



Meet Cal Poly's Slam-Dunk Professor: Dr. Phillip Tong

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By Donna Berry

Educator and researcher impacts the global dairy industry with his passion and dedication to dairy foods science

A few years ago, the PBS Kids network contacted Dr. Phillip Tong, professor of dairy science and director of the Dairy Products Technology Center (DPTC) at California Polytechnic State University in San Luis Obispo, to profile him for the DragonflyTV kids' series on scientists. Before explaining the basics of ice cream manufacturing in this three-minute video, Dr. Tong describes his journey from growing up about 50 miles northeast of San Francisco in a town called Vacaville (yes, that it is "cow town" in Spanish!) to becoming an expert in the science of dairy foods.



"It all started when I was a little kid. See, I had a dream. I wanted to be a professional basketball player," he says, as the video shows him shoot...and miss. "But that really wasn't meant to be. So I took a job in my dad's grocery store, and it was there that my interest in the science of food really began."

The video can be viewed at: <http://pbskids.org/dragonflytv/scientists/scientist13.html>. The basketball industry's loss is the dairy industry's win, as Dr. Tong's passion for science is contagious. "I love my job. It is science in action," he says while concluding the video designed to inspire young viewers to pursue studies in food science. "It's one of the few jobs where you get to eat your results."

Returning to his roots

After not being drafted by the NBA in 1973, Dr. Tong's interest in food science led him to the University of California-Davis, where he received his B.S. in Food Science & Technology in 1977. After a one-year stint as an Assistant Food Scientist at the Clorox

Technical Center in Pleasanton, and as an intern at the Foremost Technical Center in Dublin, CA, he decided to adventure beyond California's borders to advance his food science education.

Cornell University in Ithaca, New York, welcomed him. In 1982, he received his masters, with a minor in agricultural economics and in 1986 his doctorate, with minors in agricultural economics and chemical engineering.

Realizing he was yet to explore the Midwest, he joined Kraft Foods in Glenview, IL, where he was a technical brand manager/research scientist in the refrigerated products division for one year. Being close to aspiring (at the time) NBA star Michael Jordan was not enough to keep him in the Chicago area. That inner voice was calling him back to California, so he took a faculty position at Cal Poly, where today he leads the dairy foods science research team.

All in a day's work

In the video, Dr. Tong introduces viewers to what he calls his "field office," the pasture where the cows that provide milk for his students and fellow researchers graze. His teaching interests are in the chemistry and technology of dairy foods, food engineering, new food product development, and short courses and symposia for the dairy foods industry. For nearly 25 years, Dr. Tong has taught thousands of undergraduate and graduate students, as well as industry members, on how to convert premium California milk into quality dairy products.

Many of his Cal Poly students have stayed in the dairy industry, because, as mentioned, Dr. Tong's passion for dairy science is contagious. He also continues to make an impact on the global dairy industry through the numerous symposia and short courses that he organizes. This includes the annual Dairy Ingredients Symposium, which is now in its 15th year and mostly funded by the California Dairy Research Foundation (CDRF).

"This year's meeting will be held February 21 to 22 in San Francisco," says Dr. Gonca Pasin, executive director of CDRF. "CDRF stakeholders embrace the investment of their local dairy check-off dollars into such industry outreach programs as a means to support dairy industry members in their efforts to improve and innovate. As a new initiative, CDRF is supporting competitive undergraduate and graduate student travel awards to present their research findings at the annual Dairy Ingredients Symposium."

"The main beneficiary of CDRF support in the area of industry outreach is DPTC for its annual industry continuing education and information communication program," adds Dr. Pasin. "This program runs a series of short courses to provide practical information on dairy processing techniques, particularly in relation to cheese making and dairy foods processing. It also promotes the most recent science and innovation in dairy

processing techniques and ingredient development to encourage translation of dairy science for user benefits.”

Dr. Tong explains that this outreach support indirectly helps Cal Poly’s dairy science research program, in particular “my research on the processing and functional properties of dairy ingredients,” he says. “My current research thrust is to improve the quality and functionality of skim milk powder, nonfat dry milk and milk protein concentrate. Recent activities have been to understand and improve solubility and heat stability of these products through process and product innovations. Most recently we have been able to develop a series of novel food prototypes that take advantage of the heat-set gel characteristics of whey proteins.”

As director of DPTC, which celebrated its 25th anniversary in October 2012, Dr. Tong has become a global authority in dairy science. His contributions to the industry, via his investment and dedication to making DPTC a Center of Excellence, are appreciated around the world. “And the next 25 years of education, research and outreach for the global dairy industry will be even better,” he says.

This includes an expansion of the facilities that support DPTC. “We need to update and expand our facilities to accommodate a new Masters in Professional Studies program,” says Dr. Tong. “Additionally the new space will enhance our abilities in dairy foods research and applications work, as well as improve our ability to deliver an expanded program of training and industry outreach.”

In addition to his current work at Cal Poly and DPTC, Dr. Tong has published more than 75 scientific publications and book chapters and continues to write educational, hands-on, practical articles for various industry publications. He also speaks on these topics at conferences around the world.

He has and continues to serve on numerous dairy association boards. Seldom does a year go by that he does not add one or two more awards of recognition to his trophy case, awards much more meaningful than an NBA championship.

This profile was written by Donna Berry, a food scientist and editor in the dairy and food industries. She will contribute monthly “Check Off Dollars in Action” columns to the CDRF website, which will highlight CDRF-supported research efforts and programs and the innovative individuals behind them. To contact her, visit www.BerryOnDairy.com.

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