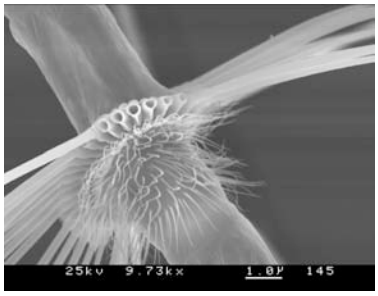
Nanoelectronics Undergraduate Research Fellowship (NURF)
2010 Project Summary

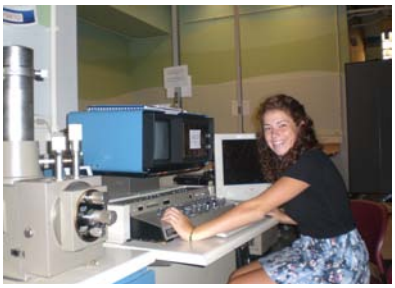
Student name: Allison O'Rourke
Faculty mentor name: Dr. Gary H. Bernstein
Project title: Curiosity-driven research using a Scanning Electron Microscope

It is an important part of Notre Dame to offer many opportunities to their students and communities. This project is a part of that. It allows for students of the university as well as members of the neighboring community, to use a Scanning Electron Microscope (SEM) for their own curiosity-driven research. This SEM, an ISI SR-50, has recently been thoroughly cleaned and is imaging at much higher magnifications, allowing students and local teachers to uncover even more detail on their sample. Local high school children are also being given the opportunity to learn the theory behind how an SEM works as well as getting to see the machine and operate it. It is a unique chance for the students to get to participate in science research setting.

The SEM was down for vacuum and valve repairs when I started this summer, so I was able to participate in the repairs and learn how the SEM functioned as a mechanical machine. With the machine operational I began the process of improving my skill at operating the SEM. After a lot of practice I have become much more proficient in my operation of the machine. I was also able to start recruiting and alerting others in the community to the availability of the SEM for their own curiosity-driven research. Then as students responded, I trained them in use of the SEM as well as providing them with background information on how the SEM works. I have been working to get the SEM ready to move to what will be its new home in the optics suite of Stinson-Remick.



Allison O'Rourke – Mosquito



Using the Scanning Electron Microscope

Curiosity-Driven Research Using a Scanning Electron Microscope By Allison O'Rourke, Mike Padburg Advisor: Dr. Gary H. Bernstein