

## **Microbial Modelling and Risk Analysis PDG**

**Members Present:** Yuhuan Chen (Chair), Alejandro Amezcuita, Michael Batz, Peter Ben Embarek, Ray Collins, Paw Dalgaard, Francisco Gaerces Vega, Leon Gorris, Miao Guo, Arie Havelaar, Erin Headley, Shigenobu Koseki, Deon Mahoney, Clare Narrod, Maarten Nauta, Hao Pang, Fernando perez-Rodriguez, Abani Pradhan, Sofia Santillana Farakos, Panagiotis Skandamis, Erdal Tuncan, Jane Van Doren, Elizabeth Williams and Marcel Zwietering.

**Board/Staff Members Present:** Mickey Parish.

**New Members:** Matthew Bailey, Jagpinder Brar, Bill Centrella, Ammar Chinwalla, Alejandro Echeverry, Vinayak Ghate, Sandra Hoffmann, Yasu Komoto, Ivan Leguerinel, Tong Liu, Beatriz Mazon, Bryan Oliveros, Omar Oyarzabal, Florence Postollec, Weilin Shelver, Maria Elena Tanabe, Zeynal Topalcengiz, Clement Trunet, Yangyang Wang, Yeru Wang and Aixia Xu.

**Visitors/Guests:** Brita Ball, Tammy Barnaba, Erdogan Ceylan, Matthias Filter, Jayanthi Gangiredla, Lorna Graham, Dave Horowitz, Joneth Luna, Russ McMinn, Jen Patro, Padmini Ramachandran, Lu Ran, Carmen Tartera, Weimin Wang and Ben Warren.

**Meeting Called to Order:** 9:01 a.m., Sunday, August 3, 2014.

**Recording Secretary of Minutes:** Marcel Zwietering (with help from Yuhuan Chen and Alejandro Amezcuita).

Chair Yuhuan Chen, taking over from Alejandro Amezcuita, welcomed attendees, followed by self-introductions for all PDG members and visitors. Yuhuan reviewed the meeting agenda and asked if there were any additional items; there were none suggested.

### **Old Business:**

**Minutes.** Minutes from the 2013 meeting were tabled for comments or edits. There were no edits. Motion to adopt the minutes by Alejandro, seconded by Keith Ito. Minutes adopted.

**Webinars.** Alejandro gave a brief re-cap on the 6 webinars held in the last three years. (see list in Appendix I). Alejandro and Yuhuan thanked all the speakers for contributing to the PDG. It was mentioned that webinars are a good way to show benefit of being a member. They are available to IAFP members at: <https://www.foodprotection.org/events/webinars/>.

**MMRA PDG Highlight Article in *FPT*.** The article will be published in the *Food Protection Trends* Sept/Oct issue. People who did not see *FPT* yet are encouraged to look it up.

### **New Business:**

THANK YOU to past chair and election of new vice-chair. Yuhuan Chen and the PDG members thanked past chair Alejandro for his outstanding leadership and for the many accomplishments of the PDG achieved under his leadership, not only illustrated in the symposia and webinars but also the networking and collaborations among PDG members, and collaborations with other PDGs. Some of the accomplishments will be highlighted in the upcoming *FPT* article. To show the impacts from Alejandro's leadership, Yuhuan also cited a message from David Tharp: "You and the Microbial Modelling & Risk Analysis PDG Team have done an outstanding job ... You are an example of what can be done in IAFP's PDG structure to keep communication channels open between your Members throughout the year. Thank you for your leadership."

Yuhuan called for nominations for vice chair. One nomination was received -- Marcel Zwietering. There was overwhelming support for Marcel. The PDG proposed to appoint Marcel as vice chair.

**Guest speaker:** Dr. Regis Pouillot – US FDA gave a very well structured informative presentation on “Quantitative Microbial Risk Assessment: What could we do better to tackle key challenges in modeling?”

Three main points have been presented as being crucial:

- better consideration of rare events
- better consideration of variability and uncertainty
- better transparency and quality check.

After the presentation the following remarks were made. Arie Havelaar mentioned that EFSA is working on an overall approach of uncertainty in analysis of risks in food (including tox), and soon there will be a call for public comments. Bob Buchanan mentioned that there is still a lot of confusion on variability and uncertainty. Often mixed up by risk managers (if at all understood) but also assessors. A second point is the difficulty of working with rare events of rare events. A third point is that often there are in MC not enough iteration, guidance on how many iteration might be useful. Concerning the last point Regis mentioned that indeed many iterations are needed, which is less of a problem nowadays, but in certain cases it is also not totally needed, by sometimes just using good math, much better certainty and insight can be obtained.

**Greetings/Comments from Executive Board:** Mickey Parish thanked members for their involvement and contribution to the PDG. IAFP is doing well. There are 4 new affiliates and a new PDG proposed. He also provided data to show increased attendance and exhibit booths at the annual meeting. Last year we had 2,822 participants, this year again higher. Last year 187 booths, increased now to 224. We have now 3,900 members (30% increases in last 8 years). Due to the increases in participants for the next year, meeting will start a day earlier (for one year). International symposia are organized in Middle East (Dubai), Europe, Taipei, and Brazil.

- IAFP’s Latin American Symposium on Food Safety October 12-15, 2014 Iguazu Falls, Brazil.
- China International Food Safety and Quality Conference and Exhibition (11/05/2014 - 11/06/2014).
- Dubai International Food Safety Conference and Exhibition (11/09/2014 - 11/11/2014).

As last point he indicated that the Board would prefer to have in the minutes as a symposia list, one clearly identified list and then text.

**Updates from the ICPMF Committee:** Marcel Zwietering (as being the chair of the International *Committee* on Predictive Microbiology of Food) explained the committee that was founded 12-9-2011 in Dublin (ICPMF-7, the 7th International Conference on Predictive Microbiology of Food). The mission is “to catalyse the development of predictive modelling in foods, primarily through advancing the success and sustainability of the biannual ICPMF-conferences.” The next conference will be in Rio de Janeiro in September 2015.

### **Symposia/Workshops/Roundtables – Ideas for 2015**

1. Arie Havelaar (RIVM): *Symposium on output of global burden of food borne disease estimates* (FERG, WHO).

2. Florence Postollec (ADRIA): *Symposium on the new ISO working group on designing challenge tests (growth and survival) with the use of predictive microbiology.*
3. Jane van Doren (FDA): *Symposium: How to do risk assessment under a lot of uncertainty.*
4. Bob Buchanan: (Univ of Maryland): *Celebrate 20 years of WTO and the role of risk analysis.*
5. Yuhuan Chen (FDA): *Produce-related risk assessment.*
6. Ben Warren (vice-chair of HACCP PDG): *Towards more quantitative HACCP systems.*
7. Yuhuan Chen (FDA) – *Workshop on tools for risk assessment (FDA-iRISK).*
8. Dennis Seman (Kraft) *Symposium on how to make practical examples of use of models in industry.*
9. Peter Ben Embarek (WHO): *Roundtable on major risk assessments developed in the last 20 years – how have they been used and lessons learned* (suggested after the PDG meeting).

Helps if the proposal is sponsored by the PDG, and supported by other PDGs. Yuhuan reminded all that the proposals are due by October 14, 2014.

#### **Elaboration on ideas for Symposia:**

1. Arie Havelaar (RIVM) – output of global burden of foodborne disease estimates (FERG).  
By May 2015, WHO will publish report and a series of paper in a PLoS journal. Dedicated symposium in The Hague. Ultimate metric: DALY.
2. Florence Postollec (ADRIA) – ISO working group (No 19) on challenge testing. Challenge test for growth & now also to assess survival. Predictive modelling is part of the guideline. Build on the IAFP Europe 2014 symposium on microbial inactivation modelling. Present guidelines. Potential also to do a webinar on this topic.
3. Jane Van Doren (FDA) – How to do risk assessment under a lot of uncertainty. Use case studies such as virus risk assessment (NoV in shellfish) and parasite risk assessment.
4. Bob Buchanan (Univ of Maryland) – Celebrate 20 Years of WTO.  
The role of Risk Analysis in the SPS Agreement. Speaker from WTO ideal (potentially to invite him/ her as Ivan Parkin lecture, focusing of the accomplishments of WTO). Yuhuan indicated that the International Food Protection Issues PDG are interested in collaborating with the MMRA PDG to form a small working group to identify themes/topics and further develop a symposium proposal around the progress made and challenges in the use of risk analysis in food safety in areas such as standard setting and trade. Connect with International Food Protection Issues PDG.
5. Yuhuan Chen (FDA) – Produce-related risk assessment. Microbial risks in fruits and vegetables. In the context of FSMA. Connect with Fruit & Vegetable Safety & Quality PDG.
6. Ben Warren (vice-chair of HACCP PDG) – towards more quantitative HACCP systems.  
Connect with HACCP PDG.

7. Yuhuan Chen (FDA) – Workshop on tools for risk assessment (FDA-iRISK). Hands-on exercises understanding real needs from industry and evaluating how iRISK can be used to answer questions.  
 Bob Buchanan’s comment: better to go for a symposium that this is a viable approach for the determination of equivalence. This will help ‘convince’ industry and government to use this tool for determination of equivalence, particularly when it is between 2 countries. This is one of the benefits of risk analysis. But if you propose a workshop, you need to ‘sell’ it that this is a viable approach. Framework of equivalence is a risk management / policy topic.  
 Mike Batz’s comment: maybe the discussion around risk assessment role in determination of equivalence would be a good topic for a roundtable. If it is just a training session on iRISK, then fine. I would not frame the workshop around equivalence.  
 Yuhuan Chen’s comment: the proposed workshop would focus on risk assessment but not risk management or policy aspect of equivalent. It would focus a better understanding of how it can provide an accessible methodology to establish a baseline, and to compare different control measures and alternatives based on risk estimates and a common metric.  
 Connect with HACCP PDG & Fruit/Vegetable PDG. Bob Buchanan’s comment: also of interest to the Food Law PDG and International PDG.
8. Denis Seman (Kraft) – How to make models useful for industry. Useful microbial modelling, practical examples. Industry should not disregard models at once because they don’t work. Paw Dalgaard’s comment: this is a good suggestion. One of the big limitations is that the range of environmental parameters is too limited. Secondly we don’t characterize enough the food. This is an important boundary. Some models are not used to their full potential because we don’t know enough about the food. Also explore other options Webinar? White Paper? Short symposium? Alejandro Amezcua (Unilever) interested to work with Denis/Paw on this.

**Ideas for webinars topics 2014-2015:**

Webinar: Leon Gorris mentions that the idea of a webinar on FSO metrics / case study is still planned: Lisa Gkogka and Leon Gorris. We will reach out to the HACCP PDG potentially interested in co-sponsoring.

**IAFP 2014** – Yuhuan provided a brief review of a list of selected Symposia and Technical Sessions of note – a few of the symposia/round tables were organized by members of the PDG and/or were developed from ideas proposed at the 2013 meeting, e.g., S4, S5, RT2, S26 and S35, organized in collaboration with several other PDGs. Also of note, this year the Silliker Lecture is on the topic of “Bringing Science-based Risk Analysis to Practice to Further Improve Food Safety.”

**Other Business:** None.

**Recommendations to the Executive Board:**

1. Recommend to the Board that Marcel Zwietering be the Vice Chair.
2. Recommend to the Board that the MMRA PDG mission statement be revised as follows:

*To facilitate communication on the topics of predictive modelling (PM) and microbial risk analysis (MRA), encourage research and data reporting methods to support PM and MRA, and promote their applications and use.*

**Next Meeting Date:** July 25, 2015 Portland, Oregon.

**Meeting Adjourned:** 10:58 a.m.

**Chairperson Name:** Yuhuan Chen.

## **Appendix I.**

### **Webinars**

Re-cap and feedback on webinars held in 2012-2014.

- i. Quantitative Assessment of the Microbial Risk of Leafy Greens from Farm to Consumption (Dr. Don Schaffner – Rutgers University, USA) 17 January 2012
- ii. ComBase  
(Dr. Jozsef Baranyi – Institute of Food Research, UK)  
18 April 2012
- iii. Distributions of Microorganisms and Their Impact on Food Safety  
(Dr. Marcel Zwietering – Wageningen University, Netherlands)  
31 January 2013
- iv. Risk-based Microbiological Criteria for Campylobacter  
(Dr. Maarten Nauta – Technical University of Denmark)  
29 May 2013
- v. How Do We Move to Risk-based HACCP?  
(Dr. Bob Buchanan – University of Maryland, USA) 12 December 2013
- vi. Towards Harmonization of Food Safety Risk Modelling and Its Resources  
(Dr. Maarten Nauta – Technical University of Denmark and Mr. Matthias Filter – Federal Institute of Risk Assessment BfR, Germany)  
28 May 2014