

FOOD WASTE AND SUSTAINABILITY



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"WE WILL ENGAGE OURSELVES IN FURTHER STRENGTHENING THE IDENTITIES OF BOTH FOOD SCIENCE AND NUTRITION"

The theme of this year's Newsbite is "Food Waste and Sustainability." Food waste is a major issue facing society – not only the waste produced by the consumer at home during cooking or in the form of discarded products, but also the waste by industry and in food distribution. With the increased emphasis on sustainability, the development of technologies to better utilize food waste and reduce the ecological footprint of our food consumption is becoming a priority. At Cal Poly, Professor Stephanie Jung is driving this important area, and the cover story is dedicated to her research (p.10). Our graduate program in food science has been awarded a prestigious Department of Agriculture USDA National Needs and Postgraduate Fellowship Grant to focus on the conversion of agricultural and food waste challenges into opportunities. Food waste is only one of the elements in Cal Poly's efforts on food sustainability. In the Food Science and Nutrition (FSN) Department, another important theme is the reduction of water use during food processing, a theme that is central to the future of California's food industry.

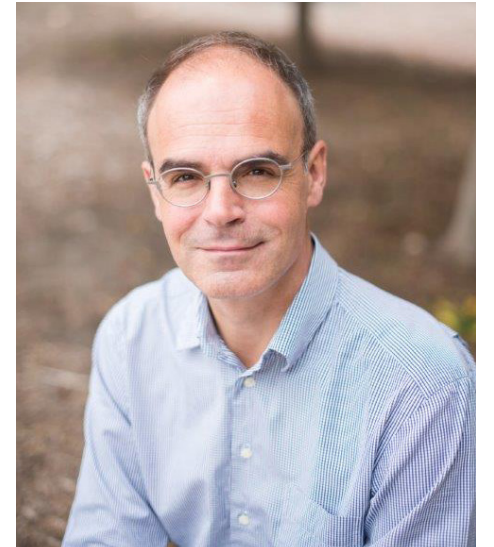
The 2016-17 academic year was a very busy one, with major efforts on program review, realignment of our programs and the renewal of our facilities. This academic year, we continue to build upon these efforts. We are recruiting for two new professors in nutrition; one position will be dedicated to the important area

of Type 2 diabetes; the other position in the field of nutrition education and communication. This latter position is specifically aimed at novel methods and technologies for the delivery of nutritional information and counseling.

At the start of the year, we moved into our new Human Nutrition Lab (p. 16). This laboratory is dedicated to a range of teaching and research activities in the fields of community nutrition, sports and exercise nutrition and nutrition education. I expect that this large, multifunctional laboratory space will become a nucleus for further development of our nutrition program, in particular, in the area of student-driven research.

In the department, we are all very proud of Doris Derelian, professor of nutrition education, who received the 2017 Marjorie Hulsizer Copher Award from the Academy of Nutrition and Dietetics (p. 4). This award, which is the highest award conferred by the academy, is not only a recognition of all Derelian's contributions to the field of nutrition and dietetics, it is also an expression of the high regard in which our nutrition program is held nationwide.

It is with confidence that I look forward to the future of the department. For both food science and nutrition, student interest is high, and the field of food and diet continues to be of prime



societal importance. I expect that this year, we will engage ourselves in further strengthening the identities of both food science and nutrition while increasingly benefiting from the synergies between the two programs.

Sincerely,

Johan B. Ubbink, Ph.D.
FSN Department Head

For information on how to get involved with the department, contact Johan B. Ubbink at jubbink@calpoly.edu.



Staff Spotlight

Professor Doris Derelian received the Academy of Nutrition and Dietetics' highest honor, the Majorie Hulsizer Copher Award. The Copher Award honors an academy member who has contributed to the profession of nutrition and dietetics through extensive, active participation both within and outside the academy. The recipient of the Copher Award is someone whose unique contributions have created new opportunities for registered dietitian nutritionists and nutrition dietetics technicians; inspired others to take on leadership roles; and promoted the academy's mission, vision and values. Congratulations to our very own Professor Derelian on this fantastic achievement!

RD Alumni Outreach

Registered dietitian alumni who would like to receive regular email updates and announcements from Professor Arlene Grant-Holcomb (DPD Director), should email agrantho@calpoly.edu. The department is looking to expand its connections with more practicing Cal Poly RD/RDN alumni around the country.

New Analytical Lab

The College of Agriculture, Food and Environmental Sciences' Analytical Core Laboratory is a chemistry facility offering a comprehensive suite of quantitative and qualitative methods to match the diverse research interests of Cal Poly scientists. The lab will be an asset to faculty projects and student thesis research. It will also serve as a powerful platform for experiential learning, helping students to gain lab work experience and supporting classes focused on instrumental analytical chemical analysis. Lab personnel are developing methods to analyze a metabolomics profile (sugars, amino acids, DNA/RNA components, biochemical pathway intermediates, vitamins), lipids (triglycerides, phospholipids, fatty acids), biogenic amines, polyphenols and carotenoids. Additional compounds may be analyzed based on demand by Cal Poly scientists. Sample matrices processed will include plasma, serum, biological tissue, plants/food, cells and media. Quantitative and qualitative analyses will be performed primarily by ultra-performance liquid chromatography (UPLC) combined with multiple detection methods, including mass spectrometry (MS), diode array detection (DAD), and fluorescence light detection (FLD).



Photos of students in Sierra Leone.

Students Making a Difference

Several of Professor Peggy Papathakis' students have been helping her with her research over the years. Some have gone to Sierra Leone while others have assisted her by transcribing manuscripts. Below are some testimonials from these students.

Madison Fishler, Applied Nutrition, graduating in spring 2018:

Since spring quarter 2017, I have been assisting Dr. Papathakis with her research efforts behind the scenes by doing manuscript composition and data analysis. This experience had great influence on my future education and career decisions as it opened my eyes to the world of research and to international health issues. I will be going to graduate school to pursue a master's in public health in nutrition and am grateful to Dr. Papathakis for her encouragement and for providing me with this unique opportunity.

Kalina Gardiner, Applied Nutrition, graduating in fall 2018:

For eight weeks in Sierra Leone last summer, I assisted at clinics and behind the scenes of an ongoing research project that's investigating the effectiveness of food interventions in malnourished children. Learning about anthropometrics and the logistics of running a research study has been invaluable to my future in dietetics.

Alexa Selden, Applied Nutrition, graduating in spring 2018:

Thanks to Dr. Papathakis and her connections with Project Peanut Butter, I had the incredible opportunity to travel to Sierra Leone this past summer and get hands-on experience working on a research study called the Four Foods Protocol to find an effective food for the treatment of moderately malnourished children. Every day I traveled to rural clinics, working with our local staff, helping with data collection, including measuring the children's height, weight and mid-upper arm circumference. Living and working in a developing nation gave me a different perspective on how I can use my nutrition career to help people in need. I am currently applying to go to the Peace Corps in Madagascar, where I hope to continue on a path of global nutrition.

Natalie McCluskey, Applied Nutrition, graduating in fall 2018:

Over the past summer, I was coordinating clinics working with malnourished pregnant women. After the clinics, I would input the data collected into the database. While working in Sierra Leone, it gave me a chance to slow down. Working with women and babies every day helped me realize I wanted to pursue midwifery as a career to continue having one-on-one interactions with women throughout pregnancy. The results from Dr. Papathakis' study in Malawi helped to shape the interventions included in the current study in Sierra Leone, which included adding anti-inflammatory drugs such as malaria prophylaxis and a general antibiotic in addition to the food treatment.

Taking the Field

Interview with Cal Poly alumnus Sebastian Zorn, (Nutrition, '15) who is now a sports nutritionist for the Chicago Bears

COMPILED BY PAVAN SOHAL

Photos submitted by Sebastian Zorn

How was your experience at Cal Poly?

Speaking and engaging with students around the country has solidified the fact that my experience was one of a kind. The Learn by Doing approach is unique to Cal Poly and gives students an edge for the rest of their careers. I was drawn to this field initially wanting to pair the science of nutrition with real-life application in sports. Cal Poly allowed me to explore that in a number of ways in different classes and environments. Few other students had anywhere near the real-world experience that I had received from Cal Poly, including those with master's degrees from other schools.

Did you go to graduate school?

I did. I went to The Ohio State University to complete a two-year Master of Science and Dietetic Internship program. I was fully immersed in both sports nutrition education and practice during my time there. I had my rotations in the early mornings then ran to classes, headed back to rotations, drove to give a talk, drove back to volunteer at football, before going home to study. It was an incredibly taxing and rewarding experience. I recommend going to graduate school because it forces you outside of your comfort zone, which is where you grow the fastest. I was lucky to be able to experience a completely different part of the country with very different cultures and attitudes.

How did you get the job as the sports nutritionist for the Chicago Bears?

Upon graduating from OSU and passing the registered dietitian exam, I applied for a Gatorade SNIP (Sports Nutrition Immersion Program) position. I was selected to interview with a number of different locations and luckily got my first choice. I work as a dietitian under the mentorship of Jenn Gibson, who is the sports science and nutrition coordinator for the Chicago Bears.

Tell us about your experience with the Bears.

It's been incredible! I've never been more challenged professionally than I am here, and I love it. At this level, given the pressure on the staff and players to perform every week, excellence is demanded. It is a grinding seven-days a week, 10 to 14 hours a day job that includes traveling with the team, setting up post-game meals, on-the-fly nutrition consults, and much more. It's been a fantastic fast-paced environment for a dietitian to build skills and as be a part of an incredibly historic franchise. It is a high-work, high-reward career.



Sebastian Zorn and his sports science and nutrition coordinator, Jenn Gibson at Lambeau Field before a Thursday night football game against the Green Bay Packers.



How did Cal Poly prepare you for this job?

I wouldn't be here without the skills and knowledge given to me by the fantastic faculty at Cal Poly. Dr. Scott Reaves believed in me and gave myself and one other undergraduate student an incredible opportunity to be part of founding the Cal Poly Sports Nutrition program. He allowed us to Learn by Doing and take ownership of the program, always asking us how we could improve it. This large responsibility as an undergraduate lit a fire in me and ignited the passion I have for this career.

What advice do you have for students who want to pursue a career in sports nutrition?

I recommend that they first talk to Dr. Reaves and do research online to see if they find sports to be of interest. I also highly recommend attending the CPSDA Bootcamp. I've attended three over the past six years, and the lectures and networking are fantastic. Also, reach out to sports registered dietitians since everyone's path is different and almost everyone responds to emails. Having a strong background in clinical and food service is vitally important for this profession. I write SOAP notes, counsel athletes, run budgets, audit food service, and do many things I undervalued as an undergraduate.

Approach every lecture with the mentality of "how can I best use this in the real world?"

Any final comments or advice?

To be successful in this field, you'll have to put in some very hard work. Be reflective, know what your strengths and weaknesses are and actively work on them. Be honest with yourself every single day and hold yourself accountable to your potential. If you are looking to get into professional sports nutrition, you will be competing against the best practitioners from around the country and details matter. Above all else, find out what value you bring to a school or organization that someone else can't. Please reach out to me via email for any information or if you would like to connect.

If you would like to contact Sebastian Zorn, his email is sebzorn88@gmail.com.



Thriving in the Food Industry

Interview with Cal Poly alumna Bouchra Nafi-Krause, (Food Science, '15)

COMPILED BY RAY MCDONNELL HORITA

Photos submitted by Bouchra Nafi-Krause



How was your experience at Cal Poly in the Food Science Department?

The three years I spent at Cal Poly were a time of learning, adapting and growing. My learning experience was not limited to what I learned in my classes. In fact, the college atmosphere provided opportunities that helped me learn new things about myself, others and life in general. As an aspiring food scientist, I found that Cal Poly helped me gain the necessary knowledge to succeed in the workplace. As an individual, it gave me a lifetime of friendships that I will forever be grateful for.

What did you do after graduation?

I was offered a job in November 2015 (a month prior to my graduation). I started working as an research and development/quality assurance technologist with a well-known Bay Area barbecue sauce company called Kinder's. During my time at Kinder's I managed multiple tasks in the R&D and QA

Department. Although I did not have any internships while I was a student (because I had to work all my summers to pay for my living expenses), the knowledge I gained at school from classes and working as a laboratory assistant was enough for me to succeed in the workplace. I often found myself answering questions about Department of Agriculture/Federal Drug Administration regulations, thanks to FSN 374: Food Law and Regulations, taught by Professor Shohreh Niku.

How did you get your job at Plum Organics?

After a year and a half with Kinder's, I decided to expand my knowledge in the R&D field beyond barbecue sauce. I applied for the R&D technologist position at Plum Organics through indeed.com. A few weeks after I submitted my application, I was brought in for an interview that led to a full-time position.



Right: Bouchra Nafi-Krause educating high school students about food science and the role of R&D.

Left: Luv Me-Brand promotion and consumer education/Expo West for Kinders.

Tell us about your experience at Plum Organics.

I started working at Plum Organics in June 2017, and my experience has been nothing but wonderful. Throughout my career as an R&D technologist, I have been given many responsibilities beyond product development. Some of those responsibilities include, but are not limited to:

- Working with Innovation Team to bring new ideas to life.
- Formulation and product testing, for both existing and new products.
- Travel to co-manufacturer to support line trials and first production.
- Attending food shows to promote the brand and products.
- Participating in consumer education.
- Interview and support human resources during the hiring process for R&D positions.

The best part about working at Plum, besides working closely with different functions and supporting the business beyond R&D, is the flexibility and autonomy we are given, which has greatly increased my work-life balance. In addition, working for a company that has a strong philosophy and mission encourages me to be the best version of myself so that the "little ones" can enjoy their first bite of food starting from ingredient selection all the way to recipe development.

What advice do you have for students who want to pursue a career in food science?

The food industry is very small, and making connections in the early stages is very critical. Working in R&D and QA at my early stages as a food technologist made me realize that my food science strengths are in R&D.

These are the few points I would like each student to keep in mind while they are getting their bachelors at Cal Poly:

- Spend time with your faculty members because they are the support you need to grow as an individual and as a professional.
- Pay attention to the things you learn in classroom. A few of the questions I had during my interviews were related to the things I learned in the classroom, such as, "What is the difference between fortified and enriched? What is a pH meter?"
- Be your own self wherever you go and be your best version in the workplace. We "Mustangs" have a fantastic reputation in the food industry, and companies love us because we live up to the challenges they put in front of us. Our job is to keep this reputation strong for future generations.

FOOD WASTE AND SUSTAINABILITY

War on Waste

Food science Professors Stephanie Jung and Amanda Lathrop receive USDA grant to discover ways to combat food waste

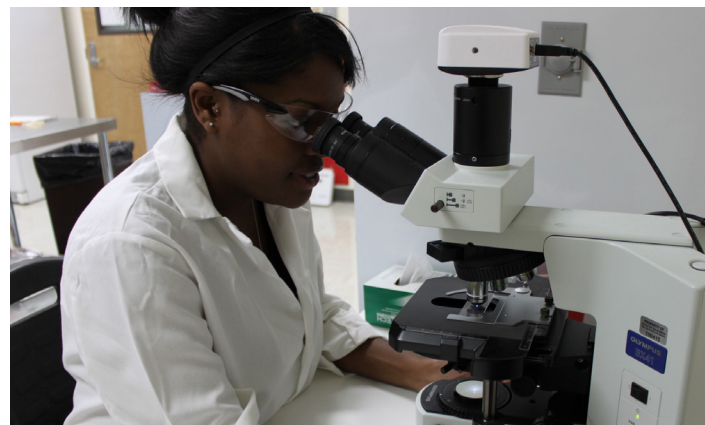
BY STEPHANIE JUNG

Food waste. Everyone is aware of the problem but what can we do about it? Here are some facts. Every year, consumers in industrialized countries waste almost as much food as the entire net food production of sub-Saharan Africa (222 million tons wasted vs. 230 million tons produced). The amount of food lost and wasted every year is equal to more than half the world's annual cereals crops (2.3 billion tons in 2009-10). In the U.S., organic waste is the second highest component of landfills, which are the largest source of methane emissions, and 30-40 percent of the food supply is wasted, equaling more than 20 pounds of food per person per month (http://www.worldfooddayusa.org/food_waste_the_facts, December 2016). Since 2013, the Department of Agriculture (USDA), in collaboration with the Environmental Protection Agency launched the U.S. Food Waste Challenge, calling on others across the food chain — including producer groups, processors, manufacturers, retailers, communities and other government agencies — to join the effort to reduce, recover and recycle food waste.

The first step to solving the problem of food waste is education. Thanks to a program of the USDA's National Institute of Food and Agriculture, Cal Poly students will be able to work alongside Professors Stephanie Jung and Amanda Lathrop on identifying solutions



Food Science student using extruder in Pilot Plant.



Food Science student observing enzymatic transformations under a microscope.



Food Science graduate students

that could contribute to resolving the issues around food waste. Earlier this year, Cal Poly's Food Science and Nutrition Department was awarded a nearly \$250,000 grant through the Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowship program. "This program will expose fellows to an array of academic, intellectual and global themes pertaining to food waste and the ways to overcome the challenges associated with it," said food science Professor Stephanie Jung. "Students will address the economic, environmental and social burden of food waste." The grant will be used over the course of four years to enroll a total of six graduate students in an agriculture master's program with specialization in food science. The first fellow started in fall 2017 and is identifying ways to add value to carrot pomace, a low-value stream collected during the processing of carrots. Fellows receive a stipend of \$18,000 per year for two years, plus partial tuition. Students with a bachelor's degree in food science, chemistry, biochemistry and engineering are encouraged to apply. A total of 11 faculty with a wide area of expertise including industrial packaging, food safety, product development, food processing and engineering, and animal science and engineering, could be involved in the mentoring of the fellows. Some potential research topics are: extrusion technology to maximize utilization of food processing by-products; utilization of overripe, underripe or partially ripe strawberries in novel food applications; extraction of polyphenols from apple waste for addition to hard cider

to improve quality attributes; consumer assessment of the utilization of vegetable pomace in food applications; extraction of bioactive compounds from cheese whey; and development of packaging systems to enhance shelf life and improve quality through distribution by developing and validating modified atmosphere packaging systems that extend the shelf life while retaining the quality of fresh or minimally processed produce on domestic and global distribution.

The program includes a mandatory internship and mentoring/teaching opportunities. A strong partnership with the food industry is key to the success of this program. We encourage companies that are interested in collaborating on food waste-related projects to contact our department.

To learn more about the master's program, contact Professor Stephanie Jung at stjung@calpoly.edu or Professor Amanda Lathrop at lathrop@calpoly.edu.

Food Waste Facts

40%

OF ALL FOOD PRODUCED
IN THE U.S. IS WASTED

133

BILLION
POUNDS

FOOD WASTED PER YEAR=1,240
CALORIES PER PERSON PER DAY



DIVERTING **15%** OF WASTED
FOOD WOULD CUT THE
NUMBER OF FOOD INSECURE
AMERICANS IN HALF

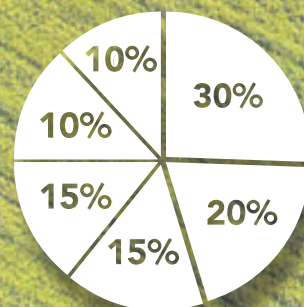


FOOD WASTE CAN BE COMPOSTED
INTO SUSTAINABLE SOIL ADDITIVES OR
BE USED TO GENERATE ELECTRICITY



AMOUNT OF
LANDFILL WEIGHT
FOOD WASTE
CONTRIBUTES TO

PERCENT OF FOOD WASTE PRODUCTS

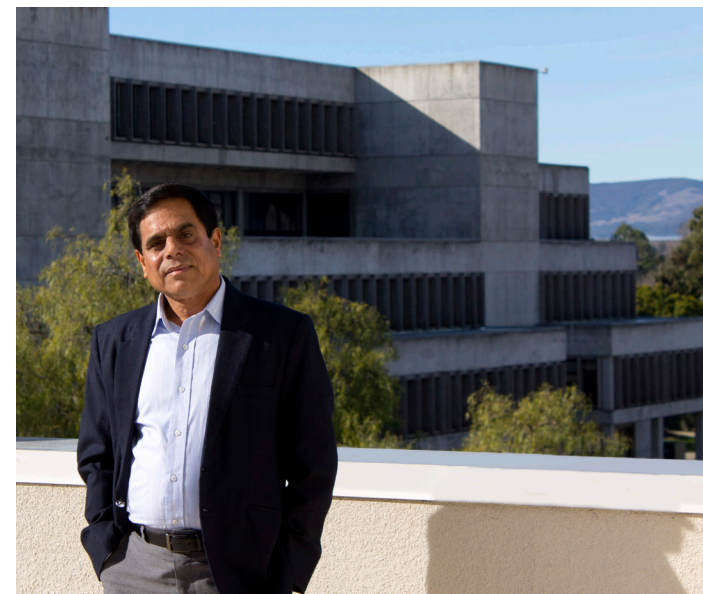


MEAT: 30%
SEAFOOD: 20%
GRAINS: 15%
DAIRY PRODUCTS: 15%
FRUIT: 10%
VEGETABLES: 10%

Sustainable Food Processing

How food science Professor Gour Choudhury is taking steps towards a sustainable future for California's food processing industry

COMPILED BY PAVAN SOHAL



Top: Peaches that have been peeled using Choudhury's method.
Left: Food science Professor Gour Choudhury.

Professor Gour Choudhury has been working on two sustainability issues: water conservation and maximum utilization of harvest. Water is the most important and is an essential input to food processing plants in California. These facilities use large volumes of water: 960 to 17,000 gallons per ton of product. The high water demand to process food and wastewater disposal issues are raising big questions about the future of food processing in California because of drought, ever-increasing treatment cost, limited wastewater treatment capacity in some areas, and increased regulatory requirements. Choudhury has been examining two water conservation approaches: a) re-engineering of food processing technologies and b) in-plant processing and reuse of wastewater. Re-engineering unit operations has led to the development of a new fruit-peeling technology that reduces water demand for peel removal by 80 percent to 100 percent. The process has been commercialized for peach peeling. Choudhury's work has led the development of a green cleaning chemical. He has designed prototypes for chemical-free cleaning of tanks, pipes and open surfaces (conveyor belt, plant floor, etc.). These green cleaning technologies are expected to result in substantial water savings.

Choudhury's focus on maximizing harvest has led to the development of new technologies that use the byproducts of food processing. The food processing industry generates a large volume of byproducts, and efficient use of those byproducts is becoming an economic necessity for many sectors of the food industry. Choudhury's work in this area has led to the development of new technologies for the use of peach and pistachio processing byproducts. He has developed processes for extruded snack food products derived from peach pomace, shitake mushroom, and pistachio shells and hulls.

Choudhury has always been interested in challenging himself to solve sustainability issues related to the food industry. He works with food industry partners, and his work has earned him seven patents. "I solve industry problems. This is what I do," Choudhury said. "The whole idea at Cal Poly is to support more sustainable food processing with our training and research so the food industry can produce healthy and safe food products."

Exciting Changes Ahead

Interview with Dietetic Internship Director Kati Fosselius about the changes the program is undergoing

COMPILED BY PAVAN SOHAL

What changes are being made to the Dietetic Internship Program?

There are several changes being made to the program. The most notable change is the structure of the community rotations the interns do. In the past, interns have gone to six different sites and spent only two weeks at each site. Now they will spend time at three sites but have four weeks at each site. Since interns will now have more time at each of their sites, they can narrow their focus and take on bigger projects at these facilities. More project requirements have been implemented at each site to ensure more consistency among the facility locations. This way, interns are assigned similar amounts of work and types of work despite their different locations. We are also looking into potential future changes that will allow for more collaboration with the master's program students and implementing new models of learning into the clinical rotations that will ensure future graduates will have an even more robust experience in the hospital rotations.

How do you feel about these changes?

I am really excited about the changes that have already been made and the changes that might come up in the future. The Dietetic Internship is already such a great program that offers such a meaningful Learn by Doing experience; these changes can only make the program better.

How do the interns feel about these changes?

The interns are excited about these new changes and ready to take on the new challenges. We have already received positive feedback from current interns and preceptors, as well as prospective students. Most of the feedback has to do with the longer time at sites. They are excited about getting more involved and having a richer experience at the sites.



Dietetic Internship preceptor Erin Primer, intern Maris Altieri, and Director Kati Fosselius at a community event organized by Altieri at San Luis Coastal Unified School District.



The current cohort of dietetic interns at the end of their orientation, ready to take on an exciting and rigorous year!



How often does the Dietetic Internship Program undergo changes?

The program is constantly being assessed. At the end of each quarter and year, the program preceptors receive feedback from the interns. The interns complete surveys and course evaluations so there is always lots of data to consider. We are always looking for opportunities to learn and grow as a program. Our main goal is to ensure that the interns are meeting their learning objectives, and we feel that making small changes every year helps us attain that goal. The program undergoes a formal evaluation reviewed by our accrediting body every nine years.

What is your favorite part about being the Dietetic Internship director?

I love working closely with the interns at such a formative time in their careers. I work with them all year and see them every week, and I'm grateful I get to know them and observe them grow. I get to experience their growth so acutely because I get to see them from start to finish. I get to watch them try out

new experiences and watch them make personal discoveries and develop skills they didn't even know they had. To watch them grow into professionals and figure out how to navigate the professional path is something I am lucky to be a part of.

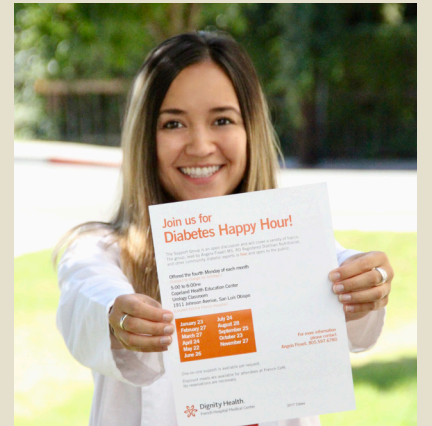
Any final comments?

I am truly happy and fortunate to be here. Cal Poly is an institution grounded in Learn by Doing and that is really helpful for the Dietetic Internship Program. This mentality makes the transition from student to professional easier, and I feel the students here are exceptional.

Left: Interns Maris Altieri, Alyssa Los, Kamala Ersson and Arissa Lujano hanging out together at Avila Valley Barn.

Top: Intern Kamala Ersson promoting Diabetes Happy Hour.

Bottom: Intern Christina Archer being interviewed by MVME Wellness preceptor Kaelon Russell.





Human Nutrition Lab

Professor Kari Pilolla on the new Human Nutrition Lab's role in fostering new research activities for the Food Science and Nutrition Department

BY KARI PILOLLA

The Human Nutrition Lab is the newest edition to the nutrition program in the Food Science and Nutrition (FSN) Department. The lab will allow human nutrition research activities at the individual, family and community level, including groups such as sports teams. This lab is intended for scholarly activities related to the role of nutrition in:

- Human health (i.e., cardiovascular disease, Type 2 diabetes, overweight/obesity, malnutrition, etc.)
- Physical/sport/exercise performance (e.g., looking at how nutrition influences physical movement or sport/exercise performance) – this could mean focused interest on nutrition influence during exercise/physical activity on any organ system (e.g. bone/skeletal muscle; cardiovascular and respiratory systems; kidneys, nervous system, etc.) or physiological function (e.g., glucose control, blood pressure regulation, energy metabolism, etc).

Eventually the Human Nutrition Lab will be equipped to support phlebotomy and biopsy activities, in addition to our current ability to conduct selected diet, body composition, cardiovascular and metabolic assessments. The space is also equipped for nutrition education activities, including individual counseling sessions, focus groups and larger structured educational sessions for groups.

Prior to obtaining this lab facility, the FSN department was lacking sufficient space to lead human interventions in the areas mentioned above. Thus, this space has increased the capacity and scope of research that the nutrition faculty can conduct. As a result, students in the nutrition program (and others) will be exposed to more research activities and learn more about human nutrition research assessments and interventions. This also translates to more knowledge and skill acquisition related to nutrition and health careers.



Hungry Students Can't Learn

Professor Aydin Nazmi on Cal Poly's CalFresh Outreach Team and Food Insecurity

COMPILED BY RAY MCDONNELL HORITA



We have all heard about college students getting by on ramen for breakfast, lunch and dinner. The unfortunate fact is that this is not an urban legend. And far from being endearing or some sort of rite of passage, the consequences of nutritional inadequacy among students are devastating.

Food insecurity, or limited access to sufficient nutritious food, is experienced by 27 percent of Cal Poly students. Increasing college tuition combined with San Luis Obispo's notoriously high housing costs (not to mention other student necessities like books, transportation and clothing) have contributed to the problem, and today, more than one in four Mustangs lack adequate food on a regular basis. This follows a national crisis and impacts students of all backgrounds.

Food insecurity is a major risk factor for physical illness and mental health issues, and it also hinders academic success. Students experiencing food insecurity have lower GPAs, which puts them at risk for dropping out. According to Aydin Nazmi, associate professor in the Food Science and Nutrition Department, "Hungry students can't learn. We know this from years of research on food insecurity and academic performance. Imagine sitting in class having not eaten all day, and not sure where your next meal is coming from. You can't think. Concentration, memory, cognition and social behavior are all negatively impacted."

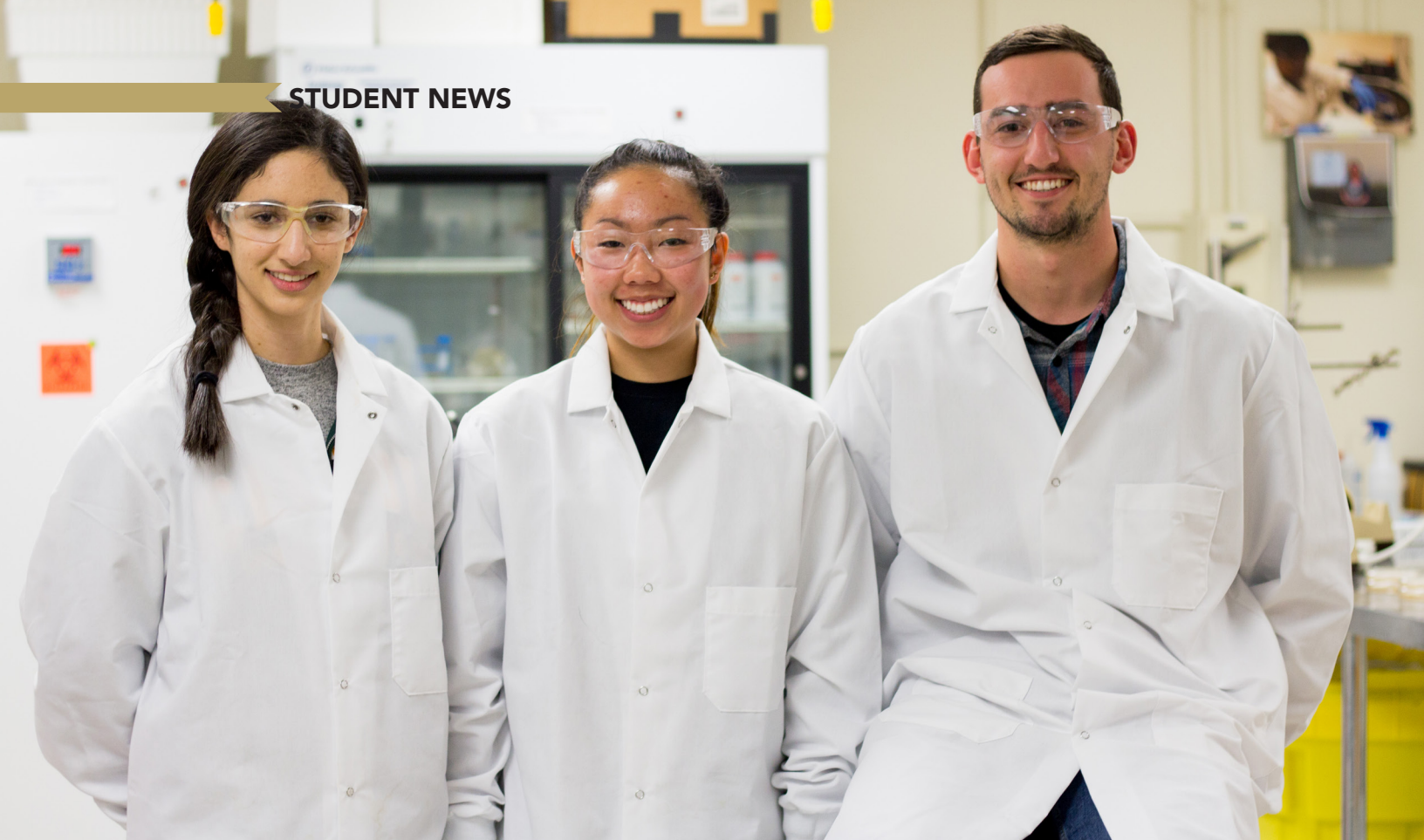
In response, universities across the nation have been building basic needs infrastructure to help support students in need. Cal Poly has several programs to address food insecurity, including food vouchers and a food pantry. The university also has a Basic Needs Working Group that tackles the issues around food insecurity and housing instability.

The Supplemental Nutrition Assistance Program (SNAP), known as CalFresh in California, is a national nutrition safety net program. It offers eligible individuals and households extra money for groceries. "It's like financial aid for food," according to Kelly Condrón, a nutrition graduate student

who leads Cal Poly's CalFresh Outreach team. With funding from the California Department of Social Services, 11 CSU campuses have recently implemented CalFresh Outreach (CFO) teams. Their mission is to identify and enroll eligible students for CalFresh. The CFO team helps students through the eligibility criteria and application process and acts as a support structure for students who have applied. Full-time student eligibility guidelines are complex and the application process with the Department of Social Services can be intimidating, "but it's not that complicated and with our help, it usually only takes about 30 minutes to apply," Condrón said. Most students qualify as a "single-member household" and can qualify for up to \$192/month for groceries at most supermarkets and at some farmers markets.

The Cal Poly CFO team is made up of 15 undergraduate student staff members from majors including nutrition, social sciences, graphic design and business. "Our ultimate goal is to sign students up for CalFresh," said Nazmi, "but perhaps more importantly, we want to increase awareness and visibility about food insecurity and CalFresh on campus." According to Condrón, "food insecurity can be a sensitive and stigmatized topic. Part of our job is to spread awareness to students, most of whom have never heard of food insecurity — even if they themselves experience it."

For more information on college food insecurity or CalFresh Outreach, contact Aydin Nazmi at nazmi@calpoly.edu or call/text the CFO team at 805-399-0236. Facebook and Instagram: @CalFreshCalPoly



Left to Right: Blended students Tara Egigian, Kathryn Yamada, and Luke Lundberg

Blended Students Program

New food science graduate program in FDSC

BY STEPHANIE JUNG

The Food Science and Nutrition Department launched in fall 2017 a blended bachelor (B.S.) and master (M.S.) program in food science. This program is allowing our food science students to start working on their M.S. in agriculture with a specialization in food science degree while finishing their undergraduate classes to complete their food science bachelor's degree. Cal Poly offers blended programs in 11 majors across campus. The food science blended program is the first one in the College of Agricultural, Food and Environmental Sciences.

The first three blended students in our program have been working since fall 2017 on exciting research topics with their advisors (see photo). Luke Lundberg is working with Professor Gour Choudhury on developing a sustainable method of saponin removal for raw quinoa. Tara Egigian is mentored by Professor Amy Lammert and is focusing on determining differences of packaged salad for consumers based on their mouth behavior and bitterness sensitivity. Katy Yamada and Professor Amanda Lathrop are looking at pathogen growth in hard cider.

The food science faculty members are eager to continue their close collaboration with the food industry and to work with the blended students on research topics that are important for California companies. We invite companies to reach out if they are interested in sponsoring research that blended students can focus on. We would like to thank Nutrition Inc. for the first donation to our food science blended program. This donation will be used for supporting the research supply for a blended student starting in fall 2018. Anyone interested in sponsoring a blended student should contact food science Graduate Coordinator Stephanie Jung at stjung@calpoly.edu.

To learn more about the blended students program, contact Stephanie Jung at stjung@calpoly.edu.



IN SUPPORT OF EXCELLENCE

The Food Science and Nutrition Department is honored to recognize those people whose contributions to the department enable us to continue to provide students with the opportunity to learn and grow at Cal Poly. Thank you for all that you do.

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FOOD SCIENCE AND NUTRITION: LEARNING LABS FOR THE FUTURE



3

The center will include three Food Science and Nutrition labs: Product Development, Culinary and Sensory Analysis.

Together, these three labs will allow Cal Poly to bring food and beverage product developers together to co-create and prototype new food products, scale them from benchtop to shelf, and test them with a diverse student and campus population that is well-versed in food issues and trends. Food companies will have the opportunity to sponsor research, joint projects and consumer testing.

To make a gift or learn more, contact:

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