



The Honor Society of Food Science and Technology

## ***Phi Tau Sigma Newsletter*** July 2021

### **News:**

#### **Phi Tau Sigma Annual Business Meeting and Awards Ceremony:**

The Phi Tau Sigma Annual Meeting and Awards Ceremony will be presented virtually on Monday July 19, 2021 at 11:30am eastern, 10:30am central, 9:30am mountain, 8:30am pacific, 5:30am Hawaii times.

The live stream information is in an attachment distributed in the same email as this July Newsletter. Please join us, and bring your colleagues, friends, and family.

#### **Updated Membership Nomination form**

An updated Phi Tau Sigma membership nomination form has been developed. It is available on the Phi Tau Sigma website at <http://www.phitausigma.org/phi-tau-sigma-nomination-2022-doc/> or <http://www.phitausigma.org/phi-tau-sigma-nomination-2022-pdf/>, in both Word and writeable pdf formats, respectively. The updated version of the form will be the only one accepted from July 1 onward.

The membership nomination form is updated from time to time as new situations arise, more explanation needs to be given, and/or for logistical reasons. As always, please read the Instructions which start on page 3 of the form before and after filling it out to be sure it is done correctly. Copies of the new form, any questions, requests for clarification, or comments can be directed to the current Chair of the Membership & Qualifications Committee, or the Executive Director ([klkotula@msn.com](mailto:klkotula@msn.com)).

Please try out the form by nominating colleagues and students.

#### **Phi Tau Sigma sponsored and co-sponsored Scientific Sessions within IFT 2021**

(Note: All of the sessions are "On Demand". Details of each session are in the April 2021 Phi Tau Sigma Newsletter)

*151.1: Packaging Strategies of Carbon Dioxide Control to Improve Food Preservation under Cultural Dynamics of Globalization*

Dong Sun Lee, Ph.D. (Presenter), Ziyne Boz, Ph.D. (Moderator)

*151.2: Food Product Development in the 21st Century – Turning Art into Science – Bernard E. Proctor IFT Food Engineering Division Lecture*

Steve Lombardo, Ph.D. (Presenter)

*151.3: Advances in Nonthermal Food Processing Technologies that can Help Address the Present and Future Challenges of the Food Sector*

Carmen Moraru, Ph.D. (Presenter), Hosahalli Ramaswamy, Ph.D. (Moderator)

*184: Regulatory Awareness for Food Scientists: A Career Choice Consideration From Global Perspectives*

Bhakti Harp, Ph.D., Douglas Williams, Ph.D., Neal Fortin, J.D. (Presenters), Poulson Joseph, Ph.D. (Moderator)

*207: What is the Role of Meat in a Healthy Diet and for a Healthy World?*

Robin White, Ph.D., David Klurfeld, Ph.D. (Presenters), Gary Sullivan, Ph.D., Jerrad Lageko, Ph.D. (Moderators)

*233: Efficacy of Nonthermal Processing Technologies for Inactivation of Viruses: Gaps and Opportunities*

Brendan Niemira, Ph.D. (Presenter), Kathiravan Krishnamurthy, Ph.D. (Presenter, Moderator), Tatiana Koutchma, Ph.D. (Moderator)

*234: Seeking Meaningful Significance: Insights into Academic and Industry Statistical Practices and How to Prepare for Both*

Christopher Simons, Ph.D., Frank Rossi, M.A., Jason Parcon, Ph.D. (Presenters), Rodrigo Tarté, Ph.D., Anna Hayes, Ph.D. (Moderators)

*319: The Pandemic, Processed Food, Nutrition, and Immunity*

Julie Miller Jones, Ph.D., Susana Socolovsky, Ph.D., Roger Clemens, DrPH (Presenters), Kantha Shelke, Ph.D. (Moderator)

## **IFT 2021 to be a “Digital Experience”:**

The IFT Board has decided to change the annual meeting to a digital experience, which will occur July 19-21, 2021. See details at <https://www.iftevent.org/ift/home/press/press-releases/2021/march/3/ift-transitions-2021-annual-event-to-digital-experience>

## **AMSA’s Reciprocal Meat Conference August 15-18, 2021 in Reno, Nevada**

AMSA looks forward to seeing you at the Grand Sierra Resort and Casino in Reno, Nevada, on August 15-18, 2021 in person if possible, but if you can’t make it in person, we hope to see you virtually since we are building the meeting as a hybrid.



Registration is open so register today at <https://meatscience.org/events-education/rmc>

### **Book Your Hotel Today**

AMSA is happy to announce the room block for the AMSA 74<sup>th</sup> RMC is OPEN! The Grand Sierra Resort and Casino has been selected as the 2021 RMC host hotel. For more information and to make your reservations, <https://meatscience.org/events-education/rmc/lodging-information>.



# Fun Run + Fitness

**Calling Runners, Fitness Enthusiasts, Feeding Tomorrow Supporters!**  
**-->Join the Phi Tau Sigma IFT21 Virtual Fun Run + Fitness Team<--**

The Phi Tau Sigma Student Relations Committee invites you to participate together in the IFT21 Virtual Fun Run + Fitness event, Feeding Tomorrow's largest fundraiser to support food science student scholarships. This year's virtual event will span 6 weeks, July 1 – August 13, and will feature different wellness challenges. Gather up your colleagues and Chapter members for some new fitness and nutrition activities! Details on how to register with the Phi Tau Sigma Team will be sent soon, so stay tuned for further communication from us. Contact Claire Zoellner, Ph.D. ([cez23@cornell.edu](mailto:cez23@cornell.edu)), Chair of the Student Relations Committee, with questions. Thank you for supporting the future food scientists of the world!

## **Undergraduate and Graduate Research Competitions through Agricultural & Food Chemistry Division of ACS**



The deadline for nominations for the Undergraduate Research Competition and the Withycombe-Charalambous Graduate Research Competition from the Agricultural and Food Chemistry Division of the American Chemical Society is **October 15, 2021**. For more information: <https://www.agfoodchem.org/>

## **From the Desk of the Treasurer: Giving anonymously or publicly**

(Contributed by Kantha Shelke, Ph.D., Phi Tau Sigma Treasurer)



To give or not to give anonymously is an age-old question in philanthropy. Be assured that both help Phi Tau Sigma and its members. It is much like Tevye (*Fiddler on the Roof*) proclaimed: "On the one hand, there's ..., but on the other hand, maybe ...."

Far more are generous publicly than secretly. They feel good about the act of giving and enjoy the accompanying fanfare. They are baffled when generous people choose to keep quiet about their charitable activities. Others give quietly and ask to not be named.

People generally feel good when they give. Many appreciate the recognition; it is just human nature. Being acknowledged publicly feels even better the second or third time, so there is something to be said for donating publicly more than once. They enhance one's reputation in organized public philanthropy and chances for future roles of leadership and influence. Public donations from well-known and highly regarded donors are influential endorsements that prompt friends, peers, and others to follow suit. This effect is even greater when the celebrity donor offers a matching-grant challenge: the charity gets additional public exposure, and both, the charity and its beneficiaries win. The donor also wins. This can often have a ripple-effect to persuade shy donor prospects to consider publicity over anonymity.

There are those that give quietly and ask to not be named. While giving anonymously is less common than giving publicly, the motivation for secrecy can be equally compelling. Silent donors tend to want the focus of their generosity to be on the worthy cause they are supporting instead of on themselves; many are introverted and wish to avoid the limelight; yet others believe it is noble to give and nobler to be invisible while giving. Some also worry about being hounded by other donation seekers.

A curious effect of anonymous donors being listed in the Newsletter is the intrigue it generates along with direct and not-so-direct questions about the identity of the "anonymous donor" (which we do not divulge). What is even more curious is that those keen on knowing the identity of anonymous often follow up with a donation. Happens every time.

While I am not a religious person, I noted that practically all religions exhort maintaining the dignity of the recipient by remaining anonymous and to expect nothing in return. "*When thou doest alms, let not thy left hand know what thy right hand doeth.*" Whether donating publicly or anonymously, one thing is certain. "It is more blessed to give than to receive."

When you donate to Phi Tau Sigma, you are doing more than just giving fish, you are also providing a fishing pole (and bait) along with opportunities to succeed. Your donations benefit not only our Honor Society but also the recipients and ultimately, our society-at-large.

As the Treasurer of Phi Tau Sigma, I look forward to your donations—small or large, given publicly or anonymously. It puts a smile on your heart and mine while helping foster honor and recognition of the food science profession worldwide.

## 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](mailto:tboylsto@iastate.edu)), with a copy to Dr. Kathryn L. Kotula ([klkotula@msn.com](mailto:klkotula@msn.com)).

### ->Phi Tau Sigma Annual Meetings and Events:

- July 15:** Phi Tau Sigma Executive Committee Meeting – Conference call
- July 19:** Phi Tau Sigma Annual Business Meeting and Awards Ceremony (11:30am eastern, 10:30am central, 9:30am mountain, 8:30am pacific times)

Other events of interest:

- IFT Awards Celebration, includes the presentation of the Dr. Carl R. Fellers, Ph.D. Award sponsored by Phi Tau Sigma (date and time to be determined)
- Sessions in conjunction with the IFT meeting (on demand)

**-> July 19-21, 2021, Institute of Food Technologists Annual Meeting:**

**NOTE: IFT will again be a 'Virtual' meeting. See details at**

<https://www.iftevent.org/ift/home/press/press-releases/2021/march/3/ift-transitions-2021-annual-event-to-digital-experience>

**-> August 15-18, 2021, Reciprocal Meat Conference of the AMSA:**

August 17, 7:30pm PDT                      Awards Banquet

**-> 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, 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 Charlwit Kulchaiyawat, Ph.D. ([charlwit.kulchaiyawat@fosterfarms.com](mailto:charlwit.kulchaiyawat@fosterfarms.com)) and Executive Director Kathryn L. Kotula, Ph.D. ([klkotula@msn.com](mailto: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](mailto:klkotula@msn.com)), and the AMSA Youth Programs Manager Rachel Adams, M.S. ([radams@meatscience.org](mailto:radams@meatscience.org)). (More information: <http://www.phitausigma.org/awards/>)

**-> December 7: 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 (Tom Aurand, Ph.D., Chair, [tom.aurand@gmail.com](mailto: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 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

# Student Research Synopsis: Adsorptive surface modification of cellulose nanocrystals to stabilize nutraceuticals loaded lipid carriers for food application

(Contributed by Avinash Singh Patel, Ph.D., Advised by Mary E. Camire, Ph.D. and Robert C. Causey, Ph.D., University of Maine, School of Food and Agriculture)

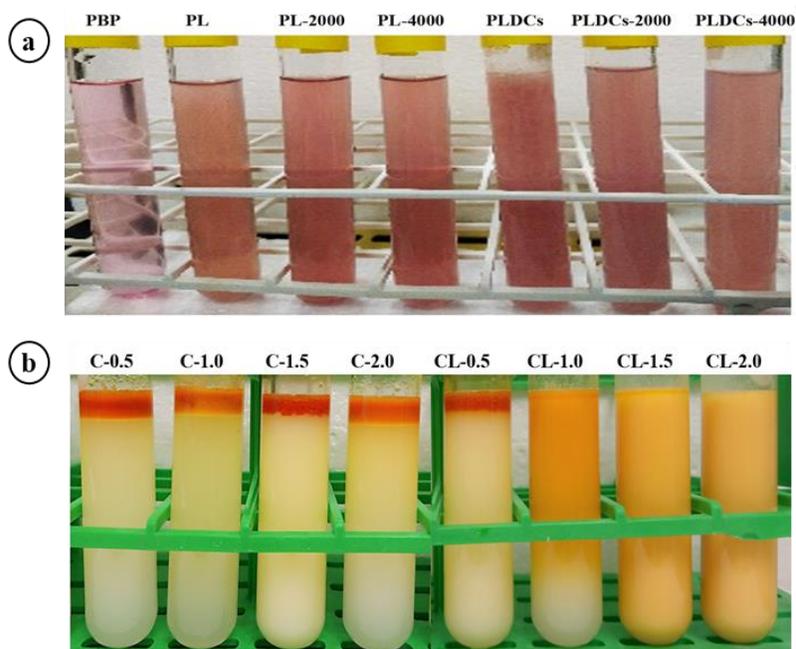
**Introduction:** Lipid carriers such as emulsions and liposomes have been widely studied as carriers for different nutraceuticals (Khosha et al., 2018). However, lipid carriers' physicochemical instability results in the leakage of loaded nutraceuticals and the low solubility into the digestion medium, thus reducing the bioaccessibility (Yadav et al., 2011; Peng et al., 2019). Cellulose nanocrystals (CNC) are nano-sized cellulose derivatives obtained after hydrolysis of cellulosic matrices that possess potential applications in functional foods and nutraceuticals. However, hydrophilicity, anionic surface potential, and poor re-dispersibility limit CNC's applications (Cheng et al., 2015; Saidane et al., 2016).



**Purpose and Methods:** The primary objectives of this research were 1) to modify CNC via adsorbing polyethylene glycol (PEG) to stabilize liposomes and to study its physicochemical stability at different *in vitro*

gastrointestinal tract (GIT) conditions, pH levels (1-11), temperatures (4-100 °C) and illumination periods (4-72 hours); 2) to modify CNC via adsorbing lauric acid to stabilize oil-in-water emulsion and to study its physicochemical stability at different pH (1-11), dilution factors (1-10 times), storage period (up to 30 days) and GIT conditions. Phycobiliprotein and beta-carotene were chosen as model nutraceuticals (Fig. 1).

**Results:** In study 1, particle size and microscopic analysis revealed a better physical/kinetic stability for the liposomes stabilized with PEG-adsorbed CNC than the liposomes stabilized with unmodified CNC, resulting in significantly ( $p \leq 0.05$ ) smaller



**Figure 1.** Macroscopic images PBP loaded liposomes stabilized with PEG adsorbed CNCs (a) and beta-carotene O/W emulsion stabilized with lauric acid adsorbed CNC (b). PBP – phycobiliprotein, PL – PBP loaded liposomes, PL-2000 – PL stabilized with PEG-2000, PL-4000 – PL stabilized with PEG-4000, PLDCs – PL stabilized with unmodified CNC, PLDCs-2000 – PL stabilized with PEG-2000 adsorbed CNC, PLDCs-4000 – PL stabilized with PEG-4000 adsorbed CNC, C-0.5 to C-2.0 – unmodified CNC with 0.5 -2% (w/v), CL-0.5 to CL-2 – lauric acid adsorbed CNC with 0.5-2% (w/v).

average particle size during the initial and mouth phases of the in vitro GIT study, nonetheless a significant ( $p \leq 0.05$ ) increase in the particle size from  $\sim 300$  nm to  $\sim 5500$  nm at gastric phase due to lower pH. Confocal laser scanning and optical microscopic images confirmed the coalescence and agglomeration of liposomes at lower pH. However, the fluorescence intensity of the phycobiliprotein loaded liposomes remained the same at different pH, illumination, and a temperature of  $60^\circ\text{C}$ . In study 2, lauric acid-adsorbed CNC affirmed the kinetic/physical stability of emulsions during dilution, pH influence, storage periods, and throughout the GIT phases. However, results exhibited a significant ( $p \leq 0.05$ ) reduction in beta-carotene bioaccessibility. Results also showed that the emulsions stabilized with modified CNC significantly ( $p < 0.05$ ) reduced the degree of lipid digestion by 55%.

**Significance:** Although modified CNC retains the kinetic/physical stability of liposomes and emulsion at neutral pH, it decreased the bioaccessibility of loaded nutraceuticals. To ensure the physicochemical stability of lipid carriers during processing, storage, and digestion process, and an increased bioaccessibility of loaded nutraceuticals; a strategic modification of CNC (i.e., esters of PEG or Fatty acids on CNC) could be useful. Moreover, adsorptive modified CNC could impede the lipid digestion in designed high-calorie foods and can be used to design the food or drugs for sustained release of nutraceuticals.

#### References:

- Cheng, D., Wen, Y., Wang, L., An, X., Zhu, X., & Ni, Y. (2015). Adsorption of polyethylene glycol (PEG) onto cellulose nanocrystals to improve its dispersity. *Carbohydrate Polymers*, 123, 157-163
- Khosa, A., Reddi, S., & Saha, R. N. (2018). Nanostructured lipid carriers for site-specific drug delivery. *Biomedicine & Pharmacotherapy*, 103, 598-613.
- Peng, S., Zou, L., Zhou, W., Liu, W., Liu, C., & McClements, D. J. (2019). Encapsulation of lipophilic polyphenols into nanoliposomes using pH-driven method: Advantages and disadvantages. *Journal of Agricultural and Food Chemistry*, 67 (26), 7506-7511.
- Saidane, D., Perrin, E., Cherhal, F., Guellec, F., & Capron, I. (2016). Some modification of cellulose nanocrystals for functional Pickering emulsions. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 374(2072), 20150139.
- Yadav, A., Murthy, M. S., Shete, A. S., & Sakhare, S. (2011). Stability aspects of liposomes. *Indian Journal of Pharmaceutical Education and Research*, 45(4), 402-413.

## Lifetime Member Tribute: Ravi Kiran Tadapaneni, Ph.D.

Senior Food Technologist, Impossible Foods

### Why did you become a Lifetime Member?

My journey with Phi Tau Sigma started with student membership, and as I was elected to the Society, I had realized even then the immense benefits that I was receiving. After a couple of years, I graduated and became a professional member. While working on Development Committee, I realized that Phi Tau Sigma is a premier Honor Society, and holding membership of such a prestigious legacy for the life would be incredibly rewarding to my career in the



food science and technology field. The membership for life would forge a never-ending relationship with accomplished professionals for having invaluable knowledge exchange. Thus, I chose to become a Lifetime Member of this esteemed organization.

Education:

Ph.D. – Washington State University (2017) – Biological and Agricultural Engineering

M.S. – Illinois Institute of Technology (2010) – Food Process Engineering

B.E. – Sardar Patel University (2007) – Food Processing Technology

Experience/Accomplishments:

Sr. Food Technologist – Impossible Foods (03/20 – Present)

Food Engineering Manager – Taylor Farms Pacific (10/18 – 02/20)

Food Scientist – Taylor Farms Pacific (03/18 – 09/18)

Research Assistant (Ph.D. Research) – Washington State University (01/13 – 12/17)

R&D Food Science Intern – METER Group/Decagon Devices (05/16 – 08/16)

Areas of Expertise:

Process-Product Development, Low moisture food safety, antioxidants, commercialization

Awards and Honors (selected list):

Sportsmanship Award (2017) – Washington State University Sports Club Federation

Outstanding Scholastic Achievement Award (2017) – Puget Sound Section IFT

Membership in Sigma Xi - The Scientific Research Society (2016)

Outstanding Volunteer Award (2016) – Food Engineering Division IFT

Research Scholar Travel Award (2016) – Puget Sound IFT & Washington State University

Arnie & Marta Kegel Endowed Fellowship (2015-16) – Washington State University

Outstanding Student Award (2015) – Puget Sound Section IFT

Leadership Division Travel Grant (2014-15) – Food Engineering Division IFT

Feeding Tomorrow Graduate Scholarship (2014) – IFT

Personal: Family, Interests, Hobbies:

I enjoy photography and recently, I have picked up drone videography. I also take time to focus on health – work out and go on hikes in California. I hope to resume travel and exploring new places as the COVID-19 situation is improved to normal.

Advice to university students and career food scientists and technologists:

First, I would advise - Be an impactful ambassador of Phi Tau Sigma!

I have always viewed food science and technology as a sacred field that is dedicated to addressing the enormous challenges in sustainable feeding the growing population of our planet. Being part of such a noble science community, I believe that more than ever food professionals should embrace a mission-oriented career and start working towards core issues of food – wastage, sustainability (climate change), easy access to nutritional products (focus on developing countries) and other societal challenges in relevance to food. Such difference-making and rewarding opportunities are not limited to big food corporations but are arising from new start-up firms that are redefining the dynamics of the food industry.

## Careers: Senior Research Scientist

Contributed by Shreya N Sahasrabudhe, Ph.D., PepsiCo Global R&D

Introduction/Background: I was born and brought up in Mumbai – the city that never sleeps! I completed my Bachelor's from the Institute of Chemical Technology in Food Engineering. Following my Bachelor's, I moved to the United States to pursue a Master's degree from University of Nebraska-Lincoln. My Master's research focused on developing a lab-based technique mimicking industrial scale tortilla production process.

Being passionate about the field and driven by the need to conduct deeper research, I decided to pursue a Ph.D. in Food Science. My doctoral journey started out at Purdue under the guidance of Dr. Brian Farkas. I focused on studying surface and interfacial properties of oils at high temperatures and their impact on the frying process. My Ph.D. journey had an unforgettable impact on me both academically and personally through collaborations, friendships and managing competing priorities. I was delighted to know that after a hard earned Ph.D., I would be joining PepsiCo – one of the biggest names in the food industry!



I knew acquiring practical experience during grad school would expose me to commercial processes in the food industry and acclimatize to working in a research and plant environment. I was fortunate to have previously worked as a product development intern at Kellogg's and General Mills while pursuing Ph.D. research.

Qualifications: At PepsiCo, Product Developers have a variety of degrees and previous work experience. Master's and Ph.D.'s in Food Science are the most common, but there are roles available for Bachelor's in Food Science with the right experience.

Positions: Senior Scientist at PepsiCo, Product Development Intern at Kellogg's & General Mills.

Duties: My primary role involves global and regional extrusion initiatives, providing technical recommendations during product and process development. My projects focus on new ingredient research, shape innovation and new technology development. I work on prototype development, plant trials, startup production and consumer testing. My projects are cross-functional where I collaborate with Nutrition, Quality Assurance, Marketing and Scientific & Regulatory Affairs as we develop new products.

Salaries: Salaries for Product Development Scientists vary depending on the education level, experience and location.

Benefits: Health insurance (Medical, Vision, Dental), 401K and retirement benefits, vacation, flexible working policies and wonderful colleagues!

Conclusion: Working at a global company like PepsiCo is a great way to start your career. There is a wide array of technologies used to make the iconic brands and products that consumers love. This provides several opportunities to learn and grow under the guidance of many technical experts. Through your transition to becoming an industry professional, you will always find mentors to further your career goals. My advice to all students is to recognize the value of each experience as it will help you shape your future!

## Chapter News – Iowa State University Chapter of Phi Tau Sigma

(Contributed by Dr. Terri Boylston)

The Iowa State University Chapter of Phi Tau Sigma celebrated the end of the 2020-2021 year with recognition of new initiates and graduating members and lunch in the Food Science Building Courtyard. Eight undergraduate and graduate students have become members of Phi Tau Sigma during the past year. Due to Covid restrictions during the past year, meetings were held virtually, so all the members enjoyed the opportunity to visit together.

This year's officers were Lillian Nabwiire, M.S., President, and Arianna Saffold, B.S., Treasurer. Following a brainstorming session at the first meeting of the year, members hosted the presentations at our meetings. Presentations during the past year included:

- Increasing STEM Majors' Participation in Elections (speaker: Abbey Boyd (B.A.))
- How Industry is Dealing with Covid 19. Could these Changes Last Forever? (speakers: Clint Johnson, Ph.D., ConAgra Brands; Will Schroeder, Ph.D., Kemin Industries; Jeff Underwood, B.S., Kent Corporation; Kara Hobart, General Mills)
- Diversity and Inclusion at the Workplace (speakers: Michael Jackson, M.A. and Diana Sloan, MBA, ISU)
- The Iowa State University Creamery (speaker: Sarah Canova, MBA, ISU)
- Communication Science to Broader Audiences (speakers: Kim Becker, M.A. and Tanzeel Rehman, M.S., ISU)
- The Iowa Grape and Wine Industry (speakers: Bob Wersen, MBA, Tassel Ridge Winery and Erin Norton, M.S., ISU)

The Phi Tau Sigma members are looking forward to next year and the opportunity to meet in person (without masks) to continue our exploration of current food science topics.



Phi Tau Sigma Initiates for the Iowa State University Phi Tau Sigma chapter for 2020-2021: Emily Everhart, B.S\*, Lindsey Bouska, B.S.\*, Lillian Nabwiire, M.S., Abbey Boyd, B.A., Shalini Wijeratne, B.S., and Ariana Saffold, B.S. (\* graduates)

## 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.phitausigma.org/membership-dues/>. 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.) 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](mailto: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. Lund 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://www.phitausigma.org/donate/>

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](mailto: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.phitausigma.org/store](http://www.phitausigma.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/>). 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>.



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/>). **Thank you!**

## Editorial:

Want to feel great pride in our Phi Tau Sigma students and professionals?

Want to know what has been going on in your Honor Society?

Want an interesting diversion in your day?

Then take a little time out of your day on **July 19, 2021** to attend the **Phi Tau Sigma Annual Business Meeting and Awards Ceremony**. The log in instructions are in the cover email of this Newsletter. Open to Phi Tau Sigma members, colleagues, family, and friends.

Please attend. You will be glad you did.

## About Phi Tau Sigma Communications:

The Phi Tau Sigma Newsletter Committee includes: Kathryn Kotula, Ph.D., Editor-in-Chief, Chair ([klkotula@msn.com](mailto:klkotula@msn.com)), Claire Zoellner, Ph.D., Associate Editor ([cez23@cornell.edu](mailto:cez23@cornell.edu)), Anthony W. Kotula, Ph.D., Hossein Daryaei, Ph.D., Tianxi Yang, Ph.D., Laura Strawn, Ph.D., Diane Schmitt, Ph.D., Gabriela John Swamy, Ph.D., Jennifer Fideler M.S. (Ph.D. Candidate), Tiantian Lin, Ph.D.

*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 to Editor Kathryn L. Kotula, Ph.D. at [klkotula@msn.com](mailto:klkotula@msn.com) or Associate Newsletter Editor Claire Zoellner, Ph.D. at [cez23@cornell.edu](mailto: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](http://www.phitausigma.org).

Phi Tau Sigma Membership Nominations

<http://www.phitausigma.org/phi-tau-sigma-nomination-2022-doc/>

<http://www.phitausigma.org/phi-tau-sigma-nomination-2022-pdf/>

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/>

Every Member Get A Member Campaign

<http://www.phitausigma.org/growing/>

## 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://www.phitausigma.org/donate> or by going directly to PayPal ([https://www.paypal.com/donate?hosted\\_button\\_id=QTA7NUHUEEPP2](https://www.paypal.com/donate?hosted_button_id=QTA7NUHUEEPP2)). 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. 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 (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/>)

### **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](http://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](mailto:kantha@corvusblue.net)), or the Executive Director, Kathryn L. Kotula, Ph.D.

([klkotula@msn.com](mailto:klkotula@msn.com)). Please write "Contribution" in the subject line.

## **2020-2021 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.**



Food Ingredients Group 

**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 support and endow the Dr. Daryl B. Lund Student International Travel Scholarship.) **The Lunds are a Silver level Contributing Partner.**

## **2020-2021 Sponsors and Donors:**

**Dr. Catherine Adams Hutt** and **Peter Barton Hutt**, Phi Tau Sigma Lifetime Members. Catherine is food safety and regulatory consultant and expert witness with RdR Solutions, and Peter is an attorney with Covington and Burling. Both are IFT Fellows. (Donation for the Dr. Gideon "Guy" Livingston Scholarship)

**David K. Park, B.S.**, Phi Tau Sigma Lifetime Member, is Principal, Food-Defense, LLC, providing expert food safety / food defense, USFDA and USDA-FSIS Process Authority technical and regulatory consultation for thermal and non-thermally processed low

acid canned foods (LACF), acidified foods (AF), and refrigerated extended shelf life foods (ESL) and their packaging systems. (Donation towards a Phi Tau Sigma Student Achievement 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.

**William Benjy Mikel, Ph.D.**, a Phi Tau Sigma past President and a Lifetime Member who appreciates the field of food science and technology. (Donation towards a Phi Tau Sigma Student Achievement 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.)

**Dr. Mary K. Schmidl** is the President 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.

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

**Corvus Blue LLC** is a Chicago-based contract food science and research firm retained by food, dietary supplement, and allied enterprises to expedite new product development and commercialization and pave the path for rapid market realization with competitive intelligence and food science communication. The firm works with startups and established entities at the intersection of science and business to maximize opportunity and minimize risk.

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

**Dr. Claire Zoellner**, Food Safety Scientist at iFoodDecisionSciences, Phi Tau Sigma Director, Associate Newsletter Editor, and Chair of ad hoc Student Relations Committee.

#### **Phi Tau Sigma Development Committee 2020 - 2021**

Each and every member of Phi Tau Sigma Development Committee has generously donated to Phi Tau Sigma. The Development Committee is responsible *to develop and implement strategies and mechanisms to raise long range funding to allow Phi Tau Sigma to be funded in perpetuity*. The Committee has made its generous contributions to demonstrate its unwavering support and to role model the action of making a financial contribution to the Society. (Sponsorship for the Phi Tau Sigma Special Recognition Award)

### **Phi Tau Sigma Leadership 2020 -2021**

Each and every member of Phi Tau Sigma Leadership has generously donated to Phi Tau Sigma. The Phi Tau Sigma Leadership is composed of its Board of Directors and Chairs of its appointed Committees. Its mission is to honor and build excellence in the profession of food science and technology. Besides sharing generously of their time and talent, the Leadership has made a generous financial contribution to set, through example, what our discipline may achieve through its contributions. (Sponsorship for the Phi Tau Sigma Chapter of the Year Award)

**Dr. Rodrigo Tarté**, a Lifetime Member 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.)

**Dr. Liz Boyle**, a Lifetime Member of Phi Tau Sigma, is a Professor and Meat Extension Specialist at Kansas State University, and Past-President 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.)

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

**Dr. Ogechukwu Tasie**, Member, Phi Tau Sigma Membership and Qualifications (M&Q) Committee. (Donation to the General Fund.)

**Dr. Lili He**, a Lifetime Member of Phi Tau Sigma, is an Associate Professor in the Department of Food Science at University of Massachusetts Amherst. (Donation to the General Fund.)

**Lauren Jackson, Ph.D.**, a Lifetime Member of Phi Tau Sigma, is a Supervisory Food Technologist at U.S. Food and Drug Administration, and Chair of the Membership & Qualifications Committee of Phi Tau Sigma. (Donation towards the endowment for the Dr. Gideon "Guy" Livingston Scholarship.)

**Shantrell R. Willis, Ph.D.**, currently serves as a Research Scientist and Adjunct Faculty at Alabama A&M University, and is a member of the Phi Tau Sigma Membership & Qualifications Committee. (Donation for the General Operating Fund.)

**An anonymous** donation "In loving memory of Ana Lee (Biyen Chen). May you live on in those you've left behind." (Donation towards the General Fund)

**David Anderson, Ph.D.**, a Lifetime Member of Phi Tau Sigma, retired from Elanco Animal Health R&D. (Donation towards the endowment for the Phi Tau Sigma - AMSA 'Research with Impact' Scholarship honoring longtime friend Dr. Tony Kotula)

**Dr. Russell Cross**, a Lifetime Member of Phi tau Sigma is a Professor at Texas A&M University, and Past-President of Phi Tau Sigma. (Donation towards the endowment for the

Phi Tau Sigma-AMSA 'Research with Impact' Scholarship) Tony Kotula has had a tremendous impact on my life and career.

**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)

**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)

**Dr. Tommy L. Wheeler**, Research Leader of the Meat Safety and Quality Research Unit of the U.S. Meat Animal Research Center of USDA-Agricultural Research Service. A long-time member of AMSA and renewed member of Phi Tau Sigma. (Donation towards the endowment for the Phi Tau Sigma - AMSA 'Research with Impact' Scholarship)

**R. Bruce Tompkin, Ph.D.**, Food Industry Microbiologist and long-time member of AMSA. (Donation towards the endowment for the Phi Tau Sigma - AMSA 'Research with Impact' Scholarship.)

**Dr. Don Beermann**, retired Chair of the Iowa State University Department of Animal Science, is a long time member of AMSA. Don also served on the faculty at Cornell University and as a Department Head, Director, and interim Dean at the University of Nebraska-Lincoln. (Donation towards the endowment for the Phi Tau Sigma - AMSA 'Research with Impact' Scholarship.)

**Dr. Joe M. Regenstein**, a Lifetime Member of Phi Tau Sigma, is a Professor Emeritus of Food Science and Head of the Cornell Kosher and Halal Food Initiative at Cornell University. (Donation in memory of Dawn Lund to the Dr. Daryl B. and Dawn L. Lund Student International Travel Scholarship.)

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.

