FOOD INNOVATION CENTER NEWSLETTER

WINTER 2017 | Volume 10 | Issue 1

Department of Food Science and Technology
The Food Processing Center

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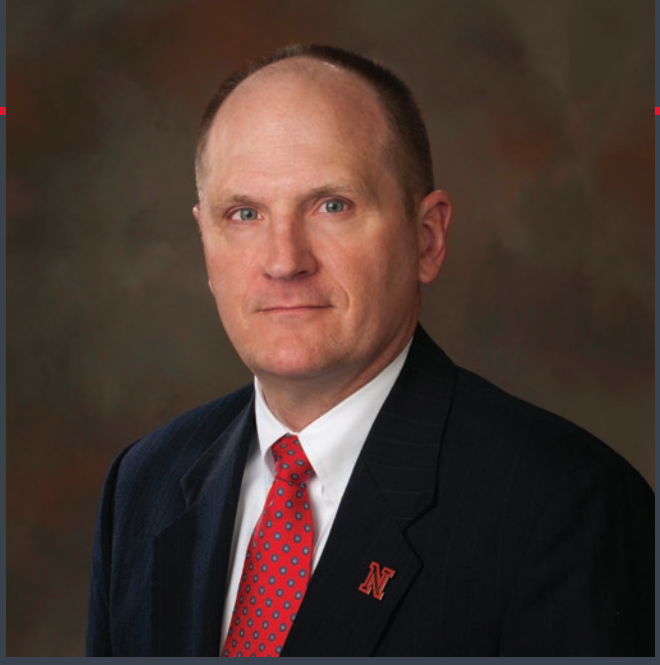
UNIVERSITY OF NEBRASKA-LINCOLN



Committed to collaboration and exploring new ways of thinking

We had an exciting fall in the Department of Food Science and Technology, and I'm looking forward to the months ahead. In September, we invited our university administrators and stakeholders to a private open house. The event was a success thanks to help from Jill Gifford and other members of our staff. The Dairy Store ice cream that we served was a hit!

We've been continuing to hire new and talented faculty. Associate professor Jacques Izard will be focusing his research around the support provided by bacteria to keep us healthy. Assistant professor Kaustav Majumder will be teaching protein chemistry and sensory evaluation courses and developing a course for students to understand intestinal absorption, bio-availability and bio-accessibility of dietary proteins and peptides. Research associate professor Mary-Grace Danao will be developing an applied research program in food engineering, participate in outreach programs of The Food Processing Center and teach a unit operations and separation processes principles course. Assistant professor of practice Mei Lu will be teaching undergraduate courses in food analysis, biochemistry and nutrition, and assistant professor of practice Jiajia Chen will be teaching food engineering and processing courses as part of the 3+1 program.

Angela Anandappa was named the founding director of the Alliance for Advanced Food Sanitation in July of last year. I'm confident that the alliance and our faculty members will collaborate diligently with other members of the University of Nebraska system in transforming food manufacturing under her guidance. I also want to take the opportunity to recognize Andrew Benson as the acting director of the Nebraska Food for Health Center and thank everyone involved in the creation of the center for their hard work and dedication. Our researchers will work with other members of the University of Nebraska system to find new and beneficial links between food and health.

In addition to our new faculty hires, we are looking forward to working with Mike Boehm, our new vice chancellor for the Institute for Agriculture and Natural Resources. Mike has the experience necessary to help us stay committed to future success as leaders in food science and technology.

We are committed to taking on the many challenges faced by the food industry and consumers. The keys to success in taking on these challenges are committing to collaboration and developing new ways of thinking. We think collaboratively as a department at NIC, but we also have about 115 students from the Northwest Agricultural and Forestry University (NWAFU) in Yangling, China, that will be joining over the next few years as part of our 3+1 program. I visited NWAFU with other members of our university community in September to meet students in the first two cohorts. Two years from now, the first cohort will arrive in Lincoln.

Our reach is growing and we're continuously working to provide healthy, safe and less wasteful food to consumers in Nebraska and around the world. I'm excited to highlight some of the services, students and research in this newsletter that are helping us do just that. I'm very thankful for your support and the opportunity to serve as the interim head and director. Here's to a successful spring!

Best wishes,
Curtis L. Weller
Professor and Interim Head,
Department of Food Science and Technology and
Interim Director, The Food Processing Center

Benson believes that the center's research will have transformative impacts for food producers, the food industry and future leaders in food and public health.

Andrew Benson

RESEARCH

Center studies links between food, health

A group of researchers led by professor Andrew Benson is working to discover how food impacts the gut microbiome and how to ultimately develop foods with increased health benefits for people along a broad continuum of health and illness. At home in Lincoln, the Nebraska Food for Health Center will bring together researchers from throughout the University of Nebraska system to discover dietary molecules affecting the gut microbiome, translate those discoveries into clinically proven effects on human health and disease and train the next generation of scientists in food and public health.

The early beginnings of the Food for Health Center date back to 2007 with the formation of the university's Gut Function Initiative (GFI). The group, largely in the department of food science and technology, formed around the concept of understanding the role of the trillions of microbes in the gut that were unknown of at the time. New DNA sequencing technology was coming down the pipeline that would allow scientists to measure the number of microbes in the ecosystem. Benson, one of the founding members, knew that it was time to act.

"The technology was being commercialized around that time, which told us that it would be an emerging area," Benson said. "Doing [this research] in a food science department made sense. We develop foods to stuff down our throats but we have no idea what's going on in the GI tract. We know some of the physiological aspects that our bodies carry out, but have no idea what the organisms do."

The GFI started to grow with support from the university and funds were given to researchers in 2008 to purchase an automated DNA sequencer – one of the first 100 machines on the planet. The machine allowed the GFI's researchers to get ahead of the curve.

"We had an amazing group that formed and cranked discoveries out – fundamental discoveries," Benson said. "None of it was easy at the time, and we built up all of the infrastructure and computational biology. All of that happened in the first few years."

Diligent research between 2010 and 2012 brought the GFI's research to recognition on the international stage. The research caught the attention of Jeff Raikes and the Gates Foundation in 2012 and 2013, leading to early interactions between Raikes and Benson. In 2015, Benson worked with Archie Clutter, dean of the university's agriculture research division to put together a program of excellence proposal, creating a road map for the future of the GFI.

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"We had to have a road map, and with the food science department moving to Nebraska Innovation Campus, it was clear that we had to be an epicenter of something," Benson said. "We had big new spaces with high expectations. Everybody was watching us."

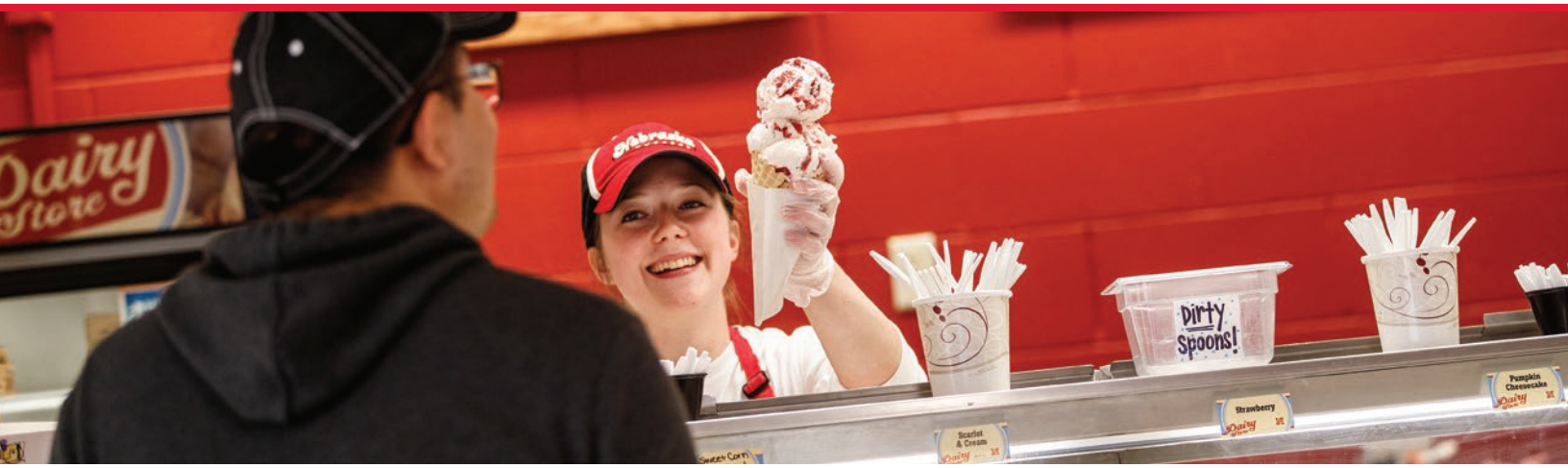
A decision was made to focus the GFI's research on dietary modulation – the ability to manipulate the gut microbiome with components of the diet. According to Benson, scientists are only able to predict the impact of about a dozen molecules on organisms in the gut microbiome. The planets aligned when the University of Nebraska system's food for health initiative launched, providing seed grants to let the center initiate projects with the University of Nebraska Medical Center and the University of Nebraska at Omaha. At the same time as the system initiative, Raikes began pushing Benson think bigger.

"Jeff pushed me to think about how the agriculture commodities would be a good place to work to find molecules that we can use to modify the gut microbiome," Benson said. "We have tremendous plant science resources at Nebraska – the whole spectrum just sitting here and all of the expertise behind it."

Gifts from the Raikes and Gates Foundations in 2016 provided start-up funds to officially launch the Nebraska Food for Health Center. The university and private donations will help to sustain the center over the coming years.

The center will initially focus on a few elements of their research program including the use of high throughput screening to screen the genetic diversity of agricultural plants used by breeders in Nebraska at the in vitro level, guiding the center in picking what commodities to focus on in their research program, closing research gaps with new collaborations between the University of Nebraska–Lincoln, the University of Nebraska Medical Center and the University of Nebraska at Omaha. Administratively, the center is setting up parameters to develop a human cohort of about 1,000 individuals that will participate in feeding studies as research develops.

Benson believes that the center's research will have transformative impacts for food producers, the food industry and future leaders in food and public health.



GENERAL

Dairy Store Celebrates 100th Anniversary in 2017

Since 1917, the Dairy Store's mission has been to provide hands-on experience for students in dairy and food production and sales, facilities for dairy product research and the opportunity to work with entrepreneurs who are developing dairy products to boost the value of Nebraska's agricultural commodities.

As part of its food production mission, the Dairy Store has been involved in education at the university and around the state since its opening. Food science and agriculture majors, among other students working in the Dairy Store, have opportunities to produce food products at scale in a working processing facility. The Dairy Store has also offered consultation and test products for graduate student projects. In addition to working with students, the Dairy Store regularly conducts outreach to entrepreneurs and local dairies and offers tours and demonstrations to the public.

Associate pilot plant manager Russell Parde believes that the Dairy Store provides a connection to both the past and future for students and visitors, whether a parent is dropping their student off for their first semester or an alum is back on campus for the first time since graduation.

"Anything that's been around for 100 years is a big tradition," Parde said. "The Dairy Store ties back to the university's history in serving Nebraska. This anniversary is a reason for us to celebrate the role that we've filled."

A LASTING EDUCATIONAL TRADITION

Like other dairy stores and creameries in the Big Ten, Nebraska's has a long history and rich tradition in the university community. The university's original dairy building opened in 1896, and the Dairy Store and processing plant opened in the newly built Dairy Industry Building (Filley Hall) on East Campus in 1917. At the time, students could buy all-you-can-drink milk for only a nickel.

In the 1940s, the Dairy store started providing dairy products to all university residence halls from a herd of cattle located on East Campus. The Dairy Store's popular "Husker" cheeses were developed in 1942 by two members of the dairy husbandry department. The university's dairy science program was integrated into the department of food science and technology in 1968.

Even though the Dairy Store no longer offers all-you-can-drink milk, a wide variety of products are produced and available for purchase on campus, including ice cream, coffee, meats, eggs, cheese and other food items.

While the ten most popular ice cream flavors, including the flagship Scarlet and Cream, are always available in the dip cabinet, the Dairy Store staff is happy to work with customers to explore the possibility of creating new and recreating traditional or discontinued flavors. Parde works with ingredient suppliers to find specific flavors or inclusions and will create a small five to ten-gallon test batch of the desired flavor if possible. If he's able to find the right combination and amount of flavor, a full batch can be created.

"We had a customer come in who went to the university in the '70s. We make a black walnut fudge ice cream, but in the '70s, they made it with a vanilla base. We made a "heritage black walnut" with a vanilla base at his request," associate pilot plant manager Russell Parde said. "If you have a flavor that you remember, we're happy to try and make it for you. We're always looking for new ideas."

In celebration of the 100th anniversary, a special edition Scarlet and Cream flavor will be released this spring.

For more information on the Dairy Store and its products, visit dairystore.unl.edu.

RESEARCH

Schlegel studies effect of great northern beans on cholesterol

Associate professor Vicki Schlegel was always interested in the unique and diverse crops grown in western Nebraska. When she learned that Nebraska grows more great northern beans than any other state, she decided to study them. Although it's widely known that great northern beans contain multiple chemically diverse micronutrients and large amounts of protein, few studies have connected these compounds to potential health benefits, which posed a challenge to Schlegel.

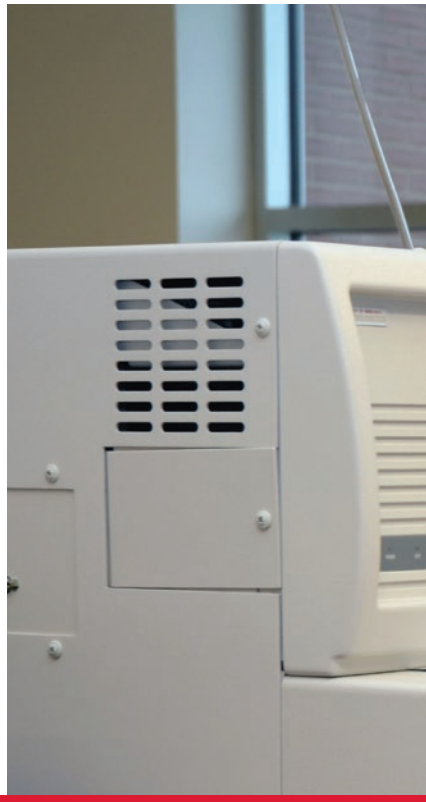
Her research aims to determine the links between the nutrients and health benefits in great northern beans. Specifically, she is studying how great northern beans can be used to prevent cellular stresses that lead to disease. Her research focuses on cellular stresses rather than the disease itself, as most of the time, foods are more effective at relieving cellular stresses than they are at curing diseases.

To understand the interactions, invasive methods are needed, including removal of the liver and intestines, which could not have been applied on humans. Schlegel's lab uses hamsters because they have similar cholesterol profiles and cholesterol metabolism to that of humans. The FDA requires animal studies before moving to human studies, and for this type of research, the FDA specifically requires hamsters.

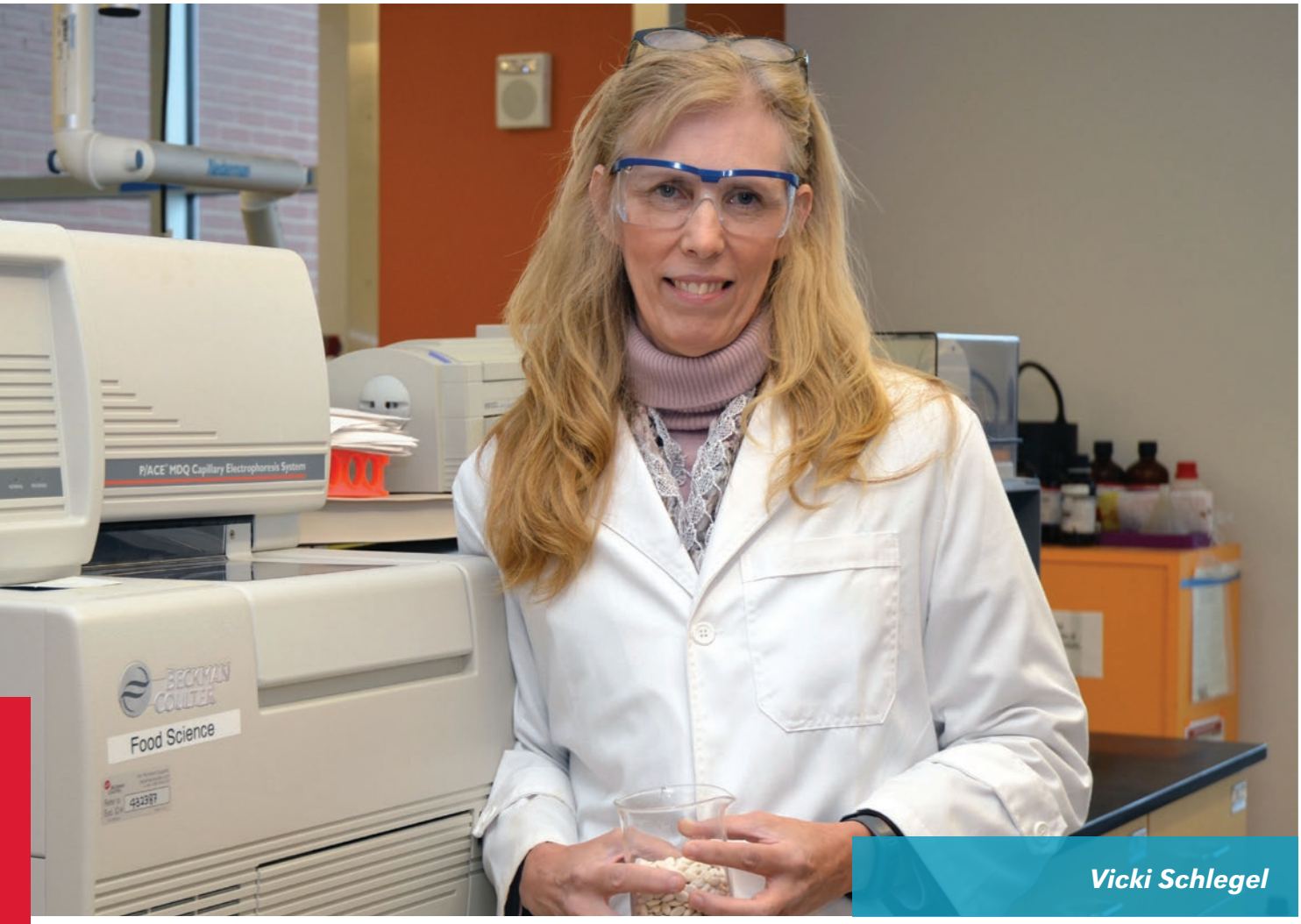
Through her study, which is pending peer review, Schlegel determined that feeding the hamsters a high-fat diet supplemented with beans lowered cholesterol levels similar to a low-fat diet at only 3 percent of the weight of the diet. Before the hamsters are provided the diet, the beans are tested through various instrumental based tests to thoroughly characterize their vitamin, protein, carbohydrate, fiber and micronutrient contents. After testing, groups of 11 hamsters are caged individually and fed one of three diets (1%, 3%, and 5% per weight of the diet supplemented into a high-fat diet) over the span of four weeks. Some hamsters are fed a low-fat control diet, while others are fed a diet high only that contains fatty acids and cholesterol. The hamsters are allowed free access to food and water and can eat as much as they want. Their weights are monitored weekly and fecal samples are collected to show the level cholesterol being excreted.

At the end of four weeks, the hamsters' plasma and blood are drawn and a wide range of different cholesterol markers are tested through various methodologies. This includes non-high-density lipoproteins (bad cholesterol) and high-density lipoproteins (good cholesterol). In addition to the cholesterol marker tests, the hamsters' livers are weighed and the triglycerides are measured, which is important as liver weight is affected by fatty diets.

Schlegel's study showed that the hamsters that were on the high-fat diet had liver weights that were higher than those on the low-fat diet and the hamsters on the high-fat diet supplemented with the beans at any of the three levels had the same liver weight as the hamsters on the low-fat diet. The study also showed that the hamsters on the high-fat diet gained weight compared to those on the low-fat



"Limited work has been completed on foods that will lower cholesterol when you're eating a high-fat diet like most Americans do," Schlegel said. "Having an alternative to statin drugs, which are expensive and toxic, may have multi-targeted effects with various types of cellular stresses that are caused by high-fat diets as well, such as intestinal stress that can lead to bowel cancer and irritated bowel syndrome."



Vicki Schlegel

diet, while the hamsters on the high fat diet with beans had the same weight as the subjects on the low-fat diet. Schlegel believes that this research could eventually lead to developing alternative methods for lowering cholesterol, which many consumers want considering the steadily increasing prices of drugs and their side effects.

"Limited work has been completed on foods that will lower cholesterol when you're eating a high-fat diet like most Americans do," Schlegel said. "Having an alternative to statin drugs, which are expensive and toxic, may have multi-targeted effects with various types of cellular stresses that are caused by high-fat diets as well, such as intestinal stress that can lead to bowel cancer and irritated bowel syndrome."

Schlegel said she believes that increased research on great northern beans could also influence producers and land use by promoting the consumption of great northern beans.

"What we want to do is connect the health benefit with the composition of the beans and go back to breeders and say, 'Can you grow them or produce a hybrid with this combination of components?'" Schlegel said. "If we can produce a bean that is healthful, it will increase the market demand thus increasing the demand for beans. Farmers will then have alternative crops to grow or are able to increase their market status prices."

As her research continues, Schlegel hopes to better understand how we can grow or cook a bean so that it might have a double action or a less toxic action. She's also interested in studying cooking methods that can keep the components of the great northern bean intact without denaturing them.

ALUMNI

Where are they now?

An interview with graduate Megan Bonin

Megan Bonin's interest in food and cooking developed while she was in high school. A native of Federal Way, Washington, Bonin stayed on the west coast after high school to attend the Oregon Coast Culinary Institute where she received her associate's degree. Mention of the university's culinary science program by her chefs caught her attention and she thought it would be a good way to mix two of her interests – food and science.

"I worked in a kitchen before and after culinary school. I didn't mind the busy work or pace, but I didn't feel like I was being treated the right way," she said. "I thought that if I went back to school and got my bachelor's that I could do something else."

When Bonin first contacted the university, she mentioned an interest in food science, not culinary science. She realized after six months that she was in the wrong program. After talking to her advisor, she decided that staying with food science would be better as it would open more doors for her in the future. The first door opened when she met representatives from Cargill at a university career fair.

"I didn't exactly know what Cargill was when I decided to just try for an interview," she said. "I stepped out on a limb and it worked out for the best – I interviewed straight into a position."

After receiving her bachelor's degree in food science and technology in 2013, Bonin took the position of food safety, quality and regulatory chemist at Cargill in Blair, Nebraska. She works in Cargill's food ingredients and products manufacturing division, specifically with starches and sweeteners. At Cargill's corn lab in Blair, corn is bought locally from farmers and processed into a range of products that include high fructose corn syrup, lactic acid, animal feed, corn oil and ethanol. Bonin's job as a chemist is to test in-process products and approve final products.

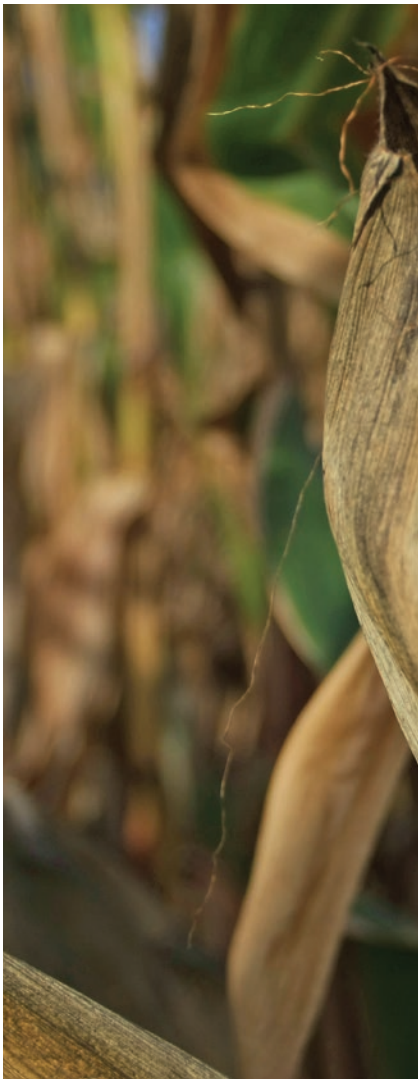
Of the three processes in the corn lab—milling, refining and animal feed manufacturing—Bonin has spent the most time working in high fructose corn syrup refining. Product testing during the refining process is important for both Cargill and consumers.

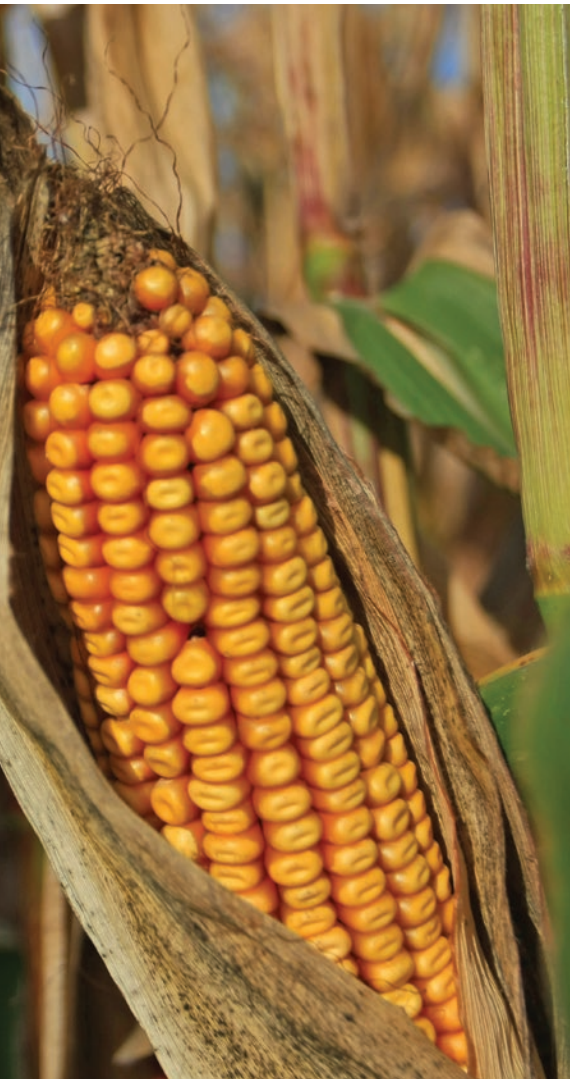
"In the beginning, we want to make sure we maximize the ability for enzymes to work as fast as they can – it saves time and money and speeds up our process," she said. "As we go through the system, we also want to make sure that we don't have any biological contaminations."

Bonin also works as an internal auditor in addition to her responsibilities as a chemist. In this role, she makes sure that Cargill's safety systems are up to date and compliant with document records. She believes that internal audits ensure all employees are educated and aware of how everything works – not just the food safety and management teams, but all the way down to chemists, technicians and operators.

For Bonin, the best part about working for Cargill is the opportunity to work on projects outside of her area of focus, which is an opportunity that she thinks would be hard to find working for another company.

"They always want you to find your niche – to strive and become who you want to be," she said. "I've really been passionate about food safety and have gotten to work on projects around food safety."





FACULTY

Upcoming FPC professional development opportunities

Opportunities for employees to obtain new skills and knowledge are critical for any company to remain successful and competitive. The Food Processing Center provides companies with a variety of unique training and educational opportunities designed specifically for the food manufacturing industry and presented by industry and faculty experts. In addition to the opportunities listed below, The Food Processing Center can work with your company to customize learning experiences for your employees, including on-site presentations. For more information on on-site options, please contact Jill Gifford at jgifford1@unl.edu or 402-472-2819.

Food Processing Management Certificate Online Program
Ongoing

Food Microbiology Workshop
March 21-23

Recipe to Reality Seminar
April 1

Better Process Control School for Acidified Foods
April 3-4

Extrusion Workshop
May 9-11

Recipe to Reality Seminar
June 24

FSPCA Preventive Controls for Human Food Course
June 27-29

Recipe to Reality Seminar
August 19

Better Process Control School
September 26-28

Recipe to Reality Seminar
October 28

Craft Brewers Workshop
Date TBD

For complete information, visit fpc.unl.edu

Undergraduate Student Sarah Herzinger

STUDENT

First-generation undergraduate finds success in the classroom, FPC internship

Sarah Herzinger, a junior double major in food science and technology and food technology for companion animals got her start raising grain on her family's farm in Beemer, Nebraska. Those experiences eventually led to her curiosity of what happens as food leaves the farm and hits consumers' forks.

"I watched as our grain went to our local elevator, but the process of returning it back to us as food is what sparked my interest," Herzinger said. "That's why I chose this major."

She came to the university with dual credits from Northeast Community College, but had to fill gaps in her schedule to be a full-time student. She discovered that she was only a few classes away from a second major in food technology for companion animals and decided to pursue both majors. Herzinger believes that having both majors will help her achieve her goal of working at a company like Nestlé Purina, where she could produce food for both humans and companion animals.

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Graduate Student Mallory Suhr

STUDENT

Suhr researches gut bacteria as part of Ph.D. program

Second-year doctorate student Mallory Suhr planned to go to medical school after completing her bachelor's degree, but an internship at the U.S. Meat Animal Research Center sparked her interest in microbiology. She decided to continue her education through the graduate program in food science and technology.

A native of Seward, Nebraska, Suhr graduated from Hastings College with a bachelor's degree in biology. She chose the Department of Food Science and Technology's graduate program because she was interested in food safety and microbiology and knew the department's reputation in the field. She studied gut fungi for her master's degree but switched her focus to gut bacteria for her doctoral program.

Her current research focus is discovering new compounds in plants that illicit specific shifts in the gut microbiome that are associated with human health. Specifically, she looks at the association between dietary molecules and gut bacteria to determine if it's possible to shift the microbiome through dietary regimen.

"Before I got into this department, I had no idea that gut bacteria were so important to health," she said. "Now, being in this department and having technology to study all of this, we're able to sequence all of the bacteria in the gut – it's quite amazing."

In addition to her research, Suhr is a lab manager for Andrew Benson, her faculty adviser. She oversees all of the people in the lab, manages the budget, orders supplies and works on a number of projects. She enjoys the culture in the department and feels that that the students and professors have been the best part of her experience.

"We have a lot of people from a lot of different areas within food science and we collaborate all the time," she said. "They're positive supporters, and we always help each other out."

When she's not researching or managing the lab, Suhr enjoys living an active lifestyle. She played softball in college and continues to play basketball, volleyball and softball year-round. Sports are her go-to getaway for fun, exercise and stress relief.

Suhr wants to stay in academia after completion of her doctorate and is interested in teaching microbiology and molecular biology labs.

FACULTY

Welcome New Members

JACQUES IZARD – ASSOCIATE PROFESSOR

Izard studies how bacteria, as part of a microbiome, are organized in a host as a functional population in health and disease. The main focus of his research is around the support provided by bacteria to keep us healthy. One of his interests is the investigation of the effect of diet components on the microbiome and its impact on the host. Izard received his master's degree and doctorate in cell biology and microbiology at Aix-Marseille University in France and completed postdoctoral work in microbiology at the Wadsworth Center of the New York State Department of Health in Albany, New York.

KAUSTAV MAJUMDER – ASSISTANT PROFESSOR

Majumder will be teaching protein chemistry and sensory evaluation courses and developing a course for students to understand the intestinal absorption, bio-availability and bio-accessibility of dietary proteins and peptides. His research program will explore the health effect of food-derived bioactive proteins and peptides and evaluate their therapeutic potential for the treatment, prevention and management of hypertension, type-2 diabetes and associated metabolic disorders. His research will also delineate the molecular mechanisms of food-derived bioactive compounds to reduce the pathogenesis of hypertension and related metabolic disorders. Majumder has a bachelor's degree in biotechnology from the West Bengal University of Technology in India and a master's degree and doctorate in food science and technology from the University of Alberta in Canada. He was a postdoctoral fellow at the University of Guelph (Canada) in the Department of Food Science.

MARY-GRACE DANAO – RESEARCH ASSOCIATE PROFESSOR

Danao's area of expertise is value added food processing. Danao will develop an applied research program in food engineering, participate in outreach programs of the Food Processing Center and teach a unit operations and separation process principles course beginning in the spring 2017 semester. Her research experience spans from developing sensor technologies to characterize food systems and bioenergy crops to assessing postharvest losses of cereal grains and oilseeds throughout the supply chain in Brazil. She received her bachelor's degree in agricultural and biological engineering from the University of Florida and her master's degree and doctorate in Biosystems and Agricultural Engineering from the University of Kentucky.

MEI LU – ASSISTANT PROFESSOR OF PRACTICE

Lu works with the 3+1 cooperative program. Her main responsibility is teaching upper-level undergraduate courses in the area of food chemistry/analysis and nutrition. Her research interests include evaluating the safety and allergenicity of genetically engineered crops and investigating the effects of food processing on the allergenicity of foods. Lu received her bachelor's and master's degrees in food science and technology from Jiangnan University in China and her doctorate in Food Science and Technology from the University of Nebraska–Lincoln.

JIAJIA CHEN – ASSISTANT PROFESSOR OF PRACTICE

Chen's expertise is in food engineering. His main responsibility is teaching food engineering and processing courses for the 3+1 program. His research interest focuses on developing multiphysics-based computer simulation models of food processes for improving food quality and safety. Chen received his bachelor's degree in environmental engineering, his master's degree in environmental science and engineering from Beijing University of Chemical Technology in China and his doctorate in agricultural and biological systems engineering from the University of Nebraska–Lincoln. Prior to joining the Department of Food Science and Technology, he worked as a research assistant professor in the Department of Biological Systems Engineering.

Jacques Izard

Kaustav Majumder

Mary-Grace Danao

Mei Lu

Jiajia Chen

KUDOS

Congratulations to the Grads

Kwame Andoh-Kumi – Ph.D.
Anamika Bagchi – M.S.
Phoebe Chong – B.S.
Juan Ortuzar Irarrazaval – M.S.
Shyamali Jayasena – Ph.D.
Kyra Mathis – B.S.
Thomas Morehouse – B.S.
Sviatoslav Navrotskyi – M.S.
Joao Carlos Gomes Neto – Ph.D.
Lee K. Palmer – M.S.
Shengqian Sun – Ph.D.
Minon Wilkinson – B.S.
Junsi Yang – M.S.
Roxana Yglesias – Ph.D.

Awards and Recognition

MILDFORD HANNA – EMERITUS PROFESSOR
Recently joined the university the Biological Systems Engineering Hall of Fame.

STEVE TAYLOR
Career Innovation Award

NEOGEN
Commercialization Partner of the Year Award

GENERAL

Labeling services available for new regulation compliance

Understanding FDA and USDA labeling regulations can be a daunting task for any company. In May 2016, amendments in the FDA regulations were created for the labeling of conventional foods. Some of these changes provide updated nutrition and consumption information, different presentation and requirements for the nutrition facts panel, all to assist consumers when making food choices to maintain healthy dietary practices. Food manufacturers must be compliant with the new regulations by July 2019. Some manufactures must comply sooner, although it depends on the size of the company.

If labels aren't up to date or labeling mistakes are made, consequences are possible for both food manufacturers and consumers. Labels and recalls are expensive for manufacturers, so small mistakes can cost millions.

The Food Processing Center employs experienced food scientists with backgrounds in food labeling and product development to better assist in labeling compliance. With its ties to the university, access to a wide variety of specialized research and resources is also available. The software used for database nutritional labels is updated twice yearly, and software suppliers are re-screened every five years. In addition, The Food Processing Center's food scientists look for red flags and can provide support and consultation during the labeling process.

The following fee-based services are offered to food manufacturers and businesses of all sizes:

LABEL REVIEW:

- Nutrition facts panel
- Ingredient statement and allergen declaration
- Nutritional claims
- Statement of identity
- Net contents statement
- Type size and placement requirements

CONSULTING:

- Product-specific regulations
- Identification of government regulations

NUTRITION FACTS PANEL:

- Chemical analysis
- Database
- Appropriate format selection

INGREDIENT STATEMENT AND ALLERGEN DECLARATION:

- Concise ingredient list
- Allergen declaration

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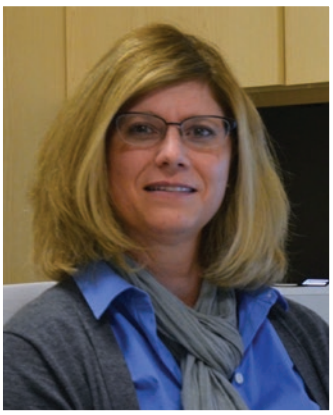

Bethany Jackson

NUTRITIONAL CLAIMS:

- Claim acceptability
- Appropriate phrasing
- FDA/USDA approved phrasing
- Nutrient content claims
- Health claims
- Qualified health claims
- Structure and function claims

To learn more about how The Food Processing Center can help you with food labeling and regulatory compliance, visit fpc.unl.edu, or contact technical services manager Bethany Jackson at 402-472-8917 or bjackson4@unl.edu.

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First-generation undergraduate finds success in the classroom

As an only child and first-generation college student, Herzinger faced some challenges transitioning to college life. She credits the Dean's Scholars in Experiential Leadership (DSEL) seminar and the Office of Academic Success and Intercultural Services (OASIS) with helping during her transition to the university.

"DSEL really helped me get to know the dean's office and the dean," Herzinger said. "We had monthly meetings with OASIS and study hours to help with the transition. Both programs were super supportive and wanted me to succeed in college."

When she's not in class, Herzinger is a student worker in The Food Processing Center's pilot plants. She assists in completing trials to test new product formulations and cleans and prepares equipment after each run. She sees her job in the pilot plants as a way to apply the skills that she's learned in classes to real work and network with industry pros.

"I'm not just reading it in a book," she said. "I'm getting my hands dirty with experience."

Herzinger is also involved in student organizations including Students for the Education of Exotic and Companion Animals, Food Science Club and the National Society of Collegiate Scholars. She also enjoys hanging out with friends, baking and cooking, and returning to her family's farm to help when she has time.

Herzinger was recently accepted for a product development internship at ConAgra Foods in Omaha for the upcoming summer and is on track to graduate with both majors in May 2018.

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The Department of Food Science and Technology and The Food Processing Center Alumni Newsletter is published by the Department of Food Science and Technology and The Food Processing Center in the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln under the auspices of the department head.

The importance of alumni contributions

Private support is essential to recruit outstanding undergraduate and graduate students, provide timely and applicable research findings and expand our outreach to small businesses and entrepreneurs across the state. In these times of shrinking budgets and decreasing state support, donations from our alumni and friends are critical. We hope you will consider making a gift to assist us in these efforts. Contact the University of Nebraska Foundation to contribute to the following funds:

Food Science & Technology Student Scholarship Fund No. 1359: This fund provides much needed financial support to our undergraduate students, an invaluable aid to our recruitment and retention efforts.

Food Science & Technology Research Fund No. 1452: This fund sponsors research activities with the Department, including undergraduate student research and travel support for graduate students to attend scientific meetings.

Food Science & Technology Development Fund No. 4312: This fund provides general support to the Department and is specifically used to enhance undergraduate student recruitment efforts (high school visitations, etc.)

To make a gift, contact Ann Bruntz at 402-458-1176 or abruntz@nufoundation.org.

LET US KNOW WHAT YOU THINK!

We'd love to hear from you! For any feedback or story contributions you'd like to see in future issues, email us at **FOODSCI@UNL.EDU**.

University of Nebraska Lincoln