



NC STATE UNIVERSITY

COLLEGE OF  
**AGRICULTURE & LIFE SCIENCES**  
ACADEMICS • RESEARCH • EXTENSION



*digest*



FALL 2013



At the heart of the Department's new strategic plan are: People. Programs. Partners.

A year ago we welcomed Dean Richard H. Linton – an internationally recognized food safety expert – as a tenured faculty member into FBNS. Our dean was joined by two exceptional faculty hires: Dr. Rodolphe Barrangou (M.S., 1999; Ph.D., 2001), an expert in genomics engineering, and Dr. Eduardo Gutierrez, an expert in pre-harvest to post-harvest produce safety.

Our faculty and staff continue to be recognized with numerous achievements and awards, which we've highlighted on page 16. And this fall, Schaub Hall is home to 550 students, the largest student body in the history of the department (and the second largest student body currently in CALS). At the December 2012 and May 2013 commencements, FBNS celebrated the graduation of 115 undergraduate and 40 graduate students – a record achievement for the department.

Alumni continue to achieve and provide leadership addressing agricultural and food related challenges that face our communities and the globe. In this issue, you'll read about Dr. Jeff Resch (Ph.D., 2004) of General Mills, who is working to improve the health and nutritional values of staple foods throughout Tanzania and Malawi. Tiffany Brinley Sepanski (B.S., 2004; M.S., 2007) recently was featured in Forbes magazine as a leading innovator for her work developing Belvita breakfast bars.

The Department's research and extension programs remain incredibly active and successful. In fact, our faculty and staff were awarded in excess of \$8 million in extramural funding in 2012.

This year, our Southeast Dairy Foods Research Center (SDFRC) is celebrating 25 years of commitment and service to the U.S. dairy industries. During the annual meeting in August, the SDFRC welcomed a record 22 companies to Schaub Hall to learn about FBNS dairy programs and research.

Food manufacturing and entrepreneurship is a core directive of the FBNS strategic plan, and we believe it to play a critical role for a strong North Carolina economy.

To lend support to the food manufacturing sector, the FBNS extension faculty created teams to visit with industrial clientele and respond to challenging manufacturing-based questions and concerns. Recent visits this fall have included Smithfield Foods and Ann's House of Nuts.

Our department is committed to becoming the most industrially-friendly food science program in the country. In fact, we recently opened a state-of-the-art training and conference room in Schaub Hall that will house workshops focused on preparing industrial and regulatory partners for implementation of the Food Safety Modernization Act, while also providing an on-site location for promoting food manufacturing and entrepreneur development programs. Through the impact of these efforts and allied programs, we will strengthen our partnerships throughout North Carolina and beyond.

The Department of Food, Bioprocessing and Nutrition Sciences has had great impact over our 52-year history of developing people, programs and partners to address the challenges of providing a secure food supply. Rest assured, we will respond to those challenges through innovative teaching, scientific discovery and outreach that make a difference in people's lives.

Our success will be measured by how well we contribute to providing an abundant food supply that is safe, affordable, healthy and enjoyable for citizens of North Carolina, the United States, and the world.

Christopher R. Daubert  
Head, Department of Food, Bioprocessing and Nutrition Sciences

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## UPCOMING EVENTS

### 2013

- October 17-27  
**DAIRY BAR @ STATE FAIR**
- October 31  
**S'BOO'GHETTI LUNCH**
- December 18  
**FALL GRADUATION**
- December 19  
**HOLIDAY LUNCH**

### 2014

- March 29  
**WINE AND CHEESE**
- April 24  
**AWARDS BANQUET**
- May 10  
**SPRING GRADUATION**
- May 15  
**FACULTY RETREAT**
- June 21-24  
**IFT – NEW ORLEANS**



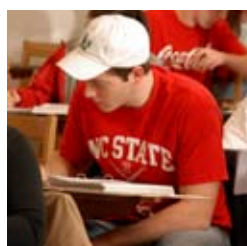
### **Strategic Direction I: Food Safety and Foodborne Disease Prevention**

**Statement:** Become the preeminent integrated (research, education, extension) food safety program to provide students and stakeholders the capacity to analyze situations, address issues, and provide solutions for preventing contaminants in food and their impact on human health.



### **Strategic Direction II: Food Manufacturing and Entrepreneurship**

**Statement:** Be the recognized authority for providing food and beverage manufacturing and entrepreneurship expertise to state, national, and international students and stakeholders to meet the demand for an abundant, safe, nutritious, tasteful, and affordable food supply.



### **Strategic Direction III: Instructional Innovation and Effectiveness**

**Statement:** Be recognized for designing, developing, and delivering highest quality instruction to various stakeholders, including students, professionals in industry, government agencies, and consumers, both locally and internationally.



### **Strategic Direction IV: Foods for Health and Well-being**

**Statement:** Be the preeminent program in identifying bioactive, nutritional, microbial, sensorial, and structural elements of food related to health and well-being by establishing mechanisms of action and translating that knowledge into food products and ingredients, bioactive interventions, prevention programs, and educational platforms for promoting public health.

*To view an abridged version of the Department Strategic Plan plan, visit: [go.ncsu.edu/fbns](http://go.ncsu.edu/fbns)*



*Local, state, and national media call on faculty in the Department of Food, Bioprocessing and Nutrition Sciences for expert opinions, research findings, educational opportunities for the public and more. Below are links to videos and articles published in the past year.*

*Visit the department website ([go.ncsu.edu/fbns](http://go.ncsu.edu/fbns)) for these links and more.*

### **Dr. Ken Swartzel is named Tar Heel of the Week**

News & Observer, August 2013

<http://www.newsobserver.com/2013/08/10/3098015/if-your-packaged-food-stilltastes.html>

### **Dr. Mary Ann Lila speaks about the health benefits of blueberries**

TV New Zealand, March 2013

<http://tvnz.co.nz/breakfast-news/research-shows-blueberries-fight-obesity-diabetes-video-5384990>

### **Dr. Keith Harris weighs in on the debate over whether or not junk food is addictive**

Fox News, March 2013

<http://www.foxnews.com/health/2013/03/26/junk-food-might-not-be-addictive-after-all/>

# From the crops to the cow to the cream: Milking center dedication spotlights innovation



*Carl Hollifield (second from right), business manager for N.C. State University's dairy enterprise system, discusses the 21st century technology used in the newly dedicated milking center.*

A new N.C. State University milking center was cause for celebration for North Carolina's dairy industry Friday Nov. 9, 2012. More than 100 people came out to view the new building designed to enhance the university's teaching, research, and extension programs in both food and animal sciences.

The center includes milking stalls where about 150 cows are milked twice a day, producing 1,000 gallons a day of milk that's trucked to Schaub Hall and used in Howling Cow ice cream and other dairy products.

The center's dedication and ribbon-cutting ceremony at the Lake Wheeler Road Field Laboratory's Dairy Educational Unit mark an important milestone in the development of a vertically integrated dairy enterprise system that encompasses not just the dairy farm unit but also the Schaub Hall Dairy Pilot Plant.

The milking center modernization is among the first steps in expanding that system. Planning and fund raising are under way for a dairy museum at the farm, as well as a retail creamery and ice cream parlor to be added to Schaub Hall.

CALS Dean Richard Linton described the system as "a living laboratory where we can take students through the entire integration from the farm, through processing, through manufacturing, to the development of wonderful products."

"We can now do things fully from the farm all the way to the fork," Linton added. "It also provides us a great opportunity to lead in the southeast region . . . in dairy science and education and to build our capacities for the dairy industry here in the state."

While Animal Science Department Head Todd See was unable to attend the dedication, he sent to Food, Bioprocessing and Nutrition Sciences Head Christopher Daubert a letter outlining his thoughts on the milking center's significance.

"We now have the most modern and comprehensive resources for teaching, research, and outreach on all aspects of dairy, from genetics programs to value-added marketing of milk products, touching every step from the crops to the cow to the cream," Daubert quoted See as saying.

"This milking parlor will allow our researchers to better evaluate nutritional, reproductive, genetic, and management programs and their impact on the quality, quantity, and safety of milk produced. More importantly, the 800 students studying animal science will be exposed to state-of-the-art facilities to learn the scientific foundation of the dairy industry at one of the best teaching farms in the world."

The industry's support of the milking center and the dairy enterprise system was evident in the number of people present for the dedication and in the page-long list of donors to the N.C. Dairy Foundation Campaign for Excellence. The campaign chairman, Charles "Buddy" Gaither, noted that the foundation has raised \$1 million toward its goal of \$2.5 million. Students have shown especially strong support. The Food Science Club has donated \$35,000, while the Animal Science Club chipped in \$25,000, Daubert said.



*CALS Dean Richard Linton, Tom Kenan and Dairy Enterprise System Director Gary Cartwright were among those who cut the ribbon at the milking center dedication.*



## THE DEAN'S ICE CREAM

*There are certain perks that go along with being dean of the College of Agriculture and Life Sciences – like ice cream.*

*The college is the home, after all, of Howling Cow ice cream. So if you're the dean of the college, you can have your own ice cream.*

*Dean Richard Linton commissioned the folks at the Department of Food, Bioprocessing and Nutrition Sciences Feldmeier Dairy Processing Lab in Schaub Hall, where Howling Cow is made, to create the dean's ice cream.*

*The dean settled on two finalist flavors:*

*Ice Cream A – dark chocolate, tart cherries, and white chocolate swirl*

*Ice Cream B – dark chocolate, tart cherries, chocolate chunks, and marshmallow swirl.*

*To determine which flavor would be the dean's ice cream, Linton turned to students. On an unseasonably cool Tuesday in late April, approximately 100 gallons of Howling Cow ice cream – 50 gallons each of A and B – were hauled to the brickyard, and students were invited to assess the two flavors.*

*It turns out it's fairly easy to draw a crowd of students with free ice cream. Students were given sample cups of each type of ice cream and asked to vote for their favorite. The result: more students preferred Ice Cream B, dark chocolate, tart cherries, chocolate chunks, and marshmallow swirl.*

*Dean Linton unveiled the name of the new concoction, Cherry Brick Road, at a celebration on the brickyard in October.*



*Dean Richard Linton and his wife Sally scoop ice cream on the brickyard.*

## No small beer: NC State Brewery teaches the process and the science of beer making

A small brewery in the basement of Schaub Hall at N.C. State University is making a big name for itself on campus.

Dr. John Sheppard, professor in the Food, Bioprocessing and Nutrition Sciences Department, has been brewing beer since he came to the university seven years ago, and now the N.C. State Brewery provides various microbrews for events on campus through University Dining.

Students are also involved in the brewing, although Sheppard says most aren't seeking a career in the brewing industry. But some student brewers have expressed interest in opening their own brewery one day.

Enthusiasm on campus for the beer has grown, just as the number of craft breweries in North Carolina has ballooned in recent years. The N.C. State Brewery provides beer for about 25 campus events per year.

"We make the beer in small quantities, not high-volume production," Sheppard said. "With proper time, ingredients, and sanitary conditions, we make sure our beer is of the highest possible quality."

Sheppard teaches biopharmaceutical production at N.C. State's Biomanufacturing Training and Education program. In the FBNS Department, his research area is brewing and studying the yeast used in beer fermentation.

When Sheppard left McGill University in Montreal seven years ago, he was able to bring the brewing equipment with him to N.C. State. Schaub Hall features a variety of food processing equipment, including a commercial creamery where Howling Cow ice cream is made.

Sheppard would like to see the brewery in a room of its own, but for now, it shares space with other processing equipment. Beer kegs are stored in nearby refrigeration.

The list of N.C. State Brewery beers reads like a list from any good, local craft brewery.



*Dr. John Sheppard, shown at the NC State Brewery in Schaub Hall, holds a glass of one of the microbrews made there.*

The year-round brews include:

- Pack Pilsner – A pale yellow/golden lager
- Chancellor's Choice IPA (India Pale Ale) – Award-winning English IPA, a medium-bodied orange-colored ale
- Brickyard Red – Light amber (ale) accentuated with dark hues of red
- Ma Blonde Do'r (Golden Blonde) – A clean, medium-bodied beer
- Schaub Schwarzbier – Deep brown/black with ruby highlights

The brewery provides microbrews for events on campus.

Last fall the Chancellor's Choice IPA earned a blue ribbon in the N.C. Brewers Guild competition.

In addition, there are four seasonal beers: Wolf-toberfest (fall), Pullen Porter (winter), Graduator Maibock (spring) and Wolfpack Wheat (summer).

The crowd favorite among the beers has been Brickyard Red Ale, Sheppard said. At events, the beer is served by University Dining bartenders and comes in its own refrigerated kegerator with tap and carbon dioxide.

One day, the beer may be served on campus, perhaps at a taproom in the planned clubhouse for the Poole Golf Course on Centennial Campus.



# The Wright way: FBNS scientists turn ideas into reality

Article by David Hunt for *Results* magazine.



*Food science researcher Dr. Josip Simunovic set out to solve a puzzle. The result is a revolution in food processing and packaging.*

The bustle inside the Wright Foods plant in Troy, N.C. contrasts sharply with the quiet atmosphere of its rural surroundings. The small town settled by Scottish immigrants on the edge of the Uwharrie Forest before the Civil War, seems a more likely mecca for fishing than food processing. But the company's year-old factory off N.C. Highway 24 is at the center of a scientific revolution that's changing the packaged food industry.

It's bringing the region, long plagued by high unemployment, along for the ride.

"We're in the bull's-eye," says CEO Michael Drozd. "If North Carolina wants a model, we're it. We're the model for economic prosperity in North Carolina."

It's not hard to win converts, including North Carolina Gov. Pat McCrory, who toured the plant in July to see if the company had found matching funds for a \$1.5 million economic development grant from the state. Wright Foods didn't disappoint, announcing a \$53 million expansion that is projected to triple the size of the plant, adding 120,000 square feet and more than 500 new jobs.

Innovation is the watchword at Wright Foods, founded last year by Drozd and NC State food scientists Ken Swartzel and Josip Simunovic. The company was born out of a decade of research at the Center for Advanced Processing and Packaging Studies, sponsored by the National Science Foundation.

The partnership started with a question. In the late 1990s Drozd, then working at an equipment manufacturer in Research Triangle Park, fielded a telephone call from Simunovic at nearby NC State.

"Can you guys heat food that's being pumped through a pipe?" the researcher asked.

"Why would anybody want to do anything like that?" Drozd thought to himself.

Answering that question would eventually lead to dozens of inventions, 10 patents and a wildly successful startup company, all focused on finding better ways to package and deliver processed foods.

## Aseptic Solution

The Schaub Food Science Building at NC State is home to the two food scientists behind Wright Foods. Here, in a ground-floor lab, they've built an elaborate testing system to help turn ideas into reality. It's a time-tested relationship for Swartzel,



Photo courtesy Wright Foods.

*Shelf-stable foods are packaged under completely aseptic conditions at Wright Foods, preserving their natural flavor and texture.*

a pioneer in the field, and his colleague and former Ph.D. student, Simunovic, now an associate professor. The relationship intensified in 2006 when the researchers teamed up with Drozd to found Aseptia Inc., the parent company of Wright Foods.

Together, the professors and their students have created a wealth of new processes, prototypes and products. And they're not nearly done.

"I didn't really set out to build a business venture," Simunovic says. "In my mind, I set out to solve a puzzle."

That puzzle, it turns out, involves many gallons of minestrone soup.

Simunovic, who began his academic career in his native Croatia four decades ago, is an expert in a technology called advanced aseptic processing, the applied science of sterilizing food before it's packaged to ensure that you kill harmful bacteria.

In fact, pumping products through a system of heated pipes — called continuous flow thermal processing — is a common way to sterilize liquids like soups, sauces, fruit juices and other beverages. The trouble starts when you try to sterilize something like minestrone soup, beef stew or salsa.

"Minestrone has over 10 different solid components, flowing with different velocities and heating at various rates," Simunovic says. "How do you quantify the amount of heat that each of them has received and how will you deliver the process that will make each and every piece properly sterilized? It's a very challenging puzzle for a scientist."

Perhaps the easiest way to approach the problem would be to simply overheat the soup until all those bits of green bean, carrot, celery and pasta were reliably sterilized. That's a nonstarter for the industry. Heat not only degrades the nutritional value of food, it impacts sensory characteristics like appearance, color, flavor and texture. All are important consideration for consumers.

The NC State team began to unravel the puzzle looking for ways to speed up the heating process, to make it virtually instantaneous and uniform at the same time. This process, called advanced thermal sterilization, seeks to maximize both quality and food safety.

Through years of experiments, pumping untold gallons of simulated and real minestrone soup through the lab's testing equipment, Simunovic and his students have developed a system tailored to the needs of the industry, combining advanced thermal processing with continuous flow monitoring in a completely aseptic environment. Pair it with environmentally friendly cartons, cups and pouches, and the innovative system sets a new standard for food processing and packaging. Ingredients go in one end of the elaborate airtight system, and a box of soup or a squeezable fruit pouch — ready for store shelves — comes out the other.

*To read the full article in Results, please visit: [www.ncsu.edu/research/results](http://www.ncsu.edu/research/results)*

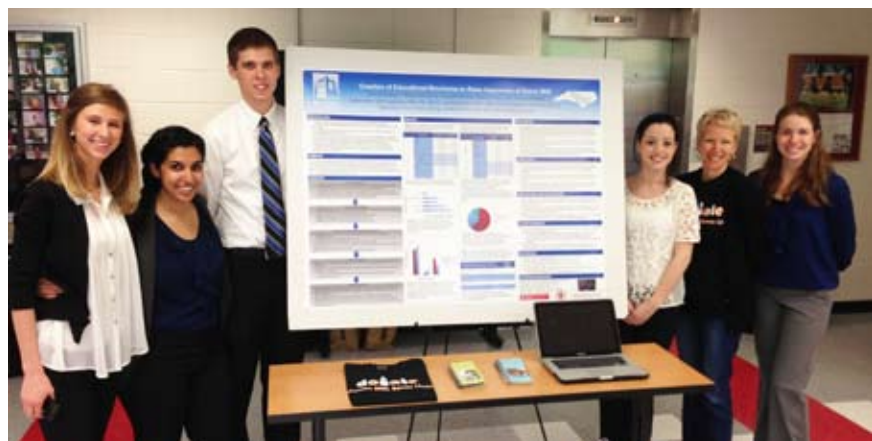


Photo courtesy Wright Foods.

*Wright Foods is moving from consulting to product development and product packaging. Employee Anita Shek is a 2012 graduate of NC State's food science program.*

## Student Spotlight: Nutrition science seniors work to make an impact in their community

In Spring 2013, 43 Nutrition Science seniors completed their Senior Capstone in Nutrition, developing special projects for these community partners: the Alexander YMCA, Stough Elementary School, AB Combs Elementary School, Telamon Cooperation's Head Start preschools, the North Carolina Breastfeeding Coalition, Wake County Meals on Wheels and NC State's Wood Wellness Village.



*A team of nutrition science seniors shows the results of their Senior Capstone project.*

Seniors Shima Ghattan, Tiffany Glasscock, Joe Roberts, Sarah Sutton and Janna Whitfield partnered with the North Carolina Breastfeeding Coalition to initiate "Every Ounce Counts," an educational campaign promoting human donor milk. Supervised by Dr. April Fogleman and doctoral student Maryanne Perrin, the team created educational brochures about the benefits of human donor milk for premature infants and the protocols taken to ensure its safety. So pleased with the students' work, the North Carolina Breastfeeding Coalition has requested that future senior capstone groups continue the campaign.

Reaching out to provide nutrition education resources to low-income parents and their preschool children, another team of seniors created eye-catching posters and handouts focusing on ChooseMyPlate.gov. Matthew Bishop, Rebecca Dulin, Abra Selick, Eric Waddell and Montana Wagner partnered with Telamon Cooperation's Head Start preschools to develop ten posters with original illustrations of super hero foods, like "Wonder Wheat," "Amazing Apple" and "Berry Brothers." The students also compiled fact sheets in Spanish and English, activity sheets and recipes related to the highlighted food group of the month. Four local preschools will display the students' posters this year.

"While our community partners gained a great deal from the students' hard work, the seniors in Nutrition Sciences also gained valuable skills working in the community," said Dr. Suzie Goodell, who teaches the course.

## Student Spotlight: Senior nutrition major brings global perspective to her studies

When it comes to addressing issues related to hunger in developing nations, FBNS nutrition major Becky Dobosy is not sitting still. The senior has traveled near and far to grow her knowledge of nutrition and sustainable agriculture and to put it to work.

She has helped indigenous people in Guatemala address issues related to food and health. She's visited world food and agriculture agencies in Rome. And, most recently, she spent a summer serving as intern at the Center for Environmental Farming Systems (CEFS) in Goldsboro.

"My passions don't lie with nutrition for optimal performance or athletics but for survival and day-to-day life," Dobosy says. "I am really interested in international development as it relates to nutrition and sustainable agriculture, and so I'm trying to find a career where the fields of community nutrition and sustainable agriculture intersect."

Dobosy's interest in nutrition and agriculture is rooted in childhood experiences with a family garden. And a church mission trip she took while in high school to a Nicaraguan orphanage sparked her passion for working internationally. In Nicaragua, she saw firsthand the important role that nutrition plays in learning, she says, and she realized that could combine her interests in international development, nutrition and sustainable agriculture into a career.

Dobosy cites research that shows that malnutrition, especially early in life, slows brain development. "Nutrition not only helps you be healthy, it also helps you learn," she says. "And people who can learn and are not held back by hunger or diseases are able to do more for their community and overcome problems – or avoid problems altogether – and thus help their communities develop."

Thus, nutrition education can give "people the tools to make change in their own communities and not rely on food or help from the outside," she says.

As Dobosy looks ahead to the next steps on her journey toward a career in nutrition and community development, she has a full plate: As she works toward her nutrition degree, she's also tackling minors in agroecology and Spanish.

"I don't know if I'm going to look at the world and see my impact, but I at least hope to leave my fingerprints in a community or two."



*Senior nutrition major Becky Dobosy says she plans a career "where the fields of community nutrition and sustainable agriculture intersect."*

# Alumni Spotlight



Dr. Jeffrey Resch (Ph.D. '04), second from left, and Dr. Kelsey Ryan (Ph.D. '12), at far right, with program partners in Malawi.

Alumnus Jeffrey Resch (PhD'04) is putting his NC State training to work to help solve world food problems. Read his article about the volunteers from his company and the difference they are making in one country.

**Food processors in Malawi receive training from General Mills volunteers**  
 By Dr. Jeffrey Resch, Sr. Scientist, General Mills  
**Excerpts from [www.triplepundit.com](http://www.triplepundit.com)**

For most people, the goal of making a better bowl of porridge may seem like a trivial matter, certainly not a pursuit for which one would volunteer countless hours of their free time and make trips around the world. But, for a small group of food industry volunteers, creating a better bowl of porridge is precisely what they have dedicated themselves to achieving.

Their efforts culminated in an unforgettable journey to Malawi where they provided training to help local manufacturers understand how to consistently create nutritious, great-tasting porridge for the millions of people who depend on it. The porridge in question is known locally in Malawi as likuni phala, but more commonly throughout the rest of the world as corn soy blend or just CSB.

The volunteers who traveled to Malawi to facilitate the training, Dr. Jeff Resch and Craig Lundquist, arrived several days ahead of the training. They made visits to several CSB producers to provide technical assistance and build personal connections with the attendees prior to the training and also to better understand some of their challenges and training needs.

## TWO FOOD SCIENCE GRADS NAMED 2013 FBNS OUTSTANDING ALUMNI

Dr. Harold Schmitz, Executive Director of the Mars, Inc., Center for Cocoa Health Science, and Dr. Qixin Zhong, Associate Professor of Food Science and Technology at the University of Tennessee Institute of Agriculture, were named the 2013 FBNS Outstanding Alumni. Schmitz and Zhong earned doctoral degrees in Food Science from the Department in 1993 and 2003, respectively.

# IFT 2013 annual meeting highlights

Once again, the Department of Food, Bioprocessing, and Nutrition Sciences left a lasting impression on a convention of food scientists and technologists. At the 2013 International Food Technologists annual meeting, held in Chicago, Ill., in July 2013, FBNS students and faculty walked away with multiple awards and recognitions.

**Dr. Ken Swartzel** received IFT's highest award, the Nicholas Appert Award, for his research and development results, methods, and techniques which have transcended the boundaries of food industry and are being applied in high technology industries, for his lifetime dedication of teaching and mentoring, and for mapping the field of Food Technology by being well-recognized throughout the world.

**Dr. MaryAnne Drake**, William Neal Reynolds Distinguished Professor, received the 2013 Research and Development Award for impacting the dairy food industry, both nationally and globally, by leading a comprehensive and unique research program on dairy foods flavor. Drake was also recognized by the IFT Philadelphia Section with the 2013 Julius Bauermann Lectureship Award.

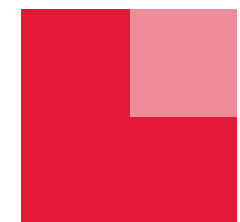
The **Food Science Club** earned first place in the Chapter of the Year competition, the tenth time the club has received this honor since 1976. Additionally, the club placed third in the Product Development competition with "Chocolettes," a reduced calorie/reduced fat dark chocolate truffle. The club also earned fourth place in the College Bowl competition.



Dr. MaryAnne Drake and Todd Klaenhammer.



Chris Pernel, Rheology Lab Manager; George Stoforos, graduate student; and alumna Dahlia Suriaatmaja staff the Department's booth at the conference.



## A LOSS IN THE FBNS FAMILY

Dr. Henry Pridgen Fleming, Jr. of Raleigh, NC, passed away on March 15, 2013 at the age of 80. He received his bachelor's and master's degrees in food science from NC State and his doctoral degree in food science from the University of Illinois. Fleming was a research leader at the USDA Food Fermentation Laboratory and professor in the Department. He retired in 2003 after nearly 40 years of service.





**AWARDS &  
HONORS  
2012-2013**

**FACULTY + STAFF**

2012 INNOVATOR OF THE YEAR FOR NC STATE <i>Dr. Josip Simunovic, Research Associate Professor</i>
2013 NC STATE ALUMNI ASSOCIATION OUTSTANDING EXTENSION AND OUTREACH AWARD <i>Dr. Fletcher M. Arritt III, Associate Professor</i>
2013 NC STATE ALUMNI ASSOCIATION OUTSTANDING TEACHER <i>Dr. L. Suzanne Goodell, Assistant Professor</i>
2013 IFT RESEARCH AND DEVELOPMENT AWARD <i>Dr. MaryAnne Drake, Professor</i>
2013 JULIUS BAUERMANN LECTURESHIP AWARD, IFT PHILADELPHIA SECTION <i>Dr. MaryAnne Drake, Professor</i>
IFT 2013 NICHOLAS APPERT AWARD <i>Dr. Kenneth Swartzel, Professor</i>
2013 NACTA TEACHING FELLOW <i>Dr. Keith Harris, Associate Professor</i>
CALS OUTSTANDING STAFF MEMBER <i>Mr. Gary D. Cartwright, Director of the Dairy Enterprise System</i>
2012 ACADEMY OF OUTSTANDING FACULTY ENGAGED IN EXTENSION <i>Dr. Fletcher M. Arritt III, Associate Professor</i>
2012 OUTSTANDING EXTENSION SERVICE <i>Dr. Fletcher M. Arritt III, Associate Professor</i>

EPSILON SIGMA PHI FRIEND OF EXTENSION <i>Mr. Gary D. Cartwright, Director of the Dairy Enterprise System</i>
2013 NACTA TEACHING AWARD OF MERIT <i>Brian Farkas, Professor</i>
CALS OUTSTANDING TEACHER <i>Dr. L. Suzanne Goodell, Assistant Professor</i>
PRIDE OF THE WOLFPACK <i>Ms. Lisa Gordon, Ms. Beth King</i>
IFT AQUATIC FOOD PRODUCT DIVISION OUTSTANDING SERVICE <i>Dr. David Green, Professor</i>
PURDUE UNIVERSITY OUTSTANDING FOOD SCIENCE ALUMNA <i>Dr. Lee-Ann Jaykus, Professor</i>
DOW AGROSCIENCES AWARD FOR EXCELLENCE IN RESEARCH <i>Dr. Tim Sanders, Professor</i>



**DR. KEN SWARTZEL NAMED TAR HEEL OF THE WEEK**

*Dr. Ken Swartzel was named Tar Heel of the Week in the News and Observer on August 10. He was honored for his 30-year career in pioneering methods of preserving foods in flexible packages to capture and preserve the tastes and textures of foods for long periods of time.*

# Nourishing your Department of Food, Bioprocessing and Nutrition Sciences

*Keeping the FBNS family strong and healthy requires the attention of our important stakeholders, including alumni and emeriti, industrial partners and commodity organizations. From supporting daily operations to creating endowments that give back to the department in perpetuity, there are many ways you or your organization can help nurture the people and programs that make FBNS a preeminent department.*

*Think about your own years and experiences in Schaub Hall. Was there a faculty or staff member who made a difference in your college career? Is there an endowment or student award named in their honor? There is no better way to recognize their influence on your life than to make a donation in their name. Perhaps there are program areas that directly impact your own work? Annual gifts to the department's enhancement fund can be directed toward specific teaching, research, and extension efforts. Program endowments of \$25,000 or more (can be set up over a period of five years!) can also ensure discretionary funds are available to the faculty and staff who work in those program areas.*

*Faculty and staff give time, talent, and their own personal treasure, above and beyond the classroom and laboratory. Professorships and professional development award endowments help recruit, retain and reward those professors and professionals who dedicate their lives to the students and research areas, as well as to the health and well-being of our communities. Please use the enclosed form to make your commitment to a strong and healthy Department of Food, Bioprocessing and Nutrition Sciences.*

## Thank you!



**Partners are featured on special display shelves in Schaub Hall that are designed to spotlight the companies and commodities that support and benefit from innovations in food, bioprocessing and nutrition sciences. The goal? Circle the building!**

## ENDOWMENTS, FELLOWSHIPS, AND SCHOLARSHIPS

Duong, Green and Gharst Food Science Leadership Award  
Dr. Peggy Foegeding Memorial Food Science Scholarship  
Food, Bioprocessing and Nutrition Sciences Enrichment Fund  
Food Science Club Endowment  
NC Dairy Technology Society Enhancement Fund  
NC Soybean Producers Association Annual Scholarship  
Dr. Isadore and C. Peppe Food, Bioprocessing and Nutrition Scholarship  
John and Kelli Rushing Food Science Scholarship Fund  
Frank and Rachel Thomas Food Science/Family and Consumer Science Scholarship  
Neil and Nancy Webb Food Science Scholarship Endowment  
Wanida Lewis Fellowship Award Endowment

## GOLD LEVEL PARTNERS

Feldmeier Equipment, Inc.  
Glanbia Inc.  
Kenan Foundation  
NC Soybean Producers Association Inc.  
Pickle Packers International, Inc.  
Silliker Labs  
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