03 DONOVAN ELECTED TO NAM—Dr. Sharon Donovan joins the National Academy of Medicine

11 BARIATRIC SURGERY AND ALCOHOLISM—a puzzle for Dr. Yanina Pepino’s lab

12 ENCAPSULATING TRIBUTYRIN FOR GUT HEALTH—three faculty work towards a non-bitter solution

13 FSHN IN THE NEWS—rum, local food processing, hospitality management alumnae, safe bioactives . . .

AND MORE
Amazing Milestones

During my childhood, my family often played a card game called *Mille Bornes*®, the objective of which was to complete a road race the distance of 700 or 1,000 miles while avoiding driving hazards and making strategic choices about safety, speed, distance, and driver awareness. We played the French version, probably to learn the metric system and standardized road signs of Europe, but what I most remembered about the game was an annoying focus on getting to the finish without any attention to what would be seen out of the car window, or encountered at a lunch stop at a roadside park, or learned from the people that might be met when stopping to refuel or change a tire. There were not any life experience cards to play; in essence, the “thousand milestones” were missing! What relevance does the destination have, without the markers of achievement along the way?

We are celebrating a major milestone at the University of Illinois—150 years of access to education, discovery, and technology/knowledge transfer. Each kilometer of progress has been a journey in and of itself, with many highlights from 1867 to today. The roadblocks, speed limits, and empty gas tanks have yielded to creativity, collaboration, and enrichment. Throughout this issue of our FSHN publication, you will find our 150-year history wrapped into our current mission of implementing research, education, and outreach programs designed to promote a safe, nutritious, accessible, and affordable food supply that enhances human health. Please visit us during the sesquicentennial celebration that continues into the new year. We hope that you will make the trip and count the milestones on your journey!

Sharon M. (Shelly) Nickols-Richardson, Ph.D., R.D.
Department Head

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Faculty research summaries available at www.fshn.illinois.edu
Nutrition scientist Sharon Donovan elected to National Academy of Medicine

Sharon M. Donovan, a professor of nutrition and the Melissa M. Noel Endowed Chair in Nutrition and Health at the University of Illinois, was elected Oct. 16 to the National Academy of Medicine.

Considered one of the highest honors in the fields of health and medicine, induction into NAM recognizes individuals who have demonstrated outstanding professional achievements and commitment to service.

“Sharon Donovan embodies the spirit of this honor through the incredible contributions she has made to advancing our understanding of digestive tract and brain development, childhood obesity and autism.”

Donovan is among 70 new members and 10 new international members announced by the academy. With the additions announced today, NAM has 1,812 active members and 151 international members.

“Being inducted into NAM is an incredible honor that very few people achieve,” said Kim Kidwell, the dean of the College of Agricultural, Consumer and Environmental Sciences. “Sharon Donovan embodies the spirit of this honor through the incredible contributions she has made to advancing our understanding of digestive tract and brain development, childhood obesity and autism. Sharon’s work helps people throughout the world to live better lives. I am thrilled that she has been acknowledged for her contribution in this way and am very proud that she is a member of the ACES family.”

A registered dietitian, Donovan and her group conduct basic and translational research in pediatric nutrition, focusing on three areas: optimal intestinal development of neonates, prevention of childhood obesity and determinants of picky eating in 2- to 5-year-old children.

Donovan also is principal investigator with the Illinois Transdisciplinary Obesity Prevention Program; an affiliate with the Carl R. Woese Institute for Genomic Biology at the Urbana campus; and an adjunct professor of pediatrics at the U. of I. at Chicago College of Medicine.

Her work has garnered numerous honors, including awards from the International Life Sciences Institute North America and the American Society for Nutrition. She is an active member of the American Society for Nutrition, serving as that organization’s president from 2011 to 2012, and currently is present-elect of the International Society for Research on Human Milk and Lactation.

Donovan earned a bachelor of science degree in nutrition science and a doctorate in nutrition from the University of California, Davis. After completing a postdoctoral fellowship in pediatric endocrinology at Stanford University School of Medicine, she joined the U. of I. faculty in 1991. She served as the director of the Division of Nutritional Sciences Graduate Program at Illinois from 1999-2009.

Established in 1970 as the Institute of Medicine, NAM is an independent organization of eminent professionals from diverse fields including health and medicine, and the natural, social and behavioral sciences. The academy works to address critical issues in health, medicine and related policy and to inspire positive action across sectors.
Dr. Jaime Amengual Terrasa will join FSHN as an Assistant Professor of personalized nutrition in January 2018. Jaime completed his PhD in biochemistry at the University of the Balearic Islands (Spain), followed by postdoctoral training in pharmacology at Case Western Reserve University and in cardiology at New York University. Jaime joins us from New York University, Department of Medicine, where he has been a Research Assistant Professor investigating the regulation of atherosclerosis progression by beta-carotene. He contributes to the reduction of cardiovascular disease by examining how carotenoids and lipid metabolism interact to mediate atherosclerosis. Using animal models and cell culture techniques, Jaime explores the structure and function of vitamin A and its metabolites to mitigate metabolic disease progression. He is supported by an American Heart Association Scientist Development Grant.

Dr. Melissa Pflugh Prescott, RDN, will join FSHN as an Assistant Professor of school/childhood foods and nutrition in February 2018. Melissa completed her PhD in public health at New York University, Steinhardt School of Culture, Education, and Human Development, and has been a Postdoctoral Research Fellow at Colorado State University in Fort Collins, where she has been the primary investigator for a United States Department of Agriculture funded program on school meals, student vegetable consumption, and reduced plate waste in middle schools. She also has been a co-investigator for a farm-to-school, food supply chain program evaluating food choice, consumption, and waste. Melissa promotes child nutrition in the school environment by using student-driven food system campaigns to promote meal participation and vegetable intake. She evaluates the impact of farm-to-school programs on farmers and food businesses.

Mr. Jorden Brotherton, MBA, joined the department as Clinical Assistant Professor of Hospitality Management in September 2017. He is primarily responsible for upper-level courses in fine dining management and quantity foods management, along with a few other courses in his areas of experience. He earned his BS in Food Science and Human Nutrition in the Hospitality Management concentration from the University of Illinois. After graduation, Jorden worked full-time with The Walt Disney Company in Lake Buena Vista, Florida, covering a wide variety of responsibilities such as Resort Front Desk Host, Resort Management Intern, and Resort Guest Experience Manager. He earned a Master’s of Business Administration from the University of Tampa, with a concentration in Management Information Systems. Most recently before joining the department, Jorden held a position with Hilton Worldwide, serving as the Manager of the Information Technology Cluster with Waldorf Astoria Chicago and Conrad Chicago. His valuable experiences in front- and back-of-house operations offer exceptional training for our hospitality management students.

Ms. Toni Burkhalter, MS, joined the department as a Senior Instructor in August 2017, to teach an introductory course on contemporary nutrition to undergraduate students during the 2017-2018 academic year. Toni earned two MS degrees (exercise physiology and animal sciences) from the University of Illinois at Urbana-Champaign. She joins us from Parkland College where she has been an Associate Professor. She has over 15 years of experience in teaching fundamentals of nutrition, community health, exercise physiology, and anatomy and physiology at Parkland College, along with mentoring students in independent study experiences. She has taught in online, hybrid, and traditional classroom formats, motivating students to understand and appreciate biological and nutritional sciences.
NEW STAFF

Mr. Jonathan (Jonny) Davidson joined the FSHN Department in April 2017 as Food Service Administrator II. He assists with foodservice operations in Bevier Café and the Spice Box. He is responsible for organizing, coordinating, and managing the teaching kitchen that serves as the learning laboratory for multiple courses supported by the Café and Spice Box. Jonny most recently was Chef de Partie at Miga, a local high-end restaurant in Urbana-Champaign. He has also been a kitchen manager at Farren’s Pub & Eatery and a personal chef. He received a diploma from the French Culinary Institute in Campbell, California, and is a Certified Food Safety Manager. Welcome Johnny!

CELEBRATIONS

Congratulations to Dr. Pawan S. Takhar, who has been promoted to Full Professor! In simple terms, Pawan explores polymer mechanics coupled with movement of heat, moisture, and oil in porous foods to improve their quality during processing. In practice, he designs and solves very complex mathematical models to optimize energy use and improve food processing and engineering methods. Applications of his research have saved the food industry millions of dollars by altering critical processing steps to produce higher quality foods and lower energy costs and product waste.

Mr. Brian Jacobson was named Assistant Director of Food and Bioprocessing Pilot Plant Operations. He leads efforts in the FSHN Pilot Plant in coordination with the emerging Integrated Bioprocessing Research Laboratory for the FSHN Department and the Agricultural and Biological Engineering Department.

Ms. Audra Martin has become an Office Manager. Audra coordinates internal and external visits to the FSHN Department by faculty colleagues, prospective students and their families, alumni, friends, advisory boards, and other visitors. She supports the Online Masters of Science in Food Science Program and provides assistance for a variety of departmental activities.

Ms. Amanda Floyd has been named Office Support Specialist. Amanda receives individuals who visit the FSHN Department and assists them with schedules and appointments. She coordinates equipment and supply inventory management and facility needs, along with bookkeeping activities.

ITEMS OF NOTE

Soo-Yeun Lee has been elected to the Board of Directors for the Institute of Food Technologists. She began her term of office in September 2017.

The FSHN Department’s Didactic Program in Dietetics (DPD) achieved a 100% placement rate with dietetic internships, compared to the national average of 50%. Every senior who applied for a dietetic internship in spring 2017 was matched with one in the first round. Ms. Justine Karduck, Clinical Assistant Professor, leads the DPD. Together with the Graduate Dietetic Internship, led by Ms. Jessica Madson, Clinical Assistant Professor, the Dietetics programs at the University of Illinois are stronger than ever!

Dr. John Erdman has been selected by the Awards Selection Committee and the Council of the International Carotenoid Society to be recognized as a 2017 Fellow of the International Carotenoid Society. As noted in their notification letter to Dr. Erdman, “The International Carotenoid Society recognizes members whose consistent contributions to the Society, the scientific community, and the general public demonstrate a commitment to excellence, leadership, and sound ethics.” A recognition of the honor was part of a banquet at the 18th International Symposium on Carotenoids, held in Lucerne, Switzerland, July 9–14.

Jozef Kokini, Professor Emeritus, received the Nicolas Appert Award from the Institute of Food Technologists in June 2017.
2017 College of ACES and Paul A. Funk Recognition Awards

Dr. Keith Cadwallader, Professor, was awarded the Paul A. Funk Recognition Award, limited to full-time faculty with ten consecutive years of service before being nominated. The award recognizes outstanding achievement and major contributions to the betterment of agriculture, natural resources, and human systems.

Ms. Justine Karduck, Clinical Assistant Professor, was presented with the Teaching Associate Teaching Award. This award recognizes specialized faculty who excel as teachers in the classroom and/or laboratory instruction in the College.

Ms. Leslie Alexander, Dr. Bruce Branham, Dr. Nicki Engeseth, Dr. Hao Feng, Mr. Brian Jacobson, Dr. Youngsoo Lee, Mr. Matt Smith, Dr. Pawan Takhar, and Ms. Marla Todd were recognized with the Team Award for Excellence. Each year, one award is presented to highlight outstanding contributions uniquely accomplished through a team effort. The Food Bioprocessing Innovations Team was awarded for their meritorious service to the FSHN Pilot Plant renovation project.

Mr. James Hartman, Research Specialist, was presented with the Professional Staff Award for Excellence, Sustained Excellence in Research for exceptional outstanding and meritorious work over an extended period of time.

International Research

Dr. Juan Andrade, Assistant Professor, received a grant from the ACES Office of International Programs for his proposal “Food Environments in Urban and Rural Ecuador.” This research will improve the national capacity for quality research examining non-communicable disease risk, and examine aspects of the Ecuadorian food environment contributing to food intake that may increase non-communicable disease risk among children and families. Juan is collaborating with faculty in the Department of Kinesiology at Illinois and in the School of Public Health at the Universidad San Francisco de Quito in Ecuador. Dr. Andrade also received a Joint Research Grant from the College of ACES for the project “Pre-clinical and clinical evaluation of legume-based nanoaggregate as a delivery vehicle to address vitamin D deficiency in Saudi Arabia. His collaborators are with the King Saud University of Riyadh.

Dr. Elvira de Mejia, Professor, along with collaborators in crop sciences, received a Joint Research Grant for their project “Impact on inflammation and atherosclerosis prevention potential of phenolic compounds and bioactive peptides from chia seeds.”

Dr. Hao Feng, Professor, has also received a Joint Research Grant for the project “Mano-thermo-sonication as a novel extraction method for ginseng saponins.” He will work with collaborators at National Taiwan University.

Dr. Youngsoo Lee, Assistant Professor, was selected to receive a Joint Research Project with National Taiwan University on “Developing vitamin A and iron-fortified, less-sodium soy sauce.”

Dr. Michael Miller, Associate Professor, received a Joint Research Project grant for his work on “Listeria monocytogenes and Hispanic-style fresh cheese.” His collaborators are at the Autonomous University of Queretero in Mexico.
Vision 20/20 Awards (from the College of ACES Division of Nutritional Sciences)

**Dr. John Erdman,** Professor Emeritus, received a two-year, $20,000 grant on the “Effect of supplemental RRR- and all-racemic alpha-tocopherol in brains of young and aging adult alpha-tocopherol transfer protein knockout mice.” Collaborators in the neurosciences, psychology, and division of nutritional sciences programs will join John in his research effort.

**Dr. Hannah Holscher,** Assistant Professor, received a two-year, $20,000 grant on “Hepatic steatosis as a novel target for a dietary fiber intervention in overweight and obese adults.” Collaborators include **Dr. John Erdman** and others from the kinesiology, electrical and computer engineering, and division of nutritional sciences programs.

**Dr. Manabu Nakamura,** Associate Professor, received a one-year, $10,000 grant to study “A novel in vivo model to investigate the mechanism underlying the effects of dietary polyunsaturated fatty acids on macrophage behavior.” He will work with collaborators in animal sciences.

**Dr. Soo-Yeun Lee,** Professor, received a two-year, $20,000 grant for her project titled “Gastrointestinal issues and nutritional strategies of endurance athletes.” She will work with faculty in kinesiology and gastroenterology.

**Dr. Sharon Donovan,** Professor, received a two-year, $20,000 grant for the “Assessment of cytokines in human milk and relationship to serum cytokines, milk microbiome, gut microbiome and health outcomes of children enrolled in the STRONG Kids 2 cohort: development and validation of cytokine assays of dried blood spots.”

**Dr. Marcia Monaco Siegel,** Research Assistant Professor in FSHN, will assist in leading the project, along with collaborators at Children’s Hospital of Fudan University in China.

**Dr. Yuan-Xiang Pan,** Associate Professor, received a two-year, $20,000 grant titled “Using epigenetic biomarkers as nutritional assessment tools to facilitate cancer diagnosis and to improve cancer patients’ health.” He will collaborate with **Dr. Anna Arthur,** Assistant Professor of FSHN, and clinician scientists at Carle Cancer Center.

**Dr. Karen Chapman-Novakofski,** Professor and Extension Specialist, received a one-year, $10,000 grant to develop “Apps for enhancing diabetes care: perceptions in clinical practice.” She will conduct this research with faculty in education policy, organization and leadership.
Awards from the Campus Research Board (2016–2017)

Dr. Hao Feng, Professor, received a grant to support his project titled “Oxygen-controlled germination to enhance the health benefits and functional properties of whole-wheat flour.” The U.S. sells roughly $47 billion of finished wheat-based products each year. Increasing the nutritional value of wheat products will have an impact on health. Dr. Feng will investigate whether whole-wheat flours prepared from oxygen-controlled germinated wheat have enhanced nutritional value and dough functionality compared to non-germinated wheat flour.

Dr. Zeynep Madak-Erdogan, Assistant Professor, received funding for her research on “Metabolic rewiring of breast cancer cells during the therapy resistance progression.” Most estrogen-receptor-positive tumors respond well to endocrine therapies; however, half of such tumors recur within 10 years. Endocrine resistance to treatment is a substantial clinical problem, the mechanisms of which will be explored in this project.

Dr. William Helferich, Professor, received funding for his project “Thermally abused frying oils and secondary breast cancer metastasis.” This grant also received the distinction of Arnold O. Beckman Award, selected for projects of special distinction or promise. In this project, degradation of frying oil will be characterized and analyzed for properties that are known antecedents of breast cancer metastasis. Collaborators include Dr. Nicki Engeseth, Professor, in the FSHN Department and faculty in the molecular and integrative physiology program at Illinois.
Dr. Zeynep Madak-Erdogan, Assistant Professor, received a two-year Patient-Centered Outcomes Research Institute (PCORI), Eugene Washington PCORI Engagement Award for her Cancer Research Advocacy Group-CRAG Training Program proposal. Funds of $135,000 are provided to engage clinicians, patients, caregivers, and other healthcare stakeholders in research toward developing and delivering more effective patient care. In addition, Zeynep was one of eight faculty selected by the National Center for Supercomputing Applications (NCSA) for the 2017–2018 Faculty Fellowship program. Funds are provided to support graduate student time, equipment needs, and access to NCSA staff, computing facilities, and software. She will conduct data analytics on breast cancer disparities in African-American women. Finally, Zeynep and her collaborator, Dr. Rohit Bhargava in bioengineering, has been awarded a $60,000 Dow AgroSciences grant on machine learning platform for predictive toxicology.

Dr. Youngsoo Lee, Assistant Professor was awarded $4,000 from the Teaching Advancement Board as a result of engagement in the 2017 Provost’s Faculty Retreat Grant program. These grants allow recipients to design and implement an instructional enhancement that has a high probability of improving education at Illinois. Youngsoo is developing an ‘open laboratory’ for FSHN 462 Food Processing II, which will allow small groups of students access to the FSHN Pilot Plant during specified times.

Dr. Shelly Schmidt, Professor, received an Association of Public and Land-Grant Universities Innovative Teaching Award for 2017. This $3,000 grant is designed to build collaborative teaching relationships between senior and junior faculty across institutions to promote innovations in teaching and learning in the food, agricultural, and natural resources sciences. Shelly is working with collaborators at the University of Idaho and North Carolina State University.

Dr. Hannah Holscher, Assistant Professor, received a $2,500 Karl E. Gardner Endowment Teaching Enhancement Award from the College of ACES to support the enhancement and evaluation of the capstone project in the course, FSHN 420 Nutritional Aspects of Disease. This project requires critical inquiry of evidence-based medical nutrition therapy practices.

Dr. Michael J. Miller—International Dairy Foods Association Teaching Award in Dairy Manufacturing from the American Dairy Science Association, June 2017

Dr. Soo-Yeun Lee—William V. Cruess Award for Excellence in Teaching from the Institute of Food Technologists, June 2017
Alumni and Friends

Francis F. (Frank) Busta | Myron Solberg Award from the Institute of Food Technologists, June 2017

Guy H. Johnson | The Gilbert A. Leveille Lectureship and Award from the American Society for Nutrition and the Institute of Food Technologists, April 2017

Russell Moroz | College of ACES Friend of ACES Award, ACES Alumni Association, September 2016

Katheryne Rehberg | College of ACES Young Alumni Award, ACES Alumni Association, September 2016

Jennifer Westerkamp | College of ACES Young Alumni Award, ACES Alumni Association, September 2016

Graduate Students

Candice Mazewski (E. de Mejia), Sindy Palma-Salgado (H. Feng), Luis Vargas (H. Feng), Elizabeth Morrow (S. Schmidt), and Emely Lopez (W. Helferich) | Chicagoland Food Industry Scholarship, Chicago Section of the Institute of Food Technologists

Candice Mazewski | Emerging Leaders in Nutrition Science Poster Competition (2nd place), Travel Award from the Diet and Cancer Research Interest Section of the American Society for Nutrition, April 2017

Dennis Padilla | ACES Education Abroad Award, College of ACES, Office of International Programs, March 2017

Shashank Gaur | Next Generation Delegate 2017, Global Food Security Symposium, Chicago Council on Global Affairs

Anna Waller | U.S. Borlaug Summer Institute on Global Food Security, Center for Global Food Security

Undergraduate Students

Maya Nienaber | Chicagoland Food Industry Scholarship, Chicago Section of the Institute of Food Technologists

Karen Zheng | Chicagoland Food Industry Scholarship, Chicago Section of the Institute of Food Technologists

Bronze Tablet

Spring 2017

Bronze Tablet honors are given to the top 3 percent of the graduating class; students must have a total grade point average of at least 3.5 out of a possible 4.0. The following students received a B.S. in Food Science and Human Nutrition with the Bronze Tablet distinction: Jennifer E. Burke, Eileen M. Ennis, Regan R. Frielig, Thomas W. Novak, Janique C. Tyler (December 2016)

FSHN 2017 Departmental Awards

Outstanding Senior in Dietetics | Andie Scherer

Outstanding Senior in Food Science | Thomas Novak

Outstanding Senior in Hospitality Management | Eileen Ennis

Outstanding Senior in Human Nutrition | Jamie Greenstein

Nishida Undergraduate Researcher | Regina Cortez

Outstanding Undergraduate Researchers | Regina Cortez and Rebecca Lau

Outstanding Undergraduate Leader | Alina Rodriguez

Outstanding Teaching Assistant | Candice Mazewski

Outstanding MS Student | Emely Lopez

Outstanding PhD Student | Emily Mayhew

Outstanding Adviser/Mentor/Educator | Youngsoo Lee

George Lanter Outstanding Staff Member | Audra Martin
Bariatric surgery and alcoholism—
a new puzzle for Dr. Yanina Pepino

Framed and posted on a shelf at Dr. Yanina Pepino's desk is the dictum “Think Outside the Box”. A reminder of the value of taking different paths to approach a problem, the phrase is also indicative of how Dr. Pepino’s inquisitive nature and desire to get to the bottom of a problem has led her down a variety of scientific and academic paths. One of those paths, and a current line of inquiry, is the rather unexpected and unfortunate reality that some of those turning to bariatric surgery to deal with the problem of obesity are finding themselves with a new burden—alcoholism.

Currently Assistant Professor of Ingestive Behavior in the Department of Food Science and Human Nutrition at the University of Illinois, Dr. Pepino’s career did not start with an interest in science, but rather a lack of interest in science—chemistry and pharmacy were her interests. However, during her Master’s program at the National University of Cordoba, Argentina, Dr. Pepino developed an interest in scientific exploration while working with a group of psychologists measuring alcohol in mother’s milk. After obtaining a Ph.D., Dr. Pepino moved on to a postdoctoral position at the Monell Chemical Senses Center in Philadelphia, studying links between obesity and addictive behavior (alcohol and smoking). In a subsequent faculty position at Washington University in St. Louis, Dr. Pepino became involved in research on the impact of weight-loss surgeries on eating and drinking behavior.

Dr. Pepino’s combined interests were soon supported by an ‘R21’-type exploratory grant from the National Institutes of Health (NIH), funding a study on the pharmacokinetics (movement of drugs through the body) and pharmacological effects of alcohol after weight-loss surgeries. Results from the exploratory study indicate that type of bariatric surgery influences how fast alcohol is absorbed and how people feel when they drink, helping explain, at least in part, why some patients may be more prone to alcohol use disorders after surgery. Incredibly, patients who had gastric bypass surgery (which reduces the stomach and re-routes the intestine), reached peak alcohol levels in just five minutes after alcohol consumption, with feelings of drunkenness doubled, compared to before surgery. Essentially, gastric bypass surgery turns every two drinks into four!

Dr. Pepino hypothesizes that removal of part of the stomach and rapid gastric emptying changes both alcohol pharmacokinetics and gut brain peptides, which in turn influence brain pathways for food and alcohol reward systems. The preliminary data produced by the R21-funded study impressed NIH enough to support more research on the topic via an ‘R01’ grant, the original and oldest grant mechanism at NIH, and one which supports specific, circumscribed projects. The R01 grant will explore in more detail the pharmacokinetics of ingested versus intravenous alcohol to answer the question of whether gastric bypass and sleeve gastrectomy surgeries increase sensitivity to rewarding effects of alcohol independently of changes in alcohol absorption.
There’s no need to be bitter: Encapsulating tributyrin for gut health

When asked to describe the bitterness of tributyrin on a scale of 1 to 10, Dr. Youngsoo Lee, Assistant Professor of Food Science, has an immediate and emphatic answer—“12!” If the bitter taste wasn’t off-putting enough, tributyrin also has an unpleasant cheesy odor.

Why, then, would a food scientist be interested in tributyrin, a substance no one wants to ingest? Tributyrin, a triglyceride with 3 butyrate molecules, is converted to butyrate in the gastrointestinal tract. Butyrate, a short-chain fatty acid, is naturally found in several dairy and fermented products, and is associated with multiple positive outcomes involving gut health—relieving symptoms of inflammatory bowel disease, decreasing the proliferation of colon cancer cells in vitro, and improving the health of the small intestine and colon. However, butyrate is almost completely unpalatable due to its strong odor; tributyrin, despite its flaws, has less unpleasant odor and is easier to handle than butyrate.

The notion of being able to deliver tributyrin into the body for its potential health benefits earned Dr. Lee and his collaborators a grant of over $500,000 over three years from the USDA’s National Institute for Agriculture for their study titled “Improvement Of Gastrointestinal Health By The Incorporation Of Gamma-Cyclodextrin/Tributyrin Complex In Foods”.

For Dr. Lee, the challenge is to apply his expertise in encapsulation to surround tributyrin in a way it can be ingested and delivered to the target areas of the intestine. Encapsulation in this context doesn’t refer to a pill-like capsule, but rather involves emulsion of a lipid (i.e., tributyrin) into a protein under high pressure, which produces a protein shell of about 20-50 micrometers (about ¼ the thickness of a human hair) surrounding the tributyrin. In that shell, tributyrin is both more palatable and can reach where it needs to go in the body.

Successful encapsulation of tributyrin is a critical first step, but it has to be followed by steps testing its palatability and its health outcomes. Joining Dr. Lee for these steps are his collaborators, Dr. Soo-Yeun Lee, Professor of Food Science, who will run sensory panels where panelists will taste baby formula containing encapsulated tributyrin, and Dr. Sharon Donovan, Professor of Nutrition, who will determine the efficacy of encapsulated tributyrin on gastrointestinal health and inflammation via a piglet model.

Ultimately, the researchers aim to develop a form of encapsulated tributyrin that can be added as a supplement to products such as baby formula, powdered drink mixes, and other processed foods, with widespread health benefits—and that’s not a bitter pill to swallow.
A maternal high-fat diet may program child for disease risk, but better nutrition later on can change that

Research has shown that a mother’s diet during pregnancy, particularly one that is high-fat, may program her baby for future risk of certain diseases such as diabetes. A new study from nutrition researchers at the University of Illinois shows that switching the offspring to a new diet—a low-fat diet, in this case—can reverse that programming. Yuan-Xiang Pan, a professor in the Department of Food Science and Human Nutrition at U of I, along with Laura Moody, a doctoral student in the Division of Nutritional Sciences at U of I study how early-life nutrition affects later generations and offspring health. In a new study published in the journal, *Epigenomics*, the researchers focused on whether a post-weaning diet, or a diet later in life, could control the epigenome and affect metabolism in the body.

For the love of food

United by their passion for food, three Hospitality Management alumni—sisters Annie Murray and Lauren (Murray) Miller and their friend Audrey (Stoerzbach) Scherrer—first became friends after meeting in ACES hospitality management courses in the Department of Food Science and Human Nutrition. In meal after meal at the Bevier Café, their friendship grew. They can talk for hours about those early days of their friendship, from nearly setting the Bevier Hall kitchen on fire to performing double duty at each other’s weddings as bridesmaids and caterers.

What’s in your rum? Flavor scientists create a lexicon of terms to describe nuances of popular beverage

Keith Cadwallader, a professor of food science at U of I, says despite the popularity of rum right now, not much research has been done, in terms of the flavor chemistry or flavor science of the product. “Rum is an unexplored area, especially considering the diversity of the product. There are over 1,000 kinds of rum, which makes it hard to define.” In Cadwallader’s lab, he and others study all aspects of flavor, particularly aroma. “We’re interested in compounds that have some kind of odor impression that can be detected by humans,” he says.

Local foods: Food processing program, student farm allows campus to serve local and sustainably grown items

The Illinois Sustainable Food Project is a partnership between the Department of Food Science and Human Nutrition, the Department of Crop Science’s Sustainable Student Farm, and University Housing–Dining Services. With over $1 million in funding from the U of I Student Sustainability Committee over the last four years for the project, and recent renovations to the FSHN Pilot Processing Plant, the project has allowed for new opportunities in both teaching and producing consumable food. And big plans to expand the project’s teaching and research opportunities are ahead.
Herbs, spices on vegetables may increase their appeal to men, young adults

Adults who don’t routinely eat vegetables for lunch may be more likely to consume them if the vegetables are seasoned, a new study suggests. People who seldom ate vegetables at lunch were 1.5 times more likely to select a seasoned vegetable than its unseasoned counterpart, researchers at the University of Illinois found in a study of more than 530 adults. Diners in the study were significantly more likely to choose a seasoned vegetable—especially if the consumer was male and under 50 years old, the researchers found.

Too much of a good thing: Developing safe level guidelines for bioactives

The good news is out that wine and dark chocolate may be good for your health. That’s because of substances known as bioactives that are contained in those foods. Research has shown the potential health benefits of bioactive nutrients—those compounds found in foods like fruits, vegetables, tea, and cocoa. And consumers are showing an increased interest in learning more. But can there be too much of a good thing? In a series of recently published papers, including a study in the journal *Regulatory Toxicology and Pharmacology*, Erdman and colleagues report that the key to establishing appropriate levels is assessing bioactives’ safety and potential toxicity: In other words, how much is too much before there are adverse side effects?

Nutrition, the microbiome, and Autism Spectrum Disorder: Review article looks at current evidence, outlines research needs

Over the last decade, research has revealed more about the human gut microbiome—the environment within the gastrointestinal tract—where microbes, especially bacteria, reside. Recently, more has become known about the function of those microbes and the microbiome’s connection with health and disease. Sharon Donovan, a professor of nutrition at the University of Illinois explains that researchers have started to look at more specific disease states and the microbiome. “We are starting to see links with autism, obesity, diabetes, cardiovascular disease, and almost every disease that is looked at.”
Dr. Kelly A. Tappenden, RD, FASPEN, accepted the position of Head and Professor, Department of Kinesiology and Nutrition in the College of Applied Health Sciences at the University of Illinois at Chicago (July 2017). During her tenure at the University of Illinois at Urbana-Champaign, Kelly made many significant contributions spanning each dimension of the University of Illinois’ mission. Specifically, Kelly’s internationally recognized research contributions enhanced the lives of patients with intestinal failure by providing key mechanistic, safety, and efficacy knowledge necessary to establish novel therapies for adults with intestinal failure. She served as principal investigator for several international, multisite Phase II and III Food and Drug Administration (FDA) trials assessing the therapeutic efficacy of teduglutide in humans with intestinal failure. She provided expert reports and testimony to the FDA on multiple occasions, culminating in availability of this therapy in early 2013. She received more than $5 million in research support for her independent and collaborative research program, from a variety of funding agencies including the National Institutes of Health. She was a Future Leader Award recipient in 1999 from the International Life Sciences Institute and received the American Society for Nutrition Bioserv Award for outstanding work as a young investigator involving experimental animals used as models for nutrition research in 2003. She was the 2005 Dudrick Research Scholar Award recipient for significant achievements in clinical nutrition from the American Society for Parenteral and Enteral Nutrition. Publishing over 100 peer-reviewed journal articles, her studies were included in many of the most prestigious nutrition and gastroenterology related journals. As a teacher, Dr. Tappenden was steadfastly committed to fostering student learning, and her efforts resulted in the receipt of multiple teaching awards, inclusion on the “Incomplete List” on 21 occasions, and educational leadership evident within the College of ACES and across the Illinois campus, including in the Graduate College. Beyond her notable service contributions, Kelly was exceptionally active in her service to the Department, College, University, and broader scientific community and wish her well in her new administrative role within the University of Illinois system.

Ms. Alanna B. Olah, MS, accepted the position of Instructor-in-Charge of the Hospitality Management program in the College of Business at St. Petersburg College in Clearwater, Florida (August 2017). Alanna was an energetic and innovative instructor for the FSHN 340 Bevier Café and FSHN 443 Spice Box courses in which students manage the foodservice operations for our café and fine dining facility. She generously shared her knowledge and experience as a food safety and sanitation supervisor for Marriott International at Orlando World Center Marriott with our undergraduate students and dietetic interns. As a Court of Master Sommeliers Certified Wine Sommelier, she created a new course on beverage management to enrich the students’ ability to provide fine dining experiences to customers. She fully engaged in the Visiting Chef program that partnered current students with industry professionals. Always expecting professionalism from students, she had a smile for one and all. Best wishes to Alannah!

Dr. Fred Kummerow, Professor Emeritus, passed away at the age of 102 at his home in Urbana, Illinois, in June 2017. He was engaged in scientific discoveries for nearly 75 years, most of which were spent at the University of Illinois in food science, human nutrition, and comparative biosciences. He was known for his work in dietary fats and cardiovascular disease, using animal models to test hypotheses related to the role of trans fatty acids in heart disease progression. He was an early advocate for elimination of the use of trans fatty acids in the food supply and appealed to the Food and Drug Administration to remove them from the generally recognized as safe list. Dr. Kummerow was a prolific writer, having published over 200 scientific papers, ranging from topics on nutritional value of egg substitute products in 1974 to uncertainties about the health benefits of exchanging dietary saturated fatty acids with polyunsaturated fatty acids in 2014. Always challenging scientific dogma, Dr. Kummerow carried out his studies with conviction and passion. Dr. Kummerow lived a rich and fulfilling life.
Hold the date
Child Development Laboratory 75th Anniversary and Home Economics 45th Anniversary Alumni Event “An Illinois Legacy Continues—Home Economics: Family, Consumer, and Health Sciences,” April 20, 2018. Luncheon, Talks, Tours and Tea. Details will be posted at acesalumni.illinois.edu/home-economics-45th-anniversary-alumni-event as information becomes available. In January 2018, you may contact Ms. Tina Veal (veal@illinois.edu) directly if you do not have internet access.

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Please take a moment to send the information requested to the Department of Food Science and Human Nutrition. This helps us stay in contact with you and to update our records. Any news that you would like to share may be included in next year’s newsletter.

- Name | Year of graduation | Street address | City, state, zip | Email | News to share (e.g., a move, job change, promotion, award or recognition, retirement, accomplishment) | and please share if your company has internship or job opportunities for FSHN graduates
- Email to alumni-fshn@illinois.edu or fshn-general@illinois.edu, use the online alumni form at go.illinois.edu/alumni_fshn, fax to 217-265-0925, or send hard copy to FSHN Alumni, 260 Bevier Hall, 905 S. Goodwin Ave., Urbana, IL, 61801, ATTN: FSHN Newsletter.

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Home Economics Demonstration Railcar, ca. 1917. Courtesy of the University of Illinois Archives.