

ΦΤΣ

The Honor Society of Food Science and Technology

Phi Tau Sigma Newsletter April 2018

News Alerts:

Spring and Dues – a Good Combination

(Contributed by Robert Brackett, Ph.D., President Phi Tau Sigma and Lifetime Member)

Greetings! As I write this, we are only days away from the first official day of Spring. To many, Spring's warmer days and blooming flowers symbolize renewal in our natural environment. However, did you know that Spring also brings renewal to Phi Tau Sigma? It is at this time of the year when we have the opportunity to renew our membership and pay our dues. While Phi Tau Sigma is in very good financial shape, it still relies on the receipt of dues each Spring not only to provide the cash flow needed to keep Phi Tau Sigma running, but to build our endowment, fund scholarships and awards, and plan for new programs to benefit members and students. I know how easy it is to forget tasks such as renewing memberships and paying dues, so I want to encourage you to pay your dues now while you are thinking about it. Also, consider becoming a Lifetime Member. Not only will you be helping Phi Tau Sigma become a stronger and more vibrant organization, but you will never again have to remember to renew and pay your dues. Thank you in advance for your continued support of Phi Tau Sigma.



[Editor's Note: Your dues status is listed in cover email to this Newsletter.]

We Want to Help YOU!

(Contributed by Mary K. Schmidl, Ph.D., Chapter Affairs Committee Chair)

The Phi Tau Sigma Chapter Affairs Committee is passionate about helping ALL of our Chapters in every way we can. We have been reactivating Chapters one by one and are proud of our success! Additionally, every member of the Chapters Affairs Committee is here to help with starting or renewing your Chapter, and your membership nomination process. Please contact us through our emails listed here. We will guide you through the process as we want active and healthy Chapters.

Members of the Chapter Affairs Committee: Mary K. Schmidl, Ph.D., Chair mschmidl@umn.edu, Reza Tahergorabi, Ph.D. rtahergorabi@gmail.com, Claire Koelsch

Sand, M.S. clairekoelschsand@gmail.com, Terri Boylston, Ph.D. tboylsto@iastate.edu, Naim Montazeri, Ph.D. naim.montazeri@gmail.com, Amy Simonne, Ph.D. asim@ufl.edu, and Lily Yang, M.S. llyang@vt.edu.

Phi Tau Sigma Symposia during the IFT meeting

(Contributed by Rakesh Singh, Ph.D., Program Committee Chair)

The following symposia are sponsored and/or organized by Phi Tau Sigma at the 2018 IFT Annual Meeting in Chicago (July 15-18, 2018). The locations of the symposia will be published in a future article, once we receive the information from IFT.

Advances and Challenges in the Design, Development and Implementation/Commercialization of Novel Food Processing and Packaging Technologies

Monday July 16, 2018, 10:30am to 12:00pm

Session Organizer: Jose Reyes de Corcuera, Ph.D. (Associate Professor, University of Georgia)

Session Moderators: Jose Reyes de Corcuera, Ph.D. (Associate Professor, University of Georgia), Nicolas Meneses, Ph.D. (Food and Feed Safety Expert, Buhler), Hossein Daryaei, Ph.D. (Research Scientist, Institute for Food Safety and Health)

Session Description:

The food processing industry and academic institutions are constantly researching and implementing novel technologies, improving existing technologies, and adapting them to new products and new markets. Challenges faced include: reducing wastage through increased shelf-life with greater quality retention; better assessment of shelf-life of perishables through the development of novel sensors, intelligent packaging, and accurate monitoring of the cold supply chain; increased energy efficiencies and reduced carbon foot print through equipment and process modeling and optimization; scaling up from laboratory or pilot plant to industrial throughput; incorporating novel nano-scale and other materials into foods, food contact surfaces, or packaging materials; and economically integrating hurdle and combined technologies. Bridging research to commercial development, whether within food processing companies, equipment and instrumentation companies or from academic institutions is challenging.

Three Distinguished Lectures from outstanding professionals identified by the Nonthermal, Packaging, and Food Engineering Divisions will shed light into the current advances and challenges in the design, development and implementation of novel food processing and packaging technologies. The Distinguished Lecturers will contrast the scientific and technological merits of recent advances to the economic and multidisciplinary constraints of the industry. Reflection on previous success stories and an assessment of current research trends will provide attendees with a holistic perspective of the state-of-the art on emerging technologies.

This session is co-sponsored by Phi Tau Sigma - The Honor Society of Food Science and Technology.

Presentations:

Larry Keener, B.S. (CEO, International Food Safety Professionals): Food Safety Assurance: An Imperative for Commercialization and Regulatory Acceptance of Novel Processing and Preservation Technologies (*Distinguished lecture from nonthermal processing division*)

Hongda Chen, Ph.D. (National Program Leader, Bioprocessing Engineering/Nanotechnology, USDA - National Institute of Food and Agriculture): Focus + Scale = Impact? Lessons Learned in Advancing Food Technologies (*Distinguished lecture from food engineering division*)

Jung H. Han, Ph.D. (Vice-President of Research and Development, Pulmuone Foods USA): Challenges and Opportunities in the Development and Implementation of New Packaging Technologies for Tofu (Soy Protein Curd) (*Distinguished lecture from food packaging division*)

Educating the Future Food Scientists capable of facing Evolving Regulatory and Technological Challenges in Global Food Industry

Tuesday July 17, 2018, 12:30pm to 2:00pm

Session Organizers: Kathiravan Krishnamurthy, Ph.D. (Assistant Professor, Illinois Institute of Technology) and Purnendu C. Vasavada, Ph.D. (Professor Emeritus, University of Wisconsin – River Falls)

Session Moderators: Kathiravan Krishnamurthy, Ph.D. (Assistant Professor, Illinois Institute of Technology) and Ramkishan Rao, Ph.D. (National Program Leader, USDA - National Institute of Food and Agriculture)

Session Description:

Over the last 25 years, the food industry faced a great deal of change in food science and technology, culture, policy, and politics and has been truly “global” in its scope and impact. Also, the emergence of new foodborne hazards, along with consumer habits, preferences, and demand for convenience, nutrition, and safety of food and ingredients have resulted in increased need for understanding and navigating changing the regulatory landscape by food industry professionals. While the academic institutions have kept pace with technical training in food science and technology, the industry is experiencing a dire shortage of prospective employees – food scientists, technologists and even production workers, who can function adequately in changing the regulatory and technological climate. This symposium is designed to examine the current academic preparation for food science and technology graduates and discuss associated challenges and opportunities for the food industry.

This symposium is sponsored by Phi Tau Sigma, The Honor Society of Food Science and Technology and AAFSIS (American Association of Food Scientists for the Indian Subcontinent).

Presentations:

Purnendu C. Vasavada, Ph.D. (Professor Emeritus, University of Wisconsin, River Falls): “Role of education, outreach, and industry academia partnership in training new generations of food Industry professionals”

Robert E. Brackett, Ph.D. (Director of Institute for Food Safety and Health, Vice President of Illinois Institute of Technology): “Evolving Food Safety Philosophy in the context of Regulatory and Technological Changes Impacting the Global Food Industry”

Vijay Juneja, Ph.D. (Lead Scientist, Eastern Regional Research Center, United States Department of Agriculture): “New Food Safety Regulations and Food Science and Technology Education in India”

Shedding light on food safety, quality, and nutrition: Opportunities and challenges with the light-based technologies

Wednesday July 18, 2018, 8:30am to 10:00am

Session Organizer: Kathiravan Krishnamurthy, Ph.D. (Assistant Professor, Illinois Institute of Technology)

Session Moderator: Kathiravan Krishnamurthy, Ph.D. (Assistant Professor, Illinois Institute of Technology)

Session Description:

CDC estimates that every year, there are 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths in the United States due to consumption of foods contaminated with

pathogens. Therefore, it is necessary to process foods to effectively inactivate these microorganisms to render food safe. Various preservation technologies have been developed and adopted successfully to eliminate or reduce microbial contamination of the food. However, conventional treatments are very highly energy intensive with high capital and operational costs. Most often these processes also result in deterioration of food quality. Therefore, there is a need for alternative processing methods that are simple, cost-effective, have high inactivation efficiencies and yield minimal quality changes. Emerging technologies such as UV light, pulsed light and LED light processing show great promise since they can inactivate the pathogenic microorganisms while preserving the quality of foods. This session will focus on recent advances in the light-based technologies for microbial decontamination. There has been an increased interest in the applications of light-based technologies such as UV light, pulsed light and LED light for inactivating microorganisms. Typically, these technologies operate in the UV, visible and near-infrared light range. Studies have shown that these technologies can effectively inactivate myriad microorganisms. However, there are several challenges associated with these technologies. The identified speakers are experts in the light-based technologies. They will shed light on the applications and challenges of these technologies. Due to the increased interest in these technologies, a symposium on this topic is highly warranted. This symposium is sponsored by Phi Tau Sigma - The Honor Society Of Food Science and Technology.

Presentations:

Kathiravan Krishnamurthy, Ph.D. (Assistant Professor, Illinois Institute of Technology): Overview of the light based technologies

Carmen I. Moraru, Ph.D. (Associate Professor, Cornell University): UV light processing: Challenges and future trends

Larry Keener, B.S. (CEO, International Food Safety Professionals): Applications of light-based technologies: Industry perspective

Glenn Black, Ph.D. (Associate director of research, Division of Food Processing Science & Technology, Food and Drug Administration): Applications of light-based technologies: Regulatory perspective

The Future of Food Packaging

Wednesday July 18, 2018, 10:30am to 12:00pm

Session Organizers: Sunil Mangalassary, Ph.D. (Associate Professor & Coordinator, California State University, Los Angeles), Claire Koelsch Sand, Ph.D. (CEO, Packaging Technology & Research, LLC; Adjunct Professor, Michigan State University and Cal Poly)

Session Moderators: Sunil Mangalassary, Ph.D. (Associate Professor & Coordinator, California State University, Los Angeles), Claire Koelsch Sand, Ph.D. (CEO, Packaging Technology & Research, LLC; Adjunct Professor, Michigan State University and Cal Poly)

Session Description:

The future of food packaging is complex and enchanting with much promise. Active and intelligent packaging are integrated into mainstream use and their future applications address decreasing food waste through the controlled release of compounds to extend product shelf life and track and trace to enhance food safety. Altered supply chain of e-commerce and the evolving sustainable circular economy in addition to innovations in design will have a larger role in directing consumer choices in packaged food. These areas will be explored in the context of current uses, projected applications, and areas for research.

Presentations:

Sunil Mangalassary, Ph.D. (Associate Professor & Coordinator, California State University, Los Angeles): Future of active food packaging

Claire Sand, Ph.D. (CEO, Packaging Technology and Research): Future of intelligent packaging

Natalie Gontard, Ph.D. (Research Director, INRA (National Institute for Agronomical Research), France): Food packaging innovations in the context of a sustainable circular economy

Scott A. Morris, Ph.D. (Professor, University of Illinois, Urbana Champaign): Future food packaging to meet changing supply chains

Dan Ahern, B.S. (Director of Global Innovation & Design, Graphic Packaging International): Future of food packaging design

Calendar:

->Phi Tau Sigma Awards Schedule:

- November 30: Deadline to submit nominations to the Awards Committee for the Dr. Daryl B. Lund International Scholarship.
- February 1: Deadline to submit nominations to the Awards Committee for the Phi Tau Sigma Special Recognition Award, the Phi Tau Sigma Student Achievement Scholarship, the Dr. Gideon "Guy" Livingston Scholarship, and the Phi Tau Sigma Founders' Scholarship.
- April 1: Deadline to submit nominations to the Awards Committee for the Phi Tau Sigma Outstanding Chapter of the Year Award.

Send completed nomination forms to both Awards Committee Chair Poulson Joseph, Ph.D., (pjoseph@kalsec.com) and Executive Secretary Kathryn L. Kotula, Ph.D. (klkotula@msn.com). (More information: <http://www.phitausigma.org/content.php/3-Awards>)

->December 18: Deadline to submit Nominations for the **Dr. Carl R. Fellers Award**, and other IFT Achievement Awards.

(More information: <http://www.ift.org/membership/awards-and-recognition.aspx>, <http://www.ift.org/Membership/Awards-and-Recognition/Achievement-Awards/Carl-R-Fellers-Award.aspx>)

->Phi Tau Sigma Chapter Schedule:

- March 15: Deadline for membership nominations to ensure decisions from the Membership and Qualifications Committee before the Annual Meeting
- April 1: Deadline to order Honor Cords and lapel pins to ensure delivery before Spring graduation dates
- May 1:** First call for Chapter annual reports
- June 1: Second call for Chapters annual reports
- July 1: Final call for Chapter annual reports
- August 1: Deadline for Chapter annual reports
- November 1: Deadline to order Honor Cords and lapel pins to ensure delivery before Fall graduation dates

Reminder to all Chapters: In order to receive the *Certificate of Merit* or *Certificate of Excellence*, Chapters must submit their annual reports for evaluation by August 1. Please send your annual report to the current Chair of the Chapter Affairs Committee, Dr. Mary Schmidl (mschmidl@umn.edu) with a copy to Dr. Kathryn L. Kotula (klkotula@msn.com).

-> Election schedule:

- December 15: Nominations due to Nomination and Election Committee (Tom Aurand, Ph.D., Chair (tom.aurand@gmail.com))
- January 2: Nominations and Elections Committee convenes
- January 21: Deadline for Nomination and Elections Committee to submit slate of candidates to President
- February 5: Last date on which nominations by petition may be submitted
- March 1: List of candidates will be emailed to the Members for balloting
- March 31: Deadline for casting ballots
- April 8: Deadline for tabulation of ballots
- July 15: Phi Tau Sigma President will present the newly elected individuals to the Membership at the Annual Business Meeting of Phi Tau Sigma

-> July 15-18, 2018, Institute of Food Technologists Annual Meeting, Chicago, IL:

July 15 (Sunday): (times tentative)

- 11:00am-12:15pm Phi Tau Sigma Executive Committee Meeting
- 12:15pm-1:30pm Lunch Break
- 1:30pm-3:00pm Phi Tau Sigma Leadership Council Meeting and Annual Business Meeting
- 12:30pm-1pm Student Competition Poster Set-up
- 1:00pm-2:30pm Student Poster Competition Judging
- 3:30pm-4:20pm Phi Tau Sigma and IFT Division Competition Awards Ceremony (also called: Phi Tau Sigma Annual Recognition Event)
- 6:00pm-7:00pm IFT Awards Celebration, includes the presentation of the Dr. Carl R. Fellers, Ph.D. Award (Meet the Award winners at the IFT Networking Reception immediately following.)

Lifetime Member Tribute: Don Schaffner, Ph.D., Distinguished Professor and Extension Specialist, Rutgers University

Why did you become a Lifetime Member? I became a Lifetime Member of Phi Tau Sigma because I believe in the organization. I also hate the annoyance of remembering to pay my dues every year.

Education: I earned my B.S. in Food Science from Cornell University in 1983. I earned a Masters and Ph.D. in Food Science and Technology from the University of Georgia in 1985, and 1989, respectively.

Experience/Accomplishments: As I like to tell people, I have never had a real job. After graduating from the University of Georgia, I interviewed for and was hired as an Extension Specialist in Food Science at Rutgers University. I currently hold the title of Distinguished Professor and Extension Specialist. I help food companies solve food safety problems and teach my graduate students how to do research. It's so much fun that most days it doesn't seem like work.



Areas of Expertise: predictive food microbiology, quantitative microbial risk assessment, handwashing and cross-contamination.

Awards and Honors (selected list): American Society for Microbiology, Distinguished Lecturer, 2017-2019. Elected as a Fellow of the International Association for Food Protection, 2017. Elected as a Fellow of the American Academy of Microbiology, 2014. Awarded the Silver Beaver Award, Monmouth Council, Boy Scouts of America, 2013. Elected as Secretary, International Association for Food Protection (IAFP), April 2010, with a five-year commitment to the Association serving as President in 2013-2014. Elected as a Fellow of the Institute of Food Technologists, 2010. Awarded the IAFP Elmer Marth Educator Award in 2009.

Personal: I'm married with two grown sons. Both sons are Eagle Scouts and I've volunteered many hours in leadership positions within our local Boy Scout Council. I'm volunteering less with the Scouts these days as I've recently become active as a board member and facilitator for a local depression and bipolar support group.

Family, Interests, Hobbies: While I don't go backpacking with the scouts any longer, I do still enjoy walking for exercise. My wife and I enjoy traveling around the world, and hanging out at home with our two rescue dogs. In my spare time, I do a food safety themed podcast at <http://foodsafetytalk.com>.

Advice to university students and career food scientists and technologists: As an incoming Cornell freshman in 1979, I was somewhat unusual in that I had already decided to be a food science major. The whole reason that I decided to major in food science was because of a conversation I had with Dr. John Sherbon, a faculty member at Cornell (now deceased). He told me that I'd never get rich, but that I'd always have a job, because people have to eat, and I'll always be thankful for that advice. I also have to thank Dr. Bob Gravani (also Cornell, Food Science) who gave a talk on careers in the food industry. He happened to mention that graduate school was an option instead of going to work after my B.S. I will also always be thankful for this advice. My advice to you: pay attention, as there will always be folks there to give you good advice.

Student Research Synopsis: Improved academic performance and student perceptions of learning through use of a cell phone-based personal response system (Contributed by Sihui Ma, Ph.D. Student, Department of Food Science and Technology, Virginia Tech)

Recently published work: Ma, S., Steger, D. G., Doolittle, P. E. and Stewart, A. C. (2018), *Improved Academic Performance and Student Perceptions of Learning Through Use of a Cell Phone-Based Personal Response System*. *Journal of Food Science Education*, 17: 27-32. doi:10.1111/1541-4329.12131

Introduction: In undergraduate education including Food Science programs, the paradigm has transferred from faculty passively providing the instruction to creating a student-centered learning environment where students are actively engaged in the learning process (Barr & Tagg, 1995). Classroom response systems, such as



"clickers," have been widely used to encourage student active learning by engaging students in various classroom settings (Sevian & Robinson, 2011), including Food Science courses (Intemann, 2006). Although using clickers can improve student performance (Morling, McAuliffe, Cohen, & DiLorenzo, 2008; Poirier & Feldman, 2007; Uhari, Renko, & Soini, 2003), the disadvantages of clickers, including additional cost of clickers, additional time and effort on integration of clickers into the class, and technical problems associated with clickers, limit their use (Blasco-Arcas, Buil, Hernández-Ortega, & Sese, 2013), and proper use of clickers is essential to achieve the desired learning outcomes (Freeman, Eddy, McDonough, Smith, Okoroafor, Jordt, et al., 2014). Cell Phone-Based Personal Response Systems (CPPRSs), such as TopHat™, are proposed to have similar benefits to clickers with more interactive functions and no additional cost for purchasing hardware since they can be installed on Internet-connected devices, such as smartphones. Smartphones are almost unavoidable in classrooms (Ali, Papakie, & McDevitt, 2012). They can lead to improved academic performance when properly used (Gikas & Grant, 2013), but they can cause distraction and student misconduct when mis-used (Tindell & Bohlander, 2012). The impact of using CPPRSs in Food Science undergraduate education has not been systematically evaluated.

Purpose: This study aimed to evaluate the effectiveness of using CPPRSs on academic performance and students' perceptions in an upper-level undergraduate Food Science course.

Methods: In the content of an upper-level semester-long undergraduate Food Science course in Fall 2016 at a Southeastern land-grant university, a CPPRS (TopHat) was incorporated in the course during the first half of the semester when students used the CPPRS to respond to two multiple-choice questions (a) at the beginning of the class for review, (b) in the middle of the class for the immediate content of the class, and (c) at the end of the class for summary of the class content. The CPPRS was not used in the second half of the course. Student performance was measured by the correctness rates on quizzes covering the class content in which they used or did not use the CPPRS, separately. Students' perceptions of using TopHat were accessed by a survey at the end of the semester.

Results: The average correctness rate on quizzes covering the class content in which CPPRS was used (0.85) was higher than the rate during which the CPPRS was not used (0.82, $p = 0.016$). The average correctness rate on lower-ordering questions of the content delivered with the CPPRS (0.88) was higher than of content delivered without the CPPRS (0.85, $p = 0.016$). However, the average correctness rate on higher-ordering questions of content delivered with the CPPRS (0.79) was not significantly different than of content delivered without the CPPRS (0.77, $p = 0.207$). From the survey, students found TopHat was easy to use and believe the use of TopHat positively impacted their learning.

Conclusion: Incorporation of a CPPRS into in-class exercises during lectures improved students' performance overall, especially on lower-order thinking. However, no improved students' performance was found on the quiz questions to access higher-order thinking with the use of the CPPRS. A better understanding of students' perceptions of the CPPRS used in Food Science education was gained to provide more insight into the practical application of CPPRSs. With the pervasiveness of smartphones in classrooms, a CPPRS such as TopHat can turn the omnipresent smartphones into useful tools to improve students' academic performance by engaging students and creating an active teaching and learning environment.

References:

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Careers: Director, Food Safety and Policy

(Contributed by Jamie N. Wiggins, M.S, Food Northwest)

Introduction/Background: I am currently the Director of Food Safety and Policy for Food Northwest, a regional trade association for food processors in the states of Washington, Oregon and Idaho. We use science to advance food safety, environmental and sustainability practices and policy. As the only food scientist employed by Food Northwest, I focus on food safety practices, technical issues and concerns of members, and regulatory relations on behalf of the Northwest food industry.



I earned my bachelor and master degrees in food science from Alabama A & M University. I participated in the Summer Research Opportunities Program (SROP) at Purdue University prior to my senior year. My thesis research studied the antioxidative properties of phenolic compounds in fruits for military rations. After graduate school, I worked as a Research and Development Scientist and later enrolled at Washington State University, where I earned a Master in Teaching degree. In my current position I use my diverse and unique education, career experience and skill set.

Qualifications: This requires a breadth of skills from scientific knowledge to interpersonal and leadership skills. The job requires a bachelor's degree, although a master's is preferred, and experience in the food processing industry. Familiarity with food laws, regulations and policy is beneficial.

Positions: Prior positions include Graduate Research Assistant, R&D Scientist and Science Teacher.

Duties: I am responsible for monitoring scientific advancements that will enhance food safety and I communicate those findings to the industry. I also track food regulations,

ascertain their impact on food processing operations; and verify that these regulations are well supported by research and are scientifically valid. I collaborate with our members about issues they are experiencing in their operations and difficulties they have complying with both federal and state regulations. I foster relationships with personnel from the FDA, state food regulatory agencies, and other food industry associations to cooperate on developing good food policy. This position requires 25-30% travel for processor facility tours, conferences and meetings.

Salaries: There are regional and national trade associations in our industry. Salaries will vary greatly depending on the type of association, experience, and duties. The general range is \$70,000-\$140,000 a year.

Benefits: Full benefits are offered for a full-time position including medical and life insurance, short-term disability and 401K contributions.

Conclusion: This job is awesome because you get the opportunity to meet a lot of great people, and become familiar with a variety of food operations and different commodities. You learn how science shapes food policy and how those policies impact our industry. If you are passionate about people, food safety, science and ensuring that food policy is effective for public safety and balanced so that our food industry can continue to grow and diversify, then a job with a food trade association may be a great fit for you.

Member News:

Phi Tau Sigma Scholarship and Award Recipients

Dr. Daryl B. Lund Student International Travel Scholarship

Amadeus Driando Ahnan, or Ando, is a food scientist with outstanding competences in communication, multimedia, social movement, entrepreneurship, and culinary arts. Ando is doing his 3rd year of Ph.D. program in the Food Science Department, University of Massachusetts Amherst, while serving as the Vice President of Institute of Food Technologists (IFT) Student Association (2016-2017) as well as the Vice Chair of Research Chef Association (RCA) Student Committee (2017-2018). Ando is the founder-coordinator of the Indonesian Tempe Movement (www.tempemovement.com), an international non-profit organization that aims to give more access to affordable, nutritious, and sustainable protein source through promoting tempe – a traditional staple food from Indonesia. He is also the co-founder of FGW Academy (www.fgwacademy.com), a free e-learning platform on food science & biotechnology. Several notable awards Ando has received are the Northeast IFT (NEIFT)'s most prestigious Graduate Suppliers Award 2017, Feeding Tomorrow Graduate Scholarship 2017, and 1st Place in Food Science in Action Video Competition by Journal of Food Science Education 2017.



Ando will apply the Phi Tau Sigma Daryl B. Lund Student International Scholarship to his upcoming travel in August 2018. The travel would enable him to fulfill his duty as the

corresponding scientist-multimedia in the launching of novel biopreservative product for tofu. Ando's dedication to this project since 2014 has contributed to the invention of the only natural bio-preservative that can give similar tofu shelf-life and production yield compared to formaldehyde, which is an adulterant that is commonly used in Indonesia. The launching would be hosted by the Indonesian FDA "BPOM" at the national level with the Indonesia President Joko Widodo as an invitee. Ando is navigating his professional development towards ensuring that developing countries can be in more strategic positions to synergize with developed countries in feeding the world safe, healthy, sustainable, ethical, and delicious foods. This award will enable him to continue his journey in reaching these goals.

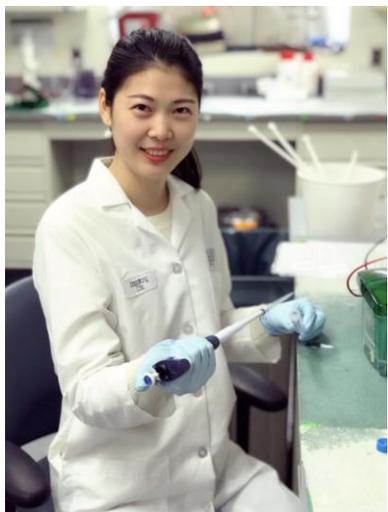
Phi Tau Sigma Achievement Scholarships (3 recipients):

Nicole Arnold, M.S. is currently a second year Ph.D. student in Food Science and Technology at Virginia Tech, under the direction of Dr. Renee Boyer. She completed her Bachelor's and Master's degrees in Food Science and Technology at North Carolina State University. Nicole was instrumental in the reactivation process of the Virginia Tech Chapter of Phi Tau Sigma and currently serves as the Chapter President.



Nicole's research is part of a larger initiative, USDA NIFA CAP Grant *Enhancing the Safety and Quality of Produce and Low-Moisture Foods by Waterless Nonthermal Technologies*. In the past few years, the FDA has identified commodities like leafy greens, tomatoes, berries, and almonds as posing as a high risk for potential pathogen contamination due to the frequency in which they are consumed fresh, ready-to-eat, or as ingredients. They are often minimally processed to maintain freshness, nutrition content, and sensory properties. To address this issue, new waterless nonthermal processing technologies that show promise in producing safe, high quality foods (i.e. decontaminating light, gaseous treatment, and cold plasma) are being investigated. Nicole's dissertation titled "Consumer Knowledge, Perceptions, and Purchasing Behaviors Associated with Food Processing Technologies in the United States" focuses on the consumer perspective of both conventional and emerging food processing technologies. In a time where consumers are more interested than ever in the foods they consume, it is important that they are comfortable with emerging food processing technologies that show promise within the food industry. As new food processing technologies emerge, it is essential that consumers, as well as personnel that serve as educational resources for consumers, be supplemented with accurate information that drives consumer acceptance.

In addition to her commitment to fulfill the obligations of a Ph.D. in Food Science and Technology, Nicole is also dedicated to taking courses in pedagogical practices each semester as a member of the College of Agriculture and Life Sciences Graduate Teaching Scholar Program. She recently completed the Future Professoriate Graduate Certificate for graduate students interested in pursuing academic faculty positions post graduation. Through the GTS Program, Nicole is the instructor of record for Virginia Tech's Introduction to Food Science course.



Xiaoqiong Cao, Ph.D. candidate, University of Massachusetts, Amherst, received her Bachelor degree from Sichuan Agricultural University in China. Currently, she is working on an innovative and significant Ph.D. dissertation topic on risk evaluation of foodborne titanium dioxide (TiO₂) nanoparticles (NPs). In her research, she utilized both *in vitro* and *in vivo* models to evaluate the toxicity of TiO₂ NPs, a whitening agent in various food products, and also the interactions of TiO₂ NPs with other food components which may impact the biological fate of NPs. Her work has led to 3 research articles in peer-reviewed journals, including Journal of Agricultural and Food Chemistry, RSC Advances. Additionally, she has given 5 presentations at multiple international conferences where it showed her ability to deliver a clear, concise, and well-thought presentation with a new perspective by demonstrating her research.

Xiaoqiong's excellence has been recognized by numerous awards. She received the annual scholarships from Northeast Dairy Associate two years in a row (2016 & 2017). She won a travel award for 252nd American Chemical Society (ACS) national meeting and she also received travel grants from Pepsico and the New York Academy of Science. In addition to her research experience, Xiaoqiong has equally impressive mentoring and teaching experience. At UMass, she has worked as a teaching fellow in College of Natural Science from 2017 to the present, and she is the instructor of a 1-credit seminar called "Food matters: how does food impact health?" where she developed the curriculum including lectures, discussions and debate. She has taught three sections and received very positive feedback from her students. Xiaoqiong served as the Treasurer for the UMass Phi Tau Sigma Chapter, and ACS/AGFD Student Chapter from 2016 to 2017 and dedicated herself to reactivating and strengthening the Chapter.

In summary, Xiaoqiong has proven herself to be a highly intelligent, mature and outstanding young researcher. She has great communication skills, is a patient and effective teacher and works extremely hard to be successful.

Tianxi Yang is a Ph.D. Candidate in Food Science at the University of Massachusetts Amherst. Her research focuses on *in situ* and real time monitoring and characterization of pesticide residues on and in fresh produce using surface-enhanced Raman spectroscopy (SERS). Pesticide residues on and in fresh produce are of great food safety concerns. SERS method is a powerful analytical tool which is fast, simple, novel and very practical in real applications. Understanding the behaviors and fate of pesticide residues on and in fresh produce is critically important for effectively applying pesticides and minimizing pesticide exposures from food.

Tianxi is a hard-working, motivated and focused researcher. She has achieved remarkable scholastic accomplishments including 2 book chapters, 19 peer-reviewed journal publications, 2 patents and 24 awards. One interesting paper involving evaluation of the best washing method to wash pesticide off apples was published on *Journal of Agriculture and Food Chemistry* and it has been reported by many famous



media such as TIME, CNN, USA TODAY etc. In June 2017, she was awarded by American Chemical Society for her contributions in the areas of agricultural and food chemistry. Her research was also featured in a Student Research Synopsis article in the September 2017 issue of the Phi Tau Sigma Newsletter. Since 2017, when Tianxi was inducted into Phi Tau Sigma, she has been serving on the Newsletter Committee. She is also actively involved in student and professional organizations. Upon completing her Ph.D. study, Tianxi plans to become a faculty member, and to be a distinguished scientist is her goal.

Given her exceptional scholastic achievements, dedication to Phi Tau Sigma, and passion for food science, Tianxi is a most worthy recipient of a 2018 Phi Tau Sigma Student Achievement Scholarship.

Dr. Gideon "Guy" Livingston Scholarship



Zipei (Zach) Zhang is a Ph.D. student and Research Assistant in Biopolymers & Colloids Research Laboratory in Food Science Department of University of Massachusetts Amherst under Professor David Julian McClements' guidance. His scientific research work is on the development of novel excipient and delivery systems to enhance the performance of bioactive agents, such as nutraceuticals, enzymes, and vitamins. Zipei has published over 40 scientific articles in peer-reviewed journals with citations over 600. He has also submitted a patent disclosure and book chapter. He has participated as a

reviewer of 19 papers for more than 12 journals.

Zipei Zhang's hard work and extraordinary achievement have been recognized by professional organizations. He received the AOCS Hans Kaunitz Award this year and he is going to be honored in the following 109th AOCS Annual Meeting. In 2017, Zach received the Honored Student Award, and the Peter and Clare Kalustian Award from the AOCS. He received the IFT Feeding Tomorrow Scholarship, and won the 2nd Place Student in the IFT AAFSIS Poster Competition. He also won the 1st Francis competition in our department. In 2016, Zach won a Research Assistant Scholarship from UMass and a Travel Award from the ACS, in addition to coming in second place in the AOCS Industrial Oil Poster Competition. Zach also takes pride in giving back by way of volunteering. He has participated in many service activities in the department, on campus, and to the wide community. He volunteered at the NEIFT Food Industry Expo and was a co-chair in the AOCS Nutrient and Health session. Last year, he volunteered at the IFT 17 Annual Meeting and he was the co-organizer in the 7th Annual Life Sciences Graduate Symposium.

Phi Tau Sigma Founders' Scholarship

Weicang Wang is currently a Ph.D. Candidate at University of Massachusetts, Food Science Department. Weicang kept his GPA over 3.5 in all degrees he has received, and his GPA for Ph.D. degree is 3.95. His research focuses on 1) novel functions of bioactive food components, such as curcumin or allicin on cancer prevention and treatment, 2) biological functions and pathological mechanism of lipid metabolisms signaling in human disease, 3) potential health risks of commonly exposed dietary



factors, such as oxidized lipids from cooking oils, in human health.

Weicang is an excellent student and scientist, being highly productive and creative. This is in part reflected in his excellent publication record: 11 peer-reviewed publications, including 8 first-author publications and 3 co-author publications. There are two other first-author papers under review. All of these research achievements were accomplished in three years. In August 2016, Weicang was funded by ACS/AGFD to present his research about "Redox active antioxidants increase chemical stability and biological effect of curcumin" at the ACS National Meeting in Philadelphia. In April 2017, Weicang was awarded by the American Society for Pharmacology and Experimental Therapeutics to give a research talk about "cytochrome P450 as a therapeutic target for colitis-associated colorectal cancer" at the ASPET Annual Meeting in Chicago. In addition, Weicang is the winner of Departmental Alumni Fellowship-UMass Food Science (2014-2017), IFT Feeding Tomorrow Graduate Scholarship (2017) and NEIFT Graduate Scholarship (2017). Weicang currently serves as a reviewer for several food science journals, including *Journal of Food Science*, *Food & Function*, *Journal of Biotech Research* and *Medicine*. Besides, Weicang has worked as a teaching assistant for undergraduate course (FOOD-SCI 120), volunteered as registration staff on attendee check-in station in 2016 and 2017 Northeast IFT Food Industry Expo (Worcester, MA), and actively participated in Phi Tau Sigma-UMass Chapter activities.

Phi Tau Sigma Special Recognition Award

Dr. H. Russell Cross, Lifetime Member, epitomizes the intent of the Phi Tau Sigma Special Recognition Award which "shall be given to a professional Member of Phi Tau Sigma who has shown exceptional dedication to Phi Tau Sigma - The Honor Society of Food Science and Technology, as evidenced by significant accomplishments towards the goals and/or administration of Phi Tau Sigma." "Preference shall be given to Lifetime Members of Phi Tau Sigma."

Dr. Cross was inducted into Phi Tau Sigma in 1983, and has been a Lifetime Member since July 26, 2011.

Dr. Cross has served on and chaired committees, and has been on the Executive Committee (At-Large Councilor and President). Specifically:

- Russell served as Chair of the Phi Tau Sigma Nominations and Elections Committee (2012-2013), and then served as this committee's Past Chair (2013-2014).
- Dr. Cross was elected to the Executive Committee as a Councilor at-Large (2012-2015).
- Dr. Cross was a member of the Phi Tau Sigma Newsletter Committee (2013-2014).
- Dr. Cross was a member of the Membership and Qualifications Committee (term 2013-2016) and was Chair of that Committee in 2014-2015.
- Dr. Cross served on the ad hoc Scientific Communications Committee (2015-2017).
- Dr. Cross has served on the Finance Committee (2015 to present).
- As President Elect, Dr. Cross was Chair of the Program Committee (2015-2016).
- Dr. Cross served as President of Phi Tau Sigma (2016-2017).
- Dr. Cross currently serves as Past President of Phi Tau Sigma (2017-2018).



One can easily see from the list above Dr. Cross's dedication to Phi Tau Sigma, spanning years, and frequently with over-lapping responsibilities. He has had "significant accomplishments towards the goals and/or administration of Phi Tau Sigma."

Dr. Cross has approached each responsibility with professionalism, tact, and insight. Russell works with efficiency and quality. He has contributed extensively to the advancement of Phi Tau Sigma, as well as the day-to-day duties that are so necessary to run an Association.

Dr. H. Russell Cross exemplifies the intent of the Phi Tau Sigma Special Recognition Award.

Effectively teaching "Food Safety System Management" overseas

In 2017, **Dr. Catherine Cutter** (Penn State) a Lifetime Member of Phi Tau Sigma, and colleagues developed, disseminated, and evaluated a 4-week Food Safety System Management (FSSM) curriculum for college-aged, agribusiness students in Yerevan, Armenia. The curriculum included a mix of lectures, hands-on laboratories, and break-out sessions that covered the following topics: introduction to food science, food microbiology, sanitation, thermal processing and acidification of foods, hazard analysis and critical control point (HACCP), and food defense. Participants earned certificates at the completion of each module, as well as a Food Science certificate from Penn State upon completion of the full program. Each week, students visited food processing facilities to observe how concepts the students had learned were being implemented. The students visited a winery and cognac factory, as well as a cannery, a dairy plant, and a meat processing facility. The field trips demonstrated proper food safety measures for processes from production to canning, boxing, and packaging of food and beverages.



Additionally, a research project was conducted to determine the impact of the training program on the participants. Prior to beginning the program, demographic data was collected and a paper-based pre-test was administered to assess the food safety knowledge, behavior, and attitude of participants. For assessment of a skill, participants' handwashing techniques were videotaped and scored before the program commenced. Immediately after completion of the entire curriculum, a paper-based post-test with identical questions for food safety knowledge, behavior, and attitude was administered and handwashing skills were assessed. The research demonstrated significant improvements in food safety knowledge, behavior, and attitudes upon completion of the training program, and again when assessed 3 months later. Participants' handwashing skills prior to delivery of the FSSM curriculum also improved significantly when compared to handwashing skills after completion of the curriculum. This research was published in the *Journal of Food Science Education*, a publication of the Institute of Food Technologists. In 2018, Dr. Cutter and colleagues from Penn State are adapting and offering the curriculum for students and faculty at the National University of Life and Environmental Sciences in Kiev, Ukraine.

In Case You Were Wondering... Remembering our roots – with haggis and scotch...

(Contributed by Rosemary Mucklow, B.A., Director Emeritus and Consultant, North American Meat Institute)

My brother-in-law, Errol Wilson Mauchlan, husband of my late sister, often came to dinner and I tried to think of ways to entertain him and honor his accomplishments. When I was serving as the President of the Berkeley City Club in 2006, I instituted a new social event honoring Robert Burns, the great poet of Scotland, the country where Errol and I were born. Errol, a true Scotsman, ensured that I did things right! And we continue to celebrate it every year even though Errol moved to the hereafter in 2014!

Robert Burns was born on January 25, in 1759. I persuaded organizations that would be supportive to join us, such as the St. Andrew's Society based in San Francisco, and friends in the great meat industry with Scottish ancestry. Once again, on January 25, 2018, we had yet one more celebration.



It starts with a reception, with Scotch Eggs, and other tasty bites, and there is always good single malt Scotch available! But the real fun begins when the Piper, in a Scottish kilt playing the bagpipes, leads the parade from the kitchen to the dining room, and everyone stands in welcome. The Piper is followed by the Chef, carrying a platter on which the hot Haggis is placed, followed by a kilted guest carrying two bottles of Scotch crossed like the St. Andrew's Cross across his breast, followed by another kilted Scotsman ready to deliver Burns famous poem, The Ode to the Haggis. For the past several years, my UFCW friend in Southern California, John Grant of UFCW Local 770, drives 400 miles to join us. He knows the Ode by memory and delivers a rousing presentation! He then picks up his dirk

and plunges it into the Haggis, and the steam rises! It is a grand moment! I then deliver the words of Robert Burns from the Selkirk Grace: *Some hae meat and canna eat; And some wad eat that want it. But we hae meat, and we can eat, And so the Lord be thank it!*

My friends at Superior Lamb send legs of lamb which the Chef roasts, and it is served with fresh mint sauce from my garden and "nips and neeps" (mashed potato and mashed turnip). So there is food for all, and a wonderful buffet.

Dessert includes Fly Cemeteries – the Scots name from thin slices of pastry, with Rosemary-home-made mincemeat inside, and slices of Dundee cake, a rich fruit cake.

With full stomachs, the guests sit back for entertainment. A distinguished person with Scottish ancestry presents: The



Immortal Memory! This is a brief presentation of the life and work of the great poet, and what he meant to Scotland during his short life-time, and ever since, and why he is remembered so fondly today! Then a kilted guest is invited to give the Toast to the Lassies, and is followed by a female guest who responds with the Toast to the Laddies!

And then another guest, with his fiddle, plays Scottish songs for all to sing! I start it off, bursting out with: By yon bonnie banks, and by yon bonnie braes, When the sun shines bright oer Loch Lomond; Me and my true love will never meet again, By the bonnie bonnie banks of Loch Lomond!

And we always finish on time, with everyone rising and joining in a big circle, with crossed arms and holding hands, as we break forth with Auld Lang Syne! Remembering our roots, and remembering scientists like Alexander Fleming who discovered penicillin, and Joseph Lister, who first introduced antiseptics to medicine, both of whom hailed from Scotland, and celebrating our roots in a meaningful way is very important in all our lives!

Dues Reminder:

Your dues status is listed in the cover email of this Newsletter. If you have not already paid your dues, Phi Tau Sigma Member dues are \$40 per year, but students get a discount so their dues are \$20 per year. Lifetime Membership is \$400 (just once). Please access the Phi Tau Sigma Membership Renewal Notice at:

www.phitausigma.org/forms.php?do=form&fid=2, and provide the requested profile information which is needed to update our directory of members. Proceed on to pay by PayPal. Once you are successful with your PayPal payment, you will receive a receipt. If you do not receive a receipt, please try again.

Dues can also be paid by check payable to **Phi Tau Sigma**, (made with U.S. Funds and drawn on a U.S. Bank). (Do not send a money order.)

Mail your check to: **Daryl Lund, Ph.D.** (Do **not** address to Phi Tau Sigma.)

May 1 to October 31: 151 E Reynolds Street, Cottage Grove, WI 53527.

November 1 to April 30: 11815 N 97th Avenue, Sun City, AZ 85351.

You are welcome at any time to give a donation to the Dr. Carl R. Fellers Award Fund, the Dr. Gideon "Guy" Livingston Scholarship Fund, Phi Tau Sigma Student Achievement Awards Fund, Phi Tau Sigma Special Recognition Award Fund, Dr. Daryl B. Lund International Scholarship Fund, Phi Tau Sigma Founders' Scholarship, Phi Tau Sigma Chapter of the Year Award, Honorary Society Advancement Fund, or the President's Fund.

We also ask each Chapter to send a list of their current, and lapsed, members along with contact information to the Chapter Affairs Committee Chair, Mary Schmidl, Ph.D. at: mschmidl@umn.edu, to help ensure our records are accurate.

Phi Tau Sigma Store

Phi Tau Sigma has an online store. Items featured include Honor Cords, Official Lapel Pins, Banners (podium and wall/table), Annual and Lifetime Member dues, printed Certificates of Membership, and an opportunity to make tax deductible donations to Phi Tau Sigma. The

Society Store can be found by going to www.phitausigma.org, and clicking on the Dues & Supplies tab, or going directly to: <http://www.phitausigma.org/content.php/245-gift-shop> (If you pay your dues through the Society Store, please remember to fill out the Membership Renewal form also: <http://www.phitausigma.org/content.php/143>)

Editorial:

Recently an Aunt of mine (yes, another one), and a very close friend, died two days apart. The losses sting. However, reflecting on their lives and writing to you all brings me a joy in the realization that the Phi Tau Sigma Newsletter Features offer us the opportunity to learn about colleagues, who have in many cases become friends, while they are still with us, rather than just in their eulogies.

As you scroll through the Newsletter, take the time to read about each member featured, and particularly this month the Phi Tau Sigma scholarship and award recipients. Be amazed at their accomplishments, and proud that you share membership in Phi Tau Sigma. Spend a moment to get to know them when your paths cross. Appreciation of someone's accomplishments should not have to wait for their eulogy.

About Phi Tau Sigma Communications:

The Phi Tau Sigma Newsletter Committee includes: Kathryn Kotula, Ph.D., Editor-in-Chief, Chair (klkotula@msn.com), Claire Zoellner, Ph.D., Assistant Editor (cez23@cornell.edu), Anthony W. Kotula, Ph.D., Afef Janen, Ph.D., Hossein Daryaei, Ph.D., Tianxi Yang, M.S. (Ph.D. Candidate), and Yiren Yue, B.S. (Ph.D. Candidate). Please be responsive to their inquiries for information for the Newsletter.

The Newsletter Committee particularly wishes to share news from Phi Tau Sigma Members and Chapters. Any items for the monthly Phi Tau Sigma Newsletter should be emailed in Word (97-2003 compatibility mode) to Editor Kathryn L. Kotula, Ph.D. at klkotula@msn.com or Assistant Newsletter Editor Claire Zoellner at cez23@cornell.edu. Write "*Phi Tau Sigma Newsletter*" in the subject line. Please provide the information by the 1st of the month. Thanks.

Documents:

Phi Tau Sigma Documents can be found on our website at: www.phitausigma.org. Be sure to log in to access the attachments/forms.

Phi Tau Sigma Membership Nominations
<http://phitausigma.org/content.php/264-Membership-Nomination>

Phi Tau Sigma Scholarships and Awards Forms
<http://phitausigma.org/content.php/3-Awards>

Phi Tau Sigma Mentorship Program
<http://phitausigma.org/content.php/304-Phi-Tau-Sigma-Mentorship-Program>

Phi Tau Sigma Constitution and By-Laws
<http://www.phitausigma.org/content.php/201-Constitution-and-By-Laws>

Donors, Sponsors, and Contributing Partners:

Phi Tau Sigma accepts donations and has a variety of available sponsorship opportunities.

Phi Tau Sigma is a non-profit 501(c)(3) charitable organization, so your contributions are tax deductible to the extent provided by U.S. law.

Donations and sponsorships may come from, but are not limited to, Corporations, Companies, Universities, Government agencies, Associations, Consultants, and individuals.

Contributions are appreciated in any amount, and can be made by way of the Phi Tau Sigma website (www.phitausigma.org/content.php/142-donate). Donations by check can be made by contacting: Treasurer Daryl Lund, Ph.D. (dblund@wisc.edu). Please write "Donation" or "Sponsorship" in the subject line.

Contributions of \$500 or more will be recognized publicly by the Society at the annual meeting, on the Phi Tau Sigma website, in printed material associated with relevant programs and events, and in the Phi Tau Sigma monthly Newsletter. Sponsorships of awards and scholarships are also available at levels of contribution sufficient to cover the associated cost of the award or scholarship. Endowments are also accepted.

Sponsorship opportunities are available for the Phi Tau Sigma Annual Recognition Event, Phi Tau Sigma Special Recognition Award, Phi Tau Sigma Student Achievement Award (up to 3 will be awarded), the Dr. Gideon "Guy" Livingston Scholarship Fund, the Phi Tau Sigma Founders' Scholarship, the Dr. Daryl B. Lund International Scholarship Fund, and the Phi Tau Sigma Outstanding Chapter of the Year Award. Donations can be made towards the awards and scholarships listed above, as well as the Program fund and the General fund. There are also endowment opportunities for student scholarships named for the sponsoring company.

Phi Tau Sigma has a **Contributing Partners Program** with five levels of sponsorships as described below. The Contributing Partner receives all of the benefits in the previous levels, plus the addition of the benefit listed for that level.

Bronze (\$5000)

- Company listing in the "Donors and Sponsors" section of the Phi Tau Sigma Newsletter.
- Recognition with company name on www.PhiTauSigma.org
- Prominent recognition at all major Phi Tau Sigma events

Silver (\$10,000)

- Bronze benefits.
- Posting your company's job openings and internships in the Phi Tau Sigma Newsletter.

Gold (\$15,000)

- Silver benefits.
- Acknowledgement of sponsorship and placement of corporate logo on plaque or scholarship/award memorabilia.

Platinum (\$20,000)

- Gold benefits.
- A press release associated with significant contributions, distributed to allied professional and trade associations for circulation to their membership via their publications, e-news and/or listservs.
- Complimentary access to student resume database.

Diamond (\$25,000)

- Platinum benefits.
- Prominent multi-year listing on the Phi Tau Sigma website as a sponsor of an Endowed Program.

Some corporations will match individual contributions of their employees, so check with your company about matching funds.

For more information contact the Treasurer, Daryl Lund, Ph.D. (dblund@wisc.edu), or the Executive Secretary, Kathryn L. Kotula, Ph.D. (klkotula@msn.com). Please write "Donation" or "Sponsorship" in the subject line.

2017-2018 Donors and Sponsors:

Hawkins, Inc. is a progressive concern that manufactures and distributes specialty chemicals and provides functional solutions for a wide variety of industries. The Food Ingredients Group is a leading manufacturer of innovative pathogen control technologies and ingredients for the food industry. The recent formation of Ingredient Works, an entity conceived to capitalize on expertise in functional ingredient applications, food industry knowledge, technical service, and an extensive product portfolio, is focused on the comprehensive science of shelf-life, providing

customized solutions to both the common and the highly complex issues faced every day by food manufacturers. The ultimate goal for the Hawkins Food Ingredient Group is to re-define the concept of shelf life and become a complete solution provider to the food industry. (Contribution to fully sponsor a Phi Tau Sigma Student Achievement Scholarship.)



International Food Network, Inc. is a consultancy based in Ithaca, New York that serves the food, beverage and nutrition industry, providing services in the areas of value optimization, corporate development, mergers & acquisitions and divestitures. Peter Salmon is IFN's founder and principal. (Donation to fully support a Phi Tau Sigma Student Achievement Scholarship.)

Dr. Mary K. Schmidl is the President-Elect of the International Union of Food Science and Technology (IUFoST), a Lifetime Member and a past President of Phi Tau Sigma, a Past President of the Institute of Food Technologists (IFT) and Adjunct Professor, University of Minnesota.

Dr. Theodore P. Labuza is a Lifetime Member of Phi Tau Sigma, a Past President of the Institute of Food Technologists (IFT) and the Morse Alumni Distinguished Teaching Professor of Food Science and Engineering, University of Minnesota.

Dr. Daryl and Mrs. Dawn Lund. Dr. Lund is a past President of Phi Tau Sigma, a Lifetime Member, and current Treasurer; and is an Emeritus Professor, University of Wisconsin. (Contribution to sponsor the Dr. Daryl B. Lund Student International Travel Scholarship.)

Dr. Fergus Clydesdale, a Lifetime Member of Phi Tau Sigma, is the Distinguished Professor and Director of the UMass Food Science Policy Alliance, University of Massachusetts Amherst and a member of Phi Tau Sigma since the 1960's.

Dr. Rakesh K. Singh is the President-Elect of Phi Tau Sigma, a Lifetime Member; and is Professor and Head of Department of Food Science & Technology at the University of Georgia. He is also a Fellow of IFT and Editor-in-Chief of LWT – Food Science and Technology. (Sponsorship towards a Phi Tau Sigma Achievement Scholarship.)

David K. Park, M.S., Phi Tau Sigma Lifetime Member, is Principal, Food-Defense, LLC, providing expert food safety / process authority / food defense consultation for traditional and novel low acid canned foods (LACF), acidified foods (AF), and refrigerated extended shelf life foods (ESL) for USFDA and USDA-FSIS- inspected products, packaging and processing systems. (Donation towards a Phi Tau Sigma Scholarship.)

Dr. Yaguang (Sunny) Luo, is a Food Scientist with US Department of Agriculture, Agricultural Research Service. Her work focuses on food quality and safety of fresh and fresh-cut produce. Dr. Luo currently chairs the IFT's Fruit and Vegetable Product Division, and is the Past President of Chinese American Food Society. (Donation towards a Phi Tau Sigma Scholarship.)