



The Honor Society of Food Science and Technology

Phi Tau Sigma Newsletter *November 2018*

News:

Awards Committee:

(Contributed by Poulson Joseph, Ph.D., Chair of the Phi Tau Sigma Awards Committee)

Dr. Daryl B. Lund Student International Travel Scholarship – Deadline November 30

The Dr. Daryl B. Lund Student International Travel Scholarship is presented annually to a student Member of Phi Tau Sigma - The Honor Society of Food Science and Technology, to supplement international travel for educational purposes. The scholarship, in the amount of \$2,000, is presented to honor the commitment of Dr. Lund, whose international reputation for outstanding scholarly contributions and inspired leadership has fostered and facilitated the global advancement of food science and technology.

Nominees shall be students who are members in good standing during the administrative year of the nomination, although they may have graduated by the presentation of the award.

Nomination materials must be submitted to the Chair of the Awards Committee by email by November 30th (pjoseph@kalsec.com), with a copy to the Executive Director (klkotula@msn.com). For more information on the nomination process please visit the Awards section of the Phi Tau Sigma website (www.phitausigma.org). For information specific to this scholarship, including the nomination form, please visit <http://www.phitausigma.org/lund-scholarship/>.

Don't wait for us – Please share your news!

The Phi Tau Sigma Newsletter and the newly renovated Website are essential for keeping Members informed and connected. The respective committees work hard to develop the content that will be shared with the Society each month, but ultimately the content comes from the honorable achievements and incredible activities of all our Members and Chapters.

Don't wait for us to contact you; please share your news and experiences with the Newsletter Committee, so they can be featured! As a reminder, Newsletter feature articles include **Student Research Synopsis, Careers, Lifetime Member Tribute, Chapter News, In Case You Were Wondering...**, and **Member News**. Any articles, questions or

suggestions regarding the monthly Phi Tau Sigma Newsletter can be emailed to Editor Kathryn L. Kotula, Ph.D. at klkotula@msn.com or Associate Newsletter Editor Claire Zoellner, Ph.D. at cez23@cornell.edu. You may also be contacted by members of the Newsletter Committee, so please be responsive to their requests for contributions. Thanks for reading and contributing to the Phi Tau Sigma Newsletter!

Know your Leadership: About Your Phi Tau Sigma Directors:

Kantha Shelke, Ph.D., is a Lifetime Member and Treasurer of Phi Tau Sigma, and is currently a Principal at Corvus Blue LLC, a contract food science and research firm. She holds Master's degrees in Organic Chemistry and in Food Science and Nutrition, and a Ph.D. in Cereal Chemistry and Technology. She practices, writes, and teaches from end-to-end in food and supplement supply chains on the global front. An IFT Food Science Communicator, she is also the technical editor of PLMA Live!, (Private Label Manufacturers Association), and Nutrition Business Journal, and holds adjunct/visiting professorship positions at the Johns Hopkins University in Baltimore and at the MCI Management Center in Innsbruck, Austria. When not teaching or working with clients, she helps entrepreneurs advance the understanding of food and nutrition, food safety, and regulations.

T. Matt Taylor, Ph.D., is Associate Professor in the Department of Animal Science at Texas A&M University in Food Safety Microbiology. He has B.S. and M.S. degrees in Food Science from North Carolina State University and Ph.D. in Food Science & Technology from the University of Tennessee-Knoxville. His teaching and research program focuses on the microbiology of human foods, principally animal-derived foods, and he has a particular interest in the functionalization of natural food preservatives through encapsulation. He sits on the editorial boards of Journal of Food Protection, Food Protection Trends, and International Journal of Food Microbiology. He joined IFT in 1997 as a sophomore and was invited to Phi Tau Sigma membership as a Student Member in 1999.

David Park, B.S., a Phi Tau Sigma Lifetime Member, is Principal of Food-Defense, LLC, a food safety and food defense services firm in the Washington DC-area providing FDA and USDA-FSIS thermal and non-thermal process authority consulting for both domestic and foreign manufacturers of shelf-stable and refrigerated foods. His industry and federal government positions have included research, technical support, analyst, regulatory compliance and product development for major food equipment manufacturers and technical services suppliers. Park received his B.S in Agriculture (Food Science) from Purdue University in 1972. He currently holds an instructional position with the University of Maryland Joint Institute for Food Safety and Applied Nutrition (JIFSAN) and an appointment as an adjunct expert for the University of Minnesota Food Protection and Defense Institute (FPDI). Park is a Professional Member of IFT and has taught IFT Short Courses, served as a member of the IFT Nomination and Elections Committee and Alternate Councilor for the Food Laws and Regulations Division and was an IFT Distinguished Lecturer. He currently teaches industry food safety certification courses for both Grocery Manufacturers Association (GMA) Better Process Control Schools and is a Lead Instructor for FSPCA Preventive Controls for Human Foods. Park has received the U.S. Army Patriotic Civilian Service Award and Purdue Outstanding Food Science Alumni Award and served on various food industry organization Boards, including Research and Development for Military Foods and Packaging Systems (R&DA) and the Institute for Thermal Processing Specialists (IFTPS).

Dongjun Zhao, Ph.D., a Lifetime Member of Phi Tau Sigma, is currently a Manager at the Kraft Heinz Company. She received her B.S., M.S. and Ph.D. degrees in Food Science from Cornell University with a focus in Food Engineering. Her Ph.D. research focused on developing a non-thermal hurdle technology combining microfiltration and UV for cold pasteurization of apple cider to improve quality and ensure safety. She has been actively involved in the Honor Society since the beginning of her membership in 2007. She was the Secretary in 2007 and President in 2011 of the Cornell Chapter. On the national level, Dongjun served on the Program Committee in 2012-2013 and Chaired the ad hoc Student Relations Committee in 2013-2014. She is also an active member of IFT, and currently is the Chair of the Fruit & Vegetable Products Division.

Ruth S. MacDonald, RD, Ph.D., a Lifetime Member of Phi Tau Sigma, is Professor and Chair, Department of Food Science and Human Nutrition, and Assistant Dean for Graduate Programs for the College of Agriculture and Life Sciences at Iowa State University. She holds a Ph.D. in Nutrition, minor in Food Science, and Masters in Nutrition, minor in Physiology from the University of Minnesota, and she is a Registered Dietitian. Her research interests include the role of dietary factors in cancer progression, specifically breast, colon and prostate cancer. She gives frequent public presentations on the science and safety of biotechnology use in food and is a scientific expert for GMO Answers and Best Food Facts. She coauthored a textbook: Understanding Food Systems: Agriculture, Food Science and Nutrition in the United States in 2017. She has served as a member of the Executive Board for the Nutrition Division, and the Higher Education Review Board of IFT, and is a member of the American Society for Nutrition.

Wesley N. Osburn, Ph.D., a Lifetime Member of Phi Tau Sigma, is an Associate Professor at Texas A&M University appointed in the Department of Animal Science and an adjunct faculty member of the Department of Nutrition and Food Science. He also serves as the Associate Head for Academic programs for the Department of Animal Science overseeing both undergraduate and graduate programs. Dr. Osburn has a teaching and research appointment in Meat Science with a specific focus on value added meat processing. His teaching interests include value added processing, food safety, quality assurance and team problem solving. He teaches a graduate level processed meats course, undergraduate quality assurance and senior seminar courses. His research interests include development and application of processed meat technologies to improve product quality and safety, utilization of meat by-products and enhancing meat protein functionality. His outreach efforts include assisting the meat and poultry industry with processing systems troubleshooting and conducting value added processed meat workshops. Outreach activities include conducting Texas A&M processed meats workshops and providing guest lectures and laboratory demonstrations to numerous out of state workshops and conferences. He has traveled nationally and internationally to present seminars on processed meats and has consulted with numerous companies to enhance production processes and assist in the development of processed meat, poultry and pet food products, including products for the NASA Space Food Systems Laboratory. He has received over \$750,000 as PI or Co-PI, presented research findings at national and international conferences, published research articles and written book chapters in the area of processed meats. He has been involved with IFT, ASAS and is an active member of the American Meat Science Association, having chaired several committees and serving on the Board of Directors. Dr. Osburn received his B.S. in Agricultural Education from Texas A&M University in 1981, his M.S. degree in Animal Science, Meat Science Discipline in 1992 and completed his Ph.D. in Animal Science at the University of Nebraska-Lincoln in 1996. He was hired by Michigan State University in 1996 where he served as an Assistant and then Associate Professor with tenure before joining Texas A&M University in 2004.

Elizabeth Grasso-Kelley, Ph.D., a Lifetime Member of Phi Tau Sigma, is an Assistant Professor in the Department of Food Science and Nutrition at Illinois Institute of Technology. She received her B.S. degree in Food Science from The Pennsylvania State University in 2005 and M.S. and Ph.D. degrees from the Department of Food Science and Technology of The Ohio State University in 2007 and 2010, respectively. Her area of expertise involves low moisture food safety with research interests including: characterizing thermal resistance of pathogens in low moisture environments, developing best practices for inoculation of low moisture foods, and studying the survival of pathogens during storage and processing. She is the IIT lead on the Institute for Food Safety's Low Moisture Research Consortium, past-Chair of the International Association for Food Protections Low Water Activity Foods Professional Development Group, and regularly volunteers for the Institute of Food Technologists' review of abstracts and proposals. She also serves on the editorial board for the Journal of Food Protection.

Tom Aurand, Ph.D., a Lifetime Member of Phi Tau Sigma, is a Principle in Aurand & Associates, LLC, a food technology consulting company, based in St. Paul, MN, focusing on developing technology in the dairy, fruit and nutraceutical industries. He also consults with clients on R & D management techniques such as Stage Gate, Product Lifecycle Management and Intellectual Property capture and documentation. During his career in the food industry, Tom served in senior R & D management positions in the dairy, fruit, corn processing and frozen food industries. He is currently active in Phi Tau Sigma as the past Chair of the Nominations & Elections Committee and as a Director. Tom has also been involved in several volunteer organizations such as Western New York Library Resources Council, a consortium of public and private libraries, where he served a term as President of the organization. Tom was an active member of the Cornell Food Science Industry Advisory Council for 18 years. He also served for 21 years on the Board of Directors of Graceland Fruit, a Michigan fruit infusion and drying processor. Tom received his Ph.D. and M.S. degrees from Cornell University and a B.S. degree from North Carolina State University.

Stephen Campano, M.S., a Lifetime Member of Phi Tau Sigma, is Vice President of Research and Applied Technology for Hawkins, Inc. He received a B.S. degree in Animal Science and M.S. degree in Animal Industries from the University of Connecticut in 1978 and 1981, respectively, and has spent the past 30+ years working with the meat industry in a variety of positions with processors and allied suppliers. Steve has been involved in developing and directing food safety research initiatives with government, industry and academic institutions, and has been instrumental in the development and application of new food ingredient technologies, both domestically and internationally. He was elected to the American Meat Science Association Executive Board, served as President in 2008/2009, was conferred an AMSA Fellow in 2011. Steve is past Chair of the Phi Tau Sigma Membership and Qualifications Committee, the Awards Committee, the Recruitment Campaign Committee, and the Development Committee. Steve was the 2015 recipient of the Phi Tau Sigma Special Recognition Award.

Lili He, Ph.D., a Lifetime Member of Phi Tau Sigma, is currently an Associate Professor of Food Science at University of Massachusetts, Amherst. She received her PhD degree from University of Missouri-Columbia in 2009 and did her postdoc training in University of Minnesota between 2009 and 2012. Then she joined the faculty in the Food Science Department at the University of Massachusetts, Amherst as an Assistant Professor in 2012. Dr. He's major research focus is to develop and apply the most advanced and innovative analytical techniques to help solve critical and emerging issues in food science. Her group has developed various surface enhanced Raman scattering based techniques for food safety and food chemistry applications. Her excellence has been recognized by receipt of the 2012

Young Scientist Award from the International Union of Food Science and Technology, 2015 ACS-AGFD young scientist award, 2016 young investigator award from Eastern Analytical Symposium, 2016 IFT Samuel Cate Prescott Award for Research, and was selected as one of the Talented 12 by C&EN, the ACS magazine in 2016.

Rodrigo Tarté, Ph.D., a Lifetime Member of Phi Tau Sigma, is Assistant Professor of Meat Science in the Department of Animal Science at Iowa State University, where he also holds a courtesy appointment in the Department of Food Science and Human Nutrition. He holds a Ph.D. in Food Science and Technology and Meat Science, from Iowa State. He joined the ISU faculty in 2015 after nineteen years as a food research and product development scientist in the private sector, most of which was spent at Kraft Foods Inc./Oscar Mayer, the John Morrell Food Group (Smithfield Foods), and Rica Rondo S.A. (Colombia). At ISU he researches the development and application of innovative process and ingredient technologies to improve the sensory and nutritional quality, resource utilization, and safety of further processed meat products. He also teaches courses on introductory meat science and processed meats. He has served as Chair of the Phi Tau Sigma Membership & Qualifications Committee, Chair of the IFT Muscle Foods Division, and member of the Board of Directors of the American Meat Science Association, and was the 2013 recipient of the AMSA Meat Processing Award. He is the editor of the book *Ingredients in Meat Products: Properties, Functionality and Applications* (1999), has authored or co-authored numerous scientific and industry publications (research articles, book chapters, trade articles), and is a regular speaker at conferences, seminars and short courses.

Claire Zoellner, Ph.D., is a Food Safety Scientist, at iFoodDecision Sciences, Inc. where she manages research projects and development of pragmatic science-based software tools for the fresh produce industry. Previously she worked as a Postdoctoral Associate on computer-based models to optimize the design of pathogen environmental monitoring programs in food processing facilities. Her doctoral research involved characterizing microbial risks in the postharvest supply chain of fresh produce, for which she received the Dr. Daryl B. Lund International Travel Scholarship in 2015. Claire received her Ph.D. degree from Cornell University and a B.S. degree from the University of Illinois at Urbana-Champaign. She currently serves as the Associate Editor of the Phi Tau Sigma Newsletter and Incoming Chair of the Student Relations Committee.

Calendar:

->Phi Tau Sigma Awards Schedule:

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

Send completed nomination forms to both Awards Committee Chair John Luchansky, Ph.D., (john.luchansky@ars.usda.gov) and Executive Director Kathryn L. Kotula, Ph.D. (klkotula@msn.com). (More information: <http://www.phitausigma.org/awards/>)

->December 18: Deadline to submit Nominations for the **Dr. Carl R. Fellers Award**, and other IFT Achievement Awards.
(More information: <http://www.ift.org/membership/awards-and-recognition/achievement-awards.aspx>)

->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, Amy Simonne, Ph.D. (asim@ufl.edu) with a copy to Dr. Kathryn L. Kotula (klkotula@msn.com).

->Election schedule:

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

Student Research Synopsis: HS-SPME and GC-MS/O Combined with Chemometrics to Assess the Impact of Germination on Flavor Attributes of Chickpea, Lentil, and Yellow Pea

(Contributed by Minwei Xu, Ph.D. candidate in Plant Science, North Dakota State University)

Introduction: The ongoing strong demand for high fiber and gluten-free foods continues to spur product development in diverse product segments. Cracker, pasta, bread, cereal, chips, and baked goods were the top categories for gluten-free claims in 2017 [1]. Pulse seeds, such as chickpea (*Cicer arietinum* L.), yellow pea (*Pisum sativum* L.), and lentil (*Lens culinaris* Merr.), are the very few that possess high protein, high fiber, high minerals, and gluten-free properties with potential health benefits [2]. One of the continuing impediments to popularize pulses as functional food ingredients is the distinct beany flavors [3].

Beany, green, grassy, earthy, rancid, and muddy are the main beany-related flavors of pulses described by consumers. Beany flavors in raw pulse flours are mainly derived from hydrolytic and oxidative degradation of lipids, and degradation of amino acids. The high

temperature encountered during pulse processing can further intensify the beany flavors in pulse flours and products as the consequence of Maillard reaction, thermal and oxidative degradation of lipid and carotenoids, etc. Chemical modification, heat treatment, enzymatic hydrolysis, and fermentation have been carried out to reduce undesirable flavors in pulse products. However, the unique pulse protein conformation and structure has retained strong affinity with beany flavor compounds that cannot be stripped off easily. Germination, an inexpensive and traditional way of availing the health benefit of pulse, can improve the nutritional quality, reduce antinutritional factors, and boost antioxidant capacity [4, 5]. In addition to its modifying effects on the nutrition of pulse, some studies have shown that germination is also a relevant technique for mitigating beany flavor in both pulse flours and baked food products.

Purpose: The aim of the present study was to evaluate the capability of germination to modify the flavor attributes of chickpea, lentil, and yellow pea using headspace solid-phase micro-extraction (HS-SPME) coupled with gas chromatography–mass spectrometry/olfactometry (GC–MS/O). The beany flavor markers were quantified to confirm the impact of germination on beany flavor development in pulse flours.

Methods: The method of pulse germination was adapted from Xu and coworkers [6]. Briefly, 500 g of seeds were germinated at 25 °C in the dark for 6 days with the relative humidity and the moisture of seeds at 99% and 50%, respectively. Two grams of pulse flours was extracted by HS-SPME described above. All the analyses were performed on an Agilent Technologies 7890B GC system. Volatiles were separated on a ZB-Wax column. One third of the column effluent was split to the 5977A mass detector. Two thirds of the column effluent were split to an olfactometry detection port (ODP3, Gerstel, Germany) (Fig. 1). Principle component analysis (PCA) and hierarchy cluster analysis (HCA), were further employed to discriminate and identify the changes of volatile compounds during pulse germination.

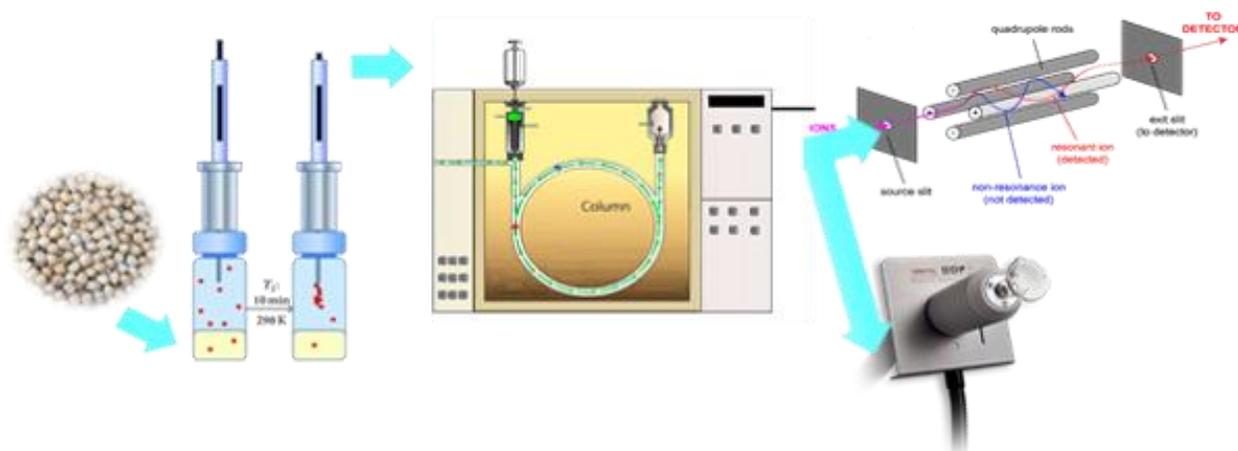


Figure 1. Flow chart of flavor analysis by GC-MS/O method.

Results: The combination of GC-MS and GC-O was applied to comprehensively understand the flavor changes during pulse germination. One hundred and twenty-four volatile components were identified in germinated pulse flours. Overall, 21 aliphatic aldehydes, 22 aliphatic alcohols, 6 aliphatic esters, 13 aliphatic ketones, 17 benzenoids, 5 carboxylic acids, 5 furanoids, 7 hydrocarbons, 3 pyrazines, 3 terpenoids, 6 others, and 16 unknown

compounds were recorded. GC-MS with library NIST 14 could detect the majority of the volatile components (108), while GC-O was only able to identify 62 active odor components. In other words, 62 volatiles with little or no active odors were mainly speculated by MS spectrum and 38 of them were further confirmed by the calculated RI value, such as (*E*)-2-decenal, 1-decanol, and 2-hydroxyanisole. Meanwhile, we also noticed that 19 active odors components were unable to be recognized by GC-MS but exclusively by GC-O, which can be explained by their trace quantity and low olfactory threshold. Such components were not neglectable as they own distinct beany flavor characteristics, and 16 of them were referred to as unknown aroma components. For instance, beany, grassy, and green flavors were described by the panelists.

The impact of germination on the beany flavor development varies depending on the type of pulse seeds. The beany flavor associated volatile components increased in lentil and yellow pea flours over the course of germination, whereas beany flavors of chickpea were decreased in conjunction with the increase of some unpleasant flavor notes. With the PCA and HCA of GC-MS/O results, lentil and yellow pea flours had similar flavor variation with little difference during germination, while chickpea flours had different flavor attributes that became undesirable after 4 days germination. Based on the PCA and HCA results (data not shown), six markers, i.e., hexanal, (*E,E*)-2,4-nonadienal, (*E,E*)-2,4-decadienal, 3-methyl-1-butanol, 1-hexanol, and 2-pentylfuran, were selected to quantify the development of beany flavors. The dynamic changes of the quantified markers matched with the GC-O results which suggests that they can be used to predict the development of beany flavor in pulse flours.

Significance: Identifying the flavor compounds over the course of germination is indispensable to fully understand how germination could potentially impact beany flavors in pulse flours. The variation of binding force between flavor compounds and proteins could be further studied based on this research.

References:

1. Schierhorn CD (2018) Why gluten-free is here to stay. *Food Technol* 72:51–57.
2. Hall C, Hillen C, Robinson JG (2017) Composition, nutritional value, and health benefits of pulses. *Cereal Chem* 94:11–31.
3. Kaneko S, Kumazawa K, Nishimura O (2011) Studies on the key aroma compounds in soy milk made from three different soybean cultivars. *J Agric Food Chem* 59:12204–12209.
4. Xu M, Jin Z, Ohm J, et al (2018) Improvement of the antioxidative activity of soluble phenolic compounds in chickpea by germination. *J Agric Food Chem* 66:6179–6187.
5. Sozer N, Holopainen U, Poutanen K (2016) Traditional and new food uses of pulses. *Cereal Chem J* 94:66–73.
6. Xu M, Jin Z, Peckrul A, Chen B (2018) Pulse seed germination improves antioxidative activity of phenolic compounds in stripped soybean oil-in-water emulsions. *Food Chem* 250:140–147.

- "Surveys on the Methods to Improve the Solubility of Proteins from Garden Pea", Mar. 2012 – June 2013
- García-Torres, Rosalía, José I. Reyes-De-Corcuera, and Daoyuan Yang. "Protection of Enzymes Against Thermal Degradation." (2018).

Experience and Awards

- IFT Certified Food Scientist, certification number 4962, issued on 5/26/2018
- Serving as the UGA Chapter Student President of Phi Tau Sigma Honor Society of Food Science and Technology, fall 2017 – present
- Serving as the student representative in biosensor community in the American Society of Agricultural and Biological Engineers, fall 2017 – present
- Serving as a research assistant, University of Georgia, 2014 – present; serving as a teaching assistant in courses "Chocolate Science", "Introduction to Food Science" and "Food Engineering", UGA
- Marshall Plan Scholarship, Vienna, Austria, 6500 EUR, 2017
- National Scholarship (Top 1%, 8000 RMB), Ministry of Education of China, 2009 – 2010

Advice to university students and career food scientists and technologists

I would suggest all food science students and food scientists and technologists learn more about Phi Tau Sigma Society and consider becoming a member. I would also think it is very helpful for either graduate students or professionals to refresh basic food science knowledge regularly by rereading good textbooks.

Careers: R&D Scientist

(Contributed by Maxine Roman, PhD, The Kraft Heinz Company)

Introduction/Background: I have been working as a Senior Scientist in Breakthrough Innovation for a little over 2 years at the Kraft Heinz Company in Glenview, IL.

I am originally from Chicago. Prior to working for Kraft Heinz, I received a B.S. in Food Science and Human Nutrition from the University of Illinois, a M.S. in Food Science from UC Davis and a Ph.D. in Food Science from UMass Amherst. Along the way, I've had the opportunity to intern at Kraft Foods twice and work internationally, most recently completing a 5 month assignment at the Kraft Heinz EU R&D Center in the Netherlands in 2018.

Qualifications: My current position required 5 years of experience in a related field with expertise in technology development. In addition, I completed two internships at Kraft Heinz, one of which was focused on ingredient technology research.

Positions:

Senior Scientist, Breakthrough Innovation, Kraft Heinz
 Senior Scientist, R&D Europe, Kraft Heinz
 Graduate Research Fellow, Department of Food Science, UMass Amherst
 Visiting Scholar, Riddet Institute, Massey University



Graduate Research Assistant, Department of Food Science, UC Davis
Ingredients & Process Research Intern, Cultures & Enzymes Group, Kraft Foods
Oscar Mayer Product Development Intern, Brand Value Group, Kraft Foods

Duties: My main responsibility is to lead biotechnology and natural preservation technology platforms for the North American businesses. I work primarily on developing new ingredient technology to support innovation and renovation projects. In addition, I flex as a product developer and/or packaging developer to support whitespace innovation projects.

Salaries: Senior Scientist starting salaries range from \$75-95K/year.

Benefits: Health and dental insurance, 401K, annual bonus up to 25% salary.

Conclusion: One of my favorite children's shows growing up was the Magic School Bus because it's about hands-on science. The protagonist of the show, Ms. Frizzle, always tells her students "take chances, make mistakes, and get messy!" I've found that I learn the most when I approach food science with this motto in mind, especially when it comes to innovation. Kraft Heinz is a great company to get a lot of cross-functional experience as long as you are willing to take chances and act like an owner.

Chapter News: Iowa State Chapter 2018

(Contributed by: Terri D. Boylston, Ph.D., Chapter Chair 2017-2018)

The Iowa State Phi Tau Sigma Chapter inducted new members and celebrated the chapter's graduates on May 2. New members received their membership certificates. Graduating members received honor cords. All members enjoyed lunch and fellowship to celebrate the end of spring semester.



Phi Tau Sigma Graduates: 1st row: Morgan Denzer (B.S.), Xiaoqing Zhuang (B.S.), Michaela Minock (B.S.), Nicole Gaudino (M.S.). 2nd row: Jacques Overdiep (M.S.), Tad Beekman (B.S.), Tim Lott (M.S.)



New Phi Tau Sigma members: 1st row: Zifan Wan, Xiaoqing Zhuang, Alyssa Tainer, Tim Lott. 2nd row: Nicole Gaudino, Leah Gilman, Rebecca Nellis



Iowa State Phi Tau Sigma Chapter Members: 1st row: Nuria Acevedo, Xiaoqing Zhuang, Zifan Wan, Michaela Minock, Alyssa Tainter, Jessica Schaumberg, Tim Lott, Terri Boylston, Stephanie Clark. 2nd row: Rodrigo Tarte, Morgan Denzer, Nicole Gaudino, Jacques Overdiep, Leah Gilman, Rebecca Nellis, Tad Beekman, Shannon Coleman

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.)

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, Honorary Society Advancement Fund, or the President's Fund.

We also ask each Chapter to send a list of their current, and lapsed, members along with contact information to the Chapter Affairs Committee Chair, Amy Simonne, Ph.D. at: asim@ufl.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.

Editorial: Breaking out of my Comfort Zone: Lessons for a Lifetime

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

Ever have the feeling that you are way out of your depth? I have. In fact, I am experiencing it at this very moment but also loving it.

This is a story about disability-confidence and getting out of comfort zones. It involves being open to new opportunities and experiences, and accepting oneself (actually, embracing oneself) in what matters most.

First, a note about my disability. I am good with numbers. I can do incredible calculations in my head. If a "\$" sign appears in front of numbers, however, I freeze up. I get scared and paralyzed.



Here is how I am working to develop confidence to overcome my fear /ignorance of financial matters, by stepping outside my comfort zone.

I had just attended a unique event where I was sitting in pitch darkness with people I had never met before. The event, called Dining in the Dark, was a social change dinner, discussion, and music experience held entirely in 100% pitch darkness to enhance awareness and understanding of visual impairments. My face and fingers were sticky with foods that I could not see, but only touch and taste. As one who is usually always in control, I was completely out of my element and rather uncomfortable. This situation was, however, totally by design. I had accepted the challenge of breaking bread over a 3-course dinner served family-style, engaging in a social impact Q&A with legally blind staff and immersing myself amongst strangers in an intimate live music listening experience.

The event succeeded with its mission by raising my awareness of my own comfort levels in various situations and inspired me to seek other opportunities to break out of my comfort zone. While I naturally and instinctively did what made me comfortable in the dark, I learned that was not comfortable for the blind people in attendance. I learned from them to sense my surroundings differently, but breaking out of my comfort zone was incredibly difficult and challenging.

Returning to everyday life with a heightened awareness of the importance of breaking out of comfort zones, I would try simple ways. Using my left hand more often instead of my right, as I am right handed. Deep inside, however, I was seeking something a far more meaningful way to break out of my comfort zone.

My quest was answered almost immediately, when Dr. Daryl Lund sent a note that he had been the Treasurer of Phi Tau Sigma for a long time and would anyone consider stepping in to take on this role. While it was a call for someone with accounting knowledge and expertise, his closing statement grabbed my attention. "I am happy to teach how". I believed Dr. Lund's letter was a call to action for me.

Here was the perfect opportunity to step out of my comfort zone and do something meaningful. I was, as always, busier than ever at work with unavoidable family circumstances requiring my complete attention every now and then. I just have a knack for always being busy with a never-ending list of things to be done. I have also detested and avoided finance matters all my life, so much that I actually have sleepless nights every tax season because I dread the associated accounting.

My thoughts turned to various students, who despite different backgrounds and learning styles and limitations that many did not realize or articulate, stepped out of their comfort zones to overcome language barriers, cultural differences, and financial constraints to do something worthwhile. Phi Tau Sigma means so much to them and could mean even more. Learning the ropes of the Treasurer would expand my horizons and maybe, open avenues for Phi Tau Sigma to mean more than it already does.

Before pragmatism and fear could paralyze me, I hastily replied to all on copy that I was willing to learn and step in as Treasurer for Phi Tau Sigma. There. I had done it. I had openly declared I would step in. There was no turning back now. I knew I would have to overcome my phobia of finance and all accounting.

It has only been a month or so learning the ropes of the finances behind Phi Tau Sigma. What I have learned thus far could perhaps, be important lessons for anyone who is reading this column. I learned:

- Getting a good teacher is key to success. I checked this one. I was incredibly fortunate for I had two incredibly patient, dedicated, and reliable teachers. Dr. Daryl Lund and Dr. Kathy Kotula have helped me immensely with step-by-step instructions and guides that teach me not only how to do the work, but when to schedule the work and for how long. Much easier than I had ever imagined it would be.
- Non-negotiable deadlines. A Treasurer's work entails non-negotiable dates. Financial institutions release their reports at a particular time each month and the executive team relies on the Treasurer to get a summary and explanation soon after. This will be most difficult learning for me, but I intend to adhere to the schedule that Dr. Kathy Kotula so graciously plotted for me.
- Letting perfection go. Nobody is perfect and certainly not me. I am learning to let go of that unnecessary pressure knowing that Dr. Lund and the Finance Committee will catch me, should I err.

I know Phi Tau Sigma members are watching. At least I hope they are. I hope this bold step of mine will inspire some of you to consider stepping up to Phi Tau Sigma for change and growth.

At the end of it all, I know I will have no regrets. I'm very much looking forward to the challenge, knowing that "Growth happens when one steps out of one's comfort zone to achieve bold ambitions. Magic happens when one does it with others and for others."

Note from the Executive Director and Newsletter Editor: Kantha, thank you for taking on this new position. I am looking forward to working with you, and watching you grow into the great Treasurer that I know you can be.

About Phi Tau Sigma Communications:

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

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

Documents:

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

Phi Tau Sigma Membership Nominations

<http://www.phitausigma.org/membership-nomination-form-pdf/>
<http://www.phitausigma.org/membership-nomination-form-word/>

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/>

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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), 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.

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Bronze (\$5000)

- Company listing in the "Donors and Sponsors" section of the Phi Tau Sigma Newsletter.
- Recognition with company name on www.PhiTauSigma.org
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- Posting your company's job openings and internships in the Phi Tau Sigma Newsletter.

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

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

For more information contact the Treasurer, Kantha Shelke, Ph.D.

(kantha@corvusblue.net), or the Executive Director, Kathryn L. Kotula, Ph.D.

(klkotula@msn.com). Please write "Donation" or "Sponsorship" in the subject line.

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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.

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

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

David K. Park, M.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 Scholarship.)

Nina Teicholz, M.Phil. is an 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. (Donation towards a Phi Tau Sigma Scholarship, and Phi Tau Sigma programs.)

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.)

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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 minimally processed fruits and vegetables. Dr. Luo is an IFT Fellow, and the Past President of Chinese American Food Society. (Sponsorship towards a Phi Tau Sigma Achievement Scholarship.)