The Eyes of Texas

A Publication of THE UNIVERSITY OF TEXAS AT AUSTIN — Week of June 3, 2002

Environmental Science Institute awarded $1.52 million to enhance science education in Texas

The National Science Foundation has awarded the Environmental Science Institute $1.52 million to partner graduate students in the sciences with K-12 teachers in Texas to enhance science education through new classroom activities, workshops and field projects.

The program will build on existing outreach activities involving the university and local school systems within Texas. These include the Marine Science Institute's *Study of Arctic Change*, The University of Texas Institute for Geophysics *Adopt-A-School*, *Teachers in the Field* and *TEXTEAMS Leadership Training* for teachers of the Texas high school course, *Geology, Meteorology and Oceanography* and the Environmental Science Institute/Department of Geological Sciences *Outreach Lecture Series*.

The three-year project will provide support for nine graduate fellows and four advanced undergraduate fellows each year to serve as resources for K-12 students and teachers in science and mathematics in Texas. The program will emphasize collaboration in K-12 classrooms and in field projects on Texas watersheds, estuaries and ocean-going vessels.

Details of the program can be found at: <http://www.geo.utexas.edu/esi/gk12/>.

To contribute news items for use in this newsletter, contact Richard Bonnin at: richard@opa.wwh.utexas.edu. *The Eyes of Texas* will be distributed three times a month via campus mail and is available online at: <www.utexas.edu/opa>.

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Produced by the
Office of Public Affairs

VOLUME 1, No. 30

University ranks fourth in nation in Peace Corp volunteers

The University of Texas at Austin ranks number four nationally on the list of colleges and universities with alumni serving as Peace Corps volunteers.

A total of 69 University of Texas at Austin students are representing the country by serving the people of the developing world as Peace Corps volunteers. Texas A&M University, with 34 volunteers, ranks 22nd on the list.

The University of Wisconsin-Madison ranks first with 96 student volunteers. The list ranks the top 25 large colleges and universities with more than 5,000 undergraduates.

The Peace Corps has 7,000 volunteers and trainees in 70 countries throughout the world. To date, about 165,000 volunteers and trainees have served in 135 countries.

George Gau named dean of McCombs School of Business

George W. Gau, an accomplished department chairman credited with developing innovative collaborations with industry, has been named dean of the McCombs School of Business.

Gau

Gau was appointed dean after 10 years as chair of the Finance Department, where he pioneered a series of research centers bringing together the interests of students, faculty and corporations. Under his stewardship, programs such as the AIM Investment Center, the Center for Energy Finance Education and Research and the EDS Financial Trading and Technology Center brought new economic and educational opportunities to Texas students while raising the McCombs School's international profile.

The ninth dean in the business school's 80-year history, Gau succeeds Robert G. May, who resigned after seven years to return to teaching. Gau will start his new duties this summer.

"By bringing business into the classroom, George Gau has helped ensure the relevance of the McCombs curriculum while demonstrating an outstanding capacity for strategic thinking," said President Larry R. Faulkner. "I am confident that as dean he will bring his strategic vision to bear on the McCombs School as a whole, helping propel the institution into the highest ranks of the world's business programs."

As dean, Gau will head one of the largest business schools in the world.

"I am honored to be offered the position, and I am very excited about the opportunity to work with our faculty, students, staff, alumni and business supporters in leading this school to its next stage: becoming the best public business school in the nation," Gau said. "My goals include the improvement of our academic programs for our undergraduate and graduate students, the enhancement of our research environment and the strengthening of our alliances with the business community."

An award-winning teacher renowned as an expert in real estate and mortgage markets, Gau is director of the Center for Real Estate Finance, the first research center at a leading business school to specialize in this field. Founded by Gau in 1999, the center rapidly has become a focal point for the university's nationally recognized real estate program.

Before starting the center, Gau helped found four similar joint ventures with industry: the EDS Trading and Technology Center; the Center for Energy Finance Education and Research; The Hicks, Muse, Tate & Furst Center for Private Equity Finance; and the AIM Investment Center.

University researchers engineer anthrax-battling antibodies

Biochemical engineers and chemists at the university are working on a promising cure for anthrax based on powerful antibodies. The research was announced in the June 1 issue of *Nature Biotechnology*.

A long-term collaboration between Dr. George Georgiou, professor of biomedical and chemical engineering, and Dr. Brent Iverson, professor of chemistry, developed the potential anthrax cure in research supported by the U.S. Department of Defense since 1997.

Further trials are necessary to determine the antibodies' effectiveness in humans and the best treatment methods. The antibodies theoretically would be administered by injection to people exposed to anthrax, and would block the toxin's deadly effects. This new antibody treatment, possibly coupled with a concurrent regimen of antibiotics, would disable both the anthrax toxin and its related bacteria.

Anthrax, the disease now synonymous with bioterrorism, is caused by a bacterium whose dormant airborne spores can enter the body by breathing or through a cut on the skin. Once inside the human system, the spores begin to actively reproduce. In the case of deadly inhalation anthrax, rapidly multiplying, toxin-laden bacteria soon make their way from the lungs to the bloodstream, and throughout the entire body.

When flu-like symptoms appear a week or so after exposure, they're often disregarded at first. By the time the sufferer develops full-blown respiratory distress, it's usually too late.

"By that time, it's not enough just to kill the bacteria," Georgiou said. "You have to do something about the toxin."

Anthrax microbes possess an arsenal of three toxins. The first, called PA, binds to the body's own immune cells. Working together in groups of seven, the PA molecules carry out a complex process that eventually punches a hole through the immune cell and "injects" two other toxins, Edema Factor, which causes swelling, and the deadly Lethal Factor. The triple assault seriously disrupts the body's natural defenses and can lead to death.

The university research team's approach interrupts the lethal process at the toxin delivery stage. Their strategy is to genetically engineer "sticky" antibodies that derail PA by providing an alternative, more attractive surface for the destructive antigen to adhere to. Once bonded to such substitutes, the PA is rendered inert and innocuous.

Using modern laboratory techniques — Georgiou, Iverson and Jennifer Maynard, a then-doctoral candidate in chemical engineering, isolated thousands of potentially useful protein fragments. The researchers then isolated the best antibody in the mixture, an approach known as laboratory-directed evolution. The best protein, called "1H", was found to bind 50 times more tightly to PA than any antibody previously known.

"Having the antibody bind 50 times better means that it can hold onto the PA toxin long enough to have the entire complex cleared from the body, eliminating the toxin before it has a chance to do any damage." Iverson said. "Combined with antibiotics, this could represent an effective treatment."

In a series of laboratory tests conducted last summer, rats given the antibody survived 10 times a normally lethal dosage of anthrax toxin.

No anthrax spores were used during any phase of the experiments.

The researchers indicated further tests need to be conducted on primates, under conditions more closely emulating the way anthrax is contracted, before a therapeutic drug can be formulated. After that, it must be submitted to the U.S. Food and Drug Administration for approval, a process could take several years.

University News Briefs....

Barufaldi, Roux named 2002 Piper Professors

• The Minnie Stevens Piper Foundation has selected two professors at the university — Dr. James P. Barufaldi, the Ruben E. Hinojosa Regents professor in education, and Dr. Stanley J. Roux Jr., professor of molecular cell and developmental biology, as 2002 Piper Professors. President Larry R. Faulkner presented the award, which includes a $5,000 stipend, along with a certificate of merit and commemorative gold pin, during a ceremony earlier this month. The honor, given by the Minnie Stevens Piper Professor Award Foundation, recognizes outstanding achievement in teaching in colleges and universities throughout Texas.

Career services representative from School of Social Work honored

• Andrea Galliette of the School of Social Work has received the Robert Murff Excellence Award in recognition of her outstanding support of career services at the university. Galliette, a teaching assistant in Social Work's Office of Career Services, received her master's degree in social work this month. The Murff Award is named in honor of Dr. Robert Murff, the founder of the Career Exploration Center in Jester Center and a lecturer in the College of Education.

Performing Arts Center seeks volunteer ushers

• Interviews for prospective ushers for the 2002-2003 season are scheduled for 6:30 p.m., June 18, or 6:30 p.m., June 19. Call the Usher Line at 471-0611 for an appointment. Participants will be asked to participate in training sessions in September; work 15 events over the course of 12 months (between September through August); be on time, follow a set dress code and be ready to work hard. They also must support the arts and the Performing Art Center's dedicated mission to enhance student education. In return, they receive the opportunity to see theatre, dance and musical performances and a newsletter, ticket discounts and other special considerations.