

AG RESEARCH SPOTLIGHT



Elizabeth Tran

"The funny thing about discoveries is that none of us actually say, 'aha!' We say, 'Well that's weird.'"
Elizabeth Tran, Associate Professor of Biochemistry

The Ag Research Spotlight shines each month on an individual whose work reflects our commitment to the six strategic themes that guide Agricultural Research at Purdue. Our spotlight for August 2016 underscores the theme, "Utilizing molecular approaches to expand the frontiers of agriculture and life sciences."

THE RESEARCHER: Cows grazed across the street from Beth Tran's high school, and friends who came to visit her at home tied their horses to the mailbox. In this small-town Texas setting, Tran's was an academic family in which everyone held an advanced degree; her mother was a research psychologist. One high school science teacher, Charles Temple, influenced Tran's academic path by being "an excellent teacher who made chemistry fun." As an undergraduate at Texas A&M University, Tran was interested in chemical engineering but was deterred by its applied nature. In her junior year, she switched to life sciences and earned a bachelor's degree in genetics, graduating magna cum laude. "Upon graduation, I knew I wanted to do research, but didn't quite know in what area," she says. The answer came after graduation while she was working as a lab technician and overheard a graduate student bemoaning the difficulty of working with RNA. "That's when I decided, that's what I wanted to do," Tran says. Her interest in RNA took her through a Ph.D. program in biochemistry at North Carolina State University and postdoctoral fellowship at the Vanderbilt University Medical Center. She was recruited to Purdue in 2009. "I really liked the undergraduate emphasis at Purdue, which reminded me a lot of A&M. And the smaller department felt like my graduate school; it had a 'home' feel to it. Everyone I met with genuinely cared about my research and me."

THE RESEARCH: "I still work on RNA—on one particular factor that has caught our fancy and is known to regulate the expression of genes in cancer cells," Tran explains. Using primarily baker's yeast as a model system, her lab focuses on an enzyme that controls gene expression necessary for metabolism. Scientists are just beginning to understand how important the regulation of RNA might be in regulating gene expression, Tran says: "We're really at the front of science right now."

LEARNING FROM OTHERS: Observing her postdoc advisor over five years prepared Tran for building a team that brings unique and complementary skills to her "technique-heavy" lab. She says the exceptional work ethic of her first graduate student set a high standard for others who followed. Team members also have to be resilient: "We don't coddle. You can't be crushed every time an experiment doesn't work—that's science." Her department's strength in epigenetics advances her own research, adds Tran, who appreciates being able to take unexplainable results to her Purdue colleagues.

INTERNATIONAL NATURE OF SCIENCE: Tran serves on the board of the RNA Society and recently returned from Japan, where she chaired a session at the international organization's annual meeting. Away from the lab, her main interest is her 13-year-old daughter (who is decidedly not interested in science, she notes). Tran is also a runner who has set personal goals for the upcoming Chicago and Monumental marathons and has qualified for Boston in April 2017.