VANDERBILT UNIVERSITY A&S COLLEGE OF ARTS & SCIENCE
CORNERSTONE

CROSSING NEW FRONTIERS

New interdisciplinary research institutes promote scientific breakthroughs

Imagine a medical device that can travel through the human body to seek out and destroy small clusters of cancerous cells before they can spread. A box no larger than a sugar cube that contains the entire contents of the Library of Congress. Or materials much lighter than steel that possess ten times as much strength. They don't exist yet. But scientists believe that they can create them in the not-too-distant future, as a result of basic research on nanotechnology, the manipulation of materials at the atomic and molecular level.

— *From the Vanderbilt Institute for Nanoscale Science and Engineering Website*

(please turn to page 6)

For more information about the College of Arts and Science, visit our Web page at

http://sitemason.vanderbilt.edu/cas

You also can access the main alumni Web page at

www.vanderbilt.edu/alumni

and the on-line version of the *A&S Cornerstone* at

www.vanderbilt.edu/alumni/publications/cornerstone.html

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Joanne Lamphere Beckham, BA'62, *Editor*

Nelson Bryan, Judith DeMoss Campbell, Shelton Clark, Vivian Cooper-Capps, Katie Galbreath, Lew Harris, David Salisbury *Contributors*

Neil Brake, Peyton Hoge *Photography*

Donna Pritchett *Art Director*

Keith Wood, *Designer*

Anthony J. Spence, E'75 *Director of Alumni Publications*

Vanderbilt University is committed to principles of equal opportunity and affirmative action.

AIDS and Africa: A New Holocaust?

Africa faces a health crisis not seen before in modern times, and Professor Volney Gay sees some analogies with the Holocaust, although he also cites differences. "This to me is a moral crisis," says Gay, citing the AIDS epidemic in Africa that has left 34 million people dead and has orphaned 13 million African children.

"It's true that the AIDS epidemic is not a Holocaust in the sense that you don't have a group of human beings bent on the genocidal destruction of another race," Gay says, "but our indifference to this problem reminds me of our shameful slowness in responding to the Holocaust."

Chair of the Department of Religious Studies and professor of psychiatry and anthropology, Gay decided to act on his beliefs. He organized a conference on "AIDS and Africa, Science and Religion," at Vanderbilt in October, drawing panelists from many disciplines with expertise in addressing the medical, religious and ethical questions surrounding the AIDS epidemic. Funding came from a Templeton Foundation grant. The goal of the conference was to determine how Vanderbilt and other Nashville religious, educational and political communities should respond to the crisis.

One clear solution is more funding. "Estimates are that it will cost about $12 to $14 billion per year to contain the AIDS epidemic in Africa and probably cure malaria, as well," says Gay. "My numbers show that current U.S. contributions are between $200 and $400 million per year. We give less per capita than most European nations."

"Vanderbilt has taken a significant step towards assuming a key leadership role in the growing world AIDS crisis," Gay says. "We have the resources, interest and support from the science, medical, religious and political fields giving us a unique opportunity to assume a leadership position among American universities."

The AIDS epidemic in Africa has left 34 million people dead and orphaned 13 million children. Without massive relief efforts, those numbers are expected to increase, says Professor Volney Gay.

The $70,000 Templeton Foundation grant came with the stipulation to establish a course dealing with religion and science. Gay surpassed that mandate five times over. He convened other faculty colleagues and together they designed five new courses addressing science and religion. Joining Gay were Victor Anderson, associate professor at the Divinity School; Shai Cherry, Mellon assistant professor of religious studies; Jeff Franks, professor of psychology and cognitive science; Tom Gregor, professor and chair of the Department of Anthropology; and Gary Jensen, professor of sociology.

The core group—joined occasionally by about 10 other faculty members interested in science and religion—met on a monthly basis during the fall of 2001 and the spring of 2002 to design five new courses. They include "The Evolution of Religion and Science," taught by Cherry; "Religion, Science and the Paranormal," taught by Jensen; "Human Universals and Natural Law: Perspectives from Science and Religion," taught by Gregor; "Natural Science and the Religious Life," taught by Anderson; and "Cognitive Science Meets Buddhist Practice," taught by Franks.

— Lew Harris

Vanderbilt among nation's top universities

Vanderbilt continues to score high in rankings of the nation's universities. It held steady at No. 21 in the latest rankings by *U.S. News & World Report*, and its service learning effort ranked 17th in the magazine's first review of "Programs that Really Work." This is the 13th year that Vanderbilt has been chosen by *U.S. News* as one of the nation's top 25 universities. Vanderbilt is also considered among the best values in higher education, advancing from 36th to 32nd this year in the magazine's category of "Great Schools at Great Prices."

Vanderbilt was also listed among the nation's 64 "most competitive" universities in Barron's "Profiles of American Colleges." That rating is based on admissions data and indicates how difficult it is to gain acceptance to a particular school. According to Barron's, the schools listed as most competitive accept "only the best and the brightest students." Vanderbilt will be included in a special edition, "Guide to the Most Competitive Colleges" to be published later this year.

Physicists bring QuarkNet to Nashville

A group of Vanderbilt physicists have brought a new educational program to Nashville that seeks to excite local high school science students about the building blocks of matter.

The physicists have established a local center for QuarkNet, a national program funded by the National Science Foundation and the U.S. Department of Energy. The program, which will involve about 100,000 students from 600 high schools across the nation, will allow Nashville students to collaborate with students worldwide and engage in the analysis of scientific data via the Web.

The program also aims to establish an ongoing relationship between local physicists and high school science teachers.

"This is accomplished by having high school science teachers work side-by-side with researchers during a special summer program so they can bring what they learn into high school classrooms," says Robert S. Panvini, one of the physics professors involved. Also participating are Associate Professor Steven E. Csorna, Assistant Professor Will Johns, Associate Professor Paul D. Sheldon, and Professor Medford S. Webster.

During the first year, the program will provide teachers an eight-week paid summer research appointment. They will work with the physicists to design equipment and online research projects for their students. They will also participate in research projects led by Vanderbilt professors, including investigations of matter and anti-matter and fundamental aspects of particle behavior.

Lory E. Heron, a science teacher from Nashville's Hillsboro High School and one of the program's lead teachers, is excited about the opportunities of QuarkNet. They include travel to the Fermilab in Illinois, the Stanford Linear Accelerator Center in California, and the particle accelerator at Cornell University in New York.

"This program will allow me to work side-by-side with physicists on current research," Heron says. "I am interested in gaining first-hand knowledge about a subject I teach… [and] I will get to meet new people and travel to new places where I will see laboratories that I have only read about."

College boasts 11 AAAS fellows

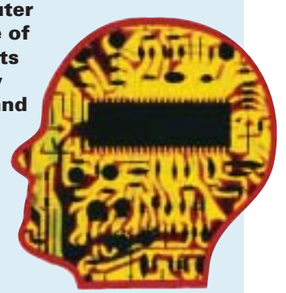
Of 28 Vanderbilt faculty members who are fellows of the prestigious American Association for the Advancement of Science (AAAS), 11 are current or emeriti professors in the College of Arts and Science. They include

- Randolph Blake, professor of psychology
- Robert Fox, professor of psychology and biomedical engineering
- Walter R. Gove, professor of sociology
- Joseph H. Hamilton, Landon C. Garland Distinguished Professor of Physics
- Wendell G. Holladay, professor of physics, dean of the College of Arts and Science, and provost, emeritus
- Mark M. Jones, professor of chemistry, emeritus
- Jon H. Kaas, distinguished professor of psychology
- Joseph S. Lappin, professor of psychology
- Richard McCarty, professor of psychology, A&S dean
- Timothy P. McNamara, professor and chair of psychology
- C.R. O'Dell, distinguished research professor of physics and astronomy

Founded in 1848, AAAS is the world's largest federation of scientists with more than 143,000 individual members. AAAS fellows are selected on the basis of their distinguished efforts toward advancing science or its applications.

Did You Know?

Vanderbilt provides four Microcomputer Laboratories free of charge to students and faculty. They contain 147 PC and MAC systems with Internet access, printing facilities, and other software and hardware resources.



New faculty join A&S ranks

The following faculty members recently joined the A&S ranks:

Richard J.M. Blackett is the new Andrew Jackson Professor of History. A native of England, he was the John and Rebecca Moores Professor of History and African American Studies at the University of Houston prior to coming to Vanderbilt. He specializes in 19th century American history, specifically the study of African American and antislavery history, as well as the history of the Caribbean.

Richard Blackett

Professor Blackett is the author of a number of books, the most recent being *Divided Hearts: Britain and The American Civil War.* He is currently working on a study of the ways Northern communities organized to resist the enforcement of the 1850 Fugitive Slave Law.

The poets and novelists in the English department have a new colleague: Lorraine Lopez is the winner of the 2002 Miguel Marmol Prize for fiction, and the author of a collection of stories, *Soy la Avon Lady and Other Stories*.

Lorraine Lopez

Professor Lopez earned her degrees from California State University, Northridge, and the University of Georgia. Her stories have appeared in numerous publications, including *New Letters, The Crab Orchard Review, The U.S. Latino Review,* and *The Watershed Anthology*. Formerly assistant professor of English at Brenau University in Gainesville, Georgia, Lopez teaches an advanced fiction workshop and ethnic American literature at Vanderbilt.

Leadership Changes Announced

Nicholas Zeppos, provost and vice chancellor for academic affairs, recently announced new leadership in the University's Department of Development and Alumni Relations. Robert L. Early, BA'71, MDV'76, has been promoted to executive associate vice chancellor for DAR. Randy Smith, BA'84, MDiv'88, is the new associate vice chancellor for alumni relations. Debbie Vaughn is now associate dean for A&S alumni and development, a newly created position.

Robert Early

Early joined the department in 1983 as assistant dean for alumni and development at the Divinity School. He was a member of the management team that planned and executed the Campaign for Vanderbilt, which raised $560 million during the 1990s.

In addition to Smith, Early's management team also includes Associate Vice Chancellors Robert Lyon, Elizabeth Rapisarda, Jen Howe, and Christy Passmore.

Randy Smith

An ordained minister, Smith served as director of development for the Divinity School and has led Vanderbilt's regional fund-raising efforts for the past three years.

Vaughn brings to A&S successful prior experience as director of development for the Vanderbilt School of Engineering and the Mississippi State University College of Business.

Also new to the College of Arts and Science is Hilary Spruytenburg, BA'97, who has returned to Vanderbilt as assistant director for A&S development. Spruytenburg worked in the Undergraduate Reunion office prior to joining the private sector.

Debbie Vaughn

Warner Ballard, formerly director of development for Arts and Science, is now senior development officer working with top supporters and volunteer leaders of the college.

Book provides photographic journey of campus

For the first time in more than a decade, photographs celebrating the natural and architectural beauty of the Vanderbilt campus have been published in a coffee-table book, *Vanderbilt University: A Photographic Journey*. The photographs were selected from the extensive archive in the Department of Creative Services and feature the work of University photographers past and present: Neil Brake, Lynn Cradick, and Gerald Holly. The book, which sells for $39.95, can be purchased from the Vanderbilt Bookstore (www.vanderbilt.edu/pictorial_book) or other Nashville-area bookstores.

Where Are They Now?

Fellow professors and former students speak fondly of the "fatherly influence" and "outstanding contributions" of Wendell Holladay, professor emeritus of physics.

Holladay came to Vanderbilt on the G.I. Bill after World War II, and earned his B.A. and master's degrees in physics in 1949 and 1950, respectively. He received a Ph.D. in physics from the University of Wisconsin in 1954, the same year he began his career at Vanderbilt as an assistant professor.

Wendell and Virginia Holladay

The theoretical physicist served as chairman of the physics and astronomy department, dean of the College of Arts and Science, and provost, before returning to the faculty in 1982. Although he received the Thomas Jefferson Award for outstanding contributions in the governance of the university, teaching was his first love. Upon resigning from the deanship, he said being a faculty member was "the best job in the University."

May 2003 will mark the tenth anniversary of Holladay's retirement, but his legacy and passion for science live on through the Wendell and Virginia Holladay Endowment Fund. Established in 1994, the fund supports scholarly study of physical science or mathematics and their relationship with history, philosophy, theology, politics, or technology. Holiday continues to study and write about physics and quantum mechanics and also enjoys spending time with his wife, their four children, and multiple grandchildren.

— Katie Galbreath

Richard Larsen

My Most Memorable Professor

I had Professor Richard Larsen for a statistics class, and he was also my advisor. Professor Larsen was an excellent teacher and communicator, yet I most remember him for his great relationships with the students. He was always available to help or to listen to us. Regularly in class he would pass around a sign-up sheet for a group of students to go out to lunch with him. He made us feel like family. Mathematics was a popular major because of Professor Larsen and others like him in the department. I have taught mathematics at the University of Alabama and am now teaching high school math at the Greater Atlanta Christian Academy and feel that I have a trusted mentor and friend in Professor Larsen. *—Edie Johnston Kelsey, BA'87*

Editor's Note: Professor Larsen is currently associate dean of the College of Arts and Science. His responsibilities include student advising and revising the curriculum.

A&S SPORTS

Women's tennis players garnered national honors on and off the court at the end of last season. The team earned the Intercollegiate Tennis Association All-Academic Team award, and senior Kate Burson, BA'02 (history) earned ITA Scholar-Athlete status. As a team, Vanderbilt finished with a GPA of 3.46 for the 2001-2002 school year, and Burson logged a senior-year GPA of 3.66 and a career GPA of 3.50. In the process, Burson became Vanderbilt's all-time leader in career wins with 207 (102 singles and 105 doubles). She is the only Commodore, male or female, to log more than 100 singles and 100 doubles victories in a career. Three Commodores were named ITA All-Americans, including then-sophomore Aleke Tsoubanos, a biology major.

In October, the men's golf team won both the team and individual titles at the Mason Rudolph Championship, played on the Commodores' home course at the Legends Club in Franklin. Leading the way were senior economics majors Brandt Snedeker and Craig Dunlap.

Football Coach Bobby Johnson received the first endowed head football coaching position in the Southeastern Conference as a result of a gift from Richard Patton, BS'84, and Robin Patton of Nashville. The endowment is the Bronson Ingram Head Football Coach's Chair, which was named in honor of Robin's late father, E. Bronson Ingram, A'53. A Nashville businessman, philanthropist and community leader, Bronson Ingram served as chairman of the Vanderbilt Board of Trust from 1991–1995. His widow, Martha R. Ingram, is currently chairman of the University Board of Trust.

Vanderbilt was the clear-cut winner among SEC schools in the 2002 NCAA graduation rates, which are based on scholarship players who entered school in the 1995-96 school year. The Commodores graduation rate: 100 percent.

New office helps students win honors scholarships

In order to help more graduating seniors compete successfully for post-baccalaureate fellowships, Vanderbilt has established the Office of Honors Scholarships. Paul Elledge, professor of English, associate provost, and former associate dean of A&S, is its first director.

Elledge has supervised the Rhodes, Marshall, and Churchill scholarship competitions at Vanderbilt since 1998. In his expanded role, he will oversee at least 26 additional fellowship opportunities, including the Mellon, Fulbright, and other national and international scholarships.

A&S Founder's Medalist

Elbridge Samuel Chase IV received the Founder's Medal in the College of Arts and Science from Dean Richard McCarty during Commencement ceremonies in May. Chase graduated with high honors with a double major in economics and theatre. While at Vanderbilt, he received the Lee Blessing Award for creative writing, the Morgan Award for writing, and most recently, the Cecil Jones Prize for Theatre. He is currently working in regional theater in Minneapolis, Minn., while applying to graduate programs in the U.S. and England. During the summer of 2002, he worked on the dramaturgy staff for the world premiere of Arthur Miller's newest play, "Resurrection Blues," at the Guthrie Theater in Minneapolis.

Men and Women of Honor

Three Vanderbilt students are currently studying abroad on Fulbright Fellowships:

- Inese A. Radzins, a graduate student in the Department of Religion, is conducting archival research at the Bibliotheque Nationale in Paris for her dissertation on Simone Weil's conception of the natural world.
- Jeffrey M. Jackson, a graduate student in philosophy with a strong background in phenomenology and psychoanalysis, is spending the 2002-03 academic year at the Katholieke Universiteit Leuven in Belgium. He is studying principally with Rudloph Bernet, while researching and writing his dissertation on the possible compatibility of phenomenology and psychoanalysis.
- Erika Weingarth, a 2002 graduate of Peabody College with majors in German and human and organizational development, is studying international marketing and new media communications at Universitaet Mainz in Germany.

Senior wins Rotary Scholarship

Ryan Williams, a senior history major, has won a Rotary Ambassadorial Scholarship to study at Oxford University in England next year. He will continue his work on the development of democratic institutions in the Americas.

Rhodes Scholar Returns

David Carlisle Latimer, 1998 Vanderbilt Rhodes Scholar, has accepted a post-doctoral appointment in the Vanderbilt Department of Physics. Latimer earned his D.Phil. in mathematical physics at Oxford University in England last summer.

Freshman class strongest ever

This year's freshman class is the strongest academically in the University's history. It has broken several admission records, many set as recently as last year.

"This class has the highest numbers in everything we value in our students," says Bill Shain, dean of undergraduate admissions.

"The applicant pool has been considerably stronger. This year, the average applicant had SATs over 1300. Six years ago, it was 1276."

While he declined to discuss the specific SAT scores of classes enrolled at Vanderbilt, he said the average score has gone up 32 points since 1997.

There are 917 freshmen enrolled in A&S. Of the students indicating race, 22 percent of A&S freshmen are minorities, compared with 20 percent for all freshmen, the highest percentage in the University's history.

Fifty-four percent of A&S freshmen are female. About 46 percent hail from the Southeast, followed by 15.2 percent from the Midwest and 13.8 percent from the Northeast. Approximately 24 percent are from Tennessee.

Fifty-nine percent of A&S freshmen receive some form of financial assistance.

NEIL BRAKE

Freshmen Jess Godwin, left, Kristin Ulewicz, and Rebecca Creel pratice rapelling at Squirrel Camp, one of several freshmen pre-orientation programs. This year's freshman class is the strongest academically in the history of the University.

CROSSING NEW FRONTIERS *(continued from page 1)*

To take advantage of new knowledge being discovered at hot research frontiers like nanoscience and technology, Vanderbilt recently launched several interdisciplinary initiatives that combine the strengths of A&S faculty with their colleagues in the Medical Center, the School of Engineering, and Peabody College.

Today, exciting new discoveries are taking place at the intersections between traditional fields, such as physics and chemistry or biology and engineering. Understanding how the brain processes information, the molecular basis of diseases like AIDs, and the causes and cures of mind and brain disorders such as schizophrenia and Parkinson's disease require teams of scholars from different disciplines working together.

To support interdisciplinary research that cuts across traditional college boundaries, the University has adopted an internal grant program funded by the newly formed Academic Venture Capital Fund. The Board of Trust's executive committee approved the AVCF in February 2001 and funding for eight multi-year interdisciplinary research institutes and a one-year planning grant began last fall.

"Vanderbilt has a long history of supporting and seeding research within individual schools but not across them," says Dennis Hall, associate provost for research. "This is a significant and historic effort for the University, which is investing its own funds as seed money to develop cross-school programs with national stature. It's an area from which we expect great things to come on a number of fronts, from education to technology to health care and fighting disease."

Hall, who is also a professor of physics, points to nanoscience as one area that may produce breakthroughs that will benefit people in the future as much as antibiotics and computers do today.

Among the "great things" that could result from the ability to manipulate and control matter at the nano or molecular level:

- More powerful and sophisticated computers, hundreds of times faster than today's technology permits, embedded in everything from cars to home appliances to medical equipment
- Drugs designed specifically to target an individual patient's diseased cells
- Palm-sized biosensors that use individual cells to detect chemical or biological warfare threats within seconds

The College of Arts and Science is funding several of these institutes in partnership with the AVCF and other schools within the University. They are described elsewhere on these pages.

Plans are also underway for an interdisciplinary Center for the Americas, which would involve a number of A&S departments in languages and the social sciences. A Center for the Study of Religion and Culture, uniting the efforts of the A&S Department of Religious Studies and the Divinity School, is also under consideration.

In addition to these initiatives, the Academic Venture Capital Fund has also approved the Program in Law and Business, chaired by Kent D. Syverud, dean of the Law School, and William G. Christie, dean of the Owen Graduate School of Management; and the Planning Grant for an Initiative in Environmental Risk and Resources Management, led by David S. Kosson, professor of civil and environmental engineering.

A&S researchers are also working closely with the Functional Genomics of Zebrafish and the Research in Proteomics and Functional Biology initiatives, both chaired by faculty in the Medical Center.

The Vanderbilt Institute of Chemical Biology (VICB), *directed by Lawrence J. Marnett, Mary Geddes Stahlman Professor of Cancer Research and director of the A.B. Hancock Jr. Memorial Laboratory for Cancer Research, and Ned Porter, Stevenson Professor of Chemistry*
Faculty from the A&S Departments of Chemistry and Biological Sciences have joined with colleagues in the Medical Center to apply chemistry to important biological problems such as cancer, diabetes, and other diseases. Past breakthroughs in this field include

- The development of imaging techniques to identify proteins associated with disease
- The discovery of how cell damage leads to heart disease and cancer
- The design and synthesis of new anti-inflammatory pain relievers such as Celebrex and Vioxx

Center for Integrative and Cognitive Neuroscience (CICN), *Jeffrey D. Schall, professor of psychology, director*
Understanding how the brain produces thought and emotion is the goal of this center. Research in this area may help develop better ways to prevent and treat mental and neurological disorders like schizophrenia and Parkinson's disease. CICN researchers have shown that mature brains can grow new connections even after traumas like strokes or severe head injuries. Their findings may result in better treatments for patients with brain damage, or even Alzheimer's disease.

Vanderbilt Institute for Integrative Biosystems Research and Education (VIIBRE), *directed by John P. Wikswo Jr., Gordon A. Cain University Professor, professor of physics, professor of molecular physiology and medical engineering.*
Faculty members associated with VIIBRE are bringing the ideas, tools, and methodologies of the physical sciences and engineering to bear on emerging opportunities in the biological and biomedical sciences. Many of these scientists and researchers have pioneered numerous surgical, diagnostic, and other medical technologies. Now they are tackling projects that go straight to the heart of biological and medical research in the 21st century: Unlocking the secrets of a living cell. Such research has already produced

- Advanced imaging technologies that reveal the detailed structure and function of the body's organs
- Instruments that precisely guide surgical tools or the delivery of radioactive implants, chemotherapy, or gene therapy during delicate brain and liver operations
- A miniature device that can detect the oxygen consumption of a single cell and may be able to spot the effects of chemical or biological weapons within seconds

Vanderbilt Institute for Nanoscale Science and Engineering [VINSE], *Leonard C. Feldman, Stevenson Professor of Physics, director*
Miniaturization — the driving force that has produced ever cheaper computers, cell phones, and other electronic devices — is giving scientists and engineers the ability to arrange atoms and molecules into precise shapes and to produce new drugs and other materials atom by atom and molecule by molecule. A number of experts have predicted that nanoscale [from one billionth to several hundred billionths of a meter] science and engineering could provide the basis for the next industrial revolution.

Nanoscience research has already produced such diverse commercial applications as

- Stain-resistant clothing
- Hand creams that protect against biological weapons
- Miniaturized solid-state lasers
- Tougher ceramics

Learning Sciences Institute (LSI), *Directed by John D. Bransford, Centennial Professor of Psychology, and Camilla P. Benbow, dean of Peabody College*
The LSI is a university-wide organization that focuses on ways to strengthen the educational programs of Vanderbilt and the local community by focusing on how people learn, effective teaching, and new technologies for teaching and learning. Past efforts have resulted in award-winning computer programs such as The Adventures of Jasper Woodbury and The Little Planet Literacy series, used to teach mathematics and reading in elementary classrooms around the country.

Function Follows Form

New Building Promotes Interdisciplinary Research

Whenever Nicki Fox, a PhD candidate in molecular biology, wanted to confer face-to-face with her colleagues in the Medical Center, she had to walk across campus from her laboratory in Buttrick Hall. That meant valuable time away from her research with Professor Larry Zwiebel on disease-spreading mosquitoes.

Now if Fox has a question about measuring RNA, she can walk up the stairs from Zwiebel's laboratory in the new Biological Sciences/Medical Research Building III to Associate Professor of Pharmacology Ronald Emeson's lab on the eighth floor.

"It's great to be able to go upstairs or next door and ask a quick question of someone who is expert in that field," Fox says, "rather than have to email them or walk across campus."

Professor Zwiebel, Fox, and Jason Pitts recently identified the genes in the malaria mosquito's sensory system. Zweibel has also received a $50,000 Vanderbilt grant to study similar mechanisms in the West Nile mosquito.

NEIL BRAKE

Mosquito researchers Jason Pitts, left, Professor Laurence Zwiebel, and Nicole "Nicki" Fox in their laboratory in the new Biological Sciences building.

Putting researchers in the biological sciences closer to their colleagues in medicine, neuroscience, genetics, and structural and developmental biology is one of the goals of the new building. A joint venture between the College of Arts and Science and the Medical Center, it also offers students a chance to rub elbows with and learn from faculty members conducting research in a variety of fields.

"The building fosters informal interactions among groups with similar interests, which can lead to new ideas," says Professor Charles K. Singleton, chair of the new Department of Biological Sciences.

The recent merger of biology and molecular biology into a single department provided the impetus for putting faculty from those departments into one building, together with their colleagues from the Medical Center who have common research interests.

NEIL BRAKE

Biological Sciences building

The 350,000-square-foot building reflects the growing emphasis on interdisciplinary research. For example, faculty from the Brain Institute, the Kennedy Center, the Cognitive and Interactive Neuroscience Center, and neurobiology all work in the new building, often on the same floor, making it easier to share common interests and information.

Mood differences associated with activity in area of the brain

Are you moody? If so, then there is a small area near the front of your brain—an inch or two behind your right eye (if you are right handed)—that is probably working overtime.

That is the conclusion of a recent study, published in the online *Early Edition of the Proceedings of the National Academy of Sciences*, which found a significant association between activity in a specific area of the brain and individual differences in mood.


NEIL BRAKE

David Zald, assistant professor of psychology, has found a significant association between activity in a specific area of the brain and individual differences in moods.

"There are lots of beliefs about the relationship of individual differences in emotional behavior and brain function, but this is one of the first times we've seen direct evidence of an association with a specific brain region," says David H. Zald, assistant professor of psychology at Vanderbilt, who co-authored the paper with Dorothy L. Mattson from the Minneapolis Veterans Affairs Medical Center and José V. Pardo from the University of Minnesota.

The study used the brain imaging technique called positron emission tomography (PET) to record the levels of brain activity in two groups totaling 89 individuals. The subjects ranged in age from 18 to 55 years, with a median age in the mid-20s. There were slightly more men than women. None of the participants had a history of medical or neurological problems or were using mood-affecting medicines. They were all right-handed, because of potential differences in the brains of left- and right-handers.

Before the brain scans were taken, the individuals filled out a questionnaire that asked them a series of questions about the extent to which they had experienced unpleasant moods during the previous month. The researchers used these answers to rate each individual on a "negative affect" scale. Negative affect includes a range of unpleasant mood states, ranging from irritability to anxiety to anger. Previous studies have shown that individuals who rate high on the scale are at increased risk of developing depression or anxiety disorders.

After scanning the first group of 51 subjects, the researchers compared the levels of brain activity. They looked for areas where the activity level increased or decreased in those with higher negative-affect ratings.

"The most striking positive correlation we found was localized in only one small region of the brain, the ventromedial prefrontal cortex," says Zald. "Because this is just a correlation, we don't know whether this activity is the cause or the effect of negative mood states. Such a connection does make sense, however, because animal studies show that this region of the brain controls heart rate, breathing, stomach acidity levels, sweating and similar autonomous functions that have a close connection to mood."

In order to double-check their findings, the researchers assembled a second group of 38 subjects. They put them through the same procedure and came up with essentially the same results.

Since the time of the ancient Greeks, there has been speculation that the brain is the basis of personality, but it is only within the last 20 years that scientists have developed instruments capable of measuring brain activity with enough accuracy to address this question directly.

"With increased knowledge of the relationship between brain function and mood, we should be able to find more effective ways to treat the millions of Americans who suffer from clinical depression each year," says Zald.

—David Salisbury

Economic historians ranked third nationally

Economic historians in the Department of Economics—Professors Jeremy Atack and Robert Margo, Associate Professor Peter Rousseau and Assistant Professor William Collins—ranked third nationally in the June 2002 issue of the *Journal of Economic History*. The ranking was based on the number of publications produced by faculty in the field since 1989. "What is remarkable," says Atack," is that Professor Rousseau only received his doctorate in 1995 and Professor Collins in 1997, at which time they joined the Vanderbilt faculty."

"One of the reasons we have been successful," Atack continues, "is the strong support we receive from our department and from the Department of History." Atack noted that the Economic Historical Association will meet in Nashville in September 2003, presenting an opportunity "to showcase Vanderbilt and Nashville."

RESEARCH BRIEFS

From the Mayas to the Market • As the world economy becomes more interdependent, many remote ancient cultures are undergoing serious upheaval. For example, Mayan farmers in Tecpan, Guatemala, now grow broccoli, blackberries, and other crops for export to the United States, in addition to traditional crops such as corn and beans. While some decry what they see as the slow death of Mayan traditions, Associate Professor of Anthropology Edward Fischer disagrees: "The Maya are simply doing what their ancestors have done for centuries: adapting circumstances imposed upon them to their own ends, assimilating Western capitalism and interpreting it through an indigenous lens."

Image Is Everything • The acronyms CD, MP3, and MRI evoke a range of reactions, but all depend on digital data. Such data may become even more focused, thanks to the work of mathematics Professor Akram Aldroubi and his University of Connecticut contemporary Karlheinz Gröchenig. The two mathematicians hope to sharpen the images, so to speak. "Our theory—which is based on a lot of beautiful new mathematics—can produce more accurate digital representations of all kinds of samples, including those that classical methods handle poorly or cannot handle at all," says Aldroubi. "It generates algorithms (sets of mathematical procedures) that are fast, efficient, stable, and robust."

For more information about exciting research at Vanderbilt, visit Exploration, *the University's online research journal, at http://exploration.vanderbilt.edu/home.htm*

New Ambassador to Panama

Watt first woman graduate appointed U.S. ambassador

When Linda Ellen Watt arrived on the Vanderbilt campus as a freshman in the class of 1973, her dream was to become a math teacher. But low grades in a calculus class her freshman year soon put that dream to rest. She decided to pursue her interests in Spanish and history instead, and it proved to be just the right avenue for her. Last summer, President George W. Bush nominated Watt as Ambassador to Panama, following her distinguished 26-year career in the Foreign Service. In November, the U.S. Senate confirmed her nomination, making Watt the first Vanderbilt woman graduate to hold such an office. She is also one of seven women currently serving as ambassadors in Latin America.

Born in Tokyo, Japan, Watt grew up in Atlanta, but she spent more than one summer vacation in places like Nicaragua where her father, a career military officer, served as defense attaché. "He encouraged me to think about the Foreign Service," she says.

However, it was a semester with Vanderbilt-in-Spain during her junior year that she regards as a turning point in her career plans. "I realized I really liked living abroad," she says. She went on to earn a double major in Spanish and history from Vanderbilt and then a master's degree in Latin American Studies at the University of New Mexico in 1975. Watt's first assignment after passing the Foreign Service exam in 1976 was in Nicaragua. Since then, she has also served in the United Kingdom, Costa Rica, Ecuador, Russia, the Dominican Republic, and two tours at the State Department in Washington, D.C. Her most recent assignment was as foreign policy advisor to the commander of the Southern (Military) Command in Miami, Florida.


Ambassador Linda Watt

During these years, Watt's life has been full of what she calls "bridge-building opportunities" in the countries where she has served. One of those came in 1998 when Hurricane Georges devastated the Dominican Republic while she was serving as acting ambassador. "The American people really expressed their generosity and solidarity with the Dominicans at that time," Watt says. "We had a lot of official government assistance that came in the form of disaster relief supplies and trying to rebuild the base of the economy."

She adds an understatement: "I've been in some interesting places at interesting times." In addition to Hurricane Georges, she has survived two earthquakes and the ending of the Sandinista War in Nicaragua. When she served in the State Department's Near East Bureau during the Gulf War, it was Watt's job to manage the evacuation of embassies in the region and ensure the safety of people and property.

"I have loved serving my country in such a wonderful way overseas," Watt concludes. "I hope young people are thinking about this now [as a career]. It's a great opportunity to serve and have an adventurous life."

Watt is married to Leo Duncan, a retired Foreign Service official, and has two grown children from a previous marriage.

—Judith DeMoss Campbell

Wired for Art

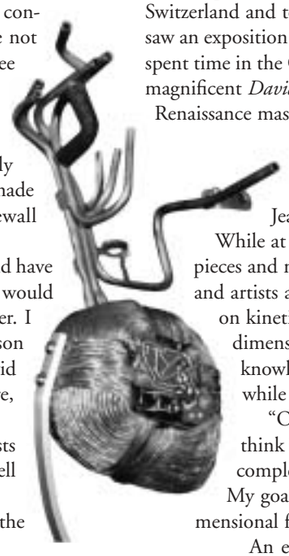
John Powers is genetically wired for art—literally. The Dickson, Tenn., native grew up helping his father with his contracting and electrical engineering business, but chose not to follow in the elder Powers' footsteps towards a degree in engineering.

It's been more than a year since John Powers, BA '01, walked across the graduation stage to claim his degree in art history with a minor in studio. He recently returned from a two-month European museum tour, made possible by winning the 2001 Margaret Stonewall Wooldridge Hamblet Award.

Had he not received the award, Powers says, "I would have found a way to make the trip somehow. But I probably would have had to play the part of the Bohemian backpacker. I think it's vital for a student of art to see works in person as opposed to viewing them as slides—to see the vivid color and size of a work—to see it, especially sculpture, beyond the second dimension."

The award allowed him to view works by the artists who have most influenced him, such as Joseph Cornell and Jean Tinguely.

As recipient of the Hamblet Award, Powers used the $17,000 grant to cover travel and living expenses during his two-month European museum tour, and to purchase art supplies upon his return to Nashville.


Mixed media sculpture, "The Artificial Heart."

The grant enabled him to visit museums throughout Italy and Switzerland and to map out ideas for future work. In Venice, Powers saw an exposition of Cornell's mixed-media dioramas. In Florence, he spent time in the Galleria del Academia, which houses Michelangelo's magnificent *David*, and the Galleria degli Uffizi, home to Botticelli's Renaissance masterpiece, *The Birth of Venus*.

"In addition to the scenery, the Swiss people, and the fact that my German allowed me to communicate, a highlight of my trip was definitely the Jean Tinguely museum in Basel, Switzerland," he says.

While at Vanderbilt, Power's portfolio contained a variety of pieces and media. Now, as a result of his exposure to new ideas and artists abroad, he chooses to focus his efforts almost solely on kinetics. He produces mainly small, mixed media, three-dimensional, movable sculptures, which often require knowledge of electricity and mechanics that he gained while working for his father.

"Of course my work has changed," he says, "but I think it's a change for the better. My ideas are much more complex, and my work has become very object-oriented. My goal is to take a metaphor and express it in a three-dimensional form."

An exhibit of Power's work, titled "Kinetic Diagrams," will take place at the Vanderbilt Fine Arts Gallery, Jan. 9-30.

— Katie Galbreath

Recombinant DNA Pioneer Mosig "Retires"

Within a week after they had finished studying Mendelian genetics in Gisela Mosig's high school class in East Germany, her teacher announced that what they had learned was wrong and began teaching them the theories of Lysenko instead.

Lysenko was a Russian plant breeder who espoused a theory of heredity that rejected the existence of genes and held that heredity was based on the interaction between the organism and its environment. After a prolonged struggle within Soviet scientific circles, Lysenkoism was officially endorsed by the state in 1948 and the views of geneticists were rejected.

Gisela Mosig

"So I had first hand experience of the dangers of dogma," Mosig told nearly 50 of her friends, colleagues and former students who attended a symposium in her honor in September.

As a young woman, Mosig escaped Lysenkoism by bicycling single-handedly across the border into West Germany with little more than the names and addresses of some relatives living in West Germany and some professors at the University of Bonn. As a result, the Vanderbilt professor of biological sciences and of molecular biology emerita has fought actively against dogma in all its forms throughout her long and distinguished career. In so doing, she has made some major contributions to the field of genetics.

"Her work provides the foundation of our understanding of both DNA replication and recombination," said Franklin W. Stahl, an eminent geneticist from the University of Oregon who spoke at the symposium.

"There are two characteristics which Gisela possesses that are essential for great science," he added. "Her willingness and courage to attack complicated problems and to go against the rules."

These same characteristics, however, have meant that Mosig's contributions are not as widely recognized as they should be, said Alberto Roca, a biochemist from Rice University. Roca is interviewing Mosig for the "Recombinant DNA History Project" that he started when he realized that the pioneers in this breakthrough field were reaching the ends of their careers. Upon completion, Roca will give copies of the material on Mosig to the Heard Library's special collections department.

Because of the difficulty of the problems she has tackled, often the significance of her findings haven't been recognized for decades, said Roca. "Working with the T4 virus, for example, a number of years ago she proposed some ideas about the interface between replication and recombination that are only now coming into vogue."

After earning her degrees from the Universities of Bonn and Cologne, Mosig joined the Vanderbilt faculty in 1965. In 1995, she earned the Earl Sutherland Prize for Achievement in Research, the University's highest award for research.

According to colleagues, Mosig is also well known for supporting her students and young scientists in general. Her undergraduate course on viruses over-enrolls year after year, and she received the Outstanding Graduate Teaching Award in 1989.

Although she retired from full-time teaching and research in May 2002, Mosig will continue to mentor students through a new internship program for undergraduates, directed by Professor Ellen Fanning (please see related article on page 11).

—David F. Salisbury

Marshall Eakin, right, associate professor and chair of the history department, received the Order of Rio Branco from the Brazilian ambassador to the United States in Washington, D.C., in September. The award is given to foreigners and sometimes Brazilians for contributions to Brazil's relations with the world. Eakin teaches and writes extensively about 19th- and 20th-century Brazil, especially its social and economic history. He is leading an alumni tour to Brazil in July.

Russell retires from VIPPS

Cliff Russell, professor of economics and of public policy, has retired as director of the Vanderbilt Institute for Public Policy Studies (VIPPS), a think-tank that he has led for the past 16 years. During those years, VIPPS gathered its collection of scholars that were scattered across campus into a multi-million dollar centralized building located at the edge of the Peabody campus. Today VIPPS includes nine centers with around 130 faculty, staff, research assistants and graduate research assistants.

Russell's plans for retirement include continuing his research, fly-fishing, and perhaps building a wooden boat with his wife.

"This has been a really great job," he said, "and it will seem strange, and possibly even a little sad, to not be deeply engaged in Vanderbilt and the institute."

Dan Cornfield, professor of sociology, has been named acting director of VIPPS.

Kudos

Steve E. Csorna, associate professor of physics, **Thomas Joseph Weller,** professor of physics, and a team of nine other scientists have been chosen to collaborate in a NASA-approved, funded Concept Study of the Extreme Universe Space Observatory. EUSO is a European Space Agency-led investigation conducting research on extreme-energy cosmic rays from the International Space Station. Past investigations have recorded a handful of extreme-energy events that directly contradict the current theory of astrophysical sources and distances.

Ellen Fanning, Stevenson Professor of molecular biology, is one of 20 research scientists nationwide to receive $1 million over the next four years from the Howard Hughes Medical Institute. Fanning will use the funds to create a new research internship program for Vanderbilt freshmen.

Ellen Fanning

Dennis Hall, professor of physics, professor of electrical engineering, and associate provost for research, was elected to a three-year term on the board of directors of the Oak Ridge Associated Universities.

Joseph H. Hamilton, Landon C. Garland Distinguished Professor of Physics, received the D. Ikovic's medal from the Slovak Academy of Sciences for his "achievements in physics." The medal was presented to him at the Institute of Physics in Bratislava in April 2002.

Thomas A. McGinn, associate professor of classics, received the 2002 Outstanding Publication Award from the Classical Association of the Middle West and South. McGinn received the award for his book, "Prostitution, Sexuality, and the Law in Ancient Rome" (Oxford University Press 1998).

Helmut Walser Smith, associate professor of history, has written and edited two new books on genocide that are receiving excellent reviews. The author of "*The Butcher's Tale: Murder and Anti-Semitism in a German Town*," Smith also edited "*The Holocaust: and Other Genocides: History, Representation, Ethics.*"

Staros chosen A&S dean at Stony Brook

James V. Staros

James V. Staros, professor of biological sciences, molecular biology, and biochemistry, and chair of the Department of Biological Science, has left Vanderbilt to become dean of the College of Arts and Sciences and professor of biochemistry at the State University of New York at Stony Brook on Long Island. Staros joined the Vanderbilt faculty in 1978. In addition to his teaching duties, he served as the founder and director of the Vanderbilt Minority Summer Research Program and the Graduate Training Program in Molecular Biophysics. He also served as vice chair of the Graduate Faculty Council, chair of the Arts and Science Faculty Council, and chair of the Faculty Senate.

Silver Anniversaries

The following A&S faculty members received Vanderbilt chairs recently in recognition of their 25 years of service to the University: George Becker, associate professor of sociology; M. Francille Bergquist, associate dean of Arts and Science and assistant professor of Spanish; Steve E. Csorna, associate professor of physics; Calvin F. Miller, professor of geology; Molly Fritz Miller, professor of geology; and John P. Wikswo Jr., Gordon A. Cain University Professor, professor of physics, professor of biomedical engineering, and professor of molecular physiology and biophysics.

A&S Faculty Garner Awards

Several A&S faculty members have been honored with University-wide awards during the past year.

Lucius Outlaw Jr., professor of philosophy and director of the African-American Studies Program, received the 2002 Chancellor's Cup. Awarded by the Nashville Vanderbilt Club and presented by the chancellor each year since 1963, the Chancellor's Cup honors the faculty member who has made the greatest contribution outside the classroom to undergraduate student-faculty relationships.

DANIEL DUBOISE

Lucius Outlaw Jr. was surprised when Chancellor Gee presented him with the 2002 Chancellor's Cup during Homecoming.

David M. Hercules, Centennial Professor of Chemistry and chair of the department, received the Earl Sutherland Prize for Achievement in Research at the fall faculty assembly. One of the University's most prestigious awards, the Sutherland Prize is given annually to a faculty member whose scholarly research has had a significant critical reception and national influence.

In presenting the award, Chancellor Gee called Hercules "the acknowledged discoverer of electro-generated chemiluminescence."

"He was the first American scientist to employ electron spectroscopy for chemical analysis of surface species," Gee continued.

Established in 1976, the Sutherland Prize is named for Vanderbilt's late Nobel laureate.

Also honored were **David Ernst**, professor of physics, the Alexander Heard Distinguished Service Professor, given for distinctive contributions to the understanding of problems of contemporary society; **William Caferro**, associate professor of history, the Madison Sarratt Prize for Excellence in Undergraduate Teaching; and **Beth Conklin**, associate professor of anthropology, the Ellen Gregg Ingalls Award for Excellence In Classroom Teaching.

Faculty named emeritus

Thirteen members of the College of Arts and Sciences faculty and administration were honored for their years of service to the University by having the title "emeritus" or "emerita" bestowed on them during the Commencement ceremony last May: **Barbara C. Bowen**, professor of French, emerita; **William F. Caul**, professor of psychology, emeritus; **Donald H. Evans**, professor of art and art history, emeritus; **Sidney Fleischer**, professor of biological sciences, emeritus; **Russell G. Hamilton**, professor of Spanish and Portuguese, emeritus, dean of the Graduate School, emeritus; **Gisela Mosig**, professor of biological sciences, emerita; **Richard A. Peterson**, professor of sociology, emeritus; **Oakley S. Ray**, professor of psychology, emeritus; **Francisco Ruiz-Ramón**, Centennial Professor of Spanish, emeritus; **Lawrence J. Schaad**, professor of chemistry, emeritus; **John H. Venable**, professor of biological sciences, emeritus, dean of the College of Arts and Science, emeritus; **Harold L. Weatherby**, professor of English, emeritus.

extraVUganza
Homecoming*Friends Reunion*Alumni
VANDERBILT UNIVERSITY

Arts and Science alumni played leading roles in making extraVUganza 2002 a resounding success. Many are featured in the photos on this page.

More than 2,500 alumni and friends from all classes and schools returned to campus October 26-27 for the two-day event, which combined Reunion for classes ending in '2 and '7 with Homecoming. Friday highlights included campus tours and educational events, class parties, and a Homecoming parade, pep rally and concert by the Counting Crows. On Saturday, alumni were invited to a tailgate party hosted by the Nashville Vanderbilt Club prior to the Commodore football victory over the University of Connecticut. A gala all-class party took place on Saturday night under the big tent on the Rob Roy Purdy Athletic Fields.

General Reunion chairs Ann Kimball Johnson, BA '67, and her husband, Johnny Johnson, BE '67, photographed at right, presented Chancellor Gee with a giant check for more than $18 million in gifts and pledges from the 10 reuniting classes and the Quinqs, alumni who graduated 50 years ago or more.

For more information and extraVUganza photos, click on *http://www.vanderbilt.edu/alumni/homecoming.htm.*

PHOTOS BY PEYTON HOGE.

VANDERBILT UNIVERSITY
A&S Cornerstone
College of Arts and Science
2201 West End Avenue
Nashville, TN 37235

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