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The Honor Society of Food Science and Technology

Phi Tau Sigma Newsletter December 2018

News:

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!

Hawkins, Inc. - Bronze Contributing Partner to Phi Tau Sigma

Hawkins, Inc., Food Ingredients Group is once again a Bronze 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.



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.



NOMINATIONS ARE OPEN FOR THE 2019 ARRELL GLOBAL FOOD INNOVATION AWARDS

The Arrell Food Institute provides a working portal of collaboration for food expertise to ensure global food security. Dr. Maria Corradini, the Arrell Chair in Food Quality and Phi Tau Sigma Member, would like to advertise the Arrell Global Food Innovation Awards.

Two Arrell Global Food Innovation Awards are adjudicated per year to distinguish scientific excellence and community engagement which contribute to overcoming the challenges our world will face in feeding 9 billion people and beyond. Each award is worth CAD\$100,000. The first award recognizes a researcher, or group of researchers, who has advanced understanding of food production, processing, distribution, consumption, safety, or human nutrition, with a significant positive impact on society.

The second award recognizes an individual, or group of individuals, who has contributed to improved nutritional health or food security, with a focus on strengthening communities. Nomination submission closes January 31st, 2019. For details, visit <https://arrellfoodinstitute.ca/innovation-awards/>

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 Poulson Joseph, Ph.D., (pjoseph@kalsec.com) 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 Feature: Perfluorobutanesulfonic acid potentiates adipogenesis of 3T3-L1 Adipocytes

(Contributed by: Weipeng Qi, Ph.D. student under the direction of Prof. Yeonhwa Park, Department of Food Science, University of Massachusetts Amherst)

Introduction: Per- and polyfluoroalkyl substances (PFASs) are a large group of surface-active compounds. PFASs, such as perfluorooctanesulfonic acid (PFOS), were extensively used as water, oil, and stain repellents in food packaging, non-stick cookware, and textiles, for over 50 years. These ubiquitous environmental contaminants are highly persistent in the environment, and bioaccumulate in living organisms, posing a growing concern for the potential adverse effects on human health. Accumulating evidence reveals a strong correlation between exposure to PFASs and the increased risks for metabolic syndromes, including obesity (1). As a replacement for PFOS, its four-carbon cognate, perfluorobutanesulfonic acid (PFBS), is widely used due to its shorter biological half-life in humans of ~1 month compared to that of 5 years for PFOS. After production and usage for over 15 years, PFBS has become one of the major perfluorinated environmental contaminants (2, 3). Similar to PFOS, PFBS was found to distribute to fat tissue, although the potential adverse effects are largely unknown and understudied (4).

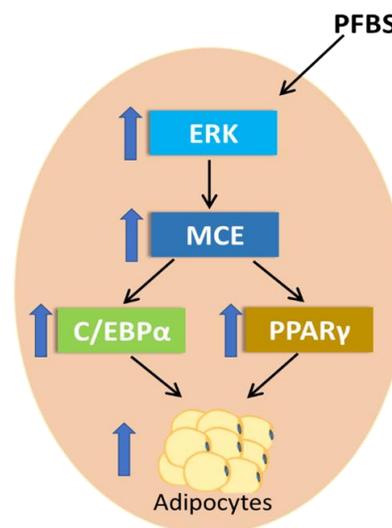


Figure 1. PFBS activated ERK and MCE, which subsequently increased C/EBPα and PPARγ, and finally induced adipogenesis.

Objectives: Previously, PFASs, particularly PFOS and perfluorooctanoic acid (PFOA), were reported to promote adipogenesis in 3T3-L1 adipocytes (5, 6). Further, evidence from an animal study revealed that PFOS administration to mice induced adipogenic gene expression and activated nuclear factor erythroid 2-related factor 2 (Nrf2) signaling in epididymal white adipose tissue (7). The effects of PFBS on adipogenesis, however, have not been investigated. Therefore, we aimed to examine the effects of PFBS exposure on adipogenesis using 3T3-L1 adipocytes.

Methods: 3T3-L1 murine preadipocytes were exposed to PFBS (0, 10, 50, 100, 200 μ M) for 6 days. On day 6, cells were harvested, and triglyceride contents were measured using a commercial kit. The expression levels of proteins and mRNA were tested using Western Blot and qPCR, respectively.

Results: PFBS treatment for 6 days extensively promoted the differentiation of 3T3-L1 preadipocytes to adipocytes, resulting in significantly increased triglyceride levels. In particular, the treatments of PFBS at the early adipogenic differentiation period (day 0-2) were positively correlated with the increased triglyceride accumulation on day 6. PFBS treatments significantly increased the protein and mRNA levels of the master transcription factors in adipocyte differentiation, including CCAAT/enhancer-binding protein α (C/EBP α) and peroxisome proliferator-activated receptor gamma (PPAR γ), along with acetyl-CoA carboxylase (ACC) and fatty acid synthase (FAS). At the same time, mitotic clonal expansion (MCE), a prerequisite for the expression of adipogenic genes, was activated by PFBS treatment. PFBS significantly activated the phosphorylation of extracellular signal-regulated kinase1/2 (ERK1/2) which is essential for MCE. Moreover, PFBS' effect on triglyceride was abolished by U0126, a specific MAPK/ERK kinase (MEK) inhibitor. Therefore, PFBS increased the adipogenesis of 3T3-L1 adipocytes, in part, via MEK/ERK-dependent pathway.

Significance: Over the last few years, PFBS has increasingly been identified as a food contaminant due to the extensive usage. From the perspective of food safety, PFBS, similar to PFOS, poses a major exposure risk through drinking water, food packaging, and cooking surfaces. Since PFBS is less accumulative than PFOS in the biological system, the potential adverse effects of PFBS are often overlooked. However, our current study reports the effects of PFBS, the replacement compound for PFOS, on adipogenesis. These results are significant in elucidating a potential link between the risk of developing obesity and the exposure to the replacement of PFOS, which is a known obesogen.

References:

- (1) Halldorsson, T. I., D. Rytter, L. S. Haug, B. H. Bech, I. Danielsen, G. Becher, T. B. Henriksen and S. F. Olsen (2012). "Prenatal Exposure to Perfluorooctanoate and Risk of Overweight at 20 Years of Age: A Prospective Cohort Study." Environmental health perspectives **120**(5): 668.
- (2) Skutlarek, D., M. Exner and H. Farber (2006). "Perfluorinated Surfactants in Surface and Drinking Waters." Environmental science and pollution research international **13**(5): 299.
- (3) Zhou, Z., Y. Liang, Y. Shi, L. Xu and Y. Cai (2013). "Occurrence and Transport of Perfluoroalkyl Acids (Pfaas), Including Short-Chain Pfaas in Tangxun Lake, China." Environmental science & technology **47**(16): 9249-9257.
- (4) Bogdanska, J., M. Sundström, U. Bergström, D. Borg, M. Abedi-Valugerdi, Å. Bergman, J. DePierre and S. Nobel (2014). "Tissue Distribution of 35s-Labelled Perfluorobutanesulfonic Acid in Adult Mice Following Dietary Exposure for 1-5 Days." Chemosphere **98**: 28-36.

(5) Watkins, A. M., C. R. Wood, M. T. Lin and B. D. Abbott (2015). "The Effects of Perfluorinated Chemicals on Adipocyte Differentiation in Vitro." Molecular and cellular endocrinology **400**: 90-101.

(6) Yamamoto, J., T. Yamane, Y. Oishi and K. Kobayashi-Hattori (2015). "Perfluorooctanoic Acid Binds to Peroxisome Proliferator-Activated Receptor γ and Promotes Adipocyte Differentiation in 3t3-L1 Adipocytes." Bioscience, biotechnology, and biochemistry **79**(4): 636-639.

(7) Xu, J., P. Shimpi, L. Armstrong, D. Salter and A. L. Slitt (2016). "Pfos Induces Adipogenesis and Glucose Uptake in Association with Activation of Nrf2 Signaling Pathway." Toxicology and applied pharmacology **290**: 21-30.

Lifetime Member Tribute: Connie Weaver, Ph.D.

Distinguished Professor, Department of Nutrition Science, Purdue University

Why did you become a Lifetime Member? Phi Tau Sigma is one of the organizations I have supported for my whole career. I am at the point of my career of thinking more about my legacy than the immediate future. Phi Tau Sigma is the first organization I have considered as a Lifetime Member, but I expect to commit to one or two others as well. Many people think of me as a nutritionist, but I trained in food chemistry and my major teaching assignment at Purdue was Food Chemistry. External funding is better in nutrition, but working at the interface of nutrition and food science provides the most practical insights for discovery to help people to eat a healthy diet.



Education:

Ph.D. Florida State University. Thesis: Accumulation of nuclear fission products by vegetable crops and their removal during processing. 1978.

M.S. Oregon State University. Thesis: Factors influencing enzymatic browning of ripening bananas. 1974.

B.S. Oregon State University. Honors thesis: Enzyme inactivation and quality of steam vs. microwave-blended frozen broccoli. 1972.

Experience/Accomplishments (Selected):

Professional Experience:

- 2017- President's Council on Fitness, Sports & Nutrition's Science Board
- 2017- International Life Sciences Institute, Chair
- 2017- Associate Director of Indiana Core Center for Clinical Research in Musculoskeletal Disorders (ICCCR)
- 2015- Board Member, FDA Science Advisory Board
- 2014-18 NIH Advisory Committee on Research on Women's Health
- 2011- Director, Women's Global Health Institute, Purdue University
- 2011-17 Member, Food and Nutrition Board, Institute of Medicine
- 2010- Elected Member, National Academies of Science, Engineering and Medicine
- 2010- Co-Director of International Breast Cancer and Nutrition Project
- 2008- Deputy Director of NIH Indiana Clinical and Translational Science Institute
- 2000- Distinguished Professor, Department of Nutrition, Purdue University

2000-11 Director, NIH Botanicals Center for Age-Related Diseases
1996- Courtesy Appointment, Department of Food Science, Purdue University
1991-16 Professor and Head, Department of Nutrition Science, Purdue University

Areas of Expertise: Mineral bioavailability and relationship to bone and heart health.

Awards and Honors (selected list):

- David Kritchevsky Career Achievement Award, American Society for Nutrition/ASN Foundation (2017)
- Fellow of the American Society for Nutrition (2016)
- Trailblazer Award, Institute of Food Technology and Academy of Nutrition and Dietetics (2016)
- Purdue Spirit of the Land Grant (2013)
- Herbert Newby McCoy Award (Purdue's top research award) (2012)
- Linus Pauling Research Prize (2011)
- Gilbert A. Leveille Lectureship and Award (ASN) (2011)
- American Society for Nutrition Robert H Herman Award (2009)
- Harris Award Ohio State University (2008)
- Woman of Indiana (2007)
- W.O. Atwater Lectureship, Agricultural Research Service, USDA and American Society for Nutritional Sciences (2003)
- Michigan State University, G. Malcolm Trout Lecturer (2002)
- Julius Bauermann Lectureship Award, Philadelphia Section Institute of Food Technologists (1999)
- Institute of Food Technologists Babcock Hart Award (1997)
- Institute of Food Technologists Scientific Lecturer (1988-1991)
- AMOCO Foundation, Inc. Purdue University Undergraduate Teaching Award (1986)
- Award for Outstanding Service and Recognition by Indiana Section Institute of Food Technology (1984)

Personal: Family, Interests, Hobbies:

I have been married to Lloyd Weaver for almost 47 years, and we have 3 sons (Doug, Mark, Rick), and 8 grandchildren. We take adventure vacations, especially ski trips. I love to hike, participate in group exercise, and read.

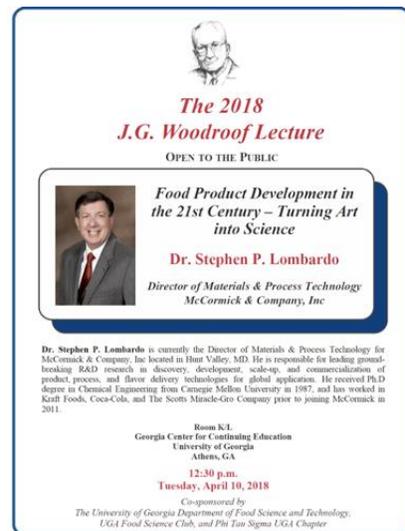
Advice to university students and career food scientists and technologists:

Do not limit yourself by thinking about what you cannot do or expertise you do not have or looking stupid by questions you wish to ask. Where there is the will, there is a way.

Chapter News: Two University of Georgia Chapter 2018 Activities:

J.G. Woodroof lecture "Food Product Development in the 21st Century – Turning Art into Science" by Dr. Stephen P. Lombardo.

The J.G. Woodroof lecture was organized by Phi Tau Sigma chapter advisor Dr. Fanbin Kong and several Phi Tau Sigma student members, and it was co-sponsored by UGA Department of Food Science and Technology, UGA Food Science Club, and Phi Tau Sigma UGA Chapter. It was open to the public and was mainly participated by the UGA students and faculty. Dr. Stephen P. Lombardo is currently the Director of Materials & Process Technology for McCormick & Company, Inc located in Hunt Valley, MD. He is responsible for leading groundbreaking R&D research in discovery, development, scale-up, and commercialization of product, process, and flavor delivery technologies for global application. He has worked at Kraft Foods, Coca-Cola, and the Scotts Miracle-Gro Company prior to joining McCormick in 2011. Dr. Lombardo toured the UGA food science department and had in-depth discussions with several professors. He then gave a marvelous speech on the topic of "Food Product Development in the 21st Century – Turning Art into Science". Product samples were distributed to the audience during the lecture. The food science students got to know better how food product development works in the real world, which is a possible job after graduation; the non-food science students and participants learned more about food science and the lecturer's brilliant intelligence and thinking. This event allowed the Phi Tau Sigma members not only to get familiar with the event organization with the help of advisor Dr. Fanbin Kong, but also to learn product development in the real world from the lecture. Moreover, the lecture promoted maintaining the network of professionals and connecting fundamental research or scientific principles to the food and beverage industries.



Flyer for the J.G. Woodroof lecture

Annual induction ceremony /Phi Tau Sigma lunch seminar

This lunch seminar was open to all students and faculty of food science department of UGA. A delicious BBQ lunch, provided by Pulaski Heights BBQ was prepared for the participants. This lunch gave the chance for the Phi Tau Sigma members to catch up with each other and also allowed them to communicate with and get to know other graduate and undergraduate students that they were not familiar with. Dr. Rakesh Singh, the UGA Chapter President, gave a speech introducing Phi Tau Sigma, from the history to the benefits of the society, during the event. New Phi Tau Sigma officers were introduced to the students. Phi Tau Sigma flyers and application forms were distributed to every participant, and questions from those interested in Phi Tau Sigma were answered. The



Dr. Rakesh Singh, the Chapter President, introducing Phi Tau Sigma during the annual induction ceremony

ceremony made Phi Tau Sigma known to many students in the department, especially the undergraduate students whom the current Phi Tau Sigma members seldom have contact with. This lunch seminar also gathered most the graduate students who typically would not leave the lab, providing a great chance for them to exchange scientific knowledge.

More Chapter News: Q/A with Casimir C. Akoh, Ph.D., CFS

Distinguished Research Professor at the University of Georgia, Department of Food Science and Technology, Phi Tau Sigma Lifetime Member, and 2018 IFT Babcock-Hart Award Recipient



Dr. Akoh was recently interviewed by Daoyuan Yang of the University of Georgia Chapter of Phi Tau Sigma because he received the 2018 Babcock-Hart Award sponsored by the International Life Sciences Institute North America and IFT.

Where did you earn your degrees and what are your areas of expertise?

I received my undergraduate degree in Biochemistry from the University of Nigeria. At Washington State University, I received my M.S. degree in Biochemistry and Ph.D. in Food Chemistry. My areas of expertise primarily include lipid chemistry, lipid biotechnology, nutraceuticals, and phytochemicals.

Why did you change your major from biochemistry to food chemistry?

I changed from biochemistry to food chemistry because of job outlook and the desire to do applied research. In biochemistry you end up being a research associate or post-doc for a long time. However, the food industry is a larger industry and you can either work in academia, the government, or the food industry. There are more opportunities within the food industry than in biochemistry.

When did you come to UGA? What brought you here, and what are your current responsibilities at UGA?

I came to UGA in 1992 and was recruited as an assistant professor. My responsibilities since I came to UGA were to conduct research and teach. I teach primarily graduate courses. Currently, I teach Food Lipids, Food Carbohydrates, and both Graduate Seminar courses. Initially I also taught a Food Biotechnology course for senior-level undergraduates and graduate students.

What are some highlights of your career? What is your proudest moment?

I think my career has been punctuated with a lot of highlights, so it is difficult to choose just one. One of the main highlights was moving into Food Science and starting my research in the Food Biotechnology area. At the time, my research in Food Biotechnology was something new. Using enzymes to modify lipids, as opposed to chemical catalysts to produce structured lipids, was something that I learned on my own with the hope that someday I would go on to be a leader in the field. When I was doing my Ph.D., I was using organic chemistry, or chemical catalysis, to prepare fat substitutes. So, moving from chemical catalysis to enzymes was a big leap. That area of research has expanded exploded, and we are leading the way in to the future.

I learned that the Babcock-Hart Award you received is for recognizing your exceptional contribution to the enzymatic modification of lipids to produce trans-free fat. How does this affect the food industry and public health?

Of course, *trans*-fat consumption has been implicated in a lot of diseases. We started our research on and off back in the 1990's. Our first work on *trans*-free fat was around 1997. At the time we did not know that *trans*-fat would be banned. But now as of June this year, nobody can use *trans*-fat. A lot of countries are banning *trans*-fat. So, our big contribution is producing an alternative to *trans*-fat. We are using enzymes to make *trans*-free fat that will still have all the physical and chemical properties of that food, but without the *trans*-fat. You can make products such as margarines, spreads, and baked goods, without using *trans*-fat and it is expected to have the same physicochemical properties.

So that is one alternative, but there are other alternatives that the food industry is exploring. Some people are using physical blends of fats and/or oils to see if they can come up with the same physical properties. Some people are using organogels. We are working on organogels now. Sarah Willett, a Ph.D. student in my lab, is working on organogels currently. We are also working on low saturated fats as a means of reducing consumption of saturated fat, since saturated fat may raise your cholesterol. We are concerned with the amount fat people are consuming. So, we use enzymes to make these low saturated fats for various applications. We also use chemical modification or a combination of chemical and enzymatic modification. Sometimes we may use chemical modification to get to one step and then enzymatic modification to get the final structured lipid that is desired. It can be a combination of chemical and enzymatic (chemoenzymatic), or we can do them separately.

Where do you see the lipid industry heading in 5 or 10 years?

I think the lipid industry will still be interested in lipid oxidation. People are moving towards using polyunsaturated fatty acids in food products. They want omega-3 fatty acids in food products, but they are not very stable. So, finding a way to stabilize them is still a major problem. This is even true with the enzyme work. When we make these structured lipids for health, for infant formula, or for food applications, if we have these polyunsaturated fatty acids, we still need to stabilize them. So, lipid oxidation is one area, and the other will probably be natural antioxidants to stabilize these highly unsaturated lipids. Of course, low fat/low saturated fat will also be another area of interest. Other areas include formation of organogels and microencapsulation of lipids to deliver them to their appropriate target without oxidizing.

If you are working with relatively stable saturated or monosaturated, then lipid oxidation is less of a problem. If you are using the natural oil, sometimes these are a little more stable than the oils modified with enzymes. This is because you lose the antioxidants during the purification process. If you just buy soybean or olive oil, these antioxidants are still there. They will be more stable than if you modify using enzymes and then purify. Sometimes antioxidants react with the fatty acids and form different products. So, you will have to add back some of these antioxidants to stabilize the modified lipids. You can also add back the antioxidants then microencapsulate it to make it even more stable and deliverable to the target tissue.

How does your research inspire your teaching, and vice versa?

Right now, we have many books we have edited on food lipids which are used all over the world. We have the 4th edition of Food Lipids out currently. Some of the things we do in research are relatable, or fresh, to the students. Some of the current research we do, and other people do, are in these books and we use that to teach the students. So, the students are aware of the current research. These books will also probably help the food industry too.

Hearing it from the people who actually did the work is best because we know the topic and we can teach and instruct them better.

I think it is the research that helps the teaching. A good researcher who can bring current knowledge to the classroom is better. Of course, the students contribute when you have discussion, but I think it is skewed towards bringing the research to the classroom. You can pick up a few points from the students when they present something or come up with some ideas, but mostly it is the other way around.

What do you hope your students gain from their research experience with you?

I want them to learn everything they can learn from me, contribute to the research, and come up with their own ideas sometimes. I want them to be future food scientist or lipid chemist (or whichever area they choose) leaders. I think a lot of them are up to the task. I want them to get involved in associations and volunteer. Some of them are active in the national/international organizations like IFT (Institute of Food Technologists) or AOCS (American Oil Chemists' Society). Also, while they were at UGA, some were involved in the Food Science Club. A lot of them have been President of the Food Science Club.

Who is an ideal student and what advice do you have for university students?

I think the ideal student is one that is willing to learn. You do not need to know what we do before you start, but if you are willing to learn and put in the effort, then you can succeed. In general, every student is different, and I prefer to advise each student individually. You have to know each student and help that student succeed because they are different, and they do not work at the same pace. If you come to the university you should enjoy your stay and know why you are here from the very first semester. If you know that, then you can work towards your goals. You must have set goals that you want to accomplish each semester or each year. If you set those attainable goals and work towards them, then you will graduate on time.

For undergraduates, know when to socialize, know when to study, know when to go to class. If you are an undergrad, you cannot party your way through. You still have to go to class, take exams, and study. Have a future plan and know what you are going to do when you graduate. If you know you want to go to graduate school, then you have to study hard to get the grades needed for graduate school. If you want to go to professional school, then the same thing. Knowing what your plan is for the future when you come in and working toward that is applicable to graduate and undergraduate students, even post doc or visiting scientists. You have to plan your time so that it is not wasted.

Is there anything you want to share about your family?

My wife, a pharmacist, and I are lucky to have hardworking children that are very successful. We have four children, all in the medical field. We already have one Ph.D. and one MD. My daughter finished her Ph.D. at Cornell recently. She completed her B.S. degree in food science at UGA and is now attending NYU as a medical student. My oldest is an MD and he is an orthopedic surgeon. My second son works in the area of strength and conditioning of athletes. The youngest one who played football in college is in school studying physical therapy.

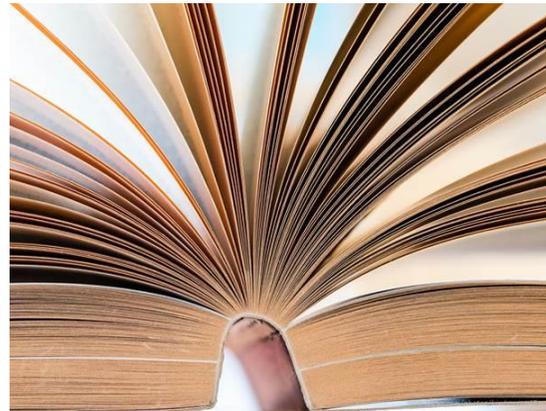
What hobbies do you have?

I like sports. When I was younger, even as a faculty member, I played intramural soccer, tennis, and Ping-Pong. When I went to Taiwan on sabbatical, I played Ping-Pong. I enjoy watching sports such as basketball, football, and soccer. I also like to write, we have 8 academic books now. I read, but I do not read too many novels anymore. These days I read

primarily something related to research. I used to like to write poems, but lately I have not had the time to do that. I still exercise, and now that I am getting older, I like to walk almost every morning. Today, I have already clocked four miles before coming here. I still try to be physically fit, eat good, healthy food, and have a healthy lifestyle.

In Case You Were Wondering...about the future of book publishing (Contributed by Nancy Maragioglio, B.A.)

As I sat in a recent meeting, I was struck by the exciting new means of content delivery that are on the horizon. Some are already in use in other industries or within journals publishing, like augmented reality where a cell phone application can add a whole new layer of interactive insight, or decision tree mapping that not only guides the reader through a process of choice-making, but delivers the information to support that choice. Others are in development that will customize the reading experience in terms of both content depth and personal preference – your personal “library” will never be the same! Was it only ten years ago that simple electronic delivery of content in a PDF format was groundbreaking?



www.flickr.com/photos/kimbenson45

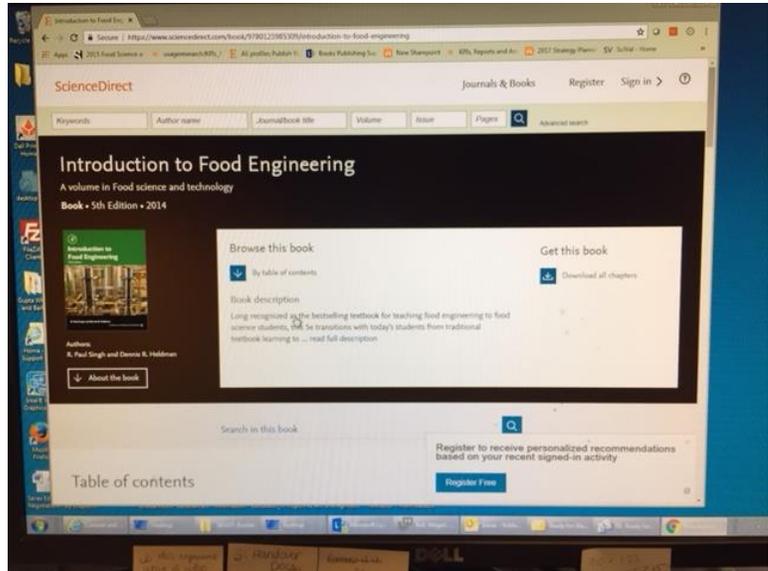


One of my first publishing jobs was marking “blues” – the literal print from which a book would be reproduced – circling typographical errors, the occasional grammar element that had been missed, but also the plate marks that were showing on the print and would impact the final quality. Riding the train from NYC to Long Island with my red wax pen and stacks of pages, I was at the leading edge of quality content delivery.

Today, manuscripts are researched, drafted, rewritten, submitted, edited, proofed and printed from electronic files without ever having been printed until the order for the book is placed. Gone are the warehouses with boxes of books awaiting shipment. Print-on-demand is the “new normal” and is designed to ensure prompt delivery from a printer located close to the customer, avoiding the delays of shipping across country, typically with a carton of other books.

It's the "on-demand" aspect that is rapidly changing the world of book publishing. Our customers – our authors and editors, as well as our readers – have come to expect the same instant accessibility with research and science as they have with viewing movies on their computers, tablets or smart TVs. Book publishing is responding with new options to facilitate that delivery, but also anticipating the NEXT generation of expectation.

Eventually the idea of information having come from a book or a scientific journal will disappear – it will all be considered "content", delivered on a source-neutral media platform, in a structure that allows individual reader preferences to be customized, can track the reader's advancing knowledge and understanding, and highlight areas of weakness for additional work.



While there's no specific timeframe announced for these advances, as someone who has long valued being part of the information dissemination industry, I am pleased that despite all these changes and projections, the one thing that will remain constant is the requirement for good content, well-presented, by skilled scientists. That means that the work being published today and tomorrow, in whatever format, relies on YOU and the work you're doing. Every great book – whether the greatest novel of all time or the most impactful scientific publication ever distributed – came from a human. And that's the root of the future of book publishing.

(The opinions expressed here are those of Nancy Maragioglio, B.A., and not necessarily those of her employer.)

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: First Impressions

We hear from an early age that 'you only have one chance to make a good first impression'. So what do people notice? Generally, in order: One's appearance (attire, hygiene, and body language), one's smile (sincerity, and eye contact), one's hand shake (firm is important), one's initial communication skills, one's interest in the other person, and one's business card. Hopefully, these items are second nature to all of us.

About Phi Tau Sigma Communications:

The Phi Tau Sigma Newsletter Committee includes: Kathryn Kotula, Ph.D., Editor-in-Chief, Chair (kkotula@msn.com), Claire Zoellner, Ph.D., Associate Editor (cez23@cornell.edu), Anthony W. Kotula, Ph.D., 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 kkotula@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/>

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), 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 (\$5000)

- Company listing in the "Donors and Sponsors" section of the Phi Tau Sigma Newsletter.
- Recognition with company name on www.PhiTauSigma.org
- Prominent recognition at all major Phi Tau Sigma events

Silver (\$10,000)

- Bronze benefits.
- Posting your company's job openings and internships in the Phi Tau Sigma Newsletter.

Gold (\$15,000)

- Silver benefits.
- Acknowledgement of sponsorship and placement of corporate logo on plaque or scholarship/award memorabilia.

Platinum (\$20,000)

- Gold benefits.
- A press release associated with significant contributions, distributed to allied professional and trade associations for circulation to their membership via their publications, e-news and/or listservs.
- Complimentary access to student resume database.

Diamond (\$25,000)

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

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

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

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

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

2018-2019 Donors and Sponsors:

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, USDA 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.)

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 the Phi Tau Sigma general fund.) **Hawkins, Inc. is a Bronze level Contributing Partner.**



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International Food Network, Inc. is a consultancy based in Ithaca, New York that serves the food, beverage and nutrition industry, providing services in the areas of value optimization, corporate development, mergers & acquisitions and divestitures. Peter Salmon is IFN's founder and principal, and a Lifetime Member of Phi Tau Sigma.
(Contribution for the General Fund.)