Addressing malnutrition in a rural area of Tanzania

During a trip to the Bukoba region in rural East Africa, Dr. Neeta Singh, associate professor of nutrition, became intrigued by Tanzania’s published nutrition survey about the food intake of area residents. The survey uncovered vast protein deficiencies in their diets.

Singh led efforts to increase the population’s intake of protein through the harvesting of soybeans by working with the Bukoba Women’s Empowerment Association (BUWEA). Singh’s research addresses the underlying determinants of under nutrition in rural Tanzania.

A goal of her research is to contribute to mitigate malnutrition with specific emphasis on creating agricultural and economic sustainability among the women and children of the Kagera region of the Republic of Tanzania. Singh’s pilot project used existing land and farming skills-set of women to grow soybean to improve diets and generate income for the women in the region.

By using a bottom-up solution, focus groups were created to build an infrastructure to cultivate soybean for the members of the cooperative. Workshops are provided bi-yearly to:

- increase knowledge about the nutritional benefits of soy consumption to various population groups;
- increase soy consumption in the diets of the BUWEA members, thereby decreasing protein calorie malnutrition and improving overall health status;
- provide adequate technical assistance and training to the BUWEA members on the cultivation, expansion and commercialization (micro-enterprise) of the soybean in order to improve economic sustainability;
- implement soy-processing machines/units to increase consumption of soy and create long-term sustainable economic activity for the BUWEA members and their families.

Singh’s soybean cultivation pilot research represents a need based, bottom-up approach to the problem of malnutrition in the rural areas, with reliability and continuity.

Born in India, UIW Associate Professor of Nutrition Dr. Neeta Singh grew up as the daughter of a foreign diplomat in the former Soviet Union where training in English wasn’t up to her parents' standards. Her mother, a professor of English, insisted her three daughters have a quality education, so she brought them to England every summer to augment their studies. Over the years, Singh’s eyes were opened to the health sciences and ignited a desire to study global food issues.

Hungry for knowledge, she ventured to the U.S. to attend Oregon State University and received her doctorate in nutrition. Her doctoral research included modeling an artificial intelligence system for food aid distribution. Singh’s work centered on developing ways to integrate technology to advance the field of nutrition. To expand her world focus, she later completed her M.B.A. at UIW with an international concentration. But it was her earlier dissertation work with a San Antonio professor working with NASA software that dramatically changed her life. Singh ended up visiting UIW, and was so impressed with the beautiful campus and its culture that she wanted to stay -- permanently.

After a stint as an adjunct nutrition instructor, Singh landed a full-time faculty position and hasn’t looked back. “I am where I’m supposed to be,” she says. She currently serves as the department chair for the Nutrition Department.

Teaching beyond classroom walls is what Singh is all about. Her philosophy is to not only bring the world to the classroom, but to bring the classroom to the world. Her work in Tanzania is just one example.

Singh savors life’s daily pleasures -- everyday conversations and small achievements -- and looks forward to every teaching day, saying, “There are no equations or algorithms to explain my philosophy of teaching. To me, it’s a constant adventure with never a dull moment. It is like a spontaneous drive in the middle of the night: you may enjoy the beauty of the drive or you may end up getting a traffic ticket -- either way, it’s an adventure.”
Excellence in Teaching

Biology students often struggle to understand the complex processes fundamental to life. That’s why Dr. Jessica M. Ibarra doesn’t rely on traditional lectures alone to motivate and encourage learning. To create an environment where students work together, interact, and get feedback, for example, she created a series of concept checks, where students turn to one another and work in cooperative groups to understand difficult and often complex material in the classroom. “The entire class gets involved in the learning process,” she says, “the information sticks and light bulb moments occur all around the room when students work in groups and encourage each other and making learning fun.”

Active learning works, and that’s why she integrates creative educational approaches into courses for first-year biology students, as well as in the advanced classes. Utilizing teaching strategies that are student-centered is important to Ibarra. She understands that students must work and perhaps struggle with the topics by tradition, but that doesn’t mean that learning shouldn’t be meaningful and engaging.

Ibarra challenges herself to create and include more active learning in her courses. She uses collaborative learning, clinical cases, integrates technology, offers service learning, and develops student-centered learning activities. Students understand she is committed to their success and is enthusiastic about creating a positive learning experience for them.

Students appreciate that she is approachable, tough without being harsh, connects with the students, and is passionate about her subject matter and her students. All of this translates into an environment that promotes excellence in teaching biology.

Atmospheric Science and Physics Department hosts SKYWARN training

The Austin-San Antonio National Weather Service (NWS) Office provided SKYWARN training to 39 participants which included faculty, students, and members of the public. Jason Runyen and Nick Hampshire from the NWS Austin-New Braunfels office gave two training sessions.

The training is designed to allow citizens, first responders, emergency management personnel, amateur radio operators, and volunteer organizations the opportunity to learn about severe weather preparedness and safety.

After the sessions, the participants became official weather spotters for the National Weather Service. Real time reports to the NWS office can save lives and property. Posting storm reports helps the NWS find severe weather damage, tornado tracks, and verify severe weather warnings.
A passion for chemistry turned into a life changing experience

It was during high school when faced with the life changing decision of what to major in when Stephanie Chong-Macias finally decided to go into chemistry. She wanted to go into a field that would allow her to help people, but knew medical school was out of the question since she couldn’t watch a full episode of any medical show without looking away at some point.

Throughout the years, she noticed how much she enjoyed science and math classes. Looking back at her childhood, it was clear that she had a passion for all things chemistry.

Today, Chong-Macias is continuing that passion by working in the medicinal research field. Of course, when making the decision to major in chemistry, she was terrified. “I was deciding what I would be doing for the rest of my life at 18 years of age, and I did not feel ready,” she comments. “Fortunately, being at UIW helped reinforce my decision and gave me the skills I needed to be part of this field. Not only was I challenged when trying to learn some complicated topics, but I also had the support of my professors.”

Chong-Macias is now teaching undergraduates at a large institution and she reports that the small school experience she received at Incarnate Word was invaluable. “Getting to know your professors and the professors actually getting to know you is tremendously beneficial,” she said. “It’s not always the case where you can sit down at a professor’s office and get told that you can do much more than what you’re aiming for.”

Because of these words of encouragement from UIW faculty, she pursued graduate school and was accepted.

Throughout undergraduate and now graduate school, Chong-Macias has been able to learn so much about chemistry that it is “just astonishing how much we know and how much we have yet to figure out,” she says.

After graduating from UIW in 2013, Chong-Macias applied to and was accepted to the University of Wisconsin-Madison for graduate school. Since starting the path to obtaining a Ph.D. in chemistry, she received the Chemical Biology Interface (CBI) Training grant.

She is currently in the chemical biology path of the chemistry department working under Professor Sandro Mecozzi. Her research focuses on improving drug delivery systems for cancer therapy, and it truly excites her to be in a field that brings together both chemistry and biology.

Stephanie Chong-Macias presents a poster about her research on improving drug delivery systems for cancer therapy.
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