



The Honor Society of Food Science and Technology

## **Phi Tau Sigma Newsletter** *December 2020*

### **News:**

#### **Hawkins, Inc. - Silver Contributing Partner to Phi Tau Sigma**

**Hawkins, Inc., Food Ingredients Group** has generously upgraded to a **Silver Contributing Partner** to Phi Tau Sigma. Always on the forefront, Hawkins, Inc. has been a consistent and longtime sponsor of Phi Tau Sigma scholarships since 2012, and by this donation has renewed their commitment to the philosophies and accomplishments of Phi Tau Sigma.



Food Ingredients Group 

Hawkins is a formulator, manufacturer, blender and distributor of specialty chemicals, and provides functional solutions to 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.

*Interested in becoming a Contributing Partner or other significant donor to Phi Tau Sigma? Read the "Contributing Partners" article below or the "Sponsors and Donors" section.*

#### **AmazonSmile**

Remember to use AmazonSmile with Phi Tau Sigma as your Charity. This makes a difference and is appreciated very much!



#### **Graduating or Moving?**

Be sure to send your new contact information, particularly your new email address, to Executive Director, Kathryn L. Kotula, Ph.D. at [klkotula@msn.com](mailto:klkotula@msn.com). We don't want to lose you when/if your current email address becomes inactive.

## From the Desk of the Treasurer: MULTIPLYING THE IMPACT OF YOUR GIVING

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



GivingTuesday is a global celebration that matches selected donations to help raise awareness of charitable causes and amplify donors' generosity on the Tuesday after Thanksgiving (this year on December 1, 2020). It is a global celebration that matches selected donations to help raise awareness of charitable causes and amplify donors' generosity.

GivingTuesday runs for 24 hours, beginning at midnight (your local time), and social platforms including Facebook, Instagram, LinkedIn, PayPal, SnapChat, Tiktok, and Twitter are matching eligible donations made during GivingTuesday on their platforms. This year, due to the unprecedented impact of the coronavirus on the world, GivingTuesday has announced #GivingTuesdayNow—a global day of giving and unity—set to take place all day long on Dec 1, 2020.

To participate, on December 1, I will post on LinkedIn and Twitter—two platforms I am familiar with—a few words about Phi Tau Sigma and #GivingTuesdayNow and why our honorary society believes in the power of generosity to help the situation we're facing today. I invite you to chime in with just a word or two or even a line about "giving and generosity" along with the hashtags #GivingTuesdayNow and #PhiTauSigma. The more we talk about #PhiTauSigma, the greater the chance of our donations being matched.

Donations made to Phi Tau Sigma via PayPal or Facebook, no matter how small and every bit matters, could be potentially matched by these platforms. Matched donations are on a first come first serve basis and purely by lottery. We stand a greater chance to win matching funds if more of us make donations to Phi Tau Sigma on December 1, 2020 and post an announcement of support on a social platform of our choice.

Wishing everyone a wonderful giving season ahead.

### 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 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/>)

->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>)

**->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
- 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, Terri Boylston, Ph.D., ([tboylsto@iastate.edu](mailto:tboylsto@iastate.edu)), with a copy to Dr. Kathryn L. Kotula ([kkotula@msn.com](mailto:kkotula@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
- May: Newly elected individuals announced to the Membership in the May Phi Tau Sigma Newsletter

**->July 18-21, 2021, Institute of Food Technologists Annual Meeting, Chicago, IL:**  
(times tentative, and presumes an in-person meeting)

**July 18 (Sunday):**

- 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 19 (Monday):**

- 12 noon-1:30pm Phi Tau Sigma and IFT Division Competition Awards Ceremony

## Student Research Synopsis: Switchable Solvents: A novel extraction method for phospholipids from the dairy by-products

(Contributed by Kaavya Rathnakumar<sup>a</sup> and Dr. Sergio Martinez-Monteagudo<sup>a,b,c</sup>, <sup>a</sup>Dairy and Food Science Department, South Dakota State University; <sup>b</sup>Family and Consumer Sciences, New Mexico State University; <sup>c</sup>Chemical & Materials Engineering Department, New Mexico State University)



### **Previously published work featured here:**

- Cheng, S., **Rathnakumar, K.**, & Martinez-Monteagudo, S. I. (2019). Extraction of Dairy Phospholipids Using Switchable Solvents: A Feasibility Study. *Foods*, 8(7).
- **Rathnakumar, K.**, and S. Martínez Monteagudo. Switchable Solvents – A novel extraction method of dairy phospholipids. E-poster presentation, IFT annual meeting, Chicago, IL, July 13-15, 2020.
- Research poster award, PhD. Student Poster Competition by Gamma Sigma Delta, South Dakota State University. April 2019.
- AAFSIS Finalist, E-poster competition, IFT, July 2020, Chicago, USA

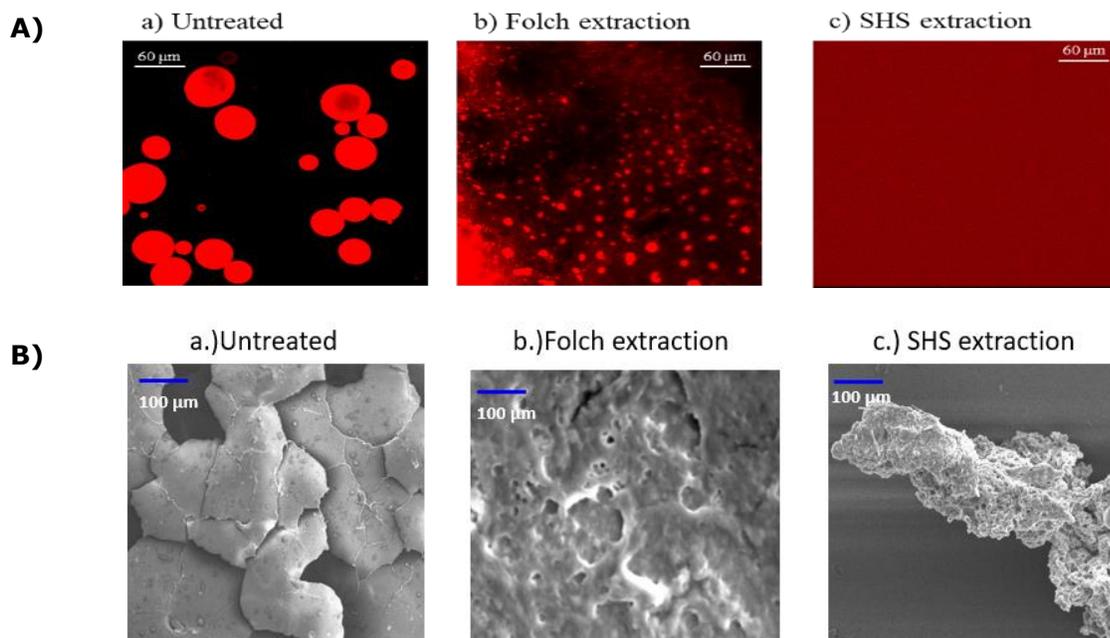
**Introduction:** Phospholipids (PLs) are found as lipid bilayers in all plant and animal cell membranes. In the last decade, PLs have been associated with several health benefits including heart diseases, inflammation, gastrointestinal infections, and brain development in infants. Moreover, PLs present a number of applications such as a natural emulsifier in food formulations. Current extraction methods for PLs are not economically viable. It is a multi-step process and new methods are yet to be successfully scaled-up and optimized.

**Purpose:** This research aimed to develop a process for the extraction of PLs from dairy byproducts by using N, N, dimethyl cyclohexylamine (CyNMe<sub>2</sub>), a switchable hydrophilicity solvent (SHS). It is a tertiary amine, authorized by the FDA as an Indirect Food Additive (CFR:177.2600). This new generation of extracting solvents are referred to as smart solvents, as they can reversibly switch between a hydrophobic and hydrophilic form by simply bubbling or removing CO<sub>2</sub> and the solvent can be reused for the further extraction process. Unlike extraction with conventional organic solvents, this novel approach requires neither distillation nor the use of volatile, flammable, or chlorinated solvents. The main objectives of this study aimed i) to evaluate the feasibility of the SHS in extracting the PLS from different dairy byproducts and compare the extraction efficiency with the traditional methods, ii) to study the mechanism of SHS disruption on protein matrix, iii) to determine the effect of pretreatments such as ultrasound on the extraction of B-serum, and iv) to optimize the extraction conditions, temperature and solvent ratio, for the dairy byproducts.

**Methods:** The SHS was used to extract the PLs from buttermilk, concentrated buttermilk, and B-serum. The extraction was also performed with a conventional extraction technique, Folch and Mojonnier, which utilized organic solvents. Each extraction consisted of 1 g of sample added into a 20 mL vial containing either 3, 6, or 12 mL of CyNMe<sub>2</sub> and left for stirring. Afterwards, an equimolar amount of water was added to maintain the stoichiometry of the reaction, followed by bubbling of CO<sub>2</sub> for 120 min. The presence of CO<sub>2</sub> converted the CyNMe<sub>2</sub> into its respective water-soluble salt, switching the hydrophobic form of the amine

into the hydrophilic form of the bicarbonate salt where the layer of lipids is at the top of the mixture. The final fractionation of PLS from the extracted lipids was done using solid-phase extraction by passing through an SPE-silica column. Afterwards the solvents from the PLS fraction were evaporated under vacuum at 40°C. The extraction was enhanced using ultrasound as a pretreatment, which consisted of 100mL of matrix subjected to three different amplitudes (50, 75 and 100%) and further extracting using SHS with the solvent ratios (3, 6, 12 mL). The optimization of the extraction parameters was done using central composite design using the design expert software V7 considering the parameters, temperature (25-60°C), solvent ratio (1:3-1:18 mL), and time (3-18 h). The quantification of the individual PLS was evaluated using Thin-layer chromatography (TLC) and High-pressure liquid chromatography (HPLC-CAD) for all the treatments and conditions. The extraction mechanism of SHS was studied using the Scanning electron microscope (SEM), Confocal laser scanning microscopy (CLSM) and SDS-Page/Gel-electrophoresis.

**Results:** The SHS extracted up to  $99.96 \pm 1.26\%$  (12/1 mL) of the PLS directly from Buttermilk as a wet sample, which was 4-fold higher compared to traditional methods. The ultrasound (USD) pretreatment of B serum for 4 min with 100% amplitude for solvent ratio 12/1 enhanced extraction efficiency and the recovered PLS was  $69.07 \pm 0.10\%$ , 10 times higher compared to untreated B-serum. The disruption mechanism and reduction in size of PLS droplets was observed using microstructural imaging through CLSM-illustrated droplets of PLS (Fig. 1A), while SEM images showed the gross morphology of the materials (Fig. 1B). Optimization of extraction parameters for B-serum was done with the maximum desirability of 0.982. The adequacy of the model was predicted from the ANOVA response, the model was significant for all three responses of the time and the coefficients of determination ( $R^2$ ) were 0.9825, 0.8164 and 0.7060 for 3, 10, 18 h respectively. The individual PLS of the representative sample were characterized from the TLC and HPLC-CAD, and they included sphingomyelin, phosphatidylethanolamine, serine, and choline.



**Figure 1:** CLSM(A) and SEM(B) images of the microstructure of phospholipids droplets before and after extraction from dairy byproducts.

**Significance:**

This process for recovering dairy phospholipids will be a more sustainable method for the future, as it can be reused, and uses less energy and therefore helps dairy farmers to generate more profit. It will also promote employment and responsibility in utilizing every fraction of milk. This research will also help to advance education and public awareness of technological platforms for increased utilization of dairy byproducts. This research effort also creates more business opportunities by adding value to these byproducts.

**References:**

Cheng et al., Extraction of Dairy Phospholipids using Switchable Hydrophilicity Solvents using Feasibility study, *Foods*, 2019; 8(7).

Gallier et al., Composition and fatty acid distribution of bovine milk phospholipids from processed milk products, *J Agric Food Chem*, 2010;58.

Jessop et al., A solvent having switchable hydrophilicity, *Green Chemistry*, 2010;12(5).

Leong et al., Temperature effects on the ultrasonic separation of fat from whole milk, *Ultra sonochemistry.*, 2014;21(6).

**Lifetime Member Tribute: Dojin Ryu, Ph.D.**

Professor, University of Idaho

Why did you become a Lifetime Member?

As "THE Honor Society of Food Science and Technology," Phi Tau Sigma has long been promoting and advocating the profession. I particularly value its culture of bringing our next generation to the center stage. I simply wanted to extend my commitment to support the Society. I also hope others would recognize the benefits of joining and being a (Lifetime) member.

Education:

I started dating (B.S.) Food Science in Seoul, Korea (Korea University) and got engaged (M.S.) at the University of Missouri-Columbia. Then... married (Ph.D.) at the University of Nebraska-Lincoln with emphasis on environmental toxicology in studying molds and mycotoxins under the guidance of the late Dr. Lloyd B. Bullerman.

Experience/Accomplishments:

After a few years of postdoc and non-tenure track faculty position, I worked at Texas Woman's University for eight years where I devoted a significant portion of effort in teaching. I cherish this period as I learned to appreciate teaching and interacting with the students with genuine interests in food and science. Then, I have been putting more emphasis on research since I joined the University of Idaho in 2012.

Areas of Expertise:

I enjoy seeing and working with stinking (foodborne) molds and their toxic metabolites, mycotoxins. As much as it is challenging to control mycotoxins in foods, I am very much

interested in chemical and toxicological fate of mycotoxins particularly during food processing. As an educator, I also would like to contribute to food safety education especially for those hard-to-reach and/or at-risk population such as Deaf and hard of hearing.

Awards and Honors (selected list):

Science Board (2019-2023) U.S. Food and Drug Administration  
Tanner Award (2018) Most cited paper in *J. Food Sci./Toxicology* section, IFT  
Outstanding Research Award (2018) Gamma Sigma Delta, CALS/UI  
Food Advisory Committee (2016-2017) U.S. Food and Drug Administration  
Scholarship Award (2012) College of Health Sciences, TWU  
Distinction in Scholarship (2009) Texas Woman's University

Personal: Family, Interests, Hobbies:

I am much blessed with a loving family, my wife Mary of 30 years and two daughters – Christine (MD) in Omaha, NE and Annabel in Manhattan, NY. When allowed, I enjoy gardening, woodworking, and Kendo.

Advice to university students and career food scientists and technologists:

Don't be afraid or shy to get involved as it is your world to claim and (it may be a cliché but) nothing works better than (your own) hands-on experience. It would be a good way to learn and define yourself as a professional as well as a person. Soon your classmates will be your peers/colleagues in your profession possibly for a long time. Do not neglect the importance of knowledge or understanding in the subject area of course. Most of all, feed your interest in food and science. 😊

## **Chapter News:**

### **Phi Tau Sigma – Hoosier Chapter at Purdue University – 2019-2020 Activities**

(Contributed by Anbukhani "Connie" Muniandy, M.S., Sarah Corwin, Ph.D., RD, and Anna Hayes, Ph.D. Candidate)

The Phi Tau Sigma Hoosier Chapter at Purdue University has continued improving and expanding its activities while remaining highly committed to excellence. We welcomed 8 new members in April where their induction ceremony was scheduled during the Phi Tau Sigma Chapter Annual Luncheon. The ceremony was canceled due to COVID-19. Katie Rippel, global director, supply VPO of Anheuser-Busch was invited to speak at the Luncheon.

The Chapter organized and carried out two mentoring events for undergraduate students to give them valuable insights to graduate school. Additionally, multiple seminars were planned and organized to provide professional development opportunities to our members. Stacey Heuer, B.S., Consultant at Integrated Project Management Company, Inc., and Rob Neufelder, B.S., Managing Director at Integrated Project Management Company, Inc. presented a seminar on overview of project, program and portfolio management in the food industry. Bill Shazer, M.S. Technical Sales Manager at DairyChem was also invited to deliver a seminar regarding technical sales and business development roles in the food industry. Curt Emenhiser, Ph.D., head site of operations at Nestle Development Center was invited to

speak on the unique challenges of creating new products for the infants and toddlers, which was canceled due to COVID-19.



Attendees with the guest speakers for our September 2019 seminar titled "The 3 Ps: An overview of Project, Program, and Portfolio Management in the Food Industry." The speakers were Stacy Heuer, B.S., Consultant, and Rob Neufelder, B.S., Managing Director at Integrated Project Management Company, Inc.

Our members also engaged in volunteering in various committees and panels, especially within the Cereal and Grains Association, The Institute Food Technologists, American Society of Baking, Brewers of Indiana Guild, Purdue Student Food Insecurity Committee, as well as science fairs and other community events around the Purdue community.



Senior mentoring event in Fall 2019 – undergraduate and graduate students engaged in thoughtful conversation about graduate school

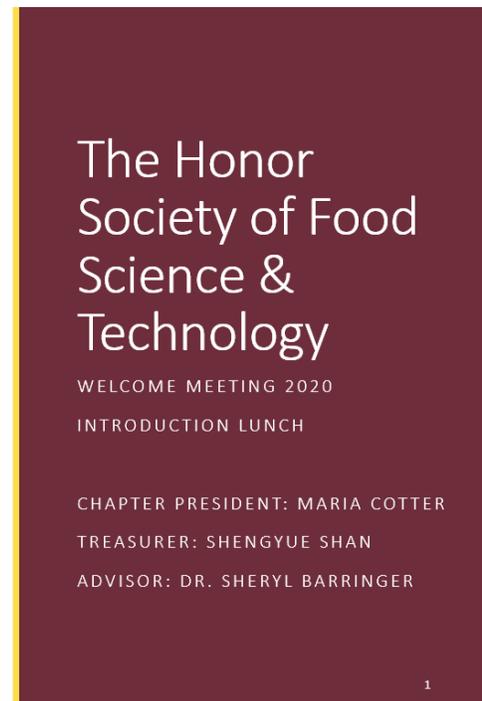
In the future, the Hoosier Chapter aims to continue organizing and improving upon these events, with special focus on encouraging membership in Phi Tau Sigma, increasing attendance at events, and implementing more service-related activities. We look forward to a successful upcoming year!

## Phi Tau Sigma Buckeye Chapter successfully held a virtual welcome lunch

(contributed by: Shengyue Shan, Ph.D. student at The Ohio State University, Phi Tau Sigma Buckeye Chapter Treasurer)



Buckeye Chapter



On October 21<sup>st</sup>, Phi Tau Sigma Buckeye Chapter organized a virtual welcome lunch to introduce the benefits of joining Phi Tau Sigma and strengthen the communications among members and potential members. This event was initiated by Buckeye Chapter President Maria Cotter (Ph.D. Candidate) and Treasurer Shengyue Shan (Ph.D. student), and it attracted 15 participants.

President Maria Cotter started the meeting with the introduction of Phi Tau Sigma as a national organization and the connections between university chapters. It was mentioned that the key value of Buckeye Chapter is connection, the connection between academic pursuit and career, and the connection with peer food scientists. Maria summarized the career development events that had been held so far and would continue in the future, including Microsoft Office software tutorials, resume and interview skill workshops, and upcoming pandemic-suitable social events, such as virtual dinner party and virtual 5K run. Buckeye Chapter member Katie Williamson (Ph.D. student), recipient of Phi Tau Sigma's Founders' Scholarship in July 2020, also presented at the lunch and shared her expertise. The Phi Tau Sigma student member nomination process was explained, and it was pointed out that the process workflow could be found on the updated website of Phi Tau Sigma Buckeye Chapter. Maria and Shengyue answered questions from students who were interested in becoming members at the end of the event.

The 30-minute lunch provided a platform for Food Science students at The Ohio State University to learn more about Phi Tau Sigma and has prompted several new student membership applications.

## Member News:

### Mary K. Schmidl, Ph.D. honored with the The Minnesota Section President's Award

**The Minnesota Section President's Award** for 2020 was presented to **Mary K. Schmidl, Ph.D.** (President, International Union of Food Science and Technology (IUFoST) and Adjunct Professor, University of Minnesota) on Wednesday September 30, 2020 in St. Paul, Minnesota.



Dr. Mary K. Schmidl, a Lifetime Member and Past President of Phi Tau Sigma, received her Bachelor of Science degree from the University of California-Davis and a M.S. and Ph.D. degree in Food Science and minors in biochemistry and human nutrition from Cornell University. She is the former Vice President of Science and Technology for the Humanetics Corporation where she was responsible for new drug discovery and scientific and regulatory affairs. She was the Director of Research, Clinical Division of Novartis (Nestle, Inc.), responsible for medical foods, weight management products and medical devices. Prior to her work with Nestle, Dr. Schmidl directed the Nutrition Research Department for AG Bayer and was involved with intravenous feeding systems and medical foods. She has commercialized more than 75 new products, authored or co-authored over 100 refereed research papers, magazine articles, patents, book chapters, books. She is the co-author of the book: Essentials of Functional Foods and her published works have been cited > 900 times.

Mary joined IFT as a student in 1973 and was one of six Phi Tau Sigma finalists recognized for exceptional research in the global graduate student paper competition. Mary has been extremely active in the local MNIFT section since moving to Minnesota in 1982. Foremost, she is the only individual to serve the section twice as its President (1987, 2016). She has served as its Secretary (3 years), Councilor and Chaired the following committees: Board, Long-Range Planning, Program, Macy Award, President's Award, Midwest Food Processors Conference. She has served the following committees: Silent Auction, Scholarship, Arrangements, Bylaws, Tellers, President's Award, Strategic Planning and Financial Accountability. She is an active member of the IFT Nutrition Division serving as Chair, Secretary, Executive Committee Member and Newsletter Editor.

Dr. Schmidl has demonstrated extraordinary leadership by serving as IFT President (2000) and President of The Honor Society of Food Science and Technology (Phi Tau Sigma) (2013) and in 2018 the first woman to serve as President of the International Union of Food Science and Technology (IUFoST), an organization representing 300,000 food scientists across the world. She served IFT as its Assistant Treasurer (5 years), Board of Directors (11 years), Foundation Board (8 years), Distinguished Lecturer (9 years) and Chaired the Awards Committee and numerous other committees. Dr. Schmidl received the Babcock-Hart Award, the Dr. Carl R. Fellers Award, the Award of Distinction-University of California-Davis, the Friendship Award, Science Spirit Award from the Chinese IFT, the Woodroof Lectureship Award-University of Georgia, the Patrick Award-Louisiana State University, the Stiebling Lectureship-Florida State University and the Phi Tau Sigma Special Recognition Award. She is an elected Fellow of IFT, IFST & IUFoST. Dr. Schmidl served on Board of Directors of the

Council of Scientific Society Presidents (CSSP), representing 1.5 million scientists, served on the European Union's Advisory Board for Food Risk Communication and a visiting professor at Jiangnan University-China.

## Claire Zoellner, Ph.D. honored with the The Frozen Food Foundation Freezing Research Award



The International Association for Food Protection (IAFP) announced that **The Frozen Food Foundation Freezing Research Award** honoree for 2020 is **Claire Zoellner, Ph.D.** The award honors an individual, group, or organization for preeminence and outstanding contributions in research that impacts food safety attributes of freezing.

"It's an honor to be among the scientists who have received this award and to have worked with the industry on advancing food safety awareness and practices for frozen foods" said Dr. Zoellner.

Dr. Zoellner has made significant contributions to enhance the safety of frozen foods, particularly in addressing the risk of *Listeria monocytogenes* contamination. This includes recent accomplishments in research (e.g., modeling work on *Listeria*

*monocytogenes* and three open-access peer-reviewed publications) that have resulted in workshops, invited talks, and commercialization opportunities to introduce new risk assessment tools to the frozen food industry.

As the Postdoctoral Research Associate spearheading the Frozen Food Foundation funded research project "*Development of mathematical models that can be used to develop environmental sampling programs for Listeria and assess L. monocytogenes-associated public health risks in the frozen food industry*" (PI: Martin Wiedmann, Co-PI: Renata Ivanek), Dr. Zoellner combined existing research and guidance documents on *Listeria* in food processing environments, mapping out the gaps in resources for the frozen food industry.

As a result, two new modeling tools for the industry were created:

- EnABLE: used to design and execute risk-based environmental monitoring programs.
- FFLLoRA: quantifies the public health impact from low-level contamination in non-RTE frozen foods, including under abuse scenarios

Claire holds a B.S. in Food Science and Human Nutrition from the University of Illinois Urbana-Champaign, and a Ph.D. in Food Science and Technology with minors in Epidemiology and Systems Engineering from Cornell University. Her foray into food safety began with a doctoral USDA National Needs Fellowship in International Food Safety, which she used to study microbial dynamics in an international supply chain of fresh tomatoes. For the impact and practicality of this research, Claire was awarded the Phi Tau Sigma Founders' Award, and was recognized as an emerging leader in food science with IFT's 2019

Emerging Leaders Network Award. Claire currently serves as a Phi Tau Sigma Director, the Associate Editor of the Newsletter, and Chair of the *ad hoc* Student Relations Committee.

Claire is a Food Safety Scientist at iFoodDecisionSciences, Inc. (iFoodDS), a software company offering EnABLE for widespread industry use. She uses her expertise in microbial contamination, simulation models, and risk assessment to develop and deliver pragmatic, science-based software tools for the food industry.

These models and Claire's research contributions to the frozen food sector may facilitate the adoption of more digital risk-based food safety programs to help control *Listeria monocytogenes*.

"I'm impressed by the investment and momentum coming from the frozen food sector to be proactive in tackling food safety risks not only within their facilities and products, but also with educating consumer[s]," Dr. Zoellner mentioned. "We're seeing an industry-wide trend towards modernization of food safety systems and I think the Frozen Food Foundation's collaborative research between industry and academia has been, and continues to be, the key to developing new food safety approaches and policies that make the frozen food sector a leader in that transformation".

Follow iFoodDS on [LinkedIn](#), [Twitter](#), [Facebook](#) and [Instagram](#) to get practical insights your company can use in advance of these upcoming changes.

[Modified from: <https://www.idsfoodsafety.com/our-blog/claire-zoellner-awarded-with-the-frozen-food-foundation-freezing-research-award>]

## 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 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, 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).

## Support Phi Tau Sigma through AmazonSmile:

If you shop at Amazon, please register Phi Tau Sigma as your charity through AmazonSmile. 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!**



## 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-2021-doc/>

<http://www.phitausigma.org/phi-tau-sigma-nomination-2021-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/sponsor/>). 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.

### **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 support the Phi Tau Sigma Founders' Scholarship, and a new initiative.) **Hawkins, Inc. is a Silver level Contributing Partner.**



Food Ingredients Group 

**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)

**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. (Sponsorship of the Dr. Daryl B. Lund Student International Travel 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.