



University of Massachusetts
Department of Food Science Newsletter
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McClements Receives American Oil Chemist's Supelco Award



D. Julian McClements added to his long list of awards receiving the Supelco/Nicholas Pelick-AOCS Research Award. This is the top research award for the American Oil Chemist Society. Julian was recognized for his outstanding work in the industrial application and health properties of lipids in foods.

This award has been given since 1964 and the awardees include three Nobel Laureates. We recently moved Julian to the large third floor corner office (Dr. Clydesdale's old office) so he could have more space to display all of his prestigious awards. Julian is pictured with Len Sidisky of Supelco-Sigma/Aldrich.

Lili He Receives IFT's Prescott Award



Lili He is the recipient of the 2016 IFT Samuel Cate Prescott Award, which recognizes her significant contributions in developing an advanced analytical technique (i.e., surface-enhanced Raman spectroscopy) for food safety and chemistry applications. Amazingly, this is Lili's 4th Outstanding Young Scientist Award!!

Lili is the third UMass faculty in a row to receive this award, making a total of 7 winners in our history (Xiao, Decker, McClements, Goddard, Weiss and Hultin). Winning this international award 3 years in a row and UMass's 7 of the 49 awards ever given certainly reinforces that UMass Food Science is tops in the world.

Maria Corradini Joins UMass Food Science

Maria Corradini is joining UMass Food Science this fall as an Assistant Professor. Maria is a former PhD student of **Micha Peleg** and will be teaching our Food Processing classes. Her research will focus on developing novel methodologies to increase the use of optical biophysical techniques (in particular, luminescence spectroscopy) to study food systems and their biophysical behavior. This inherent power of luminescence spectroscopy provides chemically specific, sensitive, and site-specific information about molecular properties of foods and has yet to be fully exploited. Expanding the knowledge base to effectively and systematically use luminescence signals from native or commonly added GRAS chromophores in foods will facilitate new applications in food science research and industrial applications. Her research complements the expertise of other faculty members by providing a way to evaluate structure and functionality of food macromolecules and delivery systems in a noninvasive and effective way. Dr. Corradini will also apply a photophysical approach to gain insights into the relationship between physiological functionality of food components to molecular structure, physical properties and processing conditions.



Additionally, Maria is interested in the development and implementation of novel data analysis and modelling approaches to obtain additional information from data sets and aid in data interpretation. She will continue multidisciplinary collaborations to manage and analyze data to develop integrative and meaningful mathematical models aiming to the rational design of organogelators and nanoemulsions, the estimation of shelf life estimation and adequate predictions of microbial growth and inactivation. We are eager to welcome her to our UMass faculty team.

Clydesdale and Sela Highlighted in Food Technology



IFT came to campus to interview **Ferg Clydesdale** and **David Sela** for a piece in the “INSIDE ACADEMIA” section of the June issue of *Food Technology*. Ferg gave a great perspective on the role of processed foods in the health and wellness of the nation and the critical need to expand Food Science for the challenges of the rapid changing world. In addition, they did a nice piece on David’s research on the microbiome. Please check out *Food Technology* to read the entire article.

Herbalife Product Development Competition



As I mentioned in the last newsletter, Herbalife sponsored a Product Development Experience for our undergraduate students. Alumni, **Matt Steffens**, taught a class on product development and he and **Amanda Kinchla** worked with 28 students to go from concept to finished product.

The goal of the program was to design food products geared toward the millennials that were both innovative and healthful. Students were required to create production-ready formulas. Their tasks included ingredient sourcing, ingredient pricing, nutritional labeling, packaging ideas and developing marketing campaigns for their finished products. Herbalife provided guidance and ingredient support throughout the project giving the students a great experience working with industry. The student teams presented their final prototypes to the Herbalife Nutrition group on April 25th with the opportunity of having their prototypes commercialized and scholarships given to the top three teams. All seven teams presented impressive finished prototypes – most with multiple applications, and equally impressive presentations that supported and promoted their products.

Herbalife commented that “the presentations, the students’ enthusiasm and final prototypes went far beyond their expectations”!

A Big Congratulations to the winning teams!

- **First Place: High Protein Pancake**
Developers: **Catherine Askew, Marie Lawton, Peyton Ryan, Precious Henshaw, Xiaokun Cai**
- **Second Place: Tropical Chia**
Developers: **Jennifer Eng, Kelsey Decker, Rachael Picard, Tuyet Truong**
- **Third Place: Green Bean Dip**
Developers: **Jennifer Jacobowitz, Kathleen Ho, Kelsi Harper, Meghan McGillan**



First Place Winners:
Team High Protein Pancake



Second Place Winners:
Tropical Chia



Third Place Winners:
Green Bean Dip

UMass Food Science signs Agreement with Xiamen University for the Dick Tan Fellowship

A delegation of UMass faculty including **Lili He**, **Guodong Zhang** and **Eric Decker**, traveled to Xiamen University and signed a formal agreement with the Chemistry and Chemical Engineering Department to host one of their students as a **Dick Tan PhD Fellow**. The first student will be selected this fall and will start their studies in the fall of 2017. This program will allow a Xiamen University student to repeat the education pathway of Dick Tan who funded the program with a \$700,000 endowment.



Faculty News

Amanda Kinchla was named a co-director for the Northeast Center to Advance Food Safety (NECAFS) which is a \$950,000, three-year grant supported by the U.S. Food and Drug Administration. The consortium is led by the University of Vermont with co-directors from UMass Amherst, Cornell, Penn State and the University of Maryland. NECAFS focus is to promote food safety education and technical support to small and medium-sized producers and processors within the northeast region.

Eric Decker is happily enjoying sabbatical at CIRAD, the French agricultural research and international cooperation organization working for sustainable development in the tropical and Mediterranean regions. He is working with longtime collaborator, Pierre Villeneuve, on development of new antioxidant technologies including phenolipids and digestible phenolic-fatty acid conjugates.

Lili He gave talks at UMass Stockbridge School of Agriculture and College of Chemistry and Chemical engineering, Xiamen University, China. She also participated in Bio-TAP, a Talent Advanced Program (TAP) for biological science majors in the Commonwealth Honors College.

Yeonhwa Park gave an invited talk at the University of Wisconsin-Madison's Food Research Institute's 70th Anniversary Meeting. She also gave talks at the Departments of Nursing and Nutrition at UMass.

David Sela published a paper in *Frontiers in Microbiology* on incorporation of probiotic microorganisms food-grade alginate hydrogels showing novel technology to improve the health

and wellness of foods. David was also named Chair of the Maternal, Perinatal and Pediatric Research Interest Section of the American Society of Nutrition.

Hang Xiao gave invited talks on his research on enhancing the health benefits of food components at the Department of Agricultural and Environmental Sciences at Tennessee State University and on his work in nanotechnology to improve food safety and quality at the International Nanotoxicology Congress (Boston, MA) and National Institute of Agriculture Nanotechnology Meeting (College Station, PA).

Student News:

At the American Oil Chemist Society (AOCS) our students received 3 of the 4 major scholarships. David Johnson (advisor Decker) received the Smouse Graduate Fellowship, Cansu Gumus (Advisor McClements) received the Hans Kaunitz Fellowship and Maxine Roman (Advisor Goddard) won the both the Ralph Potts Memorial Fellowship and the Manuchehr Eijadi Award. AOCS's Inform magazine included this great write up of our program:

Critical Mass from UMass

From Inform Magazine; volume 27, 2016

Faculty and students from the University of Massachusetts, Amherst, were exceptionally prominent at this year's Awards Plenary and AOCS Business Meeting, where they took home one AOCS Fellow Award, the Supelco/Nicholas Pelick-AOCS Research Award, and four of the most prestigious student awards, including the Thomas Smouse Fellowship, the Manuchehr Ejadi Award, the Ralph Potts Memorial Fellowship, and the Hans Kaunitz award. The graduate program in the Department of Food Science at the University of Massachusetts was ranked #1 by the US National Research Council, the research arm of the National Academies of Sciences, Engineering, and Medicine. What makes them such a powerhouse? An understanding of food at the molecular level and strong partnerships with industry.

We had another great **Jack Francis Scholarship** Competition this year. As in recent years, over 20 students participated in a pre-competition where they were asked to give a research snapshot similar to an "elevator pitch". Six students were selected to compete in the Francis Poster Competition. David Johnson (Advisor Decker) was selected as the winner for his work entitled, "Is Oxygen Reduction a Viable Antioxidant Strategy for Oil-in-Water Emulsions?"

The **Herbert O. Hultin** Oral Scholarship Competition was also a huge success as 8 graduate students gave 15 minute research presentations with Stephanie Alder (Advisor Goddard) winning the competition. She gave her paper "Influence of Hierarchical Structure on Lipase Stability and Application in Deep Eutectic Solvent" at the Strategic Research Alliance meeting.

Many thanks to all of the **Alumni** that funded these 2 scholarships, as it has been hugely successful at bringing the Department closer by providing a forum to discuss research and by providing the students with excellent industry exposure. Also, many thanks to **David Sela** and **Lili He** for organizing these events.

Our students were again extremely successful in obtaining Northeast IFT scholarships. NEIFT announced that there was a record number of applicants this year. UMass won 6 of the 11 scholarships with UMaine receiving 3, Framingham State University 1 and Johnson & Wales 1. UMass students won all 3 of the honorable mention scholarships. The UMass awardees were undergraduates **Marie Lawton, Maryssa Debonee, Gayle Raften** and **Gisele Andree** and graduate students, **Cansu Ekin Gumus** (Advisor McClements) and **William Dixon** (Advisor Xiao).

Three Ph.D. students from Dr. Park's lab presented papers at the [Society of Toxicology Annual Meeting](#) with **Xiao Xiao** receiving the Jean Lu Student Scholarship Award and **Peiyi Shen** winning a Graduate Student Travel Award.

Dr. Xiao's group gave 6 oral presentations and 9 poster presentations at the 2016 Experimental Biology Meeting in San Diego. **Zili Gao** received third place in the American Society of Nutrition Emerging Leaders in Nutrition Science Competition. Hua Zhang received a \$1000 travel grant from American Society for Biochemistry and Molecular Biology.

Cansu Gumus, Danhui Wang, Juhong Chen, Kanyasiri Rakariyatham, Siyue Gao, Tianxi Yang, Weicang Wang, Xiaoqiong Cao, Zhiyun Zhang and **Ruojie Zhang** all received travel grants for the 1st ACS/AGFD Student Chapter Symposium which will be held in Philadelphia in August.

Lili He has done a great job of revitalizing our Phi Tau Sigma Honor Society Chapter as we now have 8 faculty members and 22 student members. **Cansu Gumus** is the incoming president and **Xiaoqiong Cao** is the treasurer. This year, the Phi Tau Sigma chapter hosted seminars on product development, giving successful research talks on the use of analytical techniques in food industry presented by Shimadzu. The Phi Tau Sigma members are in the photo below.

