

*University of Massachusetts
Department of Food Science
Newsletter*

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As always, at the beginning of yet another year I want to take this opportunity, on behalf of all the students, faculty and staff, to offer our very best wishes for the Holidays and the New Year. It is difficult to believe that this is the 20th Issue of the Alumni/ae Newsletter, how very fast time goes by and what remarkable changes we have seen. All extremely positive for your Department.

We had another spectacular and exciting year with, perhaps the most exciting news being the successful completion of our search for our new faculty hire. We were most fortunate to once again hire our top choice and we welcomed Dr. Hang Xiao to the Department in November as our newest Assistant Professor.

Dr. Xiao is an outstanding scientist with a PhD in Food Science from the University of Wisconsin Madison and 2.5 years Post Doctoral experience at the Susan Lehman Culman Laboratory for Cancer Research, Department of Clinical Biology, Ernesto Mario School of Pharmacy, Rutgers. Dr. Xiao will bring a wealth of experience to the Department and will add tremendously to both our teaching and research with his own programs as well as collaborating with faculty in our Department and elsewhere in the University. You will learn more about Dr. Xiao's research later in the Newsletter as he kindly agreed to write a short summary of his work for the "Research Corner".

In addition to Dr. Xiao joining us, we were delighted that Dr. Jochen Weiss was awarded tenure and promoted to Associate Professor. This was most well deserved and I know you all join me in congratulating Jochen on this wonderful milestone in his outstanding career.

As mentioned as "future events" in our last Newsletter, our faculty received several prestigious awards during the summer and fall.

In July at the Annual Meeting of the IFT in Chicago, Dr. Jochen Weiss received the Samuel Cate Prescott Award for outstanding ability in research for a young scientist and Dr. Julian McClements received the Research and Development Award. These awards were given, as is the IFT's custom, at the opening ceremony of the IFT and we were delighted that one of our students, Caitlin Boon, was also recognized at the opening ceremonies in recognition of her selection as the recipient of the Campbell's Excellence in Leadership Award.

At our all College Meeting in November, Dr. Bob Levin received the Outstanding Research Award from the College of Natural Resources and the Environment and Dr. Jochen Weiss received the College's Outstanding Teacher Award.

Dr. Eric Decker was one of eight faculty members, University wide, who were recognized at the University Fall Convocation for Outstanding Accomplishments in Research and Creative Activities. These awards have only been going on for 3 years and we are very proud that we have 2 recipients, with Dr. Shetty being recognized 2 years ago and Dr. Decker this year.

Drs. Peleg, McClements and Decker were named as ISI Highly Cited Researchers, Dr. Shetty was appointed to an NSF peer review panel and I was fortunate to receive the Distinguished Faculty Award from the Alumni Association at a wonderful ceremony at the State House in Boston.

We had an extremely successful Symposium in October which was described in the last Newsletter. It was entitled "Second International Symposium on: Delivery of

Functionality in Complex Food Systems” and held under the leadership of Dr. Julian McClements. There were over 100 attendees, some 65 presentations and poster along with exhibits and participants from around the globe.

Dr. Decker organized an extremely successful international Symposium on Omega 3 Fatty Acids in Food in November. This was truly International as it was held in Shanghai, China in November. Dr. Park and Dr. Weiss as well as Dr. Decker gave presentations and the Symposium attracted some 120 participants. This is the first time we have organized and sponsored a program in China and I believe it bodes well for the Department and our Alumni.

We will be having our second Symposium in our Food Science Policy Alliance series entitled “Obesity and Health: Modifying Behavior, Modifying Food or Using Policy to Optimize Both” to be held June 4th and 5th here on Campus.

Obesity and its concomitant diseases are increasing at an alarming rate worldwide. In the U.S. medical costs of these diseases exceed \$500 billion to say nothing of their devastating effects on the quality of life. Of particular concern is the prevalence of overweight, obesity and type II diabetes in children who seem to be doomed to a life of obesity and all its consequences.

Attempts at solving these problems have ranged across age, gender and economics and have been largely unsuccessful.

Many trials have been attempted to modify food in the diet, by education or exclusion of a particular food, with variable, but limited success.

Yet we continue to see cries for more education to achieve behavior change with little patience for the concept of modifying the existing food supply to assist in these efforts.

This Symposium will review efforts at modifying behavior as well as efforts at modifying the food supply to effect positive changes in Obesity and Health. Following these two individual sessions we will devote the entire last half day of the symposium to an audience/panel discussion in an effort to create policy to optimize results with a combination of behavior modification along with modification in the food supply.

To our knowledge this is the first time that a Symposium has attempted to bring together these complimentary but often disparate ideas to maximize the results of our efforts in this war on obesity. A registration brochure is enclosed. Registration may be done by mail or on the website noted in the brochure. Please share this with your colleagues as it will be an exciting program.

We changed the timing of our International Dinner from the spring to December 13 this year so it could encompass the Holidays. It was, once again, a tremendous success and a wonderful celebration of the diversity in your Department, a tradition that has been going on for some 55 years.

We had another terrific Alumni Breakfast at IFT with some 90 attendees who, as always, had a wonderful time with the incredible spirit and comraderie which is so evident in UMass Food Science Alums.

Our undergraduate enrollment continues to climb and the Department attracts students from around the world. We had a graduate acceptance rate of 18%, which once again was the lowest in the College.

External grants including funds from the Strategic Research and Policy Alliance were once again up by 9% this year.

We had some 44 new or active grants from a wide variety of sources including 4 new USDA NRI grants, one from the American Heart Association and continuation of our Seafood Safety Federal line item. As well as obtaining grants, our faculty has been invited to serve on grant juries by governments, foundations and industry worldwide to select grant recipients.

We also met with Congressman Olver to propose a new Federal Line Item in Health and Wellness which we are very optimistic about.

Faculty, students and staff authored or co-authored 107 papers (increase of 15%) along with 12 patents, 46 abstracts, 6 proceedings papers, 3 books and 13 book chapters.

We have 44 active and/or new Federal grants including USDA NRI, NOAA, EPA and other grants from both industry and government sources. Many visiting scholars from around the world chose the Department and its faculty for their research experience (14 Post Docs and 13

Visiting Scholars) and some 4 dozen industrial and academic scientists visited the Department to discuss research projects or matters of national policy with our faculty.

Faculty presented 59 keynote and invited papers and 42 technical papers nationally and internationally, served as editors or co-editors for 6 journals/books and 37 editorial boards, reviewed 219 papers and books, served on some 40 juries, executive boards and advisory boards and on some 40 juries, executive boards and advisory boards and on some 50 committees, chairing 9, both nationally and internationally.

Obviously our faculty, students and staff continue to operate at a breakneck pace with an incredible high standard of excellence. Their outstanding performance is a real tribute to your Department and maintains the standard of excellence that UMass Food Science has always been known for. But please remember we could never accomplish what we do without the standards you set and continue to set and the support and funds which you so generously provide. We are so very grateful for having the finest alumni/ae in the world.

Food Science Alumni Weekend-2008

Please mark your calendars for our 7th Food Science Alumni Weekend on October 3, 4, 2008.

Our planning committee once again headed up by the triumvirate of Cory Briant, Amanda Kinchla and Cassandra Knight have a terrific series of events planned so please plan to be a part of the wonderful weekend. You will be receiving email invites soon (if we have your address) as well as hard copy invites in the summer. We look forward to a record turnout!

Student Awards

The Student Awards were announced in the last Newsletter and we will bring you up to date in our next Newsletter.

Food Science Club Activities

This fall semester the UMass Food Science Club continues to do more for its members and the department. We started the semester by welcoming back Pepsi, Unilever, Kraft, and Campbell's, looking to recruit

students for summer internships. To help students find that perfect internship or ideal first job, the club offered a resume building session. Ginger Goldsbury from UMass Career Services presented to students the importance of an excellent resume and what criteria are necessary to create one.

In October, Caitlin Boon organized a canned food drive for the local 4H chapter. Towards the end of the month the club put on its first Halloween party. It was a great fun filled family friendly event with a spaghetti dinner, caramel apples, pumpkin painting, costume contest and even a haunted tour. Being such a great success with students and faculty, the club is planning to make the party an annual event.

Then in November, Dr. Decker and the Food Science 265 class prepared smoked turkeys for the annual luncheon. This is always a department favorite! The club helped by slicing the meat and providing the necessary sandwich builders for this delectable treat. Towards the middle of month, Christina Kriegel, our Northeast IFT representative, and some club members volunteered to travel over to Smithfield, RI for NEIFT "Taste of New England". There we put together and distributed goodie bags to attendees and assisted in the cleanup afterwards.

On December 13th, we hosted the annual International Dinner. In years past we enjoyed tasting the cuisines of our fellow students. This year we are including a special raffle, best dish contest, and winter/holiday setting. It will be a terrific evening as always.

Even though the semester is coming to an end, there are still plenty of new events the club is planning to do for next semester! Our officers for 2007-2008 are Ed Ryan (President), Chandrakant Ankolekar (VP), Caitlin Blacker in 2007 and Alana Jakas in 2008 (Secretary), Ameena Saleh (Treasurer), Danielle Kelley (Fundraising Chair), Kaitlin Ewald (Activities Chair), Christina Kriegel (Northeast IFT Representative), Dr. Yeonhwa Park (Sr. Club Advisor), and Dr. Micha Peleg (Jr. Club Advisor). This is a wonderful group and I am

honored to be working with such dedicated and loyal students and faculty.

Thank you for supporting the Department, the students and the Food Science Club and we wish all of you a wonderful Holiday Season and a Happy New Year.

Edward Ryan Jr.,
On behalf of the Food Science Club

Research Corner

As noted earlier Dr. Hang Xiao is our newest Assistant Professor.. Dr. Xiao received his Ph.D. in Food Chemistry from University of Wisconsin-Madison, and B.E. in Food Science and Technology from Ocean University of China, Qingdao. Before joining the faculty, Xiao was a Research Associate in the Department of Chemical Biology, Susan Lehman Cullman Laboratory for Cancer research, in the Ernest Mario School of Pharmacy at Rutgers University. Dr. Xiao has received several awards, such as the Louis and Elsa Thomsen Wisconsin Distinguished Fellowship Award, WIFT (Wisconsin Institute of Food technologist) Graduate Academic Scholarship, the first place winner of IFT Student Association/Phi Tau Sigma/Procter & Gamble Graduate Research Paper Competition, and the Grand Prize Winner of the 2nd Annual "Almond Innovations" New Product Development Contest (team member).

The following section gives a very brief summary in his words:

My research is focused on identifying potential cancer preventive dietary components (nutraceuticals), elucidating their molecular mechanisms, investigating possible synergistic interactions among these dietary components and commonly used pharmacological compounds, with the long-term goal of designing nutraceuticals-based food products and strategies for the prevention of cancer. The major approach of this research is the utilization of chemical, biochemical & molecular biology in cell cultures combined with *in vivo* animal models for human cancers.

I have worked on different bioactive dietary components, such as polyphenols from green tea, tocopherol isoforms (Vitamin E),

sulfur/selenium compounds from onions and garlic, and polymethoxyflavones from orange. Using a chemical-induced rat model for human colorectal cancer, my work convincingly demonstrated that green tea polyphenols inhibited development of colorectal tumors and retarded the formation of malignant tumors. This study will be featured in the press conference during the Frontiers in Cancer Prevention Research Meeting (American Association for Cancer Research) in Philadelphia, Dec. 5-8th, 2007. In a xenograft tumor model, we discovered that oral administration of a tocopherol mixture (65% gamma-tocopherol) inhibited human lung cancer tumor growth in mice. These results support the usage of foods rich in gamma-tocopherol (i.e. soybean) as cancer preventive functional foods. Utilizing a bioassay-guided purification strategy, we also identified a series of sulfur and selenium compounds from *Allium* spp. (i.e. onion and garlic) that can upregulate detoxification enzymes in human liver cells, which can protect cells from hazardous chemicals, such as carcinogens.

Polymethoxyflavones (PMFs) almost exclusively exist in citrus, i.e. orange, and have shown various health-promoting effects, including anti-cancer activity. I have studied a class of novel compounds, hydroxylated PMFs, which can be formed from PMFs by hydrolysis. The results showed that hydroxylated PMFs had much stronger inhibitory effects on human cancer cell growth in comparison to PMFs from which they are formed. Moreover, it is likely that these hydroxylated PMFs interact with different molecular targets in cancer cells to cause cell growth retardation and cell death. Based on these interesting results, I will be developing a research program at Umass Amherst, in collaboration with other faculty members, to establish a novel strategy to enhance cancer preventive efficacy of orange fruit through generation and enrichment of hydroxylated PMFs by tailored food processing methods. This research is innovative, since it will use unique strategies for incorporating food science, biochemical nutrition, and cancer research to enhance anticancer efficacy of food components and provide appropriate foods as vehicles for these bioactives, thus creating a

foundation to use processed orange extract as a nutraceutical ingredient for food and beverage applications for cancer prevention.

I am very excited about joining this outstanding Department and the legacy of excellence upon which it is founded.

Wrap – Up

As is our tradition I would like to conclude the Newsletter with a few selected activities and accomplishments of the members of the Department.

Of the many Post Docs in the Department, all of whom do outstanding work, I wanted to mention that two of them, Drs. Bum-Keun Kim and Jeung Jun Choi submitted (with the assistance of Dr. McClements) and were awarded \$23,000 each per year for continued studies from the Korea Research Foundation.

Dr. Herb Hultin was invited to present a paper at the 98th AOCS Meeting in Quebec City Canada in May. In addition he gave a paper on lipid oxidation in fish muscle at the 2nd Joint Trans-Atlantic Fisheries Technology Conference in Quebec City in November, 2006 as well as co-authoring 3 papers which were presented at the Annual Meeting of the IFT in Chicago.

Dr. Kalidas Shetty was invited to present six invited papers at venues such as South Korea, Iowa, Minnesota, Illinois and the Annual Meeting of the IFT as well as co-authoring four papers at the IFT where 2 of his PhD students, Young-In Kwon and Manos Apostolides, who presented posters received first and third place awards (only 3 awards given) in the Food Biotechnology Division Poster Competition. In addition he led a delegation of four faculty and presented invited papers at the Norwegian Food Research Institute.

Dr. Ron Labbe presented an invited paper at the 2nd International Congress of Food Science and Food Biotechnology in Developing Countries in Saltillo, Coahuila, Mexico, co-authored a paper given at the Annual Meeting of IAFP in Lake Buena Vista, FL and a paper on his research to a visiting delegation from the Norwegian Food Research Institute.

Dr. Ray Mahoney co-authored a paper presented at the Annual Meeting of the IFT and

continued his service on the Faculty Senate International Studies Council.

Dr. Jochen Weiss gave some dozen invited papers including those at the Food Research Institute in, Tsukuba, Japan, the International Symposium on Recent Progress in Food Science and Engineering in Tokyo, Japan, the 2nd International Food Nanoscience Conference in Chicago, the University of Murcia, Murcia, Spain and the University of Hohenheim, Germany as well as presenting or co-authoring several papers at the Annual Meeting of the IFT.

Dr. Eric Decker was invited to present some 9 invited papers including those given at the Department of Food Science and Human Nutrition, Iowa State University, the Plenary Lecture of the 6th Italian National Congress of Food Chemistry, Alba, Italy, Department of Food Science, University of Nottingham, UK, the University of Udine, Italy and the University of Bologna, Italy. In addition, he presented or co-authored several papers at the Annual AOCS meeting.

Dr. Bob Levin continued his leadership role with our Seafood Safety Federal Line item grant. In addition, he presented an invited paper at the Norwegian Food Research Institute, co-authored a poster presentation at the Annual Meeting of the IFT and is pursuing a patent on a technique he developed in his research to remove PCR inhibitors from food samples prior to analysis.

Dr. Julian McClements was invited to give several presentations including two papers at the Annual ACS meeting in Boston, another at the ACS Meeting in Chicago, a paper in Washington, DC and several other papers or posters at the AOCS Meeting in Quebec City. In addition he was a co-organizer of a Symposium at the ACS Meeting in Boston and served on the Program Committee of the ACS Colloids and Surfaces Division.

Dr. Lynne McLandsborough gave an invited paper at the Norwegian Food Research Institute, another at the IAFP 94th Annual Meeting and co-authored several poster presentations by her students at the Annual Meeting of the IFT in Chicago. In addition she was invited by the UMass Department of Microbiology to give a presentation on her

research with *Listeria monocytogenes* as well as being invited to serve as a session convener at the IAFP meeting in Orlando and a Session Monitor at the IFT Annual Meeting.

Dr. Micha Peleg gave the invited keynote presentation at the 4th Congress on Chemical Engineering in Pueblo, Mexico, the keynote at the 2nd European Congress on Life Science Process Technology in Nuerenberg, Germany and another keynote at the 5th Northeast Granular Workshop organized by the UMass Physics Department.

In addition he gave several other invited papers and co-authored a poster paper at the IFT Annual Meeting.

Dr. Yeonhwa Park gave an invited presentation at the Food Science and Technology Symposium held at the US-Korea Conference on Science, Technology and Entrepreneurship as well as several invited poster presentations at a Multidisciplinary Graduate Research Conference at Tufts University and several others at the New England Technical and Young Generation Symposium at Harvard University. In addition, she coauthored several poster presentations given at the Annual Meeting of the IFT in Chicago.

I am keeping busy with a reappointment to the National Academy Food and Nutrition Board of which I was a member from 1994-2000. As well, I am active on the Keystone Food and Nutrition Round Table which is currently reviewing the possibility of universal front-of-pack labeling. I continue my work with IFT and ILSI but mostly I take great pride in the incredible accomplishments of my colleagues.

Jack Francis and Wassef Nawar continue to be very active in the Department and Dick Mudgett, Dave Evans and Ernie Buck are doing well.

I hope you are pleased and proud of the many activities and accomplishments of your Department. As I have said before we are well aware of the legacy of excellence that has taken place over the many years of existence of this outstanding Department and we take very seriously our role in continuing that legacy. As always, I want to offer our most sincere appreciation for your remarkable generosity,

support, loyalty and friendship. We really couldn't do it without you.

And on behalf of all the students, faculty and staff I want to offer not only our deepest thanks but our very best wishes for the Holidays and for a happy, healthy and peaceful New Year.

Kindest personal regards,

In Memoriam

On December 10, 2007 Dr. Herb Hultin passed away from complications arising from pancreatic cancer which was diagnosed in the Spring of 2007.

The Department, all its alumni/ae and the world have lost a wonderful scientist, teacher and friend.

Herb touched everyone he met in a profound way and he will be sorely missed.

It is no surprise to anyone that Herb worked until the very last and the day before his final admission to the hospital talked to his wife, Marie about reading over a student thesis the next day. How very much like Herb to have a student's well being on his mind to the very last.