

NEWSLETTER

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY
THE FOOD PROCESSING CENTER



Corn storage key to greater food security in Guatemala

Guatemala has the fourth highest prevalence of chronic malnutrition and one of the lowest food security indicators in the world. Better storage of corn in metal silos could increase the quality of the corn Guatemalans eat and decrease malnutrition.

“Corn is the dietary staple of Guatemala, and its availability, quality and safety is directly related to food security and public health,” said Andrea Bianchini, research assistant professor in the UNL Department of Food Science and Technology and The Food Processing Center. She is a member of a research team studying the use of metal silos to improve the storage of corn harvested in the highlands of Guatemala.

In addition to funds provided by US-AID to create the Feed the Future Innovation Lab for the Reduction of Post-Harvest Losses at Kansas State University, which Bianchini is part of, the project in Guatemala received a two-year, \$39,050 award from USDA-SCRIP. This latest award, with Bianchini as the PI, will help to expand the scope of the work underway in Guatemala.



Andrea Bianchini & graduate student Luis Sabillón

their Mayan heritage. These traditional practices may lead to improper post-harvest management and storage conditions that can cause crop losses of up to 30 percent, primarily due to pests and molds in stored grain. The insects can create entry points for mold establishment as well as transfer mold spores from infected kernels to healthy kernels. This can lead to the production of mycotoxins, which are chemicals produced by fungi that can cause severe illness or death in humans and domestic animals.

The interventions provided by this project are expected to positively impact the health of the people living in the Huehuetenango region of Guatemala by reducing their exposure to mycotoxins and increasing the amount of corn available for consumption. The project also is expected to provide education regarding the benefits of good post-harvest practices and possibly result in additional income for the farmers. In the long term, it is expected that if the implemented storage practices are maintained, the levels of stunting among children under age 5, as well as the child mortality rate related to malnutrition, would be reduced.



Much of the corn produced by farmers in the Guatemalan highlands is cultivated, harvested and handled using subsistence-oriented agricultural practices that are part of

Greetings from the Department of Food Science and Technology and The Food Processing Center!

We are getting closer to our move to Nebraska Innovation Campus, and I have wonderful news to share. The Nebraska Research Initiative has approved over \$1 million for an ARD proposal for the Food Science and Technology/The Food Processing Center Pilot Plants on Innovation Campus.

Along with other new equipment for alternative unit operations, the addition of a 55L High Pressure Pasteurization (HPP) unit and a continuous HPP system will complement the current 2L HPP we have. These units are critical for the new High Pressure Processing Development Consortium we are forming with Universal Pasteurization/Cold Storage, the Nebraska Department of Agriculture, the Nebraska Department of Economic Development, and other partners to join us in the near future.

This equipment will catapult our applied research to higher levels, increasing our service to the food industry and entrepreneurs (see the story on page 5 about an entrepreneur using HPP technology). It also will create optimal educational conditions for our undergraduate and graduate students, and provide a unique environment that will connect basic research to consumer needs.

We are very appreciative of the strong support from the administration of the Institute of Agriculture and Natural Resources and from the central administration of the University, which has made this possible. In addition, the Agricultural Research Division is contributing \$150,000 for equipment installation and maintenance.

The Department will move to Innovation Campus this summer with the exception of the Dairy Store, Dairy Plant and the level 2+ biosafety pilot plant, which will remain in their current locations on East Campus.

We are very pleased to announce the long-term partnership of Wenger Manufacturing with The Food Processing Center. Wenger Manufacturing has been a close partner of The Food Processing Center since its beginnings, and it is extending support to the Center via a credit arrangement of \$30,000 renewable annually. As Lafe Bailey, Wenger Co-CEO & President-Sales Business Development, put it, "This will help better serve industry clients and accomplish various research projects in an effective manner."

Moving with us are our new faculty members – George Cavender, Melanie Downs and Philip Johnson. Dr. Cavender, who is a specialist in HPP, is a research assistant professor focusing on value-added processing. Assistant professors Downs and Johnson research food proteins, allergens and the use of mass spectrometry in allergen detection. They came to support the food allergen program in the Department. To learn about them, see pages 3 and 8.

The development of the Alliance for Advanced Food Sanitation (AAFS) continues, and the Organizational Charter and the letters of intent of the founding members have been finalized. The Alliance has been developed by UNL in cooperation with industry partners to conceptualize, create and disseminate improved sanitation approaches and practices with and for the food industry. Our next issue of this newsletter will have more details about the Alliance; do not hesitate to contact us if you want more information.

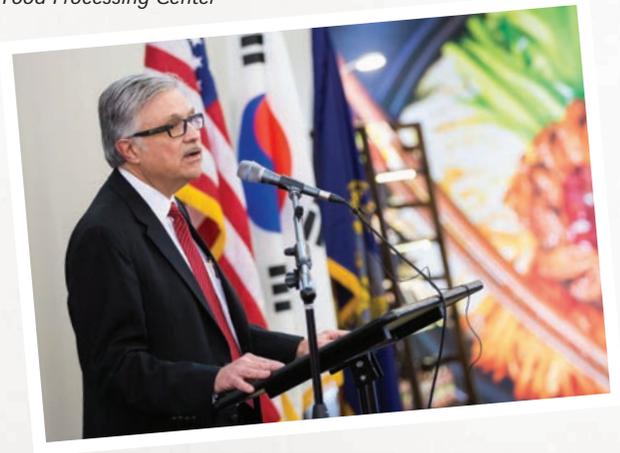
The new facilities, the new equipment and the addition of our new faculty are like a dream come true. We hope you will visit us in our new home on Innovation Campus – after we are settled there. You can check our NIC move page, <http://foodsci.unl.edu/nic-move>, for the latest information about our move.

Best wishes,



Rolando A. Flores

*Professor and Head, Department of Food Science and Technology
Director, The Food Processing Center*



New faculty thrive at the intersection of food and science



Melanie Downs



Phil Johnson

Melanie Downs and **Phil Johnson** are among the newest members of the Food Science and Technology faculty.

Downs, an assistant professor, received her undergraduate and graduate degrees from the department. For her Ph.D., Downs participated in a split program between UNL and Clare Mills at the University of Manchester in the United Kingdom and spent 2 ½ years in the UK conducting research.

Johnson, also an assistant professor, received his B.Sc. in molecular biology and biochemistry from Durham University, UK, and his Ph.D. in biochemistry from John Innes Centre/ University of East Anglia, UK.

Because Downs and Johnson have similar research interests related to food allergens and protein mass spectrometry, they answered questions about their work as a team.

What is the focus of your research?

Our research programs focus on the application of protein mass spectrometry and proteomics to the study of food allergens, including:

- Identification and characterization of food allergens
- Development of quantitative detection methods for food allergen residues
- Investigation of the behavior of allergens in physiological systems
- Assessment of modifications to allergens induced by thermal food processing
- Evaluation of food allergen preparations used in biopharmaceutical applications

Why is your research important? How will it make a difference to the food industry and consumers?

As there are no approved treatments for food allergies, allergic consumers must maintain strict avoidance diets to prevent potentially severe or life-threatening reactions. The food industry, in turn, is responsible for providing products that are safe for allergic consumers by abiding by the relevant food safety regulations.

In a number of cases, the industry needs confirmatory analytical techniques to resolve issues related to the presence of undeclared food allergens in a product. Protein mass spectrometry has tremendous potential to be the best

confirmatory method for these purposes, and we are hoping to develop these methods here, for use by the food industry.

In addition, the root causes of food allergy are poorly understood. By studying the proteins that are the allergens in foods, we will contribute to the fundamental understanding of the disease to develop more refined prevention and treatment strategies.

Do you teach? What do you hope your students learn?

Beginning in the spring 2016 semester, we will be co-teaching a class on food proteins (FDST 880P). We hope that our students will learn about the diversity of protein properties that contribute to the functionality of proteins in foods.

In addition, we will look to expand their knowledge of advanced techniques for food protein analysis. The combination of these two primary objectives will allow the students to apply their food protein knowledge and have an impact in research and/or industry settings.

Why did you want to join this department and university?

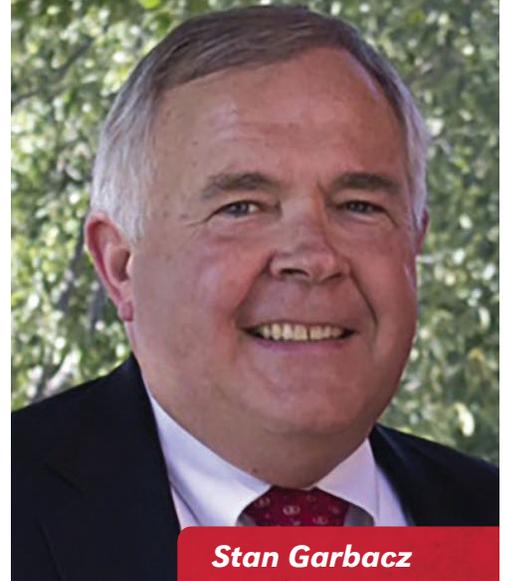
The Department of Food Science and Technology, as well as the affiliated Food Allergy Research and Resource Program (FARRP), has a strong reputation in the field of food science and food allergy. The focus of the department on the intersection of food and health was a particularly compelling factor. With FARRP, the international recognition of the program and its co-director, Steve Taylor, made this an ideal location to start research programs focused on the application of protein mass spectrometry to food allergens.

What made you decide to work in the area of food science?

Downs: I've always had a personal passion for food. Back in high school, at a time when I was considering going to culinary school, I read an article about chefs who were bringing chemistry into the kitchen to develop new gastronomic creations. From that moment, I was hooked on the scientific aspects of food. As I learned more and more about the science behind the food that we eat every day, the more interested I became in pursuing a research career in food science.

Johnson: Food science allows the application of chemical, physical and biological sciences to food production and safety.

Garbacz takes lead for FPC Advisory Board



Stan Garbacz

The Food Processing Center's advisory board benefits The FPC, board members and the agricultural industry.

"In general, the board is asked to provide third party input for The FPC," said Stan Garbacz, advisory board chair, "but it also is a unique opportunity for board members to gain insight into the work both in research and academics that The Food Processing Center is doing."

The advisory board, which was established in 2008, is part of the center's ongoing process of improvement. Board members are professionals working in a variety of roles across the food industry. Their charge is to bring an innovative and focused approach to food-related issues that impact Nebraska and the nation and to assure clients that The FPC is concerned about the

needs of the industry and responsive to Nebraska's value-added agricultural businesses.

One of Garbacz's priorities is developing new ways to increase awareness of food science and The FPC.

"The FPC is like the proverbial light hidden under a basket," said Garbacz, agricultural trade representative for the Nebraska Department of Agriculture.

"We need to uncover The FPC's bright light so more people know about this remarkable staff doing such remarkable work," he said. "It is our duty to get the word out so more people in the state, the United States and internationally learn about the work being done and the cutting-edge technology being used to do it."

Grants awarded to FST over last 6 months

SELECTED GRANTS

DR. JEYAM SUBBIAH

"Open-source multiphysics code to unlock parallel computing to design microwaveable foods for improving quality and safety"
\$375,000

DR. HEATHER HALLEN-ADAMS

"NC-1183: Mycotoxins: Biosecurity, Food Safety and Biofuels Byproducts, Mycotoxin profiles of Fusarium head blight pathogens"
\$196,146

DR. OZAN CIFTCI

"Development of a Novel Green Process for the Production of Bioactive Carrier Solid Lipid Nanoparticles"
\$10,000

DR. VICKI SCHLEGEL

"Assessment and Development of Dry Edible Bean Varieties Grown in the Central High Plains as an Anti-inflammatory Food for Western Societies"
\$467,047

DR. DEVIN ROSE

"Extrusion Processing of Dry Edible Beans to Increase In Vitro Magnesium Bioaccessibility"
\$35,140

"Gut microbiota profiles among endurance runners and sedentary controls: relationships with diet and gastrointestinal distress"
\$10,000

DR. ANDRÉIA BIANCHINI

"Quantitative reverse transcriptase PCR rapid detection and quantification method for viable yeast and molds in dairy products"
\$39,973

"Mapping changes in sporeforming bacteria contamination along the production chain"
\$4,987

DR. AMANDA RAMER-TAIT

"Roles of milk-borne microRNAs in the regulation of gut inflammation"
\$499,812

FPC helps Park add Korean flavors to U.S.

After attending The French Culinary Institute in New York City, Suji Park, originally from Korea, decided she wanted to bring Korean food to North America. "It was clear that Korean food was not yet well-understood here and that there was an opportunity to introduce Americans to amazing Korean flavors," she said.

After finishing her studies at the culinary institute, Park returned to Seoul and opened award-winning restaurants and retail food lines in Korea and Japan. But she never lost sight of her dream to bring high-quality Korean food to the United States.

"I'm back to make Korean food easy for any home chef in America," she said. All of the Suji's Korean Cuisine product lines are manufactured in the United States, under direction from the headquarters in Omaha where Park, company founder and "Chief Inspirational Officer," now lives.

WHY OMAHA?

"It is the Silicon Valley of meat preparation and packaging, and the best place to realize my vision of authentic Korean cuisine with a completely clean label," she said. "It's also a great city to live!"

Park credits The Food Processing Center with helping her dream become reality. The FPC assisted in the formulation of the all-natural, MSG-free recipes, the interior and exterior packaging design, the shelf-life studies and the technology that enabled the creation of high-quality products with a long shelf life without the need for preservatives.

The Food Processing Center was and remains instrumental to the creation of Suji's Korean Cuisine and the company's move to Omaha, she said.



Suji Park

The refrigerated, frozen and shelf-stable product line includes authentic Korean foods, such as bulgogi, which is marinated, thinly-sliced meat, rice bowls, dumplings and sauces. All products are made with a short list of healthy ingredients intended to be easily understood and prepared at home. Only the finest premium cuts of USDA beef and quality U.S. pork are sourced for these products, Park said.

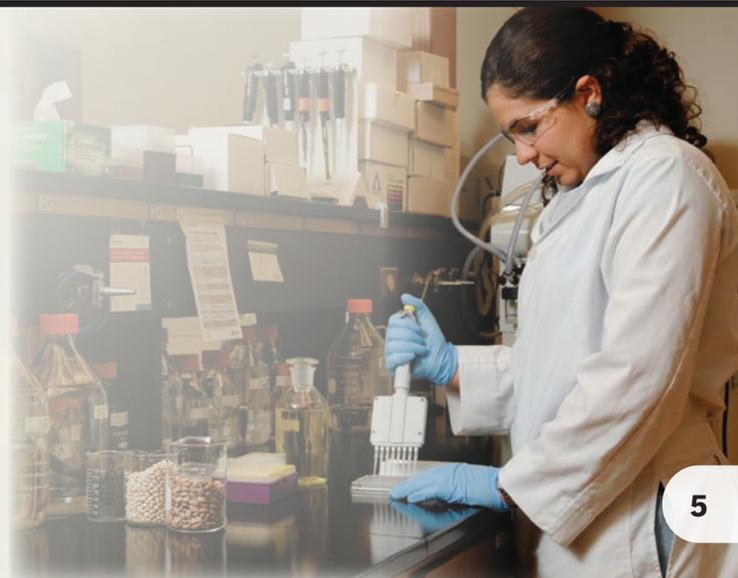
"There is a growing appreciation and interest in bold Asian flavors in America. The response has been very positive," she added.

BRAIN FOOD

As alumni of the Food Science and Technology program you understand the importance of scholarships to students in the program.

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

CAMPAIGN for
NEBRASKA
UNIVERSITY of NEBRASKA FOUNDATION



Studying cereal grain safety to head off risk

Jayne Stratton and graduate student Bismarck Martinez

Escherichia coli O157:H7 is a foodborne pathogen that can cause severe infection in humans. Illnesses caused by these bacteria are mainly associated with undercooked beef.

In recent years, however, outbreaks have been linked to fresh produce such as spinach, lettuce and sprouts. In 2009, flour was implicated as the contamination source in an outbreak involving consumption of raw cookie dough that resulted in 77 illnesses.

Jayne Stratton, research associate professor in the Department of Food Science and Technology and with the Food Processing Center, and her colleagues have been doing research on the safety of cereal grains to determine if the potential exists for more large outbreaks related to these foods.

"Cereal grains comprise a large percentage of the American diet. As much as 25 percent of our calories comes from these foods," Stratton said.

"If there is an outbreak of foodborne disease from contaminated flour, it could impact a large number of people. There is also a trend toward consuming minimally processed, uncooked or raw foods. This also creates new challenges for manufacturers to keep these products safe," she said.

After *Salmonella enterica*, pathogenic *E. coli* is the second most important causal agent of outbreaks from fresh produce such as lettuce, spinach and sprouts. *E. coli* O157:H7 has been shown to internalize into these plants, especially into the intercellular space, via the root system through contaminated manure, soil or water. Internalization protects the organism from washing steps that are meant to eliminate contamination.

"The ability of *E. coli* to internalize into produce has been well-studied. However, this is the first time anyone has studied whether the organism can internalize into wheat," Stratton said.

The origin of the project came from ConAgra, a large manufacturer of wheat flour. After the outbreak from raw cookie dough, ConAgra was interested in learning more about potential risks of contamination of wheat in the field from various environmental sources and believed the University of Nebraska had the resources to help.

Stephen Wegulo, professor in the Department of Plant Pathology, collaborated on the project and provided materials such as seed and soil for the experiments. Stratton's food science graduate student, Bismarck Martinez, conducted the research, which eventually became the topic of his master's thesis. The

results showed that internalization into wheat seedlings was possible using contaminated seed, soil and irrigation water, with internalization rates of 2, 5, and 10%, respectively, as shown in Table 1.

EXPERIMENT	POSITIVE SAMPLES/TOTAL # SAMPLES	INTERNALIZATION RATE (%)
Seed contamination	2/96	2.1
Soil contamination	5/100	5
Irrigation water	10/100	10
Total Controls	0/50	0

Table 1. Internalization of *E. coli* O157:H7 in seedlings using different sources of contamination.

Adapted from: Martinez, B., Stratton, J., Bianchini, A., Wegulo, S., Weaver, G. 2015. Transmission of *Escherichia coli* O157:H7 to Internal Tissues and Its Survival on Flowering Heads of Wheat. *J Food Prot* 78, 518-524.

“Even though these rates were low, another experiment showed the ability of *E. coli* O157:H7 to survive on the wheat head for as long as 15 days,” Stratton said. “This indicates the need

to continue to push for good agricultural practices in the production of all commodities destined for human consumption, even those that are considered low risk.”

Wheat fields are often close to livestock where there is abundant manure. This could increase the risk of contamination of wheat heads with this pathogen during rain storms or irrigation.

“This research was an excellent example of how industry and academia can partner together to solve problems and develop key strategies in managing food safety risks,” Stratton said.

It also led to a joint publication in the *Journal of Food Protection* that was published in March 2015.

“Our lab continues to focus on the area of cereal grain safety because there are few researchers studying potential problems in these foods because of their safe history,” Stratton said.

“However, history shows us that foodborne pathogens have the ability to adapt and exploit new opportunities to create public health issues. Therefore, food safety researchers have to try to stay one step ahead of the next challenge.”

Cavender focuses on process in teaching, research, outreach



George Cavender

Research assistant professor George Cavender has the best of three worlds in food science. He does research; he gets to work with people in the food industry through his Extension activities; and he teaches in the Department of Food Science and Technology.

Cavender's research focuses on high pressure processing (HPP), a non-thermal process that the industry relies on to reduce pathogens and extend the shelf life of food products. He is exploring the use of HPP to modify polymers for use in novel formulations.

He also is investigating ways to use fruit and vegetable waste in new applications; for example, using that waste to make packages such as egg containers. Another area of research is water and energy use in the food industry for sustainable purposes. "The food industry uses a lot of water and energy," he said. "Is there some way to reduce the use of those resources and reuse wastewater safely?"

Cavender, who received his Ph.D. in Food Science from the University of Georgia, has a strong background in engineering. He came to UNL from Oregon State University in Corvallis, Oregon, where he was a post-doctoral associate in the Value-Added Food Processing Laboratory under the direction of Yanyun Zhao. He earned his B.S. in biological engineering, also from the University of Georgia. "I'm not a microbiologist. I'm a process engineer interested in the quality and safety of food," he said.

Cavender enjoys teaching Food Science and Technology courses in heat and mass transfer, and fruit and vegetable processing. Many students are good at memorizing facts short-term, but ideally, Cavender said, he'd like his students to understand the principles behind what he's teaching — "not just what happened but why it happened."

As one of the instructors for The FPC Better Process Control School and other workshops, he has an opportunity to work with professionals in the food industry, which not only gives him an opportunity to teach but to learn more about the issues facing the food industry.



Spring in For Ice Cream

Ah, spring. With the warmer temps and summer just around the corner, you might find yourself thinking more about ice cream. Scarlet & Cream, Bavarian Mint, Butter Brickle - we have all your favorites. So stop in. Every scoop we serve supports UNL's educational mission, no matter what season it is.



Senior interning with Land O'Frost in Chicago

Alexandra Tobin

When Alexandra Tobin began attending the University of Nebraska–Lincoln, she didn't know what she wanted to be when she grew up.

Tobin, who grew up in Chicago, didn't declare her major for two years. Then, she took an online food science course taught by Professor John Rupnow.

"It was a general food science class but it was great class. I loved it," she said.

After discussing possible majors and careers, her father encouraged her to major in food science.

"Dad knew I wanted to do something that I could apply in the real world and that would make a difference, that could help people," she said.

Food science fits her interests.

The Department of Food Science and Technology is a good fit, too. "The faculty are great. You get to know the professors on a personal level. They know my name and I know their names," Tobin said. "They are extremely helpful. They care about their students and they are interested in their success."

She will be working as an intern in food safety with hot dogs and lunch meat at Land O'Frost in Chicago this summer.

It's one more step toward a food science career that will enable her to reach her goal of helping people.

Passion for allergen science drives graduate work

Rachel Scott

At the 2012 Institute of Food Technologists annual meeting, Rachel Scott, then an undergraduate at Truman State University, attended a presentation by UNL Food Science and Technology Professors Steve Taylor and Joe Baumert.

"I realized that food science was a very broad discipline and that I could apply my background in science and chemistry to an application that interested me, food, and a problem that I had passion and experience with, allergens," Scott said.

She said that since starting graduate school at UNL in Food Science and Technology, it has been interesting to learn more about all the different facets included in food science.

Scott, who grew up in Dubuque, Iowa, earned her undergraduate degree in chemistry from Truman State University. She is working toward an M.S. in Food Science and Technology in the Food Allergy Research and Resource Program (FARRP).

FARRP develops and provides the food industry with credible information, expert opinions, tools and services relating to allergenic foods, including enzyme-linked immunosorbent assays, which can be used to detect allergenic food residues.

Working with Taylor and Baumert, Scott is researching the effectiveness of qualitative lateral flow devices (LFDs) for milk residue detection. She is investigating the ability of LFDs to detect milk processed under varying conditions and from different food processing surfaces as well as the ability of the LFDs to validate cleaning programs.

A career in food science will combine Scott's interests in food, food allergies and chemistry. She hopes to work in a food industry-related profession after she graduates this December.

"Grad school can provide a very good work-life balance," she said. "UNL is a really good fit for me."

New Staff

Russell Parde

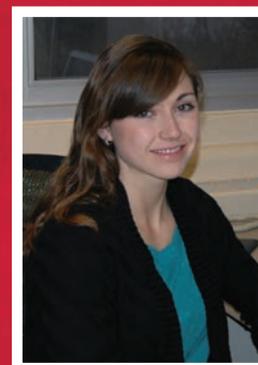
The Department would like to welcome Russell Parde, associate pilot plant manager, to the Food Processing Center team. Russell is a 2012 graduate of the UNL Food Science and Technology program, and was a student worker in the Dairy Plant. Prior to accepting the position with the FPC, Russell worked as a quality assurance lab technician. Russell's office is located in FIC 212.



Sara Roberts

The Department would like to welcome our new student services coordinator, Sara Roberts.

Sara graduated from South Dakota State University with a degree in Food Science. She spent the previous four years in Omaha working in food manufacturing. She is looking forward to working with students, staff and faculty. Sara's office is located in 143C.



Kaiser, UNL '10, brings science to snacks for ConAgra Foods



Steve Kaiser

Imagine eating popcorn for breakfast, lunch and snacks all day. It's not unusual for Steve Kaiser, a Senior Food Scientist at ConAgra Foods in Omaha.

Kaiser, who earned his B.S. in Food Science and Technology in 2010, spices things up in ConAgra Foods' Spicetec® Flavors and Seasonings division where he is part of a team whose primary responsibility is developing flavors and seasonings for snack products. It would be hard to determine the correct seasoning for a food product without tasting it, so an important part of his job is taste-testing.

"I get to eat a lot of salty snacks," he said, smiling. The products Kaiser has worked with include sunflower seeds, crackers, pretzels, pita chips and new flavors in the Orville Redenbacher Gourmet Natural line, such as Zesty Pepper Butter and Sea Salt, Garlic Butter and Sea Salt, and Classic Butter and Sea Salt, which are sold nationwide.

"Everyone tastes food differently. There is no one size fits all," he said. One person might think a food is too spicy, while the next person would consider it too bland. As a result, Kaiser and his colleagues try to find "a happy middle ground" in seasonings and flavors that will have the greatest appeal for most consumers.

Sometimes the job involves testing foods he doesn't particularly like. "I'm not a guy who eats a lot of eggs," he said, so while some members of his team were glad to eat Egg Beaters® Florentine for breakfast instead of popcorn, Kaiser was not as enthusiastic. But he felt because of his disposition, he was better able to hone in on the flavor at hand.

"Fortunately, the development of that product went pretty quick," he said. Kaiser attributes much of his professional success to the education he received in the College of Agricultural Sciences and Natural Resources and the Department of Food Science and Technology.

"I thank my professors for instilling the scientist in me," he said. "I learned something from each and every one of my classes." He particularly appreciates the experience he gained working in The Food Processing Center product development laboratory, where he learned how to set up experiments, keep accurate records and create replications. The lab work was a critical step in getting a ConAgra Foods internship, which led to his career at ConAgra Foods.

There are pluses and minuses to any job but for Kaiser there is only one minor minus. "Depending on the day, sometimes when my wife wants to eat dinner early, I'm just not hungry yet," he said. But he's not complaining. "I love my job," Kaiser said.

SPRING 2015
VOLUME 10, ISSUE 3

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.

Written material may be reprinted, provided no endorsement of a commercial product is stated or implied. Please credit the Department of Food Science and Technology and The Food Processing Center, University of Nebraska–Lincoln.

To simplify technical terminology, trade names sometimes may be used. No endorsement of products is intended nor is criticism implied of products not mentioned.

Chancellor,
University of Nebraska–Lincoln
Harvey Perlman

NU Vice President and
Harlan Vice Chancellor, Institute of
Agriculture and Natural Resources
Ronnie Green

Department Head,
Department of Food Science
and Technology, and Director
of The Food Processing Center
Rolando A. Flores

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**.

The importance of alumni contributions

Private support is essential to recruit outstanding undergraduate and graduate students, provide timely and applicable research, 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, 402-458-1176, abruntz@nufoundation.org.

UNIVERSITY OF
Nebraska
Lincoln®

It is the policy of the University of Nebraska–Lincoln not to discriminate based upon age, race, ethnicity, color, national origin, gender, sex, pregnancy, disability, sexual orientation, genetic information, veteran's status, marital status, religion or political affiliation.