

The Campus

Fall 2002

“We have conquered one terrible scourge only to be faced with the prospect of introducing it again.” —DR. KATHRYN EDWARDS on the smallpox trials

Undergraduates Study Abroad in Record Numbers

DESPITE CONCERNS ABOUT traveling abroad in the aftermath of Sept. 11, the spring 2002 semester saw the largest number of Vanderbilt students ever taking part in international study programs. Approximately 180 students participated in one of 44 direct credit undergraduate programs last spring.

Student enrollment in study-abroad programs has doubled in the past decade. “We have sought to expand opportunities for students campus wide,” says Lorraine Sciadini, outgoing director of the University’s undergraduate study abroad program.

Traditionally, study abroad enhanced foreign language studies, but Sciadini says it has become more attractive for students for a broad range of disci-

plines. Pre-med, engineering, business administration and economics, education, and human and organizational development students are choosing to gain exposure to other cultures as part of their undergraduate experience.

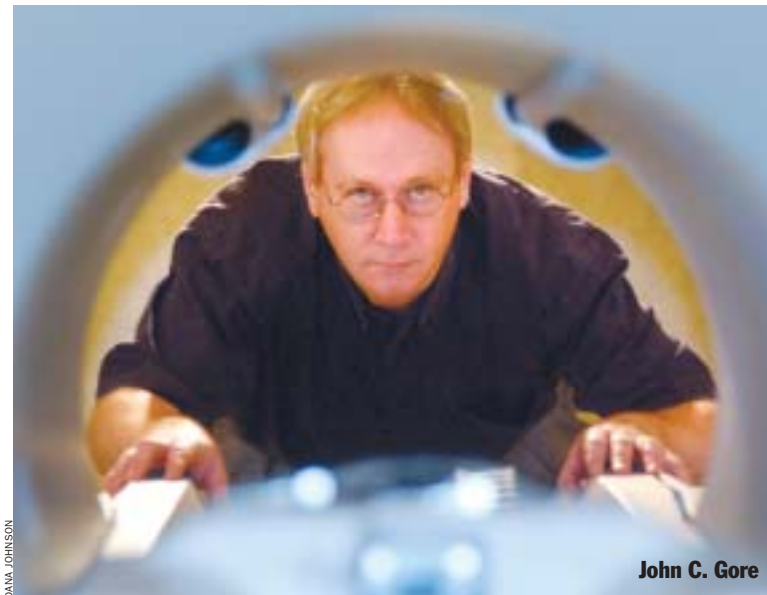
Vanderbilt undergraduates can earn degree credits in one of 20 countries on four continents. Programs in English-speaking countries including Ireland, Scotland, Australia and New Zealand have been added. Existing programs in Spain and Italy have expanded to include additional partner institutions in Palma de Mallorca, Bilbao and Siena.

Study-abroad programs emphasize academics as much as the cultural experience. Students must maintain at least a 2.7 GPA and are encouraged to complete their sophomore year before enrolling in the programs.



COURTESY OF OFFICE OF OVERSEAS PROGRAMS

Enrollment in study-abroad programs has doubled in the last decade.



John C. Gore

Former Yale, Kansas Researchers Strengthen Imaging Science, Matrix Biology

WHEN RESEARCHERS LEAVE AN institution for greener pastures, they often must say goodbye to close colleagues with whom they may have enjoyed decades-long collaborations. But several top researchers new to Vanderbilt are getting the best of both worlds—unprecedented new opportunities, with the advantages of hitting the ground running.

John C. Gore, internationally recognized for his magnetic resonance imaging research, has joined the faculty as Chancellor’s University Professor of Radiology and Radiological Sciences and Biomedical Engineering and director of the new Vanderbilt University Institute

of Imaging Science. He and a team of more than a dozen scientists moved to Vanderbilt from Yale University.

The Institute of Imaging Science will bring together engineers and scientists whose interests span the spectrum of imaging research—from the underlying physics of imaging techniques to the application of imaging tools to study the brain’s inner workings.

At Yale, Gore directed the Nuclear Magnetic Resonance Research Center, one of the leading centers in the world for magnetic resonance imaging research. In addition to using functional MRI to study the brain, Gore and colleagues

examine factors that affect the magnetic resonance signal from tissues, seeking ways to improve the technology.

Their expertise in functional MRI will bolster ongoing research, particularly projects focused on human cognition and vision in the Department of Psychology. Gore plans to explore new applications for functional MRI in studying brain development, in collaboration with Kennedy Center investigators, and in studying neurological disorders, in collaboration with investigators in psychiatry.

Vanderbilt has also substantially strengthened its efforts in the area of matrix biology with the addition of Billy Hudson, a scientist internationally known for molecular biology research in kidney disorders.

Hudson is director of the new Center for Matrix Biology and the Elliot V. Newman Professor of Medicine in the division of nephrology, with a secondary appointment in biochemistry. When he left Kansas University Medical Center, he brought with him a cadre of researchers including four assistant professors, two post-doctoral fellows, a graduate student and several research associates.

Matrices, Hudson says, “are fundamental to a number of

Alpha & Omega

This window in Benton Chapel, known as the Word of God window, is the work of artist Robert Harmon. The movement from the letter ALPHA at the bottom to the OMEGA at the top symbolizes the all-inclusiveness in time and space of the omnipotent God. Divinity School alumni provided funding for the window in appreciation for the late Dean John K. Benton and the school itself.

different diseases. They serve as a carpet for cells to sit on, glue that helps hold them together, which is critical for the development of all tissues. The Center for Matrix Biology will stimulate interdisciplinary research in extracellular matrix as it relates to organ development, cancer and the pathophysiology of tissue fibrosis. Hudson expects to collaborate with colleagues throughout the basic sciences, including biochemistry, molecular physiology, biophysics and cancer biology.

Also joining Vanderbilt from Kansas are reproductive



NEIL BRAKE

{Inquiring Minds}

The Case for Kangaroo Care

If breastfeeding is natural, why do so many mothers find it difficult? Bette Moore, a Ph.D. student in nursing who came to Vanderbilt after years as a lactation consultant, thinks part of the answer might lie in the crucial first hours after birth.

Moore's research shows that skin-to-skin contact (sometimes called "kangaroo care") can improve the chances of successful breastfeeding. " Oftentimes, nurses give the swaddled baby to the mother to hold for about a half-hour immediately after birth," Moore says. "They don't realize the significance of skin-to-skin contact. By placing the baby skin-to-skin, the baby has more olfactory, tactile and thermal cues."



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Don't Blame TV for Increase in Homicides

All that television watching may give you thunder thighs, but it isn't likely to make you go out and kill somebody. Vanderbilt sociology professor Gary Jensen has examined and con-

tradicted a widely cited 1992 study by Brandon Centerwall at the University of Washington which concluded that television was the main cause for an increase in violence among whites in the U.S., Canada and South Africa during a 30-year period starting in 1945.

Jensen analyzed other factors that Centerwall did not consider — including divorce rates, alcohol use, unemployment, and immigration rates.

"The analysis shows that the breakdown of the family is a critical factor when tracking increases in homicide rates for whites," says Jensen, "while television becomes insignificant."

Takeovers of Troubled Schools Produce Mixed Results

The takeover of poorly performing schools by states and cities in an attempt to improve them has been on the rise in the past decade. Twenty-four states allow state takeover of local school districts, and actual takeovers have occurred in 18 states and the District of Columbia.

In an extensive study of 14 school districts in which comprehensive takeovers have occurred, Kenneth K. Wong, professor of public policy and education and associate director of the Peabody Center for Education Policy, and Francis X. Shen of Harvard University found "mixed results for state takeovers on both academic and management issues."

biologist S.K. Dey, who brings 13 people with him, and x-ray crystallographer M. Sundarmoorthy, who brings a team of four.

Hudson and Dey had both been at Kansas University for about 30 years. "It is quite a coup for Vanderbilt," says Arnold Strauss, James C. Overall Professor of Pediatrics, chair of the department, and professor of molecular physiology and biophysics, calling Hudson and Dey "both world-class investigators."

Burn Cases May Mask Child Abuse

EVERY DAY, VANDERBILT'S 20-bed Regional Burn Center sees lives marred by house fires, auto crashes, and other tragic accidents. Among the most horrific cases, however, are ones that didn't have to happen.



NEIL BRAME

Dr. Jeffrey Guy

"Twenty percent of our pediatric admissions are cases of child abuse," says Dr. Jeffrey S. Guy, director of the Burn Center. Guy and the team of physicians, nurses, therapists, and support personnel including psychiatrists and a chaplain have seen the worst of humanity: youngsters immersed in

scalding water by their parents as punishment for potty problems, children branded with curling irons, and others with cigarette burns.

Too often, Guy contends, courts and service agencies return abused children to abusive homes. Red tape delays treatment. Or teachers and doctors do not recognize the abuse for what it is. Guy cites an exam given to medical practitioners in which 80 percent did not recognize a child's burns as abuse.

Some signs of child abuse Guy points to:

- When a parent has no explanation or an inconsistent explanation of how a burn or other injury occurred.
- When a parent delays seeking medical attention for a child.
- When a parent has no regular pediatrician for the child.
- When a child wears long sleeves all the time, even in hot weather.

Vanderbilt Testing 30-Year-Old Smallpox Vaccine

AND YOU THOUGHT YOU HELD the world's record for going the longest without cleaning your freezer: Last fall, in a long-overlooked freezer, pharmaceutical firm Aventis Pasteur discovered a smallpox vaccine stockpile that had been frozen for 30 years—an estimated 75 million doses, produced for the Department of Defense.

Now the National Institutes of Health has awarded Vanderbilt a \$12.6 million contract to determine whether the doses could still be used, perhaps even diluted enough to administer to the entire U.S. population in the event of a



Remnants of Stars Past

IC4406, NICKNAMED THE RETINA NEBULA, is one of the closest planetary nebulae to Earth. Planetary nebulae are the multicolored remnants of dead stars.

C. Robert O'Dell, professor of physics, and colleagues reported the discovery of this new feature, shown here in a Hubble Space Telescope image, in the June 2002 issue of *Astronomical Journal*. They also identified five other nearby planetary nebulae.

To learn more and journey into the nebula, visit Vanderbilt's online research journal, *Exploration*, at <http://exploration.vanderbilt.edu>.

bioterrorist attack. Trials at Vanderbilt and three other sites—the University of Iowa, Northern California Kaiser Permanente, and Baylor College of Medicine—will involve several hundred volunteers.

Smallpox, a highly contagious and often fatal disease which has killed hundreds of millions of people in earlier times, has not been seen worldwide since 1977, after an international immunization campaign wiped it out. The last U.S. case was seen in 1949, and routine smallpox vaccinations ceased in 1972. But terrorism experts believe the virus could have been smuggled out of laboratories in the U.S. or Russia.

While the risk of a smallpox attack by bioterrorists is considered small, experts consider the possibility particularly dangerous because one infected patient could spread the disease to many others.

Because the vaccine carries significant risks and in rare cases is fatal, experts do not anticipate resuming vaccinations for the public at large. Federal officials at the Centers

for Disease Control and Prevention are considering vaccinating as many as half a million emergency and health-care workers who would be among the first to see smallpox cases.

The Vanderbilt grant resulted from an application made before the Sept. 11 terrorist attacks. The study will be the first project funded by the grant, which establishes funding for Vanderbilt to be a vaccine evaluation center for five years.

“For many years Vanderbilt has been at the forefront of developing new vaccines for meningitis, whooping cough, flu, and respiratory viruses,” says Dr. Kathryn Edwards, professor of pediatrics and lead investigator for the smallpox vaccine trials. “Our major focus was looking at vaccines in vulnerable populations including children and elderly people. We were looking at new ways to deliver flu vaccines and pneumonia vaccines. It was only after 9/11 that the additional challenge was presented.”

By using different strength vaccines in the clinical trials,



COURTESY OF JEFF MCKINZIE

Quechua Indians of rural Peru welcomed the arrival of Vanderbilt volunteer health-care providers.

researchers will be able to determine how much the vaccine can be diluted and still be effective. If the old vaccine is shown to be effective at its weakest dilution—one part vaccine to 10 parts water—a total of 750 million additional people could be vaccinated.

Volunteers Bring Health Care to Rural Peru

ELEVEN THOUSAND FEET HIGH in the Andes Mountains, 19 volunteers from Vanderbilt spent a week providing free medical, dental and vision care to a community primarily inhabited by Quechua Indians in Pisac, an impoverished Peruvian community of 5,000. Vanderbilt volunteers teamed up in an international effort with the Universidad Nacional de San Antonio Abad del Cusco and Peruvian officials to provide care to 2,369 patients May 5-13.

For most of the region’s people, “access to health care is very limited,” says Dr. Jeff McKinzie, assistant professor of emergency medicine, who coordinated the trip. They suffer from worms and parasites, malnutrition, and musculoskeletal pain. With the help of a Peruvian dentist, volunteer health-care providers pulled a total of 325 teeth. Vanderbilt ophthalmologist Dr. Juli Dean

provided eye evaluation and care and performed cataract removal and eye surgery.

Women’s basketball players Venessa Ferragamo and Hillary Hager were among the volunteers. “It was an amazing experience,” says Hager. She and Ferragamo, both juniors on a pre-medical track with Spanish minors, helped translate and worked in the visual clinic testing patients’ eyesight.

Each member of the medical team paid more than \$2,000 to participate in the trip. The Department of Emergency Medicine donated \$5,000, and several pharmaceutical companies provided medication and supplies.

Each day, volunteers woke at 5:30 a.m. to prepare for the 45-

minute journey up a winding mountain road to Pisac from Cusco, the nearby ancient Incan capital where the group spent each night. Twenty-eight crates of medical equipment and supplies traveled with the volunteers in order to create a full-service health clinic.

McKinzie has traveled to Peru for the past seven years with church groups and plans similar trips to Peru and Guyana next year.

Graduate Students Rub Elbows with Nobel Laureates

JONATHAN SPRINKLE AND Laura Swafford spent a week last summer doing something most graduate students only dream about—attending the



NEIL BRAKE

Graduate students Jonathan Sprinkle and Laura Anderson Swafford.

52nd Nobel Laureates meeting in Lindau, Germany.

Sprinkle, a Ph.D. candidate in electrical engineering and an IBM Fellow, and Swafford, a graduate student in physical chemistry, were the first two Vanderbilt graduate students ever invited to attend the annual gathering. There they rubbed shoulders with the likes of chemists Paul Boyer and Harold Kroto and physicist Rudolf Mössbauer.

Sprinkle was chosen by the Oak Ridge Associated Universities to attend the illustrious gathering. He anticipates receiving his Ph.D. in 2003 and hopes to teach engineering at the college level. Swafford was chosen by the Department of Energy. She has just finished her third year of graduate school and also hopes to enter academia after completing her doctorate.

Each year since 1951, Nobel Prize winners in chemistry, physics, physiology, and medi-

cine have met in Lindau to have open and informal meetings with more than 400 students and young researchers from around the world. The two Vanderbilt students were among 39 U.S. students selected for the honor.

“Some of the laureates were very focused on their individual research, others on education or politics, and a few talked about what it is to become a laureate,” says Swafford. “A number of them said it was a matter of being in the right place at the right time.”

“Some were receptive to American students, but others were highly critical of the U.S.,” says Sprinkle. “The best prizewinners were those who spoke about their intuition for the future direction of science, and our role in educating a force of people who will change the world.”

Virtual Vanderbilt

www.vanderbilt.edu/kennedy/pathfinder

Search for Services allows those seeking information on disabilities to explore a database of more than 1,400 providers in Tennessee by county and type of assistance. It is the newest feature on the Tennessee Family Pathfinder Web site, which serves as an adviser and educator to those searching for information on disabilities, covering many aspects such as employment, housing and laws. The John F. Kennedy Center for Research on Human Development and the Tennessee Council on Developmental Disabilities created Pathfinder with grant support from the Administration on Developmental Disabilities.



NEIL BRAKE

“We need to reduce our dependence on foreign oil so that America cannot be held hostage to global chaos and tin-horn tyrants like Saddam Hussein.”
—Al Gore in an April 22 Earth Day address at Vanderbilt