

Microbial Modelling and Risk Analysis PDG

Attendees: Shirin Abd, Maria Albarracin, Ruby Apilado, Elba Arias Rios, Todd Badgley, David Baker, Michael Batz, Thomas Bell, Elizabeth Beshearse, Wafa Birbari, Richard Brouillette, Robert Buchanan, Rick Carpenter, Joanna Carroll, Yuhan Chen, Zhao Chen, Anne Chi, Sung Min Cho, Soo Hyun Chung, Pam Coleman, Jessica Cooper, Ashley Cunningham, Atin Datta, Kelly Dawson, Heidi Den Besten, Nancy Dobmeier, Darrell Donahue, Denise DuFresne, Steven Duret, Sanjit Fernandes, Carrie Ferstl, Matthias Filter, Florence Postollec, Kyle Ganz, Francisco Garces-Vega, Solomon Gebru, Foivos Genigiorgis, Leon Gorris, Dong Han, Emma Hartnett, Arie Havelaar, Erin Headley, Ian Hildebrandt, Lihan Huang, Andy Hwang, Keith Ito, Jin Woong Jeong, Wen-Tsai Ji, Don Jones, Bianca Juarez, Jae Woo Kang, Susanne Keller, Nicolas Korsak, Shigenobu Koseki, Bala Kottapalli, Barbara Kowalczyk, Kunihiro Kubota, Elisabetta Lambertini, Dung Le, Kyu Ri Lee, Panagiotis Lekkas, Fritz Lembke, Min Li, Scott Li, Jiang Liang, Pichamon Limcharoenchat, Pushpinder Litt, Lisa Lucore, David Luedeke, Deon Mahoney, Bradley Marks, Conor McCrauran, Sherri McGarry, Joseph Meyer, Paul Morin, Maarten Nauta, Desriac Noemie, Cian O'Mahony, Mickey Parish, Suresh Pillai, John Porter, Florence Postollec, Abani Pradhan, Tian Ren, Tanya Roberts, Oscar Rodriguez-Gonzalez, Muhammad Khalid Saeed, Paula Safko, Sofia Santillana-Farakos, Don Schaffner, Chris Seeber, Dennis Seman, Arlette Shazer, Shelendra Singh, Panagiotis Skandamis, Philip Steinbrunner, Carolyn Steiner, Diana Stewart, Quincy Suehr, Haixia Sui, Irshad Sulaiman, Abdullatif Tay, Antonio Valero, Jane Van Doren, Mariana Villarreal-Silva, Xinyao Wei, Richard Whiting, Edith Wilkin, May Yeow, Lei Zhang, Jiaojie Zheng, Claire Zoellner, and Marcel Zwietering. **Number of Attendees:** 113

Meeting Called to Order: 9:00 a.m., Sunday July 31, 2016.

Minutes Recording Secretary: Bala Kottapalli (with help from Yuhuan Chen and Marcel Zwietering).

Chair Marcel Zwietering, taking over from Yuhuan Chen, welcomed attendees, followed by self-introductions for all PDG members and visitors. Marcel reviewed the meeting agenda.

Comments from Executive Board: Mickey Parish indicated that this PDG is very active, both in symposia as well as in webinars. Also the whole IAFP community is doing well. This year, we are averaging around 4,100 IAFP members, 3,300–3,400 are expected at the end of the meeting, with 175 exhibitors. Both the number of participants and exhibitors have increased compared to last year. He also mentioned that future symposium presentations are strictly limited to 30-minute presentations. He requested to continue submit proposals (deadline of October 4th, 2016).

Furthermore, he requested to nominate eligible candidates for IAFF awards. This year marks the first time to register participants through scanning of badges. New members to the PDG are automatically enrolled through the scanning of the badges. *[Editor's Note: new members are not automatically enrolled. Members should join a PDG through the IAFF Web site by updating the Professional Info tab in their Member profile.]*

Minutes from the 2015 meeting were tabled for comments or edits. There were no edits. Motion to adopt the minutes by Yuhuan Chen, seconded by Leon Gorris and Thomas Bell. Minutes adopted.

New Business:

- Thank you to past Chair and election of new Vice Chair: Marcel Zwietering and the PDG members thanked past chair Yuhuan Chen for her outstanding leadership and for the many accomplishments of the PDG achieved under her leadership, not only illustrated in the symposia and webinars but also the networking and collaborations among PDG members, and collaborations with other PDGs. To show the impacts from Yuhuan's leadership, Marcel mentioned "Yuhuan is a most friendly person, always smiling and socializing, but at the same time a perfect organizer and networker. It can only get worse; I should not have taken the job!" Marcel also quoted a message from Alejandro Amezcuita (Past Chair): "It's been a pleasure to have served in the leadership of the MMRA PDG. As a strong advocate of predictive modelling and risk-based approaches applied to food safety, I feel proud to see how this PDG continues to grow from strength to strength, with excellent outputs, and keeping a global community of members and other interested professionals engaged. This would not have been possible without the commitment of the energetic colleagues who worked with me in the leadership for the past couple of years. Therefore, I want to thank Yuhuan for her outstanding role as PDG Chair in 2015–2016, and I wish Marcel and Bala success for the next year. The PDG is in excellent hands. Thanks."
- Yuhuan thanked everyone for supporting her and also mentioned the following: "Thank you so much, MMRA. It's great to chair the committee. I want to thank everyone for your support. It was terrific to work with Alejandro Amezcuita, immediate Past Chair, and with Marcel in the PDG leadership. I have very much enjoyed working with Alejandro and Marcel, and with all of you. As a forum for MMRA, one thing that stood out is the quality of the symposia, workshops and webinars the committee helps organizing – more than 10 proposals every year and acceptance rate is very high– 80%. The committee is amazing. Now that the torch is passed to

Marcel and we welcome a new Vice Chair, I think Alejandro put it very well – the committee is in good hands for much more success in the years ahead. Thank you so much!”

- Bala Kottapalli was introduced as a new Vice Chair to the PDG group. Marcel explained the selection process for new Vice Chair. This included multiple nominations from PDG members and elections through a voting process. Marcel indicated that this type of selection process will be adopted for future selection of Vice Chair(s); hence nominations are welcome. Nominations are welcome from different regions and affiliations (industry, government, academia etc.).

Guest Speaker: Matthias Filter is senior research scientist in the unit “Food Technologies, Supply Chains and Food Defense” at the Federal Institute for Risk Assessment (BfR), Germany.

Matthias coordinated several software development and modeling activities within the BfR. In several national and international research projects, Matthias promoted the idea of standardized information exchange as the basis for harmonization, transparency and knowledge generation.

Mathias presented the following topic, “Update from RA Software/Data Exchange Workgroup – Available Resources and Current Developments.” The purpose of this software was to support risk assessors with mathematical models and model-based software tools. He described a four-step process (Step 1: Model Exchange Formats, Step 2: Rules for Model Annotation, Step 3: Community Contributions and Step 4: Food Safety Knowledge Bases) that is required to generate food safety knowledge bases. He provided an overview about the current progress on the development of software and also harmonization to facilitate exchange of mathematical models. He concluded his presentation by indicating that the vision of “sharing models and modules” is achievable and more joint efforts are required in this area to fulfill the vision.

Following the presentation, there was some discussion on the following points:

- When integrating different models validation of the individual models as well as the integrated model is necessary, how would the software achieve this?
 - QC of models should be done before uploading to the repository. There should be an editorial board reviewing the QC of the uploaded models.
- Is it a server-based software?
 - It is a desktop software.
- How do you address propagation of errors?

- While this item was not on the priority list of the development of software, one suggestion to address the propagation of errors is to have an idea of uncertainty/variability of the models as well as sufficient documentation across different models which will help risk assessors to make knowledge based food safety decisions.

Update from the ICPMF Committee: Marcel Zwietering (as being the Past Chair of the International Committee on Predictive Microbiology of Food) gave an update. The next conference, ICPMF10, will be in Cordoba, Spain on September 26–29, 2017. Since 2015 ICPMF became a subcommittee of the ICFMH (International Committee on Food Microbiology and Hygiene of the IUMS). Also, good relationships and cooperation with the IAFP are continued.

Symposia/Workshops/Roundtables – Overview 2016

A total of 11 proposals were submitted by the members of PDG which the MMRA PDG sponsored or co-sponsored. Nine out of 11 were accepted. This allows us to continue to submit good quality proposals in the area of MMRA and also continue to collaborate with other PDGs. Especially making good links is very well appreciated, and very much feasible in our group, symbiosis between legal, industry and academia, on the one hand, and on the other hand between mathematics, statistics, informatics, microbiology, and product specific knowledge.

Symposia/Workshops/Roundtables – Ideas for 2017 – Proposals Due October 4, 2016

- A software fair for MMRA tools (Roundtable, ICPMF, Fanny Tenenhaus).
- Modeling pathogens in low-water activity foods (Symposium, Sofia Santillana-Farakos, low a_w PDG).
- Fresh Produce Chain (on farm, processing and retail) Risk Assessment (Symposium/Webinar: possibly working with ILSI Europe/US, Yuhuan Chen, Marcel Zwietering).
- WGS/Metagenomics focusing on how it can be implemented in risk assessments, specifically in epidemiology, exposure assessment, hazard characterization (Symposium/Webinar: ILSI Europe, Marcel Zwietering).
- Risk ranking of food safety hazards under low resources situations (Symposium: Barbara Kowalcyk).
- Risk assessments on soil amendments (Symposium: Barbara Kowalcyk).
- Data uncertainty issues and how to use expert elicitation to fill data gaps (Symposium: Arie Havelaar).
- Modelling kinetics (Webinar: Lihan Huang.)

- Water standards for food safety (Symposium: Elizabetta Lambertini).
- Validation under FSMA and the use of MMRA tools to inform this process, also under unexpected conditions (i.e., power outages, flooding) (Symposium/Roundtable: Erin Headley, Joseph Meyer, Dennis Seaman).
- Risk assessment for microbial/food chemicals/chemical hazards/allergens: Similarities and differences, also consider risk-risk, risk-benefit (Symposium: Cian O'Mahony).
- New insights and risk assessments related to *Listeria monocytogenes* in Blue Bell Ice cream outbreak: Misconceptions about dose-response relations, tolerable level of risks (Symposium/Webinar: Bob Buchanan).

Upcoming Meetings:

- SRA 2016: Society for Risk Analysis, December 11–15, 2016, San Diego, California.
- ICPMF10 : 10th International Conference on Predictive Modelling in Food, September 26–29, 2017, Cordoba, Spain, www.icpmf10.com.
- IAFP Europe: March 29–31, 2017, Brussels, Belgium.
- Food Micro, September 3–6, 2018, Berlin, Germany.

Recommendations to the Executive Board:

1. Recommend to the Board that Bala Kottapalli be the Vice Chair.
2. Webinars are a great way of promoting food safety to students, the developing world, small and medium enterprises and other interested parties, and also a good marketing tool for IAFP. Currently the recordings are only available for members and the webinars itself freely available if it has as audience PDG members only. The MMRA PDG again had big support to recommend that recordings of MMRA-PDG webinars be made freely available for both IAFP members and non-members. The PDG also recommends that webinars sponsored by the MMRA PDG be freely available to members of other IAFP PDGs. This could contribute largely to advancing food safety worldwide, but also improve marketing for new IAFP members.
3. Recommend the Board consider providing electronic addendum for scientific papers published in *Journal of Food Protection*. Other journals, such as the SRA *Risk Analysis Journal*, *IJFM* and *AEM*, provide such service so providing electronic addendum to *JFP* will stimulate people in this domain to submit more papers.

Next Meeting Date: July 9, 2017, Tampa, Florida.

Meeting Adjourned: 11:03 a.m.

Chairperson: Marcel Zwietering.