, Sieh Ng, Robert Hagberg, Katie Das, Brenda Becker, Sanak Mishra, Hurue Paulos, Rhonda Kane, Harold Ewell and Shirin Abd.

Visitors/Guests: None.

Meeting Called to Order: 9:00 a.m., August 1, 2010.

Recording Secretary of Minutes: Todd Rossow.

- Introductions and circulation of the Member Roster and New Member/Visitor Sign-in sheets.
- Review of agenda and was approved as written by the group in attendance.
- A motion to accept the minutes from 2009 was made by Dale Grinstead and seconded by Zeb Blanton. All approved.
- Special recognition of Jeff Kornacki for Sanitarian of the Year and Purnendu Vasavada for Fellow 2010 award.

Old Business:

- Todd shared the outcome of the 3 Webinars held this year in April, May and June. Each Webinar was very successful and pulled over 100 participants that included 29 – 62 non-IAFP members. Special thanks to Didi Loynachan for her assistance.
- The Cleaning and Sanitation Webinars followed by the 1 ½ day workshop were initially approved by the Board in 2009 and requested additional information. The proposal was later rejected.
- Todd read the Antitrust Statement.
- President-Elect, Lee-Ann Jaykus presented the following information to the group:
 - Webinar success from 2010.
 - The 3 sanitation Webinars were very successful, >100 participants at each Webinar.
 - The \$25 fee was changed to all attendees (members and non-members).
 - These will be used as a model for future Webinars.
 - They want to stage no more than 2/month. "First come, first serve."
- She reminded the PDG note taker that the section for Board Recommendations is for recommendations only. General minutes should be in the Minutes section.

- She asked for input on 4 topics: (1) Ways to increase IAFP visibility, (2) Identify sources of where our membership obtains food safety and other related information, (3) Define the benefits and drawbacks of social media, and 4) Define the Top 100 food safety tips.
- 1. Through Webinars. These have proven to be valuable to those outside of the IAFP membership. These can also be used by the affiliates to provide low cost education and training materials for their members and communities. We also felt that these Webinar notifications could be shared with university extension agencies, small and local business groups, GMA, IFT, NEHA, NRA, ASM, etc.
- 2. Google, NIH (National Institute of Health), *JFP* (*Journal for Food Protection*), *FPT* (*Food Protection Trends*). We really need access to university libraries, too.
- 3. Information from sources like Facebook or Twitter are means to get timely food safety information, but may not be from reputable sources or vetted.
- 4. Our PDG will ask our membership for feedback and will be sent to Lee-Ann by the close of business on 8/13.

New Business:

- It was discussed that we would like to approach an aggressive year of Webinars. There were options on how the cost should be taken care of for these events. Ideas included corporate sponsorship, reduced rate for members, reduced membership fees if non-members participated, and member's only access to the recorded Webinars. We will discuss with the Board for the best options.
- The group agreed to take the 2009–2010 **Cleaning and Sanitation series (Back to Basics/Wet Cleaning/Dry Cleaning)** and hold again over 2010–2011. We will use the same presentations/presenters as this year. Todd will coordinate and work with Didi. 3M (per Ken Davenport) is willing to be a sponsor for the first Webinar series.
 - We need to more actively promote the Webinars and work with other organizations to get the word out. All members should share with their contacts.
 - We will investigate translating into Spanish so we can better reach the international community.
- We discussed putting together a Webinar or series of Webinars on **Validation of Cleaning and Sanitation (sampling and testing)** – Jeff Kornacki will be working with P.C. Vasavada to develop the presentation(s) and possibly partner with the Applied Laboratory Methods PDG.
- We discussed putting together a Webinar or series of Webinars on the **Optimization of Cleaning and Sanitation** – David Rasmussen will lead the effort to develop the presentation(s).
- We discussed putting together a Webinar or series of Webinars on the **Science of Cleaning and Sanitation** and possibly tie it into a **workshop** at the Diversey labs in Milwaukee in 2011 – Dale Grinstead will lead the effort to develop the Webinar(s) and workshop proposal.
 - Some additional thoughts include chemical compatibility (plastics, metals, etc.), Water chemistry, How often do you clean? Improve safety, etc.

- Symposium idea submitted by Jeff Kornacki— **Strain Persistence and Control in the Industrial Food Processing Environment (full symposium)**
 - The Importance of Persistent Strains in the Food Processing Environment – J. Kornacki
 - Mechanisms of Strain Adaptation to the Food Processing Environment – Joseph Frank of UG
 - The Relationship of Environmental Stress Adaptation to Pathogen Virulence – Joshua Gurtler – USDA, ARA
 - Adaptation of *Cronobacter* spp. (*Enterobacter sakazakii*) and *Salmonella* to Dry Conditions – tbd
 - Adaptation of *Listeria mono* to the Environment – Eliot Ryser, MSA, or Martin Weideman, Cornell
 - Practical Approaches to Preventing Adaptation to Strains to Food and the Industrial Food Processing Environment. – tbd
- Jeff shared ideas of a workshop around **Sanitation and Microbiological Controls for Production of Dry or Low Water Activity Foods** – He will develop and be prepared to share with the group prior to submission.
- **White Papers** – We discussed the formation of a sub-committee to review current literature and define some thoughts for these topics. Also, what are the elements that need to be in a White Paper? Jeff to lead.
- **Mentoring Program** – Kelly Stevens asked about the formation of a mentoring program— How to pass on what we learn to the next generation of food safety professionals. She will follow-up with the group on ideas for such a program.
- **Real-time Feedback from Our PDG and IAAP Membership** – Lab Methods does something around this already. This is an idea presented by Jeff Mitchell. He will draft his thoughts and share with the group.
 - Set up a link on the IAAP Web site
 - Format so the questions are easier to search and trend
 - Food safety questions
 - Food safety tips
 - To help develop late-breaking information sharing (Webinars, white papers, the next year's symposium)
- Conference calls will be coordinated over the next 2 months to develop ideas for the Webinars, symposia and workshops for submission to the Planning Committee. All proposed submissions will be provided to IAAP by October 18, 2010.

Recommendations to Executive Board:

- We recommend that the Board provide a list of the accepted symposia, workshops and roundtables from the past 5 years. This will help the PDGs know what has been done in the past and prevent duplication.
- We recommend that each PDG be provided at least 1 symposium slot for each year if properly developed and of substance and merit.
- We recommend a staff position be created to allow for the management of more than 2 Webinars/ month.
- We recommend a staff position be created to support the local affiliates and help them grow and reach their communities with food safety education and training.

- We recommend for the formation of a Hygienic Design PDG.
- We recommend that IAAP establish a fund for research projects like AMI does.

Next Meeting Date: July 31, 2011 in Milwaukee. Note: There will be scheduled conference calls between now and then with the PDG membership and sub-committees.

Meeting Adjourned: At 11:00 a.m. a motion was made by Mark Davis to adjourn the meeting and seconded by Dale Grinstead. All agreed.

Chairperson: Todd Rossow.

Food Law PDG

Members Present: Jenny Scott, DeAnn Benesh, Zeb Blanton, Patricia Curtis, Carl Custer, Emilio Esteban, Gordon Hayburns, Yale Lary, Susan Linnp, Andrew MacCabe, Deon Mahoney, Gloria Swick-Brown, Gina Nicholson, Christina Wilson and Suresh Pillai.

New Members: Ken Tyrrell, Gregory Sanders and Thilde Peterson.

Visitors/Guests: Deborah Herr, Helen Barela, Rupesh Doshi and Ronald Jech.

Meeting Called to Order: 9:00 a.m., Sunday, August 1, 2010. PDG Chair, Caroline Smith-DeWaal, unable to attend. Meeting called to order by Vice-Chair, Jenny Scott, FDA CFSAN.

Recording Secretary of Minutes: DeAnn Benesh.

Old Business:

1. Motion to approve meeting minutes from July 22 conference call – Carl Custer; seconded – Christina Wilson. Minutes Approved.
2. One of the three symposia submitted by the Food Law PDG for this year's program was accepted, but the PDG Chair had not been made aware. Brainstorming by the PDG as to how to improve this situation for the future resulted in 3 recommendations for the executive board – listed below.

New Business:

Vice-Chair election:

The Vice-Chair still has 1 more year to complete of a 2 year term, so no action required at the moment. Nominations remain open. Two candidates were mentioned thus far: Christina Wilson, and DeAnn Benesh. Voting will be conducted electronically. White Paper Ideas:

1. **Criteria and Tools for Comparing National Food Safety Programs** – Rejected as a symposium for 2010, but agreement within PDG that we should work towards creating a white paper for publication in *Food Protection Trends*. Caroline Smith-DeWaal & DeAnn Benesh will lead a small working group [Deon Mahoney, Emilio Esteban, Pat Curtis and Carl Custer] to draft.
2. **Different National Import/Export Programs to Ensure Consumer Protection** – it was suggested that this could be a series of white papers, or a follow-up to the Criteria and Tools paper above.

The committee felt we should complete the paper above, and then determine next step – how this topic fits in, or becomes a new topic.

3. **New Legislation: Bringing Science & Law Together to Improve Food Safety** – review again, when Congress passes the Food Safety Bill. Consider providing this topic as a recorded Webinar.

Webinars:

- There is discussion within IAFP regarding a minimal charge for Webinars [\$25?].
- IAFP currently covers cost for PDG Webinars, but are considering a charge for Webinars that are considered continuing education. IAFP would like comments.

Food Law Webinar Topics:

- Food Safety Transportation Act – suggested we hold this for the future, when law in place
- Overview Outlining the “Layers” of Food Law:
 - Local vs. State vs. Federal
 - Country vs. European Union

Symposia suggestions for 2011 [the first 3 below were suggestions from Gina Nicholson]:

1. 100 Years of Food Law – retrospective, and the changes occurring to address new challenges. It should include: domestic & international, developed and developing countries.
 - Organizers: Caroline Smith-DeWaal, DeAnn Benesh, Deon Mahoney, Carl Custer, Gina Nicholson.
 - This topic may be large enough to break down into parts 1 & 2 [and also to connect with Symposium suggestion #3, below].
 - Pat Curtis suggested a white paper could be created from this symposium – which would be especially useful for students taking courses that include topics around food law.
 - The organizers should consider seeking a sponsor for support – both for international speakers and the white paper project.
2. Food Transportation [synergies with Food Defense and Retail PDGs]
 - This topic could cover: concerns along the cold chain – how to regulate and control this vulnerability? Effect and control of independent trucking contractors; temperature control monitoring technologies.
 - It was suggested perhaps this could also create additional vendor participation/ membership from technology companies that would be new to IAFP.
 - Gina Nicholson will take this symposium idea to the Retail PDG to see if they would like to collaborate.
 - Ron Jech will take this symposium idea to the Food Defense PDG to see if they would like to collaborate.
 - Organizers: Gina Nicholson and Yale Lary, possibly with others from collaborating PDGs.
3. Changes in Food Laws from Health Concerns [reduced salts, fats, etc.] requiring new product formulations, and their effects/ implications for food safety.
 - Ideas surrounding this topic: nutritionists aren't knowledgeable about food safety, so they aren't aware of the effects of some of these health changes; effects on labeling and

- packaging regulations; sustainability, etc
- Gordon Hayburn will take this topic to the new Food Packaging PDG to see if they would like to collaborate.
- Ron Jech will take this symposium idea to the Food Defense PDG [because of the packaging-related issues] to see if they would like to collaborate.
- Organizers will depend on interest of other PDGs.

4. Important information, e.g., applicable food laws, to help when setting up a new food company
 - Thide Peterson, member of the Committee for Control of Foodborne Illness, requested support from the Food Law PDG to collaborate on this symposium.
 - Topics they would like to cover: where do food entrepreneurs get food law information? Business incubators; Edison Technology; Innovative Food Technology Centers [US] / Food Industry Centers [EU]; contacts and step-by-step procedures of points to consider when setting up a food company.
 - They would like our PDG to provide a Food Law perspective.
 - Information from this symposium could be developed into a manual, and/or on-going Webinars.

Board Member Visit to the PDG: IAFP President-elect, Lee-Ann Jaykus

- Thank you to PDG for hard work.
- What do we think about set a cost for Webinars? [there's a cost to have staff organize & manage these. Today, IAFP can manage 2/month, so schedule early!].
- The Board wants *recommendations* from PDGs vs. just information [things that affect IAFP as a whole vs. points that only affect the PDG].
- The Board is in the process of strategic planning and would like input to the following questions:

1. How can we increase the visibility of the IAFP Brand?
 - The IP name isn't IAFP – it's food protection, so it doesn't “pop up” first when you type “IAFP” into the search engine.
 - Get connected to other associations, to get recognition: as a resource, as a leader in food safety, etc. [e.g., the association that exists for innovative food technology centers].
 - IAFP is not just food safety, so expand the reach to better include our shift to new areas [packaging, defense, toxicology, etc.]
 - Increase the number of white papers and guidance documents produced. Try to be the FIRST people to do this in new areas [defense, packaging], and not just FIRST, but BEST.
 - IAFP should focus on being recognized as a true leader in food safety.
2. Where does the Food Law PDG get information? Is there a need/gap in our sourcing that IAFP could help fill?
 - IAFP should create specific, simplified, food law material for consistent information, publication and generation of credible information.

3. Where does the Food Law PDG get information? Is there a need/gap in our sourcing that IAFP could help fill?
 - IAFP should create specific, simplified, food law material for consistent information, publication and generation of credible information.
4. What are the benefits and downfalls of current social media? Should IAFP be capturing / capitalizing on them?
 - Instead of Facebook, use the professional site: LinkedIn, because IAFP is a professional group, and some companies do not allow access to Facebook through their firewalls.
 - Create a group[s] within LinkedIn where white papers can be uploaded.
 - Use Doodle.com for polling and voting within IAFP.
 - IAFP 100th Anniversary next year – the Board is looking for any ideas for the celebration, and the 100 top food safety tips. Please submit your ideas.

Recommendations to the Executive Board:

- **Recommended Improvements to PDG Symposia Submission Process:**
 1. Include within the electronic symposium submission the option to select the NAME of the PDG submitting the symposium [where applicable].
 2. When the symposium has been submitted, an automatic notification should be sent to the PDG Chair.
 3. If a symposium is rejected, the PDG chair, in addition to the organizers, should be notified, along with the rationale as to why the symposium was not accepted. Note areas for improvement and/or whether there is interest in seeing the topic resubmitted in the future.

Next Meeting Date:

Teleconference will be scheduled mid-September to finalize symposium submissions. Teleconference or Webinar will be held if/when new US food safety legislation is passed.

Meeting Adjourned at: 11:00 a.m.

Vice Chairperson: Jenny Scott.

Food Packaging PDG

New Members: Linda Leake, Harold Ewell, Andy Benson, Fritz Lembke, Albert Elboudwarej, Gregory Phillips, Mike Sipp, John Allan, Mark Moorman, Dan Erickson, Bob Brackett, Shiowshuh Sheen, William Evan Chaney, Isabel Walls, Tony Flood, Gordon Hayburn, Jena Roberts, S. Balamurugan, Erdal Tuncan, Jason Wan, Rocelle Clavero, Ema Maldonado-Siman, Mary Lou Tortorello and Peter Slade.

Visitors/Guests: Joe Hotchkiss, Ronald Jech, Erwin Dela Frente, Katie Burns and Rhonda Kane.

Meeting Call to Order: 11:00 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Tony Flood.
Welcome by Linda Leake. Self-introductions by all in attendance.

Old Business: N/A

New Business:

1. Guest speaker Joseph Hotchkiss, Ph.D., Director of the School of Packaging at Michigan State University, East Lansing, MI (Presentation of 15–20 minutes, followed by 10–15 minutes available for questions for the speaker and/or discussion of this talk). Topic: "Overview of the hot topics in food packaging relative to food safety, quality, protection and defense."
2. Guest speaker: Albert Elboudwarej, Ph.D., Manager of Packaging Development for the Product Design Group at The National Food Lab, Livermore, CA. (Presentation of 15–20 minutes, followed by 10–15 minutes available for questions for the speaker and/or discussion of this talk.)
Topic: "Hot topics in chemical migration into food from packaging materials."
3. Everyone in attendance concurred that we should move forward with recommending to the Board that a Food Packaging PDG be established.
4. Time did not permit after the formal presentations; therefore Linda Leake suggested that a vote for Chair and Co-chair could take place via E-mail soon after the IAFP Annual Meeting. Linda promised to correspond with everyone in attendance via E-mail about this issue after the Annual Meeting. Linda announced the deadline for proposals for programs for the 2011 Annual Meeting is October 18, 2010. We will correspond about this issue via E-mail and possible conference calls in the weeks ahead.
5. Any other new business.

Recommendations to the Executive Board:

1. We recommend a Food Packaging PDG be established.
2. Approve Albert Elboudwarej as Chair and Linda Leake as Vice Chair.

Meeting Adjourned: 12:30 p.m.

Acting Chairperson: Linda Leake.

Food Safety Education PDG

Members Present: Renee Boyer (Chair), Katie Swanson (Board Liaison), Andrew Benson, Christine Bruhn, Benjamin Chapman, Bennett Armstrong, Marie-Luise Baehr, Anthony Flood, Kerri Harris, Ema Maldonado-Siman, Patricia Curtis, Matthew Jenkins, Sandra McCurdy, Sue Snider, Brian Turner, Gordon Hayburn and Brita Britt.

New Members Present: Katie Burns, Shay deSilva, John Allan, John Wendell, Hayley Oliver, Adnrea Moreno Switt, Lorraine Rodriguez-Rivera, Helen Barela, Mark Davis, Todd Rossow, Gregory Sanders, Pamela Wilger, Andrew Clarke, Louise Fielding, Lara Snyder, Marin Pavlic, Kerri Harris, Carl Custer, Carrie Ferstl, Gregory Phillips, Andy Benson, Mariam Reyes, Isabel Walls, Gina Nicholson, Larry Kohl, Jacob Lemmons, Ashley Haneklaus, Brittany Laster and Ruth Petran.

Meeting Called to Order: 1:03 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Renee Boyer.

Old Business:

Wikipedia Project:

Ben Chapman reviewed the project history: 3 conference calls and 1 Webinar were held in the past year, IFIC hosted a Webinar to teach how to contribute to Wikipedia and the creation and editing of a page. The next meeting will be at

the end of Sept. with a goal to develop a guideline to give to other PDGs and to write a 2–3 page white paper to *FPT* so all members can learn how to do this.

IAFP identifier: Katie says yes it would be useful, but you would need Board approval. Decided not to have an identifier b/c it could eventually be used maliciously.

Development of small series of Webinars associated social media: a series of small Webinars.

Presentation from IFIC, 2010 Food and Health

Survey: Tony Flood and Katie Burns from IFIC presented data from their survey on consumer food safety perceptions. Executive summary made available at the end of the meeting.

Food Safety Education for Physicians: The discussion of the food and health survey generated a good discussion about the gaps in food safety training of physicians:

- Sub-committee from our PDG to pull this information together;
- Tony Flood and Christine Bruhn put together a group that could look for funding, potential chairs will E-mail Ben Chapman.
- For the sub-committee:
 - Include international perspective.
 - Physicians food safety knowledge... development of work for that group. Audience wants Web-based primers not print-based.
 - Going to physicians, can you get them to actually carry out with the information.

Potential Workshop for Milwaukee 2011:

- Working with media on how to tell food safety stories proactively and reactively – include social media/online.
- Chaired by: Gina Nicholson, Sue Snider, IFIC.

Election of New Vice Chair:

- Pamela Wilger (Cargill), all in favor. Pamela accepted the position; we will bring this to the Board on Monday morning.

Food Safety for Temporary Events Document Revisions:

- PDG's publication revision requested.
- Subcommittee created to address: Albert Armstrong, Brian Turner, Renee Boyer and Ben Chapman.

100 Safety Tips for the 100 Years:

- PDG will assist in creation of 10–15.

Potential Symposium Topics for 2010:

- Theme: what has happened in food safety education over the last 100 years (meat safety microwave)?
- Reaching policy makers on food safety issues:
 - (1) How to intercede when secular advocacy influences the view of the policy makers.
 - (2) How to guide a legislature to determine science versus emotion.
 - (3) Local vs. national, European, Asian... to get to the question.
 - (4) Speak about how and why decisions are made. How political decisions are made.
- Education for teachers, secondary education (Adriene Shearer to lead?)
 - Resources available.
 - Gaps.
 - Cooking skills.
 - Puppets as a communication vehicle?

- How do you target different groups to encourage behavior change? (industry employees)
 - Finding the appropriate medium for that audience.
 - Food safety education interventions lessons learned.
- Good assessment of learning tools, how do you know if you are effective. (Shay deSilva to lead?)
 - People from culture and communications of behavioral, learning assessment.
 - Have to prove competency longitudinal assessments. Attitude/knowledge and behavior change. Effectively transferring messages to target audiences. Assessment of social media's effect?
- Developing food safety education strategies for new businesses
 - Non-food science individuals on preparing a safe product, processing things w/o inspection.
 - "How do you educate people that have no clue?"

Recommendations to Executive Board:

1. We wish for the Board to appoint Pamela Wilger as PDG Vice Chairperson.

Recommendations for 100 Year Planning Committee:

2. Suggest that the 100 food safety tips that are created to be added to the IAFP Facebook page and put out as a tip of the day via twitter as a lead-up to the meeting.

Next Meeting Date: August 2010, Milwaukee, WI.

Meeting Adjourned: 3:00 p.m.

Chairperson: Renee R. Boyer.

Fruit and Vegetable Safety and Quality PDG

Members Present: Jack Guzewish (Chair), Stan Bailey (Board Liaison), Kevin Allen, Bassam Annous, Larry Beuchat, Elizabeth Bihn, LeAnn Chuboff, Michael Cooley, Michelle Danyluk, Francisco Diez, Elena Enache, Eelco Franz, Donna Garren, David Gombas, James Gorny, Robert Gravani, Steven Grove, Keith Ito, Stephen Kenney, Sun Kim, Kalmia Kniel, Larry Kohl, Keith Lampel, Alvin Lee, Bashir Manji, Mayra Marquez Gonzalez, Karl Matthews, Sherri McGarry, Xiangwu Nou, Jitu Patel, Terence Peters, Suresh Pillai, Jena Roberts, Joan Rosen, Manan Sharma, Amarat Simonne, Michelle Smith, Stacy Stoltenberg, Thomas Taylor, Mary Tortorello and Randy Worobo.

New Members: Henry Nahmad, Leslie Thompson, Jason Wan, Elaine Black, Roger Cook, Bridget Tinsley, Wendy Maduff, Carlos Menes, Andrew Farnum, Elsie Friesen, Jerry Erdmann, Hyun-Gyun Yuk, Joshua Gurtler, Jeff LeJeune, Tong-Jen Fu, Karl Reineke, Divya Jaroni, Christine Aleski, Zhinong Yan, Thomas McCaskey, Pat Millner, Stephanie Jensen, Pascal Delaquis and Sharon Lanini.

Visitors/Guests: Sid Thakur.

Meeting Called to Order: 1:02 p.m., August 1, 2010.

Recording Secretary of Minutes: Sherri McGarry.

Old Business: Motion to accept Minutes from 2009 PDG Meeting was adopted.

New Business:

Outbreak Update: Sherri McGarry gave the FDA report on outbreaks linked to produce. There were six produce outbreaks in 2009 with approximately 288 illnesses reported. For 2009, agents involved *Cyclospora* and *Salmonella* with

berries, melons, tomatoes, and sprouts associated with illness; cucumbers and lettuce were suspect vehicles in two outbreaks. So far in 2010, there are 7 reported outbreaks with produce either implicated or suspect including an *E. coli* O145 outbreak associated with eating shredded romaine lettuce. Jack Guzewich discussed FDA recent efforts to conduct more intensive environmental assessments for certain outbreak such as the *E. coli* O145 outbreak. He mentioned that FDA will be providing the findings of that environmental investigation.

Regulatory Update: Michelle Smith, Ph.D., and Jim Gorny, Ph.D., provided the FDA regulatory update. Michelle Smith informed the group on FDA's plan to focus efforts on produce safety regulation though there are many other efforts underway. She mentioned that the White House Food Safety Working Group identified two items relating to produce safety as priorities. One was to issue commodity specific guidance and the second was obtaining input for improving produce safety and preventive controls. Commodity specific guidance was issued in the *Federal Register* on August 2, 2010. This guidance is largely based on efforts by other groups including Dave Gombas of United Fresh Produce Association. For the second item, FDA is in the deliberative process for regulation development for growing and packing of produce preventive controls. A docket was opened for public comment and closed recently with over 700 submissions. Some key considerations mentioned by Michelle Smith include the importance of collaboration with stakeholders and FDA has held listening sessions and visited growers and others in 13 states. A few themes FDA has heard include holding imports to the same standard as domestic produce, provide access to tools to assist firms to comply with any regulation, and FDA to leverage with existing resources and collaborate with other groups that have an on-farm presence. After the draft Rule is published, possibly 2011, there will be another opportunity for comment.

Jim Gorny provided an overview of FDA's approach including if Congress doesn't pass a bill with new authorities, FDA intends to move forward with the regulation using existing authorities to improve produce safety.

E-Extension Initiative: Amy Simone discussed the E-Extension Initiative and is soliciting expertise to contribute to the effort. The effort includes gathering food safety materials and putting them in one online place for easy access. She disseminated information and materials to the PDG and asked that those interested contact her or the individuals identified on the materials.

IAFP Symposia: Jack Guzewich mentioned that the PDG has until October 18 to submit symposia suggestions. He also mentioned the new proposed Pre-harvest Food Safety PDG and the importance to coordinate with them and that they had a few ideas on symposia. Sid Thakur from that PDG gave an overview of the PDG planning meeting.

- Jack Guzewich mentioned that Trevor Suslow submitted a Symposia idea.
- Jim Gorny will work on On-Farm Preventive Control Symposia with Dave Gombas, Bridgette Tinsley, and a USDA representative.
- Keith Warner will spearhead Effective Interventions and New Concepts/Technology and had several volunteers to assist in developing the Symposia.
- Environmental Sampling will be developed for Symposia by Thomas Taylor working with Dairy PDG. Ideas discussed include statistical sampling strategy, interpretation of results for low numbers of positives, costs, and using results to inform policy.

Other: Bob Gravani mentioned Cornell University is offering a GAP training course on August 17 and 31, 2010.

Recommendations to the Executive Board:

1. Dave Gombas is recommended by the PDG as Vice-Chair.
2. The PDG discussed IAFP's idea for charging a fee of \$25 for Webinars. There were differing opinions on the cost and a suggestion that instead of holding a Webinar with a fee use a conference call and E-mail out the PowerPoint presentation in advance. The majority support the idea of a Webinar and \$25 fee. Many thought it was a means of IAFP membership building and the Webinar should reach out to industry.
3. The PDG recommends to the Board that presentations from the Annual Meeting be posted on the IAFP Web page, or sent after the meeting on a thumb drive, to persons who paid registration for the meeting. IAFP would have to consider having authors sign a release form to share their presentations.

Next Meeting Date: The PDG will consider holding conference calls and or Webinars during the year on topics such as FDA's development of new produce regulations or produce outbreaks of significance.

Meeting Adjourned: 2:45 p.m.

Chairperson: Jack Guzewich.

International Food Protection Issues PDG

Members Present: Jeffrey M. Farber, Leon G. M. Gorris, Isabel Walls, Peter K. Ben Embarek, DeAnn L. Benesh, Andrew P. Benson, Barbara Blakistone, Robert E. Brackett, Rebecca Buckner, Sarah M. Cahill, Alessandra O. Chiarelli, Patricia M. Desmarchelier, Alejandro Echeverry, Judy D. Greig, Jack J. Guzewich, Ian Jenson, Linda L. Leake, Deon B. Mahoney, Jenny Scott, Peter J. Slade, Cindy M. Stewart, Ewen Todd and Pamela A. Wilger.

New Members: Jason Wan, Harold Ewell, Roger Cook, John Allan, Randall Phebus, Jairo Romero, Rupesh Doshi, Xianming Shi, Mariza Landgraf, Maria Teresa Destro, Christine M. Aleski, Emilio Esteban, Bobby Krishna, Mohammad I. Quamas, Anna Lammerding and Ali Al Sakka.
Visitors/Guests: Karen Hulebak, Alejandro Rojas, Yuhua Chang, Jared Strong and Tejas Bhatt.

Meeting Called to Order: 2:35 p.m., Saturday, July 31, 2010.

Chairperson: Jeffrey Farber.

Recording Secretary of Minutes: Leon Gorris.

Welcome by IAFP Board Liaison Isabel Walls. To support the Executive Board's long range strategic planning, Isabel asked for feedback on successful use of educational Webinars and associated subscription costs. Feedback was provided on importance of easy subscription and possibly bulk subscription at annual membership registration. Further feedback was requested on IAFP using social media (e.g., Facebook, Twitter, LinkedIn), raising IAFP's brand visibility and compiling a top-100 food safety tips list for next year's 100 year anniversary meeting. Feedback to David Tharp and/or Isabel Walls.

Old Business: Minutes 2009 PDG Meeting. The meeting adopted the minutes as written.

New Business:

1. Jeff highlighted several forthcoming sessions of possible interest to PDG members:
 - S19 – International Food Safety Policies
 - S26 – Global issues and Impact of Gluten Allergy and Celiac Disease
 - S27 – Food Safety in Developing Countries
 - S30 – A Practical Approach to Risk Communication – Engaging Stakeholders and the Public
 - S34 WHO's Epidemiological Approach to Estimating Foodborne Diseases – WHO FERG
2. International IAFP Meetings of interest:
 - IAFP held a successful 6th European Symposium from 9–11 June 2010, in Dublin. Close to 300 people attended. Next time, the meeting may possibly be in The Netherlands. Info on IAFP Europe meetings (incl. presentations for download): <http://www.foodprotection.org/events/european-symposia/>.
 - IAFP will hold its 2nd Latin America Symposium on Food Safety from 21–24 September 2010 in Bogota, Colombia. Info: <http://www.acta.org.co/Congreso2010%20Ingles.php>.
 - Info on other meetings supported by IAFP (i.e. Dubai, China, Korea) available on IAFP Web.
3. The guest speaker for the PDG session was Karen Hulebak, talking on "Codex Alimentarius – Past Concerns, Current Issues and Future Prospects". Dr. Hulebak is Chief Scientist in the USDA, Office of Food Safety. In July 2010, Dr. Hulebak was elected to a third and final one-year term as Chair of the Codex Alimentarius Commission. She was previously a Commission Vice Chair for three years, and the Chair of Codex Committee on Food Hygiene for seven years. In her presentation, Karen discussed recent changes in Codex Alimentarius in speeding up issuing standards and guidelines and talked about the need for further change to address challenges such as: global change in demographics and the need to involve developing and emerging economies more, implementation of risk analysis framework across commission, assuring transparency and inclusiveness, difficulty in developing consensus on nationally sensitive issues, etc. One of the ideas raised in discussion was that of mentoring developing economies in effective participation in the Codex process. Karen kindly shared her speaker notes, which will be attached to the minutes when posted on PDG Web page.
4. Roundtable updates were provided on:
 - The International Commission on Microbiological Specifications for Food (ICMSF) by Leon Gorris, secretary to ICMSF, who talked about ICMSF generally and their latest projects: Book 8 on useful testing within a food safety assurance system, excel spreadsheet tools for establishing sampling plan/microbiological criteria and for safe food design based on risk based metrics (FSO/PO/PC), and an illustrated lay-person's guide about these metrics; more details on www.icmsf.org. The PPT used will be attached to minutes posted on PDG Web page.
 - Dr. Sarah Cahill, FAO, updated the meeting on a number of activities, most of which were jointly run with WHO in the areas of development of scientific advice, capacity building and emergency response. Under scientific advice, she covered microbiological risk assessments and other JEMRA work, harmonization of methods, risk communication, nanotechnology, risk of chemicals in food (Bisphenol A) and risk/benefit of chlorine use in food industry. Sarah's speaker notes will be attached to the minutes on the PDG Web site.
5. Dr. Peter Ben Embarek added from the WHO perspective. He recalled that this year the World Health Assembly adopted a resolution providing guidance on food safety priorities for WHO and FAO to consider, covering nutrition aspects of food safety, food aid, emergency support, food availability/security, increase of data generation on foodborne illnesses, expansion of INFOSAN, strengthen education and dissemination of food safety information, and need to address human health at the interface between humans and animals.
 - Dr. Isabel Walls updated the meeting on the Asia Pacific Economic Consortium (APEC) activities, which look at coordinating activities to support food safety skill and capacity building in the region, possibly with support of the World Bank.
5. IAFP symposia/workshops for 2011 (deadline October 18, 2010). The following ideas were raised:
 - White paper on food safety system produced by PDG; FAO/WHO, communication professionals, scientists, etc.
 - International Knowledge Platforms, requested by APEC, could be on risk communication as a theme; follow-up from Wednesday symposium for volunteer working group "best practice in risk communication" (issues such as: communicating tox thresholds, chemicals in foods, emerging concern areas).
 - GFSI & global food safety auditing. Some work presented this year. Needs to address new aspects.
 - Where can we find key information on various hazards, like thermal kill temperatures? An easy source of information...
 - New laws are created in many countries to force food processors to use the system. What support is given to processors to make it work? Capacity building. Best practice in implementation – maybe with focus on small and medium sized businesses.
 - Private sector initiatives. What is happening in terms of their activities to help developing markets regarding safe manufacturing and marketing operations.
 - Inspection. Huge challenges. How to do it in different regions, facing global challenges. Learnings and best practices.
 - A symposium on private standards issues. Involvement of multi-nationals, how developing countries can raise their status re: infrastructure, capacity, partnerships. Learnings and ideas to go forward.
 - *Listeria* increase in listeriosis / Denmark/ Europe and Asia. What are the underlying reasons? Implementation of the new Codex standard – learnings & performance.
 - Developing countries participation in PDG. Issues for those countries such as security of food supply. Relative low priority of food

safety in their environment. How can they be supported by IAFP? World Bank and Codex links?

An E-mail discussion (possibly in September) will be used to establish concrete ideas and progress proposals. Proposers are requested to keep Jeff and Leon up to date with submission and feedback from the Program Committee.

6. Election of a new Vice Chair for the PDG.
Three nominations have been put forth: An e-mail ballot will be organized for PDG members to vote on the new Vice Chair.
7. Any Other Business.
Jeff inquired after satisfaction of members to have the PDG meeting on Saturday afternoon. Those present were not unhappy with it, disregarding the additional time/costs for attending. One argument was that there would be more overlap with other PDGs when it would be on Sunday.

Recommendations to Executive Board:

1. Approve Deon Mahoney as Vice Chair.

Next Meeting Date: 30 July 2011, Milwaukee, WI.

Meeting Adjourned: 5:00 p.m.

Chairperson: Jeffrey Farber.

Meat and Poultry Safety and Quality PDG

Members Present: Timothy Freier (Chair), Craig Henry (Vice Chair), Katherine Swanson (Board Liaison), Gary Acuff, Mueen Aslam, Cynthia Austin, S. Balamurugan, Kristina Barlow, Dennis Burson, Jinru Chen, Roger Cook, Carl Custer, Maria Teresa Destro, Denise Eblen, Laura Fenton, Veneranda Gapud, Kathleen Glass, Kerri Harris, David Herweyer, Ian Jenson, Yale Lary, Jr., Lynn McMullen, Michael Michel, Michael Musgrove, Marin Pavlic, Justin Ransom, Jeff Savell, Joe Shebuski, Brian Sheldon, Manpreet Singh, Mike Sipp, John Wendell, Patricia Wester, Kurt Westmoreland and Wendy White.

New Members: Agnes Tan, Marian Angela Reyes, Mary Pia Cuervo, Emilio Esteban, Patrice Arbault, Peter Slade, Betsy Booren, Christine Aleski, Brittany Laster, Ashley Haneklaus, Joe Harris, Jacob Lemmons, Moustapha Oke, Roxanne Von Tayson, Regina Whitemarsh, Masi Rajabi, Xin Li, Robert Tebbs, Carlos E. Ruiz, Morgan Wallace, Larry Kohl, Jerry Erdmann, Nurliza Buyong, Nate Bauer, Jeff Farber, Yemi Ogunrinola, Ali Al-Sakkaf, Mariza Landgraf, Alena Borowski and Alejandro Echeverry.

Meeting Called to Order: 10:05, Sunday, August 1, 2010.

Recording Secretary of Minutes: Craig Henry and Patricia Wester.

Old Business:

- Thank you to Tim for his work as Chair. Chairperson for 2011 will be Craig Henry.
- Review of antitrust guidelines and housekeeping items.
- Announce Symposia of special interest to the Meat and Poultry Safety and Quality PDG
 - S7 – Government, Academic and Industry Collaborations to Advance the Development and Use of Microbiological Risk Assessments.

- S17 – The *Salmonella* Smorgasbord: The Problem with Too Many Choices.
- S16 – Significance and Detection of STEC or Non-O157:H7 *Escherichia coli*.
- S23 – Way Before the Fork: Impact of Pre-harvest Management Programs and Supply Chain influences on the Control of Shiga Toxin-producing *Escherichia coli* Contamination in Beef.
- S29 – Maintaining Consumer Market Continuity During Animal Disease Outbreaks.
- T5 – Meat and Poultry Technical Session.

New Business:

- Katie Swanson provided a greeting from the Board and items to consider:
 - Webinars are welcomed for \$25 to cover costs per line for educational subjects. Charge or not to charge?
 - M & P recommendations:
 - Member vs. non-member pricing an option.
 - Obtain multiple sponsors for a Webinar.
 - Must consider how long the Webinars will run which will impact the profit or loss position.
 - Ideas regarding benefits and drawbacks of current popular media and how IAFP can implement use of social media.
 - IAFP has a LinkedIn established and appears popular.
 - What is the intent for such media?
 - Educate public, if so, yes because it is needed.
 - Can be used to supplant dis-information.
 - Consider the new generation of the public and it is their method of communication.
 - Board must enumerate all of the reasons to use social media..
 - Board must consider the cost factor.
 - How to increase visibility of the IAFP brand.
 - What can the PDG do to advance IAFP visibility?
 - Long range plan is to go global.
 - 21% of registrants are outside of North America.
 - Board should define what metrics are used and what is the goal of increased visibility?
 - Consistency of IAFP participating at IFT.
 - Identify sources of info that you use within your field and identify gaps in your info needs.
 - What will attract more of the food supply chain to IAFP as a credible info source?
 - What info source is needed?
 - What type of portal is needed to access info?
 - ACTION ITEM: Obtain a list of credible sources used by M & P PDG by October 1.
 - How to obtain international news?
 - US Dept of Commerce is one.
 - Consider forum software, etc.
 - *Journal of Food Protection* and *Food Protection Trends* are not electronically available so consider this option.
 - Want to compile IAFP's TOP 100 food safety tips for the 100 year anniversary.
 - ACTION ITEM: Obtain a brief list for the Board by October 1.

- Administrative
 - Recommendations for a Vice Chairperson for the Meat & Poultry PDG.
 - Trish Wester volunteered to be the Vice Chair for 2011 & 2012 and was unanimously approved by PDG.
- Symposium and Workshop topics proposed for 2011, Milwaukee, Wisconsin meeting (Due Oct. 18, 2010).
 - *Listeria* – at retail outcome of latest risk assessment.
 - Denise Eblen, FSIS.
 - Kristy Marlow, USDA-FSIS.
 - Fred Reimers.
 - Jeff Farber – Canada.
- Environmental *Salmonella* from dry processing
 - One year later impact of GMA Sanitation.
 - Lessons learned from agencies and industry.
 - Morgan Wallace.
 - Carl Custer.
 - Trish Webster.
 - Xim Li.
- Non-O157 STEC update from lessons learned
 - Denise Eblen, FSIS.
 - Industry and agency.
- Food safety activities/inputs and impact on microbial indicator and public health outcomes: Joining the dots.
 - Control programs and public health metrics – do they relate to one another.
 - Campy chicken.
 - *E. coli* O157 ground beef.
 - *L. monocytogenes* in processed meats.
 - *Salmonella* in poultry.
 - 100 years – what has changed? Is meat still a high risk?
 - Food and Law PDG might want to team up.
 - Ian Jenson, Roger Cook, Denise Eblen, Lynn McMullen and Peter Slade.
- Effect of Public Education on Proper Food Handling.
 - Changes to cooking instructions and primary label and impact on public.
 - Larry Kohl.
 - Morgan Wallace.
- How has industry practically embraced mandated pathogen log reduction – Webinar or workshop
 - Yale Lary.
 - Roxanne Bontayson.
 - Windy White.
 - Carl Custer.
- Chemical hazards impacting imports and exports.
 - Dioxin, BPA, drug residues, economic adulterations.
 - Betsy Borreen AML.
 - Craig Henry.
 - ACTION ITEM: Abstracts and other ideas to Craig and Trish by end of August in preparation for September.

Recommendations to the Executive Board:

1. PDG chairs/vice chairs should meet to share recommendations and possibly rank suggested symposia to facilitate selection by the Program Committee.
 - a. We agreed a virtual meeting should occur of the Chairs and Vice Chairs.

- b. Ask the Program Committee to accumulate all of the proposed symposia and host a Webinar type meeting in October 2010 to update all PDG chairs and vice chairs.
 - c. This will allow for the PDG chairs to also possibly adjust their recommendations to the Program Committee and potentially combine topics with other PDGs.
2. The IAFP Board should consider allocating a set amount of session time for PDGs to develop appropriate symposia recommendations.
 - a. The PDG also will consider just limiting the number of symposia at the start. Maybe just allocate 10% over what has been accepted historically.
 - b. We should rank and then recommend to the Program Committee.
 - c. There is the issue of independent symposium recommendations outside of a PDG.
 - d. Therefore this provides for potentially more overlap.
 - e. The Board should provide a complete list to the PDG chairs and vice chairs prior to the Webinar to facilitate the meeting discussion.
 - f. IAFP should provide a list of historical topics and date of symposia with abstract before the end of August and send to the PDG members to improve recommendations for 2011.
3. Approve Patricia Wester as Vice Chair beginning at IAFP 2011.

Other New Business:

- PDG member requests for the next meeting in the way of speakers/topics.
- Everyone likes the current agenda format for open discussion.
- Consider some controversial speakers would be helpful to stimulate discussion.
- Have the Board issues discussed at the business meeting to not encroach on 2-hour PDG meeting time.
- Ask IAFP for table microphones for size of meeting as well as projector.
- Hot topics for discussion?

Next Meeting Date: Sunday, July 31, 2011, Frontier Airlines Center, Milwaukee, WI.

Meeting Adjourned: 11:03 a.m.

Chairperson: Craig W. Henry.

Microbial Modelling and Risk Analysis PDG

Members Present: Deon Mahoney, Leon Gorris, Mickey Parish, Donald Schaffner, Alejandro Amezcua, John Bassett, Peter Ben Embarek, Richard Brouillette, Roger Cook, Vanessa M. Cranford, Jeffrey Farber, Kenneth James, Fumiko Kasuga, Keith A. Ito, Anna Lammerding, Bradley Marks, Joseph D. Meyer, Juliana Ruzante, Niteen Sawant, Jenny Scott, Cindy Stewart, Jeyamkondan Subbiah, Panagiotis Skandamis, Mark L. Tamplin, Erdal Tuncan, Agnes G. Tan, Ewen Todd, Whendy N. White, Richard C. Whiting and Jozsef Baranyi.

New Members: Regis Pouillot, Xiangwu Nou, Shirin Abd, Mrudula Srikanth, Luciana Luz, Nate Bauer, Cindy Austin, Pat Millner, Kisun Yoon, Walid Alali, Vidya Ananth, Carrie Ferstl, Heidi Weinkauff, Sarah Cahill, Sa Xu, Molly Mills, Rhonda Fraser, Ali Al-Sakkaf, Hiroshi Asakura, Timothy Clouse and Jane van Doren.

Meeting Called to Order: 2:03 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Leon Gorris (supported by Mickey Parish).

Welcome by IAFP Board Liaison Don Schaffner. To support the Executive Board's long range strategic plan, Don asked for feedback on the following: costs possibly levied for educational Webinars, use of social media (e.g., Facebook, Twitter, LinkedIn), ways to raise IAFP's brand visibility, ways for IAFP to add value to members on data/knowledge gaps in food safety, and compiling a top-100 food safety tips list for next year's 100th anniversary meeting. Feedback to David Sharp and/or Don Schaffner.

Old Business: Minutes 2009 PDG Meeting. The meeting adopted the minutes as written.

New Business:

1. Deon highlighted several forthcoming sessions of possible interest to PDG members:
 - S7: Government, Academic and Industry Collaborations to Advance the Development and Use of Microbiological Risk Assessments.
 - S8: Less Recognized and Presumptive Pathogens: What Now, What Next?
 - S15: Risk-based Design of Microbiologically Safe Foods.
 - S33: Tools for Predictive Microbiology and Microbial Risk Assessment.
 - S34: WHO's Epidemiological Approach to Estimating Foodborne Diseases – WHO FERG.
 - S36: Risk Benefit Analysis of Food Production and Consumption.
 - RT1: Research Needs Roundtable: Retail and Foodservice Food Safety.
 - T7: Risk Assessment and Epidemiology Technical Session.

Discussion highlighted the need for the PDG to be kept informed on the status of PDG proposals to the Program Committee (PC), and on feedback from the PC when proposals were rejected or needed amendment for further consideration by PC. It was agreed to make a recommendation to the Executive Board regarding this (see below).

2. International IAFP Meetings of interest:
 - Latin America Symposium on Food Safety: 21–24 September 2010, Bogota, Colombia (<http://www.acta.org.co/Congreso2010%20Ingles.php>).
 - 4th China International Food Safety & Quality Conference + Expo (CIFSQ) – 10–11 November, 2010, Shanghai (<http://www.chinafoodsafety.com>).
 - Following IAFP's successful 6th European Symposium (9–11 June 2010, Dublin, with about 300 people attending), next year's meeting may be in The Netherlands. Associated to this meeting, ILSI Europe may sponsor a (closed) workshop on role of genomics in microbiological risk assessment. Experts with expertise in this area interested to be kept informed on this should inform John Bassett (john.bassett@unilever.com). Info on IAFP Europe meetings (incl. presentations for download) on <http://www.foodprotection.org/events/european-symposia>.

- 7th International Conference on Predictive Modeling in Foods: 12–15 September 2011. Dublin, Ireland (<http://www.icpmf.org/2011>).

3. PDG initiatives for IAFP 2011 Annual Meeting (deadline October 18, 2010). The following ideas were raised:

Symposia

- European Project "Biotracer" would like to present a symposium and a program had been drafted. The PDG would like to support submission to the PC. Contact person for this: Panos Skandamis.
- It would be of interest to present on the new generation of tools for risk assessment, e.g., genomics, systems biology, network science in a dedicated symposium. Contact: John Bassett. Anna Lammerding and Jozsef Baranyi will support.
- Models used in predictive microbiology and MRA studies need validation. The practice and challenges to food safety professionals of this were proposed as the theme of a symposium. Contact: Jeff Farber. Supporting: Don Schaffner, Dick Whiting and Cindy Stewart.
- Risk communication within organizations (e.g., management or marketing for companies) and between organizations and consumers, as well as risk communication of risk assessments were signaled as of interest from the PDG point of view. There could be a collaboration with the International Issues PDG (contact: Jeff Farber) that had ideas on a risk communication symposium. Contact: John Bassett.
- Roundtable discussions.
- A roundtable could be dedicated to the process of establishing "acceptable risk" levels related to microbial or chemical hazards. Obviously a difficult risk management aspect with an important risk communication angle. Could lead to a white paper for *FPT* after the round table meeting in 2011. Contact: Leon Gorris, Juliana Ruzante, Mickey Parish and Dick Whiting will support.
- Workshops.
- By 2011, it will be 4 years since a "hands-on" micro risk assessment (MRA) workshop has been held at IAFP. It was proposed to re-run the workshop in an updated format. Resources from previous workshop can be shared (contact Leon Gorris). ILSI Europe work on "tools for MRA" could be part of workshop. Workshop proposal contact: John Bassett. In support: Tim Clouse, Ewen Todd, Rosalind Robertson, Dick Whiting.

4. Interactions between Meetings – Support, ideas, format, etc.

Deon raised the issue that the PDG was largely inactive in between Annual Meetings and suggested that it should be investigated whether interaction could be facilitated via IAFP, possibly linking to the Board's interest in social media. LinkedIn could for instance be used to have a PDG subgroup to exchange info and discuss specific topics. At least, E-mail could be used about 3 times a year to update PDG members on meetings, activities, PDG proposals, etc. In discussion, it was concluded that this was a general IAFP issue and that a dedicated content management system might be established for this. Juliana Ruzante suggested that FoodRisk.org could be hosting a space on their Web for the PDG to exchange information, when

this was of interest to the PDG. A small committee will investigate options and report back by end of October: Alejandro Amezcuita (lead), Juliana Ruzante, Gary Barker, Walid Alali and Peter Ben Embarek. A recommendation would be made to the Executive Board on it as well (see below).

5. Election of a new Vice Chair for the PDG.

Alejandro Amezcuita was nominated as Vice Chair. No one in the meeting opposed and the nomination received strong support from the meeting. Alejandro graciously accepted the assignment.

6. Any Other Business.

Leon Gorris inquired after the meeting venues foreseen for the series of International Conferences on Predictive Modeling in Foods, of which the next edition is planned for 12–15 September 2011 in Dublin, Ireland. Jozsef Baranyi, who is one of the steering committee members of ICPMF mentioned Copenhagen and Budapest as possible venues in 2013 and suggested that they could be scheduled back-to-back with the IAFP European symposium, such that the ICPMF could benefit from PDG/ IAFP resources in preparation of the meeting and participants could save on travel costs.

Recommendations to Executive Board:

1. Recommendation regarding the process of Annual Meeting proposals submission and selection: The PDG would ask the Executive Board to encourage the Program Committee to (1) provide proposers with more specific feedback when proposals are rejected such that learnings can be taken into account by proposers and PDG, (2) to arrange for a mechanism through which the Chair and Vice Chair of a PDG are kept informed by the Program Committee about proposals from the PDG being submitted and rejected or accepted.
2. Recommendation regarding PDG interaction in between Annual Meetings: The PDG asks the Executive Board to set-up a mechanism for PDGs to interact and communicate in between Annual Meetings; this could be through one of the new social media or a dedicated content management system, but would preferably be one system for all PDGs.
3. Approve Alejandro Amezcuita as Vice Chair.

Next Meeting Date: July 31, 2011, Milwaukee, WI.

Meeting Adjourned: 4:30 p.m.

Chairperson: Deon Mahoney.

Pre Harvest Food Safety PDG

Organizers: Dr. Sid Thakur and Dr. Paula Fedorka-Cray.

New Members Present: Sid Thakur, Paula Fedorka-Cray, David Gombas, Divya Jaroni, Mark Updike, Mayra Marquez Gonzalez, Sherri McGarry, Anh Linh Nguyen, Brita Ball, Susanne Keller, Manpreet Singh, Jitu Patel, Kali Kniel, Jie Wei, Sarah Markland, Bassam Annous, Karl Matthews, Ema Maldonado-Siman, Peymen Fatemi, Anna Lammerding, Jack Guzewish, Jeff LeJune, Eelco Franz, Claudio Zweifd, Mitch Gilgour, Randall Phebus, Li Ma, Fawzy Hashem, Patricia Millner, Keith Warriner, Timothy Clouse, Eric Line, Maria Nazarowec-White and Moustapha Oke.

Introduction: Drs. Sid Thakur and Paula Fedorka-Cray welcomed everyone to the Pre Harvest Food Safety PDG organizational meeting. A signup sheet and program agenda were distributed to the audience. After a brief introduction the members discussed the proposed PDG mission statement, objectives, and focus areas and the following:

1. **Objectives of the PDG**

- To work towards understanding the factors that affect the emergence, persistence, transmission and ecology of microorganisms that may impact human health at the pre-harvest level,
- Controlling these factors at the pre-harvest level, and
- Promote the outreach, education and adoption of scientifically sound agricultural practices that minimize public health risks

2. **Focus Area**

This PDG will exclusively focus on the challenges posed by the presence of microorganisms at the pre-harvest level and will not extend into the harvest and post-harvest levels.

3. **Microorganisms of Interest**

- *Salmonella*
- MRSA – pigs
- *C. difficile* – retail meat
- *Cryptosporidia* – water
- *Cyclospora* – fruits
- Non-O157 STEC
- O157:H7
- Viruses
- Other emerging microorganisms

4. **Microbial Ecology and Environment**

There was great interest shown by the members to better understand the microbial ecology of pathogens in the pre-harvest environment and determine how this affects food safety. It was decided that this PDG should focus on the important aspects of reservoirs and vectors including:

- Workers
- Equipment
- Manure
- Water
- Soil and amendments
- Insects

5. **Organic Production**

The growing popularity of products that are raised in organic setting will also be targeted; not much is known about this production system at the pre-harvest level.

6. **Control**

The members highlighted that it will be important to include discussion on designing control measures to counteract the threat posed by microorganisms.

7. **Education and Extension**

The focus will be on educating students, stakeholders and members on the importance of pre-harvest food safety.

General Comments

- This PDG will not be commodity centered and, therefore, is anticipated to have wider acceptance
- The potential overlap of this PDG with the other established PDGs was discussed. However, those present felt that after the mission and objectives

were discussed this PDG is important, it serves an area that has been underrepresented, and that it will be an important addition the other PDG groups. To minimize overlap, it was decided that there will be an open communication between the chairs of the different PDGs, pending approval of this PDG by the IAFP Program Committee.

8. Selection of Chair and Vice Chair (done by show of hands): Paula Fedorka-Cray – Chair and Sid Thakur – Vice Chair.

9. List-serve

Dr. Sid Thakur will create a list serve that will be used for future communication with the PDG members.

10. Future Conference Calls and Webinars

It was brought to the attention of the members that IAFP supports conference calls and Webinars for all the PDGs. Dr. Lee Ann Jaykus shared the IAFP program committee views on this topic with the audience. The proposed \$25 fee for Webinars may be problematic.

11. Symposia

Multiple topics for future symposia (IAFP 2011) were discussed at the meeting. Potential topics include:

- Predicting the next 100 years of controls in the pre-harvest area
 - i. Think tank of the future
 - ii. What are the questions that need to be answered in the next 100 years
- The interface between fruits/vegetables/meat/animals/wildlife
- One-health concept
 - i. Bringing animal and human medicine together; different aspects of the same issues; protecting animals and protecting humans provide the same outcome.
- Other important points that were discussed under the symposia section were:
 - i. Hold a short symposia.
 - ii. Plant pathology and insecticide.
 - iii. Look for NEW speakers outside of IAFP.
 - iv. Invite new speakers to membership free 1st year and ½ price for 2nd year to capture new members.
 - v. Team up with other PDG to have support for the symposia.

NOTE: 15 additional members expressed interest in the committee but could not attend.

Recommendations to the Executive Board:

1. This committee respectfully requests that this PDG be accepted as a PDG within the organization.
2. A recommendation is given to consider a free membership for 'new' speakers with a 50% discount the following year.
3. Approve Paula Fedorka-Cray as Chair and Sid Thakur as Vice Chair.

Retail Food Safety and Quality PDG

Members Present: Ann Marie McNamara, Gary Ades, Zeb Blanton, Jr., LeAnn Chuboff, Carl Custer, Thomas Ford, Veneranda Gapud, Donna Garren, Dale Grinstead, Peter Hibbard, Matthew Jenkins, Marjorie Jones, Terry Kennedy, Stephen Kenney, C. Harold King, Larry Kohl, Boby Krishna, Eric Martin, Gina Nicholson, Brian Nummer, Kathleen O'Donnell, Mangesh Palekar, Charles Papa, Ruth Petran,

David Rasmussen, Fred Reimers, Jena Roberts, Todd Rossow, Mary Sandford, Oscar Peter Snyder, Anna Starobin, Gloria Swick-Brown, Brian Turner, Patricia Wester, Christina Wilson and Sharon Wood.

New Members: Muhammad Qamar, Kristin Ahrens, Kevin Smith, S. Balamurugan, John Miller, Jan Gardner, Carlos Menes, Stacey Willson, Bennett Armstrong, Gregory Sanders, Jeff Farber, Vanessa Bussiere and Yale Lary.

Visitors/Guests: Robin Forgey, Tatiana Lorca, Amit Morey, Fur-Chi Chen, Dulce Avila, Britta Iwen and Huda Neetoo.

Meeting Called to Order: 2:01 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Sharon Wood.

Welcome – Introductions and circulations of rosters.

Reading of antitrust guidelines for association meetings by Chairperson Ann Marie McNamara.

Call for additional agenda items.

Old Business: Adoption of 2009 PDG meeting minutes – motion, second, and all approved. Discussed last year's submissions for symposia and learnings. The PDG had one selected symposia of note: RT1 – Research needs roundtable. The PDG discussed the subject of presenting new, exciting and distinctly different proposals for next year.

New Business: Lee Ann Jaykus – New Board Liaison: Discussed program committee; the Board recognized that there were certain PDGs not represented this year; discussed enabling each PDG to submit one symposium which would be approved and communicated that the Board is taking this under consideration; the issue of overlap is an important one. New speakers are key – fresh topics and presenters; Webinars were encouraged (at least one per year) to include a \$25 charge for attendees with materials available to members; Board is doing some strategic planning on Annual Meeting next year to celebrate the 100 year anniversary of IAFP.

The PDG discussed the subject of presenting new, exciting and distinctly different proposals for next year. A joint symposium with the Virus PDG was suggested to discuss Norwalk virus – tracing through supply chain. Dale Grinstead suggested a symposium on encouraging food safety behavior in retail food operations. A joint symposium with the Food Law PDG was suggested by Gina Nicholson to cover the distribution cold chain, new transportation act etc. A joint symposium with the Food Safety Education PDG (and potentially the Meat & Poultry PDG) to cover how media affects the consumer and how do we properly communicate food safety practices through these venues? Pete Snyder discussed writing a white paper on the use of proper thermometers for taking temperatures in food products. It was suggested that Pete communicate with Sandy McCurdy at the University of Idaho as she is doing similar work regarding thermometers. "Green" chemicals was another topic brought to the table by Ann Marie McNamara. The issue is that validation studies for retail establishments have not been conducted. Todd Rossow suggested we partner with the Sanitation PDG as they were discussing this as well. Patricia Wester suggested possibly considering doing a symposium which discussed a risk assessment on less traditional products like toothpaste or mouthwashes which are ingested but are not on the typical food safety radar. Tom Ford suggested a possible session to investigate and discuss why consumers tend to feel that organic, all natural, and locally sourced / grown products are safer than other products, when in fact, the exact opposite may be true. Ann Marie McNamara

along with Gina Nicholson and Jenna Roberts suggested a potential joint symposium with the Food Safety Education PDG to include marketing or branding a food safety message that can be best interpreted and preached by the media since the normal consumer gets facts through this venue. It was also suggested that a pre-meeting workshop to include actual media training might be beneficial.

The group discussed Webinars and other activities that could occur between meetings. The group felt that at least 1 Webinar which had a very relevant and timely topic would be best attended and should not be longer than 1 hour in length. Todd Rossow shared the success of 2 Webinars which were hosted by the Sanitation PDG and suggested we share learnings and plan for future Webinars. Todd asked the group to consider how to reach the smaller operations with these types of communication. It was also mentioned that these Webinars, if advertised correctly to the right constituencies, could bring in other experts who might not normally participate in the IAFP.

Pete Snyder discussed the research that has been done to assist the industry and reviewed some potential topics of research that he feels should be published by IAFP in journals such as *Food Protection Trends*. Pete stated that this type of activity would show how IAFP plays a key role in assisting in retail food safety knowledge. Pete also reviewed his idea of writing a retail HACCP guide. Ann Marie McNamara suggested a book might be a better venue for this project. She reminded the group that anything published with IAFP's name on it would have to be approved by the Board.

Ann Marie McNamara and Sharon Wood will come up with some suggestions for at least one Webinar to be held in the next 12 months. Discussions were held to determine the best way to communicate to other stakeholders such as listserves.

Recommendations to the Executive Board

1. What role could IAFP play in an education campaign (e.g., a food safety month) targeted at the consumer and educating them on their responsibility in the food safety process? The PDG was passionate that this is a huge opportunity for consumers who need help.
2. IAFP to provide and develop a subject matter expert or group of experts who would be there in the wake of a food safety crisis situation and take on a communicator role. This could be a way to grow the brand of IAFP.
3. The PDG respectfully asks that the IAFP Board put together a formal request with associated form to collect the 100 unique food safety tips for celebrating the 100 year anniversary in 2011.
4. IAFP provide 3-5 members to monitor/host and support an international blog for shared communication.

Top Resources for PDG Members as Requested by Board Member Lee-Ann Jaykus:

Google
Food Marketing Institute
Marler Blog
Meating Place
PDGs - Chairs, Vice Chairs and Members
National Restaurant Association
IAFP Audiovisual library
Hospitality Institute - Pete Snyder
FoodSafe Listserv
KSU - Doug Powell's Venue

Next Meeting Date: July 31, Milwaukee, WI.

Chairperson: Ann Marie McNamara.

Seafood Safety and Quality PDG

Members Present: Kathleen Rajkowski, Veneranda Gapud, Katherine Swanson (Board Liaison), Troy Ayers, Adam Borger, Timothy Dambaugh, Kevin Edwards, Peter Hibbard, Marlene Janes, Salina Parveen and Tori Stivers.

New Members: Steve Kenney, Shiowshuh Sheen, Tim Dambaugh, Maria Angela Reyes, Erick Martin and Jinru Chen.

Visitors/Guests: Kristin Woods and Suresh Pillai.

Meeting Called to Order: 9:00 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Veneranda Gapud.

Old Business:

- Welcomed new members.
- Approval of 2009 minutes: motion to approve by Kevin Edwards and seconded by Marlene Janes - MOTION CARRIED.
- Announced Symposium sponsored by PDG: New Definitions in Imported Seafood Safety on Wed. afternoon - August 4, 1:30 p.m. to 3:30 p.m.

New Business:

- Katie Swanson, Board Liaison, addressed the committee. She announced that this year's meeting had over 2000 registered. She briefly explained the Board's 5 points for increasing communication (point to be sent to all on PDG's mailing list).
- Introduction of Vice Chair and members present at meeting.
- Discussion on concerns particularly with regard to Webinars:
Suggest IAFP control them and have University Partners.
Suggest having sponsors to help with cost particularly for internationals.
- One set of standard is need for seafood safety and need to get message that seafood is safe to the consumer.
- IAFP needs to partner with smaller seafood organization, i.e.: Catfish Association, and with international organizations dealing with seafood safety and standards, i.e.: FAO.
- Kristin Wood, Auburn University, gave a brief overview of Extension and how it can be used to get information out.
- Announced the invitation by Linda Leake of the Food Chemical Hazards and Food Allergy PDG to attend their session. The PDG will have a speaker to talk on: The 2010 deepwater horizon oil spill: concerns for the short-term and long-term safety of seafood from the Gulf of Mexico.
- Need to not promote video on catfish.
- Discussion on possible topics for 2011 meeting.
- E-mailed topics were the stepping point for discussion on:
 1. Processing aids (phosphates, sulfites, carbon monoxide, etc.) and not thermal aids (irradiation).
 2. What have we learned (globally) with regard to oil spills in gulf and other seafood harvesting areas? Other nations are/have experienced oil (chemical spills) in their harvesting areas with affect seafood.

3. FAO and WHO need to be encouraged to participate at meetings.
- Cooperation of other PDG on submitting joint programs for consideration:
 1. Water quality in aquaculture (global) with Water Quality PDG
 2. International perspective on the use of processing aids on the seafood industry with the International PDG to have input from FAO.

Recommendations to the Executive Board:

1. Webinar be concerned with firewalls.
2. A topic presented at a PDG meeting with general interest should be announced earlier and to the general IAFP membership or set as a late-breaking session.

Chairperson: Kathleen T. Rajkowski.

Student PDG

Members Present: Laura Strawn, Jessica Butler, Clyde Manuel, Rachel McEgan, Brita Ball, Pardeepinder Brar, Evan Chaney, Andrea Dow, Alejandro Echeverry, Stephen Grove, Kirsten Hirneisen, Claudia Narvaez Bravo, Ansen Pond, Roxanne Von Tayson and Jie Wei.

New Members: Taikiyah Abdulmalik, Achyut Adhikari, Ali Al-Sakkaf, Yousef Alsaadi, Helen Barela, Sean Beckman, Tejas Bhatt, Travis Chapin, Regina Whitemarsh, Mary Pia Cuervo, Rupesh Doshi, Marianne Fatica, Vania Ferreira, Csaba Nemeth, Cody Gardner, Maryline Girard, Ashley Haneklaus, Nigel Harper, Caitlin Hickey, Lillian Hsu, Karleigh Huff, Shihui Sun, Stephanie Jensen, Visvalingam Jeyachandran, Yoonwon Kim, Martha Kimber, Brittany Laster, Louise Lee, Jacob Lemmons, Di Li, Ahn Linh Nguyen, Fangfei Lou, Mindi Manes, Sarah Markland, Debjani Mitra, Andrea Moreno-Switt, Amy Parks, Ashley Predmore, Matthew Ranieri, Lorraine Rodriguez-Rivera, Matt Stasiewicz, Jared Strong, Duygu Tosun, Lakmini Wasala and Sommer Wild.

Visitors/Guests: Alejandro Amezcuita, John Bassett, Tyler Berg, Alena Borowski, Renee Boyer, John Bruhn, Christine Bruhn, Scott Burnett, Mark Carter, Ben Chapman, Larry Cohen, Julian Cox, Carl Custer, Michelle Danyluk, Staci DeGeer, Denise Eblen, Yen Te Gao, Leon Gorris, Gordon Hayburn, Su Jin Kim, Steve Kenney, Kali Kniel, Anna Lammerding, Wendy Maduff, Marya Marquez Gonzalez, Eric Martin, Allha Maylessi, Indaue Mello-Hall, Mark Moorman, Haley Oliver, Palar Pauchal, Granon Peuelle, Randall Phebus, Juliana Ruzante, Frank Schlitt-Dittrich, Jenny Scott, Manan Sharma, Adrienne Shearer, Amy Simonne, Nahmida Wasala, John Wendell, Wendy White, Kit Woody and Zhinong Yan.

Board/Staff: Lee-Ann Jaykus, Stan Bailey, Vickie Lewandowski, Don Schaffner, Katie Swanson and Isabel Walls.

Meeting Called to Order: 1:30 p.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: Laura K. Strawn (Chair of SPDG; both incoming and outgoing Secretaries were absent from Annual Meeting).

Old Business: The SPDG had two accepted symposia this year, which was an SPDG first. A new office, Communications Officer, was created in order to bridge the gap between students, professional IAFP members, and IAFP

Executive Board. Also, to communicate requests for funding of the student mixer. Funding was secured for the student mixer. T-shirts were made again this year, which the stipulation to keep making the shirts, we must sell out at the IAFP meeting (which we did!).

New Business: Committees were formed to submit new symposium ideas for the 2011 meeting, which preliminary reports are due in October. A call for student volunteers was issued to form a committee for the 2011 meeting activities, which include participation in helping mark the 100 year celebration of IAFP (time capsule, special memorabilia, t-shirts etc). A motion was passed to have conference calls every 6-8 weeks for the Exec. Board. Ideas were discussed on how to better secure the financial stability of the SPDG as well.

Recommendations to the Executive Board:

1. To develop a comprehensive and accurate listserve for our student members (can we request contact information for every student that paid to be at the IAFP Meeting in Anaheim this year). As well as possible tech support to create a listserve under IAFP.SPDG@...
2. To have a government, industry or academia advisor for the SPDG in order to better stay connected to our professional community. We ask this person or persons (2 at the max) to serve as adviser for 2 years and be a past SPDG officer. We feel this will ensure the continuation of the SPDG and also help maintain the professionalism of the group. The adviser would be asked to listen in on SPDG conference calls and also attend the IAFP Annual Meeting (luncheon and SPDG Board meeting). Their suggestions can only benefit the SPDG's future.
3. To have extra time and space allotted for a SPDG exec. and member Board meeting so that SPDG business can be discussed solely. The luncheon has become such a big event, that it has become difficult to discuss all the business of the SPDG during this time slot. We ask the Board if possible we can have a 30 min to 1 hr block of time that the SPDG could hold a Board meeting open to its members. Currently, the trend for the past 2-3 years is to have a large luncheon crowd of students, with only 15 or less staying for the Board meeting. To ensure the success of our group, we need more of our members to stick around. The consensus from students is that a lunch with speaker plus a meeting is too long since, like most attendees, they are hopping from meeting to meeting (other PDGs).

Next Meeting Date: Conference call for officers on August 23 (time TBD).

Meeting Adjourned: 2:30 p.m.

Chairperson: Laura K. Strawn.

Viral and Parasitic Foodborne Disease PDG

Members Present: Kalmia Kniel (Chair), Marlene Janes (Vice Chair), Lee-Ann Jaykus, Jennifer Cannon, Larry Cohen, Tim Dambaugh, Stephen Grove, Julie Jean, Juli Kase, Efi Papafragkou and Jie Wei.

New Members: Tyler Berg, Vanessa Cranford, Sara Markland, Dumitru Macarisin, Carol Shieh, Denise Lindsay, Diana Stewart, Bizhan Pourkomailian and Phyllis Posy.

Meeting Called to Order: 1:09 p.m., August 1, 2010.

Recording Secretary of Minutes: Stephen Grove.

Old Business: 2009 Minutes approved.

New Business:

1. Discussion of Symposium Ideas:
Two symposium ideas:
 - Detection-Combine with Applied Methods PDG to discuss difficulties and strategies for detecting foodborne viruses in foods, sample prep, infectious vs non-infectious, use of surrogates
 - Jen Cannon, Efi Papafragkou, Julie Ann Kase, Venessa Crawford (Applied Lab Methods)
 - * Utilize "poll everywhere" or "i-Clicker" software to engage the audience (Larry Cohen and Phyllis Posy)
 - Supply Chain-Where are the weaknesses in the supply chain that can allow for viral illnesses?
 - Overview of virus survival, persistence, entrance, gain industry interactions
 - Larry Cohen, Bizhan Pourkomainian, Marlene Janes, Stephen Grove and Jen Cannon.
 - Roundtable or short symposium to encourage engagement and interest with the industry.
 - Conference calls will be coordinated by the end of the month to discuss these symposium
 - Continue focus on both virus and parasites. In saying this we will coordinate with other PDGs to see if there is interest in protozoa.
2. Encouraging use of the Webinars. Use to educate and inform industry.

Top 10 Food Safety Tips:

1. Wash Your Hands!
2. Don't vomit around food!
3. Don't prepare foods while you are sick.
4. Don't prepare foods while changing diapers.
5. Do not eat raw seafood.
6. Know your source of ingredients.
7. Follow GAPs, GMPs, SSOPs.
8. Educate your employees.
9. Refrigerate foods properly after cooking.
10. Use proper cooking temperatures.

Sources of Information used by members of the virus and parasitic PDG come from scientific journals, ProMed, CDC, FDA, and European Surveillance.

Recommendations to the Board:

1. Overlapping PDG meetings is a problem.
2. Encourage IAFFP to become more of a leader in communicating food safety to the public; through podcasts, an application on iphones/ipod, more exposure to the media and general public.
3. In general the PDG thinks that the use of social media is a positive issue. Encourage students to help in the use and updating of the information.

One suggestion is to have a team of two students be in charge of the information portal or space and update it with scientific information. There could be two students per PDG and they could receive free registration for the meeting. Another recommendation is for IAFFP to become involve in LinkedIn (as suggested by an industry representative). We realize that a drawback to this is the amount of time that would need to be devoted, which is why we suggest that students become involved.

Next Meeting Date: Conference calls will be held within 1 month.

Meeting Adjourned: 2:54 p.m.

Chairperson: Kali Kniel.

Water Quality and Safety PDG

Members Present: Dean C. Davidson, Isabel Walls, DeAnn L. Benesh, Michael H. Brodsky, Susan K. McKnight, Larry Cohen, Peter M. Kennedy, Kathleen T. Rajkowski, Joseph A. Odumeru, Phyllis B. Posy, Robert S. Salter and Howard Malberg.

New Members/Visitors: Wendy Maduff, Jerry Erdmann, Elizabeth Bihn, Marilyn Lee, Guodong Zhang, Jim Thebaut, Kathleen Glass and Joseph A. Odumeru.

Meeting Called to Order: 2:00 p.m., August 1, 2010.

Recording Secretary of Minutes: Peter Kennedy.

Old Business: Revision of Procedures for Investigation of Waterborne Illness; Symposium/Roundtable Topics.

New Business: Group designated to work on revision of Procedures for Investigation of Waterborne with Foodborne Illness workgroup (DeAnn Benesh, Michael Brodsky; Marilyn Lee). Isabel Walls, Board Liaison, suggested Webinars and Social Media ideas; the group discussed drafting a "Thoughts on Food Safety" submission for *Food Protection Trends*.

Recommendations to the Executive Board: None.

Next Meeting Date: Conference Call, week of September 6 to formulate Symposium/Roundtable topics for 2011 IAFFP conference.

Meeting Adjourned: 4:15 p.m.

Chairperson: Dean C. Davidson.

Affiliate Council Minutes

IAFP 2010 – Sunday, August 1
Anaheim, California

AFFILIATES PRESENT:

North America

Alabama:	Tom McCaskey
Alberta:	Lynn McMullen
Arizona:	Tom Dominick
British Columbia:	Terry Peters
California:	John Bruhn
Capital Area:	Jenny Scott
Carolinas:	Angela Fraser
Chinese–North America:	Tong-Jen Fu
Florida:	Peter Hibbard
Georgia:	Tori Stivers
Illinois:	Dan Stockwell
Michigan:	Darren Bowling
Metropolitan:	Don Schaffner
Nebraska:	Jill Kuzo
New York:	Steve Murphy
Ohio:	Gloria Swick-Brown
Ontario:	Judy Greig
Pennsylvania:	Gene Frey
Quebec:	Julie Jean
Southern California:	Scott Barrington
Texas:	Fred Reimers
Upper Midwest:	Dan Erickson
Washington:	Stephanie Olmsted
Wisconsin:	Randy Daggs

International

Australia:	Ian Jenson
Brazil:	Maria Teresa Destro
New Zealand:	Roger Cook
United Arab Emirates:	Bobby Krishna
United Kingdom:	David Lloyd

Board Members and IAFP Staff Present:

Vickie Lewandowski, Lee-Ann Jaykus, Isabel Walls, Katie Swanson, Stan Bailey, David Tharp, Lisa Hovey and Susan Smith.

Visitors/Guests Present:

Deon Mahoney, Eric Martin, Zeb Blanton, Mariza Landgraf, Ed Chianini, Mario Killner, Leila Montero, Fritz Buss, Zhinong Yan, Anna Jesus, Csaba Nemeth and Christa Schlosser.

Meeting Called to Order: 7:08 a.m., Sunday, August 1, 2010.

Recording Secretary of Minutes: David Lloyd.

Call to Order: The meeting was called to order at 7:08 a.m. by Affiliate Council Chair Dan Erickson. There were 49 members and guests present. The agenda was approved with no added items (so moved and seconded).

Approval of Minutes for 2009 Meeting: The minutes for the 2009 Affiliate Council meeting were approved and duly seconded.

Report from Affiliate Council Chairperson: Dan Erickson announced and congratulated the 2010 Affiliate Award winners and new Affiliates from Nebraska and the Chinese–North America delegation. He informed the council that out of 47 Affiliates, annual reports had been received from 38. He also commented that this year's judges were scattered across the globe, making for a challenging process due to the quantity of material received from Affiliates but recognized the work involved by the IAFP staff in facilitating the judging of the awards.

Dan also thanked Margaret Burton and the Local Arrangements Committee.

Old Business: Dan Erickson informed the delegate group that all recommendations from last year's meeting had been accomplished. 2009's FAQ request was incorporated into the Web site and both new Affiliates (Nebraska and Chinese–NA) stated that they valued its presence in developing their Affiliates. Dan also indicated that 25 Affiliates have developed Web sites with direct links to IAFP's. The chair was keen to develop this type of link and urged Affiliates wishing to progress through this route to utilize the expertise offered by IAFP support staff.

Report from IAFP President: Vickie Lewandowski thanked delegates for numerous invitations to speak at their Affiliate meetings and Dan Erickson for his work in support of the Affiliate Delegate Council throughout his year in office. Vickie confirmed the strength of the organization, with membership currently at a record 3,418, despite a slight reduction in Member numbers in 2008–2009, but not as dramatic as memberships in similar organizations. She mentioned that international membership has doubled to 725 since 2004 and urged delegates to communicate the base rate of membership, as this is still not widely known.

IAFP currently has 19 Gold Sustaining Members and 13 Silver, with 105 Sustaining Members in total.

The 2009 meeting saw a 5% reduction in attendees but Vickie stated it was hoped that 2010's meeting will break the previous attendance record, with 154 booth spaces occupied at this meeting, representing a 30% increase.

She outlined the contrasting profits of the two European conferences, with Berlin (215 attendees) making for a slight loss but compensated by an extremely successful spring conference in Dublin (300 attendees), making it our most successful European meeting financially. Conferences in Korea and Dubai were successful and Vickie reminded the group of upcoming conferences in Bogota, China, and Dubai.

Vickie thanked David Tharp for substituting for her last minute at the Turkey Affiliate meeting and more widely for the work undertaken by him and the IAFP staff on international profile-raising on behalf of IAFP, helping increase international membership to 21% of the total.

Council members were encouraged to work with their Affiliate Members to develop ideas to celebrate IAFP's 100-year Anniversary and Affiliates were asked to focus on what the meeting means to them and the organization.

Report from the IAFP Office:

David Tharp, Executive Director, presented the 2009 Financial Report, highlighting some of the difficulties encountered in operational activities, such as Grapevine's expenses and the decline in exhibit booth numbers. He outlined work undertaken by Affiliate groups in Korea and Colombia to host international conferences under the IAFP umbrella and announced that Australia will host an international conference in the fall of 2011.

David outlined a proposal raised by the Executive Board to increase fees to \$55 in September to regain revenue loss.

Questions from Affiliate delegates were discussed and answered.

Report from IAFP Affiliate Liaison Staff: Dan introduced Susan Smith, who replaced Leilani McDonald in January. Susan noted that 47 Annual Reports were submitted in 2009, an 80% submission rate, but required by 100% of Affiliates. She urged Affiliates to submit reports and reminded them about the flexible deadline. Photographs of Affiliate activity were also encouraged to be included with Annual Reports. More communication of calendar events from Affiliates was requested so materials can be dispatched on a timely basis. She asked that delegates inform her of Web site launches or updates and send meeting summary information to be included in *Affiliate View*. She also discussed the non-compliance of several Affiliates regarding Membership and Annual Report submission requirements.

Election of the Affiliate Council Secretary: Dan Erickson announced that Gloria Swick-Brown of the Ohio Association for Food Protection received the sole nomination for Affiliate Council Secretary. (So moved and seconded.) Gloria Swick-Brown was voted by acclamation.

New Business:

1. **Affiliate Networking:** Dan Erickson informed the council that Room 201A in the Conference Center was available for networking and discussions during the Conference.

2. **Committee and PDG Concerns:** Tom McCaskey and Anna Jesus both commented on about the overlap of committee meetings and PDG groups, which limits full attendance. Jill Kuzo suggested PDGs be rotated from morning to afternoon on alternate years. David Tharp explained that, given the growth in committee and PDG numbers, this was unavoidable, especially with the higher number of groups in 2010. The Dairy group can recommend an afternoon meeting for next year but IAFP staff should be informed on which meetings should avoid overlap. David Lloyd will discuss with the Board.
3. **Affiliate Membership:** The Washington Affiliate started taking credit card information for new or renewing members, facilitating membership uptake. Darren Bowling (MI Affiliate) created Google accounts for Members and placed the Affiliate's profile on Facebook.

Affiliate Reports: Delegates offered a summary of their Affiliate's activities and accomplishments in the past year.

Recommendations to the Executive Board: None.

Passing of the Gavel: Chairperson Dan Erickson passed the gavel to David Lloyd, signifying the beginning of his term as Affiliate Council Chair.

Next Meeting Date: 7:00 a.m., Sunday, July 31, 2011 in Milwaukee, WI.

Meeting Adjourned: 9:54 a.m.

Chairperson: Dan Erickson.

Recommendations to Executive Board as Taken from Committee Minutes of Meetings Held in Anaheim, California

Executive Board Response as Discussed at the Executive Board Meeting on August 5

STANDING COMMITTEES

Food Protection Trends Management Committee

Recommendations to Executive Board:

1. Revise *FPT* Instructions for Authors to include the statement "manuscripts not formatted correctly may be rejected without review at the discretion of the Scientific Editor."

Board Response: Agree

2. Restructure the online indexing [Table of Contents] of *FPT* articles to increase accessibility and link directly to article PDFs. Additionally, provide RSS feeds and email alerts to notify of *FPT* publication and make these alerts/abstracts publicly accessible.

Board Response: IAFP staff will work to improve these systems.

3. Upload historic *DFES* publications as searchable PDFs by keyword and author to the *FPT* Web site.

Board Response: IAFP staff will work to improve these systems. In the short-term, if the Committee provides a list of specific articles of importance, IAFP staff will make them available first.

Journal of Food Protection Management Committee

Recommendations to Executive Board:

1. Reappoint Elliot Ryser as Scientific Editor for another four-year term.

Board Response: Approved

2. Approve the election of Kendra Nightingale as Vice Chair.

Board Response: Approved

3. The journal should establish a mechanism for allowing online prepublication access of accepted manuscripts ahead of print through *JFP* online and should develop an appropriate mechanism to bill page charges for online publication ahead of print.

Board Response: IAFP staff will investigate how to establish a system to allow for early payment of page charges so that e-pub ahead of print can occur.

4. A mechanism for providing open access should be established for manuscripts to be supported by funds from the contributing authors. Over the next year the process will be tested for manuscripts requiring publication in open access journals, such as NIH funded research. The IAFP staff will investigate the additional fees necessary for open access. In addition, the journal should consider providing funds to allow open access for a limited number (3-4 per year) of general interest, high merit/impact papers selected by the co-Editors.

Board Response: IAFP staff will investigate the fee structure to allow for open access by author choice and make the proposal for Board approval. The Scientific Editors may also identify up to 12 articles per year they believe should be made available through the open access system. Such articles can be forwarded to staff

for handling after two or more Scientific Editors agree on making an article available in this manner.

5. A Top Publication award should be developed for the most cited articles.

Board Response: The Board is open to this idea. Please submit a more detailed proposal outlining the process, describing who would be responsible for administering and where the award would be presented.

Program Committee

Recommendations to Executive Board:

1. The IAFP Bylaws state that the chair of Developing Scientists Committee is to assign up to 5 additional judges. This needs to be updated to allow us to expand the number of judges since we now have many more poster and oral awards to evaluate.

Board Response: This suggestion will be forwarded to the Constitution and Bylaws Committee for action.

2. Continue with the current system for submitting and evaluating symposia and workshops.

Board Response: Agree

SPECIAL COMMITTEES

3-A Committee on Sanitary Procedures

Recommendations to Executive Board: None.

Audiovisual Library Committee

Recommendations to Executive Board:

1. To increase membership awareness and usage of the A/V Library by the achieving of webinars that the PDGs and IAFP develop.

Board Response: Webinar recordings will be linked to the Audiovisual Library Web page.

2. To ask exhibitors to provide items to A/V Library for server/Internet distribution for our members.

Board Response: The Board believes there is a need for a Long-Range Plan for the Audiovisual Library to bring the current structure more up to date. A request is made to the committee to undertake this project (developing a Long-Range Plan for the Audiovisual Library). Soliciting new additions to the Library before this work is complete is premature.

3. To ask our college/university members to provide items to the A/V Library for distribution to our members.

Board Response: The Board believes there is a need for a Long-Range Plan for the Audiovisual Library to bring the current structure more up to date. A request is made to the committee to undertake this project (developing a Long-Range Plan for the Audiovisual Library). Soliciting new additions to the Library before this work is complete is premature.

4. To investigate the digitizing of materials in 1, 2, and 3 above to have a valuable resource in the A/V Library for server/Internet usage.

Board Response: The Board believes there is a need for a Long-Range Plan for the Audiovisual Library to bring the current structure more up to date. A request is made to the committee to undertake this project (developing a Long-Range Plan for the Audiovisual Library). Soliciting new additions to the Library before this work is complete is premature.

5. To expand the "links" on the IAFP home page into the A/V Library and to structure into a "super-arch" library with heading tabs such as links, Food, Dairy, Meats, Bakery, Pre/Post Harvest, Government Agencies, College/University Food Science, etc.

Board Response: The Board believes there is a need for a Long-Range Plan for the Audiovisual Library to bring the current structure more up to date. Soliciting new additions to the Library before this work is complete is premature.

6. At next Annual Meeting have presentation of the 100th year history through the A/V Library materials of the original tablets on "thou shall wash thy hands" through the early meetings of the first state members through the first "international" meeting to the FUTURE...

Board Response: There will be numerous activities and presentations related to the 100-Year Anniversary at IAFP 2011. These ideas will be reviewed by the 100-Year Planning Committee.

Committee on Control of Foodborne Illness

Recommendations to Executive Board:

1. The Board clarify symposia proposal approval process to avoid speaker embarrassments and committee member fatigue (see full discussion under item #2).

Board Response: The Instructions for submitting symposia clearly state those submissions are considered "tentative" until such time as when the Program Committee meets and "approves" the proposal for presentation at the Annual Meeting.

2. The Board consider mechanisms to make speaker presentations available after each Annual Meeting to IAFP members/attendees.

Board Response: Because of the wide variety of speaker backgrounds and employer stipulations, not to mention the volume of material presented at our Annual Meeting, it is difficult to achieve this goal. Therefore, the current method employed is that attendees may request presentations directly from the speaker and the speaker may choose whether to provide the information or not.

3. The Board create a policy for updating and release of electronic manuals and other CCFI documents.

Board Response: A policy is not necessary in this case. IAFP staff will provide an electronic version of manuals to the Committee when requested. New versions of the manuals will be available for purchase in an electronic format.

4. The Board help tailor social media tools for use by the CCFI (Board Liaison issue).

Board Response: This is a part of the IAFP Long-Range Plan.

5. The Board consider the CCFI suggestions for branding the organization (Board Liaison issue).

Board Response: The Board will review the Committee's suggestions.

Constitution and Bylaws Committee

Recommendations to Executive Board:

1. Appoint Randy Daggs as Vice Chair.

Board Response: Approved.

Foundation Committee

Recommendations to Executive Board:

1. The committee recommends that the name of the Student Travel Scholarship be changed to "Student Annual Meeting Travel Scholarship".

Board Response: It is preferred to keep with the current name structure of "Student Travel Scholarship" since in some cases; the receiving student is not able to travel to IAFP's Annual Meeting and instead attends the European Symposium.

2. The committee recommends that the fund manager, Wells Fargo, move to 4 and 5 star funds when possible, eliminating the 3 star funds where warranted. Also, the committee recommends that load funds be eliminated from the portfolio. The portfolio is performing no better than the S&P 500, yet funds costs are significantly higher than what we could otherwise obtain in something like the Vanguard S&P 500 fund. The committee recommends that we negotiate with Wells Fargo for lower costs, asking for a 1% fee rather than 2%. The committee felt that the 24% investment in international funds was a bit high given current economic concerns. The committee recommends that Wells-Fargo be asked to re-examine the portion of funds in international funds. The committee felt that the portfolio should be greater consideration to quality, including high quality corporate stocks. The committee recommends that Wells Fargo be asked to consider increasing the value funds while still maintaining a reasonable portion of growth funds.

Board Response: IAFP Staff will work with the IAFP financial advisor to address these concerns.

3. The committee recommends that the golf fundraiser be continued and that the link to the Foundation Fund be more clearly advertized.

Board Response: Agree.

4. The committee recommends that we consider adding optional donation boxes of \$25, \$50, \$100 and "other" to the membership renewal form.

Board Response: IAFP staff will investigate this option.

5. The committee recommends that the membership renewal form ask if member's employer has a matching donation program and whether or not it can be used for IAFP donations.

Board Response: IAFP staff will investigate this option.

Membership Committee

Recommendations to Executive Board:

1. Approve appointment of Zeb Blanton as Committee Vice Chair.

Board Response: Approved.

Nominating Committee

Recommendations to Executive Board: None.

Past Presidents' Committee

Recommendations to Executive Board: None.

PROFESSIONAL DEVELOPMENT GROUPS

Applied Laboratory Methods PDG

Recommendations to Executive Board:

1. The PDG recommended that IAFP consider corporate sponsorship or the IAFP Foundation as the source of funding for webinars.
Board Response: Webinars offered to PDG Members only will continue to be supported by IAFP (corporate hosting is welcomed). For Webinars open to a wider public (beyond PDG Members), a minimal charge will apply.
2. The PDG recommended having the Applied Laboratory Methods annual meeting commence as an afternoon session to enable PDG members to attend other PDG sessions usually scheduled in the morning also.
Board Response: The PDG Meeting schedule will be alternated and rearranged, based on rooms available, so that members can attend various meetings from year to year.

Beverage PDG

1. The committee commends the Board for the change to October submission of symposia proposals, this enabled very positive discussion of issues at the PDG meeting that would not have been possible if the symposia proposals were due at the IAFP meeting as had been the case.
Board Response: Thank you for this positive feedback.
2. Approve Emilia Rico as Vice Chair to begin at IAFP 2011.
Board Response: Approved.

Dairy Quality and Safety PDG

Recommendations to Executive Board:

1. The PDG endorsed a member recommendation to request the IAFP staff consult with all PDG Chairs on the final schedule for the Annual Meeting PDG meetings prior to publication. This was the result of the Sanitation and Dairy Quality & Safety PDG being held at the same time for the past few years and many members of each have to choose one or the other. Members expressed a number of other issues resulting in conflicts with this year's PDG meeting schedule.
Board Response: The PDG Meeting schedule will be alternated and rearranged, based on rooms available, so that members can attend various meetings from year to year. Special attention will be given to separate the groups identified.
2. The PDG endorsed a member recommendation to request IAFP staff to schedule one or two conference calls per year between Annual Meetings with the Chairs and Vice Chairs of the various PDGs to get updates and allow for sharing of information and to better coordinate activities and reduce duplicate efforts and to coordinate program submissions.
Board Response: E-mail communication is a part of on-going efforts to keep PDG and Committee Chairs and Vice Chairs informed. E-mail communication avoids scheduling conflicts and provides consistent message delivery.
3. The PDG endorsed a member recommendation to request IAFP staff and the IAFP Board of Directors make a strong recommendation to the IAFP affiliates and members to reference on their Web sites www.realmilkfacts.com in order to support the cooperative efforts of this PDG and a similar committee of the American Veterinary Medical Association, which develop a Web site containing factual information

about the dangers of direct consumption of raw milk by humans. Prior to the development of this Web site, any Internet search about raw or pasteurized milk brought up Web sites containing misinformation and representing raw milk as safe and pasteurized milk as harmful.

Board Response: IAFP will add this Web address to our linked Web sites on our list of referenced Web sites. Readers should also refer to IAFP's position statement on the consumption of raw milk.

4. The PDG endorsed a member recommendation that the statement, "The public should avoid the direct consumption of raw milk because of its current history of being the source of illness and potential long-term medical problems," as one of the 100 Food Safety Tips to be compiled by the IAFP Program Committee and released at the 2011 IAFP meeting. We are willing to discuss modification of the wording, but the concept should be on the "Top 100" list.
Board Response: This will be submitted for committee review to add to the 100 Food Safety Tips as a part of the 100-year celebration.
5. The PDG endorsed a member recommendation to request support from the IAFP Board to work cooperatively with the leadership of the National Association of Dairy Regulatory Officials (NADRO), the Dairy Practices Council (DPC) and other related national organizations with an interest in the dairy industry to encourage their adoption of resolutions opposing the legalization of raw milk sales for human consumption.
Board Response: Please refer to IAFP's Position Statement on Consumption of Raw Milk. IAFP does not directly involve itself in legislative issues, but encourages individual Members to do so when they feel it is appropriate.
6. The PDG endorsed a strongly supported recommendation that the IAFP Board of Directors direct the IAFP Program Committee to ensure that at the 2011 and future IAFP Annual Meetings, there is a balance of applied and research-based symposia as well as an expansion of dairy-focused symposia. The decisions made by the 2009 Program Committee resulted in almost no Dairy Quality & Safety PDG symposia recommendations being accepted and the program balance toward research caused some PDG members to attend IFT instead of IAFP this year. Since the origins of IAFP were from the dairy sector and the 2011 Annual Meeting is the 100-year anniversary and the location is Wisconsin, one of the leading dairy states in the country, dairy-focused symposia and workshops should be encouraged and supported.
Board Response: The Board agrees there should be a balance of applied and research symposia on each program. The Dairy PDG and other Members with interest in dairy issues are encouraged to submit strong symposia recommendations to the Program Committee for consideration to be added to the IAFP 2011 program.
7. The PDG endorsed a member recommendation that the IAFP Board in cooperation with the IAFP Program Committee invite the Governor of Wisconsin to be one of the "keynote" speakers at the 2011 IAFP Annual Meeting in Milwaukee based on the courage he demonstrated in vetoing a bill that would have significantly expanded the public's access to raw milk in the state of Wisconsin.
Board Response: This recommendation will be forwarded to the selection group looking at candidates to deliver the Ivan Parkin Lecture. Another option is to consider a symposium centered on this issue and circumstance.

Developing Food Safety Professionals PDG

Recommendations to Executive Board:

1. Approve official PDG name: Developing Food Safety Professionals.
Board Response: Approved
2. Approve Chair and Vice Chair Elections of Sean Leighton as Chair and Angelica O'Shaunessy as Vice Chair.
Board Response: Approved.

Food Chemical Hazards and Food Allergy PDG

1. Approve the election of Ken Davenport as Vice Chair.
Board Response: Approved

Food Defense PDG

Recommendations to Executive Board:

1. The individuals present at the Food Defense PDG Organizational meeting recommend formation of a Food Defense PDG within IAFP by unanimous vote.
Board Response: Approved.
2. The individuals present at the Food Defense PDG Organizational Meeting recommend that Charles Young be approved as the elected Chair of the Food Defense PDG by unanimous vote.
Board Response: Approved.
3. The individuals present at the Food Defense PDG Organizational Meeting recommend that Shaun Kennedy be approved as Vice Chair of the Food Defense PDG by unanimous vote.
Board Response: Approved.
4. The individuals present at the Food Defense PDG Organizational Meeting recommend that the Executive Board consider making PDG programs such as webinars available to the membership free of charge approximately 30 days after the date the event occurs to support students and scientists in developing countries who might not otherwise be able to afford these programs.
Board Response: PDG Webinars where a registration fee applies are made available free-of-charge within 14 days after conclusion of the Webinar.

Food Hygiene and Sanitation PDG

Recommendations to Executive Board:

1. We recommend that the Board provide a list of the accepted symposia, workshops and round tables from the past 5 years. This will help the PDGs know what has been done in the past and prevent duplication.
Board Response: A list will be constructed, posted on the IAFP Web site and distributed to Committee and PDG Chairs and Vice Chairs.
2. We recommend that each PDG be provided at least 1 symposia slot for each year if properly developed and of substance and merit.
Board Response: The Program Committee strives to ensure interests of each PDG are reflected in the Annual Meeting program.
3. We recommend a staff position be created to allow for the management of more than 2 Webinars/month.
Board Response: The IAFP Board and staff will monitor the need for such a position based on the Webinar demand presented by PDGs and on financial resources available to the organization.
4. We recommend a staff position be created to support the local affiliates and help them grow and reach their communities with food safety education and training.
Board Response: A staff position currently is in place to support Affiliate needs.

5. We recommend for the formation of a Hygienic Design PDG.

Board Response: The Board recommends caution in moving in this direction and suggests the PDG consider if this (Hygienic Design PDG) would dilute interest in the Food Hygiene and Sanitation PDG. Overlap of PDG meeting schedules already creates problems and this could cause additional conflicts. The Board will entertain a proposal after careful consideration by those suggesting this new PDG as to if this is the most effective way to achieve the intended results.

6. We recommend that IAFP establish a fund for research projects like AMI does.

Board Response: IAFP is a professional association and does not fund research. AMI is a trade association and has made funding research a part of their function.

Food Law PDG

Recommendations to Executive Board:

1. Include within the electronic symposium submission the option to select the NAME of the PDG submitting the symposium [where applicable].
Board Response: Changes will be made to the submission system to allow for this option.
2. When the symposium has been submitted, an automatic notification should be sent to the PDG Chair
Board Response: IAFP Staff will correspond with the lead submitter of the symposium. Committee and PDG Chairs are encouraged to communicate with symposium submitters and may check with IAFP staff at anytime about the status of symposium submissions.
3. If a symposium is rejected, the PDG chair, in addition to the organizers, should be notified, along with the rationale as to why the symposium was not accepted. Note areas for improvement and/or whether there is interest in seeing the topic resubmitted in the future.
Board Response: IAFP Staff will correspond with the lead submitter of the symposium providing detailed rationale for rejected symposia. Submitters or Committee and PDG Chairs may follow up with IAFP staff or the Program Chairperson regarding rejection reasons.

Food Packaging PDG

Recommendations to Executive Board:

1. We recommend a Food Packaging PDG be established.
Board Response: Approved.
2. Approve Albert Elboudwarej as chair and Linda Leake as Vice Chair.
Board Response: Approved.

Food Safety Education PDG

Recommendations to Executive Board:

1. We wish for the Board to appoint Pamela Wilger as PDG Vice Chairperson.
Board Response: Approved.
2. Recommendations for 100-Year Planning committee: Suggest that the 100 food safety tips that are created to be added to the IAFP facebook page and put out as a tip of the day via twitter as a lead-up to the meeting.
Board Response: This will be passed forward to the 100-Year Planning Committee.

Fruit and Vegetable Safety and Quality PDG

Recommendations to Executive Board:

1. Dave Gombas is recommended by the PDG as Vice Chair.
Board Response: Approved

2. The PDG discussed IAFP's idea for charging a fee of \$25 for webinars. There were differing opinions on the cost and a suggestion that instead of holding a webinar with a fee, use a conference call and email out the PowerPoint presentation in advance. The majority support the idea of a webinar and \$25 fee. Many thought it was a means of IAFP membership building and the webinar should reach out to industry.

Board Response: Webinars offered to PDG Members only will continue to be supported by IAFP (corporate hosting is welcomed). For Webinars open to a wider public (beyond PDG Members), a minimal charge will apply.

3. The PDG recommends to the Board that presentations from the Annual Meeting be posted on the IAFP web page, or sent after the meeting on a thumb drive, to persons who paid registration for the meeting. IAFP would have to consider having authors sign a release form to share their presentations.

Board Response: Because of the wide variety of speaker backgrounds and employer stipulations, not to mention the volume of material presented at our Annual Meeting, it is difficult to achieve this goal. Therefore, the current method employed is that attendees may request presentations directly from the speaker and the speaker may choose whether to provide the information or not.

International Food Protection Issues PDG

Recommendations to Executive Board:

1. Approve Deon Mahoney as Vice Chair.
Board Response: Approved

Meat and Poultry Safety and Quality PDG

Recommendations to Executive Board:

1. PDG chairs and vice chairs should meet to share recommendations and possibly rank suggested symposia to facilitate selection by the Program Committee.
 - a. We agreed a virtual meeting should occur of the chairs and vice chairs.
 - b. Ask the Program Committee to accumulate all of the proposed symposia and host a webinar type meeting in October 2010 to update all PDG chairs and vice chairs.
 - c. This will allow for the PDG chairs to also possibly adjust their recommendations to the Program Committee and potentially combine topics with other PDGs.

Board Response: The Board suggests PDG chairs and vice chairs (or persons organizing symposia) should contact other PDG chairs where the topic interest may cross-over. Organizing a teleconference or Webinar prior to the submission deadline is not feasible since only 10 to 20 percent of submissions are received in advance of the deadline date.

2. The IAFP Board should consider allocating a set amount of session time for PDGs to develop appropriate symposia recommendations.
 - a. The PDG also will consider just limiting the number of symposia at the start. Maybe just allocate 10% over what has been accepted historically.
 - b. We should rank and then recommend to the Program Committee.
 - c. There is the issue of independent symposium recommendations outside of a PDG.
 - d. Therefore this provides for potentially more overlap.
 - e. The Board should provide a complete list to the PDG chairs and vice chairs prior to the webinar to facilitate the meeting discussion.

- f. IAFP should provide a list of historical topics and date of symposia with abstract before the end of August and send to the PDG members to improve recommendations for 2011.

Board Response: There are a number of issues in this suggestion. First, the Board does encourage each PDG to scrutinize its suggested symposium ideas and only develop those that carry the necessary elements to be submitted for consideration by the Program Committee. The Program Committee has avoided a specific allocation of program slots to each PDG, opting to select from those symposia submitted to make the program most complete and balanced. A list of topics presented over the past 5 years will be developed and distributed to each Committee and PDG Chair and Vice Chair.

3. Approve Patricia Wester as Vice Chair beginning at IAFP 2011.

Board Response: Approved.

Microbial Modelling and Risk Analysis PDG

Recommendations to Executive Board:

1. Recommendation regarding the process of annual meeting proposals submission and selection: The PDG would ask the Executive Board to encourage the Program Committee to (1) provide proposers with more specific feedback when proposals are rejected such that learnings can be taken into account by proposers and PDG, (2) to arrange for a mechanism through which the Chair and Vice Chair of a PDG are kept informed by the Program Committee about proposals from the PDG being submitted and rejected or accepted.

Board Response: The Program Committee with staff support will provide more specific feedback on symposium submissions. As for communicating these results to the PDG chair and vice chair, this is the responsibility of the person(s) organizing the symposium.

2. Recommendation regarding PDG interaction in between Annual Meetings: The PDG asks the Executive Board to set-up a mechanism for PDGs to interact and communicate in between Annual Meetings; this could be through one of the new social media or a dedicated content management system, but would preferably be one system for all PDGs.
Board Response: IAFP staff will investigate systems available and cost involved; then report to the Board.
3. Approve Alejandro Amezcua as Vice Chair.
Board Response: Approved.

Pre Harvest Food Safety PDG

Recommendations to Executive Board:

1. This committee respectfully requests that this PDG be accepted as a PDG within the organization.
Board Response: Approved.
2. A recommendation is given to consider a free membership for 'new' speakers with a 50% discount the following year.
Board Response: Additional details would be necessary to implement a program along these lines. Nonmember speakers are already provided with gratis registration for Annual Meeting.
3. Approve Paula Fedorka-Cray as Chair and Sid Thakur as Vice Chair.
Board Response: Approved.

Retail Food Safety and Quality PDG

Recommendations to Executive Board:

1. What role could IAFP play in an education campaign (e.g. a food safety month) targeted at the consumer and educating them on their responsibility in the food safety process? The PDG was passionate that this is a huge opportunity for consumers who need help.
Board Response: IAFP's mission is to provide *food safety professionals* worldwide with information on protecting the food supply. There are many other groups (e.g., The Partnership for Food Safety Education, University Extension Departments, etc.) who provide information directly to consumers.
2. IAFP to provide and develop a subject matter expert or group of experts who would be there in the wake of a food safety crisis situation and take on a communicator role. This could be a way to grow the brand of IAFP.
Board Response: IAFP organizes rapid response symposia to address significant emerging issues and to educate food safety professionals in a timely manner. The monthly *IAFP Report* also provides recent food safety issues and developments.
3. The PDG respectfully asks that the IAFP Board put together a formal request with associated form to collect the 100 unique food safety tips for celebrating the 100 year anniversary in 2011.
Board Response: This effort is underway through the efforts of the 100-Year Planning Committee.
4. IAFP provide 3-5 members to monitor / host and support an international blog for shared communication.
Board Response: This is a part of IAFP's long-range plan and details are being worked on as to how we can better facilitate communication among IAFP Members.

Seafood Safety and Quality PDG

Recommendations to Executive Board:

1. Webinar be concerned with firewalls.
Board Response: This will be addressed by the Webinar service provider.
2. A topic presented at a PDG meeting with general interest should be announced earlier and to the general IAFP membership or set at a late-breaking session.
Board Response: Many PDGs have adopted a format for their PDG meeting whereas they incorporate a short presentation by a subject matter expert. These are normally specific to the PDG's interest and should be "publicized" by the PDG members to other interested participants.

Student PDG

Recommendations to Executive Board:

1. To develop a comprehensive and accurate listserve for our student members (can we request contact information for every student that paid to be at the IAFP meeting in Anaheim this year). As well as possible tech support to create a listserve under IAFP.SPDG@...
Board Response: IAFP staff will provide the information requested to the SPDG leadership. A listserve or other group communication tool will be established for each PDG.
2. To have a government, industry or academia advisor for the SPDG in order to better stay connected to our professional community. We ask this person or persons (2 at the max) to serve as advisor for 2 years and be a past SPDG officer. We feel this will ensure the continuation of the SPDG and also help maintain the professionalism of the group. The advisor would be asked to listen in on SPDG conference calls and also

attend the IAFP Annual Meeting (luncheon and SPDG board meeting). Their suggestions can only benefit the SPDG's future.

Board Response: The Board encourages the SPDG to move forward to implement this advisor system. The SPDG may select whomever it wants to place in these positions.

3. To have extra time and space allotted for a SPDG exec. and member Board meeting so that SPDG business can be discussed solely. The luncheon has become such a big event, that it has become difficult to discuss all the business of the SPDG during this time slot. We ask the Board if possible we can have a 30 min to 1 hr block of time that the SPDG could hold a Board meeting open to its members. Currently, the trend for the past 2-3 years is to have a large luncheon crowd of students, with only 15 or less staying for the Board meeting. To ensure the success of our group, we need more of our members to stick around. The consensus from students is that a lunch with speaker plus a meeting is too long since, like most attendees, they are hopping from meeting to meeting (other PDGs).
Board Response: The SPDG leadership can work with IAFP staff to establish the proper desired time (and day) on which to hold this meeting. IAFP can provide the meeting space necessary.

Viral and Parasitic Foodborne Disease PDG

Recommendations to Executive Board:

1. Overlapping PDG meetings is a problem.
Board Response: This continues to be a problem with many overlapping interest areas for IAFP Members. The PDG meeting schedule is rotated each year in an attempt to change the overlap of PDG meetings from year to year.
2. Encourage IAFP to become more of a leader in communicating food safety to the public; through podcasts, an application on iPhones/iPod, more exposure to the media and general public.
Board Response: IAFP's mission is to "share information among food safety professionals" (not necessarily the media and general public). IAFP will continue to implement uses of technology as they become available and affordable options.
3. In general the PDG thinks that the use of social media is a positive issue. Encourage students to help in the use and updating of the information. One suggestion is to have a team of two students be in charge of the information portal or space and update it with scientific information. There could be two students per PDG and they could receive free registration for the meeting. Another recommendation is for IAFP to become involved in LinkedIn (as suggested by an industry representative). We realize that a drawback to this is the amount of time that would need to be devoted, which is why we suggest that students become involved.
Board Response: Social media is being implemented for IAFP on an ongoing basis. IAFP does have a presence on LinkedIn and Facebook. It is expected that more time and effort will be put towards these efforts in the coming years.

Water Safety and Quality

Recommendations to Executive Board: None.

Affiliate Council

Recommendations to Executive Board: None.

IAFP Foundation Silent Auction Results

Over \$7,800 Raised

Donated by	Item	High Bidder
3M Brazil	Brazil Folk Art	Paula Fedorka-Cray
3M Brazil	Brazil Folk Art	Bill Cray
3M Food Safety	iTouch 64 GB	Liza Frias
8 O'Clock Coffee	8 O'Clock Coffee Package	John Wendell
AIV Microbiology and Food Safety Consultants	Kansas City BBQ Basket	Lynn McMullen
Arthur Schuman West, Inc.	Wheel of Cheese	Bill Roache
Australian Association for Food Protection	Australian Aboriginal Art Tablecloth	Ewen Todd
Cindy and Dave Blomquist	Premium Confections	Lori Ledenbach
Derrick Blunden	Presentation Pack of English Beers	Wendy White
Brazil Association for Food Protection	Sculpture	Leon Gorris
Brazil Association for Food Protection	Leaf Gift Set	Willis Fedio
British Columbia Food Protection Association	Vancouver 2010 Winter Olympics Collectors Coin Set	Donna Garren
British Columbia Food Protection Association	BCFPA Water Bottle	Jen Singh
Burger King Corporation	Burger King T-shirt	Janet McDonald
Burger King Corporation	Burger King T-shirt	Bill Cray
Burger King Corporation	Burger King T-shirt	Donna Garren
Margaret Burton	Southern California Basket	Bella Leong
Margaret Burton	"Through the Garden Gate" Lap Quilt	Ann Marie McNamara
Margaret Burton	One-of-a-Kind Cow Quilt	Florence Wu
Margaret Burton	Monogrammed Shirts	Karen Westervelt
California Association Dairy and Milk Sanitarians	IAMFES Anaheim in '87 Annual Meeting Pin	David Tharp
California Association Dairy and Milk Sanitarians	IAMFES at Disneyland 1987 Lapel Pin	Christine Bruhn
California Association Dairy and Milk Sanitarians	IAMFES at Disneyland 1987 Lapel Pin	Christine Bruhn
California Association Dairy and Milk Sanitarians	IAMFES at Disneyland 1987 Lapel Pin	Christine Bruhn
Warren Clark	Crystal Hippopotamus Signed by Villeroy and Bock	Kyle Sasahara
Warren Clark	The BTS Kuberrand Crystal Paperweight	Philomena Short
The Coca-Cola Company	Coca-Cola Gift Basket	Brooke Whitney
Julian Cox	Kangaroo Jerky and an Aboriginal Art Candle Holder	Denise Eblen
Creative Confections	Premium Confections	Steve Murphy
BethAnn Crozier Dodson	Rosemary's Garden Glycerin Soap	Dawn Terrell
DuPont Qualicon	Pulse Smart Pen and Notebook	Nandini Natrajan
Elsevier Science & Technology Books	Ensuring Global Food Safety	Deon Mahoney
Elsevier Science & Technology Books	Hyperspectral Imaging for Food Quality Analysis and Control	Randall Phebus
Elsevier Science & Technology Books	Modern Techniques for Food Authentication	Gale Prince
Elsevier Science & Technology Books	Irradiation of Food Commodities	Scott Moosekian
Florida Association for Food Protection	California T-shirt, Cap and Beads	Terri Haffner
Florida Association for Food Protection	California T-shirt, Cap and Beads	James Rogers
Florida Association for Food Protection	California T-shirt, Cap and Beads	Turonda Crumpler
Florida Association for Food Protection	Shaka Plaid Shorts	Belinda Salazar
Florida Association for Food Protection	California T-shirt, Cap and Beads	Fred Reimers
Food Marketing Institute	Guide to Food Safety Training Materials	Octavio Lopez
Food Marketing Institute	Food Safety Fundamentals Training Materials	Jean Valbrun
Food Marketing Institute	Quick Reference Training Materials	Octavio Lopez
Food Safety Net Services	Oakley Sunglasses	Gordon Hayburn
Food Safety News	Women's Real Raw Milk Fact.com T-shirt	Elsbeth Colon
Food Safety News	Men's Real Raw Milk Fact.com T-shirt	Ed Stuttard
Foster Farms	Foster Farm Imposter Chicken	Paul Hall
Foster Farms	Foster Farm Imposter Chicken	Paula Fedorka-Cray
Georgia Association for Food Protection	Georgia Gift Basket	Willis Fedio
Kathleen Glass	Wisconsin Sweatshirt	Stefano Colombo
Joe Heidenreich	Norwegian Aquavit	Jozef Baranyi
Joe Heidenreich	Norwegian Aquavit	Bill Schwartz
HJ Heinz	Mixed Bag from HJ Heinz	Stephen Grove
Bill Huntley	Antique Dairy Testing Equipment	Bill Roache
Hyglos GMBH	University of Regensburg Beer Mug and 1 Regensburg Beer	Sarita Wheler
IAFP	IAFP 2011 Registration	Darren Browning
IAFP	Foodborne/Waterborne Booklet	Muhammad Qamar
ICFIE	Wine with Bottle Opener	Paul Hall
Indiana Environmental Health Association	Indiana Made Gift Box	Ellen Koenig
Industrial Fumigant Co.	UV Inspection Flashlight for Rodent Evidence	Tom Graham
In-N-Out Burgers	In-N-Out Basket	Margaret Binkley
Bobby Krishna	Hand Crafted Lens	Jenny Scott
Bobby Krishna	Sparkling Date Drink	Willis Fedio
Linda Leake	Giada at Home Cookbook	Laura Nelson
Vickie Lewandowski	Milwaukee Brewers Package	Larry Cohen
Margaritaville Enterprises, LLC	Frozen Concoction Maker	Barry Whitman
Mars Petcare US	Dog Lover Basket	Denise Eblen

Donated by	Item	High Bidder
Mars Petcare US	Cat Lover Basket	Peter Ben Embarek
Metropolitan Association for Food Protection	Weird NJ Volume 2	Steve Mamber
Metropolitan Association for Food Protection	Discover the Hidden New Jersey	Bobby Meeker
Metropolitan Association for Food Protection	Storytellers – Springsteen	Stefano Colombo
Metropolitan Association for Food Protection	Essential Springsteen	Fred Weber
Metropolitan Association for Food Protection	Darkness on the Edge of Town	Fred Weber
Metropolitan Association for Food Protection	Born to Run	Richard Seuke
Metropolitan Association for Food Protection	Springsteen – Greatest Hits	Mike Cooley
Metropolitan Association for Food Protection	Born in the USA	Katie Swanson
Metropolitan Association for Food Protection	One Wild Night – Bon Jovi	Gloria Swick-Brown
Metropolitan Association for Food Protection	Soprano's Season 1	Florence Feeherry
Michigan State University Online Master of Science in Food Safety	MSU Gift Basket	Allison Jeffrey
Microbiologics	Gift Pack	Nancy Rajkowski
Microbiologics	Gift Pack	Florence Feeherry
Microbiologics	Gift Pack	Cody Gardner
Microbiologics	Gift Pack	Ed Stuttard
Microbiologics	Gift Pack	Hesham Egaali
Missouri Milk Food and Environmental Health Assn	Missouri Gift Basket	Anna Lammerding
Missouri Milk Food and Environmental Health Assn	Missouri Gift Basket	Margaret Burton
Neutec Group Inc.	USB 2 GB Flash Drive	Melissa Mundo
New York State Association for Food Protection	Cornell Sweatshirt	Mary Totorello
New York State Association for Food Protection	1 Quart of New York State Maple Syrup	Kathleen Rajkowski
NYSAFP/Steve Murphy	Dr. Frank's Riesling Award Winning Wine	Suzanne Mailman
Ontario Food Protection Association	Ice Wine	Paul Hall
Ontario Food Protection Association	Ice Wine	Kristel Overfelt
Orkin Commercial Services	MP3 Player	Jean Valbrun
Southern California Association for Food Protection	Chocoholic Dream	Paula Panissidi
Southern California Association for Food Protection	Cork Wreath with 2 Bottles of Wine	Bella Leong
Southern California Association for Food Protection	Tie-Dye Apron	Rajas Warke
David and Connie Tharp	Pearl Necklace	Anna Lammerding
Isabel Walls	White House Travel Kit/Gift Items	Grace Ho
The Walt Disney Company	Christopher Radko-Mickey Minnie Glass Ornaments and Bag	Marjorie Jones
The Walt Disney Company	Men's Mickey Mouse Wrist Watch and Bag	Mike Hurley
The Walt Disney Company	Mickey Mouse T-shirt and Bag	Paula Fedorka-Cray
The Walt Disney Company	2 Park Hopper, Disney Passports (1 Day)	Liza Frias
The Walt Disney Company	Disneyland Sweets and Bag	Induae Mello-Hall
The Walt Disney Company	Classic Mickey T-Shirt and Bag	Paula Fedorka-Cray
Washington Association for Food Protection	Cheese of the Month Gift Certificate	Kathleen Rajkowski
Washington Association for Food Protection/Beechers Cheese	"Pure Flavor"—125 Fresh All-American Recipes from the Pacific Northwest	Marjorie Jones
Weber Scientific	E. coli Silk Necktie, Blue and Amber	Janet McDonald
Weber Scientific	Farmer Cow	Lori Ledenbach
Weber Scientific	Staph Silk Necktie, Taupe and Gold	Joe Heidenrich
Weber Scientific	Staph Silk Necktie, Burgundy and Gold	Joe Heidenrich
Weber Scientific	Giardia Silk Necktie, Gray and Purple	Kathleen Rajkowski
Weber Scientific	Giardia Silk Necktie, Chocolate and Red	Kathleen Rajkowski
Weber Scientific	Mad Cow Silk Necktie, Yellow and Red	Kristel Overfelt
Weber Scientific	Mad Cow Silk Necktie, Burnt Orange	Jill Baldwin
Weber Scientific	Foodborne 6 Silk Scarf, Multicolor	Janet McDonald
Weber Scientific	Clean Water for Family of 4 for 1 Year, CSDW	Joy Johanson
Weber Scientific	Share of Heifer, Heifer Int'l.	Suzanne Mailman
Weber Scientific	Minimally Processed Fruits and Vegetables	Grace Ho
Weber Scientific	Shelf-life Evaluation of Foods	Octavio Lopez
Weber Scientific	Bistec Cow Parade	Sara Mortimore
Weber Scientific	Glamorous Cow Parade	Sarah Cahill
Wegmans' Food Markets	Daisy: Morning, Noon and Night Cookbook	Nega Beru
Wegmans' Food Markets	Down Home with the Neelys	Ken Janes
Christina Wilson	Solar Cockroach	Bruce Pauling
Wisconsin Association for Food Protection	Wisconsin Master Cheese Makers Gift Box	Fred Weber
Wisconsin Association for Food Protection	Wisconsin Master Cheese Makers Gift Box	Lori Ledenbach
Frank Yiannas	Food Safety Culture: Creating a Behavior-Based Food Safety Management System	Melissa Hughes
Ed Zottola	Willie Walleye—Underwater Adventures	Richard McDonald
Ed Zottola	Willie Walleye—Underwater Adventures	Guy Skinner
Ed Zottola	Willie Walleye—Underwater Adventures	Fred Reimers
Ed Zottola	Willie Walleye—Underwater Adventures	Peter Hibbard
Ed Zottola	Willie Walleye—Underwater Adventures	Christine Bruhn
Ed Zottola	Willie Walleye—Underwater Adventures	Francisco Diez
Ed Zottola	Willie Walleye—Underwater Adventures	Graham Tom
Ed Zottola	Willie Walleye—Underwater Adventures	Fred Reimers
Ed Zottola	Willie Walleye—Underwater Adventures	David Markwardt
Ed Zottola	Willie Walleye—Underwater Adventures	Peyman Fatemi

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3M Food Safety
3M Center, Bldg. 0275-05-W-05
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American Council for Food Safety & Quality
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Sacramento, CA 95834, USA
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<http://www.agfoodsafety.org>

Fax: 916.561.5910

American Proficiency Institute
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<http://www.foodsafetysummit.com>

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Phone: 33.328.4193.03 Fax: 33.328.4956.92
<http://www.plastiques-gosselin.fr>

Hanna Instruments
584 Park East Drive
Woonsocket, RI 02895, USA
Phone: 401.765.7500 Fax: 401.762.5064
<http://www.hannainst.com>

Hardy Diagnostics
1430 W McCoy Lane
Santa Maria, CA 93455, USA
Phone: 805.346.2766 Fax: 805.928.2950
<http://www.hardydiagnostics.com>

Hertzler Systems Inc.
2312 Eisenhower Drive N
Goshen, IN 46526, USA
Phone: 574.533.0571 Fax: 574.533.3885
<http://www.hertzler.com>

HiMedia Laboratories Pvt. Ltd.
A-406, Bhaveshwar Plaza, L.B.S. Marg
Mumbai, Maharashtra 400 086, India
Phone: 91.22.40951919 Fax: 91.22.40951920
<http://www.himedialabs.com>

Hygiena
941 Avenida Acasio
Camarillo, CA 93012, USA
Phone: 805.388.8841 Fax: 805.388.5531
<http://www.hygiena.net>

Idaho Technology Inc.
400 Wakara Way
Salt Lake City, UT 84107, USA
Phone: 801.736.6354 Fax: 801.588.0507
<http://www.idahotech.com>

IEH Laboratories and Consulting Group
15300 Bothell Way NE
Lake Forest Park, WA 98155, USA
Phone: 206.522.5432 Fax: 206.306.8883
<http://www.iehinc.com>

IFC
P.O. Box 1200
Olathe, KS 66051-1200, USA
Phone: 913.782.7600 Fax: 913.782.6299
<http://www.indfumco.com>

IFS-International Food Standard
1610 Des Peres Road, Suite 150
St. Louis, MO 63131, USA
Phone: 314.686.4610 Fax: 314.686.4602
<http://www.ifs-certification.com>

The IMPACT Marketing Group
P.O. Box 307
Glencoe, MD 21152, USA
Phone: 410.688.4461 Fax: 410.584.8279
<http://www.theimpactmarketinggroup.com>

Instantlabs Medical Diagnostics Corporation
400 N Capitol St. NW, Suite 585
Washington, D.C. 20001, USA
Phone: 703.477.3310
<http://www.instantlabs.com>

interactive Point of View
319 Hickory Woods Drive
Auburn, AL 36830, USA
Phone: 334.821.5412 Fax: 334.821.5416
<http://www.ipov.net>

International Association for Food Protection
6200 Aurora Ave. Suite 200W
Des Moines, IA 50322-2864, USA
Phone: 800.369.6337 Fax: 515.276.8655
<http://www.foodprotection.org>

International Association for Food Protection—
Student PDG
6200 Aurora Ave. Suite 200W
Des Moines, IA 50322-2864, USA
Phone: 800.369.6337 Fax: 515.276.8655
<http://www.foodprotection.org>

International Food Hygiene
P.O. Box 4
Driffield, East Yorkshire YO25 9DJ, United Kingdom
Phone: 44.0.1377.241724 Fax: 44.0.1377.253640
<http://www.positiveaction.co.uk>

International Food Information Council
1100 Connecticut Ave. NW, Suite 403
Washington, D.C. 20036, USA
Phone: 202.296.6540 Fax: 202.296.6547
<http://www.ific.org>

International Food Protection Training Institute
49 W Michigan Ave. Suite 300
Battle Creek, MI 49017, USA
Phone: 269.441.2995 Fax: 269.441.2996
<http://www.ifpti.org>

Interscience Laboratories Inc.
199 Weymouth St.
Rockland, MA 02370, USA
Phone: 781.792.2133 Fax: 781.792.2134
<http://www.intersciencelab.com>

Life Technologies (Applied Biosystems)
850 Lincoln Center Dr.
Foster City, CA 94404, USA
Phone: 650.638.5715 Fax: 650.638.5884
<http://www.appliedbiosystems.com>

Log 5 Corporation
4 Glenberry Court
Phoenix, MD 21131, USA
Phone: 240.544.2050 Fax: 443.705.0223
<http://www.log5.com>

Marshfield Food Safety, LLC
1000 N Oak Ave.
Marshfield, WI 54449, USA
Phone: 888.780.9897 Fax: 715.389.7500
<http://www.marshfieldfoodsafetyllc.com>

MATRIX MicroScience, Inc.
400 Corporate Circle, Suite D
Golden, CO 80401, USA
Phone: 303.277.9613 Fax: 303.277.9643
<http://www.matrixmsci.com>

Medical Wire/ABSP
2228 Page Road
Durham, NC 27703, USA
Phone: 919.724.4010 Fax: 919.596.4629
<http://www.mwe-usa.com>

Meritech Inc.
600 Corporate Circle, Suite H
Golden, CO 80401, USA
Phone: 303.790.4670 Fax: 303.790.4859
<http://www.meritech.com>

Michelson Laboratories, Inc.
6280 Chalet Drive
Commerce, CA 90040, USA
Phone: 562.928.0553 Fax: 562.927.6625
<http://www.michelsonlab.com>

Michigan State University Online Master of Science
in Food Safety
B 51 Food Safety Building, MSU
East Lansing, MI 48824-1302, USA
Phone: 517.884.2078 Fax: 517.432.2310
<http://www.online.foodsafety.msu.edu>

Microbial-Vac Systems
14621 S. 800 W, #100
Bluffdale, UT 84065, USA
Phone: 801.523.3962 Fax: 801.572.8174
<http://www.m-vac.com>

MicroBioLogics
217 Osseo Ave. N
St. Cloud, MN 56303, USA
Phone: 320.253.1640 Fax: 320.253.6250
<http://www.microbiologics.com>

Microbiology International
5111 Pegasus Court, Suite H
Frederick, MD 21704, USA
Phone: 301.662.6835 Fax: 301.662.8096
<http://www.800ezmicro.com>

MO BIO Laboratories
2746 Loker Ave. West
Carlsbad, CA 92010, USA
Phone: 760.929.9911 Fax: 760.929.0109
<http://www.mobio.com>

MOCON Inc.
7500 Boone Ave. N, Suite 111
Minneapolis, MN 55428, USA
Phone: 763.493.7231 Fax: 763.493.6358
<http://www.mocon.com>

Nasco Whirl-Pak
4825 Stoddard Road
Modesto, CA 95367, USA
Phone: 800.558.9595 Fax: 209.543.1244
<http://www.enasco.com/whirlpak>

The National Food Lab
365 North Canyons Pkwy., #201
Livermore, CA 94551, USA
Phone: 925.551.4205 Fax: 925.243.0117
<http://www.thenfl.com>

The National Institute for Hometown Security
368 N Hwy. 27, Suite 1
Somerset, KY 42503, USA
Phone: 606.451.3440 Fax: 606.451.3441
<http://www.thenihs.org>

Nelson-Jameson Inc.
2400 East 5th St.
Marshfield, WI 54449, USA
Phone: 715.387.1151 Fax: 715.387.8746
<http://www.nelsonjameson.com>

Neogen Corporation
620 Leshner Place
Lansing, MI 48912, USA
Phone: 517.372.9200 Fax: 517.372.0108
<http://www.neogen.com>

Neutec Group, Inc.
200 Central Ave.
Farmingdale, NY 11735-6918, USA
Phone: 516.870.0877 Fax: 516.977.3774
<http://www.neutecgroup.com>

Northwest Analytical Inc.
111 SW Fifth Ave. Suite 800
Portland, OR 97204-3604, USA
Phone: 503.224.7727 Fax: 503.224.5236
<http://www.nwasoft.com>

NSF International
789 N Dixboro Road
Ann Arbor, MI 48105, USA
Phone: 734.769.8010 Fax: 734.827.7768
<http://www.nsf.org>

Orkin Commercial Services
2170 Piedmont Road NE
Atlanta, GA 30324, USA
Phone: 404.888.2794 Fax: 404.888.2012
<http://www.orkincommercial.com>

Pall GeneSystems
1, rue Courtil, Centre Cicea
Bruz, 35170, France
Phone: 33.299.055.790
<http://www.pall.com/genedisc>

Partnership for Food Safety Education
2345 Crystal Drive, Suite 800
Arlington, VA 22202, USA
Phone: 202.220.0605 Fax: 202.220.0873
<http://www.fightbac.org>

Q Laboratories, Inc.
1400 Harrison Ave.
Cincinnati, OH 45214-1606, USA
Phone: 513.471.1300 Fax: 513.471.5600
<http://www qlaboratories.com>

QMI-SAI Global
20 Carlson Court, Suite 100
Toronto, ON M9W 7K6, Canada
Phone: 416.401.8700 Fax: 416.401.6254
<http://www.qmi-saiglobal.com>

Quality Assurance & Food Safety Magazine
4020 Kinross Lakes Pkwy., Suite 201
Richfield, OH 44286, USA
Phone: 330.523.5400 Fax: 330.659.0823
<http://www.qualityassurancemag.com>

R&F Laboratories
2725 Curtiss St.
Downers Grove, IL 60515-4002, USA
Phone: 630.969.5300 Fax: 630.969.5303
<http://www.rf-labs.com>

Remel
12076 Santa Fe Trail Drive, Bldg. 2
Lenexa, KS 66215, USA
Phone: 913.895.4240 Fax: 800.447.5750
<http://www.remel.com>

Rentokil
1779 West Hillsborough Ave.
Tampa, FL 33605, USA
Phone: 813.877.6144 Fax: 813.874.1069

Rochester Midland Corporation, Food Safety Division
333 Hollenbeck St.
Rochester, NY 14621, USA
Phone: 585.336.2200 Fax: 585.336.2357
<http://www.rochestermidland.com>

Romer Labs
1301 Stylemaster Drive
Union, MO 63084, USA
Phone: 636.583.8600
<http://www.romerlabs.com> Fax: 636.583.8600

SA Scientific, Ltd.
4919 Golden Quail
San Antonio, TX 78240-1541, USA
Phone: 210.699.8800
<http://www.sascientific.com> Fax: 210.699.6545

Safe Quality Food Institute
2345 Crystal Drive, Suite 800
Arlington, VA 22202, USA
Phone: 202.220.0635
<http://www.sqfi.com> Fax: 202.220.0894

SANYO North America
1300 Michael Drive, Suite A
Wood Dale, IL 60191, USA
Phone: 800.858.8442
<http://www.sanyobiomedical.com> Fax: 630.238.0074

SDIX
111 Pencader Drive
Newark, DE 19702, USA
Phone: 800.544.8881
<http://www.sdix.com> Fax: 302.456.6782

Seward Laboratory Systems, Inc.
1648 Locust Ave. Suite D
Bohemia, NY 11716, USA
Phone: 631.750.5660
<http://www.sewardusa.com> Fax: 631.750.5659

SGS
291 Fairfield Ave.
Fairfield, NJ 07004, USA
Phone: 973.575.5252
<http://www.foodsafety.sgs.com> Fax: 973.575.7175

Shat-R-Shield
116 Ryan Patrick Drive
Salisbury, NC 28147, USA
Phone: 800.223.0853
<http://www.shatrshield.com> Fax: 704.633.3420

Siemens Industry Inc.
1000 Deerfield Pkwy.
Buffalo Grove, IL 60089, USA
Phone: 847.941.6470
<http://www.usa.siemens.com/buildingtechnologies> Fax: 866.561.8471

Silliker, Inc.
900 Maple Road
Homewood, IL 60430, USA
Phone: 708.957.7878
<http://www.silliker.com> Fax: 708.957.1483

Society for Applied Microbiology
Bedford Heights, Brickhill Drive
Bedford, Bedfordshire MK41 7PH, United Kingdom
Phone: 44.0.1234.761752
<http://www.sfam.org.uk> Fax: 44.1.1234.326678

Springer
233 Spring St.
New York, NY 10013, USA
Phone: 212.460.1500
<http://www.springer.com> Fax: 212.460.1575

Star-K Kosher Certification
122 Slade Ave. Suite 300
Baltimore, MD 21208, USA
Phone: 410.484.4110
<http://www.star-k.org> Fax: 410.653.9294

Stericycle ExpertRECALL
6026 Lakeside Blvd.
Indianapolis, IN 46278, USA
Phone: 317.275.7537
<http://www.expertrecall.com> Fax: 866.875.0545

Steton
912 W 1600 S, Suite A200
St. George, UT 84770, USA
Phone: 435.656.5655
<http://www.steton.com> Fax: 435.656.5680

University of Wisconsin-Madison Food Research Institute
1550 Linden Dr. MSB #1315
Madison, WI 53706-1521, USA
Phone: 608.263.7777
<http://fri.wisc.edu/> Fax: 608.263.1114

USDA-FSIS
901 D St. SW, 3rd Floor, Room 405
Washington, D.C. 20250, USA
Phone: 202.690.6408
<http://www.fsis.usda.gov> Fax: 202.690.6519

USDA Food Safety Research Information Office
10301 Baltimore Ave.
Beltsville, MD 20705, USA
Phone: 301.504.5515
<http://fsrio.nal.usda.gov> Fax: 301.504.7680

Varcode
23 Hamelacha St., P.O. Box 114433
Rosh Ha'ain, 48091, Israel
Phone: 972.3.9380835
<http://www.varcode.com> Fax: 972.3.9014072

Vista Enterprises Incorporated
P.O. Box 47
Rio Vista, CA 94571, USA
Phone: 925.755.0511
<http://www.vistaenterprisesinc.com> Fax: 925.755.0811

Weber Scientific
2732 Kuser Road
Hamilton, NJ 08691, USA
Phone: 609.584.7677
<http://www.weberscientific.com> Fax: 609.584.8388

Wiley-Blackwell
2121 State St.
Ames, IA 50014, USA
Phone: 515.292.0140
<http://www.wiley.com/go/food> Fax: 515.292.3348



AWARD NOMINATIONS

The International Association for Food Protection welcomes your nominations for our Association Awards. Nominate your colleagues for one of the Awards listed below. You do not have to be an IAFP Member to nominate a deserving professional. Nomination criteria is available at:

www.foodprotection.org

Nominations deadline is March 1, 2011

You may make multiple nominations. All nominations must be received at the IAFP office by March 1, 2011.

- ◆ Persons nominated for individual awards must be current IAFP Members. Black Pearl Award nominees must be companies employing current IAFP Members. GMA Food Safety Award and Frozen Food Foundation Research nominees do not have to be IAFP Members.
- ◆ Previous award winners are not eligible for the same award.
- ◆ Executive Board Members and Awards Selection Committee Members are not eligible for nomination.
- ◆ Presentation of awards will be during the Awards Banquet on August 3, at IAFP 2011 in Milwaukee, Wisconsin.

Contact IAFP for questions regarding nominations.

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Harold Wainess & Associates
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International Association for
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Phone: +1 800.369.6337; +1 515.276.3344
E-mail: info@foodprotection.org

Nominations will be accepted for the following Awards:

Black Pearl Award

Award Showcasing the Black Pearl
*Sponsored by Wilbur Feagan
and F&H Food Equipment Company*

Presented in recognition of a company's outstanding commitment to, and achievement in, corporate excellence in food safety and quality.

Fellow Award

Distinguished Plaque

Presented to Member(s) who have contributed to IAFP and its Affiliates with distinction over an extended period of time.

Honorary Life Membership Award

Plaque and Lifetime Membership in IAFP

Presented to Member(s) for their dedication to the high ideals and objectives of IAFP and for their service to the Association.

Harry Haverland Citation Award

Plaque and \$1,500 Honorarium
Sponsored by ConAgra Foods, Inc.

Presented to an individual for many years of dedication and devotion to the Association ideals and its objectives.

Food Safety Innovation Award

Plaque and \$2,500 Honorarium
Sponsored by Walmart

Presented to a Member or organization for creating a new idea, practice or product that has had a positive impact on food safety, thus, improving public health and the quality of life.

International Leadership Award

Plaque, \$1,500 Honorarium
and Reimbursement to attend IAFP 2011
Sponsored by Cargill, Inc.

Presented to an individual for dedication to the high ideals and objectives of IAFP and for promotion of the mission of the Association in countries outside of the United States and Canada.

GMA Food Safety Award

Plaque and \$3,000 Honorarium
Sponsored by Grocery Manufacturers Association

This Award alternates between individuals and groups or organizations. In 2011, the award will be presented to an individual in recognition of a long history of outstanding contributions to food safety research and education.

Frozen Food Foundation Freezing Research Award

Plaque and \$2,000 Honorarium
Sponsored by the Frozen Food Foundation

Presented to an individual, group or organization for pre-eminence and outstanding contributions in research that impacts food-safety attributes of freezing.

Maurice Weber Laboratorian Award

Plaque and \$1,500 Honorarium
Sponsored by Weber Scientific

Presented to an individual for outstanding contributions in the laboratory, recognizing a commitment to the development of innovative and practical analytical approaches in support of food safety.

Larry Beuchat Young Researcher Award

Plaque and \$2,000 Honorarium
Sponsored by bioMérieux, Inc.

Presented to a young researcher who has shown outstanding ability and professional promise in the early years of their career.

Sanitarian Award

Plaque and \$1,500 Honorarium
Sponsored by Ecolab Inc.

Presented to an individual for dedicated and exceptional service to the profession of Sanitarian, serving the public and the food industry.

Elmer Marth Educator Award

Plaque and \$1,500 Honorarium
Sponsored by Nelson-Jameson, Inc.

Presented to an individual for dedicated and exceptional contributions to the profession of the Educator.

Harold Barnum Industry Award

Plaque and \$1,500 Honorarium
Sponsored by Nasco International, Inc.

Presented to an individual for dedication and exceptional service to IAFP, the public, and the food industry.



NEW MEMBERS

BELGIUM

Marianne Sindic
ULG – Gembloux Agro-Bio tech
Gembloux

BRAZIL

Leonardo Annes
Biosafe Consultoria Em Seguranca
Alimentar
Rio De Janeiro

Cynthia Rubiao
Biosafe Consultoria Em Seguranca
Alimentar
Rio De Janeiro

Luiz Eduardo Rubiao
Biosafe Consultoria Em Seguranca
Alimentar
Rio De Janeiro

CANADA

Mark Klassen
Beef Information Centre
Strathmore, Alberta

Carol Zweig
TEAM Solutions
Markham, Ontario

DENMARK

Anita Forslund
University of Copenhagen
Frederiksberg, Copenhagen

FRANCE

Franck Chatigny
Ceeram
La Chapelle Sur Erdre

GERMANY

Matthew R. Luers
Kraft Foods R&D Inc.
Munich

IRELAND

Diane Geelan
Aramark
Dublin

SOUTH KOREA

Juhee Ahn
Kangwon National University
Chuncheon

UNITED STATES

CALIFORNIA

Claudia T. Hutcherson
CHS Consulting
Monrovia

Mary McCulloch
Chapman University
Newport Beach

Patrick M. Zoder
Life Technologies
Millbrae

FLORIDA

Ashley C. Miller
Temple Terrace

ILLINOIS

Nenge L. Njongmeta
Kraft Foods
Glenview

MISSISSIPPI

Susan DeBlance
Mississippi State University
Long Beach

NEW YORK

Brian D. Sauders
NY State Department of Agriculture
& Markets
Selkirk

PENNSYLVANIA

Patricia A. Borrusso
Drexel University
Philadelphia

Sauna C. Henley
Drexel University
Philadelphia

SOUTH CAROLINA

Xi Chen
Clemson University
Clemson

WISCONSIN

Kyriaki Chatzikyriakidou
University of Wisconsin
Madison

Sarah Engstrom
University of Wisconsin
Madison

Michael R. Gellerman
Land O'Lakes, Inc.
Spencer

Mandy Robinson
Cherney Microbiological Services
Denmark

NEW GOLD SUSTAINING MEMBER

Intralox, LLC
Zhinong Yan
Minneapolis, Minnesota

NEW SILVER SUSTAINING MEMBER

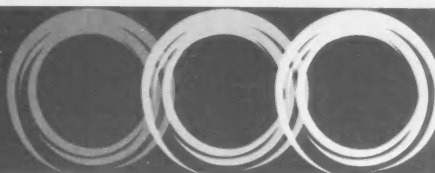
This membership was previously a Sustaining Membership

Q Laboratories, Inc.
Dave G. Goines
Riverside, California

NEW SUSTAINING MEMBER

Eurofins
Patricia Wester
Alachua, Florida

WHAT'S HAPPENING IN FOOD SAFETY



Safe Quality Food Institute Presents Awards at International Meeting

The Safe Quality Food Institute (SQFI) recognized four companies — Silliker, Inc., NSF International, Stemilt Growers and Coles Supermarkets — for their commitment to the SQF program during an award presentation at the SQF International Conference in Melbourne, Australia. SQFI is a division of the Food Marketing Institute (FMI).

"Producing safe food is a priority for all food manufacturers," said Jill Hollingsworth, group vice president of food safety programs at FMI. "Achieving SQF certification provides verification that a supplier's food safety and quality management system complies with international and domestic food safety regulations. This enables suppliers to assure their customers that food has been produced, processed, prepared and handled according to the highest possible standards, at all levels of the supply chain. We are pleased to recognize these companies for their commitment to food safety."

The honorees were selected based in part on their support of the SQF program, their ability to follow the SQF training protocol and their overall commitment to food safety. The following companies each received special recognition for their strong support for the SQF food safety certification program:

Certification Body of the Year — Silliker, Inc.

Silliker, Inc. is recognized for their strong support and growth of the SQF certification program globally. They are the largest certification body in North America and are

active on both the SQF Technical Advisory Council and Certification Body Committee. They have maintained outstanding performance in the management of their accredited SQF certification system.

"We are extremely grateful to receive this award as it reinforces our position as the number one SQF Certification Body in the U.S. and the second largest SQF Certification Body in the world," said Mike Wallace, director of Silliker Global Certification Services. "This award would not have been possible without the leadership of our global certification team and our dedicated network of auditors."

A subsidiary of Silliker Group Corp., Silliker Global CS was accredited through the Joint Accreditation System of Australia and New Zealand in 2007.

Training Center of the Year — NSF International:

NSF International, an independent public health and safety organization, has trained more than 1,000 people on how to implement and manage the SQF standard in the past 12 months. They are recognized for their strong support of the SQF training program and for their involvement in reviewing SQF training materials. They consistently receive outstanding reviews from those who attend NSF training courses.

"NSF International is proud to be recognized by the Safe Quality Food Institute for our contribution to training food safety professionals," said Robert Prevendar, director of food safety certification systems at NSF. "Ensuring an understanding of both the SQF standard and the necessary commitment to managing food safety is critical to suppliers and retailers, and it all begins with

proper training. We are honored to be recognized for this award, which complements our food safety certification and auditing expertise."

Supplier of the Year — Stemilt Growers:

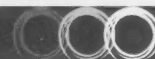
Stemilt Growers was one of the first suppliers to become SQF certified in North America. As a multi-site certified supplier for more than 12 years, Stemilt is an active member of the SQF Technical Advisory Council and the Technical Sub-Committee on Guidance Document Development. They have been long-time supporters of the SQF program.

"We are thrilled to be among the recipients of this year's SQFI awards. Food safety is vital to our success as a company," said Roger Pepperl, Stemilt marketing director. "We are proud of the work that our food safety team, led by Eva Lauve, has accomplished and look forward to continuing to ensure we deliver safe, high-quality products to markets around the world."

SQF Outstanding Achievement Award — Coles Supermarkets:

Coles is one of Australia's largest retailers and has a long-standing commitment to SQF. They have served as a resource and advocate for the SQF program with their suppliers throughout Australia.

"In 2006 when Coles relaunched our Coles Brand Supplier Approval Program utilizing third-party food safety certification, SQFI000 and SQFI2000 were two of the global standards which Coles chose to work with," said Marion Bray, supplier and product quality manager for the Coles Quality Team. "The SQF standards have provided



our suppliers with the guidance and direction needed to provide safe, quality products for our customers. Coles is proud of our association with the SQF Institute, and our program would not have achieved its current level of success without their support."

3-A SSI Announces Release of Four Major Standards Revisions

3-A Sanitary Standards, Inc. announces the release of four major revisions of key 3-A Sanitary Standards. 3-A SSI formulates sanitary standards and accepted practices for the sanitary design, fabrication, installation and cleanability of dairy and food equipment or systems used to handle, process and package consumable products where a high degree of sanitation is required.

3-A Sanitary Standard for Plate Type Heat Exchangers (Number 11-09) – This is a major five-year update of this Standard, with numerous technical changes. This standard covers the sanitary aspects of plate type heat exchangers, beginning with the inlet fittings for product(s) and for heat exchange media and ending with the outlet fittings for product(s) and for heat exchange media. This standard includes the frame and/or support components for holding the heat exchange plates and the means for manual or mechanical opening and closing of the plate pack assembly.

3-A Sanitary Standard for Scraped Surface Heat Exchangers (Number 31-06) – This standard covers the sanitary aspects of scraped surface heat exchangers for adding heat to, or removing heat from products. This standard does not pertain to freezers for ice cream, ices and similarly frozen

dairy foods, or to batch processors. This revision allows the casting of components of near net shapes using powdered metals and the layering of powder metal material as a coating. This revision introduces the allowance of Hot Isostatic Pressing, which is the application of high pressure and temperatures through the medium of a pressurizing gas (usually argon or nitrogen), during the precision casting of near net shapes of solid parts and the layering of coatings on substrates, to remove internal porosity and voids, via diffusion bonding, both at the surface and within the casting and coating. The revision also introduces High Velocity Oxyfuel Spray (HVOF), a thermal spray dry process that produces a dense non-porous metal coating from metal powder (usually of a composition inclusive of nickel, nichrome, inconel, chrome oxide and ceramics-tungsten carbide) using a fuel (usually propylene, hydrogen, propane, kerosene/oxygen) which heats the powder to a molten state during the high velocity delivery at the part to be coated using a propellant gas.

3-A Sanitary Standard for Boot Seal Type Valves (Number 55-02) – This is a major revision of a 3-A Sanitary Standard that was previously withdrawn. This 3-A Sanitary Standard covers the sanitary aspects of boot seal type valves used as components on processing equipment and pipelines that hold or convey milk, milk products, and other food products. The valve assembly includes an actuator moving a piston rod, a boot seal attached to the piston rod and supported by it, and a valve housing or body enclosing the boot seal and providing entry and exit points for the product. Product enters the boot seal type valve at the inlet connection and exits at the outlet connection.

3-A Sanitary Standard for Vacuum Breakers and Check Valves (Number 58-01) – This standard covers the sanitary aspects of vacuum breakers and check valves used on processing equipment and on equipment and lines which hold or convey milk or milk products. The technical changes this revision introduces are contained in Clause D5, which stipulates that vacuum breakers with stem seals and guide bushing recesses which are not self-draining shall be constructed so that they can be readily disassembled and are inspectable with or without the use of simple hand tools. In addition, a new Clause D5.2 was added that states where a valve stem penetrates the valve body, the stem seal may be mounted in the valve body or on the valve stem. The space outboard of the stem seal shall provide an unobstructed leak path for visual leak detection.

The latest revision includes a new provision requiring that vacuum breakers with powered actuators shall have an open space of at least 1 inch to allow inspection for leakage, between the actuator and the valve and requires powered actuators to be readily demountable from the valve and stem.

Fabricators of equipment built to a 3-A Sanitary Standard may obtain authorization from 3-A SSI to display the 3-A Symbol on conforming equipment. All 3-A Symbol holders must verify conformance to the latest revision of the standard covering their equipment in the next license renewal period.

Copies of the new standards are now available for purchase in electronic format or printed version through the 3-A SSI web site at www.3-a.org <<http://www.3-a.org/>>, see *Popular Topics*, 'Purchase Standards and Practices.'



The American Society for Microbiology Honors Carol Iversen

Carol Iversen, Ph.D., Microbiological and Molecular Analytics, Nestlé Research Centre, Lausanne, Switzerland, has been chosen by the American Society for Microbiology (ASM) to receive a 2010 ICAAC Young Investigator Award for her work re-classifying the taxonomy of *Enterobacter sakazakii*, which led to the creation of a new genus called *Cronobacter*. Sponsored by the ASM, this award recognizes an early career scientist for research excellence in microbiology and infectious diseases.

Dr. Iversen received her B.Sc. and Ph.D. from Nottingham Trent University, where she studied the emerging pathogen *Enterobacter sakazakii*. In collaboration with Patrick Druggan, Oxoid, United Kingdom, Dr. Iversen worked on the development of microbiological media to improve the detection and isolation of *E. sakazakii*. She then brought together a team of scientists from industry, academia, and government research institutes across Europe and the USA to clarify its taxonomic description. First named as a novel species in 1980 by Prof J.J. Farmer III, it was noted that these organisms displayed very heterogeneous characteristics and probably represented multiple species. In 2008 it was determined that this was indeed the case and a new genus, *Cronobacter*, was named within the *Enterobacteriaceae* family to house the six species groups identified.

In 2008, Dr. Iversen led the organization of the 1st International Conference on *Cronobacter* from January 21–23, 2009, which attracted more than 200 delegates. The conference brought together the leading *Cronobacter* researchers in academia, experts from the food industry, and regulatory professionals from around the world.

The ICAAC Young Investigator Award was presented during ASM's 50th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), September 12–15, 2010 in Boston, MA.

NSF Davis Fresh Appoints Dr. Donna Garren President and General Manager

NSF International has appointed Donna Garren, Ph.D. to president and general manager of NSF Davis Fresh, a provider of food safety audits, consulting, training and testing services for the produce industry. Dr. Garren will work closely with the NSF Davis Fresh team to verify safer, consistent produce practices utilizing NSF Davis Fresh's technical expertise.

Dr. Garren has more than 14 years of experience working in the food industry. Most recently, she served as the vice president, food safety programmes for The Consumer Goods Forum where she managed the Global Food Safety Initiative (GFSI) activities in the North American region. GFSI helps ensure confidence in the delivery of safer food to consumers, while continuing to improve food safety supply chain management.

Dr. Garren served as the vice president of health and safety regulatory affairs for the National Restaurant Association (NRA). She advised the NRA and its members on health and safety legislative and regulatory issues impacting the restaurant industry. Prior to the NRA, she spent six years as vice president of scientific and technical affairs at the United Fresh Fruit & Vegetable Association (United), a trade association committed to driving the growth and success of produce companies.

Earlier in her career, Dr. Garren was the director of research & development and product safety at Boskovich Farms, Inc. She developed

and managed the produce food safety programs in field growing and harvesting operations, packing facilities and processing facilities, and led new fresh-cut product research and development projects.

In 2005, *Produce Business Magazine* selected Dr. Garren as one of the produce industry's "40 under 40 Rising Stars." She earned a doctorate degree in food science and technology from the University of Georgia and a bachelor's degree in food science and nutrition with a minor in microbiology from Clemson University.

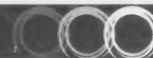
"Donna's extensive background and expertise in the produce industry is an ideal fit for the food safety initiatives at NSF Davis Fresh," said Tom Chestnut, vice president, NSF International Supply Chain Food Safety and Quality.

Dr. Elisabeth Hagen Sworn in as USDA Under Secretary for Food Safety

Secretary Tom Vilsack's sunny office overlooking the National Mall set the perfect background for Elisabeth Hagen's first moments as USDA Under Secretary for Food Safety.

Dr. Hagen is no stranger to food safety as she makes her seamless transition from USDA Chief Medical Officer at Food Safety and Inspection Service, where she played a vital role in developing and executing the agency's scientific and public health agendas.

In a statement, Secretary Vilsack said of Hagen's appointment, "There is no higher priority at USDA than ensuring that Americans have access to a safe and healthy food supply, and Dr. Hagen's background as the chief medical officer and senior executive within USDA's Food Safety and Inspection Service will enable her to successfully lead the effort to develop and execute the agency's scientific and public health agenda,



and continue to build the coordination with public health partners at federal, state, and local levels needed to achieve the objectives of President Obama's Food Safety Working Group."

Key Technology Appoints Jeff Nickerson as Product Marketing Manager

Key Technology announces the appointment of Jeff Nickerson as product marketing manager. Mr. Nickerson is responsible for marketing all of Key's product lines, which includes world-class automated inspection, specialized conveying, and product preparation systems, to support customers in international markets. His specific focus is the development of emerging opportunities in Europe, the Middle East, Africa, Australia/New Zealand, Asia Pacific, and Latin American regions.

"With his international business experience in the food processing industry and his strong engineering background, Jeff is ideally suited to help Key plan and manage marketing activities in emerging markets," noted Randy Unterseher, senior director of marketing at Key Technology. "Jeff is a valuable resource

for our customers and a terrific addition to our team."

Mr. Nickerson brings 4 years of international marketing and engineering experience in the food processing industry to his position at Key. Most recently, he was product line manager at Wright Machinery where, from his base in London, he was responsible for the Europe, Middle East, and Africa (EMEA) region. Previously, he was product line manager at PPM Technologies where he managed the EMEA region from his base in Kristanstad, Sweden.

He holds a bachelor's degree in mechanical engineering from Columbia University.

FMI Promotes Patrick J. Walsh to Senior Vice President, Industry Relations, Education and Research

Food Marketing Institute (FMI) has announced the promotion of Patrick J. Walsh to senior vice president, industry relations, education and research. He leads collaborative industry initiatives for FMI, including the FMI/GMA Trading Partner Alliance, and is responsible for the development of the FMI Private Brands Group and the Rapid Recall Exchange.

"Pat has been instrumental in developing valuable programs for our members. He has spent his entire career in the retail and fast moving consumer goods industry. His experience has proven to be a great asset as Pat has a wonderful ability to establish industry partnerships and implement new initiatives that benefit all of our members," said Leslie G. Sarasin, president and chief executive officer, FMI.

Mr. Walsh has been with FMI for 11 years. He also oversees FMI's education conferences and research studies, and supports those efforts through the FMI Associate Member Council. Previously, he was vice president of industry collaboration and education.

Prior to joining FMI, he was director of corporate electronic marketing at Safeway in Pleasanton, CA. He was responsible for launching and managing Safeway's frequent shopper program in North America. He also served in a variety of sales, marketing and product management positions during his 17-year career at Kraft Foods.

Mr. Walsh holds a BA in political science and international affairs from The George Washington University.

In Memory

*William H. Young
Buffalo, NY*

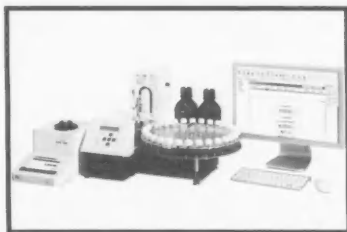
We extend our deepest sympathy to the family of William H. Young who recently passed away. IAFP will always have sincere gratitude for his contribution to the Association and the profession.

In Memory

*Joel Stangeland
White Bear Lake, MN*

We extend our deepest sympathy to the family of Joel Stangeland who recently passed away. IAFP will always have sincere gratitude for his contribution to the Association and the profession.

INDUSTRY PRODUCTS



Mettler Toledo

New Era of Density and Refractive Index Meters for the Food and Beverage Industry from Mettler Toledo

Mettler Toledo is delighted to announce the new LiquiPhysics™ Excellence instruments for density and refractive index determinations within the food and beverage industry.

The new LiquiPhysics™ Excellence density and refractometers are simple to operate and can be automated to determine pH and color simultaneously; making them the ideal tools for handling the high sample throughput requirements of the food and beverage industry.

The One Click™ user interface allows quick, simple and direct access to all routine tasks and provides clear user information utilizing shortcut buttons to start routine tasks immediately. Every operator has a personalized home screen, shortcuts and operation language. A unique product/method concept fulfills even the most demanding requirements without having to alter any settings. Measurement results are automatically converted into user-defined units such as Brix

or alcohol concentrations, while sophisticated barcode functions conveniently input sample data and automatically ensure the right measurement method is always chosen.

The highly flexible concept, with full modularity, facilitates the combination of density with refractive index, color and/or pH/conductivity measurements. This supports the simple expansion of measuring systems and simultaneous determinations of several parameters when additional needs arise, enabling the simultaneous determination of multiple parameters. Powerful sampling and automation units can completely automate measurement procedures and greatly reduce or even eliminate time-consuming cleaning procedures. A smooth and seamless LIMS/SAP integration with LabX™ PC software organizes comprehensive sample lists containing all the relevant data to entirely automate quality control.

Complete and secure traceability is only a click away with LabX™ PC software in order to easily, yet fully comply with the many regulatory demands facing the food and beverage industry. User identification and access control is performed with biometric identification via a finger print reader. Comprehensive test and error detection functions, as well as automatic adjustment verifications, add significant security ensuring the instruments always provide exact results.

Mettler Toledo

614.438.4936

Columbus, OH

www.mt.com/LiquiPhysics

DuPont Performance Polymers Introduces New Polymer Food Contact Products

DuPont Performance Polymers is launching a new family of products, designated "FG" (Food grade) that meet demanding requirements for use in food contact applications.

The materials being introduced make the DuPont offering one of the broadest portfolios of engineering plastics and thermoplastic elastomers for food contact applications. These products utilize the company's expertise and long experience in polymer science, quality, safety and regulatory compliance for the global food products market.

The DuPont Performance Polymers food grade product offering provides compliance with several regional regulations including U.S. FDA (Food and Drug Administration), European Food Contact n° 2002/72/EC and GMP (EC) n° 2023/2006 compliance.

All FG products are available globally to allow customers to have the flexibility to design and manufacture in multiple regions.

The DuPont FG portfolio consists of numerous products including DuPont™ Hytrel® TPC-ET, Delrin® POM, Zytel® HTN (High-Performance Polyamide), Crastin® PBT, Zytel® 6, 6/6 and 6/12 Nylon (Polyamide), Rynite® PET and Sorona® EP PTT.

DuPont Performance Polymers supports customers with assistance

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INDUSTRY PRODUCTS

in material selection, tool design and molding optimization. Additional specialty food grade products are being developed from its broad portfolio of performance polymers including its renewably sourced offerings as additional customer needs become evident.

"Our FG initiative brings to manufacturers the benefits of DuPont expertise in science, technology, quality, safety in manufacturing and regulatory compliance," said Bill Hassink, global segment leader, food grades – DuPont Performance Polymers. "We have a broad product portfolio that can meet a wide range of application needs, global manufacturing and supply strength, and long experience in delivering expert assistance to molders," he added.

DuPont Qualicon
416.545.0407
Wilmington, DE
www.qualicon.com

Bio-Rad Receives AOAC Approval for Detection of *Salmonella* in Pet Food and Environmental Surfaces

Bio-Rad Laboratories iQ-Check™ *Salmonella* II kit has received AOAC approval for real-time PCR detection of *Salmonella* from wet cat food, dry dog food, stainless steel, plastic, ceramic and concrete. This represents a Performance Tested MethodSM matrix extension for the iQ-Check *Salmonella* II kit, which is currently approved for raw chicken, raw beef, eggs, cantaloupe and peanut butter.

Over 23,000 tons of pet food was recalled between 2006 and 2008, according to a study conducted

by the Centers for Disease Control and Prevention (CDC). Of the 79 human patients infected with *Salmonella* as a result of contaminated pet food, 48% of them were children under the age of 2.

The performance of the iQ-Check kit was compared to the FDA Bacteriological Analytical Manual (BAM) reference method for detection of *Salmonella* from the pet food and environmental surfaces. There was no significant difference between the performance of two methods. All samples that were detected as positive by iQ-Check were confirmed by the reference method.

The method involves a single primary 20-h enrichment in buffered peptone water followed by a one-step high throughput DNA extraction in 96-well plate format. With a PCR run time of about 2 h, complete results are available in less than 24 h. Highly sensitive and specific DNA probes developed by scientists at Bio-Rad allow for accurate and rapid real-time PCR detection of *Salmonella* with no interference from common cross-reacting organisms.

Deborah McKenzie, senior director of the AOAC Research Institute, commented that "AOAC method validation brings the value of an independent third party to the evaluation process. The AOAC Research Institute, a subsidiary of AOAC INTERNATIONAL, administers the Performance Tested Methods program. Method developers like Bio-Rad, who submit methods in the AOAC Performance Tested Methods program, recognize the added value to their products

that an independent third party evaluation and the certification mark provide."

"Our extensive experience with quantitative PCR technology coupled with a deep appreciation of the challenges facing food pathogen detection come together in our iQ Check product line," says Brad Crutchfield, Bio-Rad Group vice president. He went on to say, "The result is a fast and reliable tool that allows our customers to make better decisions. It doesn't get any simpler than that."

BioRad Laboratories
800.4.BIORAD (424.6723)
Hercules, CA
www.foodscience.bio-rad.com



Torrey Pines Scientific, Inc.

Torrey Pines Scientific Compact Dry Bath is Personal Incubator/Chiller/Freezer

Torrey Pines Scientific announces its EchoTherm™ Model IC20XR, Peltier driven, compact Chilling/Heating Dry Bath.

This unit offers the broadest variety of precision-made aluminum sample blocks available anywhere.

The Model IC20XR can freeze, chill or heat samples from -10°C to 110°C in assay plates, centrifuge

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tubes of all sizes, vials, and most any size test tube.

It is particularly well suited to the molecular biology lab for doing hybridizations, sample prep for PCR, ligations, enzyme reactions and much more. It is also ideal for robotic applications where a small footprint and RS232 I/O port are required for remote control and data gathering.

The Model IC20XR has digital display and control of temperature to 1°C; count down timer in days, hours, minutes and seconds to 30 days; data logger; and RS232 interface to control the unit by computer or to record data.

The compact unit measures 6.5" (16.5 cm) wide by 8.75" (22.23 cm) deep by 3.5" (8.9 cm) tall. It comes complete with chiller/heater module, universal power supply, AC line cord, and instructions. A variety of over 25 standard sample blocks are available.

The EchoTherm™ Model IC20XR is UL, CSA and CE certified.
Torrey Pines Scientific, Inc.
760.930.9400
Carlsbad, CA
www.torreypinesscientific.com

T&D Corporation New Wireless 4 Channel Light Logger

T&D Corporation has introduced the new RTR-574, a wireless 4 channel logger that monitors illuminance, ultra-violet, temperature and humidity.

In addition to these parameters, the RTR-574 is also capable of displaying cumulative illuminance

and cumulative amount of ultraviolet light in the LCD display.

The wide Luminosity range covers 0 to 130k lx and low light resolution to 0.01 lx.

The UV range covers 0 to 30 mw/cm². Internal accumulation of exposure is for both light and UV.

The RTR-574 has a wide range from 10 to 99% relative humidity along with an expanded temperature range from 0° to +55°C.

This compact, lightweight unit is approximately 2" x 3" and operates on one AA battery.

The RTR-574 has a large data capacity which can store up to 8,000 readings times 4 channels for a total of 32,000 readings in One-Time or Endless recording mode.

This unit is compatible with any RTR-500 Series Wireless Data Collector and can be used for automatic downloading of logged data, real time monitoring and warning notifications by E-mail or text to cell phones.

TandD Corporation
518.669.9227
Saratoga Springs, NY
www.tandd.com

Thermo Fisher Scientific Simplifies UV-Vis Spectroscopy, Streamlining QA/QC Processes with Launch of Its Evolution 200 Series

Thermo Fisher Scientific, Inc., has announced the launch of its Evolution™ 200 series of next-generation UV-Visible spectrophotometers featuring new INSIGHT software with CUE (Customized User Environment) scripting capa-

bilities. The series includes three instruments which satisfy specific applications from standard quantitative analysis to research life science assays. Designed for routine QA/QC analyses in the life science, food and beverage and material science industries as well as offering fast data collection rates for kinetics measurements (up to 100 data points/s), the instruments combine high performance and straightforward software, enabling personalized operation for greater productivity.

The Thermo Scientific Evolution 200 instruments feature high quality accessories and application specific technology to meet a wide range of sampling needs. Innovative Smart accessories enable accurate, cost-effective sample handling with automated software recognition and programmable control. Adding temperature control and fiber optic accessories can increase the instrument's productivity and extend sampling options. In addition, the Evolution 220 and Evolution 260 Bio feature Application Focused Beam Geometry (AFBG) technology that tailors the instrument's optical system to specific applications for microcells, solid sampling and fiber optics. The Evolution 260 Bio includes enhanced Thermo Scientific INSIGHT life science software designed specifically for the needs of life science laboratories, offering pre-programmed assay methods for increased accuracy and convenience.

Next-generation INSIGHT software has been designed to improve the user experience by simplifying method creation and results interpretation. The software's

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INDUSTRY PRODUCTS

data browser feature allows users to preview a thumbnail of results before opening the file and to sort by workbook type, file name and date for greater convenience. In addition, the workbook format helps organize data, method and accessory options by saving them all in one place. The workbook can be reopened to continue capturing data using the same instrument configuration, with the aim to save time and improve the accuracy of results. INSIGHT software also includes CUE scripting capabilities, which enables the user to create a completely customized interface and simplified workflow. CUE works with INSIGHT to display only the most relevant information for the given application, to help improve accuracy, reproducibility and throughput in the laboratory.

The Evolution 200 series instruments are available in both local and computer controlled configurations. A locally controlled instrument with an embedded computer can be used to drive the new INSIGHT software package using touch screen technology. This easy-to-use ergonomic option allows users to perform all software functions using an embedded computer, increasing ease-of-use and saving valuable bench space while allowing sophisticated analysis and data reporting. Both local and computer controlled configurations can be run externally using the same INSIGHT software.

"We are very excited to be introducing our latest UV-Vis

platform that simplifies the UV-Vis spectroscopy technique for users performing QA/QC analyses, but who still require high performance. The advanced interface as well as next generation INSIGHT software results in more straightforward and streamlined measurements of up to 100 data points per second from a single sample," said Mike Jost, vice president and general manager of molecular spectroscopy and microanalysis for Thermo Fisher Scientific. "The Evolution 200 series was designed at our Center of Excellence for molecular spectroscopy in Madison, and further strengthens our portfolio of UV-Vis solutions ranging from entry-level through to high-end to best meet our customers' needs."

Thermo Scientific, Inc.
800.532.4752
Madison, WI
www.thermofisher.com

Eriez® Offers High Speed Cross Feeders for Packaging Lines

Eriez® offers a wide range of electromagnetic cross feeders and conveyors designed for use in packaging applications. These high speed, high deflection and high volume vibratory cross feeders and conveyors distribute product into weigh scale equipment. Feeders can be equipped with a peripheral discharge to insure the best product distribution on the radial scale cone. Models are available to deliver nearly any capacity of material.

Eriez' HS (High-Speed) and HD (High Deflection) vibratory feeders featuring low energy, AC electromagnetic drives provide superior reliability, precise cycling and low operating cost. The high deflection series is recommended when feeding lightweight, loose or sticky materials where a higher deflection (3/16") and lower frequency (30 cps) produces more accurate feed characteristics. Both HS and HD series use the same style AC drive, enabling systems to cycle up to 100 times per minute.

Eriez' VMC Series Electromagnetic Conveyors use a two-mass vibrating system also powered by electromagnetic drives. The VMC is an excellent choice when longer trays are required. Specially designed corrosion-resistant fiberglass springs amplify the stroke and are adjustable for easy fine-tuning of the conveyor's motion. They use no sliding or rotating parts that wear out, or belts and bearings that eventually will need to be replaced. A variable voltage controller allows "watch-like" precision in the control of conveyor amplitude. Units are available for base or suspension mounting.

Eriez' cross feeders can be supplied with a peripheral discharge and/or screens to eliminate fines or damaged product during packaging.

Eriez
888.300.ERIEZ (3743)
Erie, PA
www.eriez.com

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COMING EVENTS

NOVEMBER

- **30-December 3, New Zealand Association for Food Protection Annual Conference** held in conjunction with the **New Zealand Microbiological Society**. For additional information, contact Graham Fletcher at graham.fletcher@plantandfood.co.nz or go to www.nzms2010.org.nz.

DECEMBER

- **1-2, Arab Food Industries and Franchising Forum 2010**, King Hussein Bin Talal Convention Center, Dead Sea, Jordan. For more information, go to www.arabfoodevent.com.
- **9-10, 2nd Food Safety Congress**, Military Museum, Istanbul, Turkey. Organized by the Turkish Food Safety Association. For more information, go to www.ggd.org.tr.

JANUARY

- **12, Ohio Association for Food Protection Annual Meeting**, Reynoldsburg, OH. For more information, contact Gloria Swick-Brown at gloria.swick-brown@odh.ohio.gov.
- **12, SfAM Winter Meeting**, Royal Society, Carlton House Terrace, London, England. For more information, go to www.sfam.org.uk.
- **21-26, ILSI Annual Meeting 2011**, Buena Vista Palace Hotel, Lake Buena Vista, FL. For more information, go to www.ilsa.org.
- **23-26, National Mastitis Council 50th Annual Meeting**, Hyatt Regency Crystal City, Arlington, VA. For more information, go to www.nmconline.org/meetings.html.

- **26-28, International Poultry Expo**, Georgia World Congress Center, Atlanta, GA. For more information, phone 770.493.9401 or go to www.ipel1.org.

FEBRUARY

- **2-3, Ground Beef Production and Safety Workshop**, Marriott Country Club Plaza, Kansas City, MO. For more information, go to www.meatami.com/education.
- **8-10, Food and Beverage Test Expo 2011**, Cologne, Germany. For more information, go to www.food-testexpo.com.
- **16-18, Global Food Safety Conference**, London, UK. For more information, go to www.tcgffood-safety.com.
- **19-23, AFFI Frozen Food Convention**, Hyatt Regency, San Francisco, CA. For more information, go to www.affi.com.
- **20-22, 2011 Annual Meat Conference**, Hyatt Regency Dallas, Dallas, TX. For more information, go to www.meatconference.com.
- **27-March 2, 6th Dubai International Food Safety Conference**, Dubai. For more information, go to foodsafetydubai.com.

MARCH

- **1-2, 9th Annual World Food Technology and Innovation**, Brussels, Belgium. For more information, go to www.foodinnovation.com.
- **2-4, 2011 Beef Industry Safety Summit**, Dallas, TX. For more information, go to www.bifsc.org.
- **14-17, Dairy Technology Workshop**, Birmingham, AL. For more information, contact Randolph Associates, Inc. at 205.595.6455, ext. 224.

APRIL

- **7-8, IAFP Microbial Challenge Testing for Foods Workshop**, Embassy Suites O'Hare, Chicago, IL. For more information, go to www.foodprotection.org.
- **10-13, 2nd ICC Latino-American Conference 2011**, Santiago de Chile, Chile. For more information, go to www.icc.or.at.
- **13-16, AMI International Meat, Poultry & Seafood Industry Convention, & Expo**, McCormick Place, Chicago, IL. For more information, go to www.amiexpo.com.
- **19-21, 13th Annual Food Safety Summit**, Washington, D.C. Convention Center, Washington, D.C. For more information, go to www.foodsafetysummit.com.
- **24-26, ADPI/ABI Annual Conference**, Chicago Marriott Downtown, Chicago, IL. For more information, go to www.adpi.org.
- **28-May 4, National Conference on Interstate Milk Shipments Conference**, Sheraton Baltimore City Center, Baltimore, MD. For more information, contact Marlena Bordson at 217.762.2656 or E-mail: ncims.bordson@gmail.com.

MAY

- **11-12, Pennsylvania Association of Milk, Food and Environmental Sanitarians 72nd Annual Conference**, Nittany Lion Inn, State College, PA. For more information, contact Kara Krall at kmk193@psu.edu.
- **16-20, 3-A Annual Meeting**, Wyndham Milwaukee Airport Hotel, Milwaukee, WI. For more information, call 800.558.3862 or go to www.3-a.org.

(Continued on next page)

COMING EVENTS

- **18–20, IAFP's Seventh European Symposium**, The Reehorst, Ede, The Netherlands. For more information, go to www.foodprotection.org.
- **22–26, iCEF 11, International Congress on Engineering and Food Conference**, Athens, Greece. For more information, go to www.icef11.org.

JUNE

- **5–8, 2011 Association of Public Health Laboratories (APHL) Annual Meeting and Fifth State Environmental Laboratory Conference**, Omaha, NE. For more information, contact Terry Reamer at terry.reamer@aphl.org or go to www.aphl.org.

- **18–22, 2011 Association of Food and Drug Officials (AFDO) Annual Educational Conference**, Marriott Dallas/Plano at the Legacy Town Center, Plano, TX. For more information, go to www.afdo.org.
- **26–30, 4th Congress of European Microbiologists**, Geneva, Switzerland. For more information, go to www2.kenes.com/fems2011/Pages/Home.aspx.

In Memory

Michael A. Grant
Bothell, WA

We extend our deepest sympathy to the family of Michael A. Grant who recently passed away. IAFP will always have sincere gratitude for his contribution to the Association and the profession.

IAFP UPCOMING MEETINGS

JULY 31–AUGUST 3, 2011
Milwaukee, Wisconsin

JULY 22–25, 2012
Providence, Rhode Island

JULY 28–31, 2013
Charlotte, North Carolina

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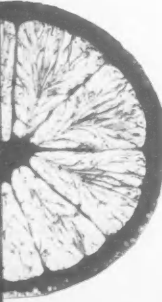
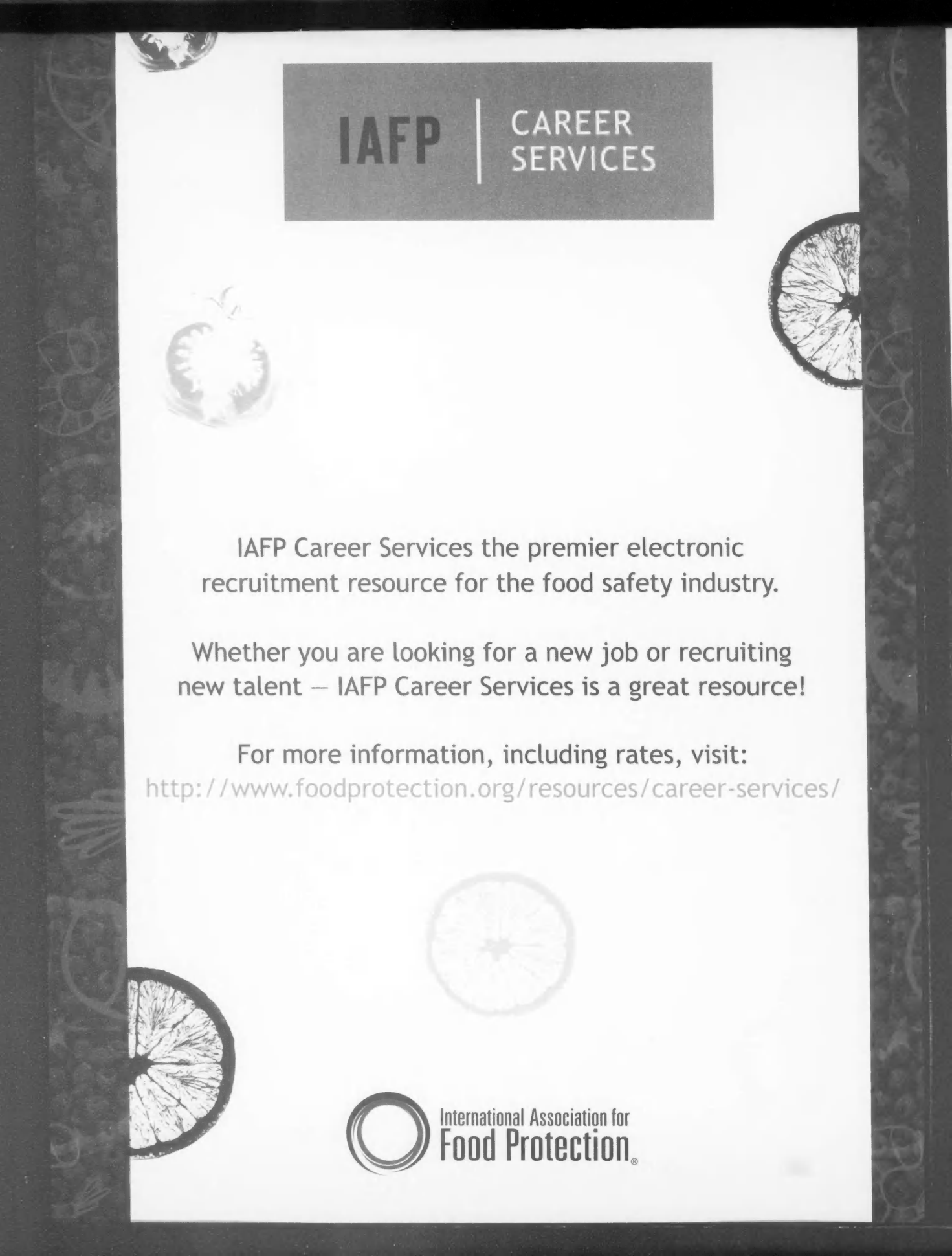
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