

**PURDUE**  
AGRICULTURE

# DEPARTMENT OF FOOD SCIENCE

2012 ANNUAL NEWSLETTER





# NOTE FROM THE DEPARTMENT HEAD



**DEPARTMENT HEAD**  
**SUZANNE NIELSEN**

Greetings from the Food Science Department at Purdue, with a new appearance and size to our annual newsletter! We're including some of the typical information about student, staff, and faculty activities, awards, and research, but in a revised format with reference to our department website for more details.

We're focusing in this newsletter on some exciting changes in the department. The first new thing you would notice at the front doors on the north side of our building is a beautiful new entrance, which was made possible by a generous donation from the Reichart Family, owners of Red Gold, Inc. Plans for the entrance were announced two years ago when the building was renamed in honor of Phil Nelson, and finally the job has been completed. As you enter the building and walk down the center hallway on first floor, at the end you'll now see a door leading into the new Test Kitchen, which also sits adjacent to the Pilot Plant. This facility was very heavily used for the first time this

spring semester by senior students working on their product development project for their capstone course.

Large undergraduate student numbers have kept the faculty and staff very busy this school year, and continue to keep Purdue Food Science a priority school of companies recruiting students. The Industry Fellows Program for graduate students, a new partnership between the Department and participating companies, is helping us recruit excellent students into our program.

This coming school year will be a time for us to review our past five years and propose plans for the next five years, as we prepare for our next department review in March 2013. That means it's also a time to reflect on and work to strengthen our relationships with our alums and the many organizations they represent. We greatly value the encouragement and support of our alums, to the benefit of our new and current students!

We hope you'll keep in touch!

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Industry Fellows Inaugural Class Left to Right: Laura Zimmerer (General Mills), Krystin Marrs (ConAgra), Sydney Moser (Cargill), Aaron Pleitner (Nestlé)

# ANNOUNCEMENTS

## WELCOME



**DR. AMY LIN**

Research Assistant  
Professor



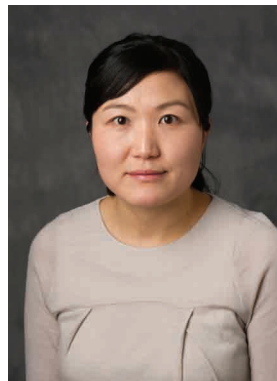
**KATIE (VEENHUIZEN)  
CLAYTON**

Food Science  
Extension  
Outreach  
Specialist



**BEN O'NEIL**

Pilot Plant  
Technician



**YOUNG-HEE CHO**

Continuing  
Lecturer

## IN MEMORY



**DR. JAMES CHAMBERS**

Professor Emeritus  
March 12, 1935-  
October 10, 2011

## RECOGNITIONS

**DR. HALEY OLIVER**, Outstanding Undergraduate Teacher

**DR. TAMESHIA BALLARD**, Outstanding Undergraduate Counselor

**DONNA KEENER**, Outstanding Service to Students Award

**DR. ARUN BHUNIA**, Outstanding Graduate Educator

**STEVE GAUGER**, received the Food Science Department Outstanding Service Award

**DR. MARIO FERRUZZI**, promoted from Associate Professor to Professor

**MIKE BUDZIK**, Network Administrator, advanced from rank 5 to rank 6

**DR. KEVIN KEENER**, elected to the Board of Trustees of the American Society of Ag. & Bio. Engineers (ASABE)

**DR. AMY LIN**, received the Young Investigator Award at the 2011 meeting of the International Conference on Food Factors (ICoFF) in Taiwan

**DR. BRUCE HAMAKER**, selected to receive the W.K. Kellogg International Food Security Award & Lectureship from the Institute of Food Technologists (IFT)

**DR. KEVIN KEENER**, as a member of the Purdue ZipTrips Team received the College of Agriculture Team Award

**DR. MARK MORGAN**, selected to participate in the 2012-13 Entrepreneurial Leadership Academy through Purdue's Discovery Park

### INDUSTRIAL ASSOCIATES MEMBERS

Cargill  
Clabber Girl  
Coca Cola  
ConAgra Foods  
Dow AgroSciences  
Enerfab, Inc.  
General Mills  
Morgan Foods  
Nestlé R&D Centers  
PacMoore  
PepsiCo Beverages & Foods  
Red Gold  
Roquette America  
Sensient Flavors  
Skidmore Sales & Distributing Co.  
Stanislaus Food Products  
The Kroger Company  
Zentis Food Solutions

# STUDENT RECOGNITIONS

## OUTSTANDING UNDERGRADUATES

(based on student's academic and extracurricular achievements)

Michelle Egger, *Freshman*  
Molly McKneight, *Sophomore*  
Amber Furrer, *Junior*  
Kallen Hovland, *Senior*

## 400 CLUB MEMBER

(cumulative GPA = 4.0)  
Claire Burtch, sophomore

## GRAND CRU CLUB

(GPA of at least 3.5 over successive semesters)

### New Initiates

(2 consecutive semesters):

Claire Burtch  
Mathias Bohn  
Tsz Yan Denise Chung  
Lindya Djaputra  
Stephen Emerick  
Amber Furrer  
Zhe Allison Ji  
Pauline Lay  
Sasha McCorkle  
Molly McKneight  
Anbukhani Muniandy  
Emily Neuenschwader  
Patrick Polowsky  
Kelsey Tenney  
Megan Turik  
Weijian Victor Wang

### Secundus

(4 consecutive semesters):

Courtney Hayes  
Kallen Hovland  
Virginia Wright

## PHI BETA KAPPA NATIONAL HONORARY SOCIETY

Amber Furrer, Junior  
Kevin Na, Junior

## 2011-12 UNDERGRADUATE SCHOLARSHIP RECIPIENTS

**\$72,200 awarded from the Department of Food Science**  
**\* \$157,000 awarded from the University**

### Alumni & Friends

Claire Burtch

### Fred Babel

Catherine Anslinger  
Mathias Bohn  
Nyssa Boyd  
Claire Burtch  
Paul Castrale  
Sandra Chough  
Courtney Hayes  
Kallen Hovland  
Joshua Jackson  
Grace Jang  
Stephen Kashdan  
Mary Ann Kiess  
Yan-Ni Lee  
Sasha McCorkle  
Molly McKneight  
Allyson Mercer  
Lucas Mitchell  
Ellen Muenz  
Emily Neuenschwader  
Savannah Poe  
Patrick Polowsky  
Arvind Raghothama  
Claire Riehle  
Rebecca Samuels  
Erin Simon  
Megan Turik  
Jamie Warren  
Jacklyn Whittemore  
Carmen Wickware  
Katherine Wilkes  
Victoria Williams  
Virginia Wright

### Arnold "Bud" Denton

Courtney Hayes  
Bethany Mason  
Megan Turik

### Institute of Food Technologists (IFT)

Claire Burtch  
Catherine Shehan  
Katherine Wilkes

### International Society of Beverage Technologists

Claire Burtch

### Mid-America Food Processors

Megan Turik

### \*Purdue Presidential

Claire E. Adams  
Catherine L. Anslinger  
Michelle L. Egger  
Joshua B. Jackson  
Katherine A. Wilkes  
Nyssa C. Boyd  
Patrick J. Polowsky  
Victoria G. Williams

### \*Purdue Trustee

Laura M. Brenberg  
Claire E. Burtch  
Ariel K. Pickett  
Kelsey N. Tenney  
Christopher J. Cheng  
Amber N. Furrer  
Kallen R. Hovland  
Haley L. Keller  
Molly M. McKneight  
Allyson L. Mercer  
Catherine V. Shehan

### Red Gold

Rebecca Kady

### Ron Rice

Courtney Hayes

## "BOILER CULINARY THROWDOWN COMPETITION"

The winning team, the Saccharides, consisted of 4 Food Science students: Jacob Eichinger, Amber Furrer, Virginia "Ginny" Wright, and Allison Mercer





## COLLEGE BOWL TEAM

Winners of Regional Competition  
(will compete at the National Competition held at the 2012 Institute of Food Technologists annual meeting)

**Team Members:** Laura Zimmerer – captain, Josh Jones, Jenn Farrell, Amber Furrer, Kallen Hovland, Catherine Shehan, Carmen Wickware,  
**Team Coach:** Dr. Haley Oliver

## FOOD SCIENCE CLUB OFFICERS

President: Jennifer Farrell  
Vice President: Gina LaRose  
Treasurer: Chris Cheng  
Secretary: Stephanie Zeider  
Ag Council Rep.: Chelsea Ramsey

## FOOD SCIENCE GRADUATE STUDENT ASSOCIATION OFFICERS

President: Emily McKenzie  
Vice President: Cordelia Running  
Treasurer: Rebecca Lipasek  
Secretary: Na Li  
Social Directors: Tristan Lipkie & Eileen Duarte

## BERNIE J. LISKA OUTSTANDING GRADUATE TEACHING ASSISTANT

Fall 2011: Shellen Goltz (PhD with Mario Ferruzzi), TA for Food Processing 442 class.  
Spring 2012: Jason Mueller (MS with Andrea Liceaga), TA for Food Analysis 469 class.

## COMMITTEE OF THE EDUCATION OF TEACHING ASSISTANTS (CETA) TEACHING AWARD

Madhuvanti Kale  
(PhD with Bruce Hamaker)

## 2011-2012 GRADUATE DEGREES

### August 2011

Claudia Ionita  
(PhD, Dr. David Nivens)

Pui Yeu Phoon  
(PhD, Dr. Fernanda SanMartin)

Amanda Tuck  
(MS, Dr. David Nivens)

## 2012 BS GRADUATES



**First Row:** Brandon Johnson, Hannah Smith, Jennifer Farrell, Christopher Cheng, Jessica Harris, Alexandra Aubrey, Kallen Hovland

**Second Row:** Chuhan Liu, Hechen Wei, Lauren Ewer, Emily Neuenschwander, Angela Baker, Dr. Suzanne Nielsen, Jingjin Wang, Melissa Arndt, Emiria Soendjojo, Sarah Princehorn, Yi Niu, Phillip Kass

**Third Row:** Catherine Anslinger, Elizabeth Kryger, Sergiy Mosendz, Carmen Wickware, Stephen Cook, James Brooks, Stephanie Zeider, Steven Chambers, Mathias Bohn, Peter Cook, Jordan Ash, Paola Flores  
Verdad Ixta Not Pictured: Jaehoon Huh, Moon Won Kwak, Vanja Pistalo, Catherine Shehan, Tianlin Xu, James Schnepf, Yi Xiao

### December 2011

Lin Bin  
(PhD, Dr. Yuan Yao)

Dawn Dahl  
(MS, Dr. Bruce Hamaker)

Choon Young Kim  
(PhD, Dr. Kee-Hong Kim)

Hyochin Kim  
(PhD, Dr. Arun Bhunia)

Udit Minocha  
(PhD, Dr. Bruce Applegate)

Cordelia Running  
(MS, Dr. Janaswamy Srinivas)

Richa Vaid  
(PhD, Dr. Mark Morgan)

Jessica Wiersma  
(MS, Dr. Connie Weaver)

Bicheng Wu  
(Dr. Brad Reuhs)

### May 2012

Wenqi Cui  
(MS, Dr. LiFu Chen)

Shellen Goltz  
(PhD, Dr. Mario Ferruzzi)

Amandeep Kaur  
(PhD, Dr. Bruce Hamaker)

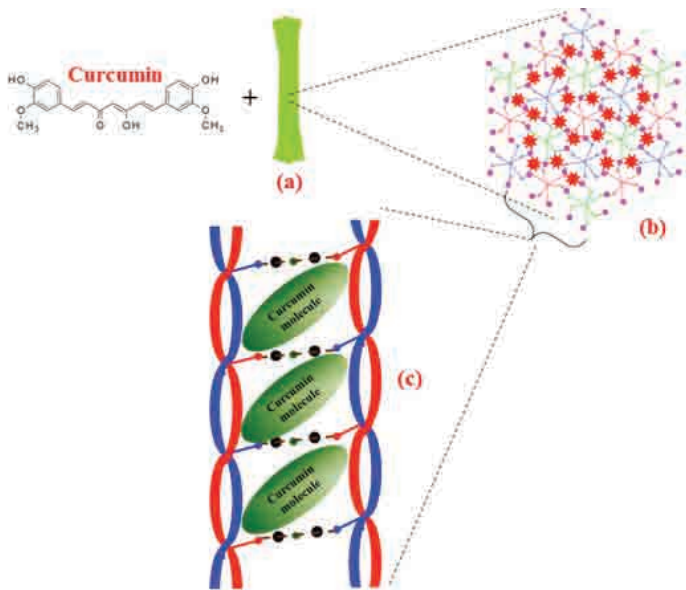
Byoung-Hoo Lee  
(PhD, Dr. Bruce Hamaker)

# DISCOVERY IN THE NEWS

## E. COLI, SALMONELLA MAY LURK IN UNWASHABLE PLACES IN PRODUCE

Sanitizing the outside of produce may not be enough to remove harmful food pathogens, according to **Amanda Deering**, postdoctoral researcher in food science and Robert Pruitt, professor of botany and plant pathology, who demonstrated that *Salmonella* and *E. coli* can live inside plant tissues. Results were published in separate papers in the *Journal of Food Protection and Food Research International*.

## PASS THE LYCOPENE: SCIENTIST CAN PROTECT SUPPLEMENTS INSIDE FOOD



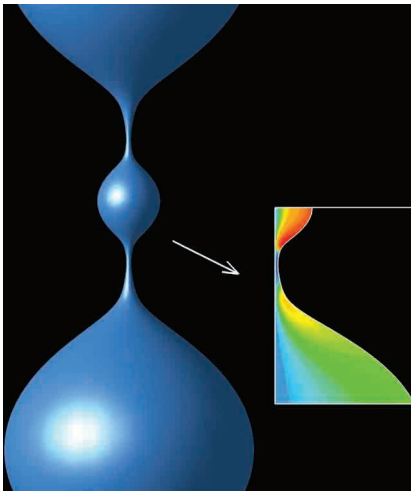
**Srinivas Janaswamy**, research assistant professor of food science, has developed a way to encase nutritional supplements in food-based products so that one day consumers might be able to sprinkle vitamins, antioxidants and other beneficial compounds right onto their meals. He said many of the nutraceuticals, or nutritional supplements, added to foods today are not structurally stable. Heat, light, oxygen and other external factors could degrade the supplements, rendering them ineffective. “There are many methods for adding nutraceuticals to foods, but the one thing they all have in common is instability due to non-rigid structures,” said Janaswamy, whose findings were published in the journal *Food & Function*.

## RED WINE, FRUIT COMPOUND COULD HELP BLOCK FAT CELL FORMATION



A compound found in red wine, grapes and other fruits is able to block cellular processes that allow fat cells to develop, opening a door to a potential method to control obesity, according to a Purdue study. **Kee-Hong Kim**, an assistant professor of food science, and **Jung Yeon Kwon**, a graduate student in Kim’s laboratory, reported in the *Journal of Biological Chemistry* that the compound piceatannol blocks an immature fat cell’s ability to develop and grow. While similar in structure to resveratrol – the compound found in red wine, grapes and peanuts that is thought to combat cancer, heart disease and neurodegenerative diseases – piceatannol might be an important weapon against obesity. Resveratrol is converted to piceatannol in humans after consumption.

## PESTICIDE ADDITIVES CAUSE DRIFTING DROPLETS, BUT CAN BE CONTROLLED



Chemical additives that help agricultural pesticides adhere to their targets during spraying can lead to formation of smaller “satellite” droplets that cause those pesticides to drift into unwanted areas, Purdue University

researchers have found. **Carlos Corvalan**, an associate professor of food science, said understanding how the additives work together means they could be designed to decrease the health, environmental and property damage risks caused by drift. Corvalan; Osvaldo Campanella, a Purdue professor of agricultural and biological engineering; and Paul E. Sojka, a Purdue professor of mechanical engineering, published their results in a February issue of the journal *Chemical Engineering Science*.

## PILL SOMEDAY MAY PREVENT SERIOUS FOODBORNE ILLNESSES

Modified probiotics, the beneficial bacteria touted for their role in digestive health, could one day decrease the risk of *Listeria* infection in people with susceptible immune systems, according to research by **Arun Bhunia**, professor of food science; **Mary Anne Amalaradjou**, postdoctoral researcher; and **Ok Kyung Koo**, a former Purdue doctoral student. They found that the same *Listeria* protein that allows the bacteria to pass through intestinal cells and into bloodstreams can help block those same paths when added to a probiotic. “Based on the research, it looks very promising that we would get a significant reduction in *Listeria* infections,” said Bhunia, whose findings were published in January in the journal *PLoS One*.

## ADDITIVES MEANT TO PROTECT VITAMIN C IN SOME CASES CAUSE MORE HARM



PHOTO BY ANDREW HANCOCK

Anti-caking agents in powdered products may hasten degradation of vitamin C instead of doing what they are supposed to do: protect the nutrient from moisture. **Lisa Mauer**, professor of food science; Lynne Taylor, professor of industrial and physical pharmacy; and Mauer’s graduate student **Rebecca Lipasek** study deliquescence, a reaction in which humidity causes a crystalline solid to dissolve. In Mauer’s laboratory, different anti-caking agents were blended with powdered sodium ascorbate, a common form of vitamin C, and were exposed to different relative humidities. Once vitamin C changes chemically, it no longer holds its nutritional value. The findings suggest that foods made with powdered vitamin C may lose the nutritional value at a lower humidity than once thought. The team’s findings were published in the September 2011 issue of the *Journal of Food Science*.

### MORE INFORMATION

The annual newsletter is only a glimpse of what’s happening in the Department of Food Science. Please visit our website for more details at [www.foodsci.purdue.edu](http://www.foodsci.purdue.edu)

Moving? Changing jobs? Keep us updated at [foodsci@purdue.edu](mailto:foodsci@purdue.edu)



Department of Food Science  
Philip E. Nelson Hall of Food Science  
745 Agriculture Mall Drive  
West Lafayette, IN 47907



## LIANGLI (LUCY) YU

PhD 1999

2012 Distinguished Ag Alumni Award

## 2011 OUTSTANDING FOOD SCIENCE AWARD RECIPIENTS (LEFT TO RIGHT)

- NICHOLAS ROZZI** (BS 1997, PhD 2000), Director, Global Commercialization for Godiva Chocolatier, Inc.
- LIANGLI "LUCY" YU** (PhD 1999), Professor & Acting Chair of the Dept. of Nutrition and Food Science at the University of Maryland
- GEORGE ABIDE** (PhD 1992), President of the Abide Idea Company
- RENÉE MELLICAN** (MS 1994, PhD 2001), Director of Product Development in Research, Quality, and Innovation for ConAgra Foods
- GEORGE SADLER** (PhD 1984), Chief Technical Officer of Prove It, LLC

