Message from the President, Rodrigo Tarté, Ph.D.

As The Honor Society of Food Science and Technology, Phi Tau Sigma provides unique value to the food science and technology profession and its practitioners, by fostering recognition, leadership, and networking, and by providing professional mentoring and growth opportunities to young professionals. In order to provide such value, however, we are in constant need of two important inputs: human resources (volunteers) and financial resources (money). On the human resource side, we are fortunate to have a great group of committed volunteers, among them your elected Board of Directors, as well as Committee chairs and Committee members. But we could still use more volunteers! If you would like to get involved, there is still room for you. Just let myself or Executive Director Dr. Kathy Kotula know, and we will find a place for you to make an impact in our Society.

On the financial resource side, payment of our membership dues is also another way to stay involved. In addition to ensuring we can deliver our programs, dues payment will also ensure you remain a member in good standing, which gives you the right to vote in elections, serve on committees, or even run for office. Please consider renewing your dues if you haven’t done so. And remember that for a one-time fee of $400 you can become a Lifetime Member and will never have to worry about paying dues again (or receiving any reminders to do so). Keep in mind that all Lifetime Member dues paid go directly into the Society’s endowment, ensuring that your contribution will have a lasting effect. In order to pay your dues, just visit http://www.phitausigma.org/membership-dues/. And if your dues have lapsed, don’t worry; just pay the current year’s dues and you will be back as a member in good standing.

On behalf of your Board of Directors and Executive Committee, thank you for staying involved!
Award and Scholarship Deadline Approaching -

Phi Tau Sigma–AMSA ‘Research with Impact’ Scholarship deadline April 19.
The award includes an honorarium of $2000 and a plaque.

The objective of the Phi Tau Sigma –AMSAR esearch with Impact Scholarship “is to emphasize the importance of original research, carefully selected to solve vexing problems of the meat/food industry. The Phi Tau Sigma – AMSA Research with Impact Scholarship shall be given to a student Member or recently graduated Member of the American Meat Science Association whose undergraduate or graduate research has had, or is expected to have, a significant Impact – a practical and meaningful application.”

Send completed nomination forms for the Phi Tau Sigma – AMSA ‘Research with Impact’ Scholarship to Phi Tau Sigma Executive Director (klkotula@msn.com) and the AMSA Youth Programs Manager (scholarships@meatscience.org)

Full information for both opportunities can be found at: http://www.phitausigma.org/awards/.

Nomination hints: (From the Editor)
• Read the Criteria carefully. Does the nominee fulfill the criteria?
• Read the Instructions carefully before and after filling out the nomination to be sure all instructions are followed properly, and the information requested is easy to find.
• Feel free to ask questions.
• Don’t wait for the deadline to send in the nomination. Early is good.

Students about to graduate:

Please remember to:
1) Order your Honor Cord and lapel pin in plenty of time for them to be mailed to you before graduation. Very early April is optimal. Store web address: http://www.phitausigma.org/store/
2) Forward your new contact information (especially your new email address) to the Executive Director (klkotula@msn.com).

Not having an in-person graduation? Consider getting the Honor Cord and lapel pin anyway. Honor cords look great displayed, and you can use the lapel pin for many years to come.

Thank you, and Congratulations on your graduation!

Membership Nomination Reminder:

Please use the most up-to-date nomination form when sending in membership nominations. The form comes in two formats: Word and writable pdf. Either format can be used.

The proper form will have '2022' in the title, and a revision date of June 1, 2021 as the footer of the second page.

The most up-to-date forms can always be found on the Phi Tau Sigma website: www.phitausigma.org.
Banners: Great for Chapter events! And anywhere you want to promote Phi Tau Sigma.

Phi Tau Sigma banners are available in the Phi Tau Sigma Store. There are three types: Podium (18”x24”, $25 each) (photo on left), Outdoor Wall/Table (has wind slits, 30”x48”, $45 each), and Indoor Wall/Table (30”x48”, $45 each) (photo on right). Order through the Phi Tau Sigma Store (http://www.phitausigma.org/store/).

Program Committee: Opportunity to have your presentations publicized to the Phi Tau Sigma membership
(Contributed by Lauren Jackson, Ph.D., President Elect and Chair Program Committee)

Do you have a presentation, symposium or technical session at IFT, IAFP, ACS, the Reciprocal Meat Conference (RMC) of AMSA, or any other meeting or conference in 2022? We would like to advertise these events in upcoming Phi Tau Sigma Newsletters.

Please send us your presentation/session information by the deadlines below, or as soon as you have it. (Keep in mind that publication dates are one month after the deadline given below.):

IFT - April 1, 2022
RMC - April 1, 2022
IAFP - May 1, 2022
ACS - June 1, 2022 (for Fall ACS meeting)
Other conferences/meetings - Please provide information at least 2 months prior to the conference or as soon as the information is available.

Please provide the following information: Title of the presentation, Presenter (and terminal degree, and affiliation), Authors (with terminal degrees, and affiliations), Presentation Description/Summary, Meeting of which association; Date, Time, and Room number. Feel free to add any other pertinent information such as Moderator. You may not have the date, time, and room number yet, but send these as soon as you do to the email addresses below.

Please send the presentation/session information to Dr. Lauren Jackson (Lauren.Jackson@fda.hhs.gov) and copy Dr. Kathryn L. Kotula (kkotula@msn.com).
AMSA is excited to announce that registration for the 75th RMC is open! Please join us June 12-15, 2022, in Des Moines, IA, as we come together to celebrate the 75 years of meat science heritage! The AMSA 75th 2022 RMC is co-hosted by Iowa State University, Kemin Food Technologies, the National Pork Board, and Hormel Foods Corporation.

AMSA is excited to head back to Iowa for the 75th RMC, who also hosted the 25th RMC and the 50th RMC! “I am looking forward to bringing together meat scientists and industry professionals in Des Moines to highlight the latest scientific and technologic innovations in our field,” Dr. Anna Dilger, 2022 RMC Chair.

2022 RMC Technical Program Will Include:
- Automation in the Global Meat Industry
- Meat in the Diet-How do we help get it on the plate?
- Oxidation of Muscle Proteins
- Supply Chain - Untangling the Issues
- New Approaches to Reducing Salmonellosis Across the Food Industry
- Modern Application of Classic Processed Meat Ingredients
- A Deep Dive into US Pork Business
- Pet Food Innovation for Pets and Pet Parents
- Abstract and ePoster Sessions
- And Over 25 Reciprocation Sessions

“The program we have planned spans the entire field of meat science, including basic muscle biology, automation in the meat industry, processed meats, food safety, and even a closer look at recent innovations in pet foods. There is truly something for everyone at RMC,” stated Dr. Dilger.

More information regarding the schedule of events, registrations fees, hotels, and more are posted online.
The early bird registration fee is $675 for AMSA members, $295 for student members, and $950 for nonmembers, so register by May 2, 2022, to save!
**IFT FIRST 2022**

IFT FIRST 2022 Annual Meeting and Expo will be held July 10-13, 2022, at McCormick Place, Chicago. A virtual option to attend will also be made available. More details on IFT FIRST 2022 can be found at [https://www.iftevent.org/](https://www.iftevent.org/)

Future Phi Tau Sigma Newsletters will provide more details once they come in.

**Entries open for the IFT22 Student Food Packaging Development Competition!**
(Contributed by Hossein Daryaei, Ph.D.)

Participants are challenged with developing a packaging innovation to solve one of several pressing challenges facing the global food system. Students can participate individually or as part of a team. All participants must be enrolled in food and packaging programs. A general certificate along with monetary prizes of $1,000, $750, $500 will be awarded to the first, second and third place winners, respectively. All winners will be invited to pick up their certificates at the IFT FIRST 2022 annual conference. Winners will be recognized at the IFT FIRST 2022 Food Packaging, Food Engineering, and Nonthermal Processing Divisions joint social activity. Students will be invited to give a very brief overview (3 minutes) of their concepts.

Submissions are due on **May 1, 2022**. The details of the competition can be found at [https://www.ift.org/community/students/competitions-and-awards/student-food-packaging-development-competition](https://www.ift.org/community/students/competitions-and-awards/student-food-packaging-development-competition)

The IFT Food Packaging Division is looking forward to your submission!

**Calendar:**

->**Phi Tau Sigma Chapter Schedule:**

- **October 25:** Deadline to order Honor Cords and lapel pins to ensure delivery before Fall graduation dates
- **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
- **August 1:** Deadline for Chapter annual reports

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, Terri Boylston, Ph.D., (tboylsto@iastate.edu), with a copy to Dr. Kathryn L. Kotula (klkotula@msn.com).
Phi Tau Sigma Scholarship and Awards Schedule:

- November 30: Deadline to submit nominations to the Awards Committee for the Dr. Daryl B. and Mrs. Dawn L. Lund Student 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, the Phi Tau Sigma Founders’ Scholarship, and the Food Regulation 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 Lili He, Ph.D. (lilihe@foodsci.umass.edu) and Executive Director Kathryn L. Kotula, Ph.D. (klkotula@msn.com). (More information: http://www.phitausigma.org/awards/)

Phi Tau Sigma – AMSA ‘Research with Impact’ Scholarship Schedule:

- April 19: Deadline to submit nominations for the Phi Tau Sigma – AMSA Research with Impact Scholarship.

Send completed nomination forms to Executive Director Kathryn L. Kotula, Ph.D. (klkotula@msn.com), and the AMSA Youth Programs Manager (scholarships@meatscience.org). (More information: http://www.phitausigma.org/awards/)

January 14: Deadline to submit Nominations for the Dr. Carl R. Fellers Award, and other IFT Achievement Awards.

(More information: https://www.ift.org/community/awards-and-recognition/achievement-awards)

Election schedule:

- December 15: Nominations due to Nomination and Election Committee (Liz Boyle, Ph.D., Chair, lboyle@ksu.edu)
- 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 2: List of candidates will be emailed to the Members for balloting
- March 30: Deadline for casting ballots
- April 8: Deadline for tabulation of ballots
- May: Newly elected individuals announced to the Membership in the May Phi Tau Sigma Newsletter

June 12-15, 2022 - Reciprocal Meat Conference of the AMSA, Des Moines, Iowa

Phi Tau Sigma Annual Meetings and Events:

2022: To be determined

July 10-13, 2022, Institute of Food Technologists Annual Meeting
Student Research Synopsis: Elucidating Mechanisms Involved in Flavor Generation of Dry-Aged Beef Loins Using Metabolomics Approach
(Contributed by Derico Setyabrata, Ph.D. candidate under the direction of Dr. Brad Kim, Department of Animal Sciences, Purdue University)


Introduction: Postmortem aging is a widely utilized process in the meat industry to improve meat palatability attributes, such as tenderness, juiciness and flavor. Currently, wet-aging (aging by storing meat in vacuum package at refrigerated condition) is the most common aging method utilized by the meat industry. However, there has been increasing interest in dry-aging by consumer seeking unique high-quality products [1]. Dry-aging is a traditional aging method where the meat (whole carcass or subprimals cuts) is aged without any protective barrier under a controlled environment. The process has been reported to generate unique flavors such as "sweet," "buttery," and "brown-roasted", which lends to the perception that dry-aged meats are premium products [2]. However, the flavor compounds that positively affect meat quality attributes of dry-aged beef have not been fully established yet.

Purpose: The main objective of this study was to identify flavor-related metabolites compounds and elucidate the flavor generation process by dry-aging, utilizing a metabolomics approach coupled with other chemical analyses.

Methods: Paired beef loins from 9 animals were obtained, split into 2 sections and randomly assigned into 3 different aging methods (wet-aging [WA], conventional dry-aging [DA] and dry-aging in water permeable bag [DW]). The samples were aged for 28 days at 2°C, 78% RH and <0.2m/s airflow. At the end of aging period, dehydrated surfaces and bones were removed. Steak samples were then collected for metabolomics profiling and biochemical analyses.

Results: The principle component analysis showed a distinct clustering of all treatments, indicating metabolite profile differences among the aging methods, even between the dry-aging

Figure 1. Principle component analysis (PCA) of significant metabolites from beef loins (M. longissimus lumborum) aged with different aging methods [Wet aging (WA), Dry aging (DA) and Dry aging in a water permeable bag (DW)].
methods (Figure 1). Higher abundance of flavor pre-cursors such as glutamate/glutamine containing dipeptide and nucleotide derived metabolites were identified in both DA and DW loins compared to WA loins (P<0.05). More gammaglutamyl peptides were observed in dry-aged product (P<0.05), indicating potential involvement of microbial activity in flavor compound liberation. Lower presence of lipid metabolites (terpenoids and steroids) were also observed in the dry-aged treatments (P<0.05), potentially reducing the negative off-flavor in the dry-aged products.

**Significance:** The results highlighted that different aging methods affected the liberation of flavor related compounds in beef. Dry-aged flavor development is potentially influenced by multiple mechanism such as microbial activity and reduction of off-flavor in the product.

**References:**

**Lifetime Member Tribute: Sarah G. Corwin Ph.D., RD**
Senior Principal Scientist, Ajinomoto Health & Nutrition North America, Inc.

**Why did you become a Lifetime Member?**
The impact that Phi Tau Sigma made on my graduate school experience was significant. Initially, through events that I attended, I was able to build a better network in this field I was entering for the first time. As I continued to utilize the Phi Tau Sigma network and events through my local Chapter, I was able to build friendships and relationships with mentors. As the Purdue University Chapter President, I found great fulfillment in mentor and mentee relationships facilitated by my involvement in Phi Tau Sigma. I wish to stay involved in Phi Tau Sigma at both the local and national levels, and I hope that by supporting as a Lifetime Member that others reap the same benefits that I have.

**Education:**
- Doctorate in Food Science, Purdue University. “Foods for Health” specialty, focus in carbohydrate chemistry
- Dietetic Internship, Indiana University-Purdue University, Indianapolis
- Bachelor of Science in Nutrition, Case Western Reserve University

**Experience/Accomplishments:**
**WORK EXPERIENCE**
- Sr Principal Scientist, Plant-Based - Ajinomoto North America Health & Nutrition, Itasca IL 08/2021 - present
- Principal Scientist - Ingredients R&D, MGP Ingredients Inc, Atchison KS 8/2020 - 08/2021
- Research & Development Intern - PepsiCo Global R&D, Barrington IL 6/2019 - 8/2019
• Consulting Dietitian - Armstrong Nutrition Management, Indiana & Missouri  3/2017-8/2021

VOLUNTEER EXPERIENCE
• The Cereals and Grains Student Leadership Association
  o Student Fundraising Chair 2019 – 2020
  o Communications Officer 2018 – 2019
• IFT Carbohydrate Division Leadership Volunteer 2019 – present
  o Hackathon Committee 2021-2022
  o Social Events co-chair 2021
  o Carbohydrate Division poster competition judge 2020
  o Member feedback survey results analysis and presentation 2020
• Phi Tau Sigma: The Food Science Honor Society, Purdue Hoosier Chapter: Leadership:
  o President (2019 – 2020), Outstanding Chapter of the Year 2020
  o Vice President 2018 – 2019
• Purdue Office of Interdisciplinary Graduate Programs Advisory Board 2018 – 2020
• American Society of Baking Product Development Committee 2020, 2021, 2022
  o American Society of Baking 3rd place 2018; Team leader, 2nd place 2019
  o Cereals and Grains Association Team leader, finalist 2019
  o Student Soybean Innovation Competition at Purdue; Team leader, finalist 2019
• KC Prep & Bowman International School, Educating grades 4-8 on food science careers, 2020, 2021

TEACHING & PRESENTATIONS:
• FS162 Purdue, Introduction to Food Processing, Guest Lecturer 2018, 2019, 2021
• FS443 Purdue, Food Product Design Senior Capstone Class, Teaching Assistant Spring 2019
• Agricultural Biological Engineering Purdue Graduate Industrial Research Symposium 2019
• Whistler Carbohydrate Research Center Annual Symposium, Poster presentation 2017, 2018, 2019

Areas of Expertise:  Carbohydrate chemistry, modification and digestion; Plant-based mimetics including meat and cheese.

Personal: Family, Interests, Hobbies:
I collect houseplants, specifically aroids, and I love spending time outdoors being active, as well as keeping physically active indoors during colder months. I love cooking, especially Japanese, Korean, and Thai cuisines.

Advice to university students and career food scientists and technologists:
Leverage any opportunity to learn from others - Critical for both professional as well as personal growth is the ability to absorb and put into action other’s findings and advice. Don’t be afraid to ask questions to those in your network, including about fulfillment with school and work, organizational culture, and happiness – these are keys to your own happiness and trajectory.
Chapter News: University of Minnesota Chapter

*The Implications of a Dietary Shift to Plant-based Foods: Sustainability, Health, Technology and Regulatory Perspectives*

(Contributed by Leslie Loehr, M.S. Student. President of University of Minnesota Phi Tau Sigma Chapter)

Dr. Rickey Yada, Professor and Dean, Faculty of Land and Food Systems from the University of British Colombia spoke at the Minnesota Section IFT Kick-off Virtual Meeting hosted by the University of Minnesota Chapter of Phi Tau Sigma in September 2021. His presentation focused on the large global shift to plant-based foods and flexitarian diets. Some key driving factors for this shift that he discussed were the UN Sustainable Development Goals, COVID, animal welfare, populism, and new technologies. His presentation analyzed how a global shift to alternative protein sources, in particular plant-based sources, could potentially impact agricultural production as well as new and innovative technologies, human health, and regulatory environments. This dinner meeting was a success and had over 30 student and industry members from both Phi Tau Sigma and MNIFT attend. The link to the meeting recording can be found on the [UMN Chapter Phi Tau Sigma Youtube channel](http://www.pbs.org/food/shows/in-defense-of-food/).
Member News: Phi Tau Sigma Scholarship and Award Recipients

Dr. Daryl B. and Mrs. Dawn L. Lund Student International Travel Scholarship:

Radhika Bharathi, B.Tech. is a 3rd year Ph.D. student in Dr. Annor’s lab at the University of Minnesota. “Can we feed the world without killing the planet?” is the question that motivated Radhika to delve deep into the science of food that promotes the food use of sustainably grown crops. Radhika’s doctoral research is geared towards optimizing processing conditions and targeted formulation techniques for Intermediate wheatgrass (IWG), a novel perennial grain with valuable ecosystem benefits. Radhika’s dissertation research is sponsored by the Forever Green Initiative and combines cereal chemistry, food processing and product development principles to optimize and develop end-use product applications for Intermediate Wheatgrass. Advancing through the first three years of her doctoral program, Radhika has published four peer-reviewed articles in well-respected journals in the field of Cereal Science and has also presented her research as both poster and oral presentations as scientific conferences. As the honoree of the Dr. Daryl B. & Mrs. Dawn L. Lund Student Travel Scholarship, Radhika will travel to, and conduct research under the guidance of Dr Catrin Tyl at the Norwegian University of Life Sciences.

Radhika has been an active student member of National/International Phi Tau Sigma and UMN Chapter Phi Tau Sigma for two years now. She served as the Secretary for UMN Chapter for 2020-21. She spearheaded the execution of the first ever 3-minute thesis competition to be held by UMN Chapter Phi Tau Sigma called “Speedy Science 21” for UMN, NSDU and SDSU students. She played an instrumental role in nominating and inducting new student members to the UMN Chapter. In recognition of her stellar academic performance, leadership, research contributions and service, Radhika received multiple awards and accolades at university, regional and national levels including the Elwood F. and Florence A Caldwell Graduate Fellowship, Minnesota Discovery, Research, and InnoVation Economy (MnDRIVE) Fellowship and MN-IFT graduate student scholarship. She is proactively involved in science outreach projects for K-12 high school students and has led several workshops as the MN State Fair and as her department, inspiring young minds to pursue careers in the field of food science and technology.

The 2022 Dr. Daryl B. and Mrs. Dawn L. Lund Student International Travel Scholarship is sponsored by Kalsec®
Phi Tau Sigma Achievement Scholarships (3 recipients):

Cierra James, B.S. is a 2nd-year master’s student in the Food Science and Technology department at Virginia Tech. She joined the department when little was known about COVID-19 and when many students were struggling to make connections. However, Cierra was able to persevere and is now thriving in our department. Currently, Cierra is working on a thesis project titled “Analysis of volatile compounds in bluefin tuna (Thunnus orientalis) by SPME-GC-MS, and GC-O.” She is working to establish the volatile aroma compounds necessary for creating a palatable bluefin tuna meat alternative. Since becoming a Hokie, Cierra has worked hard to be involved in and outside of the department to spread information about food science. She has volunteered and participated in several events where she could work with students of various age groups; including the ACS ProjectSEED 2021 Summer Camp and Virginia Tech’s BCI, where she could engage with high school students, and the Welcome Back Week event hosted by Virginia Tech for incoming freshman and transfer students.

Cierra was also our Vice President of the Virginia Tech Chapter of Phi Tau Sigma. She has worked alongside her other officers to help increase our Chapter’s membership, plan events, and find fundraising opportunities so that our Chapter could better support our students’ professional goals. Simultaneously, Cierra has also been able to take advantage of professional development opportunities such as attending virtual conferences such as IFT Virtual and others. She has also been able to acquire some certifications such as Developing and Implementing HACCP Plans for the Meat Industry and 3A- Sanitary Standards “Basic of Hygienic Equipment Design,” just to name a few. Cierra is a tremendous candidate for this award. She has exemplified a strong work ethic and an enthusiasm for food science that we are sure she will continue to spread as she pursues her professional goals.

Sonali Raghunath, M.S. is a 3rd year Ph.D. Candidate at the University of Minnesota in the Department of Food Science and Nutrition working under the guidance of Dr. Kumar Mallikarjunan. She has a Master of Science degree in Food Science with specialization in Food Engineering from the University of Minnesota (2019) and a Bachelor of Technology in Food Technology (2017) from Anna University, India. She is continuing to expand her professional development through CoRe (Business fundamentals) offered by Harvard Business School Online program (2021-22). Her focus includes the use of Design of Experiments in optimizing pulsed electric field systems for milk protein. The impact of her research will be a boon to the growing demand of the economy and benefit the protein market. Her expertise includes project design, data analysis, and the development and implementation of research tools for product development and nonthermal processing and business essentials.
During the three years of her graduate study, she has been the recipient of various outstanding achievement awards and scholarships from multiple organizations, including the Elwood Caldwell fellowship from MNIFT, Elwood F. and Florence A. Caldwell Fellowship from UMN, IFT feeding Tomorrow Graduate Scholarship, MN Drive Global Food Ventures Professional Development Award from Minnesota State for her research. She was the winner of various of the product development competitions including National Dairy Council, Ocean Spray® and American Society of Baking. She has been awarded fellowships from the Department of Food Science and Nutrition at University of Minnesota, MN-IFT, Bayer Crop Science Award, Food Science and Nutrition Travel Award (2018, 2019,2021) for excellence in research and professional development. She has presented her research in various national and international conferences like Institute of Food Technologists, International Congress on Engineering and Food (Melbourne), Conference of Food Engineering and American Dairy Science Association, ASABE and has won best oral presentations in IFT and ASABE.

Sonali serves as Co-Chair (2021-22) and has served as President of Phi Tau Sigma – University of Minnesota Chapter for a year (2020-21) and as well as serving as Vice President for the Chapter (2019-2020). Under her leadership, the Chapter won the prestigious honor as “Phi Tau Sigma Outstanding Chapter of the Year” (2021-22) and “Chapter of Excellence” (2019-20 & 2020-21) twice from the national/international level of Phi Tau Sigma. As part of Phi Tau Sigma, Sonali has been actively involved in increasing the membership and laid steppingstones to new programs including organizing webinars, virtual meetings, and launching the Speedy Science Competition with the support of Dr. Mary Schmidl. On the national/international Society level, she is also working closely with the Student Relations Committee and engaging with other Phi Tau Sigma Chapter leaders to increase membership through social media platforms. She has been working together with partner universities in encouraging more student members from SDSU, NDSU and UW-Madison to organize & participate in events for Phi Tau Sigma UMN Chapter.

Yiwen Li, B.S., is a Ph.D. Candidate at the University of Georgia working on the development of dynamic in vitro human gastrointestinal models as a quest to understand food and human health (GPA: 3.6/4). She has a Bachelor's degree in Food Technology (GPA: 3.7/4) from Northwest A&F University, China. Yiwen is truly an exceptional student who has gathered a long list of academic honors and achievements during her Ph.D. study: John J. Powers Graduate Scholarship (2021), Toledo Graduate Support Scholarship (2018, 2019), Graduate School Travel Grant (2019), Graduate Student Degree Accelerator Award (2021) for her outstanding academic achievements and a high degree of leadership in the Graduate School, and 1st prize of Chinese American Food Society (CAFS) Student Paper Competition (2019) for her research originality, significance, and writing excellence.

Yiwen’s research project and thesis titled as “Modeling the physical and chemical processes during digestion” focuses on the development of dynamic in vitro gastrointestinal models that mimic the physical and chemical processes involved in digestion and absorption. The bionic gastrointestinal models allow faithful reproduction of the physiological conditions of the human gastrointestinal tract including fluid flow patterns, gastrointestinal wall movements, digestive secretions, pH evolution, and temperature as in vivo. The models offer advantages of being fast, reproducible, low in cost and fewer ethical constrains, which
can be an effective tool in tracking the release of nutrients or bioactive components, enhancing future drug design, evaluating the performance of functional foods and the survival of probiotics, and ultimately contributing to the development of novel foods for health benefits. With great efforts given on the simulation of gastrointestinal wall movements, this research also identifies future methods to simulate human gastric and small intestinal motility with improved accuracy and efficiency. Yiwen has 3 published refereed papers in reputable scientific journals [Food Research International, Journal of Food Engineering, and Food Science (Chinese journal)] and one manuscript under review (Comprehensive Reviews in Food Science and Food Safety). Three more manuscripts have been well drafted and are ready to be submitted to Food Research International and Innovative Food Science and Emerging Technologies. She has also presented her research work in various national and international conferences including IFT (2018, 2019, 2020) and UGA Obesity Initiative Symposium (2022). An abstract submitted to IFT 2022 is recently accepted.

As President and Vice President of Phi Tau Sigma for UGA Chapter (2019-2021), she has been actively participating in various activities. As examples, she has: (1) Organized and executed 2021 Phi Tau Sigma Annual Business Meeting and Awards Ceremony, (2) Initiated professional programs that sponsors FREE webinars from distinguished scientists and engineers, (3) Cooperated with the Food Science Club at UGA and enhanced Mentor Me Program by inviting professionals as research and professional mentors for current undergraduate students, (4) Published a Student Research Synopsis in January 2021 Phi Tau Sigma Newsletter, and (5) Invited as a speaker/participant at the 2022 Phi Tau Sigma Lightening Talk Event. During her time as President, the University of Georgia Chapter was named a "Phi Tau Sigma Chapter with Merit".

As another example of Yiwen’s leadership abilities, she served as President of the Chinese American Food Society from 2018–2021. She founded and organized three annual student competitions including Paper Competition in 2019, 3-Minute Video Competition in 2020, and Graphical Abstract Competition in 2021 open to food science professionals in the U.S. and Canada.

In short, Yiwen meets and exceeds the criteria for this scholarship through her great scholarship achievements, and strong and effective dedication to Phi Tau Sigma on the Chapter and national/international level.

**Dr. Gideon “Guy” Livingston Scholarship:**

**Dajun Yu, M.S.** is a Ph.D. Candidate at the Department of Food Science and Technology at Virginia Tech and currently works as a research and teaching assistant. She is funded by a USDA-NIFA funded project and the Water INTERface Interdisciplinary Graduate Education Program at Virginia Tech. Her dissertation research focuses on investigating the effects of genotype, location, and harvest time on edamame chemical compositions. Her study facilitates the development of high-quality edamame cultivars for the U.S. market and reduces imports. Dajun also supported her advisor, Dr. Haibo Huang, on other projects that find better ways to utilize food waste and promote environmental sustainability. Therefore, she developed her expertise in fermentation, and protein/fiber extraction and characterization.
Dajun has attended and presented her research findings in multiple academic meetings. Her oral presentation regarding the 2,3-butanediol fermentation was awarded the Best Student Oral Presentation in ASABE Annual Meeting hosted in Boston, MA in July 2019. She was also selected to attend the Student Oral Poster/Presentation Competition as one of the finalists in the IFT 2018 & 2022 Annual Meeting. Till now, Dajun has published 15 peer-reviewed research articles with five of them as the first author. In addition to that, Dajun also received the Graduate Leadership and Service Award and Academic Achievement Award from the Association of Overseas Chinese Agricultural Biological and Food Engineers (AOCABFE) in 2021.

Dajun is a dependable and active student leader, and she currently serves as the President of VT Chapter of Phi Tau Sigma, Communication Coordinator of AOCS Student Common Interest Group, and the Vice-Chair of Chinese American Food Society Student Committee. She leads the team and provides support on organizing different student activities including webinars and social events that advance VT Phi Tau Sigma, engage everyone, and create a sense of community for her peers. Dajun aims to become a food scientist in the food industry and use her expertise to help deliver better and safer foods to the world.

Phi Tau Sigma Founders’ Scholarship:

Qing Jin, Ph.D., from Virginia Tech University, has done “research with significant Impact – a practical and meaningful application”.

Agriculture and food wastes as the largest renewable carbon source in the globe, is generated about 30 billion tons annually and is projected to increase due to the accumulation of agricultural activities. Therefore, appropriate management and valorization of this waste are urgently needed. Qing’s main research is focused on designing novel and practical approaches for food waste and by-products utilization to produce various green chemicals, health-promoting nutrients, materials, and biofuels in order to address the global food waste challenge with the ultimate goal of sustainable development of the agricultural and food system.

During her Ph.D. research at Virginia Tech, she designed a novel biorefinery process to convert winery solid waste into multiple high-value products including seed oil, polyphenols, and biofuels. She also noticed the increasing incidence of lead-contaminated drinking water in areas such as Flint and Washington, D.C. This severe public health issue further drove Qing’s research interest in producing winery waste-derived biochar, which could serve as a cheap, effective, and environmentally-friendly lead adsorption method. Based on the industrial scale techno-economic analysis, Qing found the biorefinery process to produce seed oil, polyphenols, and biochar is economically feasible and very promising with an internal rate of return of 34%. This series of research projects have a positive impact on the wine industry from both environmental and economic perspectives. For this work, Qing has published 5 peer-reviewed papers (e.g., Trends in Food Science & Technology, ACS Sustainable Chemistry & Engineering) as the first author, and has won 1st place in 2018 & 2020 Food Science Department Research Competition at Virginia Tech and 2nd place in the 2020 Chinese American Food Society Student Research Competition.
Qing’s research also focused on designing advanced fermentation systems to solve the major technical barriers limiting butanol production from food waste. She optimized sugar production from different types of food waste and designed an immobilized cell fermentation system, which significantly boosted butanol productivity compared with that of the batch system. The incorporation of membrane separation is under development. Qing has several collaborative works on fermentation techniques. For example, she worked with researchers from the Civil and Environmental Sciences Department on the bio-granulation of bacteria and collaborated with researchers from Tennessee State University on non-sterile fermentation design. Qing’s research has been presented in several conferences such as IFT, ACS, ASABE, and S-1045. As a postdoctoral researcher, Qing is currently seeking other novel solutions for food waste/by-products utilization (e.g., sodium battery anode and dietary fiber), and will continue her effort in this research area with the goal of sustainable food system development. Qing’s excellent research helped her win the ‘2018-2019 Sigma Xi Ph.D. Research Award’ and the ‘Outstanding Doctoral Student of College of Agricultural and Life Science (CALS), Virginia Tech’.

The 2022 Phi Tau Sigma Founders’ Scholarship is sponsored by Hawkins, Inc.

**Catherine Adams Hutt, Ph.D., R.D. and Peter Barton Hutt, LL.B., LL.M. Food Regulation Scholarship:**

Abigail Boyd, B.A. is well deserving of the Catherine Adams Hutt, Ph.D., R.D. and Peter Barton Hutt, LL.B., LL.M. Food Regulation Scholarship as recognition of her academic achievements, leadership and interest in a career in food policy and regulation. Abbey is a doctoral student in the Department of Food Science and Human Nutrition at Iowa State University. Her research is focused on the optimization of *in vitro* digestion models for analysis of bioactive compounds, which has many important implications for identifying foods with potential health benefits. Her academic accomplishments have been recognized by the award of numerous college and department scholarships, in addition to being a USDA National Needs Fellow.

Abbey is a true leader and has taken on numerous leadership roles throughout her academic career. She has served as the President of the Interdisciplinary Graduate Student Club, Senator for the Graduate and Professional Student Senate (GPSS), member of the GPSS Wellness Committee, and Wellness Officer for the GPSS. She has also shared her research expertise with undergraduate students through serving as a mentor for the Cyclone Scholars Summer Research Experience and the McNair Scholar Program.

Upon graduation, Abbey is interested in working in food and agriculture policy to promote health and safety for people and the climate. To prepare herself for this career objective, she has taken online courses for science and technology policy analysis, in addition to successfully completing her academic and research responsibilities for the Ph.D. program. She has published a manuscript, ‘From Cafeteria to Community: Amending the National School Lunch Act to Promote Healthy Eating in Children’, reflecting her interest in food policy and wellness. Furthermore, she serves as an associate editor, to provide valuable feedback to authors submitting manuscripts for publication in the Journal of Science Policy and Governance.
Phi Tau Sigma Special Recognition Award:

Dr. Kathiravan Krishnamurthy fulfills and surpasses the criteria for the Phi Tau Sigma Special Recognition Award which is that the award “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.”

Kathir has been very active with Phi Tau Sigma on three major committees: The Program Committee, Website Committee, and Nominations & Elections Committee. In each he has contributed in highly significant ways.

Program Committee:
A member of the Program Committee since 2018-19, Kathir has ensured that Phi Tau Sigma was a sponsor or co-sponsor in the IFT sessions with which he was associated as an Organizer, Moderator, and/or Presenter, and some that he was not associated with. Kathir started this endeavor in 2017, before he was even a member of the Program Committee.

Website:
Kathir has been a Member of the Website Committee from 2015-16 to 2017-18. He became Chair and Webmaster starting in 2018-19 to the present.

Our initial website was started in 2011 by Dr. Ken Lee. By 2018 we had outgrown the website, and Kathir built a new website and has maintained it since then as Chair of the ad hoc Website Committee and Webmaster. These few words do not adequately describe the ongoing, meticulous work that building and maintaining a website entails. There are continuous updates of adding or substituting material, adding new sections, and trouble shooting. Kathir constantly requests materials, and suggestions from the Leadership for improvements. This is a huge endeavor which Kathir greeted enthusiastically.

Nominations & Elections:
Kathir was a member of the Nominations & Elections Committee from 2013-14 through 2017-18, holding the position of Chair in 2016-17. But his involvement only accelerated from there.

Starting in 2017, Kathir has run the election process, which occurs in March every year. He has done a spectacular job! He sets up the electronic ballot well in advance and tests it with the Executive Committee. The ballot includes the election of a President Elect and 4 Directors. It also includes the opportunity for Members to volunteer for committees, and update their contact information. At times, there are also modifications to the Constitution that are presented to the membership for ratification. Kathir’s reports at the close of the election are very detailed and conclusive.

Kathir sends the ballot to the Members in Good Standing on time, and throughout the month of March he sends periodic reminders to those Members who have not yet voted. Because of Kathir’s efforts, the percentage of voting Members out of all that could has risen
from 45.67% in 2017 to 59.0% in 2021. Keep in mind that most associations have a very low voting percentage. Ours are extraordinary due to Kathir’s reminders.

It is apparent that Dr. Kathiravan Krishnamurthy 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.” He is therefore an extraordinary nominee for the Phi Tau Sigma Special Recognition Award.

How/Why I came to be in Food Science/Technology
Cierra James, B.S. Graduate Student in Food Science and Technology at Virginia Tech

From a very young age, I can remember following my grandmothers around in their kitchen. Food is an important part of my family dynamics because we all love food and come together with food as the centerpiece. I was fortunate enough to have a paternal grandmother from Louisiana and a maternal grandmother from Georgia, so I have an influence of creole and southern cooking.

While I always loved cooking when I was younger, I also developed a strong passion for science. Not only was I engaged in class, but I also found myself involved heavily in the sciences outside of the classroom. My mother often bought me science kits, so I performed many experiments at home. Many were successful, but sometimes it often resulted in a mess all over my working area. That’s why my parents started to send me to various science camps, so I was able to feed my curiosity without messing up their house. One of the most memorable science camps that I attended was a marine biology camp in Dauphin Island, Alabama, during the summer of my sophomore year of high school. Before attending the camp, I thought that I wanted to pursue marine biology as a profession. However, after attending the camp, I realized that despite my interest in marine biology, it was not quite the career path for me.

Once I made that discovery, I was trying to determine what exactly my career would be. I remember one day watching the Food Network channel, and one of the speaker's descriptions under their name read food scientist. My initial thought was, “What is a food scientist?” Then I did a little digging into what food science was, and I found that it combined my two top interests: food and science.

Although I had decided to go with food science, I was still a little nervous about whether I was making the right choice. However, when I took my first food science course, Introduction to Food Science, I knew I had made the right choice. Since that day, I have graduated with my bachelor’s degree from Auburn University in Food Science. I am currently a 2nd year Masters’ Degree student at Virginia Tech working on a project analyzing the volatile compounds in bluefin tuna. I am so glad that I found food science, and I am very excited to see what my future in this field will be.

We are pleased to have started this new series of articles in the Newsletter. Please share your story with us. Contact the Newsletter Editor at: klkotula@msn.com.
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 Dues Page at: [http://www.phitasigma.org/membership-dues/](http://www.phitasigma.org/membership-dues/). Proceed on to pay by PayPal. Be sure to include your address. 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.) Do not write the check to Kantha. Mail your check to: Kantha Shelke, Ph.D. (Do not address to Phi Tau Sigma.) 33 West Ontario, Suite 57F, Chicago, IL 60654. Send an email to Kantha to let her know to expect your check (kantha@corvusblue.net).

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. and Mrs. Dawn L. Lund Student International Scholarship Fund, Phi Tau Sigma Founders’ Scholarship, Phi Tau Sigma Chapter of the Year Award, the Phi Tau Sigma – AMSA ‘Research with Impact’ Scholarship Fund, the Program Fund, or the General Fund. [http://phitasigma.org/store/](http://phitasigma.org/store/) Scroll down to Donate and click the yellow Donate button.

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, Terri Boylston, Ph.D. at: tboylsto@iastate.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.phitasigma.org/store](http://www.phitasigma.org/store).

Support Phi Tau Sigma through AmazonSmile:

If you shop at Amazon, please register Phi Tau Sigma as your charity through AmazonSmile ([https://smile.amazon.com/](https://smile.amazon.com/)). There is also a mobile app that one can access. Instructions for the mobile app can be found at: [https://www.amazon.com/b?ie=UTF8&node=15576745011](https://www.amazon.com/b?ie=UTF8&node=15576745011).

The AmazonSmile Foundation will then donate 0.5% of the purchase price of eligible products to Phi Tau Sigma. This may not sound like a lot, but it adds up. Be sure to enter Amazon through AmazonSmile every time you shop ([https://smile.amazon.com/](https://smile.amazon.com/)). Thank you!
Editorial: Start of the Annual Dues Drive

April 1 is the start of the Annual Dues Drive. Phi Tau Sigma relies on membership dues to keep the Society running. Such important things as funding the Phi Tau Sigma Programs, (including the Annual Meeting costs), topping off any scholarships and awards that do not have full sponsors, as well as mundane things such as postage and software program renewals, come from the General Fund.

Lifetime Membership payments go into the Endowment Fund, which is used to ensure our scholarships and awards can be bestowed in perpetuity.

Last month you may have passed on the opportunity to become a member of a committee because of your time constraints. However, you can contribute – if not with your time and talent – but by paying your dues. You may ask how your $20 or $40 may make a difference – But it does. Dues payments add up.

So, please pay your dues to do your part to promote Phi Tau Sigma – The Honor Society of Food Science and Technology.

If you need any more reason to pay your dues, please read again about the 2022 scholarship and award honorees featured in the Member News section above. Pay your dues and you can say that you have promoted these wonderful students and professional and invested in the future of food science and technology.

If you have already paid your annual dues, or are a Lifetime Member – Thank you very much!

Instructions for paying dues are in every Newsletter and the cover email of the Newsletter send to members whose dues are due.

About Phi Tau Sigma Communications:

The Phi Tau Sigma Newsletter Committee includes: Kathryn Kotula, Ph.D., Editor-in-Chief, Chair (kkotula@msn.com); Claire Zoellner, Ph.D., Associate Editor (cez23@cornell.edu); Anthony W. Kotula, Ph.D.; Tianxi Yang, Ph.D., Research Co-Correspondent; Tiantian Lin, Ph.D., Research Co-Correspondent; Samruddhi Jadhav, M.S., Careers Correspondent; Kaavya.Rathnakumar, M.S., Chapter News Correspondent; Diane Schmitt, Ph.D., Member News Correspondent; Ashwini Wagh, Ph.D.; Ravi Tadapaneni, Ph.D.; Damla Dag, M.S. (Ph.D. student), Social media Co-Correspondent; Sonali Raghunath, M.S. (Ph.D. student), Social Media Co-Correspondent; Lily Yang, Ph.D., Social media Co-Correspondent.

Please be responsive to their inquiries for information for the Newsletter.
Documents:

Phi Tau Sigma Documents can be found on our website at: www.phitausigma.org.

Phi Tau Sigma Membership Nominations

Phi Tau Sigma Scholarships and Awards Forms
http://www.phitausigma.org/awards/

Phi Tau Sigma Constitution and By-Laws
http://www.phitausigma.org/constitution/
http://www.phitausigma.org/bylaws/

Phi Tau Sigma Mentorship Program
http://www.phitausigma.org/mentorship/

Sponsors, Donors, and Contributing Partners:

Phi Tau Sigma accepts contributions and has a variety of available sponsorship opportunities, as well as the General fund and Program fund.

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.

Contributions 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 (http://phitausigma.org/store/) Scroll down to Donate and click the yellow Donate button, or by going directly to PayPal https://www.paypal.com/donate?hosted_button_id=QTA7NUHUEPP2). Contributions by check (written from a US bank) can be made by sending to our Treasurer: Kantha Shelke, Ph.D., 33 West Ontario, Suite 57F, Chicago, IL 60654. Please write “Sponsorship”, “Donation”, “Contributing Partner”, etc. in the subject line. (A Sponsorship covers the cost of the honorarium and the administrative costs (PayPal, plaque, postage). A Donation covers only the cost of the honorarium. The Contributing Partners program is described below.)

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 monthly Phi Tau Sigma Newsletter. Endowments are also accepted.

Contribution opportunities are available for the 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. and Mrs. Dawn L. Lund Student 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 (on a ‘first come’ basis), as well as the Program fund (which includes the Phi Tau Sigma Awards Ceremony) and the General fund.

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. ([http://www.phitausigma.org/sponsor/](http://www.phitausigma.org/sponsor/))

**Bronze** ($5,000)
- 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, Kantha Shelke, Ph.D. (kantha@corvusblue.net), or the Executive Director, Kathryn L. Kotula, Ph.D. (klkotula@msn.com). Please write “Contribution” in the subject line.

**2021-2022 Contributing Partners:**

**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 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 sponsor the Phi Tau Sigma Founders’ Scholarship, and to sponsor the new Phi Tau Sigma – AMSA Research with Impact Scholarship and its endowment.) **Hawkins, Inc. is a Silver level Contributing Partner.**

**Dr. Daryl and Mrs. Dawn Lund.** Dr. Lund is past President of Phi Tau Sigma, Lifetime Member, past Treasurer, current Assistant Treasurer, and an Emeritus Professor, University of Wisconsin-Madison. (Contribution to endow the Dr. Daryl B. and Mrs. Dawn L. Lund Student International Travel Scholarship.) **The Lunds are a Platinum level Contributing Partner.**

**Catherine Adams Hutt, Ph.D., RD** and **Peter Barton Hutt, LL.B., LL.M.,** Phi Tau Sigma Lifetime Members. Catherine is a food safety and regulatory consultant and expert witness with RdR Solutions, and Peter is an attorney with Covington and Burling. Both are IFT Fellows. (Contribution for the Catherine Adams Hutt, Ph.D., R.D. and Peter Barton Hutt, LL.B., LL.M. Food Regulation Scholarship) **The Hutts are a Platinum level Contributing Partner.**

**2021-2022 Sponsors and Donors:**

**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. (Donation to the General Fund)

The **American Meat Science Association** (AMSA) works to cultivate a global community of professionals and students to discover, apply and communicate meat science and technology. An independent, objective, and credible voice for meat science and technology, AMSA is an organization recognized for its unmatched competence and commitment to attracting and developing meat industry leaders. We are an association that encourages our members' active participation and engagement, welcoming collaborative relationships with other groups and organizations.

**Anthony W. Kotula, Ph.D.**, a Lifetime Member of Phi Tau Sigma, retired in 1992 as a Supervisory Food Technologist after 38 years of service at the Agricultural Research Service, USDA; 25 years of which were as the Leader of the Meat Science Research Laboratory. (Donation towards the endowment for the Phi Tau Sigma-AMSA 'Research with Impact’ Scholarship)

**Anonymous** donation towards the endowment for the Phi Tau Sigma – AMSA 'Research with Impact’ Scholarship.

**Dr. Rakesh K. Singh** is a Past President of Phi Tau Sigma, a Lifetime Member; and is a Professor in the Department of Food Science & Technology at the University of Georgia, where he was department head from 2001 to 2020. He is also a Fellow of IFT, Fellow of IAFoST, Fellow of National Academy of Agricultural Sciences of India, and Editor-in-Chief of LWT – Food Science and Technology. (Sponsorship of a Phi Tau Sigma Student Achievement Scholarship.)
William Benjy Mikel, Ph.D., a Phi Tau Sigma past President and a longtime Lifetime Member. (Recurring donation towards the endowment for the Phi Tau Sigma-AMSA ‘Research with Impact’ Scholarship)

Kalsec® is the leading global producer of natural spice and herb flavor extracts, natural colors, natural food protection solutions, and advanced hop products for the food and beverage industry. Our mission is to capture the best nature has to offer, allowing us to provide creative solutions to those who seek safer, healthier, more flavorful and more attractive foods, beverages and functional ingredients. Operating for more than 60 years as a family-owned company, Kalsec now covers over 70 countries, with headquarters in Kalamazoo, Michigan, and with facilities in the United States, Europe and Asia. For more information, visit www.kalsec.com. (Sponsorship of the Dr. Daryl B. and Mrs. Dawn L. Lund Student International Travel Scholarship.)

Peter M Salmon, M.S., MBA, a Lifetime Member of Phi Tau Sigma, is the Founder of International Food Network, Inc., currently retired. (Sponsorship of a Phi Tau Sigma Student Achievement Scholarship.)

Dr. Mary K. Schmidl is a Past President of the Institute of Food Technologists (IFT), a Lifetime Member and a past President of Phi Tau Sigma, the Past President of the International Union of Food Science and Technology (IUFoST), and Adjunct Professor, Department of Food Science and Nutrition, 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 an Emeritus Morse Alumni Distinguished Teaching Professor of Food Science and Engineering, Department of Food Science and Nutrition, University of Minnesota.

Dr. Claire Zoellner, Food Safety Scientist at iFoodDS, Associate Newsletter Editor, past Phi Tau Sigma Director, and Past Chair of ad hoc Student Relations Committee. (Donation towards a Phi Tau Sigma Achievement Scholarship)

Dr. Rodrigo Tarté, a Lifetime Member of Phi Tau Sigma, and President of Phi Tau Sigma, is an Assistant Professor of Animal Science and of Food Science & Human Nutrition at Iowa State University, and President and President-Elect of Phi Tau Sigma. (Donation towards the endowment for the Phi Tau Sigma – AMSA ‘Research with Impact’ Scholarship.)

Robert Cassens, Ph.D., Professor Emeritus, University of Wisconsin, and long-time member of AMSA; and Martha Cassens, M.S., a long-time member of AMSA, a Lifetime Member and Director of Phi Tau Sigma, and Vice President of Product Innovation, Development & Quality at ACH Food Co. Inc. (Donation in honor of Dr. Anthony Kotula towards the endowment for the Phi Tau Sigma – AMSA ‘Research with Impact’ Scholarship.)

Dr. John H. Litchfield, a Lifetime Member of Phi Tau Sigma, is an Adjunct Professor of Food Science and Technology at The Ohio State University and a member of Phi Tau Sigma since the 1970’s. (Donation to the General Fund).

Anonymous donation towards an Achievement Scholarship.