

Food Digest

Department of Food Science and Technology



Joe Marcy

Message from the department head

Greetings,

The newsletter is a chance for us to reflect on the many activities of the Department of Food Science and Technology over the last year and to look ahead.

In our last newsletter we detailed the opportunity to hire two new faculty positions. We are pleased to

announce that Cristina Fernández-Fraguas and Haibo Huang have joined our department. With the addition of these new faculty the department has six assistant professors, the most assistant professors in the history of the department. Also joining our faculty as a research associate is Jian Wu. We feel very fortunate to have Jian join the department after completing his Ph.D. at Virginia Tech.

Bill Eigel retired this year with plans to be more involved with the many service organizations that he and his wife continue to support. We very much miss Bill for his mentoring of students and dedication to teaching but appreciate that he is enjoying his retirement. Sue Duncan has been promoted to associate director of the Virginia Tech Agricultural Experiment Station. She will continue to have a small appointment in the department to continue her research in sensory science and advising graduate students. This year we will start a search to find a new faculty member to provide leadership in sensory research.

A lot has changed in the pilot plants this year with the addition of the Virginia Tech-DuPont Convenience Packaging Collaboratory. This unique partnership brings new packaging

equipment to our pilot plant. Additionally, we made significant progress in getting pilot plant support for the fermentation option we just began. The department now has malting equipment that allows us to process barley into malt and evaluate the finished product. In July we installed our state-of-the-art pilot brewhouse made for us in Munich, Germany. To this we have added advanced pilot plant distillation equipment also manufactured in Germany. It is really exciting to see new equipment being installed in the pilot plant and know that fermentation research and extension will be possible for many years to come.

Recently I vacationed in the Orlando area and saw the themed parks that most of us have enjoyed. A lot of imagination goes into building a world where wizards fly and play Quidditch with their mates and rivals. I realized that imagination is put to good use in our department on a regular basis, also. Our students have received national recognition for their products in national competitions. Our new faculty members are bringing imagination to instruction and experiential learning. Faculty and staff are daily engaged in cutting edge science where their imagination is being stretched.

We hope you will come to see us and more importantly help us build a better Department of Food Science and Technology. We invite you to put your imagination to work to foresee a department in Virginia that serves our students, stakeholders, alumni, and friends in creative and innovative ways.

Best personal regards,

Joe Marcy

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PILOT PLANT BREWHOUSE ARRIVES



Faculty admire the new brewhouse.

Inaugural fermentation celebration held

The Inaugural Fermentation Celebration was held in October to celebrate the acquisition of the brewhouse and the establishment of the HABB1 Pilot Plant Brewery. Showcased were craft beer and cider brewed in our new facility as well as other fermented refreshments and treats. The department, the Food Science and Technology Advisory Board and others attended. We hope to make this an annual event.

The Department of Food Science and Technology is now the proud home of an Esau & Hueber 2.5 hectoliter brewhouse with four temperature- and pressure-controlled fermentation vessels. It is a small, pilot scale brewhouse that imitates big breweries.

In March, Pilot Plant Manager Brian Wiersema and Professor Sean O'Keefe traveled to Germany for factory acceptance testing of the unit. By the end of July, the brewhouse was set up in the Human and Agricultural Biosciences Building I and ready to run.

The brewhouse is for research and teaching only. No beer will be sold. Currently the unit is being used to brew the malt that Virginia Tech is breeding at its research farms. The sensory properties of these beers are being compared to beers brewed with malts

from other regions to see what flavors they produce.

Brewing is an expanding industry in Virginia and is important to the state's economy. The pilot plant brewery in HABB1 hopes to support regional businesses in the farm-to-glass movement and to help companies fine-tune their brews. Extension seminars and training sessions are being planned to assist local brewers with their needs. Researchers can produce and test small batches of beer that can later transition to craft, pub, or commercial breweries.

The brewhouse will also support the new undergraduate fermentation science option. Students taking the Advanced Malting and Brewing Science course can get hands-on experience and be more eligible for internships and employment in the beverage industry.

FST grad owns successful CHEESE MAKING BUSINESS

Carleton Yoder (M.S. 1996) is regarded as one of the most talented cheese makers in New England.

He has been in the cheese making business for about 12 years and is the owner and head cheesemaker at Vermont's Champlain Valley Creamery.

After getting a degree in electrical engineering from Penn State, he went to Virginia Tech for a master's degree. He discovered food science and decided to work on a master's degree in this field.

After graduating, Yoder worked at Woodchuck Cider in Middlebury for 6 years while he thought about what kind of business he could start.

Cheese making was a hobby for him, so he started his business in 2003 with cream and blue cheese manufacture. He won an award for his cream cheese from the American Cheese Society in 2004. Later he developed another award-winning, soft-ripened cheese that he named the Champlain Triple. Yoder makes a Queso Fresco cheese, and a Queso Añejo, which is an aged version of the fresh, soft Queso Fresco.

He would like for the Creamery to grow a little more, but not to the point of having investors.

View the article about Yoder in its entirety at: <http://thewarblervt.com/features/say-cheese/>



FST Leaders

Plans are underway to establish a mentoring group of alumni and friends of the FST Department. Selected individuals will be invited to participate in programs to enhance the student experience in our department. These programs will be developed for both undergraduate and graduate students by an executive committee of FST Leaders. Programs may include an FST Leader speaker series, student visits to Leader facilities and plants, and Leader mentors for product development teams and the Food Science Club. FST Leaders also may act as resources for graduate student research projects and participate in winter semester activities. We will keep you informed as this opportunity to interact with FST students develops.

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Departmental retreat

December's departmental retreat was held at The Inn at Virginia Tech and Skelton Conference Center. Fun activities included a cookie- and white elephant-gift exchange.



Joe Marcy and Joe Eifert pose with the prize white elephant.

The Department of Food Science and Technology welcomes Cristina Fernández-Fraguas

Cristina Fernández-Fraguas joined the department in September as an assistant professor. She is one of eight new faculty members recently hired in the college. She received a master's degree in chemistry and a master's degree and Ph.D. in food science and technology, all from the Complutense University in Madrid.

Her research and teaching is specialized in food colloids and lipid digestion. She has focused her research on molecular structures of bulk physiochemical and interfacial properties of dietary fiber, with the aim of designing ingredients and products to control lipid digestibility and reduce blood cholesterol levels.

She is a member of the Marie Curie Alumni Association and the Institute of Food Technologists.



Boyer receives Andy Swiger Land-Grant Award

Renee Boyer, food science and technology associate professor and Virginia Cooperative Extension specialist, received the 2015 Andy Swiger Land-Grant Award.

The award recognizes faculty whose accomplishments fulfill the land-grant mission of addressing state and national needs through teaching, research, or extension. Boyer's creative achievements in research include her work involving routes of fruit contamination, as well as her evaluation of anti-microbial agents. She has advised numerous graduate students, has authored many peer-reviewed publications, currently participates in the Online Master of Agriculture and Life Sciences program, and is active in various professional societies.

Waterman is CALS Employee of the Month

Kim Waterman, lab and research specialist, was the January 2015 CALS Employee of the Month. The award is given to employees who perform tasks above normal work performance, demonstrate good work and dedication to the position, and complete their job in an exemplary way.



Blacksburg cheese festival a success

The first Virginia Cheese Festival, sponsored by The Blacksburg Partnership, was held on June 13, 2015 at Virginia Tech's Moss Arts Center. Everyone enjoyed a day of artisan cheese tastings, beer and wine pairings, workshops, presentations, and more. Attendees came from all over and more than 1,000 tickets were sold.

Kemia Amin and Hayley Potts, master's students studying fluid milk and packaging under Professor Susan Duncan, gave a presentation on their experiences with artisan cheeses. Potts grew up on her family run dairy farm and spent two summers as an intern at Oak Spring Dairy and Creamery. Amin interned at a California creamery where she learned artisanal cheese making methods. The audience showed a lot of interest and asked some good questions. Both students enjoyed the outreach experience and hope that the festival's successful first year will lead to more creameries being represented next year.



Hayley Potts (left) and Kemia Amin (right)

Duncan accepts new position

Professor of Food Science and Technology Susan Duncan became associate director of the Virginia Agricultural Experiment Station on Jan. 10, 2016. In her new role she works with faculty from all CALS departments and those in the off-campus Agriculture Research and Extension Centers to develop new research opportunities for their programs. Her work specifically relates to research grants, including HATCH proposals and competitive proposal development. She replaced Jody Jellison who assumed the role of director of the Center for Agriculture, Food, and the Environment at University of Massachusetts - Amherst.

Duncan no longer teaches classes, but she maintains an active research program directing sensory research projects and overseeing operation of the sensory laboratory in the Human and Agricultural Biosciences Building 1.



Hunter Wimmer (officer), Cayla Mutschler (officer), Team members: Michaela Loving, Kaylee Seekford, Bailey O'Brien, Leah Brumback, Mary Ott (officer) and Chandler Vaughan (officer)

State FFA Food Science CDE

The State FFA Food Science Career Development Event was held in HABB1 on October 8, 2015. The contest included a product development project, written test, sensory evaluation, food safety/ sanitation problem ID, and addressing consumer complaints.

Broadway High School (Broadway, VA) placed first out of five participating teams. Team members were Michaela Loving, Bailey O'Brien, Leah Brumback and Kaylee Seekford. The team's coach was Herb Hoffeditz. Michaela Loving was the top placing individual, Hannah Craun from Turner Ashby High School placed second individually, and Leah Brumback placed third.

Strasburg high school (Strasburg, VA), coached by Brian Fisher, placed second at the state level. Central High School (Woodstock, VA), coached by Sherry Heishman, came in third.

The winning team went on to compete at the national level where they earned a Silver Emblem. Leah Brumback, Michaela Loving and Kaylee Seekford were silver emblem individuals, and Bailey O'Brien earned a bronze emblem.

Disney – IFTSA Product Development Competition

The Disney product development competition was held in conjunction with the annual IFT meeting in August. Virginia Tech was one of five PD teams that made it to the finals out of 60. The contest requires teams to propose a delicious and market-relevant snack that integrates at least a half serving of fruit, vegetables, low-fat dairy, and/or whole grains for children 10 and under.

The team came up with a lot of ideas, but after considering nutrition, process technology, and economic cost, they

decided to go with “Nemo Pocket.” Nemo Pocket is a multi-component, ready-to-eat frozen snack which contains a 1/2 cup of vegetables per serving. The vegetables are sweet potatoes, cauliflower, tomato, carrots, and zucchini. The middle of the pocket contains tomato sauce, and the rest of the vegetables are mixed with the dough. Feedback from the judges indicated that the dough was beyond their expectations. They also gave the team high marks for technical data and marketing potential.



Team members are Lily Yang (captain, Ph.D. candidate), Sihui Ma (Ph.D. candidate), Leslie Ames (B.S., 2015), Annette Janwatin (senior), Nick Patrick (senior).



Team models their ‘Fish Eaters Anonymous’ ensemble

The team dubbed themselves “Fish Eaters Anonymous,” because the product is shaped like Nemo, the fish character from the popular children’s film. They were afraid that children would hesitate to eat it because they consider fish to be friends, not food. So they conducted a sensory focus group at a local day care facility and found that the children did not hesitate at all to eat them even though they admitted that fish, and by extension, Nemo are their friends.

Although the team didn’t place in the contest, they are the first Virginia Tech team to reach the finals. Cal Poly won first with their “Build a Snowman Kit.”

Faculty visit GERMANY

In March Pilot Plant Manager Brian Wiersema and Professor of Food Science and Technology Sean O’Keefe travelled to Germany to visit with faculty at universities and industry professionals. The hope is to partner with them to establish faculty/ student research exchanges and short courses. O’Keefe and Wiersema visited Technische Universität München – Weihenstephan Life Sciences Institute and Hochschule Weihenstephan – Triesdorf Applied Sciences University, located in Freising, Germany.

The pair also visited Multivac, which manufactures thermoformers, tray sealers, vacuum wrappers and shrink wrappers. They called on Weyermann Malting which produces malted grains and derivatives. And they visited Hopsteiner, which makes hops for brewing, antibacterial products, antioxidant products and phytopharmaceuticals.

German faculty and industry representatives seemed eager to collaborate with Virginia Tech and excited about nurturing a relationship.

Food Science and Technology building undergoes renovations

The Food Science and Technology building was part of a \$5.5 million project to improve campus safety by upgrading fire alarm systems. Ten older buildings, including the food science building, had heat and smoke sensors, new pull alarms, and visual and auditory notification devices installed. New Simplex alarm panels allow the building to be connected to the campus emergency system so the police and fire departments are notified immediately. Sensors were installed in classrooms, labs, pilot plants, hallways, restrooms, coolers and freezers. The project in Food Science began in January and was completed in September 2015. System upgrades to all ten buildings are expected to be completed by spring 2017.

The dairy processing space in room 27 now has central heating and cooling!

Virginia Tech Facilities Renovations replaced the old ductwork and air handlers with above-ceiling ducts and handlers and a new roof top unit that houses the air conditioning portion of

the HVAC system. Heating occurs via a hot water–steam heat exchanger. Plans for the space include a large classroom/meeting area. Facilities Renovations also painted public areas – hallways and ceilings in the food science building.

The sensory laboratory in room 127 has been completely renovated. The area has been upgraded with a new ceiling, ceiling lights and new tile. Two GE inductive, flat top cooking surfaces, a Jenn-air double oven, Bosch dishwasher, under-counter freezer, and glass, double door refrigerator

make for a convenient and efficient work space. The central island has a sink and disposal and is divided to provide easy access to the sensory booths and panelists. New cabinets and Corian countertops provide more cabinet and counter space and give the space a warm feel.



Technical study tour in

Bruce Zoecklein, food science and technology enology professor emeritus, led 19 Virginia grape growers and winemakers on a technical study tour of the Loire Valley of France. The purpose was to review, discuss and contrast French and Virginia grape growing and wine production practices and philosophies. The group visited 14 of the most prestigious producers, evaluated wines and discussed a wide range of topics including the effects of climate change and organic and biodynamic grape and wine production. This is the 10th technical study tour Zoecklein has conducted, which have incorporated grape growing regions of France, Spain, Italy, and Germany.

FRANCE





Outstanding Senior Award presented to Lester Schonberger

Lester Schonberger of Alexandria, Virginia, received the 2015 Food Science and Technology Outstanding Senior award.

While completing his food science and technology degree with minors in political science and leadership and social change, Schonberger discovered his passion for servant leadership. As a university council representative for the Student Government Association, member of the Commission on Equal Opportunity and Diversity, and senator for the College of Agriculture and Life Sciences for SGA, he was able to act as a proxy for students' thoughts and concerns. He also mentored freshman CALS students through their first semester as a peer leader in the CALS' First Years' Experience course.

He also has excelled academically with Dean's List recognition, The Dr. Dorothy M. Torpey Social Studies Award, and the Pamplin Leadership Award. After graduation, Schonberger continued his service to the university as an assistant student conduct coordinator in Virginia Tech's Office of Student Conduct while searching for higher education and student affairs graduate programs.



Student attends CONFECTIONARY CONFERENCE

Senior Ashley Searing was accepted into the 2015 Student Outreach Program and attended the Professional Manufacturing Confectioners' Conference in April. She summarized her experience in the next paragraphs:

The 2015 PMCA Confectionary Conference in Lancaster, Pennsylvania was an exciting three days of networking, learning, and of course, one of the most popular confections, chocolate. Students were invited to participate in the conference through the Student Outreach program. An opening breakfast was hosted for the students where we met our mentors. My mentor was Hannah Robinson ('11), a Virginia Tech alumna.

Having a mentor was a great way to meet others as well as ask pertinent questions. The conference included information sessions where professors and industry professionals spoke about different confectionary topics. These topics

included lipids, sensory evaluation, and sustainability in the chocolate industry. I was able to recognize terms learned from food science classes, and see how they are applied in the industry. Other interesting activities I participated in were a tour of Shank's Extracts, where vanilla extract and other food colorings are produced, a lunch with Amy DeJong, one of the food scientists who won the Amazing Race, and a closing dinner reception for the conference.

The 69th Annual PMCA confectionary conference was a great opportunity that I look forward to attending again. My favorite part of the conference was getting to learn about various candy companies and meeting students from schools around the country. I would encourage anyone who is interested in candymaking to go to the 70th Annual PMCA conference because it is a great introduction to the confectionary industry.

IFTSA Area Meeting

The 2015 IFTSA Area Meeting was held in April at the University of Delaware. During the meeting, students toured some of Delaware's farms and mingled with students from other area universities. The department's College Bowl team participated in the competition. Students also had the chance to hear from Cabinet Secretary of Agriculture for the State of Delaware Ed Kee.

FFA Dairy Quality Career Development Event

The State FFA Dairy Quality CDE was held in HABB1 on June 22, 2015. Eight chapters had teams participating.

Teams had to identify a variety of milk off-flavors and milk fat contents. They also identified cheeses based on sensory testing and cheese characteristics. They performed the California Mastitis Test and interpreted results, and they completed a milk production exam, a milk marketing exam, and a problem solving exercise. Riverheads High School (Staunton) won first place in the contest, Fort Defiance High School (Fort Defiance) came in second, and Turner Ashby High School (Bridgewater) took third place. Top scoring individuals were Isabelle Leonard (first), Rebecca Straley (second) and Jennifer Callison (third), all from Riverheads High School. Kristen Carr coached the winning team.

The winning team went on to compete at the national level in October in Louisville, Kentucky. They placed eighth overall and earned a Gold Emblem. Isabelle Leonard and Rebecca Straley were Gold Emblem individuals, and Jennifer Callison and Ryan Fitzgerald were Silver Emblem individuals.

International Association of Food Protection

The IAFP held its conference in Portland, Oregon on July 25-28. Below is a listing of presentations.

Technical Presentations

Prevalence and Diversity of *Salmonella enterica* spp. in Irrigation Water, Poultry Litter and Amended Soils on the Eastern Shore of Virginia

GANYU GU, Jie Zheng, Laura Strawn, Mark Reiter, Steven Rideout

Use of Geographic Information Systems to Predict the Risk of *Listeria monocytogenes* Contamination in Produce Fields

Daniel Weller, Suvash Shiwakoti, Peter Bergholz, Martin Wiedmann, LAURA STRAWN

Poster Presentations

Development of Inoculation Methods for *Enterococcus faecium*, a Potential Surrogate Bacteria for *Salmonella*, on Whole Black Peppercorns and Cumin

MONICA PONDER, Lauren Bowman, Robert C. Williams, Kim Waterman

Ethanol Vapor to Inactivate *Salmonella* on Peppercorns

Nathan Briggs, ROBERT C. WILLIAMS, Monica Ponder, Kumar Mallikarjunan Virginia Tech,

Meat and Poultry Processing Employee Perceptions of Food Safety Pictograms

MATTHEW SCHROEDER, Joseph Eifert, Renee Boyer, Melissa Chase, Sergio Nieto-Montenegro, Oscar Galagarza

Identification of Risky Food Safety Practices and Microbial Assessment of Produce at Southwest Virginia Farmers' Market

STEPHANIE POLLARD, Renee Boyer, Benjamin Chapman, Monica Ponder, Steven Rideout, Thomas Archibald

Pangborn Sensory Science Symposium

In August, Andrea Dietrich (CEE), Dan Gallagher (CEE), Susan Duncan (FST), Courtney Crist (FST) and Alexandra Walsh (FST) presented posters and enjoyed the Gala event at the 2015 Pangborn Sensory Science Symposium in Gothenburg, Sweden. Courtney Crist (Water INTERface/FST Ph.D. candidate) and Alex Walsh (FST Ph.D. candidate) were awarded Young Scientist travel scholarships to present their posters at the meeting.

Left to right: Andrea Deitrich, Susan Duncan, Dan Gallagher, Courtney Crist, Alexandra Walsh



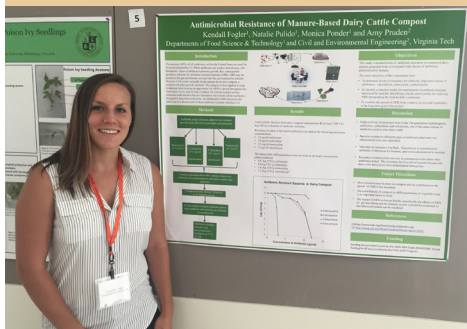
Summer undergraduate research symposium

Undergraduate research was celebrated at the annual Summer Undergraduate Research Symposium on July 30 at Goodwin Hall.

Students presented posters on their 10-week long, 40-hour-per-week-summer research projects that were planned and executed along with faculty, graduate students, and research staff.

The Department of Food Science and Technology's Kendall Fogler was part of the Fralin research program. The Fralin research program had over 80 applicants in 2015. Fourteen of these were selected to receive a research stipend to pursue their project, and Kendall was one of them. Kendall's project was entitled, "Antimicrobial Resistance of Manure-Based Dairy Cattle Compost." She was mentored by Associate Professor Monica Ponder and continues to work with her on a U.S. Department of Agriculture project to determine mitigation steps for transmission of antibiotic resistant bacteria to fresh produce.

The symposium was the culmination of undergraduate research that was conducted all over campus. More than 100 posters were presented.



Kendall Fogler with her poster.

Virginia Tech FST/College of Agriculture Alumni Awards

Each year the College of Agriculture and Life Science recognizes outstanding alumni from each department. There are two categories for recognition:

Outstanding Recent Alumni Award (graduated within 10 years of the nomination date); and

Outstanding Alumni Award (graduated more than 10 years ago).

The Department of Food Science and Technology recognizes that many of our alumni are highly invested in the university, the food industry and related fields, and their community. We would like to recognize our outstanding alumni but even with LinkedIn and other social networking tools, we are not aware of all that you do.

Therefore, we are bringing this opportunity to you directly. If you are interested in competing for the nomination process for Fall 2016, please submit the following information by email no later than August 2016 to Terry Rakestraw, executive secretary, Department of Food Science and Technology, rakestra@vt.edu. For more information about the awards please visit: <http://www.cals.vt.edu/alumni/awards/forms/outstanding-recent-alumni.html>

In order to apply, please provide the following:

- I. Name
Address
Contact information including phone and email
- II. Academic Background including institution, degree, year degree received, and major
- III. Current or most recent employer, title, most recent date of employment
- IV. University Impacts:
 - Describe/list examples of leadership to the department, the CALS Alumni Organization, or the college.
 - Describe/list examples of service to the department, the CALS Alumni Organization, or the college.
 - Describe/list examples of philanthropic contributions to the department, the CALS Alumni Organization, or the college.

Industry Impacts:

Describe/list examples of leadership to their field.

Describe/list examples of service to their field.

Describe/list examples of philanthropic contributions to their field.

Community Impacts:

Describe/list examples of leadership to their community.

Describe/list examples of service to their community.

Describe/list examples of philanthropic contributions to their community.

It is not essential that you enter something in each of the criteria fields for the university, industry, and community impacts categories. Please enter those examples that reflect your contributions in one or more of these areas.

Food Science Club UPDATE

President: Jordan Newkirk

Vice President: Caroline Ryan

Secretary: Meredith Johnson

Treasurer: Andrew Gilley

Fundraising Chair: Ashley Searing

Outreach and Social Chairs: Nicholas Patrick and Jennifer Zornjak

Industry Liaisons: Kemia Amin and Tommy Haufe

Dining Committee Chair: Chris Howell

Competition Chair: Lily Yang

The Food Science Club participated in the Big Event in April. This is Virginia Tech's largest community service project and the second largest of its kind in the nation.

Pepsi visited in September and held an information session for the club. Tony Lucas (M.S. '13), food safety scientist at PepsiCo, spoke at the meeting.

October was a very busy month. Representatives from Cargill gave a demonstration on product cutting and held a Q and A session. FSC members were able to taste a variety of Cargill products. The following day, Tyson representatives visited and offered an information session and recruiting opportunity.

On Halloween, FSC members visited Sinkland Farms where they had the chance to participate in activities that included a hayride, Chateau Morrisette wine tasting, live music, Elvis look-alike contest judging, corn maze, and pumpkin picking.

In November, members participated in the Institute of Food Technologists Student Association Global Summit. The virtual event gave 175 attendees from 20 countries the opportunity to live chat, view live video streams, participate

Sinkland Farms



Intramural flag football champs

in interactive breakout sessions, and win prizes. David Mackill of University of California-Davis gave the keynote address. He spoke about flood and drought prone rice.

Food Science Club fundraisers included a donut sale on the Drillfield in October. A bake sale at Moe's in September was held in conjunction with Moe's percentage night where the club earned 20% of the proceeds from food purchased at Moe's. From November-January, the club participated in Fun Pasta Fundraising. The fundraisers were held to support the IFTSA area meeting which will be held at Virginia Tech in 2016.

Food Science's intramural flag football team won the championship in December. The 'Explosive Runs,' made up of food science club members, finished the season with a 7-1 record.

Members had an "End of Semester Bash" on December 9. They played icebreakers, had an ugly sweater competition, and a cookie exchange.

In January, Smithfield visited and gave an information session. And, as always, the club assisted with set up and clean up for the departmental spring awards picnic, the fall semester welcome picnic, and the holiday luncheon.

Researchers encourage MEAT THERMOMETER USE

Associate Professor Renee Boyer's graduate students distributed thermometer kits at Virginia Tech tailgates that contained a digital read out thermometer, an apron, and a beverage koozy with temperature guidelines. The goal is to prompt people to monitor the temperature of their ground beef. Students went back to subsequent tailgates to check in with people who previously received the kits to see if they were using proper cooking techniques.

The group also launched a social media campaign on Instagram and Twitter. Users who posted photos with the thermometer reading 160 degrees, using the hashtag "Grill160tokill" were entered to win an iPad.

"We are trying to create an awareness of the importance of grilling meats to 160 degrees to avoid E. coli illnesses by using a thermometer and seeing if we can shift the public's attitude about monitoring cooking temperatures," said Boyer.

Cooking meat to 160 degrees kills the E. coli, which is associated with at least 265,000 illnesses each year.

This is a collaborative project with the Department of Civil and Environmental



John diStefano shows off 'tailgating kit'.

Engineering to track thermometer use in cooking hamburger meat. The extension effort is funded by a \$25 million U.S. Department of Agriculture grant that is being conducted jointly with North Carolina State University, Kansas State University, University of Nebraska, and Texas A&M.

Stewart recognized as Scholar of the Week

The Office of the Vice President for Research and Innovation recognized Assistant Professor **Amanda Stewart** for providing research-based resources for the cider and wine industries. Projects include collaborations with horticulture researchers to develop vineyard and orchard management practices for improved wine and cider quality, and the impact of hard cider processing methods on cider chemistry and quality. Her research focuses on the role of fruit nitrogen concentration and composition during fermentation on wine and cider quality and fermentation kinetics. She also studies polyphenol composition of grapes and apples and is expanding her focus to investigate the impact of food and beverage fermentation processes on dietary bioactive compounds.

FST hosts middle schoolers

Eighth graders from Central Academy Middle School in Fincastle, Virginia in Botetourt County visited the Department of Food Science and Technology in December. They were part of an agriscience class that studies food, plants, natural resources, crop production, and food processing. The purpose of the trip was to introduce them to the food science industry and careers in food science. Many of them will move into

a STEM academic track in high school where they may not be exposed to food science topics.

The day's activities included preparing snack bars for the purpose of identifying the roles of specific ingredients in food production and processing, and what happens when these foods are produced with ingredient substitutions such as a fat, sugar, and flour alternatives.

Students measured color, texture, and water activity on the snack bars and developed an ingredient label for each formulation. They also tasted the bars for the sensory evaluation component. They toured HABB1's pilot plant and learned about its importance in research and product development. It was a day of learning for the students and they seemed to thoroughly enjoy it.

Third Annual Food Science and Technology Poster Competition

The third annual departmental poster competition was held April 23, 2015. Nearly 32 undergraduate and graduate students entered, and cash prizes were awarded to the top-placing posters.

At the graduate level, **Katie Goodrich** (Ph.D., 2015) was awarded first place with "Pan-colonic pharmacokinetics of catechins and procyanidins in male Sprague Dawley rats."

Second place went to **Alexandra Walsh** (M.S. candidate) with "Implicit and explicit emotional responses to food spoilage in a breakfast meal." **Matt Schroeder** (Ph.D., 2015) received third place with "Meat and poultry processing employee perceptions of food safety pictograms."

In the undergraduate division, **John di Stefano** won first place with "Microbial assessment of fresh produce at Southwest Virginia farmers' markets," and **David Schnorbus** and **Michelle Stark** received the second place award.

Six judges spent the day talking with the contestants and evaluating posters:

Steve Franzysen, DuPont Teijin Films R&D and Market Development Manager;

Bob Reinhard, Tyson Foods Vice President Food Safety and Quality;

Tatiana Lorca, EcoLab Inc. Senior Manager Food Safety Education and Training;

Janet Webster, Fralin Life Science Institute Associate Director of Operations;

Merle Pierson, FST Professor Emeritus; and **George Flick Jr.**, FST Professor Emeritus.



Laura Strawn joins Food Science Department

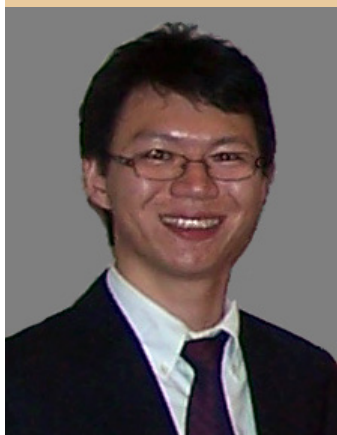
Laura Strawn

was named Virginia Cooperative Extension specialist and assistant professor of food science and technology in 2015. She received her bachelor's degree in food science and technology from the University of California-Davis, her master's degree in food science from the University of Florida, and her Ph.D. from Cornell.



Laura Strawn

Strawn's research focuses on enhanced microbial safety of produce production at both the pre- and post-harvest levels, subtyping of bacterial foodborne pathogens for source tracking and outbreak detection, and development of educational materials and trainings for producers, packers, and processors directed towards enhancing food safety of produce. Her research on big data in food safety and quality has been featured in the Institute of Food Technology's magazine.



Food fermentation engineer is onboard

Haibo Huang joined the department in December. His research focus is food processing, fermentation engineering, process simulation and economic analysis. He received his bachelor's in biosystems engineering at Zhejiang University, his master's in biological engineering at the University of Arkansas, and his Ph.D. in agricultural and biological engineering at the University of Illinois at Urbana-Champaign. Before coming to Virginia Tech, he was a postdoctoral research associate in the Department of Agriculture and Biological Engineering at the University of Illinois at Urbana-Champaign.

Huang will enhance departmental research in enology, brewing, and malting, and will introduce applications such as flavor and fragrance production, dietary bioactive compounds, and bio-based consumer products.

Spring AWARDS celebration

The Department of Food Science and Technology's annual awards recognition ceremony was held on April 23, 2015. Following the awards' presentation Professor Joe Marcy hosted a picnic buffet that was, as always, a hit.

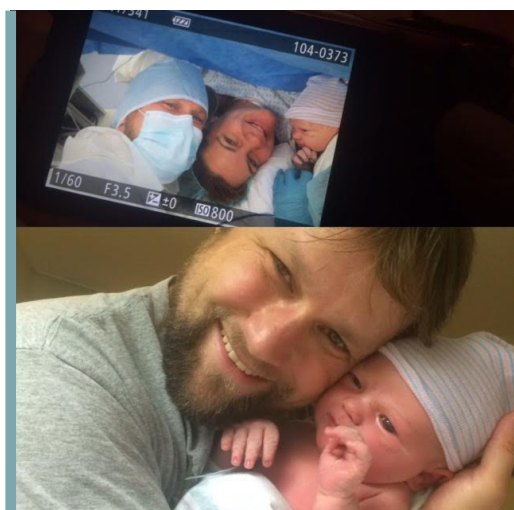
Megan Beatty	Boyd-Arlene Award
Lester Schonberger	FST Achievement Award Outstanding Senior
Huy Le	FST Achievement Award
Sushrruti Varatharaj	Paul Large Scholarship
Nicole Van Schaack	R. F. Kelly Award
Kevin Carney	Marvin Poster Memorial Scholarship
Jenna Angell Diana Woodrum Jennifer Zornjak	Cameron Hackney Memorial Enrichment Award
Galen Vosseller Laura Jacobs	Virginia Association of Meat Processor's Award
Melissa Morgan	Hillshire Brands Fund for Excellence



Diana Woodrum accepts the Cameron Hackney Memorial Enrichment Award



Melissa Morgan receives the Hillshire Brands Fund for Excellence Award



New additions to the Department of Food Science and Technology family

Amanda Stewart, assistant professor, gave birth to Kathleen Fiona Smith on April 12, 2015. Kathleen weighed 7lbs. 8oz.

Patrick David Kuhn arrived on Sept. 21, 2015 for Assistant Professor David Kuhn and his wife Meghan. He weighed 8lbs. 13oz.



Fall 2015 Dean's List*

Jenna Angell, Senior
 Olivia Baggstrom, Junior
 Elizabeth Bose, Sophomore
 Kristen Bowman, Senior
 Margaret Bumgarner, Senior
 Kevin Carney, Senior
 Patricia Deavers, Sophomore
 Megan Delene, Sophomore
 Colleen Dommel, Freshman
 Gina Gasparotto, Sophomore
 Alvis Huynh, Senior
 Virginia Kelly, Senior
 Mackenzie Knox, Freshman
 Hayley Lawrence, Senior
 Amanda Marx, Senior
 Melissa Morgan, Senior
 Robin Nguyen, Sophomore
 Lauren Ogren, Junior
 Joseph Pagano, Senior
 Nicholas Patrick, Senior
 Rachel Persaud, Senior
 Carolyn Phelps, Senior
 Nicholas Poe, Junior
 Deepak Poudel, Junior
 Alexandra Royer, Freshman
 Meghan Ruppel, Junior
 Roxanne Smith, Sophomore
 Jessica Stanford, Sophomore
 Kili Teh, Senior
 Elizabeth Tiedemann, Junior
 Heather Titanich, Freshman
 Caitlin Truong, Sophomore
 Nicole Van Schaack, Senior
 Sushrruti Varatharaj, Sophomore
 Anna Ware, Junior
 Emily White, Sophomore
 Diana Woodrum, Senior
 Sarah Work, Senior
 Rose Yim, Junior
 Jennifer Zornjak, Senior

Spring 2015 Dean's List

Leslie Ames, Senior
 Megan Beatty, Junior
 Chad Berl, Sophomore
 Mary Blodgett, Senior
 Kristen Bowman, Senior
 Kendall Fogler, Senior
 Gina Gasparotto, Freshman
 Mary Gibson, Junior
 Meagan Harmeson, Senior
 Kelly Henry, Sophomore
 Anne Ickes, Senior
 Elisha Johnson, Senior
 Virginia Kelly, Senior
 Emma Knack, Senior
 Hayley Lawrence, Junior
 Huy Le, Senior
 Amanda Marx, Senior
 Robin Nguyen, Sophomore
 Janice Overton, Senior
 Anne Peters, Senior
 Carolyn Phelps, Junior
 Hayley Potts, Senior
 Harry Schonberger, Senior
 Claire Schrunk, Sophomore
 Jessica Stanford, Freshman
 Stephanie Such, Senior
 Nichole Van Schaack, Senior
 Sushrruti Varatharaj, Sophomore
 Tan Vi, Senior
 Christopher Winslow, Senior
 Diana Woodrum, Senior
 Sarah Work, Senior
 Jennifer Zornjak, Senior

Student Achievements

Hayley Potts (FST Senior) was the recipient of the National Dairy Shrine Senior Dairy Student Recognition Program. The Program recognizes graduating four year college seniors planning a career related to dairy production, manufacturing, marketing agricultural law, business, communications, veterinary medicine, or research and environmental sciences. Students must demonstrate leadership skills, academic stability, and interest in dairy cattle.

Caroline Ryan (M.S. Candidate) won the Feeding Tomorrow General Graduate Scholarship through IFT. Students chosen to receive these scholarships must excel academically and demonstrate innovative work that will impact the global food supply.

Kemia Amin (M.S. Candidate) was awarded the Edlong Dairy Technologies Scholarship through IFT. The award is presented to students pursuing a degree in food science with a focus on dairy science.

Kemia Amin, Courtney Crist, Alex Walsh, and Hayley Potts received International Dairy Foods Association Scholarships. Applicants were selected based on their active research/ or outreach and service that benefit the dairy foods industry.

Matthew Schroeder (Ph.D. 2015) received the NACTA Graduate Student Teaching and Leadership Award. The international award recognizes students who excel as college teachers in the agricultural disciplines.

*To be eligible for the Dean's List, students must achieve a GPA of 3.4 or higher.

Food Digest

UPDATE YOUR INFORMATION. We are interested in knowing what you are doing! Please help us keep our mailing list current by completing and returning this form to the Department of Food Science and Technology, Virginia Tech (0418), Blacksburg, VA 24061, or e-mail Terry Rakestraw at rakestra@vt.edu with the following information.

Name: _____ Year and Degree: _____

Home Address: _____

Employer: _____ Job Title: _____

Work Address: _____ E-mail Address: _____

News about Yourself (attach additional pages as needed): _____