

Advanced Molecular Analytics PDG Meeting 2016

Attendees: Leen Baert, Christoph Bahrtdt, Jianfa Bai, Jing Bai, Pratik Banerjee, Junia Beaubrun, Scott Benko, Reginald Bennett, Jim Bono, Eva Borjas Orellana, Mick Bosilevac, David Buckley, Frank Burns, Brigitte Cadieux, William Centrella, Wonhee Cha, Patrice Chablain, Hediye Cinar, Anna Colavecchio, Peter Cook, Phil Coombs, Manoj Dadlani, Atin Datta, Henk Den Bakker, Xiangyu Deng, Francisco Diez, Catherine Donnelly, Edward Dudley, Christophe Dufour, Randolph Duverna, Ruth Eden, Tom Edlind, Patrick Fach, Willis Fedio, Postollec Florence, Elise Forward, Tong-Jen Fu, Ted Gatesy, Jessica Gavell, Solomon Gebru, Foivos Genigiorgis, Jose Gil, Larry Goodridge, Gopal Gopinath, Nur Hasan, Yingshu He, Joe Heinzelmann, Sunee Himathongkham, Kirsten Hirneisen, Maria Hoffmann, Jani Holopainen, Abigail Horn, Edan Hosking, Virginia Hughey, Timothy Jackson, Bala Jagadeesan, Dawanna James-Holly, Karen Jinneman, Jessica Jones, Carlos Juarez, Katrin Juling, Mikko Kauppinen, Yasu Komoto, Michael Kulka, Keith Lampel, Judy Lee, Panagiotis Lekkas, Susan Leonard, Carlos Leon-Velarde, Ye Li, Marie Limoges, Hsu-Yang Lin, Pushpinder Litt, Gabriela Lopez Velasco, Amanda Manolis, Craig Manthe, Matthew Markiewicz, Doug Marshall, David Melka, Jesse Miller, Nathan Mirdamadi, Naim Montazeri, Maria Morales, Paul Morin, Jean-Francois Mouscadet, Latha Murugesan, Chad Nelson, Xiangwu Nou, Taylor Oberg, Folarin Oguntoyinbo, Palmer Orlandi, George Paoli, Salina Parveen, Monica Pava-Ripoll, Alma Perez-Mendez, Sophie Pierre, Karen Pietrzen, Sohaib Qureshi, Sarita Raengpradub, David Rasmussen, Angela Ruple, Jon Ryan, Kristin Schill, Jean Schoeni, Pallavi Singh, Gregory Siragusa, Matthew Stasiewicz, Eric Stevens, Diana Stewart, Ke Sui, Irshad Sulaiman, Ben Tall, Siddhartha Thakur, Anna Theil-Gangl, Melody Thompson, Chun Wang, Luxin Wang, Lingzi Xiaoli, Edith Zambrana, Ruben Zapata, Victor Zesiger, Lei Zhang, and Joseph Zindulis. **Number of Attendees:** 123

Meeting Called to Order: 9:00 a.m., Sunday, July 31, 2016 by PDG Chair Greg Siragusa (Eurofins Microbiology Laboratories) who introduced himself and Vice Chair, Palmer Orlandi (FDA).

Minutes Recording Secretary: George Paoli.

Dr. Siragusa requested PDG members sign-in (or be scanned) and non-PDG members to sign-in and register as a PDG member via the IAFP Web site. He also provided a handout of PDG-related symposia of interest at this year's meeting. Symposia of interest at this meeting will be discussed in this meeting; Due October 4, 2016. He asked attendees to consider symposia for next year's meeting, considering other PDGs that might have common interests; this topic would be open for discussion later in the meeting.

- Dr. Ed Dudley (Penn State) made a 15-minute presentation entitled “*Nomenclature Primer for Genomics/Microbiomics*” summarizing NGS technologies, the basics of NGS bioinformatic pipelines, data archiving sites, and a clarification of some debated nomenclature for describing microbial communities.
- A series of short (5–10 minute) presentations was made to provide attendees an overview of the current “state-of-the-science” of NGS:
- Henk Den-Bakker (Texas Tech) *WGS New Developments Data Analysis/Sequence Platforms*.
- Maria Hoffman/Eric Stevens, (FDA) *Recent Breakthroughs in WGS at the FDA*.
- Jesse Miller (NSF International) *Advances in Aptamer for Diagnostics*
- Nur Hassan (CosmosID) *WGS Data Pipelines*.
- Amanda Manolis (ThermoFisher) *PCR and WGS Technology Advancements for Food Safety*.
- Introductions of students attending the PDG
- Peter Cook (Grad Student, Texas Tech, Nightingale lab), *Genetic/Transcriptomic Characterization of Listeria monocytogenes from Food Processing Environments*.
- Panagiotis Lekkas (Post-Doc, UVM, Donnelly Lab, P1-08, P2-141), *Cheese Microbiome and Detection of Lm*.
- Abigail Horn (MIT, Finkelstein Lab, T3-08), *Contaminations of the Food Supply Chain, Rapid Targeting of Sources with Modern Data Analysis*.
- Palmer Orlandi, provided the *FDA Perspectives on Regulatory Aspects Genomic Applications*.
- Tim Jackson (Nestle; IAFP Executive Board) made a short presentation on behalf of IAFP discussing IAFP 2016 attendance, IAFP membership and recent decline in members from Mexico and Canada, symposia for next year’s meeting, webinars, and IAFP awards.
- Ruth Eden asked members to join and act as subject matter experts for *ask-bioexpert.com*.
- **Discussion: Ideas, Concepts and New Business**
- Symposia, Roundtable, Workshop Ideas for Proposals for IAFP 2017; due October 4, 2016.
- NGS bioinformatics training at IAFP 2017 or year-round training courses.
- Greg Siragusa asked by show of hands how many people in the room were bench scientists actively collecting and using NGS data – approximately 20 people raised their hands.
- Forming and selecting a team of traveling lecturers to visit branch meeting and deliver lectures on important and vital topics. Call it the *IAFP Foundation Distinguished Speakers* (similar to *ASM Foundation Distinguished Speakers*).

- Student Involvement in our PDG (a PDG presence at the student luncheon would be a place to start).
- By show of hands – approximately a dozen attendees were potentially looking for employees with PDG-focused skillsets. Greg Siragusa asked how this PDG might help – no discussion on topic.
- Melody Thompson (Cargill) provided an industry perspective and opening a discussion on the best ways for industry to implement NGS technologies and use NGS data. The topic focused on regulatory issues, how the data will be used, data sharing, and associated legal issues. When asked by show of hands, approximately six people in attendance were currently collecting and using NGS in production and processing. Greg Siragusa suggested a conversation with Bill Marler on his perspective on what a sequence alone (in the absence of an isolate) would mean in foods.
- This discussion led to the suggestion of a symposium on the topic (i.e., industry perspective, legal and regulatory issues surrounding collection, use and sharing of NGS data).
- The topic of a side-by-side comparison of proficiency testing of PFGE and GeneTrakr. This could help push the labs toward sequencing methods. The topic of genomic methods in the BAM was mentioned
- Greg Siragusa brought up the topic of detection of DNA from dead or non-viable organisms, particularly with regard to zero-tolerance organisms. A discussion from Pratik Banerjee and others centered around the use of gene expression data (RNA Seq) and DNA sequencing data to confirm the presence of a live organisms, as well risk assessment variables with finding DNA from a dead or non-viable organisms.
- Questions and items discussed from the membership:
 - IAFFP Foundational speaker program (similar to ASM Distinguished Speakers).
 - Industry perspective on collection, application and sharing of NGS data.
 - Proficiency testing for FDA GenomeTrakr (side-by-side comparison with PFGE).

Next Meeting Date: July 31, 2017, Tampa, Florida.

Meeting Adjourned: 11:00 a.m.

Chairperson: Greg Siragusa.