



FROM THE UNIVERSITY OF VERMONT

February 27, 2008



Young Scientists Win NSF Grants

By Joshua Brown

Article published February 27, 2008

Matthias Brewer works on assembling complex molecules from simple starting materials, with an eye toward one day improving the way medicines are made. Frederic Sansoz studies the strength and properties of extremely small wires, an important piece of the revolution in "nanomaterials." Both are young scientists whose research promises to push forward on basic questions in science – and, in time, contribute a clear public benefit.

That's why the National Science Foundation granted Brewer, assistant professor of chemistry, and Sansoz, assistant professor of mechanical engineering and materials science, Early Career Development Awards (CAREER), funding portions of their research for the next five years.

This is only the second time the University has won two of the highly competitive CAREER grants in one year. Brewer's \$500,000 grant, "Synthetic Methodology for the Preparation of Polycyclic Nitrogen or Oxygen Containing Heterocycles," will begin March 1, 2008. Sansoz's \$400,000 grant, "Microstructure and Size Effects on Metal Plasticity at Limited Length Scale," will begin in April.

NSF CAREER awards support untenured faculty's career development not just in research but also in education. "Being a faculty member at UVM, it is no surprise that I am interested in green chemistry," said Brewer, who completed his undergraduate degree at UVM in 1996, studying with Paul Krapcho, before returning to join the chemistry department three years ago. In addition to his research agenda, Brewer plans to incorporate green "concepts and experiments into the undergraduate organic curriculum to strengthen our students' education," he said. "This will lay the groundwork for the next generation of chemists to develop more efficient and environmentally friendly processes throughout their careers."

For Sansoz, who studies the strange microscopic world of metallic nanomaterials, the grant presents an opportunity to continue his work with wires of nickel and gold at the scale of the atom. He expects to produce "nanorods" and "nanowires" with specific kinds of intended defects that, at that miniaturized level, make them stronger. For example, "nanoscale wires of gold, which is naturally a very soft metal, are ultra-strong materials with a strength up to a 100 times that of bulk metals," he noted.

"These CAREER awards are very prestigious and highly competitive," said UVM professor of biology, Judith Van Houten; she directs the Vermont EPSCoR (Experimental Program to Stimulate Competitive Research) program that will administer and support the new grants. "The challenge is to integrate teaching and research seamlessly. Our UVM faculty are particularly dedicated to teaching, in addition to being excellent scientists and engineers, and this contributes to their success with CAREER awards."

Other recent CAREER grant winners at UVM include: Paul Bierman in 1997, Chris Landry in 1999, Naomi Chesler in 2000, Darren Hitt in 2001, Adel Sadek in 2002, and Britt Holmen in 2006. Randall Headrick and David Bucci

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The Campus Life Task Force II presented a Phase I report, eight months in the making, to the UVM board of trustees at last week's meeting.



both won CAREER grants in 2004, according to the Vermont EPSCoR office.

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