Greetings SOT FS³ members,

2020-21 has been a memorable year! The biggest Food Safety news of this past year has to be the impact of COVID-19 on the resilience of our food supply chains. It was a scary and uncertain time a year ago to think of the possibility of food scarcity. Food companies deserve a lot of credit for getting us through the worst of this pandemic by ensuring the continued production and delivery of food products to our local supermarkets. I hope you too have gained a greater appreciation of the farm-to-fork continuum and the workers that make it happen day-to-day, from agricultural and manufacturing workers to truck drivers and supermarket clerks who kept working when the pandemic was surging with no end in sight. We owe them a great deal of gratitude!

As Food Safety toxicologists, we may not work directly with food supply chains, but COVID-19 certainly tested the resiliency of our individual organization’s contingency planning. During this pandemic, working remotely for many of us became a necessity. Many organizations had to scramble at the beginning of this pandemic to ensure all work, including online meetings, could be done remotely with the appropriate security and resources in place. If you have not already, I would like to encourage all of you to strengthen your own team’s contingency planning, as COVID-19 may have accelerated a new standard of remote working and conferencing. A good example of this new standard was the successful virtual SOT Annual Meeting we just had, including our own FS3 virtual reception, where we had participants from all over the country and a few participating from other countries as far away as the Netherlands and India.

The second biggest news of this past year has to be the new fast pace of science. Nothing is more apparent than the remarkably fast development of the COVID-19 mRNA vaccines. Not only is this technology new, but the speed at which it was evaluated and reviewed by all the stakeholders nationally and internationally for emergency use is truly unprecedented. I believe we will see more and more scientific breakthroughs in the coming years and Toxicology and Risk Assessment are no exception. The toxicologists and risk assessors of tomorrow will very likely have different tools and data than what we have today. I would like to encourage all of you to stay connected with FS3 and SOT so we can learn and adapt together as Food Safety Toxicologists.

It has been an honor to serve as FS3 President this past year and I truly enjoyed working with the members of the executive committee whom I would like to thank for their commitment, enthusiasm, and contributions.

Sincerely,

Chester Rodriguez, PhD, DABT, ERT
New Officer Bios

**Vice President-Elect: David T. Szabo, PhD, CPPS, DABT**

Dr. Szabo is currently working as a Manager of Toxicology at PPG Industries driving new chemical innovation and testing for regulatory compliance of food contact coatings and packaging solutions. He has experience within industry and government, including the US Food and Drug Administration and the US Environmental Protection Agency. He received a PhD degree in Toxicology from University of North Carolina in Chapel Hill and a MS in Engineering from Johns Hopkins University in Baltimore, Maryland. He is a certified Diplomat of the American Board of Toxicology (DABT), Certified Professional Product Steward (CPPS) and active with publications and book chapters. He brings several years of SOT experience with recently serving on the presidential tract of the Computational Toxicology Specialty Section (CTSS). Dr. Szabo is a past winner of the Best Overall Mixture Abstract Award, SOT’s Colgate Palmolive Award for Research in Alternative Methods, Best Presentation in Mixtures Award, and recipient of the Robert J. Rubin Endowment Award. He is excited to advance the Food Safety Specialty Section mission and to support its members on food safety issues.

**Junior Councilor: Fleur de Mooij, MSc**

Fleur de Mooij is a Senior Food Safety and Toxicology Scientist at Danone since 2016, where her scope is the safety assessment of ingredients and allergens. In her job she performs risk assessments on new and existing ingredients for all Danone Nutricia products globally (dairy, plant-based, beverages, baby food and formula, medical products under FSMP etc.). She completed her bachelor's degree in biomedical sciences at Utrecht University and was the President of the Biomedical Student Association. She received her master's degree in Toxicology and Environmental health at the Utrecht University in 2015 following a 12-months research internship at the Institute of Risk Assessment Sciences as well as a 9-month research internship abroad at the University of Rochester, NY. She then worked as a project assistant in regulatory toxicology at TNO Triskelion. She has been an associate member of SOT since 2017 and has been a member of the Dutch Society of Toxicology (NVT) since 2012 where she is pursuing her registration as ERT. She currently serves as an expert in the ILSI Europe taskforce on allergens.

**Junior Councilor: Lois Haighton, BSc, ERT, DABT**

Lois Haighton is a Senior Director in the Food & Nutrition Group at Intertek Health Sciences Inc. where she is responsible for providing companies with regulatory and safety support for various products including flavoring agents, food ingredients, dietary supplements, cosmetics, and consumer products. Ms. Haighton has over 30 years of experience in safety evaluation and risk assessment. She plays an integral role as a project manager and scientific resource person on a wide variety of health-related projects. In this capacity, she prepares numerous technical reports for both government and industry on issues related to chemical contamination, pesticide use, new food ingredients, and extractables and leachables. Ms. Haighton is a Diplomate of the American Board of Toxicology and a Eurotox Registered Toxicologist and she graduated from Queen’s University in 1989 with an honours B.Sc. in Life Sciences. She is a full member of the Society of Toxicology and from 2017 to 2019, she was on the executive of the Lake Ontario Regional Chapter, serving as President for the 2018 term. Ms. Haighton was Co-chair of the workshop titled, “Scientific, Regulatory, and Safety Considerations for Probiotics and Microbiome Targeted Therapeutics” which was presented at the SOT meeting in 2017 in Baltimore, MD. She also has co-authored several publications in peer-reviewed journals, and she has presented and co-authored numerous posters at the Society of Toxicology annual meetings since 2004.
New Officer Bios (continued)

**Postdoctoral Representative: Sumira Phatak, PhD**

Sumira Phatak pursued her baccalaureate in biology at Northeastern Illinois University and doctorate in toxicology at Utah State University. She has been involved with SOT since joining in 2017 and most recently served as the GSLC Professional Development Chair. Growing up as an athlete, living healthfully has been second nature and it may come as no surprise that the focal point of her dissertation was to understand the complex interaction between nutrition, patterns of transgenerational inheritance, and gut microbial composition that ultimately influence colorectal cancer or metabolic disease outcomes. Sumira recently broadened her emphasis to include the impact area of transgenerational obesogen exposure and epigenetic remodeling as a new postdoctoral scholar in the Blumberg Laboratory at the University of California, Irvine. She has a keen interest in science communication and actively shares the cool science of herself and others via multiple platforms, while promoting inclusive excellence. Her service activities include a lengthy history volunteering within the community, including as a driver for Meals on Wheels, delivering lunch weekly to housebound elderly, a sensitive population where proper nutrition is critical. Having an appetite for adventure, she is also an avid outdoor enthusiast and foodie, spending free time in the backcountry, cooking, or hopefully both.

**Senior Graduate Student Representative: Benjamin Kistinger, MSc**

Benjamin (Ben) Kistinger is a Doctoral Candidate in Pharmaceutical Sciences with a toxicology concentration at St. John’s University in Queens, NY. His research project is focused on how oral exposure to mancozeb (a fungicide containing manganese and zinc metals) affects other essential metals (specifically copper and iron) in various organs of the rat (including the gastrointestinal tract), and studying whether or not altered metal homeostasis results in oxidant imbalance and oxidative stress, with particular emphasis on the glutathione system. After graduation he hopes to start a career as a food safety toxicologist, or as a toxicologist working in cosmetics or consumer products. He was recently Chair of the Graduate Student Leadership Committee (GSLC) for the 2020-2021 year and worked with the GSLC Executive Committee to plan graduate student events for the Virtual Annual Meeting. He has served as a Graduate Student Representative for the Mid Atlantic Society of Toxicology Regional Chapter and ELSI (now ELFSI) Specialty Section and Graduate Student Liaison for the Education Committee and Career Resource and Development Committee. He looks forward to working with the Food Safety Specialty Section this year!

**Junior Graduate Student Representative: Rebecca Kim, BSc**

Rebecca Kim is a PhD candidate at NYU Langone Medical Center in the Department of Environmental Medicine. Her work centers on dysbiosis of the gut microbiome from environmental exposures to air pollutants and POPs. She received her Bachelor’s of Science degree in Biology as well as a certificate in Marine Science and Conservation, and a minor in Anthropology at Duke University. She is co-author of four publications including a peer-reviewed article in Science Magazine. She has been a member of SOT since 2017, and attended the conferences independently prior to that. She is passionate about community engagement, mentorship, and accessibility in science.
Thank You Notes to the Outgoing Officers

Dr. Mansi Krishan, PhD, ERT, the Outgoing President: Sincere thanks to Mansi for her exceptional leadership over the last 4 years to the FS3. She has been an outstanding leader who provided tremendous support in leading and advancing the FS3 successfully - motivating the new officers to effortlessly integrate in the executive committee, increasing the communication among the EC and members especially during the pandemic period, bringing in external collaboration to offer valuable scientific session to the FS3 membership and facilitate recruiting officers/future leaders and new members to the specialty section. She led FS3 by example in serving the mission of FS3, SOT and the toxicology community.

Dr. Ray A. Matulka, PhD, FACN, the outgoing Senior Councilor: Heartfelt thanks to Ray for his exemplary service as the Councilor to the FS3. Ray spearheaded different committees including the Burdock group Travel award focused on FS3 graduate students, Newsletter and Webinar subcommittee that brought valuable resources to FS3 members, and the membership recruitment/retention efforts to advancing the FS3 membership engagement.

Dr. Sumira Phatak, PhD, the outgoing Graduate Student representative. A big Shout-out to Sumira for her countless number of services, time and dedication to FS3 in the last 3 years. She went above and beyond and represented FS3 to GSLC and SOT to a greater length. Some of her valuable contributions include FS3 membership engagement by bringing in outstanding ideas, designed the captivating newsletter, built the LinkedIn platform for FS3 and continue managing the page, lead the FS3 mentoring event, aided to recruit new officers and shared the FS3 EC’s workload at every level especially during the pandemic year with virtual annual meeting events and others. The GSLC Outstanding Leadership award 2020 recognition is a testament to Sumira’s leadership to FS3 and SOT.

FS3 Treasury, Sponsorship, and Membership Report

* End of Year Net Assets for 2020: $32,998
* 2020-2021 Endowment Fund, Frank C. Lu Food Safety Student award Fund Disbursement: $1,935 (based upon 4% of year-end balance reported June 2020)
* 2020-2021 Sponsorship received: $4,200
* 2020-2021 FS3 Membership: 330 members

Thank YOU to our Sponsors for 2020-2021!
Chittaranjan is a graduate student in the Department of Pharmacology and Toxicology, NIPER, Mohali, India. His work explores the influence of nutritional deficiency and food contaminants on male reproductive dysfunction and germ cell toxicity. The primary focus of his dissertation has been evaluating the risk and negative impact of dietary insufficiency on health outcomes in the disease condition as well as food contaminant/toxicant exposure in reproductive age. Further, he has also completed various studies on the role of zinc and selenium in a diabetic rat germ cell. The several roles of zinc and the consequences of its dietary deficiency associated with male infertility risk. On the other hand, bisphenol A exhibits a xenoestrogenic effect on germ cells which may enhance the male infertility risk.

Frank C. Lu Graduate Student Award

Chittaranjan Sahu, MS

Award Recipients

Frank C. Lu Early Career Scientist Award

Lichchavi Rajasinghe, PhD

Lichchavi D. Rajasinghe is a Postdoctoral research associate in the Department of Food Science and Human Nutrition, at Michigan State University. His current research lies in exploring mechanisms in dietary lipids and silica-triggered autoimmunity. His preclinical studies have shown that consuming omega-3 polyunsaturated fatty acids (PUFAs) found in fish oil, most notably docosahexaenoic acid (DHA) can resolve inflammation and might benefit individuals who suffer from Autoimmune Diseases (AD) including lupus alone with the identifying prevention mechanisms of toxicant triggered autoimmunity with dietary DHA. Omega-3s are the most widely consumed nutritional supplement after multivitamins, taken by ~30 million. Given public acceptance and safety of DHA, discovering how supplementation with this omega-3 can protect against toxicant triggered AD could have enormous benefits for global health.

Frank C. Lu Graduate Student Award

Chittaranjan Sahu, MS

“I would like to thank the FS3 Frank C. Lu award for this award. This is my honor to receive the FS3 Frank C. Lu award at the virtual 2021 SOT Annual Meeting. First surprised, then I feel pleasure and humbled to be selected by the FS3 to receive such an award. This award encouraged me to be actively involved in FS3 future programs and motivates me to work even harder. I am very grateful for these virtual opportunities by SOT, and particularly FS3, have shaped graduates like me. I would like to express my heartiest gratitude to FS3 for this support. Also, I extend my sincere thanks to my research supervisor Dr. G.B Jena sir, who always cheered, guided, and motivated me to work harder. Now I am pursuing my doctoral degree in the Department of Pharmacology and Toxicology, NIPER, Mohali, Punjab in India. My research area is food contaminants and disease-associated male reproductive toxicity and the influence of various trace elements.”
The Food Safety Specialty Section Meeting at the SOT Annual Meeting was held virtually this year, on March 16, 2021 at 6pm ET. This reception was attended by approximately 30 individuals who represent leadership, award winners, long time members, and new members. Outgoing 2021 committee members were thanked for their contributions and incoming 2022 committee members were welcomed. The meeting was followed by small group discussion related to the ever pressing topic of genetically modified food ingredients.

Sumira Phatak served as the moderator in the first breakout room, where the conversation responded to the following elements: reasonable working definition of genetically modified food ingredients; the big deal about such dietary components; how they differ from other food ingredients; and described examples. Sachin Bhusari served as the moderator in the second breakout room. Themes discussed here included the types of safety/quality studies should a Food Safety Toxicologist recommend to their organization for the potential use of a genetically-modified food ingredient, and when or how these individuals could convince their organizations that enough information exists to move forward with regulatory approval. Ray Matulka served as the moderator in the third breakout room. This group discussed the following questions: what type of information would you like to see in a proposal to use a genetically modified ingredient in a given food, as a toxicologist at a regulatory agency such as FDA; what would you do to convince the public that the ingredient is safe for use; and how would you deal with a pre-established negative public perception of such food ingredients?

These lively conversations were followed be a reuniting of all attendees to share highlights. The casual atmosphere was warm and welcoming. As the meeting concluded, FS3 members unanimously agreed that we will hope to be in person next year!

**Award Recipients (continued)**

**Burdock Group Student Scientific Award**

**Lydia (Lei) Zhang, MS**

Lei Zhang is a PhD student in Toxicology at Texas A&M University. She is also a graduate research assistant in the laboratory of Stephen Safe, where she conducts research on the molecular oncology and potential clinical applications of a series phytochemical derived natural products that are ligands for the orphan nuclear receptor 4A1 (NR4A1, TR3, NUR77). Her specific project is focused on the development of NR41A ligands that are relatively non-toxic and can be used as adjuncts along with current therapies, and she is using non-small cell lung cancer as her current tumor model. Currently, she focuses on Resveratrol, a phytochemical that is produced in grape and berry skins, and showing that it induced targetable pathways and genes. Globally, the group (Dr. Stephen Safe) that she joined in has been a pioneer for studying the orphan nuclear receptor, NR4A1 and their have discovered a series of potent synthetic ligands for this receptor. Resveratrol has been touted as a wonder drug and many mechanisms have been proposed. Her study for the first time identifies and confirms resveratrol acts, in part, in lung cancer cells as a NR4A1 antagonist and this discovery will facilitate future clinical applications in patients expressing NR4A1.

“It is a true honor to be the recipient of this year’s Burdock Group Student Scientific Award, and I thank the SOT, FS3 for this recognition. As a PhD student, the support offered by this award will be instrumental in advancing my research program in Toxicology and encourages me to keep working hard and do more contributions in this field. The only regret is because of the Covid-19 and virtual meeting this year, I am not able to meet and thank all FS3 committee members in person. I hope everyone can stay safe during this special time and look forward to seeing you all in person in San Diego next year!”

**Food Safety Specialty Section - Virtual Reception**
Workshop Session: Establishing Quality, Safety, and Regulatory Principles for Probiotics: More Than Just a Gut Check

Monday March 15, 11:15am - 2:00pm ET, Virtual

Chairpersons:
Amy L. Roe, Procter & Gamble
Kit Goldman, United States Pharmacopeia (USP)

Speakers:
Amy L. Roe, Procter & Gamble
Jay Sirois, Consumer Health Products Association (CHPA)
Kit Goldman, USP
Michael Steller, Health Canada

FS3 Endorsed Probiotic Safety Workshop Well-Attended
The following event summary was graciously provided by Amy L. Roe.

The global market for natural ingredient products continues to experience tremendous growth, and this includes prebiotic and probiotic products. Consumer interest in biotic-based products may be based on a rising awareness in preventive healthcare and health benefits of natural ingredients such as increased dietary fiber. This has never been more evident than during the global pandemic and subsequent consumer demand for natural products related to immunity which includes probiotics.

Probiotics are among the most widely used specialty supplements in the US according to a recent consumer survey conducted by the Council for Responsible Nutrition. Like many natural products used in dietary supplements, probiotics are presumed to be safe. This presumption of safety is not completely unfounded, as there is global consumption of many common probiotic species and strains. However, as probiotic manufacturers are increasingly seeking to use new strains, species, or even novel (next generation) probiotics, justification based on a significant history of use may be challenged.

There are efforts underway by a variety of stakeholders including the USP and various probiotic and dietary supplement trade associations to develop best practices guidelines for assessing the quality and safety of probiotics. Thus, as a result of increased consumer interest in ‘biotic’-based products, an anticipated expansion of marketed ‘biotic’ products, and professional organizations interest in ensuring safety of ‘biotics’, a workshop on how to approach assessments of safety on this category of products seemed warranted.

A virtual workshop entitled, Establishing Quality, Safety, and Regulatory Principles for Probiotics: More Than Just a Gut Check, (Abstract No. 1043), was held on March 15th from 11:15 AM to 2:00 PM at the Annual SOT Meeting. This workshop was endorsed by the FS3 as well as the Regulatory and Safety Evaluation Specialty Section as secondary endorser. The workshop was co-chaired by Amy L. Roe and Kit Goldman.

The virtual workshop was well attended, with as many as eighty-six participants noted at one time point. A 25-minute live Question and Answer (Q&A) session was held at the end of the four pre-recorded talks. The audience was well engaged during the Q&A session by posting meaningful questions and comments. Below is the list of speakers and topics, along with a brief summary of some of the major points highlighted by each of the presentations.

Amy L. Roe, The Procter & Gamble Company, An Industry Perspective on Assessing Safety of ‘‘Biotics as Dietary Supplements (Abstract No. 1044). Dr. Roe described a tiered approach for assessing the safety of probiotics and a decision tree approach utilized in evaluating the safety of probiotics. She described the different types of data expected to support each tier, and what aspects of the tiered approach were based on recommendations from authoritative bodies including EFSA, FAO/WHO, and FDA. Interestingly, she brought up the question of whether standard animal toxicity studies were relevant to assess the safety of live microorganisms. For prebiotics, Dr. Roe walked the audience through the decision tree that was developed during an ILSI working group in 2002. Lastly, she introduced a couple of working definitions of postbiotics and gave some examples of this up-and-coming ‘biotic’ category.

Jay Sirois, CHPA, Development of a Best Practices Guideline for the Review of Dietary Ingredients Through the Self-GRAS Pathway (Abstract No. 1045). Dr. Sirois leads an industry-based Dietary Supplement Committee through the CHPA. He shared an overview of the U.S. regulatory pathways for dietary supplements including biotic-based products. He spent particular time discussing the Generally Recognized as Safe (GRAS) pathway, whether done through a formal notification process to the FDA or as an independent (self) GRAS process. Dr. Sirois made the point that the same level of rigor is applied whether the pathway is via notification to FDA or self-determined GRAS.

Kit Goldman, USP, Improving Quality and Safety of Probiotics: USP Activities (Abstract No. 1046). Dr. Goldman began her presentation with an overview of the USP as the standard setting body in the U.S. She discussed the clear need for quality standards for dietary supplements which includes probiotics. She mentioned the 7 probiotic strains for which monographs have been developed; and, the recent establishment of a probiotic safety sub-committee to tackle issues related to probiotics including proper identification, enumeration, and safety.

Michael Steller, Health Canada, Probiotic Safety in the Natural Health Product Context (Abstract No. 1047). Mr. Steller described Health Canada’s oversight of probiotic products under the Natural Health Product Regulations. He reviewed the comprehensive evaluation of probiotic strains, and safety data expectations for this product category. He also mentioned regulation related to the emerging category of postbiotics as well as plans to address the nomenclature changes to Lactobacilli.

The chairs and presenters would like to thank the FS3 for their endorsement of this important session.
Symposium Session: Botanical Mixtures – Predictive Approaches to Evaluating Pregnancy, and Reproductive and Developmental Health

Wednesday March 24, 11:45am - 2:30pm ET, Virtual

Chairpersons:
Madelyn Huang, National Toxicology Program
Catherine Mahony, Procter and Gamble

Speakers:
Madelyn Huang, National Toxicology Program
Robin Marles, Health Canada
Connie Mitchell, Health and Environmental Sciences Institute
Catherine Mahony, Procter and Gamble
Mark Cronin, Liverpool John Moores University

SOT Botanicals Session Summary
The following event summary was graciously provided by Madelyn (Mimi) Huang.

The symposium session “Botanical Mixtures – Predictive Approaches to Evaluating Pregnancy, and Reproductive and Developmental Health” was presented at the virtual Annual Meeting of the Society of Toxicology on Wednesday March 24, 2021. Five speakers from academia, government, and industry provided not only an overview of the state of the science for botanicals research but also examples and case studies incorporating in vitro and in silico techniques to evaluate reproductive and developmental toxicity (DART).

Dr. Madelyn (Mimi) Huang from the National Toxicology Program provided an overview of botanical dietary supplements, highlighting unique challenges specific to botanicals research and how the complexity of botanical mixtures combined with the time- and resource-intensive nature of DART studies necessitate application of new alternative methods in this field.

Dr. Robin Marles from Health Canada summarized regulatory approaches to botanical products across different global jurisdictions and highlighted a new initiative in advancing knowledge on phytochemicals in human breast milk and human milk composition.

Connie Mitchell from the Health and Environmental Sciences Institute introduced the Botanical Safety Consortium and the strategy being undertaken by the DART working group to develop a toolbox for DART evaluations.

Dr. Catherine Mahony from Procter and Gamble shared various in vitro approaches developed by her research team, including a decision tree method starting with botanical chemical characterization, high-throughput and high-content DART-relevant receptor binding and enzyme affinity assays, and functional read-across using transcriptomic data.

Dr. Mark Cronin from Liverpool John Moores University spoke on the challenges, opportunities, and solutions in the application of current in silico methods, emphasizing a need for improved botanical databases and the use of mode of action-based methods in particular given the multi-endpoint nature of DART.

A key takeaway from the live discussion was the need for user-centric, high-quality databases and models designed and used in a fit-for-purpose manner. These promising tools and approaches can and should include a variety of endpoints that are not limited to DART. Case studies and examples using data-rich botanicals are needed to demonstrate practical application. Lastly, international and interdisciplinary, cross-sector collaborations are essential to ensure the usefulness and adoption of alternative approaches for botanical safety evaluation.
FS3 Member Achievements

Brittany Bausch
Career Advancement: Promotion to Research Fellow – Toxicology @ Henkel [April 2020]

Nduka Onyekachukwu Chukwuebuka
Earned Degree: Master's Degree in Food Safety, Department of Food Science and Technology @ University of Nigeria [March 2020]

Dennis Cladis
Earned Degree: PhD, Purdue University [May 2020]
New Position: Postdoc @ University of Minnesota

James R. Coughlin
Award: The Institute of Food Technologists’ Achievement Award; Bernard L. Oser Food Ingredient Safety Award [July 2020]

Britney Geter
Career Advancement: Promotion to Manager, Scientific and Regulatory Affairs for Compliance and Innovation in the North America Operating Unit @ The Coca-Cola Company [March 2021]

Alexandra Lobach
Career Advancement: Promotion to Sr. Manager II, Toxicology, Chemistry & Regulatory Affairs, Food & Nutrition @ Intertek Scientific & Regulatory Consultancy [March 2021]

Kizito Nishimwe
Earned Degree: PhD, Iowa State University - Department of Human Nutrition and Food Science - Food Science and Technology Program [May 2020]

David Szabo
Professional Certification: Certified Professional Product Steward (CPPS) credential; administered through the Board for Global EHS Credentialing [Fall 2020]

Congratulations to everyone!

Join the SOT Food Safety Specialty Section group on LinkedIn!

To request membership:
• Enter the group name in the LinkedIn search bar (“SOT Food Safety Specialty Section”)
• Click on the group
• Click on the blue ‘Request to join’ button
• A group manager will approve your request