



The Biology News 2009

Eberly College of Arts and Sciences

WVU's First Nanobiologist Joins Department

Letha Sooter has joined the Department of Biology and WVNano, the University's interdisciplinary nanoscience initiative, bringing her teaching talent and exciting new research opportunities to the Life Sciences Building. She is WVU's first nanobiologist.

She cited WVU's collaborative environment and state-of-the-art facilities as reasons she chose to join the faculty here. Her participation in the teaching of courses in chemistry, physics, and engineering provides an indication of how her area of expertise involves interactions among traditionally separate disciplines.

"I love seeing a student's eyes light up," she says. "It makes my job worthwhile."

— Letha Sooter

"I am very excited about having a center that draws from diverse areas of the University to further nanoscience," she said. "I am also enthusiastic about the Department of Biology because a lot of the research being conducted centers around evolution."

A native of Oklahoma, Sooter attended Texas A&M University and completed a double major in biochemistry and genetics. She spent two undergraduate summers teaching English as a second language in Japan and Malaysia before graduating from Texas A&M in 1999. Then she moved to the University of Texas at Austin, where she completed her doctoral degree in biochemistry in 2004. She followed this with wide-ranging postdoctoral positions at the Massachusetts Institute of Technology, the University of California, and the U.S. Army Research Laboratory in Adelphi, MD.



Letha Sooter surrounded by her students.

Sooter's work has implications for the aerospace, defense, forensics, and homeland security fields. She uses *in vitro* selection to create molecular recognition elements (MREs) that bind to specific targets, and she uses radiation and selection techniques to create new bacteria with specific uses.

Her work at the Army Research Laboratory contributed to development of a handheld system that uses MREs based on nucleic acids and peptides to detect substances used in chemical, biological, and explosive warfare. At MIT, she facilitated the use of glowing peptides on yeast to identify microscopic cracks in aircraft wings. Current research projects at WVU involve MREs useful in the detection of chemical toxins and the

development of new bacteria that could provide highly nutritious food for long space voyages. Her research has led to several papers in peer-reviewed journals, one book chapter, and several patents and patent applications.

Students in Sooter's classes learn from a research scientist with a passion for teaching nanobiology. She invites outside speakers to class to remind her students how research and coursework have real-world applications. She used this approach in her spring 2009 Biology 493 course in MREs and sensors.

To learn more about the Eberly College's important role in WVNano, go to wvnano.wvu.edu.