



The Honor Society of Food Science and Technology

## **Phi Tau Sigma Newsletter** February 2020

### **News:**

#### **Outstanding Chapter of the Year Award Deadline Approaching**

(Contributed by Ravi Chermala, M.S., Awards Committee Chair)

Remember to submit your nominations by **April 1** to the Awards Committee for the Phi Tau Sigma Outstanding Chapter of the Year Award. *The award includes an honorarium of \$1000 and a plaque.*

Send completed nomination forms to Ravi Chermala, M.S., Awards Committee Chair, at: [ravichermala@gmail.com](mailto:ravichermala@gmail.com), with a copy to Kathryn Kotula, Ph.D. [kkotula@msn.com](mailto:kkotula@msn.com).

Full information can be found at: <http://www.phitausigma.org/awards/>.  
However, a short description of each is offered below:

“The **Phi Tau Sigma Outstanding Chapter of the Year Award** shall be given to honor a Chapter of Phi Tau Sigma that has achieved excellence in the areas of research, scholarship, leadership and service. The award comes with a plaque and a \$1000 honorarium to be used by the Chapter to advance distinction in the food science discipline.”

*Nomination hint:* (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.

#### **Membership Nominations – Reminder:**

(Contributed by Lauren Jackson, Ph.D., Membership & Qualifications Committee Chair)

**Please be sure you are using the proper membership nomination form.**

The proper form has 2020 in the title and can be found on the Phi Tau Sigma website:

<http://www.phitausigma.org/membership-nomination-2020-pdf-2/>

<http://www.phitausigma.org/membership-nomination-2020-doc/>

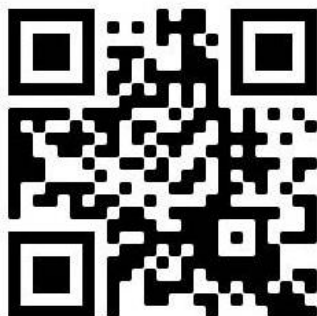
There are two formats available, Word and a writable pdf. Choose the format you prefer. And, be sure to read the Instructions which start on page 3 before and after filling out the form.

## Upcoming Election – Two areas requiring your vote

1) The election for Phi Tau Sigma Leadership: President Elect and four Directors will start March 1. **You MUST be a “member in good standing” (have paid your dues) before February 20 to be able to vote.** If you have not paid your dues, follow the instructions in the “Dues Reminder” section below. Your membership status is listed in the cover email of this Newsletter. If you have any questions, feel free to contact Executive Director Kathryn L. Kotula, Ph.D. at [klkotula@msn.com](mailto:klkotula@msn.com).

2) As usual, you will have the opportunity to show your interest in membership on one of Phi Tau Sigma’s Committees. The opportunities include: Awards, Chapter Affairs, Constitution & By-Laws, Membership & Qualifications, Newsletter, Nominations & Elections, Program, Development, Strategic Relations, Student Relations, Website & Wikipedia, and Internship Organization.

**Phi Tau Sigma has a QR code.** Give it a try.



Visit New Zealand for an **International Congress of Food Science and Technology** that will inform and inspire you into the 2020s.  
(Contributed by Mary Schmidl, Ph.D. IUFoST President)

**Plenary Sessions will set the scene** - Plenary sessions from international business people and researchers who have extensive knowledge that informs their vision of the future of food science and technology in the 2020s and beyond.

**Quality Presentations** - The Technical Programme Committee was overwhelmed with abstract submissions last October and thus has been able to select the very best for presentation at the Congress.

**Technical Tours** - Delegates can book for Technical Tours after the Congress that will showcase New Zealand’s research and development expertise in all facets of our industry.

- Visit New Zealand’s hub of research in Palmerston North - over 2000 research scientists on two adjacent sites.
- A Dairy based tour has been arranged to showcase research, analytical excellence and production in this country’s dairy industry.
- Discover New Zealand’s leading fisheries research plus horticulture research and production in the Nelson region.

**Everyone should plan to visit New Zealand at least once – why not make this Congress your reason to visit?**

[www.iufost2020.com](http://www.iufost2020.com)



**From the Desk of the Treasurer:**

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



Happy February. We are already a month into the new year. I hope you have great things planned for 2020 and hopefully, those plans include active participation and support of Phi Tau Sigma.

As the treasurer, I am looking forward to a stellar year ahead for raising funds so we can do more for our members, especially our student members. In February alone, if each of our members donated the cost of a cup of coffee, it would add up to a student scholarship. Now, if we all multiplied this donation by twelve with a monthly pledge for a year, just for the cost of a cup of coffee each month we could boost our support of students to twelve times that.

Students are our future and anything we can do to support students in food science will go a long way to further enhance opportunities for all of us. Phi Tau Sigma is committed to bringing opportunities to students to experience the IFT meeting in person. Please consider giving a modest donation so we can support more students at our annual meeting.

## Calendar:

### ->Phi Tau Sigma Scholarship and Awards Schedule:

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

Send completed nomination forms to both Awards Committee Chair Ravi Chermala, M.S., Chair, ([ravichermala@gmail.com](mailto:ravichermala@gmail.com)) and Executive Director Kathryn L. Kotula, Ph.D. ([klkotula@msn.com](mailto:klkotula@msn.com)). (More information: <http://www.phitausigma.org/awards/>)

- >December 9: 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>)

### ->Phi Tau Sigma Chapter Schedule:

- November 1: 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
- May 1: First call for Chapter annual reports
- June 1: Second call for Chapter annual reports
- July 1: Final call for Chapter annual reports
- 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, Claire Koelsch Sand, Ph.D., Chair, ([clairekoelschsand@gmail.com](mailto:clairekoelschsand@gmail.com)) with a copy to Dr. Kathryn L. Kotula ([klkotula@msn.com](mailto:klkotula@msn.com)).

### ->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
- July 12: Phi Tau Sigma President will present the newly elected individuals to the Membership at the Annual Business Meeting of Phi Tau Sigma

**->July 12-15, 2020, Institute of Food Technologists Annual Meeting, Chicago, IL:**

**July 12 (Sunday):** (times tentative)

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

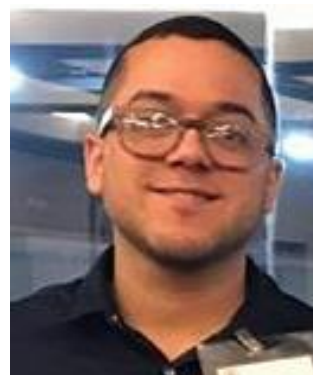
**July 13 (Monday):**

12 noon-1:30pm	Phi Tau Sigma and IFT Division Competition Awards Ceremony
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## **Student Research Synopsis: Characterization of electrostatic interactions and complex formation of $\gamma$ -poly-glutamic acid (PGA) and $\epsilon$ -poly-L-lysine (PLL) in aqueous solutions**

**(Contributed by Jorge L. Muriel Mundo, Ph.D. Student under the direction of Prof. David Julian McClements, Department of Food Science, University of Massachusetts Amherst)**

**Adapted from recently published work:** Muriel Mundo, J. L.; Liu, J.; Tan, Y.; Zhou, H.; Zhang, Z.; Julian McClements, D., *Characterization of electrostatic interactions and complex formation of  $\gamma$ -poly-glutamic acid (PGA) and  $\epsilon$ -poly-L-lysine (PLL) in aqueous solutions. Food Research International* **2019**, 108781.

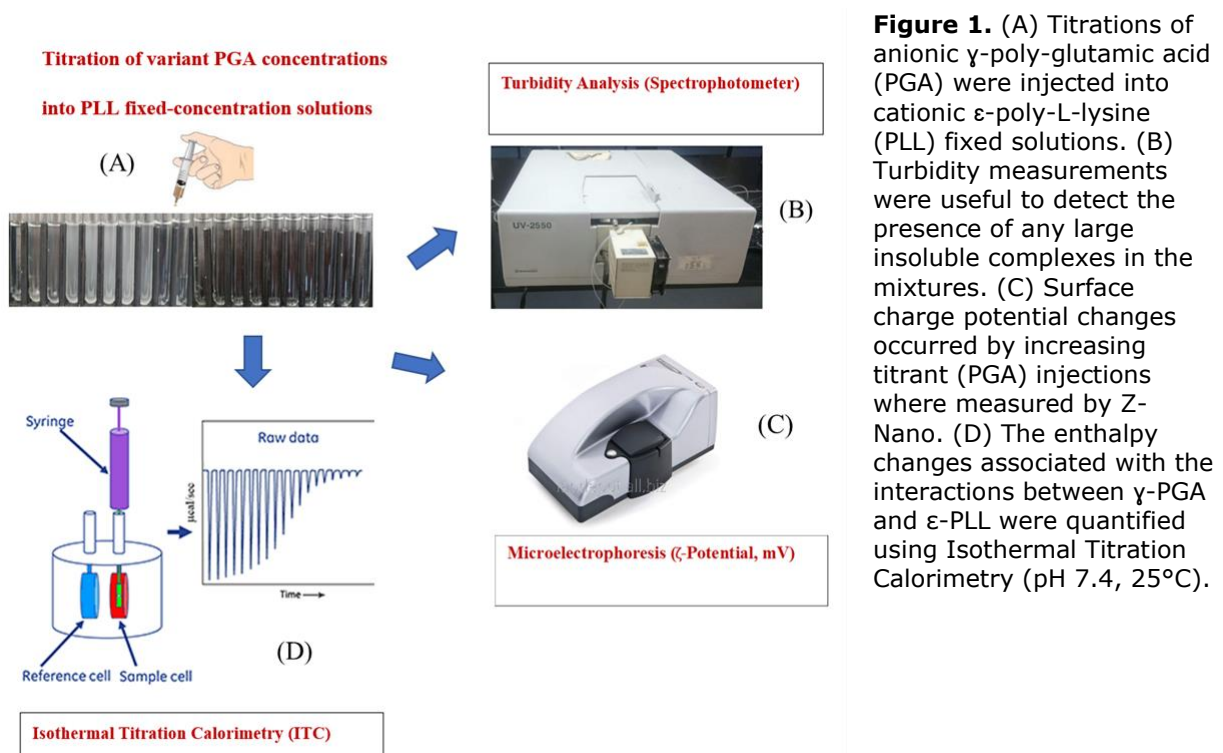


**Introduction:** Complex coacervation is a form of liquid-liquid phase separation that occurs when two polyelectrolytes associate with each other through electrostatic attraction<sup>1,2</sup>. Typically, the two polyelectrolytes have opposite net charges (one positive, one negative). Interestingly, complex coacervation is a useful approach for creating biopolymer-based colloidal particles for the oral delivery of bioactives, such as nutraceuticals, vitamins, and pharmaceuticals. Moreover, many different synthetic and natural polymers have been studied for their ability to form polyelectrolyte complexes through this phenomenon, including food-grade proteins and polysaccharides<sup>3</sup>. In this study, we examined the possibility of using anionic  $\gamma$ -poly-glutamic acid (PGA) and cationic  $\epsilon$ -poly-L-lysine (PLL) to form polyelectrolyte complexes. Since these two polyelectrolytes can be produced by microbial fermentation, they may be useful as natural biopolymers for creating novel structures and functionalities in foods.

**Objective & Methods:** The overall objective of this research was to characterize the PGA and PLL polyelectrolyte complex. In general, two polyelectrolytes can form either soluble or insoluble electrostatic complexes depending on the nature of the system<sup>4</sup>. Turbidity measurements were therefore used to detect the presence of any large insoluble complexes in the mixtures. Then, formation and properties of the complexes were characterized using visual observations, UV-visible spectrophotometry, microelectrophoresis ( $\zeta$ -potential), and isothermal titration calorimetry (ITC) (Fig. 1). Additionally, the impact of pH, ionic strength,

temperature, and polymer ratio on complex formation was also examined (data not shown). Therefore, understanding the mechanism involved during this liquid-liquid phase separation and the electrostatic attractions involved by using PLL and PGA polyelectrolytes under specific conditions, it is useful in order to obtain more insight in how to produce microcapsules by complex coacervation within these polymers.

**Results:** The electrostatic complexes formed had a 1:4 mass ratio of polyanion-to-polycation at saturation under specific circumstance. In particular, insoluble complexes were formed under pH conditions where there was a strong electrostatic attraction between the two polyelectrolytes (pH 7.4), whereas soluble complexes were formed when there was only a weak attraction. The addition of salt ( $\geq 20$  mM NaCl) promoted aggregation of the complexes, presumably due to screening of the electrostatic interactions between them. Conversely, temperature (25 to 90°C) did not have a major impact on the stability of the complexes. Overall, these results may be useful for the design of effective oral delivery systems for bioactive agents in foods and other products.



**Figure 1.** (A) Titrations of anionic  $\gamma$ -poly-glutamic acid (PGA) were injected into cationic  $\epsilon$ -poly-L-lysine (PLL) fixed solutions. (B) Turbidity measurements were useful to detect the presence of any large insoluble complexes in the mixtures. (C) Surface charge potential changes occurred by increasing titrant (PGA) injections where measured by Z-Nano. (D) The enthalpy changes associated with the interactions between  $\gamma$ -PGA and  $\epsilon$ -PLL were quantified using Isothermal Titration Calorimetry (pH 7.4, 25°C).

**Significance:** Microencapsulation by complex coacervation is being increasingly used in the food industry because of its high encapsulation efficiency and mild processing conditions<sup>1</sup>. Moreover, microcapsules produced by coacervation can be designed to be resistant to environmental stresses, as well as to create controlled- or triggered-release profiles based on changes in mechanical stresses, temperature, pH, or ionic strength<sup>5</sup>. This study reveals that cationic polylysine and anionic polyglutamic acid can be used to assemble electrostatic complexes in aqueous solutions. We have shown that the formation and properties of the complexes are dependent on pH, ionic strength, and temperature, which can be attributed to the importance of electrostatic interactions and hydrogen bonding in their formation (data not shown). In future studies, we intend to utilize these complexes to form colloidal delivery systems for bioactive agents.

## References:

1. Eghbal, N.; Choudhary, R., Complex coacervation: Encapsulation and controlled release of active agents in food systems. *LWT* **2018**, *90*, 254-264.
2. Iwashita, K.; Handa, A.; Shiraki, K., Coacervates and coaggregates: Liquid-liquid and liquid-solid phase transitions by native and unfolded protein complexes. *International journal of biological macromolecules* **2018**, *120*, 10-18.
3. Priftis, D.; Tirrell, M., Phase behaviour and complex coacervation of aqueous polypeptide solutions. *Soft Matter* **2012**, *8* (36), 9396-9405.
4. Kizilay, E.; Kayitmazer, A. B.; Dubin, P. L., Complexation and coacervation of polyelectrolytes with oppositely charged colloids. *Advances in colloid and interface science* **2011**, *167* (1-2), 24-37.
5. Dong, Z.; Ma, Y.; Hayat, K.; Jia, C.; Xia, S.; Zhang, X., Morphology and release profile of microcapsules encapsulating peppermint oil by complex coacervation. *Journal of Food Engineering* **2011**, *104* (3), 455-460.

## Lifetime Member Tribute: K.P. Sandeep, Ph.D.

Department Head of Food, Bioprocessing and Nutrition Sciences at North Carolina State University

### Why did you become a Lifetime Member?

Inducting students into an honor society is a good way to recognize our outstanding students, who are our future leaders. When students and young professionals see their mentors/professors in an organization, they are more likely to join that organization. Phi Tau Sigma provides a platform for outstanding professionals in the field of Food Science to network, discuss issues in the field, make recommendations to decision-making bodies/organizations, and be nominated for awards. The close connection between Phi Tau Sigma and the Institute of Food Technologists provides a convenient mechanism for food scientists to participate in activities of both organizations. The benefits and leadership opportunities provided by Phi Tau Sigma are thus something that I value for our future leaders and being a Lifetime Member helps these young professionals achieve their goals.



### Education:

IIT Kharagpur (India)	Agricultural Engineering	B.S., 1991
Pennsylvania State University	Agricultural & Biological Engineering	M.S., 1993
Pennsylvania State University	Agricultural & Biological Engineering	Ph.D., 1996

### Experience/Accomplishments:

March 2018 - present: Department Head in the Department of Food, Bioprocessing and Nutrition Sciences at North Carolina State University  
May 2007 - present: Site director of Center for Advanced Processing and Packaging Studies (CAPPS) at North Carolina State University  
September 1997 - present: Faculty member in the Department of Food, Bioprocessing and Nutrition Sciences at North Carolina State University

Areas of Expertise:

Food Engineering (Thermal processing of foods – heat exchangers, continuous flow microwave processing)

Awards and Honors (selected list):

IFT Industrial Achievement Award, 2015

IFT Industrial Achievement Award, 2009

NSF Citation for Breakthrough Technology, 2009

USDA Superior Efforts in Technology Transfer Award, 2009

Outstanding Instructor, Food Science Club at NC State, 2004-2005; 2017-2018; 2018-2019

Personal: Family, Interests, Hobbies:

My wife and I enjoy traveling and soaking in the sights, sounds, and culture across the world.

Advice to university students and career food scientists and technologists:

Be curious, pro-active, take leadership roles, and do your best in everything that you take up with a passion that is infectious. Write down your short term and long term goals, the steps you plan to take to achieve those goals, and periodically assess your progress towards those goals and make changes as needed. It is better to aim high and fall a little short than to aim low and succeed at it. While individual success is important, the success of your team can be more important and rewarding. Collaborate, encourage, empower, and lead your team to success.

## **Careers: Research Scientist**

(Contributed by Weslie Khoo, Ph.D., goop, Inc.)

Introduction/Background: I am currently a research scientist with goop. goop is a modern lifestyle and wellness brand with a curated shop of clean beauty, fashion, and home.

I grew up in Singapore and received my B.S. in Chemistry and Biological Chemistry from Nanyang Technological University, Singapore. After an internship with Mars, Inc. (Germany), I went to Penn State University (USA), where I completed my Ph.D. in Food Science.



Qualifications: This position requires at least a master’s degree, with a background in scientific research and writing, critical analysis of scientific literature, and product research and development.

Positions: Prior experiences include being a graduate research and teaching assistant (Singapore, UK and USA) and an R&D intern at Mars, Inc (Germany).

Duties: In this job, I have to research dietary supplements, ingredients, and medical devices, as well as review the scientific literature, analyze and summarize findings, to produce detailed reports and make recommendations for the formulation of dietary supplements. Furthermore, I have to develop and review product/claims substantiations to ensure compliance with FDA and FTC guidelines and regulations. I also work with legal,



creative and editorial teams to make sure that our products are presented to consumers in a safe and honest manner.

Salaries: Salaries will vary depending on your experience and duties, as well as the type of company and location. It ranges between \$65,000 to \$90,000 a year.

Benefits: In addition to salary, employment benefits may include; health, vision, dental, vacation days, and attending relevant conferences and expos.

Conclusion: Working at goop offers engaging challenges as well as valuable opportunities. Overall, as a scientist at heart, I am happy to be in a job that appreciate my skills learned from a science education. For students who are interested in a role like this, my advice is to make use of your resources available to you in your college, scientific societies and honor societies like Phi Tau Sigma. Be passionate about something. Take part in product development competitions, volunteer for leadership positions, or learn a new skill that is different from your research work (e.g. managing a business, graphic designing).

## Member News:

### Dr. Daryl B. Lund Student International Travel Scholarship:

**Jennifer Fidler** holds a B.S. in Food Science and Technology from Oregon State University (2011) with minors in Chemistry and Spanish. She worked for 3.5 years as product developer and regulatory specialist at a small, natural foods company in Oregon before pursuing graduate studies. She is currently a PhD Candidate in her final year of study in the Department of Food, Bioprocessing and Nutrition Science (FBNS) at North Carolina State University and conducts research within the United States Department of Agriculture, Agricultural Research Service, Food Science Research Unit.



The aim of Jennifer's research is to investigate non-probiotic, health-promoting properties of fermented cucumbers. Her dissertation title is "Generation of bioactive peptides and  $\gamma$ -aminobutyric acid (GABA) during cucumber fermentation". Many consumers attribute the healthfulness of fermented foods to probiotic organisms, yet most fermented vegetables do not contain verified probiotic strains, nor do they support living organisms due to the natural accumulation of acid (pH 3.0 – 3.5) and/or the processing methods used to make them shelf stable (e.g. pasteurization). Jennifer's research resulted in the identification of five antihypertensive peptides that were enhanced through fermentation in cucumbers. She was the first to identify bioactive peptides in fermented cucumbers, contributing both a novel approach to compositional analysis of fermented vegetables and new evidence to the hypothesis that fermented foods are healthful beyond their potential probiotic benefit. Her subsequent research focused on changes in the amino acid profile of cucumbers during fermentation, namely the generation of GABA, a non-protein amino acid with antihypertensive, anxiolytic, and anti-obesity effects. Jennifer's research showed that GABA is generated during the natural fermentation of cucumber, salt content effects the amount produced, and that commercial processing of fermented cucumber could be optimized for retention of GABA in consumer products. Her current research involves enhancement of

GABA generation during cucumber fermentation through strategic starter culture selection and process optimization. Fermented vegetables enhanced with GABA have the potential to contribute to healthy diets that positively influence large populations that suffer from prominent ailments such as anxiety and hypertension. Jennifer's research has and will continue to discover benefits of fermented cucumbers not directly related to live microorganisms to benefit both industry and consumers.

Jennifer has provided service and leadership to several local and national professional society initiatives. She has been a member of IFT since 2008 serving both locally on the Oregon Section executive board as a membership and new professionals co-chair (2013-2015), and nationally as IFT's New Professionals Task Force and Work Group co-chair (2014-2016). Jennifer volunteered with IFT's Feeding Tomorrow Foundation at the IFT Annual Meeting and Food Expo the last three years serving as a tour guide for local science educators to help them understand opportunities for their students in food science. Jennifer was inducted into Phi Tau Sigma at NC State University in 2016, has served twice on the planning committee for the Etchells Memorial Lecture co-hosted by the USDA-ARS Food Science Research and FBNS with the NC State Chapter of Phi Tau Sigma, and raised awareness of Phi Tau Sigma among her peers.

## 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.

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 Program Fund, or the General Fund.

We also ask each Chapter to send a list of their current, and lapsed, members along with contact information to the Chapter Affairs Committee Chair, Claire Koelsch Sand, Ph.D. at: [clairekoelschsand@gmail.com](mailto:clairekoelschsand@gmail.com), 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).

## **Editorial:**

"Life isn't about waiting for the storm to pass...it's about learning to dance in the rain"  
author-Vivian Green

These are wise words that I read at the bottom of emails that I receive from our Phi Tau Sigma President, Dr. Liz Boyle. Read it again, and see how this concept can relate to aspects of your life.

## **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., Yiren Yue, Ph.D., Laura Stawn, Ph.D., Diane Schmitt, Ph.D., Gabriela John Swamy, Ph.D., and Jennifer Fideler, Ph.D. candidate. Please be responsive to their inquiries for information for the Newsletter.

The Newsletter Committee particularly wishes to share news from Phi Tau Sigma Members and Chapters. Any items for the monthly Phi Tau Sigma Newsletter should be emailed in Word 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/membership-nomination-2020-pdf-2/>

<http://www.phitausigma.org/membership-nomination-2020-doc/>

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/>

## Why I Contribute to Phi Tau Sigma:

When I was a graduate student, I received assistance to complete my education. Subsequently, I was fortunate enough to have a faculty position which allowed me and my family to travel extensively. The international experience was very beneficial to my career, exposing me to other scientists and cultures. Importantly, I also saw the influence of travel to foreign countries on our daughter and son. When Phi Tau Sigma sought to honor me by naming the International Travel Scholarship in my name, Dawn and I recognized the opportunity to make a contribution to students through this scholarship. Hopefully this scholarship will catalyze continued engagement by the student recipient in international activities.  
Daryl B. Lund, Ph.D.



## Donors, Sponsors, and Contributing Partners:

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

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

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

Contributions are appreciated in any amount, and can be made by way of the Phi Tau Sigma website (<http://www.phitausigma.org/sponsor/>). Donations by check can be made by contacting: Treasurer Kantha Shelke, Ph.D. ([kantha@corvusblue.net](mailto:kantha@corvusblue.net)), 33 West Ontario, Suite 57F, Chicago, IL 60654. Please write "Donation" or "Sponsorship" in the subject line. Contributions of \$500 or more will be recognized publicly by the Society at the annual meeting, on the Phi Tau Sigma website, in printed material associated with relevant programs and events, and in the Phi Tau Sigma monthly Newsletter. Sponsorships of awards and scholarships are also available at levels of contribution sufficient to cover the associated cost of the award or scholarship. Endowments are also accepted.

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

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

**Bronze** (\$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 “Donation” or “Sponsorship” in the subject line.

**2019-2020 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 support the Phi Tau Sigma Founders’



FOOD INGREDIENTS  
GROUP

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**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.)

**Nina Teicholz, M.Phil.** is an adjunct professor at New York University, investigative science journalist and author. Her international bestseller, *The Big Fat Surprise* has upended the conventional wisdom on dietary fat—especially saturated fat. The executive editor of “The Lancet” wrote, “this is a disquieting book about...ruthless silencing of dissent that has shaped our lives for decades ... researchers, clinicians, and health policy advisors should read this provocative book.” *The Big Fat Surprise* was named a 2014 \*Best Book\* by *The Economist*, *the Wall Street Journal*, *Forbes*, *Mother Jones*, and *Library Journal*. Teicholz is also the Executive Director of The Nutrition Coalition, a non-profit group that promotes evidence-based nutrition policy. She is a graduate of Stanford and Oxford Universities and previously served as associate director of the Center for Globalization and Sustainable Development at Columbia University. Teicholz is the only journalist to date to be elected to Phi Tau Sigma. (Sponsorship of the Phi Tau Sigma Special Recognition Award, and Phi Tau Sigma programs.)

**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 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. 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)

**A donation** was made towards a Phi Tau Sigma Scholarship by a Phi Tau Sigma Lifetime Member who wishes to remain anonymous.

**A donation** was made to Phi Tau Sigma by another Phi Tau Sigma Lifetime Member who wishes to remain anonymous.

**Dr. Yaguang (Sunny) Luo**, a Lifetime Member of Phi Tau Sigma, is a Food Scientist with the US Department of Agriculture, Agricultural Research Service. Her work focuses on food quality and safety of fresh and fresh-cut produce. Dr. Luo is the Past Chair of the IFT’s Fruit and Vegetable Product Division, and is also the Past President of Chinese American Food Society. (Donation towards the Phi Tau Sigma Outstanding Chapter of the Year Award.)