



On the hill

Teaching & Learning Together

Faculty Development

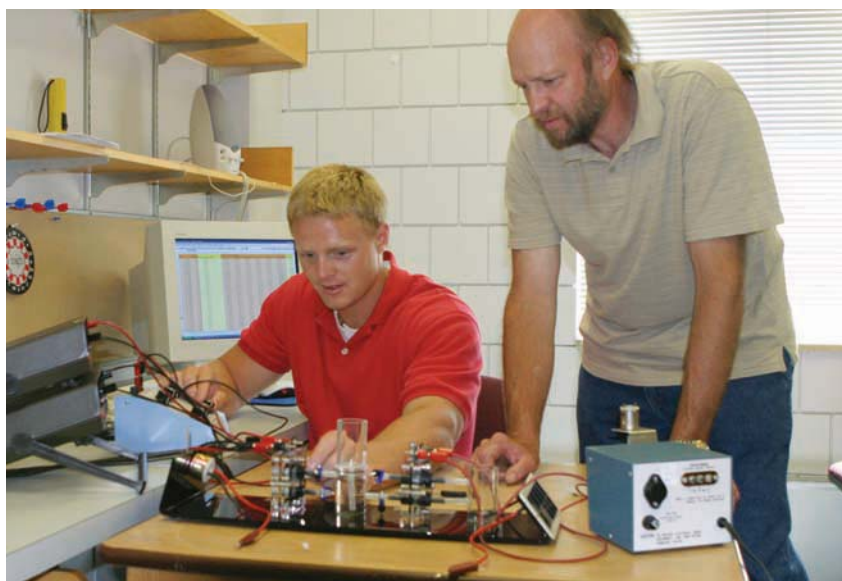
Presidential Student/Faculty Collaboration Grants

by Barbara Fister

What do wind energy, Hmong linguistics, and a ceramic art installation have in common? Each of these is a 2006 summer project funded by Presidential Student/Faculty Collaboration Grants.

This summer, physics professor Chuck Niederriter and student Jared Sieling have been studying ways that energy generated from wind power can be most effectively stored. Professor Niederriter has been involved in developing wind power for the College for several years; now he wants to explore the best ways to save up energy to use on less windy days. Sieling is happy to be involved because he's concerned about the environment—and he knows that hands-on experiences will round out his education as a future physicist.

Toshiyuki Sakuragi, associate professor of Japanese studies, has teamed with students Bao Xiong and Mai Lee Vang to explore the cognitive dynamics of linguistics by conducting field work into metaphors and classifiers used in the Hmong language. For Sakuragi, this research offers an opportunity to apply new linguistic concepts to a language that has received little attention but is undergoing dramatic change. His two student research partners not only have an opportunity to learn more about linguistics but also will be helping to understand and preserve a culture that is an important part of their identities.



Supported by a Presidential Student/Faculty Collaboration Grant, student Jared Sieling '08 (left) and physics professor Chuck Niederriter test the energy storage efficiency of a hydrogen fuel cell.

Art professor Lois Peterson and student David Goldstein are creating a ceramic tile mural out of hand-cut white clay to be mounted on the front of the choir loft of Christ Chapel. It is designed to enhance personal reflection in a contemplative piece of art. By working together, an experienced artist and a younger one will share the creative process of conception, design, and the practical problem-solving required for a major art installation.

For several years, students have learned alongside faculty in intensive projects like these. E-mail interviews conducted during the summer with two Gustavus graduates reveal they offer rich learning experiences that complement the classroom. And the faculty with whom they

worked say the learning goes both ways.

"Real Research, Real Science"

Neuroscientist Mike Ferragamo encouraged Kim McArthur '04 to dive into lab work by re-searching the neural representation of sounds in a particular section of frogs' brains during a 2003 summer project. At first, Kim thought the lab equipment looked as if belonged at NASA Mission Control. But she soon got comfortable enough to make progress. She admits, "There were some things about the laboratory and the procedures that I didn't *really* understand until my first year of graduate school, but hey! I was participating in real research, real science." The grant allowed her to spend time daily



on the project during the summer without compromising her demanding coursework. "In the science classroom, you're generally learning about things that have already been researched, picked apart, rearranged, and diluted down. That's necessary in a science classroom, because science is so *big*—you can't learn every nuance and detail, and you can't earn each piece of knowledge for yourself. There isn't enough time in the day, let alone in a single 50-minute class period. In an active research laboratory, you can be an explorer. *You* pick the question. *You* design the experiment. *You* make new observations and collect new data, and then *you* make the discoveries."

McArthur not only learned technical skills but she also gained an appreciation for the scientific process that she describes as "sometimes elegant, sometimes clumsy, always satisfying." It was good preparation for her current graduate work in neuroscience at Washington University in St. Louis. "You never really know if you'll enjoy a given career path until you've experienced it first-hand, and my experience at Gustavus confirmed for me that *this* was what I wanted to do with my life."

"Knee-Deep in Literary Criticism"

But student-faculty research is not limited to the sciences—or even to students who have chosen a particular career. Scott Newstok, assistant professor of English, admits it's harder to create collaborative projects in the humanities than in the sciences, but he argues, "It is precisely in such fields that we find the potential for the greatest intellectual rewards." As a faculty member



and student partner focus together on a particular issue, they both gain expertise and can engage in "surprisingly productive dialogue that resembles nothing so much as the stimulating conversations in which the best literary scholars engage." And both participants benefit. "The student gets the opportunity to pursue graduate-level work while the professor benefits from having a deeply informed reader of work that is most often too specialized for departmental colleagues to approach. A small liberal arts college provides the ideal environment to support such conversations."

Marissa Wold Bauck had no plans to become a Shakespeare scholar and was initially intimidated by the thought of taking a Shakespeare course required of English majors. But she found herself fascinated by the ways race featured in American readings of *Othello*. The issues she raised in her paper turned out to

parallel questions her professor was investigating, so with a 2004 grant they teamed up to form a two-person summer seminar. They began at the Newberry Library in Chicago. "This was an incredible experience," Bauck reports. "Who would have thought that spending beautiful summer days in a library, knee-deep in literary criticism, could be so much fun? The breadth of resources at the Newberry was astonishing; I was able to read original, centuries-old books and could find virtually any information I needed. The trip to the Newberry was the perfect way to dive in to the project."

Thereafter, Newstok and Bauck met daily to process their thoughts, questions, frustrations, and insights. "This experience was completely different from taking a class. Students often have to do research for a term paper, as I did for the Shakespeare seminar, and while it

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David Goldstein '08 (left) is collaborating with art professor Lois Peterson on a ceramic installation for the choir loft of Christ Chapel. Molded clay parts yet to be fired are on the table before them.



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Collaboration grants

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seems extensive at the time, it's nothing compared to being able to spend two straight months, often at least 40 hours a week, researching one single topic you're genuinely passionate about—it's really quite a luxury. And the more you delve into the topic, the more passionate you become!" As with McArthur, the process itself was eye-opening for Bauck. "One of the many great things about this opportunity is that you have the time to develop a thesis that is uniquely your own, and rather than dabbling in criticism about which you know hardly anything, you're able to gain some authority within those critical voices."

Taking Research Personally

McArthur and Bauck were both chosen to present their research at conferences; both collaborations have resulted in publications in scholarly journals. But collaborative research opportunities allow more personal kinds of discovery as well. "I realized that I could *do* science," says McArthur. "Sounds silly, but although I had been planning to become a neuroscientist for several years, I didn't really know if I could do it. Could I *really* come up with original questions and hypotheses? Could I *really* gather and analyze new data? Could I *really* present my results to an audience? Yes, I could, and I did. And I'm still doing it now, as a graduate student."

Bauck had a similar experience. "My research has had a huge impact on the way I view race—its portrayal in American media and entertainment, its impact on American society . . . I certainly view American history

and the sometimes explosive issue of race in a completely different way." She also discovered that research in the humanities is truly a collaborative process. "I sometimes refer to it as the best summer job I've ever had! I was able to go to the Newberry Library; I had the time to develop an idea and conduct the research necessary to do the thesis justice; I could meet regularly with a professor specializing in the area I was interested in. All these things were possible because of the grant."

McArthur agrees it is a valuable learning experience. "Even for those who aren't interested in research as a career, there's certainly an enormous satisfaction in completing an original project. In every field, research is the opportunity to participate in an ongoing global conversation, and I would encourage every student to take that opportunity." 

Barbara Fister, an academic librarian at Gustavus since 1987, also serves as a coordinator of the Faculty Development Program.


Covenant Award goes to naturalist Jim Gilbert '62

Jim Gilbert '62, who retired in 2005 as executive director of the Linnaeus Arboretum and campus naturalist at Gustavus, was honored by Gustavus Adolphus College Association of

Congregations at its convention on campus in April with the 2006 Covenant Award. The award recognizes

individuals who have made distinctive contributions that strengthen the partnership between Gustavus Adolphus College and member congregations of the Association.

Consulting naturalist for WCCO radio and host of *Nature Notes*, a Sunday morning program that documents natural changes as they occur in Minnesota, Gilbert also is co-author of the Minnesota Weatherguide Calendars, writes a nature column for several local newspapers including the *StarTribune*, and has written two books on the topic of nature in Minnesota. He returned to his alma mater in 1998 after a long teaching career in the Hopkins, Minn., school district to head the arboretum and serve as campus naturalist.

Jim has been one of the most popular speakers in the Office of Church Relations' Partners in Education program for many years. He has spent many Sundays speaking with Association congregations on his perspectives on the world as a naturalist and a man of faith. He continues to teach "Interpreting the Natural Landscape" for the Environmental Studies program at Gustavus. 



Jonathan Kraatz

Jim Gilbert '62 accepts the 2006 Covenant Award from President Jim Peterson '64