

From a New Zealand Hostel to USU's Creamery and a Food Science Win

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Sometimes figuring out the next step in your life means moving off the path you were on and finding your way in a new direction. David Dang, a food science student at Utah State University, had just finished his undergraduate program in pre-med in Los Angeles, when he decided to take a break and go backpacking in New Zealand. Staying hostels, Dang quickly learned that most of his fellow travelers were from the Netherlands and didn't speak English.

"The one thing that bonded us was when we cooked dinner together," Dang said. "I couldn't really speak with them, but we just shared our food and it was common courtesy. Coming back from that trip I realized that I really liked food."

Having a strong background in science, Dang wondered if combining his previous education with food was even possible. A quick Google search led him to the food science program at USU.

After completing his master's degree in food science, Dang developed an interest in dairy food science. He had been part of product competitions before, but this year

he decided to lead a team in the Idaho Milk Processors Association competition.

The IMPA's annual competition requires developing a product that contains at least 51 percent dairy. Dang noticed winners from previous competitions always came up with something innovative and trendy. The USU team he led worked with a substance called whey phospholipid protein concentrate (WPPC).

"When you make cheese, there is a solid, but there is also a liquid phase that comes out of it," Dang said. "The main process is filtering some of the minerals, removing some of the lactose, and eventually the stuff that gets filtered is dried off. That's how you get whey protein powder that people typically see in the market."

WPPC is a substance that results from this process. Dang said it contains phospholipids (healthy fats), which are important for brain development and gut health and it has a lot of protein as well. People in the past have only used WPPC as animal feed, considering it a lower value co-product.

Dang's team made good use of USU's resources and decided to use the retentate from processing at the Aggie Creamery to make ice cream.

"We completely removed the fluid milk and replaced it with this co-product," Dang said. "That was our selling point to the industry."



Formulating a recipe took the 3 months before the first trial. Having chosen chocolate as the first flavor, Dang thought the ice cream was ready for more taste tests and competition.

"Then our advisor ate it and he was like, 'This tastes like meat!' He said it tasted like turkey. It was 2 to 3 months on the white board just going back and forth," Dang said.

“Okay we have it down! Texture wise it’s good, it’s smooth, but it was a smooth-tasting turkey I think!”

After reworking the recipe, testing with focus groups, and giving it the name *Highland Scoops*, the team made other flavors as well and ultimately presented salted caramel and chocolate fudge swirl in competition. Dang said judges at the IMPA were impressed, even when the products from other teams were more innovative than in previous competitions. Taking a low-value product and creating a sustainable, flavorful, and trendy treat earned team USU first place and \$5,000. The team built on a legacy in USU’s food science program since over the past 10 years a USU team has won either the grand prize or first place in the IMPA competition.

Dang has finished his master’s program and is now pursuing a Ph.D. in food science. Members of this year’s team were Brynli Tattersall, Minghao Li, Vidita Deshpande, Austin Thomas, Isaac Bowen, Sujan Acharya, Zachary Cooper, with advisor Dave Irish, manager of the USU Creamery.

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