



The Honor Society of Food Science and Technology

Phi Tau Sigma Newsletter *January 2018*

News Alerts:

Award and Scholarship Deadline Approaching

(Contributed by Poulson Joseph, Ph.D., Awards Committee Chair)

Remember to submit your nominations by **February 1** 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. **The student scholarships include an honorarium of \$1000 each and a plaque.**

Send completed nomination forms to Poulson Joseph, Ph.D., Awards Committee Chair, at: pjoseph@kalsec.com, with a copy to Kathryn Kotula, Ph.D. klkotula@msn.com.

Full information can be found at: <http://phitausigma.org/content.php/3-Awards>. However, a short description of each is offered below:

"The **Phi Tau Sigma Special Recognition Award** shall be given to a Member of Phi Tau Sigma who has shown exceptional dedication to Phi Tau Sigma - The Honor Society of Food Science and Technology, as evidenced by significant accomplishments towards the goals and/or administration of Phi Tau Sigma. The award comes with a plaque and an appropriate memento."

"The **Phi Tau Sigma Student Achievement Scholarship** shall be given to a student Member of Phi Tau Sigma who has shown exceptional scholastic achievement and a dedication to Phi Tau Sigma."

"The **Dr. Gideon "Guy" Livingston Scholarship** of Phi Tau Sigma shall be given to a student Member of Phi Tau Sigma in honor of the founder of Phi Tau Sigma, and to acknowledge that student's scholastic achievements and dedication to Phi Tau Sigma."

"The **Phi Tau Sigma Founders' Scholarship** shall be given to a student Member or Member of Phi Tau Sigma whose graduate research has had, or is expected to have, a significant Impact - a practical and meaningful application. The objective of the Founders' Scholarship is to emphasize the importance of original research, carefully selected, to solve vexing problems of the food industry."

Upcoming, with a nomination deadline of April 1:

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

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 Secretary Kathryn L. Kotula, Ph.D. (klkotula@msn.com). (More information: <http://www.phitausigma.org/content.php/3-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.aspx>, <http://www.ift.org/Membership/Awards-and-Recognition/Achievement-Awards/Carl-R-Fellers-Award.aspx>)

->Election schedule:

- December 15: Nominations due to Nomination and Election Committee (Tom Aurand, Ph.D., Chair (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 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
- June 25: Phi Tau Sigma President will present the newly elected individuals to the Membership at the Annual Business Meeting of Phi Tau Sigma

->July 15-18, 2018, Institute of Food Technologists Annual Meeting, Chicago, IL:

- July 15 (Sunday):** (times tentative)
- 11:00am-12:15pm Phi Tau Sigma Executive Committee Meeting
- 12:15pm-1:30pm Lunch Break
- 1:30pm-3:00pm 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
3:30pm-4:20pm	Phi Tau Sigma and IFT Division Competition Awards Ceremony (also called: Phi Tau Sigma Annual Recognition Event)
6:00pm-7:00pm	IFT Awards Celebration, includes the presentation of the Dr. Carl R. Fellers, Ph.D. Award (Meet the Award winners at the IFT Networking Reception immediately following.)

Student Research Synopsis: Improving the safety of dairy foods by targeting *Listeria monocytogenes*

(Contributed by Stephanie Brown, Ph.D. student under the direction of Dennis D'Amico, Dept. of Animal Science, University of Connecticut)



Dairy foods are an important part of the U.S. food supply, with per capita consumption reaching over 646 pounds as of 2016 (6). Therefore, there is a critical need for ensuring their safety. *Listeria monocytogenes* is a particularly problematic foodborne pathogen because of its presence in agricultural and food production environments and its ability to grow at refrigeration temperatures. According to the Centers for Disease Control and Prevention there have been 13 reported outbreaks related to *L.*

monocytogenes since 2011 (1). Of these 13 outbreaks, eight were traced back to dairy foods with six attributed to fresh, soft cheeses (1). The typical composition of these cheeses (i.e. high moisture, low acidity and salt) supports *L. monocytogenes* growth (4), thus highlighting the need for control strategies.

With the demand for clean labels and natural interventions on the rise, there is a need for new methodologies to combat pathogens in dairy foods. One potential solution, biopreservation, includes the use of microorganisms and/or their metabolites to enhance the safety and quality of a food (5). Our lab is currently investigating the efficacy of protective cultures to reduce *Listeria monocytogenes* in raw milk and fresh, soft cheese. In addition to natural preservatives, modified atmosphere packaging can serve as another promising clean label strategy to reduce levels of pathogenic and spoilage microorganisms by altering the gas composition of a packaged product (2). By identifying effective, minimally invasive treatments for reducing *L. monocytogenes* levels in these products, we can provide producers with a variety of options for minimizing microbial risks.

Along with natural strategies, the D'Amico lab group is also interested in investigating additional ways to improve the safety and quality of cheeses. Previous work in our lab has identified GRAS antimicrobials (i.e. hydrogen peroxide, acidified calcium sulfate with lactic acid, ϵ -polylysine, lauric arginate ethyl ester, and sodium caprylate) that are effective in reducing surface contamination of *L. monocytogenes* on fresh cheese whether used singly or

in synergistic combinations (3). Future studies will examine changes in *L. monocytogenes* virulence when exposed to sub-inhibitory concentrations of these antimicrobial agents.

References:

1. Centers for Disease Control and Prevention (CDC). 2017. *Listeria* outbreaks. Available at: <https://www.cdc.gov/listeria/outbreaks/index.html>. Accessed 30 November 2017.
2. Khoshgozaran, S., M. H. Azizi, and N. Bagheripoor-Fallah. 2012. Evaluating the effect of modified atmosphere packaging on cheese characteristics: a review. *Dairy Sci Technol.* 92:1-24.
3. Kozak, S. M., Y. Bobak, and D. J. D'Amico. 2018. Efficacy of antimicrobials applied individually and in combination for controlling *Listeria monocytogenes* as surface contaminants on Queso Fresco. *J. Food Prot.* 81:46-53.
4. Leggett, L. N., P. M. Tomasula, D. L. Van Hekken, A. C. S. Porto-Fett, B. Shoyer, J. A. Renye, J. B. Luchansky, and N. Farkye. 2012. Effect of storage at 4 and 10C on the growth of *Listeria monocytogenes* in and on queso fresco. *J. Food Safety.* 32:236-245.
5. Ross, R. P., S. Morgan, and C. Hill. 2002. Preservation and fermentation: past, present and future. *Int. J. Food Microbiol.* 79: 3-16.
6. United States Department of Agriculture Economic Research Service (USDA ERS). 2017. Dairy Data. Available at: <https://www.ers.usda.gov/data-products/dairy-data/> Accessed 29 November 2017.

Lifetime Member Tribute: Jessica Cooperstone

Assistant Professor, The Ohio State University, Departments of Horticulture and Crop Science & Food Science and Technology

Why did you become a Lifetime Member? I have been a member of Phi Tau Sigma since joining in 2008 as an undergraduate. I have continued my membership because of the value that Phi Tau Sigma provides at the university and national level. Given that I'm at the beginning of my career, becoming a Lifetime Member seemed like a good professional and financial investment.

Education: B.S., Food Science, Cornell University; Ph.D., Food Science and Technology, The Ohio State University (OSU); Postdoc, Food Science and Technology, OSU

Experience/Accomplishments: I obtained my B.S. in Food Science from Cornell University in 2009 and my Ph.D. from The Ohio State University in Food Science and Technology in 2014 investigating factors that may make *tangerine* tomatoes, orange tomatoes with unique properties are a promising lycopene-containing food to be considered in cancer prevention studies. I then worked as a Postdoctoral Researcher and Research Scientist at The Ohio State University using mass spectrometry based metabolomics to understand *in vivo* response to plant food consumption. I joined the faculty at Ohio State as a [Discovery Themes Initiate hire in Foods for Health](#), with a split appointment in Horticulture and Crop Science (70%) and Food Science and Technology (30%) where she resides on the Columbus campus. My lab is a group of interdisciplinary scientists interested in better understanding how factors affect the biosynthesis of phytochemicals and how these compounds affect human health. By better characterizing plants, we can better understand how they affect health while developing



novel germplasm designed to test specific nutritional hypotheses. To do this, our group uses a variety of targeted and untargeted metabolomic approaches. To this end, our group is a mix of plant, food and nutrition scientists with diverse experiences and perspectives allowing us to uniquely tackle research challenges.

Areas of Expertise: Plant foods and health promotion/disease prevention, metabolomics, analytical chemistry, mass spectrometry, secondary plant metabolites, food science, nutrition

Awards and Honors (selected list): [Early Career Award](#), The Metabolomics Society; [Lisa and Dan Wampler Graduate Fellowship for Food and Health Research](#); Phi Tau Sigma Gideon "Guy" Livingston Scholarship; IFTSA College Bowl National Champion (2011); American Chemical Society (ACS) Roy Teranishi Graduate Fellowship in Food Chemistry

Personal: Family, Interests, Hobbies: travel, gardening, cooking, ping pong, yoga and trying to find space for more houseplants.

Advice to university students and career food scientists and technologists: Take time to learn new things, and get a good grasp on what you do and don't know. Be strategic about your choices; think about where you want to be in 1, 5, 10 and 20 years and identify the things you need to do to set yourself up to get there. Find some time to take care of yourself too.

Careers: Product Development Scientist

(Contributed by: Kartheek Anekella, Ph.D., Leprino Foods Company)

Introduction/Background: I grew up in several towns in India. I got my Bachelors in Biotechnology at VIT University, India; Masters in Bioresource Engineering at McGill University, Canada. I pursued my Ph.D. in Food Science at NC State University, USA.

Qualifications: I was passionate about product development since the beginning of my grad school. So, I looked for opportunities where I can develop those skills. IFT competitions are a great place to start as a student. I was actively involved in the food science club and participated in various product development competitions. IFT has many avenues and groups depending on what you are interested in. I believe these are some qualifications to be successful in product development.



Positions:

Research intern at Riddet Institute, New Zealand

R&D intern at Yoplait, General Mills (USA)

Product development scientist, Leprino Foods, Denver, CO

Duties: Leprino Foods is the largest Mozzarella cheese company in the world. Along with cheese, we also produce lactose and various types of whey proteins. I support the cheese product development group and on a day-to-day basis I work with our customers to

support their current and new product requirements. The types of projects include new flavor development, customized cheese development for specific applications, tech progression, clean label and cost optimization associated projects. I routinely run pilot plant trials and large-scale trials at our production plants to scale up. I also work closely with our sales, quality, kitchen and marketing teams which I enjoy very much. Along with my primary duties, I also try to keep up with the current food trends, regulations, IFT news and other personal development opportunities which our company is very supportive of.

Salaries: Bachelors- \$45-55k/year, Masters- \$50-65K/year and PhD- \$70-80K/year. If you have any work experience it may be higher.

Benefits: Health and dental insurance, 401K, profit sharing etc.

Conclusion: It is totally okay to not figure out what you really want, but work towards it (talking to other professionals in the field is very helpful). The US food industry is large, yet, everybody knows everyone. Maintain a good relationship with every professional you meet. In this current era of misinformation and "alternative facts", I encourage all the professionals to be a strong advocate for science. Keeping up to date with the ongoing food trends and regulations is key because this is one of the most exciting times to be in the food industry with day-to-day evolving trends.

Chapter News: University of Georgia - International cocoa research

The president of UGA chapter, Dr. Juzhong Tan visited the Cocoa Research Centre of the University of the West Indies, Trinidad and Tobago, for two weeks to carry out some specialized research in "Sensing Fermentation Degree of Cocoa beans by Artificial Neutral Network (ANN) based Electronic Nose" as a start to some post-doctoral research activities that he is contemplating. He also gave two seminars to the university personnel and location chocolate manufacturers on his current research on chocolate. His two-week internship at the CRC is being sponsored by CocoaTown LLC.

Figure 1: The poster of Dr. Juzhong Tan's research

**Seminar series:
CRC International
Internships**

Wednesday 26th July, 2017,
Room B, Sir Frank Stockdale Building,
St. Augustine Campus,
University of the West Indies

conservation research innovation

Dr. Juzhong TAN working on the Artificial Neutral Network (ANN)
based Electronic Nose



Figure 2: Dr. Juzhong Tan giving a seminar

Memories of Dr. Carl R. Fellers: (*Used with permission of Phi Tau Sigma Member Dr. John J. Powers)

CARL FELLERS, PINNACLE AND LAST HURRAH By JOHN J. POWERS*
VALE

Excerpts of letters written to Mrs. Fellers upon the passing of Dr. Carl R. Fellers.

I met Dr. Fellers...in February of 1937. I was immediately impressed with his sincere understanding of my problems, his personal interest, his cooperation and thoughtfulness, his generosity and his humility. I am proud to be known as one of Doc's boys.

Kenneth T. Farrell, Ph.D. 1940, Avi Publishing Co.

It is extremely difficult to write one's feeling for a truly great man as was our beloved "Doc" Fellers. I am eternally grateful for the wonderful gift bestowed by the Lord in allowing me, and mine, the honor of having known, loved and admired Carl Raymond Fellers. His many acts of kindness, generosity and guidance will never die in the hearts and minds of those of us that can so proudly proclaim that we were "Doc's" boys.

Enio Feliciotti, Ph.D., 1956, Retired Vice President, Thomas J. Lipton Co.



Having been associated with Carl Fellers for some thirty years...I always admired Carl for both his professional high excellence and for his unusual ability to get along so well with everyone he came in contact with. The only times Carl and I had any disagreements were in the poker parties we held at Chard Pond. Then we went at it with a hammer and tongs.

Ralph L. France, Professor, Dept. of Bacteriology and Public Health, UMass.

I am one of the Food Folks Family who got my start and interest in Food Technology with Dr. Fellers. I feel fortunate to have known and studied under Dr. Fellers. In my travels [as

a processed foods inspector, USDA], it is always a pleasure to meet others who knew "Doc" Fellers and speak of him with affection and respect.

Martha M. Flint, B.S., 1984, Marketing Service, USDA.

I am grateful for the opportunity of having studied under Dr. Fellers. I am proud to be a member of the world-wide fraternity of individuals who will be ever distinguished as "Doc's" boys.

Remo Franceschini, Ph.D., 1959.

I wish to send a message of sincere gratitude for the unselfish efforts he [Dr. Fellers] gave towards furthering my knowledge in the field of food technology...for having had the good fortune of being one of his students.

Barbara Garber, B.S., ca 1950.

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 Renewal Notice at:

www.phitausigma.org/forms.php?do=form&fid=2, and provide the requested profile information which is needed to update our directory of members. 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: **Daryl Lund, Ph.D.** (Do **not** address to Phi Tau Sigma.)

May 1 to October 31: 151 E Reynolds Street, Cottage Grove, WI 53527.

November 1 to April 30: 11815 N 97th Avenue, Sun City, AZ 85351.

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, Mary Schmidl, Ph.D. at: mschmidl@umn.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, and clicking on the Dues & Supplies tab, or going directly to: <http://www.phitausigma.org/content.php/245-gift-shop> (If you pay your dues through the Society Store, please remember to fill out the Membership Renewal form also: <http://www.phitausigma.org/content.php/143>)

Editorial:

When my middle niece was visiting, during her third grade year, she came into my bedroom in the middle of the night crying. She was very concerned that she was not learning enough in the third grade. I promised her that, during the upcoming summer when she would again be visiting, I would teach her something unique. (At the time, I had no idea what that 'something' would be.)

In June I attended the Reciprocal Meat Conference, which is the annual meeting of the American Meat Science Association. I went to a presentation given by Dr. Gary Smith – mostly because he is not only knowledgeable, but an entertaining speaker. His topic was "Preparing Undergraduate and Graduate Students to Meet Meat Industry Career Challenges".

Among many other great points, Dr. Smith provided his list of skills expected of graduates:

- (a) thinking critically,
- (b) comparing logically,
- (c) deciding independently,
- (d) solving problems rationally,
- (e) communicating effectively, and
- (f) leading decisively

These points are applicable – even for an elementary school student.

Making a long story short, that summer I gave my niece a project where she posed a question, looked at both sides of the issue (I provided printed information from reputable internet sources), she listed three theories, then stated what she thought the answer may be based on what she had read and what made the most logical sense to her (hypothesis), and then devised an experiment to test the hypothesis (there were no budget limitations). She also wrote and typed a written report, and gave an oral report (with slides she made) to her Grandparents. She enjoyed the first project so much, she insisted on doing another. [First project: Is there Life on Mars? (based on the Martina meteorite found in the Antarctic which contained what looked like fossilized bacteria). Second project: Is there really a Loch Ness Creature?]

Bottom line: Learn and use Dr. Smith's skills.

Reference:

Smith, Gary C., 2003. Preparing undergraduate and graduate students to meet meat industry career challenges. Proceedings of the 56th American Meat Science Association Reciprocal Meat Conference, pp 1-4.

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., Assistant Editor (cez23@cornell.edu), Anthony W. Kotula, Ph.D., Afef Janen, Ph.D., Hossein Daryaei, Ph.D., Tianxi Yang, M.S. (Ph.D. Candidate), 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 Assistant 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. Be sure to log in to access the attachments/forms.

Phi Tau Sigma Membership Nominations
<http://phitausigma.org/content.php/264-Membership-Nomination>

Phi Tau Sigma Scholarships and Awards Forms
<http://phitausigma.org/content.php/3-Awards>

Phi Tau Sigma Mentorship Program
<http://phitausigma.org/content.php/304-Phi-Tau-Sigma-Mentorship-Program>

Phi Tau Sigma Constitution and By-Laws
<http://www.phitausigma.org/content.php/201-Constitution-and-By-Laws>

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 (www.phitausigma.org/content.php/142-donate). Donations by check can be made by contacting: Treasurer Daryl Lund, Ph.D. (dblund@wisc.edu). 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, Daryl Lund, Ph.D. (dblund@wisc.edu), or the Executive Secretary, Kathryn L. Kotula, Ph.D. (klkotula@msn.com). Please write "Donation" or "Sponsorship" in the subject line.

2017-2018 Donors and Sponsors:

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 recent formation of Ingredient Works, an entity conceived to capitalize on expertise in functional



FOOD INGREDIENTS
GROUP

ingredient applications, food industry knowledge, technical service, and an extensive product portfolio, is focused on the comprehensive science of shelf-life, providing customized solutions to both the common and the highly complex issues faced every day by food manufacturers. The ultimate goal for the Hawkins Food Ingredient Group is to re-define the concept of shelf life and become a complete solution provider to the food industry. (Contribution to sponsor a Phi Tau Sigma Student Achievement Scholarship.)



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. (Donation to support a Phi Tau Sigma Student Achievement Scholarship.)

Dr. Mary K. Schmidl is the President-Elect 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. Daryl and Mrs. Dawn Lund. Dr. Lund is a past President of Phi Tau Sigma, a Lifetime Member, and current Treasurer; and is an Emeritus Professor, University of Wisconsin. (Contribution to sponsor the Dr. Daryl B. Lund Student International Travel 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.