VANDERBILT UNIVERSITY A&S COLLEGE OF ARTS & SCIENCE

CORNERSTONE

Futuristic visions motivate VIIBRE research

page 8

SUMMER 2005

Incoming class most selective, diverse ever

Vanderbilt's push to attract a more ethnically, politically and geographically diverse student population has made great strides recently, according to the latest admissions statistics. At the same time, the University has recruited the most selective incoming class ever.

A record 11,628 students sought admission to the fall 2005 freshman class, while fewer than 4,000 of them actually received letters of acceptance. The 34 percent admission rate is well below last year's 38 percent figure.

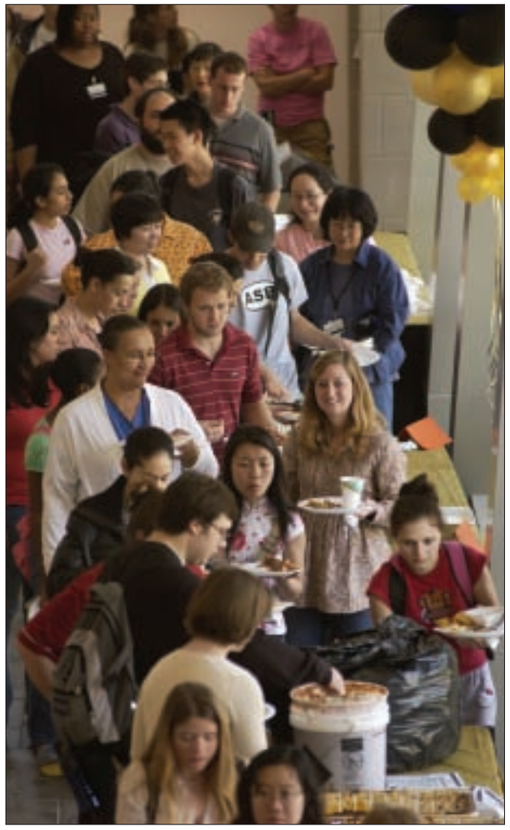
"Applications for the Class of 2009 rose by 4 percent from last year as the University continues to attract an increasingly diverse and academically talented student body," said William M. Shain, dean of undergraduate admissions.

He noted that a record 977 students of color have been accepted for admission. This includes a 9.7 percent increase in Hispanic students and 5.8 percent increase in African-American students compared to 2003-04.

While the exact profile of Vanderbilt's incoming freshman class will not be known until later this summer, Shain is confident that these students will possess the strongest academic qualifications in the University's history. He pointed out that admission to Vanderbilt is a "holistic review process," and there is no specific test score or characteristic that results in acceptance or denial for a student. "They're all high achieving — the average test score is up more than 13 points. But we really do value the essays and experiences of our students as well," he said.

So what is Vanderbilt doing to attract such talent and diversity? One factor is the addition of several new Arts and Science majors and minors, including African American and Diaspora Studies, and the renovation of the Black Cultural Center. The program in Jewish Studies and the opening of the Schulman Center have helped to attract both Jewish and non-Jewish students.

"The offering of these programs is important," Shain said, "because many students who ask about them don't want to major in them but are still interested in some of the courses. I think the university's commitment to these new courses is part of the reason that this year's African-American class is the largest in University history."



Today's Vanderbilt students are the most diverse and academically talented in University history.

Perhaps the most surprising statistic regarding Vanderbilt's increasing diversity is the political element. A recent survey of the 2004 freshman class indicates an equal balance between liberal and conservative students, challenging the stereotype of a Southern conservative institution.

"You can argue that Vanderbilt came to the issue of diversity later than some schools," Shain said. "But in classrooms, especially the humanities and social sciences, I am hearing that discussions are more intense and thought-provoking than they were 15 years ago. The tables at Rand are full of students of different backgrounds and interests sitting together, talking with one another. My guess is Vanderbilt shows a level of diversity and interaction unprecedented in its history."

For more information on Vanderbilt undergraduate admissions, go to *www.vanderbilt.edu/Admissions*.

— Ann Marie Deer Owens and Jeff Havens

Save the Date

Mark your calendars now to attend Reunion/Homecoming 2005 on Oct. 14-15 and catch up with old friends. The largest event held on campus, the celebration features Reunion parties for classes ending in '05 and '00, and Homecoming festivities for all alumni.

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

http://www.vanderbilt.edu/cas

You also can access the main alumni Web page at

http://dar.vanderbilt.edu

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The cover illustration includes cells and technologies that VIIBRE scientists are using to solve biomedical puzzles.

Where Religion Meets Culture: Perilous Crossroads?

Is religion a cause of poverty, or a solution to it? What do churches think about genetics, and how will their political clout affect public health policy?

Will theologians and scientists ever find a way to talk to each other across the entrenched technicalities of their disciplines?

Resisting the pressures of academic specialization, Vanderbilt's Center for the Study of Religion and Culture is honoring big-picture questions that preoccupy the 21st century. And it's giving scholars room to pursue answers across departmental lines and share their findings.

Founded two years ago with $3.5 million from the University, the center has awarded nearly $1 million so far to Vanderbilt scholars at the world's most treacherous modern intersection — the crossroad of religion and culture.

"Religion is on people's minds," says Mark Justad, executive director at the center. "The center opens up the possibility of giving scholars time to pursue their interests at that broad intersection. I hope one hallmark will be that scholars will be able to do work they wouldn't be able to do elsewhere."

The center pulls interdisciplinary inquiry from the margins and takes it center stage. Grants allow groups of scholars to meet regularly, launch a project, plan campus events, and forge a conversation on a global issue beyond departmental jargon to find a broader public audience.

For example, every three weeks 10 scholars meet and talk about two subjects that seldom mingle — religion and economics. The scholars themselves might never have mingled except for the center. They include a theologian, sociologist, political scientist, anthropologist, business scholar, education policy specialist and three economists.

With a $175,000 grant, the group hopes over the next three years to understand better how poverty relates to religion. Does organized religion reinforce the politics that keep people poor? Does the puritan work ethic account for American prosperity? Can biblical values of compassion be injected into the market economy and slow the disparities between rich and poor?

"Our goal is to understand the issues — and the very basic first step is to learn to talk across disciplinary lines," said James Foster, professor of economics. "That's a really hard thing."

They are making progress. The group sponsored a World Bank speaker in Spring 2005 and plans to organize an international conference and publish papers for a lay readership. They assign books they read together — lately, *The Fourth Great Awakening and the Future of Egalitarianism*, by economist Robert William Fogel — that animate and focus their conversations.

"The goal is to unlock our own minds and be released and think in new ways," Foster said. "Everyone in the group says these conversations have been the best conversations we've had at Vanderbilt. We're thinking hard; we're rising above our disciplinary biases."

A theologian in the group, Douglas Meeks of the Divinity School, said: "Scholars from other disciplines — like the economists — are asking questions that help me think more realistically as a theologian. They have a wonderful sense of humor. They're well grounded in reality. The center is helping to make Vanderbilt more responsive to the world and not just turned in on ourselves as scholars."

The center sponsors other groups of scholars from the four corners of the campus. Some proposals are still in developmental stages, such as one group considering "Music, Religion and the South" or another on "Masculinities: Sex, Race, Religion."

Does organized religion reinforce the politics that keep people poor? Does the puritan work ethic account for American prosperity?

One group led by A&S Professors Volney Gay and Richard Hagland has received grants totalling some $600,000 — primarily from the Metanexus Institute on Religion and Science in Philadelphia — to promote strenuous dialogue between science and religion. The group will sponsor a widely publicized series of annual Templeton Research Lectures on campus and plan a major conference. Called "Scales and Hierarchies: Implications for Science and Religion," the project will, among other things, examine the respective vocabularies of science and theology and find ways to bridge the two.

Another project, called "Ecology and Spirituality in America: Exploring Possibilities for Cultural Transformation," has obtained funding up to $280,000 to explore how consumer values might be reframed in order to be more earth-friendly in an era of environmental crisis. Data will be gathered in local congregations regarding their engagement with ecological issues. The group includes faculty from art history, law, religious studies, history, political science and earth and environmental science.

Another group on "Religion and Genetics" has received official funding approval. The group wants to evaluate religious opinion on the often-volatile issue of genetics. They will contact Nashville's congregations, including megachurches, and use focus groups, surveys and interviews to measure perceptions (or misperceptions) about genetics issues. These might range from cloning and stem cell research to genetics counseling for new parents.

The Center for the Study of Religion and Culture is located in Alumni Hall. The two directors are Gay, professor and chair of the Department of Religious Studies in the College of Arts and Science, and Douglas Knight, professor of Hebrew Bible in the Divinity School.

— Ray Waddle

Warren Center celebrates poet's centennial

The Robert Penn Warren Center celebrated the 100th anniversary of Warren's birth with several activities in April. Born in Guthrie, Ky., in 1905, Warren graduated from the College of Arts and Science in 1925. He won the Pulitzer Prize three times: once for his novel, *All the King's Men,* and twice for books of poetry. He became the nation's first Poet Laureate in 1985 and died four years later.

The centennial celebration included an afternoon of poetry reading and an exhibit featuring artist DeLoss McGraw's monoprints representing some of Warren's poems. This drawing illustrates the poem, "Vermont Ballad: Change of Season" from *The Collected Poems of Robert Penn Warren.*

Professor extols global legacy of civil rights movement

Last winter Carol M. Swain, professor of political science and of law, traveled to Southeast Asia under the auspices of the U.S. State Department. During her trip to Myanmar (Burma), Malaysia, the Philippines and Vietnam, Swain discussed the global legacy of the U.S. civil rights movement with government officials and private citizens, including students and faculty at several universities. She became the first U.S. citizen ever to speak at Dalat University in the central highlands of Vietnam.

Professor Carol Swain, middle, with Sadayan X. Riazurrahman, right, a member of the U.S. Embassy staff in Malaysia and Muslim students from the International Islamic University Malaysia.

Her experiences abroad, she said, "gave me a new appreciation of who we are as a nation and where we've been."

Swain's main public lecture, "The Global Legacy of the Civil Rights Movement," included a musical opening with the song, "We Shall Overcome," and a slide presentation featuring key figures from the black civil rights movement.

"This presentation set the stage for a rich discussion of the structure of American government, the nation's Judeo-Christian religious heritage, and the principles and tenets underlying founding documents like the Declaration of Independence and the U.S. Constitution," she said. "I told them that the black civil rights movement freed whites as well as blacks and enabled the U.S. legitimately to claim the mantle of leader of the free world."

In other informal lectures and forums, Swain used the U.S. experience to discuss the strengths and weaknesses of affirmative action programs; immigration reform; coalition building across racial, ethnic, and religious lines; differing forms of representation; distinctions between political and ethnic minorities; and national obligations towards various population groups.

In some nations, she met with interfaith groups and those concerned with police brutality and the advancement of women's rights. She helped the groups strategize how to bring about change in their countries, and discussed with religious groups the difference between "witnessing" and "proselytizing."

"Witnessing denotes a sharing of one's faith with those interested in learning about it, while proselytizing implies the use of social, economic, or psychological pressure or outright physical coercion," she said.

Religious tolerance must include freedom of belief, she said. "One should be able to change one's religion without fear of personal or economic harm, which is a right guaranteed by the 1948 Universal Declaration of Human Rights."

Some audiences expressed hostility toward the U.S. and its policies in Iraq, and frequently asked about the treatment of Muslim citizens after September 11.

"I explained that this was new territory for us, and that it took the U.S. a while to develop a coherent policy that would allow us to track down terrorists while protecting the civil liberties of our own citizens," she said. "I extolled the virtues of our free speech and noted that we constantly critique ourselves as we strive to become a better nation."

New director hopes to broaden definition of women's studies

Many terms could be used to define Monica J. Casper, the new director of Women's and Gender Studies — feminist scholar, bioethicist, medical sociologist and mom. Indeed, Casper's varied roles reflect one of her major goals since joining the University this fall — to expand the definition of women's studies.

"Women's studies is not just about women's identity— women's issues cross a wide variety of disciplines," Casper says. "The program here has traditionally been based in the College of Arts and Science; however, I really want to connect with other schools within the University to examine what role women and issues related to them play in the worlds of business, law and medicine, for example."

In addition to serving as director of Women's and Gender Studies, Casper also has an appointment as an associate professor of sociology.

Casper's expertise lies in the field of medical sociology, specifically how women's bodies and lives are impacted by science, technology and medicine. She is interested in issues such as how to balance pregnant women's rights to informed consent and bodily integrity with the rising fetal rights movement.

Her award-winning book, *The Making of the Unborn Patient: A Social Anatomy of Fetal Surgery*, published in 1998 by Rutgers University Press, looks at fetal surgery as a women's health issue.

Her other research projects include

• A study of the impact of chemical weapons disposal on people in nine communities across the country,

• The threat of quinacrine — an inexpensive, chemical sterilization agent used in Third World nations for population control— to women's health and women's reproductive rights,

• The ethics of prenatal treatment of congenital adrenal hyperplasia, a disorder that can cause female babies to be born with masculine-appearing external genitals due to being exposed to high levels of androgens, male-like hormones, in the womb, and

• The breast milk biomonitoring controversy — balancing the need to study the environmental conditions causing breast milk contamination without undermining breastfeeding.

DANIEL DUBOIS

Professor Monica Casper

Formerly associate professor of sociology at the University of California, Santa Cruz, Casper joined Vanderbilt after directing the Intersex Society of North America, a non-profit organization based in Rohnert Park, Calif.

She holds a bachelor's degree from the University of Chicago and a doctorate from the University of California, San Francisco. She received postdoctoral training in bioethics at Stanford University.

—Princine Lewis

Hamblet Anniversary Celebration

The Sarratt Visual Arts Committee celebrated 20 years of the Margaret Stonewall Wooldridge Hamblet Award in Studio Art, awarded each year to a Vanderbilt student by the Department of Art and Art History. Among the recipients honored were Jenny Gill, BA'00, Alysha Irisari, BA'03, Stacey Irvin, BA'98, Eleanor Luna, BA'04, John Powers, BA'01, and Joseph Whitt, BA'93.

This year's Hamblet Award recipient is Kate McSpadden, BA'05. This oil painting, *Dusk Dawn*, was among the work that earned McSpadden the $20,000 travel and study grant.

Stars in Their Eyes

Astronomers at the Dyer Observatory and Vanderbilt, Fisk and Tennessee State universities might not be able to take students to the stars, but they can bring the stars to the students.

Thanks to a grant from NASA, the astronomers have created a road show for area schools and community centers using a portable, inflatable planetarium. Their goal is to interest minority students in science as a career.

BILLY KINGSLEY

Teachers and students in front of the Fisk-Vanderbilt NASA Road Show portable planetarium

"By projecting a representation of the night sky onto the dome's interior, we are able to teach students about the Sun-Earth-Moon system, the solar-system planets and their motions, the constellations and Greek mythology, the nature of stars and many other celestial phenomena in a fun yet informative manner," says David James, director of the NASA Road Show/Planetarium. James is research assistant professor of physics and astronomy at Vanderbilt and an adjunct professor at Fisk.

He and his colleagues have adapted the program for children as young as 5 all the way through adults. Since the program began in the fall of 2004, more than 3,000 children and adults have been through the planetarium, including some 100 teachers participating in in-service training activities. Approximately 50 percent of the participants have been minorities.

"You can use it to teach more and more advanced physics and astronomy, depending on the age of the students," James says. "You can also use it to teach the community about general science and the night sky, the importance of astronomy and the role of teaching their children. In this way, we have a multiplicative effect, helping us to reach as many communities, parents, teachers and students as we possibly can."

The Fisk-Vanderbilt NASA Road Show is part of the larger Fisk Astronomy and Space Science Training Program. That program mentors undergraduates and graduate students with the goal of increasing the number of minority students pursuing doctoral degrees in the physical sciences. It is largely funded by a grant to Fisk from NASA designed to build relationships between historically minority-serving institutions, like Fisk, and strong research universities, like Vanderbilt.

"We are trying to solve the problem of under representation of minorities in the physical sciences, and in astronomy and space science specifically," says Keivan Stassun, a co-director of the program and assistant professor of astronomy at Vanderbilt with an adjunct appointment at Fisk.

"If you ask in 10 years' time, who will be the minority students getting Ph.D.'s in astrophysics at Vanderbilt, those people are now matriculating freshmen somewhere, so it's important to make investments in the pre-college arena. That's where the road show fits in," he continues.

The Fisk-Vanderbilt partnership includes a new minor in astrophysics at Fisk, merit scholarships for undergraduates, mentoring and training, and a joint master's-Ph.D. program between the two universities.

"This collaboration further strengthens Fisk's commitment to research in the space sciences," says Arnold Burger, associate professor of physics at Fisk and a co-director of the program. "The NASA grant allows the Fisk faculty to enhance our undergraduate curriculum, provide scholarships for deserving Fisk students and help them to transition smoothly into doctoral programs in astronomy and astrophysics. It also allows us to better serve the community and increase our student recruiting efforts."

— Melanie Catania and David James

BILLY KINGSLEY

Professor David James teaches area students about the night sky inside the Fisk-Vanderbilt NASA Road Show portable planetarium.

A&S grad studies effects of development on local culture

After traveling to Guatemala to learn Spanish, Avery Dickins realized her newfound fascination with Latin America had quickly evolved into a passion for studying indigenous cultures. Dickins, who received her bachelor's degree from the College of Arts and Science in 1990, returned in 2001 to begin a Ph.D. program in cultural anthropology, focusing on Guatemala.

"During my first field season in 2002, I traveled with Professor Arthur Demarest to several Q'eqchi Maya villages near the Cancuen Archaeological Project. What I found was a rapidly changing region," says Dickins, now a graduate student in the Department of Anthropology. "There is a lot of development going on in this impoverished and marginalized area, so I decided to look at the effect of such development on the culture of the people."

Dickins is spending a full year conducting ethnographic research in Guatemala for her dissertation. A $12,000 grant from the National Science Foundation is funding her research.

Focusing on the Q'eqchi Maya group in the region, Dickins is working in a community called Mucbilha'. The village was founded in 1968 by families moving away from areas plagued by land scarcity. Today around 300 people live there. Mucbilha' translates roughly to "hidden water," which refers to a system of caves and subterranean rivers found in the region.

"Recently, cave tourism has grown in popularity, and people go caving and rafting inside the caves," says Dickins. "With the help of development institutions such as USAID and Counterpart International, the residents of Mucbilha' have just built a visitors' center and trained several guides to take tourists into the caves. There are also groups introducing cash crops such as cacao, which provides villagers a way to make money, and other programs that teach women to cultivate a variety of vegetables in their home gardens to improve nutrition by introducing healthier food staples."

AVERY DICKINS

Graduate student Avery Dickins is spending a year of ethnographic research in Guatemala. She is studying the effects of development projects on Maya groups in Central America.

In addition to these projects, Mucbilha' is one of the villages that will benefit from health care programs associated with the Cancuen development led by Demarest, Ingram Professor of Anthropology and director of the Vanderbilt Cancuen Archaeological and Community Development Project. The effects of such development are the focus of Dickins' research.

Dickins hopes to determine what assets the Q'eqchi people had before the development projects, and who is in the best position to take advantage of the outside help from Vanderbilt and other institutions.

— James Doyle

Student View

Last December, sophomore Meredith Sprince attended the annual conference of the American Society for Cell Biology in Washington, D.C., where she presented her research on a protein involved in cancer cell production. It was a singular honor for the chemistry major, who was one of a handful of undergraduates making presentations. The College of Arts and Science and the Margaret Cuninggim Women's Center helped to fund her attendance at the conference. Here is her account of the experience:

My research was done last summer through an internship at the University of Iowa in pharmacology. I was able to take part in much of the preliminary research that the lab was performing on a particular protein. It is possible that, in the future, discoveries about this protein will lead to an understanding of how cancer cells proliferate rapidly and will bring about the prevention and cure of this malevolent disease. The hundreds of hours of work that I poured into this project rank as some of the greatest experiences of my life.

At the conference, I was able to attend symposia on a range of subjects. The most exciting part of my trip, however, was giving my presentation. I met people who are celebrities in their fields, and they treated me with respect and kindness. They congratulated me on my research, and expressed interest when I told them I was looking for another internship this summer. I received many business cards and requests to apply to particular programs, but have decided to return to the University of Iowa.

One of the most significant things I learned from this experience was the importance of asking questions. No one is an expert in every subject, and watching respected scientists inquire about concepts that they did not understand made me feel much more comfortable with my own queries. I would not have been able to attend were it not for the generosity of the College of Arts and Science and the Women's Center. I am incredibly grateful for their help in turning this opportunity into reality.

VIIBRE opens door to new technologies

Imagine a portable device similar to today's home pregnancy tests that can quickly detect the presence of infectious diseases, including HIV-AIDS and measles.

A hand-held instrument carried by soldiers and first-responders that can monitor the environment for biological agents such as ricin and anthrax.

Professor David Cliffel with the microphysiometer.

Or a laboratory instrument that explores the mechanisms of action of an unknown toxin and suggests possible antidotes and therapies.

These futuristic visions are motivating research at the Vanderbilt Institute for Integrative Biosystems Research and Education (VIIBRE).

One of the University's new transinstitutional initiatives, VIIBRE was created three years ago to help Vanderbilt become a leader at the intersection of the natural sciences, engineering and medicine. Directed by Professor John Wikswo, VIIBRE leverages Vanderbilt's strengths in the biological and physical sciences, medicine, engineering and education. Wikswo's other titles suggest his success in bridging many disciplines: Gordon A. Cain University Professor, A.B. Learned Professor of Living State Physics, and professor of biomedical engineering, molecular physiology and biophysics, and physics.

The greatest strength of VIIBRE is its breadth. The institute enjoys the expertise of multiple scientific and engineering faculty members from the College of Arts and Science, School of Engineering, School of Medicine and Peabody College, as well as several other universities and a number of companies. VIIBRE's pool of scientists and engineers has pioneered numerous surgical, diagnostic and other medical technologies.

Controlling the single cell

One of VIIBRE's main goals goes straight to the heart of medical research in the 21st century: instrumentation and control of the single human cell. Now that the human genome has been mapped, the next challenge is to determine the structure and function of hundreds of thousands of proteins and protein variants encoded by the genome.

"Unraveling the genetic code was just the beginning," says Wikswo. "The genome may describe 50,000 proteins, each of which could have as many as 10 variants. This complexity is overwhelming, especially when one considers the complicated interactions among multiple proteins, and between neighboring cells. Our challenge is to study the behavior, function and dynamics of a single living cell, the smallest unit of a living organism, in terms of the proteins and other components within it."

Unlocking the secrets of the human cell is no academic Rubik's Cube, done for the thrill of solving an extremely difficult, esoteric puzzle. Deeply understanding the cell holds the key to creating new drugs and drug-delivery systems in a more rapid, reliable, precise and effective way; developing new technology to diagnose disease with minimal invasiveness and understand the underlying pathologies; and exploiting what we're learning about genetics in order to cure and treat numerous diseases.

"To understand biological function from the bottom-up requires considerable mental muscle and expertise in addition to computational power," Wikswo says. "If we're going to make fundamental and important discoveries, we need to harness the power of chemistry, physics, mathematics, materials science, computer science and engineering, particularly bioengineering and biomedical imaging."

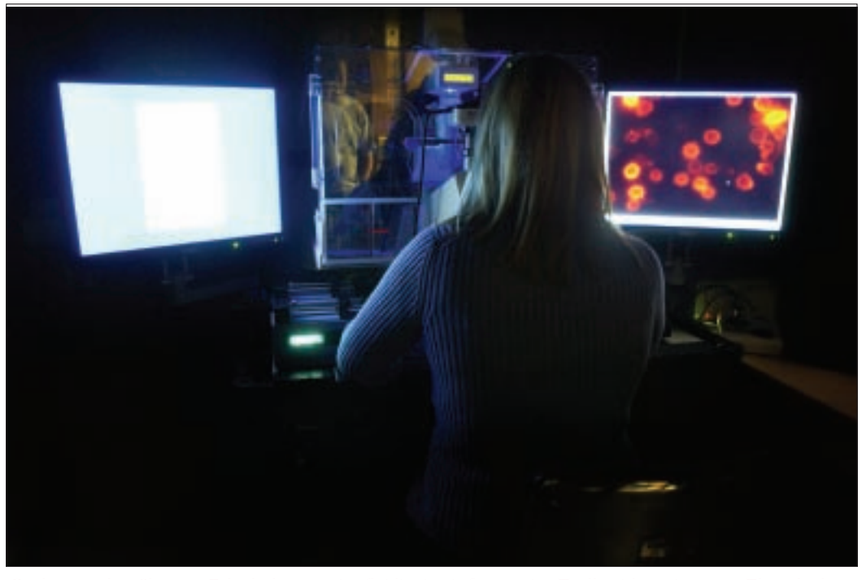
Key Technologies

VIIBRE has spent the last three years developing the ability to measure the metabolism of small groups of cells and studying how they respond to drugs, toxins and pollutants. One of the key VIIBRE capabilities — developed by a research team headed by Assistant Professor of Chemistry David Cliffel — is a set of sensors capable of simultaneously measuring the concentrations of the key chemicals that cells consume and excrete with enough sensitivity to monitor the health of thousands of cells confined in a small volume. Cliffel's research group modified an existing, bulky laboratory instrument by adding sensors for glucose, lactate and oxygen and created a "multianalyte microphysiometer."

Under the leadership of Franz Baudenbacher, assistant professor of biomedical engineering and physics, Vanderbilt researchers have developed miniature sensor technologies to record rapid changes in the metabolism and signaling of individual cells. To handle small numbers of cells, the research group has adapted a method for molding micro-channels and valves into a material similar to that used in soft contact lenses. This has given them the capability to capture, manipulate, grow and study single living cells in extraordinarily small containers that are barely larger than the cells themselves. In the process, the group has applied for more than a dozen patents.

Canary in the Coal Mine

Most sensors that can identify toxic agents are single-purpose. That is, they can pinpoint the presence of a single toxin or a limited number of closely related toxins. The ability to monitor in detail the health of small groups of cells, however, makes it possible to detect the presence of unknown poisons as long as they affect cell metabolism. The power of this approach comes from the centrality of metabolism to cell function. Furthermore, examining the impact that an unknown agent has on different cell types can rapidly provide critical insights into its mode of action.



Graduate student Shannon Faley looks at a microfluidic circuit for trapping T-cells with a microscope. The red spheres on her right are T-cells.

The Centers for Disease Control and Prevention maintain a "select list" of more than 70 biological agents that have been identified as those which terrorists are most likely to use in their attacks. The government has mounted a major research effort to develop detectors that can identify these agents and others that are either not yet known or were maliciously engineered, and to come up with treatments for them.

Developing a laboratory instrument for biodefense is the object of a new $5.5 million, five-year collaboration between VIIBRE scientists and the U.S. Army Edgewood Chemical Biological Center at the Aberdeen Proving Ground, Md., funded by the National Institutes of Health. The new system – called a "NanoPhysiometer" – takes the old "canary in the coal mine" trick and gives it a new, high-tech twist.

The basic idea is to create nanoscale cages small enough to hold a single cell up to a few thousand cells, add an array of biosensors that can monitor the cells' health, and then expose them to minute quantities of suspected biological agents. Rather than studying slow responses like cell death, the trick is to look for rapid metabolic changes. The way in which they react should provide clues to the nature of the unknown agent and help identify effective treatments and forms of prophylaxis.

"Cells are the ultimate canary," says Roy Thompson, research biologist at the Edgewood Chemical Biological Center and a key participant. "They respond to a wide range of chemicals and biologicals and signal from one cell to another about what's going on in their environment. That's their role. Using whole cells allows you to detect cellular signatures for a broad range of chemical and biological agents."

Professor Cliffel has been working with Thompson for several years to develop the big brother and predecessor of the NanoPhysiometer. Their system can discriminate between a dozen different toxins. At the same time, Professor Baudenbacher has been pursuing the challenging task of shrinking Cliffel's microphysiometer down to the size of a computer chip. The ultimate goal is a compact device that soldiers can carry into the battlefield and first responders can carry to the site of a terrorist attack that can monitor the environment for unknown biological or chemical agents. The first step at VIIBRE is to create a laboratory system that could do 100 such experiments simultaneously and provide information about a toxin even before it has been fully characterized. This capability is critical for identifying the drugs or antidotes that are best suited for treating those who have been exposed.

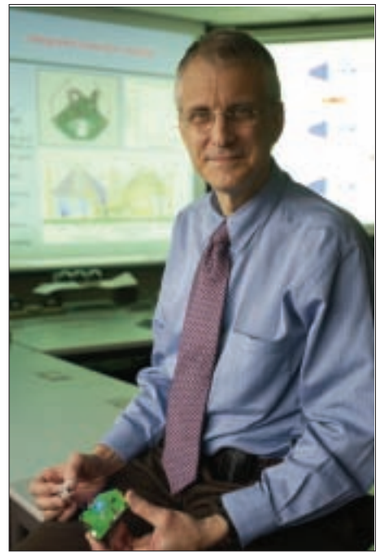
Home Testing for HIV/AIDS

The VIIBRE approach to cellular diagnosis has much broader applicability than biodefense. VIIBRE and Pria Diagnostics LLC, a privately held California company that specializes in miniaturized medical diagnostics, have joined forces to explore promising new technologies that may lead to a home-testing device for diseases such as HIV/AIDS. Such a device may be available in several years.

"Today the treatment for AIDS is very expensive, and there is always a question about when to start and stop anti-retroviral therapy," says Jason Pyle, Pria's chief technology officer. "We are developing a device that we hope will allow medical professionals and HIV patients to manage their disease in a way that is similar to how diabetes patients can monitor their condition with home blood glucose detectors."

Pria has developed a low-cost way to merge microfluidics, optics, fluorescent dyes and electronics to create a male fertility detector that can be used in the home to measure sperm motility with great accuracy. VIIBRE capabilities may enable the company to apply their technology to a number of different areas.

In addition to such "point of care" devices, Wikswo and Pyle are working towards next-generation "high-throughput" screening systems. Their goal is to use sensor arrays to garner information about dynamic cellular physiology and thereby discern how large numbers of compounds affect complex biological processes. This could have a major impact on the drug discovery process.



VIIBRE Director John Wikswo, above, is holding the basic technology in Pria's male fertility detector, which is being adapted for possible use as a home-testing device for HIV/AIDS and other diseases.

VIIBRE: The Next Generation

In addition to conducting world-class biosystems research, VIIBRE is training future scientists and engineers who want to pursue interdisciplinary research in post-genomic systems biology. To date, 18 postdoctoral research associates, 38 graduate students, and 43 undergraduates have participated in VIIBRE research projects, laboratory training programs and academic classes. The institute has produced new interdisciplinary classes and seminars, as well as summer research programs for undergraduates. It is also working to develop better teaching strategies and tools to prepare students for the highly complex and multidisciplinary world they will enter.

"The primary purpose of VIIBRE is to support and enhance research and education," Wikswo says. "We want to teach our students the vast amount of information they need in the most expeditious and enduring ways available."

— David F. Salisbury and Vivian Cooper-Capps

For more information, visit Exploration*, VU's online research magazine, at* www.exploration.vanderbilt.edu.

Yunus defies paradigms to empower the poor

Micro-lending pioneer Muhammad Yunus is living proof of the old adage, "It is better to light one candle than to curse the darkness."

Yunus, who earned his Ph.D. in economics at Vanderbilt, defied traditional lending paradigms to establish a bank designed to loan money to the poor in his native land of Bangladesh. His micro-lending model is now used in other impoverished lands.


PEYTON HOGUE

Last January, the first recipient of Vanderbilt's Distinguished Alumnus Award returned to campus to deliver the Georgescu-Roegen Lecture in economics to a standing-room only audience.

After graduation in 1970, Yunus returned to Bangladesh to teach economics at the university level. He planned to use his education to make a difference in the economy of the newly independent country. Faced with famine and pervasive poverty, however, he felt powerless.

"Things were a nightmare because the economy was going down fast," he said. "Arrogance makes you think you can solve any problem, but you see how incapacitated you are in the face of real problems."

Not sure what else to do, he began visiting villagers each day in hopes of doing a kind deed, if nothing else. "I thought I would go into a village and do something to help, even for a day," he said. "That was my mission every day. I did a lot of little things."

But what he was doing was not so little. As he listened to the stories of the street vendors, panhandlers and widows caught in a cycle of poverty, he began to see a solution after all.

One woman, who crafted bamboo stools, simply needed 25 cents to purchase bamboo each week. Because she had to borrow from a lender who demanded that she sell her wares to him at the price of his choice, she could not get ahead. Yunus suspected that a small loan was enough to turn this woman's life — and her business — around. He was right. When Yunus loaned her the money, she was able to sell her wares at a fair market price and pay him back right away. Soon, she was able to buy the bamboo without a loan.

Yunus then found 42 other poor people in the village who needed loans totaling a mere $27. "I thought, if you can make so many people happy with so little money, why not do more of it?"

He soon convinced a bank to make small loans to villagers deemed uncreditworthy, but they agreed only if Yunus served as the guarantor. In time, thousands of low-income Bangladeshis were getting small business loans and defying the naysayers by repaying them. Yunus hoped the banks would see the success of his experiment and grant the loans without his guarantee. He was wrong. The bank officials firmly held to their belief that the poor should not receive loans, particularly women. "It dawned on me, 'Why am I trying to convince them? Who are they to decide?'" he said.

Thus, Grameen Bank was born (Grameen means "rural" in Bengali). The institution, which now has 1,326 branches, provides services in almost 48,000 villages in Bangladesh and has loaned $4.57 billion to date. Ninety-nine percent of those loans are repaid, he said, despite the lack of collateral or signed loan documents. Grameen Bank gives priority to women, who make up 96 percent of their borrowers, because they have found that such loans have a much more positive impact on families.

Yunus' detractors put forth that if loaning to the poor was risky, then loaning to the poorest of the poor was insanity. Yunus, of course, disagreed. He sought out even the street beggars and taught them to use small loans to transform their begging into enterprise through selling items.

Other innovative programs for the poor pioneered by Yunus include health insurance ("poverty and poor health go together"), home loans and a cell-phone-use sales business. Grameen Telecom provides a swift business for villagers, particularly women. They receive a cell phone and are trained to sell time on the phones to villagers who previously had no access to a telephone. Now these "telephone ladies" have savings accounts in Grameen Bank and are helping others to do the same.

"Poverty is caused by the system," said Yunus. "It is caused by the policies and the conceptual frameworks we have created. But we are changing that. Access to credit should be accepted as a human right."

—*Joan Brasher*, Vanderbilt Register

To the Editor:

On the rear cover of the Winter 2005 issue, the middle picture is incorrectly labeled as the 1980s. It is actually a picture of the 1970s. Ron Mayers is the Commodore, Becky Fricke is Ms. Commodore (or whatever she was called), and they both graduated in 1977.

—*David Blum, BA'77*

A&S Alumni New BOT members

Three Arts and Science alumni recently were elected to the Vanderbilt University Board of Trust:

Catherine Brescia Reynolds, BS'79, of McLean, Va., is a prominent philanthropist and pioneer in the development of privately funded student loan programs.

William M. Wilson, BS'79, is president of Nashville-based Cherokee Equity Corporation, a private management company, and also of Cherokee Properties Inc., a private real estate holding company. He is also a principal in Global Associates LLC, a Memphis-based business management firm.

Carrie Colvin, BA'05, of Birmingham, Ala, an economics and art history major, was elected as Young Alumni Trustee. A member of various academic honor societies, Colvin represented Vanderbilt at the International Achievement Summit in Dublin, Ireland.


Colvin


Wilson


Reynolds

Reynolds is chairman and chief executive officer of the Catherine B. Reynolds Foundation and of EduCap Inc., which has provided more than $5 billion in education loans to students and their families. *Business Week* named her one of the top 50 living philanthropists in America, the first self-made woman to make the list.

Wilson, who is serving as chair for the Class of 1970's reunion this year, has many family and philanthropic ties to Vanderbilt. David K. Wilson Hall is named in honor of his father, an emeritus trustee who previously served as chair of the Board of Trust. Several endowed chairs and programs at Vanderbilt are named for members of his family.

Both Reynolds and Wilson are members of the College Cabinet, the donor society for the College of Arts and Science.

Where Are They Now?

Until their retirement, Nancy and Harry Ransom were one of Vanderbilt's power couples. Harry was professor of political science and Nancy, the founding director of the Margaret Cuninggim Women's Center.

After graduating from Vanderbilt in 1943, Harry served in Patton's Third Army in Europe during World War II. He earned M.A. and Ph.D. degrees in politics at Princeton University and taught political science at Princeton, Vassar and Michigan State, before joining the Vanderbilt faculty in 1961. He was one of the founders of the Defense Studies Program at Harvard, where he taught the Defense Policy Seminar with Henry Kissinger.

During his career, Harry was a consultant to the United States Senate Select Committee on Intelligence, a Fellow of the Woodrow Wilson International Center for Scholars, and a visiting professor at Leeds University in England. He is the author of three books and numerous essays and articles, mostly on secret intelligence.

A member of Phi Beta Kappa, Nancy received her B.A. degree from Vassar, and M.A.T. and Ed.D. degrees from Vanderbilt. She has been a lecturer in sociology and women's studies at Vanderbilt, president of Cable and Planned Parenthood, a member of the Tennessee Commission on the Status of Women, and a consultant on establishing women's centers and women's studies programs at Emory and several other universities. Since her retirement in 1997, Nancy has served on the board of directors of Senior Citizens.

With three children scattered across the U.S., today the Ransoms enjoy traveling and being with their three grandchildren. Alumni can contact them by email at *n.a.ransom@vanderbilt.edu* .


DANIEL DUBOIS

If one of your professors made a lasting impression on you, let us know about her or him. We also welcome your short articles (300 words maximum) about interesting faculty members. Send your nominations or articles by e-mail to Cornerstone@vanderbilt.edu, *or by U.S. mail to* A&S Cornerstone, *VU Station B 357703, Nashville, TN 37235.*

Ask the Faculty

David Jon Furbish is professor and chair of the Department of Earth and Environmental Sciences. Last spring, he taught an interdisciplinary undergraduate course, "New Global Crisis: Earth's Energy and Water Resources in the 21st Century."

What are the greatest environmental challenges facing us today?

The greatest environmental challenge facing humanity during this century is fundamentally a social one — embracing an Earth ethic wherein we acknowledge and act on the need to balance what Earth resources we require with what Earth can sustainably provide.

David Jon Furbish

The items that should deeply concern us, both within the U.S. and globally, are daunting: depletion of water resources, pollution of soil, water and air, global climate change, loss of habitat and species diversity, depletion of ocean fisheries, and effects of sea-level rise.

In the U.S. alone, 40 percent of our rivers and lakes are unsuitable for such basic activities as swimming and fishing. The ground water of the Ogallala aquifer — a national treasure sustaining the central U.S. bread basket — is steadily being depleted, with enormous implications for future farming practices and food production in the U.S. Pesticides, introduced only 50 years ago, and numerous other chemicals now pollute at unacceptable levels many of Earth's freshwater systems. We are losing coastal lands and wetlands — wildlife habitats that are globally invaluable — at alarming rates due in part to sea-level rise. Once thought to proffer limitless fish and shellfish, Earth's bays and oceans are being depleted because of pollution and unrestrained fishing. And, despite naysayer contrariness, we *are* changing Earth's climate through the burning of fossil fuels and release of CO_2 into our atmosphere, with enormous consequences for the health of Earth and humans alike. Meanwhile, population growth during this century will lead to demands for Earth resources — notably water, energy and habitable space — at unprecedented scales.

It is good that we are acknowledging and reacting to the pending global oil shortage, which will lead to significant social changes during this century. But more sobering, whereas humanity has existed for millennia without oil, it cannot exist without clean water or soil.

To what extent are there solutions to these problems?

Although we cannot expect to remedy these environmental problems entirely, we must stop doing, or substantially change, much activity that degrades the natural functions of our environmental systems, and aim instead at achieving a sustainable balance between use and protection.

Solutions must emerge at many levels, locally to globally, individually to internationally, and in many flavors — whether resulting from social concern and political pressures, economic and regulatory incentives, technological advances or just plain clever ideas. Indeed, recent thoughtful ideas suggest that theology and religion have important roles in the development of an Earth ethic. And, we are rediscovering ancient approaches to resource conservation that serve well now.

Some solutions will, for better or worse, emerge inevitably. As water in the Ogallala aquifer is depleted, farming and irrigation practices in this region *will* change — as has occurred elsewhere. On the other hand, no-till farming practices, involving reduced water and pesticide use, are being recognized as not only environmentally friendly but also economically smart in certain areas. Economic and social incentives to pursue environmentally friendlier practices are also emerging in other sectors, notably power production, transportation, architecture and urban design. And, it would be a mistake to ignore successes deriving from statutes like the clean air and water acts.

My Most Memorable Professor

There couldn't have been two more unlikely allies than Walter Sullivan and myself. When I attended graduate school at Vanderbilt, I was a Northern, Catholic, hippy-type with hair down to my shoulder tops. I could be wrong, but I don't believe Professor Sullivan was any of those things. And yet he was the one who encouraged me to try my hand at a novel.

He was always incredibly supportive, while suggesting there was much room for improvement in my prose. When my novel *The Thomas Berryman Number* won an Edgar Award for the best first mystery in America, Walter wrote to me, and then telephoned his congratulations.

I must point out, he shouldn't be blamed for any stylistic lapses since I've left his tutelage, but Professor Sullivan, more than anyone, started me on my road to crime.

—James Patterson, MA'70

James Patterson is one of the nation's most popular novelists. He has written 30 novels, including mystery, suspense, science fiction, romance and children's books. Several have been made into films, including Kiss the Girls *and* Along Came a Spider. *Both starred Morgan Freeman as the FBI profiler, Alex Cross. The miniseries version of his novel* First to Die *was the fourth most-watched television movie of 2002.*

Patterson delivered the Chancellor's Lecture in January of 2005.

Archaeologist unravels mummies' mysteries for Discovery Channel

Television star… world traveler… biological anthropologist … bioarchaeologist… professor. Meet Assistant Professor of Anthropology Tiffiny Tung. When she is not in the classroom in Nashville, she can likely be found in the mountains of Peru, or jetting around the globe with the Discovery Channel to discover how ancient people lived and how they died.

Unlike popular portrayals of archaeologists, bioarchaeologists make discoveries in the laboratory as well as at the dig site. They employ an impressive battery of scientific techniques — DNA analysis, computer tomography (CAT) scans, x-rays, radiocarbon dating, chemical analysis of ancient embalming fluids and strontium isotope testing — to build a detailed portrait of a person's life from their preserved remains. They then compile the data from multiple individual cases to understand the larger population. "I read the bones, and the bones tell me a story of the individual and the community in which he or she lived," Tung says.

Tung came to Vanderbilt in January 2004 after earning her Ph.D. at the University of North Carolina at Chapel Hill. Her work and reputation drew the interest of the Discovery Channel last year when they were putting together a team of bioarchaeologists and forensic anthropologists to study mummies around the globe for their new series, *Mummy Autopsy.* The show featuring Tung aired last spring.

Over the course of filming, Tung traveled with her fellow *Mummy Autopsy* colleagues to seven countries. The cases they examined included a male and female mummy from southern Peru that may have been victims of the war between Peru and Chile in the early 1880s, a skeleton from Wyoming's Wild West days, and a Romano-British family that may have died a violent death at the hands of invading Anglo-Saxons.

"One of my goals is to bring anthropology and archaeology to the public, which is one of the reasons why I agreed to do the show," Tung says. "All of these cases feed into my broader anthropological interests, complementing both my research and teaching."

Assistant Professor Tiffiny Tung, right, and her students clean a mummy.

Tung's research focuses on the Wari empire, a warlike society that existed in the Peruvian Andes from 550 to 1000 A.D. She first started working in southern Peru in 1994 while an undergraduate at the University of California, Santa Barbara. She conducted a brief archaeological survey in the region, and documented several ancient cemeteries in the Andes.

DISCOVERY CHANNEL

Professor Tung working on a skeleton

One discovery at the site of Beringa in southern Peru that is featured on *Mummy Autopsy* was the mummy of a young man, wrapped in a beautiful and relatively intact feather poncho and headdress. The mummy was seated in a flexed position and wrapped in textiles. It was surrounded by ceramic vessels, textile bags containing peanuts and coca leaves, and a variety of weapons, including a mace and a sling for throwing stones. "It was incredible to find something so intact," Tung says.

But the discovery was just beginning. When Tung brought the mummy back to the lab, she noticed that the textile was stained with what appeared to be blood.

She continued analysis of the mummified individual, who appeared to be between 17 to 19 years old at the time of death, and found that the stain was near what appeared to be a stab wound. She sent a sample to scientists in Italy who can detect ancient blood proteins, and the tests came back positive for human blood.

"Judging from the wound and test results, it looked like he was stabbed in the thorax, which bled profusely onto his textile garments. He was then given an honorable burial by his community members," she says. "So from this mummy, we were able to learn about his last moment of life, and also his larger role in the community."

—Melanie Catania

Creating the perfect poppy-seed bagel

If you run into Ed Saff at a cocktail party and ask him what he does for a living, the mathematician is likely to reply that he is working on a "method for creating the perfect poppy-seed bagel." Then he'll pause and add, "Maybe that's not the most accurate description, but it's the most digestible."

More accurately Saff, professor of mathematics and executive dean of Arts and Science, has been working with his colleague Doug Hardin, associate professor of mathematics, to come up with a new and improved way to distribute points uniformly on various types of surfaces.

Plotting a large set of equidistant points on a flat surface doesn't take a mathematician: Any draftsman can do it. Throw in a curve or two, however, and the problem gets much tougher. For complex surfaces like spheres and bagels (which form a shape that mathematicians call a torus) it becomes so hard, in fact, that mathematicians have not found a way to do it with absolute precision.

Recently, Hardin and Saff analyzed a method for generating large numbers of points that are spread with near uniformity over practically any surface of any dimension. Their effort was described in the cover article in the November 2004 issue of *Notices* of the American Mathematical Society.

The procedure has a surprising number of applications. Among other things, it comes in handy when trying to digitize curved surfaces for computer graphics and animations with greater efficiency; placing the elements of a sonar net on the ocean bottom in the best locations to detect the presence of submarines; and testing radar systems in aircraft to ensure uniform coverage.

Their theorems also help explain a variety of natural phenomena. They describe some well-known patterns such as that of spores on spherical pollen grains and the way electrons distribute themselves on the surface of a sphere. They also promise to provide new insights into the nature of more complex patterns such as the surface structures of some viruses and the locations of cracks in crystalline materials.

"It's a nice mix of mathematical theory, computation and physics," says Hardin.

The insights that their model provides may be useful in creating new materials on the micron scale with novel physical and electrical properties. In particular, the researchers believe that an improved understanding of the relationship between certain chemical forces and surface shapes will allow them to create new kinds of thin films and self-assembling membranes that could be useful in certain medical applications.

DANIEL DUBOIS

Professors Doug Hardin left, and Ed Saff have produced formulas for distributing points on curved surfaces.

"I think that we are really at the very beginning of something very big and very exciting that we couldn't see when we looked only at the sphere," says Saff. "Now, if we could only figure out how to design the perfect cheese danish!"

— David Salisbury

New twist on an old nebula

A team of astronomers led by C. Robert O'Dell, distinguished research professor of astrophysics, has developed a new model of the Helix Nebula — one of the nearest and brightest of the planetary nebulae. By combining new images from the Hubble Space Telescope with the best ground-based optical and radio images and spectra, the astronomers determined that the Helix Nebula consists of inner and outer shells of dust and gas that are oriented at nearly 90 degrees from one another. Their efforts are providing important new insights into the process that stars like the sun go through just before their fiery deaths.

RESEARCH BRIEFS

Circadian rhythms • It has long been known that constant exposure to light disrupts our internal clocks, resulting in problems like jet lag and health problems in extended-shift workers. A study led by Douglas McMahon, professor of biological sciences and a Kennedy Center investigator, reveals that although the clocks of individuals exposed to constant light may get out of synch, they keep ticking. The findings offer insight into how to modify constant-light situations to lessen their impact on humans. The research was published online in February in the journal *Nature Neuroscience.*

Dark Matter • In the last few decades, scientists have discovered that the cosmos appears to be filled with two invisible constituents — dark matter and dark energy — hose existence has been proposed based solely on their gravitational effects on ordinary matter and energy. Now, Robert J. Scherrer, professor and chair of physics and astronomy, has come up with a model that explains dark matter and dark energy as two aspects of a single unknown field. His model is described online in *Physical Review Letters.*

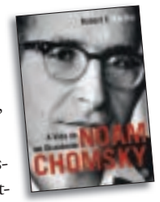
Out of Sight • Scientists have discovered the region of the brain responsible for the old adage, "out of sight, out of mind." The amount of information we can remember from a visual scene is extremely limited, and the source of that limit may lie in the posterior parietal cortex, a region of the brain involved in visual short-term memory, René Marois, assistant professor of psychology, and graduate student Jay Todd have found. Their results were published in *Nature.*

Kudos

Michael Aurbach, professor of art, recently was elected to the board of the Mid-America College Art Association.

Jo-Anne Bachorowski, associate professor of psychology, received the Madison Sarratt Prize for Excellence in Undergraduate Teaching at the Spring Faculty Assembly.

Robert Barsky, professor of French, Italian and comparative literature, has published a biography of Noam Chomsky, which has been translated into several languages, including Italian, Greek, German, French and Portuguese.



Randolph Blake, Centennial Professor of psychology and chair of the department, has been elected a Fellow of the Society of Experimental Psychologists, considered one of the most prestigious honors an experimental psychologist can receive. He joins fellow Vanderbilt psychologists, Distinguished Professor **Jon Kaas**, and Centennial Professor **Gordon Logan**, in this elite group.

David Cliffel, assistant professor of chemistry, recently received the 2005 Young Investigator Award from the Society for Electroanalytical Chemistry.

Alain Connes, Distinguished Professor of Mathematics, recently received one of France's most noteworthy scientific awards: the annual Gold Medal of the Centre National de la Recherche Scientifique.

Arthur Demarest, Ingram Professor of Anthropology, is the first U.S. citizen to receive one of Guatemala's highest awards, the National Order of Cultural Patrimony. In addition, *Choice* magazine has selected *The Terminal Classic in Maya Lowlands,* edited by Demarest, Prudence M. Rice and Don S. Rice, as a 2004 Outstanding Academic Title.

Earl E. Fitz, professor of Portuguese, Spanish and comparative literature, is the author of a new book, *Brazilian Traditions in a Comparative Context*, published by the Modern Language Association. It was commissioned by the MLA to be the premiere volume in a new series, *World Literatures Reimagined.*

Gary Jensen, professor of sociology and religious studies, received the Joe B. Wyatt Distinguished University Professor Award at the Spring Faculty Assembly.

Teresa Goddu, Jane Landers and **Mark Wollaeger** have received fellowships from the National Endowment for the Humanities. The grants, worth up to $40,000, are awarded to individuals pursuing advanced research that contributes to scholarly knowledge or to the general public's understanding of the humanities.

Carlos Jáuregui, assistant professor of Spanish and anthropology, recently won the *Premio Casa de las Américas,* one of Latin America's oldest and most prestigious literary awards, for his soon-to-be published book, *Canibali.* The book examines cannibalism as a recurring cultural metaphor.

Former Dean, Provost Holladay dies

Holladay

Wendell G. Holladay, who, as physics chairman, dean of the College of Arts and Science and provost of the University, was a key figure in the establishment of Vanderbilt as a national research-oriented university, died Dec. 9, 2005, from complications following a heart attack.

During his four decades as a faculty member and administrator, Holladay considered himself foremost a teacher. When he stepped down as provost in 1983, he returned for 10 more years to the physics faculty, which he first joined in 1954.

Born in Huntingdon, Tenn., in 1925, Holladay entered the Navy at the age of 18 during World War II. He graduated from Vanderbilt, magna cum laude, with a B.A. in physics in 1949 and received an M.A. in physics in 1950. In 1950-51 he was appointed Alumni Research Fellow at the University of Wisconsin, Madison, and a National Science Foundation fellow, 1952-54, at which time he received the Ph.D. degree in nuclear physics.

After retirement in 1993, he continued to study and write about physics and quantum mechanics. A long-time supporter of the University, he was a member of several donor societies including the College Cabinet.

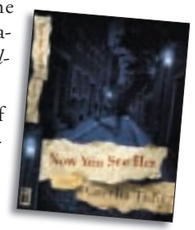
He is survived by his wife, Virginia Mershon Holladay, two sons, two daughters, and six grandchildren.

Christopher Johns, the Goldberg Professor of Art History, is currently Visiting Distinguished Research Professor of Art History in the Institute für Kunstgeschichte at the University of Munich.

William Luis, professor of Spanish, is the new editor of the *Afro-Hispanic Review,* the leading interdisciplinary journal featuring issues of race in Spanish America. It will be housed and published at Vanderbilt.

Ned Porter, Stevenson Professor and chair of chemistry and associate director of the Vanderbilt Institute of Chemical Biology, is the 2004-05 winner of the Christopher Ingold Award from The Royal Society of Chemistry.

John M. Sloop, professor of communications studies, is the new editor-elect of the Routledge/National Communication Association journal *Communication and Critical/Cultural Studies.*



Cecelia Tichi, William R. Kenan Professor of English, has published her fourth mystery-suspense novel, *Now You See Her* (NY: Mysterious Press). She writes the popular novels under the name Cecilia Tishy.

Carlton Wilkinson, senior lecturer in studio art, is included in the National African American Biography Project conducted by Harvard University. Works by Wilkinson, a photographer and gallery owner, are being exhibited at the African American Museum of Philadelphia and in Accra, Ghana.

Student Chic

Remember wearing ties to class? Bobby sox and saddle oxfords? Raincoats over Bermuda shorts? Here is a look back at changing student fashions, courtesy of the Vanderbilt Photographic Archives: a)up close and personal in the '80s; b)'50s pep rally; c)the long Mod line in the '70s; d)costumes in the 1940s; e)'nuf said; f)the 1960s Miss Commodore "flip"; g)hippies, Vanderbilt style; h)Owl Club initiation circa 1930s.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