Greetings from the Chair

To our Food Science Alumni, Friends and Family,

National College bowl champions. Dairy Innovation Hub. Scholarship recipients. Read about these and other terrific outcomes at UW-Madison, Food Science. We are running at full speed with a new incoming class of students on one hand and another group of students preparing to graduate in the 2019/20 academic year on the other. I invite you to recall your own memories of the Fall season in Madison, including the slow shadow of cooler temperatures, the energy of Badger sports and the call to refine and reflect upon the most compelling Food Science scholarship. I also invite you to peruse our Fall newsletter and learn a little about our people and their accomplishments as well as the other facets of growth and development coming to our department.

There is no question that financial and other constraints as well as novel opportunities continue to influence our design and operations, but with the creative, dedicated people and new faculty hires in the near future, there is every reason to remain hopeful and enthusiastic about how the department will continue to thrive in this challenging environment. We continue to invest in remaining connected with you through our social media outlets, the new website and the Impact newsletter. With a large number of departmental events this year, we also hope to learn about your achievements as well, so please stay in touch and drop by next time you are in Madison.

Best wishes and On Wisconsin!

Scott A. Rankin
Professor and Chair

foodsci.wisc.edu
Meet Our New Staff

Theresa Pillar recently joined the department as the new Graduate Coordinator for the Food Science Department. She has been working on campus since 2004 in the Theatre and Drama Department but has just recently started this new position. Her role in the department is to provide support to the Food Science Graduate students and the Graduate Program Committee. She also serves as a Wellness Champion on the CALS Wellness Committee. Theresa loves getting to know all of the students and staff at the University.

Departures

Bill Klein, laboratory and plant manager, retired this past Spring after working in the department for 28 years. His role evolved immensely over the years. Bill started his career as plant manager in 1990, quickly mastering the equipment of the Babcock Dairy Plant. His role eventually shifted to a more people-focused position in which he managed dairy operations in the Dairy Store and plant. When asked what had been the most rewarding part of serving as Plant Manager, Bill did not hesitate to answer with “my students.” An always friendly and outgoing member of the department, Bill will be greatly missed.

Dr. Kirk Parkin retired in July after working for the Food Science Department for over 33 years. Parkin is an established professor who has been recognized for his many contributions to the field. One of his most notable accomplishments include receiving seven major grants from the USDA. These projects have contributed to 112 refereed publications in scientific journals, facilitating the successful completion of 22 MS and 13 PhD student programs. His participation encompassed Department, State, National, and International spheres. The Department will greatly miss him.

Galyua Yang (not pictured) worked for the Food Science Department since December 2015. Her role at the Food Science Department included student hires, expense reports, administrative support, and much more. This August she left the Department and is now a Human Resource Assistant for the General Library System. She hopes to move up the HR ladder in her new position but still misses the environment, people, and food from Food Science. We wish her the best of luck on her future endeavors.
Scholarships

In order to help reduce the costs of higher education, the Department of Food Science is fortunate to be able to offer scholarships to many of our students based on academic information, extracurricular activities, and financial aid. These scholarships are available because of generous gifts from donors or directly sponsored by industry partners. The Department manages 23 individual awards and allocates approximately $42,725 annually in scholarships to deserving students. A few of the award recipients for 2019-2020 are:

David Lang is the recipient of the Dowaine Giraud Dairy Promotion Scholarship, which is given to a Senior from Wisconsin majoring in Dairy Science, Food Science, Agricultural Journalism, or Agricultural Economics who demonstrates a vast interest in the dairy industry and dairy promotion, based on their future plans in the industry.

Nigel Kang received the Ross Charles Pech Memorial Trust Scholarship, an award based on scholastic ability.

Lexi Florac is the recipient of the Hans F. Dresel Memorial Scholarship. This scholarship is awarded to a junior or senior student who is interested in pursuing a career in the Confectionery or chocolate related industries. Upon faculty recommendation, the student goes through a challenging process to get this impressive scholarship.

Emma Hanisko received the H.C. Jackson Memorial Scholarship which is awarded to a sophomore majoring in Dairy Science.

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Babcock Hall Renovation

Babcock Hall is in the process of a major construction project which includes a multi-story addition for the Wisconsin Center for Dairy Research (CDR), a new loading dock, milk intake facility with new storage silos, and new ice cream manufacturing systems. Much of the existing dairy plant will be renovated to reflect modern sanitation design requirements. The existing milk intake area, the drying tower area, a mechanical space at the northwest corner of Babcock Hall, and a stair tower will be demolished. Construction began in May 2018 and we are hopeful and excited to step into these modern facilities.
The Dr. Keizaburo Mogi Scholarship was awarded to David Lang, Elizabeth D’Auria, and Tanner Bilstad. The requirements are for junior and senior students majoring in Food Science.

Elizabeth James was awarded with the Madison West Kiwanis-Dickson Scholarship. For sophomore, junior, or senior standing students who display enthusiasm for agricultural and food sciences.

Caroline Lunning has received the Paul McShane Memorial Scholarship. Awarded to incoming sophomores or juniors that demonstrate interest in dairy science, food science, or nutritional science.

Anna Larson was awarded both the Dorothea Kroncke Scholarship and the Chiquita Brands Fritz Friday Food Science Scholarship. Respectively, the first scholarship is based on exhibiting good citizenship and being involved on campus while the second pays tribute to Carleton Friday, a leader in the Wisconsin food processing industry, given to students with a minimum GPA of 3.5.

The Badger Flyers winners are Elizabeth James and Kaitlyn Younger. The scholarship is part of an organization made up of companies that sold supplies to the dairy and ice cream manufacturers, including Wisconsin Dairy and Ice Cream Supplemen’s Association and the Wisconsin Dairy Products Association. Awarded to students getting a degree in either Dairy Chemistry or dairy Manufacturing.

Caroline Lunning has received the Paul McShane Memorial Scholarship. Awarded to incoming sophomores or juniors that demonstrate interest in dairy science, food science, or nutritional science.

The Donor Highlight: Bob Lenz

Bob Lenz, a devoted alumnus of the UW-Madison community, has generously contributed to UW students. Lenz graduated in 1962 from the Food Science Department and was largely involved in the WSUM Madison Student Radio. He worked at Waunakee Canning Company for a majority of his career, which later turned into Stokely USA. He has largely contributed to the Department of Food Science as well as the UW Campus Radio funds. Mr. Lenz has helped so many people with his gracious contributions. Thank you!
Research Spotlight

Bradley Bolling is an assistant professor at the University of Wisconsin-Madison Food Science Department. In 2010, he started his research on gut health because he recognized its importance to numerous diseases and the function of the immune system. His goal was to connect the chemistry of food to its effects on gut health. Bolling is investigating how certain foods will prevent or reduce inflammation. Inflammation is important because it increases the risk of developing diseases such as diabetes, cancer, and heart disease. Bolling’s experiments utilized cells, animals, and humans to determine how foods may prevent chronic inflammation. On a cellular level, he is testing how foods or specific food components affect the inflammatory processes. Using animals, his group tests how diets affect the intestinal immune system, which is closely linked to the microbiome. Humans, however, are the most important of experiments because results from cells and animal studies may not fully translate to humans. His research group, comprised of post-doctoral fellows, graduate students, and undergraduate students are working to determine how food composition affects dietary anti-inflammatory activity. They are focused on polyphenols, which are plant-produced compounds that protect against certain diseases. The key foods his group works with are yogurt, aronia berries, nuts, and other vegetables. Fruits and vegetables are a focus because of their polyphenols and fiber. However, yogurt has other components, such as proteins or other fermentation-derived molecules that might help reduce inflammation. In a study of yogurt in humans, they induced inflammation by giving participants a large meal to activate the immune system. Blood glucose and inflammatory markers were measured to see how eating yogurt changed the inflammation produced from the large meal. Consuming yogurt helped to moderately reduce inflammation.

Another study with aronia berries found that consuming berry polyphenols reduced cholesterol in former smokers. Bolling and his team are still researching gut health, but have already developed knowledge that will make a positive change in the food industry.
Food Science Short Courses

At the Food Science Department, there are many short courses offered to help hone in on specialized industry skills. Check out the Outreach tab on our website for more info: https://foodsci.wisc.edu/

Below are a few highlights:

**Advanced Gummies & Jellies** *(October 2nd-4th 2019)*
The Advanced Gummies & Jellies class is a three-day course that provides an overview of gummy and jelly ingredients and processes by which they are made, then develops advanced concepts and principles, including the manufacturing of various enhanced or fortified products. This course focuses on instructing technical, production, research, and managerial personnel in the field of gummies and jellies technology. Anyone looking to gain knowledge about successful manufacturing of various types of gummies and jellies would benefit from this course.

**Resident Course in Confectionery Technology** *(July 20th- 31st 2020)*
The Resident Course in Confectionery Technology is a two-week course that begins with the chemical and functional interactions of ingredients and advances to more complex subject material including processing, troubleshooting, reworking, and sensory analysis. Learning from industry experts, participants will gain hands-on laboratory experience with all types of candies. This course is designed to instruct technical, production, research and managerial personnel in the field of confectionery technology.

**Ice Cream Makers Course** *(December 3-5, 2019 & February 12-14, 2020)*
The Ice Cream Makers course is a three-day class that teaches how to successfully manufacture quality frozen desserts using modern industry-scale technologies. Fundamental concerns of quality evaluation, manufacturing, and processing procedures are the pertinent topics taught throughout this course. Held in our dairy processing facilities, the manufacturing sessions will give every participant hands-on experience with standardizing, blending, pasteurizing and freezing. Attendees get the opportunity to manufacture several hundred gallons of ice cream.

**Successful Ice Cream Retailing Course** *(January 13 & 14, 2020)*
The Successful Ice Cream Retailing course provides the best information that frozen dessert retailers need to know to be successful in this industry today. This course helps you learn the fundamentals and unique skills to better manage your business for more profit, better employees, and effective promotions.

**Batch Freezer Workshop** *(January 15-17, 2020)*
Offered annually, the Batch Freezer Workshop is a three-day course designed to provide attendees with an in-depth exposure to the practice of successfully manufacturing premium frozen desserts using batch freezer technologies. Attendees experiment with a variety of flavorants and inclusions in our pilot-scale ice cream manufacturing facility.

**Nutrition & Snack Bar Technology** *(March 16th-19th, 2020)*
The Nutrition & Snack Bar Technology course is a four-day class that provides an overview of bar ingredients, the processes in which they are made, and the functional additions to bars. In addition, shelf-life and trouble-shooting are important topics covered. Learning from industry experts, participants will gain hands-on laboratory experience with the variety of bar types and compositions.
Student Spotlight

IFTSA Competition: Product Development Teams

The trifecta of veganism, sustainability, and sweetness. Trinipea is a shelf-stable vegan meringue cookie that the Food Science students developed in vanilla, dark chocolate, and cocoa nib flavors. Instead of relying on egg whites in the meringue, the students came up with a new innovative idea to use Aquafaba. Aquafaba is the leftover liquid from the chickpea cooking process. This unique product took over 56 different trials and recipe adjustments to try and increase the hardness, density, foam stability, and crunch. This yummy treat is also gluten-free, and it has only 70 calories for twelve delicious meringues. In addition to being delicious and innovative, this product is also sustainable. Taking the leftover liquid from chickpeas helps limit food waste by upcycling ingredients from other cooking processes. A subdivision of The Food Science Club, the UW-Madison Product Development Team competes in various product development competitions across the country sponsored by well-known organizations such as Pepsi-Co, Mars and the Institute of Food Technologists. Trinipea was the teams spotlight product this year, and over the summer, a group of Food Science students headed down to Louisiana to compete in the International Food Technology Student Association (IFTSA) student competition. The Institute of Food Technology is a global organization committed to advancing the science of food. It works to ensure a global food supply that is sustainable, safe, nutritious, and accessible to all. After presenting their product at the IFTSA competition, the team ranked second in the 29th Annual IFTSA & MARS Product Development Competition. Congrats! In addition, the UW-Madison College Bowl team had an amazing year and are the 2019 College Bowl National Champions, losing only one round of the IFTSA sponsored trivia competition. The team competed at the North Central area meeting hosted by the University of Nebraska-Lincoln in April, and went undefeated to win a fourth straight regional title. They advanced to the final round of competition at the IFT Annual Meeting in New Orleans, defeating Ohio State in the final round to claim the National title. Thanks to an incredibly dedicated team of food science trivia enthusiasts, they lost only one round of competition all year. We're really looking forward to seeing next year's team grow! Congrats Food Science students on all of your hard work!
Go Big Read

Go Big Read is a UW-Madison common-reading program designed to engage students, faculty, community members, staff, and alumni in an academically shared focused reading experience. There was a very successful Go Big Read event in the Microbial Sciences building called “Food Fraud: From Detection to Prevention in the Supply Chain” with John Spink on October 7th. Spink spent 15 years in industry before joining the faculty at Michigan State as the Director of Food Fraud Initiative. One highlight that a number of our attendees were fascinated by was the large focus on food fraud through the suppliers’ point of view in comparison to the consumers'. Food fraud is defined in shockingly different ways by both parties due to federal law allowing certain standards that consumers might think is on the unethical and immoral side of things. Additionally, there are many other events such as the Go Big Read keynote event on October 15th with Deborah Blum, a UW Graduate and author of “The Poison Squad: One Chemist’s Single-Minded Crusade for Food Safety at the Turn of the Twentieth Century.”

Dairy Innovation Hub

The Dairy Innovation Hub, included in the FY19-21 biennial budget passed by the Wisconsin Legislature and signed by Gov. Tony Evers, provides $8.8M in funding for broadly-defined dairy research at UW-Madison, UW-Platteville and UW-River Falls. The funding will support research personnel, farms and labs in four areas related to dairy that each span many academic disciplines: Stewarding land and water resources, enriching human health and nutrition, ensuring animal health and welfare, and growing farm businesses and communities.
Gary Grossen

The Master Cheesemaker at the Babcock Dairy Plant, Gary Grossen, has continuously wowed the community with his incredible work. Firstly, at the 2019 Green County Fair, Grossen received numerous awards despite competing against a record-breaking 445 dairy manufacturers. He won the title of Grand Champion for Dutchkase Cheese, 1st place in both the “Cheddar Competition” and the “Colby, Monterey, Jack, Edam, & Gouda Competition,” and won 2nd place in the “Open Competition.” And in addition, more recently, Grossen scored a perfect 100 on his Smoked Flavored Natural Cheese Gouda at the 2019 World Dairy Expo Championship Dairy Product Contest in early October.

Community Service & Leadership Development

The Department is excited to announce a new initiative to support community service and promote student leadership. In partnership with UW Housing Dining and Culinary Services, we designed a student-directed program to reduce food insecurity among students while simultaneously reducing food waste on campus. With generous financial support from the American Family Dream Foundation, student leaders design, implement and maintain a program to glean excess food and repurpose it for food-insecure students. Leadership of the program is structured to develop a model of community service and ensure seamless transition from year to year. Program launch began on September 5th. Approximately 300 meals are packaged each week at Gordon Dining and Event Center, then delivered to The Crossing for distribution to students.
Meet Our Interns

Welcome Anna and Emily

The Department of Food Science is excited to welcome our Marketing Interns, Anna Brenny and Emily Garber. Anna and Emily are sophomores here at UW-Madison, obtaining degrees in Marketing and Digital Studies, as well as Marketing and Finance, respectively. They joined the department in May of 2019 to help expand our Branding and Marketing program. Working in partnership with our administrative support team, Anna and Emily have been instrumental in creating a number of communication materials that showcase the success of our department. In fact, this issue of Impact is one of their products. Over the summer, Anna and Emily worked hard to increase our social media presence through Instagram, Facebook, and Twitter and are continuing to work on other materials such as press releases, marketing campaigns, flyers for short courses, and graphics for the website.