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National Science Foundation Grant Awarded to Chemistry Professor

Winthrop University

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National Science Foundation Grant Awarded to Chemistry Professor

Quick Facts

- Lammi will involve up to 10 undergraduates in her research and also will use the spectroscopy equipment for analytical chemistry laboratories.
- Lammi and her students will try to better understand physical processes that occur at the molecular level during early stages of Alzheimer's disease.

*Robin Lammi*

ROCK HILL, S.C. - The **National Science Foundation** recently awarded Winthrop University faculty member **Robin Lammi** a \$251,274 grant for her proposal to investigate the role amyloid-beta protein plays in the underlying cause of Alzheimer's disease.

The three-year grant is titled "Probing Early Events in Amyloid-beta Association by Single-Pair Forster Resonance Energy Transfer." The grant provides funds for supplies, summer and academic year student stipends, and travel to scientific conferences.

University officials said it is the first **National Science Foundation Research in Undergraduate Institutions** (RUI) grant awarded to an individual faculty member at Winthrop.

At Winthrop, Lammi and her students have assembled a technologically advanced single-molecule-spectroscopy apparatus to better understand physical processes that occur at the molecular level during early stages of Alzheimer's disease. Recent evidence suggests that very small assemblies of amyloid-beta containing as few as two or three protein molecules, may be the key culprits in Alzheimer's disease. By looking at these assemblies, one at a time, Lammi and her students will gain new insight into the harmful protein-association process. "It is really a different approach than has been used in the past," Lammi said.

With this grant, Lammi will involve up to 10 undergraduates in her research and also will use the spectroscopy equipment for analytical chemistry laboratories for dozens of students.

Lammi arrived at Winthrop in 2003 after completing Ph.D. studies at Washington University in fluorescence spectroscopy and a postdoctoral fellowship in single-molecule spectroscopy at the University of Texas. Recently promoted this summer to Associate Professor of Chemistry, she has developed and taught new courses in introductory and advanced inorganic chemistry and directed the department's undergraduate research program. She has developed and implemented a research-committee based, two-semester undergraduate research experience that emulates practices used in Ph.D. chemistry programs.

Two of her former Winthrop research students are currently enrolled in Ph.D. chemistry programs at Clemson and the University of South Carolina, while a third will begin the prestigious SHERP science writing program at New York University in August.

University officials believe that undergraduate research continues to be the most effective form of student learning, the best preparation for graduate work, and the gold standard for quality science education at the nation's finest undergraduate institutions. Lammi is one of several Winthrop faculty members involved with the IDeA Networks of Biomedical Research Excellence program, an initiative sponsored by the National Institutes of Health, to develop junior faculty research competitiveness.

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