



# Food for Thought

THROUGH TEAMWORK AND LEARN-BY-DOING, STUDENTS CREATE PRODUCTS DESIGNED FOR SUPERMARKET SHELVES

By Paul Sterman



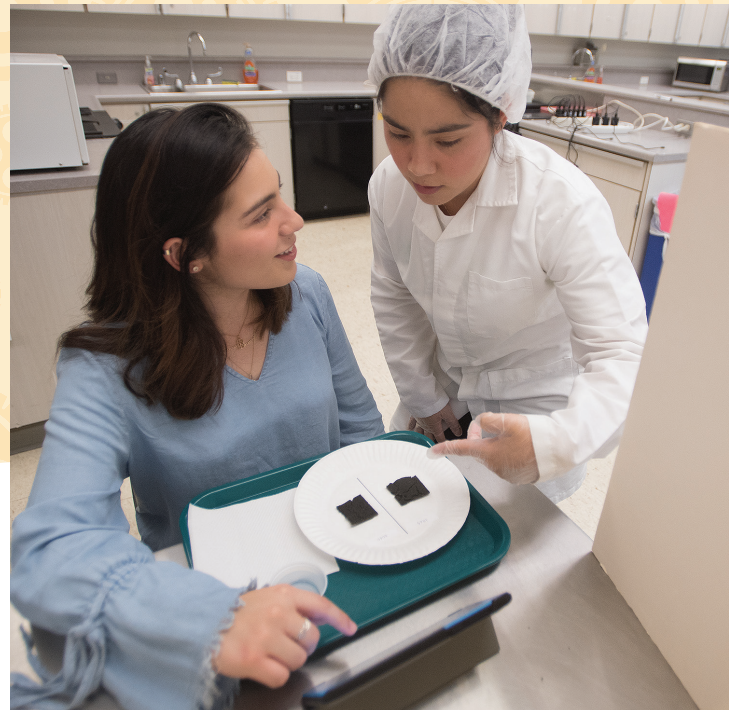
Milk-and-cereal balls

The students were stumped. The group of five seniors had a goal at the beginning of the food product development class: to make an instant breakfast item that's tasty and nutritious. Their vision for a bite-size milk-and-cereal ball was clear, but making it a reality was proving harder than they thought.

They were stymied as they tried to develop the precise formula for the ball's milky center – the "lava" filling. The texture and taste weren't right, and students couldn't figure out the exact temperature at which to heat the liquid.

"We had a lot of difficulties," recalls team member **Zin Mon**.

Unlocking the keys to this food puzzle would take perseverance and problem-solving skills – qualities that every food scientist worth their salt needs to be successful.



Students evaluate the taste, appearance and texture of the food products during taste testing.



## APPLICATION OF KNOWLEDGE

We use multiple modalities of teaching to facilitate student learning of theory, followed by reinforcement of theoretical knowledge through active, hands-on application of principles to address opportunities and challenges of the modern world.

## Showtime at AGRIsapes

The class, part of the Don B. Huntley College of Agriculture's nutrition and food science department, challenges student teams to design and develop an innovative food product intended for supermarket shelves. It's a task that draws upon students' previous coursework in biology, chemistry, food safety, nutrition and food process engineering.

A few days before the end of the fall semester, the class showcases its ideas in a large room at Cal Poly Pomona's AGRIsapes. Open to the public, the event represents the culmination of student work over the past 15 weeks.

At the showcase, students hand out a variety of samples, such as vegan jerky, grilled-cheese-and-tomato flatbread, and a cookie snack with peanut butter and banana filling.

Of that last item, called a Breakie, senior **Rosanna Eldumiate** says it took a lot of tinkering until her team was satisfied.

"We had at least 20 different versions of our Breakie until we got the right one," she says.

Her group's trial-and-error experience is the norm. Throughout the semester, the eight teams of four or five students put in about six hours a week in the lab to experiment with their product, revise formulations, draw on feedback from taste tests, assess input from their classmates, and experiment and revise some more – all while adhering to strict food safety and nutrition guidelines.

"It's the ultimate example of learning by doing, from beginning to end," says **Lisa Kessler**, interim dean of the Huntley College of Agriculture.

## It Begins with Breakfast

The milk-and-cereal ball team was inspired by a popular snack in Vietnam – deep-fried rice balls coated in bread crumbs. Team member **Thanh Nguyen**, who emigrated from Vietnam when he was 18, says the team put an American spin on the snack in creating a nutritious breakfast product for consumers on the go.

**"We had at least 20 different versions of our Breakie until we got the right one."**

ROSANNA ELDUMIATE, STUDENT

liquid center. It took a great deal of experimentation before they found the right temperature and cooking time.

The students also struggled with the consistency of the creamy filling, which is made from pudding, whey and sweet potatoes.

**Jacqueline Trinh**, the team's culinary expert, tried adding starch to the filling, but it made the texture too jellylike. To thicken the filling, she hit upon an idea: xanthan gum, a substance she learned about and analyzed in other food science classes. Xanthan gum thickened the milky center and gave it the right texture.

Another important aspect was the data analysis by team member **Jeffery Lo**. After the sensory evaluation tests (outside participants taste-tasted the various products), Lo broke down their responses about taste, look and texture so his group could improve its offering.

The result is a breakfast item that goes from freezer to toaster oven. A quick and easy meal – no utensils or bowls needed.

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## Music Department Debuts 'Rolls Royce' Studio Recording Equipment

A new state-of-the-art audio recording console puts Cal Poly Pomona on the same level as many renowned music studios worldwide.

CPP's studio now houses an AMS Neve Genesys G32 audio recording console and some associated equipment, secured with funds from the Student Success Fee's 2018-19 SPICE grant and the California Lottery.

"A console is the heart of a recording studio," said Music Professor **Arthur Winer**. "After the microphone, the console is the vehicle by which audio signal interfaces with both the acoustic and recorded realms.

"Neve is the 'Rolls-Royce' of the audio world. Cal Poly Pomona students who record with this console can be confident that they are learning on the very best."

The music department's recording studios are in near-constant use by faculty and students from early in the morning until late in the evening.

"I cracked the proverbial bottle of champagne over the console in December by recording a variety of demanding tests," Winer said. "It's ready for the students for spring semester and beyond!"

*Music technician Will Wright-Hooks, left, and Music Professor Arthur Winer operate the new recording console.*



## Huntley College Hosts 2nd Annual Coffee Summit

Coffee lovers and coffee growers came together at Cal Poly Pomona for the second annual Coffee Summit in January.

Industry leaders and agriculture professionals discussed how to establish a coffee farm in California, shared best practices for farm management, and also tasted a few varieties of coffee. The summit concluded with tours of three coffee farms in various stages of development in San Diego County.

*Kaytlin O'Dell of Frinj Coffee brews samples of California-grown coffee.*



## Streamlining the Path for Future Teachers

A new program can help future teachers save time and money as they earn both a teaching credential and master's degree.

The combined program, offered through the College of Education and Integrative Studies, allows students to earn the degree and credential concurrently. Some students could complete the program in less than two years, saving an additional year and a half of school.

Prior to this, students were required to earn a bachelor's degree and teaching credential before enrolling in the master's program. The change to semesters allowed the college to redesign both programs.

Teachers with a master's degree usually receive higher pay and advancement opportunities. According to the California Department of Education, a teacher in Los Angeles County with a master's degree and credential can earn up to \$14,000 more per year.

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Team members say that overcoming challenges along the way made their eventual success all the more satisfying.

"This is how we learn," says **My Le**, a senior. The exacting process of experimentation and analysis is preparation for working in the food-science industry, she adds.

"You have to make sure that every step is done right."

## Healthy Competition

Students in the class also gear their efforts toward regional and national collegiate food-product competitions. Each group creates its product with an eye on a specific contest: healthy children's snacks, products for developing countries, or products using 50 percent dairy ingredients. All have specific requirements.

Once they have a finished product, students submit their proposals. Competitions give teams an opportunity to hear feedback from industry professionals and possibly win a cash prize.

"Competition brings extra motivation to students, and the contests' guidelines align with what we're trying to teach them," says Assistant Professor and Culinology® coordinator **Gabriel Davidov-Pardo**, who teaches the class with lecturer **Dianne Thuy Trinh**. "It brings the real world to the class."

Trinh, a veteran of the food industry, brings a real-world perspective. Having worked as a product development scientist for companies such as Kellogg's and Nellson Nutraceutical, Trinh offers a multitude of practical tips to her charges.

Cognizant of the different skill sets needed to flourish in the food industry, she prods students to work efficiently and consistently, be creative, think critically, communicate clearly and be aware of financial constraints.

All of these skills lead to success after graduation.

"We push them, but they want to be pushed," Trinh says with a smile.

Indeed, students in the nutrition and food science department are a hard-working and highly motivated bunch, says Department Chair and Professor **Harmit Singh**.

Visiting the end-of-semester showcase, he beams with pride when discussing the work not only of the students in this class but in the department as a whole. It's exciting and impressive, says Singh, to watch students and alumni grow and progress – in classes, internships, job interviews and successful career paths.

"It's really amazing and rewarding."

## SUCCESS Continued from page 19

The technologies driving the Fourth Industrial Revolution have the potential to create a better world. Their integration into CPP's inclusive polytechnic model can help us learn and teach better by allowing us to make data-informed decisions about curricula. Our campus and students will not be bystanders in the Fourth Industrial Revolution, but rather will be actively engaged participants in ensuring the promise of these technologies to develop what Schwab calls a "human-centric" and equitable society.

Student Success is our core mission. By opening wide the doors of technological opportunity for everyone, all of our students will be prepared to meet the challenges of the future – the very definition of success.