

VANDERBILT UNIVERSITY



COLLEGE OF ARTS & SCIENCE

CORNERSTONE

*Community of Scholars
opens world of discovery
to freshmen*

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SUMMER 2004



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Cover photo: Graduate student Vitaly Klimovich, left, Eric Warren, BS'04, and rising sophomore Kristin Hinson worked together in Vanderbilt's Community of Scholars.

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

Archaeologist unearths evidence of earlier Maya civilization

In the Maya city of Cival in the Peten region of Guatemala, Assistant Professor of Anthropology Francisco Estrada-Belli has unearthed the oldest known carved portrait of a Maya king and two massive stone masks. His discoveries indicate that the Mayas developed a complex and sophisticated civilization hundreds of years earlier than previously believed.

Estrada-Belli "is pushing back the time for the evidence of Maya state institutions by several centuries," archaeologist Elsa Redmond of the American Museum of Natural History in New York City was quoted as saying in a *Los Angeles Times* article.

The new evidence shows that "Pre-classic Maya societies already had many features that have been attributed to the Classic Period—kings, complex iconography, elaborate palaces and burials," says Estrada-Belli. "The origin of the Maya civilization has to be found in the first part of the Pre-classic period, rather than the last part."

Ian Graham of Harvard University discovered Cival in 1984. Estrada-Belli has been studying the nearby city of Holmul. He was using satellite imaging and GPS positioning to explore the surrounding area when he re-discovered Cival four years ago. The new technology showed that its ceremonial center spanned a half mile, more than twice Graham's initial estimate.

Estrada-Belli and graduate students Molly Morgan and Jeremy Bauer have been digging there ever since with support from the National Geographic Society.

Vanderbilt graduate students Justin Ebersole and Jennifer Foley and rising senior James Doyle accompanied Estrada-Belli on an expedition to Holmul recently. They will be included in a new movie on the Maya by National Geographic Television and Film.



Professor Estrada-Belli with his Maya discovery

Students garner fellowships

Several graduating seniors have won prestigious fellowships. Mikel "Micky" Barry, BS'04, will pursue graduate work at Harvard University in the fall, supported by a National Defense Science and Engineering Graduate (NDSEG) Fellowship.

Megan O'Grady, BS'04, has received one of 65 National Science Foundation graduate fellowships in engineering/bioengineering. She also will attend Harvard, working with alumnus Kevin Parker, MS'93, PhD'98, an assistant professor of bioengineering.

Both Barry and O'Grady completed honors theses in physics last spring. Barry conducted research on spin properties of materials and spintronics, supervised by Norman Tolk, professor of physics and director of the Vanderbilt Center for Atomic and Molecular Physics at Surfaces.

O'Grady worked with John Wikswo, Gordon A. Cain University Professor and professor of physics, on

her thesis, "Electroporation of Cardiac Tissue from Unipolar Stimulation." She studied how strong electric fields create holes in the membranes of cardiac tissue, an important factor in the response of cardiac tissue to defibrillation-strength electric shocks.

In addition, Julia J. "Julie" Park, BA'04, is one of this year's Martin Luther King Jr. Scholars, a group of 10 outstanding undergraduate and graduate students whose academic achievement and community service honor the legacy of the renowned civil rights leader's contributions to public service and humanity.

Launched by President George W. Bush in 2002, the program offers students the opportunity to serve as summer interns at the Department of Education in Washington, D.C. Park, who majored in women's studies, sociology and English at Vanderbilt, will continue her studies at UCLA in the fall.



Research group receives \$8.3M to establish supercomputing center

What do Paul Sheldon, who studies elementary particles, Jason Moore, who analyzes high-dimensional genetic data, and Ron Schrimpf, who investigates the effects of radiation on space electronics, have in common?

All are serious "number crunchers"—researchers whose work requires the processing of such large amounts of data that they need the services of a supercomputer. Although computers keep getting faster, the three researchers predict that more and more of their colleagues in a variety of disciplines will join them in the ranks of "high performance computation" users over the next decade.

"High performance computation is going to become extremely important to all fields [of science]," says Sheldon, associate professor of physics.

That conviction, which is shared by Moore, Ingram Associate Professor of Cancer Research, and Schrimpf, professor of electrical engineering, led the three to spearhead the effort to create a state-of-the-art supercomputer center on the Vanderbilt campus, one that would be available to researchers from all disciplines. The Advanced Computer Center for Research and Education (ACRE) is funded with an \$8.3 million grant from Vanderbilt's Academic Venture Capital Fund.

In order to cater to all types of users, the money for the new center will be used not just on computer equipment but also to set up a training and outreach center. The new center will inform supercomputer novices about the advantages it offers and help new supercomputer users adapt their applications to run on the more powerful machines.

The new center will be built around VAMPIRE—the VAnderbilt Multi Processor Integrated Research Engine—the 200-node cluster created three years ago that has served

as a research tool and test bed for the larger and more powerful ACRE system.

Alan Tackett, research assistant professor of physics and technical director of the center, gives an example of the potential advantages of moving from computing on a desktop or scientific workstation to the supercomputer:

"We have two neuroscientists who have begun using VAMPIRE. One has an application that was taking two days to run on a normal computer, but takes only 20 minutes on the supercomputer. The other neuroscientist has found that he can complete a month's worth of work in a single day."

"Other similar high-performance computing centers located at places like Louisiana State University, Cornell and the University of Florida are devoted to a single program or discipline," says Sheldon. "No one else that we know about has tried to implement a fully multidisciplinary idea." Schrimpf adds, "It should increase our visibility and profile among other researchers worldwide in a way that we would never be able to do otherwise."

—David F. Salisbury

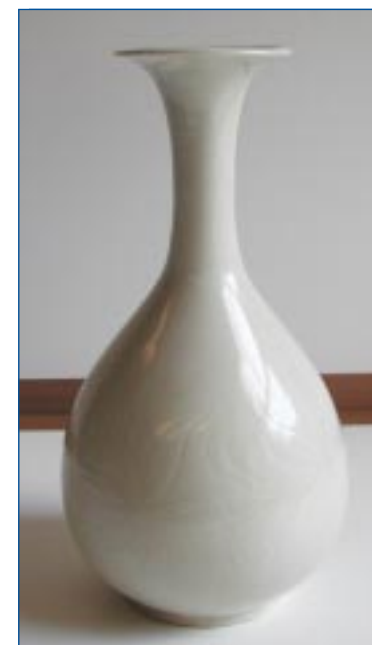


Paul Sheldon with VAMPIRE, the centerpiece of Vanderbilt's new supercomputing center

Economics faculty shine

Vanderbilt professors are now editing two of the three flagship journals in economic history. Jeremy Atack, professor of economics and of history, is the new coeditor of the *Journal of Economic History*, with Robert Margo, professor of economics and of history, as assistant editor. Margo also edits *Explorations in Economic History*.

Mario Crucini, associate professor and vice chair of economics, is one of only 14 academics nation-wide now serving on the National Science Foundation (NSF) Economics Review Panel. Members of the panel advise the NSF on the economics component of the social and behavioral sciences budget. His colleagues Jennifer Reinganum, Bronson Ingram Professor of Economics, and Robert Margo previously served on the panel.



The Fine Arts Gallery's collection of Asian art numbers about 2,500 pieces. Among them is this porcelain Ding ware vessel from the Northern Song dynasty (960-1126 C.E.), donated by Chauncey Lowe of Winter Park, Florida. Considered the height of Chinese ceramic production, Ding ware was produced for the emperor's use alone. This piece was the first of several donated to the University by Lowe, who owns perhaps the most important private collection of Ding ware in the United States.

Two views of China

China Dispatch

Catherine "Katie" Galbreath, BA'02, is completing a one-year internship teaching English in China. Here are some of her observations.

Before I arrived in China's northeastern Jilin Province in September 2003, mere mention of the country conjured illusions of green, terraced rice fields cultivated by peasants in pointed, hand-woven straw hats.

I was surprised, therefore, by the modern campus of

Hua Qiao Foreign Language Institute, where I would spend a year teaching English to college sophomores. I soon acquired the reputation of a dedicated, but approachable teacher. When a student named Gao Yang invited me to her grandparents' home in a rural village, I eagerly accepted.

Gao Yang's grandparents met us at the door, and immediately wel-

comed me—the first foreigner they had ever seen—into their humble two-room home constructed of mud bricks.

Gao Yang's grandparents can not read nor write, but they possess wisdom that comes with age and experience. They forecast the weather by peering out the foggy Plexiglas window at the clouds, and they survive on their knowledge of the crops and seasons.

Their lives seemed so simple, filled only with work and

family. There were no carpools, no blaring television, no incessant ringing of the telephone. While I was pondering this, as if on cue, I heard a phone ring. Gao Yang's grandmother pulled a tiny cell phone out of her pocket, and one of her uncles opened a hand-carved cabinet to reveal a brand new TV set and DVD player. So much for my stereotypical illusions.

Gao Yang's grandparents are proud of their few possessions which suggest they are on the fast track to "progress." I look at their simple home in a place where you can still see the Milky Way, the wisdom gained through life experience, and their close-knit family, and I am envious.

From my brief and limited view of the People's Republic, I see it as a country of contradictions: no indoor plumbing, but state of the art DVD players; cows grazing on grass in front of a downtown skyscraper; and brand new, privately owned vehicles veering to avoid an old man driving a donkey cart on an endless maze of freshly poured asphalt.



Katie Galbreath, left, makes dumplings with the family of Gao Yang.

In the Thick of Things

One of the great thrills of Eric "Rick" Bond's 25-year career of teaching economics was the time he spent amid political and economic upheaval in China and Russia.

Bond, now the Joe L. Roby Professor of Economics, came to Vanderbilt in 2003 from Pennsylvania State University. While at Penn State, he had the opportunity to lecture as a visiting scholar in several foreign countries, including Japan and Australia. But by far the most exciting times for him were the longer visits to China and Russia when those countries were experiencing major change.

He was in China in 1986—just a few years before the student demonstrations in Tiananmen Square—which allowed him to observe the Chinese economy during a period of transition. The experience now informs his teaching of international economics and trade theory.

"It was invaluable to gain the developing country perspective," Bond says.

The students he taught at Nankai University in China also found the experience rewarding. "These economies were just opening up, and the students, who had been taught only Marxist economics, were anxious to learn about Western economics. Some of them had read papers about Western economics and knew some terms, but none

had lived it; none of them understood the data and the implications of our economic theory—how it fits into how the markets work."

Bond says that in China in 1986, markets had started to develop, but they were still under considerable party control. Keenly aware of the possibility at any time of an uprising, the Chinese government was balancing the liberalization of the economy with political control.

"There were internal changes, especially to the agricultural economy," he says. "Once they let the people grow what they wanted to grow, then their agricultural productivity boomed. Rural workers were displaced as the farms became more productive, so then factories sprang up.

"It was a big culture shock," he says. "It was hard to get used to the bureaucracy—you were told that you couldn't do something for reasons that didn't make sense and you couldn't question the decision. There were still a lot of artifacts of an inefficient system."

On a return visit to China a couple of years ago, Bond found a noticeable improvement in the standard of living for the Chinese: "They're making more money, you see many more cars, and so on. There's been a real loosening of the central controls."

— *Susanne Hicks*



Eric Bond

Campus A-poppin' with Presidential Politics

Students are "campaigning" for voters in a non-partisan drive to get their generation registered and voting

During the Democratic primary season last winter, political science major Courtney Fryxell began searching the Internet for the candidate that best represented her views.

The junior from Cincinnati found that candidate in General Wesley Clark and began working with the Clark campaign. But as his hopes of winning the Democratic nomination waned, she found what she thought was an even better use of her time. She joined a group called VanderVotes (now Vanderbilt Lead), whose primary goal is to encourage Vanderbilt students and others to register to vote.

"When I started doing research on just how disenfranchised the 18 to 24 [year old] voting block was, I just had to get involved," she says. "I really believe that the earlier you educate [voters], the more likely that they will vote for their entire lives."

How do you get people under the age of 25 interested in politics and voting? That's just one of the questions that Vanderbilt Lead has tackled during this presidential election year. Mark Hand, a sophomore from Shreveport, Louisiana, and one of the organization's guiding lights, believes that campaign issues provide the key.

Hand sees the problem as cyclical. "Because politicians don't talk about our issues, we don't vote. And because we don't vote, politicians don't talk about our issues," he says. "We have to figure out what kids care about and go from there."

Hot button issues include student financial aid, the war in Iraq, and social issues such as the environment, education, abortion and gay marriage. Hand hopes that, in a day when voters tend to be polarized, Vanderbilt Lead can encourage reasonable debate on the issues rather than inflammatory rhetoric.

One of over 30 organizations under the umbrella of the University's Office of Active Citizenship and Service (OACS), Vanderbilt Lead was developed by Mark Dalhouse, OACS's new director, in concert with a handpicked group of student leaders.

Upon his arrival last summer as the first full-time director of OACS (formerly the Office of Volunteer Opportunities), Dalhouse says he "found students who had great interest in serving the community and just needed someone to help them get organized."

During its first year, Vanderbilt Lead has hosted several opportunities for voter registration both on campus and off, including popular primary parties where students gathered to watch the Democratic returns and register to vote.

Caitlin Sause, a junior from Lake Oswego, Oregon, chose to



work on Freshman Orientation. Her goal? Get every single freshman registered to vote. As president of the political science organization and treasurer of the College Republicans, Sause is planning Vote Vanderbilt, an evening event in August when some 1,500 freshmen from all parts of the country will swarm onto campus. Sause and her committee will provide information on voter registration and simplify for students the tangle of absentee voting regulations and deadlines set by different states.

Come fall, Vanderbilt Lead will swing into high gear with still more voter registration opportunities, along with forums and other events. Also scheduled is a history seminar for freshmen taught by Dalhouse. Titled "Presidential Politics and College Students," it, too, is designed to get freshmen excited about voting.

— *Judith DeMoss Campbell*



HUMANITIES COURSE EXPLORES ELECTION COVERAGE

Across campus in Wilson Hall, the Department of Communication Studies joined forces with the humanities this past spring to offer a special election-year course for undergraduates titled "How the Media Shape Policy." Designed to probe the media's effect on presidential politics and elections in general, the popular class featured a different aspect of media coverage each week.

Speakers like Daniel Casse, Roy Neel, BA'67, Larry Woods and Ann McDaniel, BA'77, chosen for their hands-on political knowledge, opened up the class for lively debate, with students taking all sides of the issues. Casse is with the White House Writers Group; Neel is an adjunct professor of political science and former chief of staff to Vice President Al Gore; Woods, an attorney, has served as a debate coach for Democratic hopefuls, and McDaniel is vice president of the *Washington Post*.

Offered during the spring semester, Humanities 161 is an interdisciplinary course, which takes up a different current-events topic each year.

Community of Scholars opens world of discovery to freshmen

For freshmen interested in science, laboratory work often seems part of an intimidating and distant domain. Struggling to memorize facts, equations and theorems in their classes, the process of scientific discovery is just another abstract concept.

Now, a small group of freshmen and sophomores has the unique opportunity to set aside their textbooks and get behind the microscope. The Community of Scholars program puts these students at the sides of upperclassmen, graduate students, post-doctoral fellows and faculty and encourages them to do the one thing they have

been trying hardest to avoid since they arrived at Vanderbilt—make mistakes.

“It’s big for these kids to learn to make mistakes,” says Ellen Fanning, Stevenson Professor of Biology and Community of Scholars program chair. “It takes four to six weeks until they get their feet on the ground and start taking chances. This growth happens in a natural lab setting but not in a stratified classroom setting.”

The Community of Scholars grew out of an invitation by the Howard Hughes Medical Institute to Vanderbilt and other universities to submit applications for funding for person-

alized educational and research-based initiatives for undergraduates.

“We decided it would be possible to set up an artificial community of scholars where, at least for the summer, freshmen and sophomores can be introduced into doing research,” Fanning says.

The program, now in its second year, extended invitations to 11 freshmen and one high school senior for this summer. The students, who come from different areas of engineering as well as biology and pre-med, participate in a research project that touches on molecular biology, biochemistry and genetics.

The key to the program is involving multiple levels of experience in the mentoring process.

“When I was a student and a faculty member in Germany, I learned how to do science by being at the bench with those who would provide me guidance along the way,” Fanning says. “One thing that has always bothered me is the very stratified way in which we treat our undergraduates here—we don’t have any transition between undergraduates, graduate students and post-docs.”

Kathy Friedman, assistant professor of biological sciences and co-chair of the program, benefited from a similar approach when she was an undergraduate.

“I had an amazing undergraduate research experience and feel like it led me to choose a research career,” Friedman says. “I really appreciate the opportunity to provide a similar atmosphere at Vanderbilt.”

While juniors and seniors have opportunities to get involved in research, such experiences are generally not available to freshmen and sophomores.

“I’m interested in pre-med and research, but without any lab experience I wasn’t sure exactly what I wanted to do. This is one of the only research opportunities for freshmen and sophomores,” says rising junior Erik Hysinger, who is majoring in biology. Hysinger, a member of the inaugural Community of Scholars class, has continued to work in Fanning’s laboratory. He



“I think the main thing is to increase the conceptual awareness of what science is and how it’s made—how do we know what we know?”

— Professor Ellen Fanning

currently spends 15 to 30 hours a week in the lab studying the origins of DNA replication. He acknowledges that the workload is heavy for the three credits he will receive, but believes it is worth the effort.

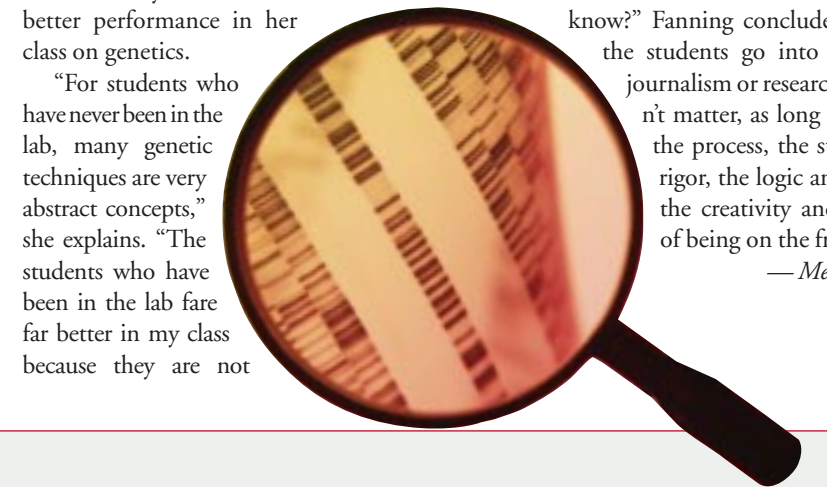
“The thought is that you put in three or four hours per hour of credit—but if you don’t put in more time you won’t get enough results,” Hysinger says.

“Even though freshmen and sophomores don’t have a lot of the background knowledge, they can get their hands dirty and see what it’s all about,” says Steve Gray, a fourth-year graduate student in Fanning’s lab who serves as a mentor for the program. “Now when they hear about a discovery in their classes, they have a sense of what went into it.”

and more,” Ivey says. “It was good to have these different levels of experience working together on the same problem.”

Friedman says she has seen the benefits of the laboratory work translate into better performance in her class on genetics.

“For students who have never been in the lab, many genetic techniques are very abstract concepts,” she explains. “The students who have been in the lab fare far better in my class because they are not



struggling with every little concept and are able to look at the big picture.”

The freshmen and sophomores are not the only ones benefiting from the program.

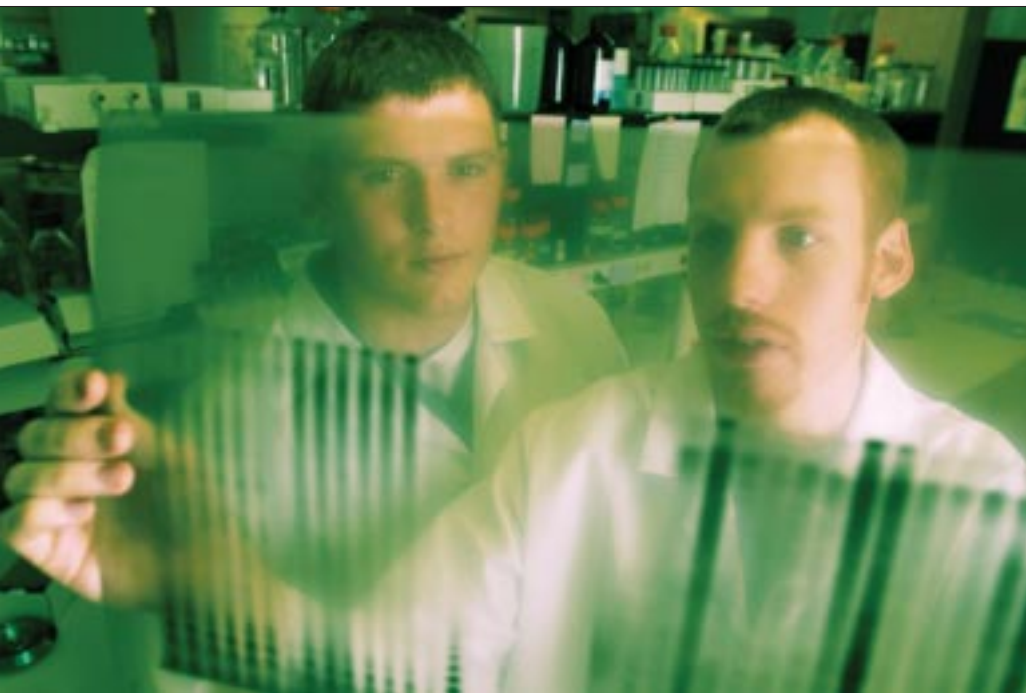
“Being a junior mentor helped me learn how to teach as well as to learn how to learn,” Ivey says. “Being on the teaching end showed me how to ask better questions.”

“The benefits to the mentors are so large I can hardly express it,” Friedman says. “The undergraduate mentors were forced to go extremely rapidly from being the beginner to being an authority. I think this was frightening at first because they didn’t feel qualified, but they all stepped up to the plate and did a great job.”

“You never really know how much you understand until you try to teach it to someone else,” graduate mentor Gray says. “It made me learn more about my project and gave me a new perspective on how much I understood. I am interested in going into academics and teaching, so this was an invaluable experience for me.”

“I think the main thing is to increase the conceptual awareness of what science is and how it’s made—how do we know what we know?” Fanning concludes. “Whether the students go into medicine or journalism or research really doesn’t matter, as long as they grasp the process, the standards, the rigor, the logic and, of course, the creativity and excitement of being on the frontier.”

— Melanie Catania



Junior Erik Hysinger, left, and Eric Warren, BS’04, are studying DNA.

RESEARCHERS-IN-TRAINING

One of the most exciting ways that Vanderbilt hopes to enhance the undergraduate experience in Arts and Science is through increasing opportunities and support for undergraduate research. Such research is likely to be one of the most memorable experiences of a student’s time at Vanderbilt.

Conducting research teaches undergraduates financial budgeting, time management, interviewing techniques and organization. But most importantly, long-term research experiences teach students to integrate the critical thinking skills that they develop in the College of Arts and Scie-

nce into each of the many steps necessary to answer an important question.

In addition to the Community of Scholars, the University provides many other opportunities for undergraduate research. These include the College Honors Program, the University Undergraduate Summer Research Program, and the Vanderbilt Minority Summer Research Program. Here is a sample of outstanding research projects by A&S undergraduates:

- Two economics majors delivered their senior honors theses to The Carroll Round, a conference held at Georgetown University last

spring: Elizabeth Mielke, BA’04, and Ashley Coleman, BA’04.

The title of Mielke’s thesis, supervised by Mario Crucini, associate professor and vice chair of economics, was “International Financial Crisis and the Real Economy.” Examining more than 100 years of data on business cycles and financial crises, Mielke found that the Great Depression remains the most significant international crisis.

Coleman, BA’04, worked with William Hutchinson, a visiting professor of economics, on “A Reexamination of the Determination of Slave Prices in Louisiana,

1725-1862.” Collecting 50,000 prices, Coleman was able to control for the effects of Jefferson’s Embargo and the British blockade during the War of 1812, something no one else has ever done.

- Renee Stowitzky, BA’04, a Dean’s Honor Scholar, worked with Richard Blackett, the Andrew Jackson Professor of American History, researching Nashoba, a utopian anti-slavery community, founded by Francis Wright in the 1820s near Stowitzky’s hometown, Germantown, Tenn., a Memphis suburb. Stowitzky plans to attend Stanford University law school in the fall.

- Josh Nepute, BS’04, worked with Charles Singleton, professor and chair of biological sciences, researching how phospholipids asymmetry of the cellular plasma membrane is established. His research has implications for blood clotting. An accomplished pianist with a 3.99 GPA in molecular and cellular biology, Nepute has won early admission to Vanderbilt University School of Medicine.

- Rising senior Eric Byrum is working with Associate Professor James G. Patton to identify Zebrafish micro RNAs. Byrum has combined his interest in biological sciences

with his duties as a linebacker for the Commodore football team.

- Rising senior Kelsey Bitting is working on a shell dissolution project related to Professor Molly Miller’s Antarctica research in Earth & Environmental Sciences.

- Yaroslav Alekseyev, BA’04, worked with Professor of Economics Andrew Daughety and Jennifer Reinganum, Bronson Ingram Professor of Economics, applying formal game theory to the role of whistle-blower rules for people who expose fraud in federal contracts. He will attend Yale Law School in the fall.

Hard-core environmentalism replaced by “light-green” policies

Professor Michael Bess, who has researched the past 40 years of the French environmental movement, has found that not only France, but also many other nations, including the United States, are becoming “light-green” societies.

Most people still want to protect nature and to purchase environmentally friendly products, but they do not want to give up the “cornucopia of modern technology and what consumer capitalism offers,” says Bess, associate professor of history. “The original Greens back in the 1960s believed that to protect the environment, we needed to make sacrifices, such as purchasing fewer manufactured goods.”

Bess explains that although this concept has never been widely accepted by the general population, many citizens here and overseas still take seriously the idea of making tangible changes to help the environment.

“Our society has bought the green message, but it is not in the full dark-green version that the original activists of the 1960s advocated,” says Bess, author of *The Light-Green Society: Ecology and Technological Modernity in France, 1960-2000* (University of Chicago Press).

Bess’ book has received the 2003 George Perkins Marsh Prize for the best book in environmental history from the American Society for Environmental History. It has also had an honorable mention from the Pinkney Prize Committee of the Society for French Historical Studies.

Although Bess characterizes many nations’ environmental actions as light green, that does not mean there have been only small changes in consumer purchases and habits. One example he cites is automobile pollution.

“We drive more cars, we drive bigger cars and we drive faster ones than in the ’60s,” Bess says. “However, the overall pollution that comes out of those cars now is vastly reduced, according to measures such as the types of chem-

icals emitted. Still, there is one area in which we’re still failing dismally with automobile pollution, and that’s greenhouse gas emissions, which can’t be removed by catalytic converters.”

Another example of consumer purchases in the light-green society is sport utility vehicles. “Most people, if they were to have an option of driving a gas-guzzling SUV or a hybrid or fuel-cell SUV that pollutes very little, would prefer to purchase the one—all other things being equal—that is environmentally friendly,” Bess says. “That’s the future, and smart companies like Toyota have started to move that way with great success.”

Bess noted that governments in both the United States and Europe have regulations that benefit corporations that are environmentally friendly. For example, some companies receive tax incentives for operating in a green way. Also, consumers tend to look favorably on companies that persuasively demonstrate they have made substantial green alterations in the way they design and manufacture products, Bess says.

Another example is the way trash is processed now. The United States and Europe produce three times more garbage in volume per year than in the 1960s. However, the overall impact on the environment is much less now because of improved recycling, waste-to-energy, and reclaiming from the trash flow.

“In the 1960s, people just chucked garbage in ravines and dumps; now we have lined landfills, scrubbers on smoke stacks, and other ways to reduce the environmental damage from trash,” Bess says.

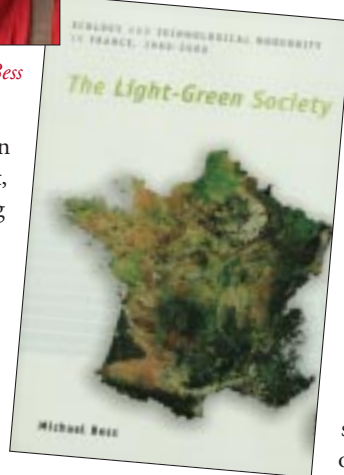
Thousands of changes have been made during the last 40 years to protect nature. Some are “mere green-packaging” on the same product, but others are making a significant difference, Bess says.

“I do not want to sound like some type of Pollyanna, saying everything is fine the way it is,” Bess says. “We still are on track for environmental collapse over the long haul if we keep going the way we are going today, without making more green changes. But we also have good reasons for hope. There has been a real change in attitudes and behaviors since the 1960s. I believe we have a fighting chance of saving the environment over the next century if we continue the current greening trend. But it will take a continued effort. We have to keep darkening the shade of green, intensifying our commitment to a truly sustainable economy.”

—Ann Marie Deer Owens



Prof. Michael Bess



RESEARCH BRIEFS

Now you see it • We are bombarded with visual stimuli while driving, shopping and watching television. New research published in February in *Neuron* reports that while we might not be aware of all that we see, our brains are busy registering this information. “When we have to deal with a lot of information quickly, such as when we are driving, our ability to perceive and react to much of it is severely compromised,” says research team leader René Marois, assistant professor of psychology. “This normal impairment shows up in problems such as driver distraction, a major cause of motor vehicle accidents.”

Sniffing out mosquitoes

• Vanderbilt and Yale University scientists have taken an important step toward understanding the mosquito’s sense of smell, an avenue of research that may lead to better ways to repel the deadly insect. In a joint effort reported in January in the journal *Nature*, the researchers have verified that the antennae of female *Anopheles* mosquitoes that prey on humans contain receptors that respond to one of the chemical compounds found in human sweat. Laurence J. Zwiebel, associate professor of biological sciences, co-authored the study.

Dark Energy • New measurements by the Hubble Space Telescope of the light from exploding stars confirm that the universe is being blown apart by dark energy and provide some new clues about this mysterious force. Robert Knop, assistant professor of physics and astronomy, led the analysis of the supernova data for an international collaboration of 48 scientists.

New device can help defend against novel biological agents

The ability to analyze and defend against novel biological agents has been strengthened by the development of a new device that can monitor the metabolism of living cells in near real time.

“So far we have been lucky that terrorists have used well-known biological agents like anthrax and sarin gas,” says David Cliffel, assistant professor of chemistry, who led the development group working under the auspices of the Vanderbilt Institute for Integrative Biosystems Research and Education (VIBRE).

“But how will we respond if one of these groups uses recent advances in genetic engineering to produce an agent that is new and unknown?”

Part of the answer, Cliffel says, is the device he and his colleagues have developed called a four-channel microphysiometer. It is a modification of a 10-year-old commercial device called the Cytosensor, manufactured by the company Molecular Devices. The Cytosensor measures changes in acidity (pH) in a small chamber holding between 100,000 to 1,000,000 individual cells. Cliffel’s research team has added three additional sensors so that the machine can simultaneously chart minute-by-minute variations in the concentrations of oxygen, glucose and lactic acid, in addition to pH.

The added capability—reported in February in the journal *Analytical Chemistry* and now available online—is important because the basic metabolism of a cell involves consuming oxygen and glucose and producing lactic and carbonic acid. As a result, monitoring variations in these four chemicals allows researchers to assess quickly the impact that exposure to different chemicals has on the

activity and health of relatively small groups of cells.

“I envision having a microphysiometer with an array of chambers,” says Cliffel. “One of them contains heart cells; another contains kidney cells; another, nerve cells and so on. Then, when an unknown agent is pumped into all these chambers, we quickly will be able to determine exactly which part of the body it attacks, and the response of the affected cells will provide us with important clues about the manner of its attack.”

Because of its potential application for bioterrorism and chemical and biological warfare, the Defense Advance Research Projects Agency (DARPA) has funded the development of the device. But the microphysiometer also has important potential applications in detecting and assessing the toxicity of environmental pollutants. It also has many possible uses in basic biological research, its developers point out.

For more about the microphysiometer, go to *Exploration*, Vanderbilt’s online research journal at www.exploration.vanderbilt.edu.

—David Salisbury



Dale Taylor, left, Sven Eklund, and David Cliffel with the four-channel microphysiometer

Training tomorrow’s nanoscientists

Vanderbilt and Fisk Universities have won a highly competitive, \$2.9 million national grant to conduct research and train doctoral students in the rapidly growing multidisciplinary field of nanoscience and nanoengineering.

The five-year Integrative Graduate Education and Research Traineeship (IGERT) grant from the National Science Foundation (NSF) will fund an innovative educational and research program centered on the world of nanoscale solids. Such research will lead to the creation of nanoscale materials for a wide variety of enterprises, particularly medicine and the computer industry.

“Nanoscale” is considered to fall between 1-100 nanometers in size. A nanometer is about four atoms long, or roughly 1/1000th the diameter of a human cell.

The Vanderbilt-Fisk IGERT in the Nanosciences brings together the expertise and efforts of more than 30 Vanderbilt and Fisk chemistry, physics, and engineering faculty members already involved in nanoscale research. The doctoral degree program, to begin in the

fall, will give students unprecedented cross-disciplinary immersion in nanoscience and nanoengineering.

Leonard C. Feldman, Stevenson professor of physics and of materials science and engineering and head of the interdisciplinary Vanderbilt Institute in Nanoscience and Engineering (VINSE), is program director. It is the second NSF-sponsored IGERT in which Vanderbilt is the lead organization.

VINSE is currently constructing a new nanoscience and engineering complex to include five laboratories specializing in single-molecule and biomolecular devices, inorganic nanocrystal and quantum dot synthesis, buckyball and nanotube fabrication, nanoscale optics, and silicon preparation. The laboratory and its equipment will be an essential component of the new IGERT program.

Fisk University students will have the opportunity to obtain their master’s degrees at Fisk and then transfer automatically to Vanderbilt to complete their doctoral degrees.

FACULTY GARNER NEH AWARDS

Cathy L. Jrade, professor of Spanish and chair of the Department of Spanish and Portuguese, has received a fellowship from the National Endowment for the Humanities (NEH) to write a book on Delmira Agustini, the first major female poet of 20th-century Spanish America. Jane Landers, associate professor of history and associate dean of the College of Arts and Science, has also received an NEH grant to study the African diaspora in Cuba and Brazil.

Faculty named to endowed chairs

The College of Arts and Science recently celebrated the appointment of several outstanding faculty members to endowed chairs.

Helmut Walser Smith is the first holder of the new Martha Rivers Ingram Chair of History. The chair was made possible by a gift from Martha Rivers Ingram, chairman of the Vanderbilt University Board of Trust and of Nashville-based Ingram Industries.

Smith's books and articles on German history focus on the relations between religious and ethnic groups: Protestants and Catholics, Christians and Jews, Germans and their neighbors. His newest book, *The Butcher's Tale: Murder and Anti-Semitism in a German Town* (2002), received the Fraenkel Prize for the best work in contemporary history and an *L.A. Times* Non-Fiction Book of the Year award. It also was a finalist for the National Jewish Book Award and received a citation from *Damals*, a popular history magazine in Germany, as one of the three most innovative works of history in 2002.

Smith joined the Vanderbilt faculty in 1991, and received his Ph.D. from Yale University in 1992. In 1997 he received the coveted Jeffrey Nordhaus Award for Excellence in Undergraduate Teaching.

Jay Clayton, chair of the Department of English, is the newly appointed William R. Kenan Professor of English. He recently received a \$100,000 grant from the National Institutes of Health—a rarity for a professor of English—to study the topic of genetics, its use and misuse in literature, film and popular culture. Fittingly, the title of his inaugural lecture as the Kenan chair was "Crimes of the Genome: Literature and the Gene for Violence."

Clayton received his undergraduate degree from Yale University in 1974 and his Ph.D. from the University of Virginia in 1979. He joined the Vanderbilt faculty in 1988. He is the second Kenan Professor of English in the College of Arts and Science; Cecelia Tichi also carries that title.

Vanderbilt alumnus John Stuhr is the new W. Alton Jones professor of philosophy and professor of American Studies. He completed both his master's and Ph.D. degrees in philosophy at Vanderbilt in 1975 and 1976, respectively, and his undergraduate degree from Carleton College. Stuhr returned to Vanderbilt last fall from Pennsylvania State University, where he was a Distinguished Professor of Philosophy and American Studies. The title of his inaugural address as the Jones chair was "Does Philosophy Progress?" Stuhr recently was elected president

of the Society for the Advancement of American Philosophy, the largest professional philosophical society concerned with American culture and its characteristic philosophies and the third largest philosophical organization in North America.

Lenn E. Goodman is the newly appointed Andrew W. Mellon Professor of Humanities. He joined the Vanderbilt faculty in 1994 as professor of philosophy. Goodman earned an A.B. degree from Harvard in 1965 and a D. Phil. from Oxford University in England in 1968. His philosophical interests center on metaphysics and ethics, and he has paid special attention to Islamic and Jewish philosophical thought and their creative interactions. He will give his inaugural lecture as the Mellon professor in the fall.

Goodman has written 12 books, the most recent being *Islamic Humanism*, published by Oxford University Press in 2003. He is currently working on *God and Evolution* for Routledge Publishing. Goodman is the second Mellon Professor in the Humanities; Jonathan Lamb also holds that distinction.

Endowed chairs and professorships are a centuries-old tradition in higher education, signaling scholarly achievement, distinction, and the promise of future discovery through exceptional teaching and groundbreaking research. To recruit and retain outstanding faculty, endowed chairs are a top priority of "Shape the Future," Vanderbilt's campus-wide, comprehensive campaign.

Endowed chairs are a top priority of "Shape the Future," Vanderbilt's campus-wide, comprehensive campaign.



Helmut Smith

CLASS NOTES ON DORE2DORE

Alumni can now read class notes on Dore2Dore, the online community for Vanderbilt alumni and students. Simply go to www.dore2dore.net.

In addition, alumni can also update their information, find classmates through the online directory, apply to have their e-mail forwarded, and access the Commodore Career Connection and alumni discussion groups.



VANDERBILT Reunion & Homecoming NOVEMBER 5-6, 2004



Reminisce and make new memories!

Join fellow alumni, current students and Vanderbilt friends for the annual extraVUganza weekend, the largest alumni celebration on Vanderbilt's campus. Mark your calendar and join your friends for the fun. For details and hotel information, visit our Web site: www.vanderbilt.edu/alumni/reunion or call 615-322-6034.

A&S FACULTY HONORED

Three of the top five University honors went to A&S faculty members during the Spring Faculty Assembly in April.

Edward F. Fischer, associate professor of anthropology and director of the Center for Latin American and Iberian Studies, received the Ellen Gregg Ingalls Award for Excellence in Classroom Teaching.

Sandra J. Rosenthal, associate professor of chemistry and of physics, was given the Madison Sarratt Prize for Excellence in Undergraduate Teaching.

The Joe B. Wyatt Distinguished University Professor Award went to Marshall C. Eakin, professor of history and chair of the department.



Sandra J. Rosenthal



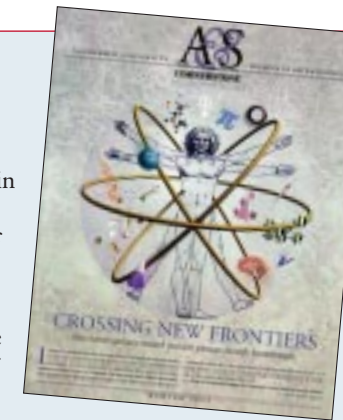
Edward F. Fischer



Marshall C. Eakin

A&S CORNERSTONE RECEIVES AWARD OF EXCELLENCE

For the fourth straight year, the *A&S Cornerstone* was included among the winners in the CASE District III 2004 communications contest. The *Cornerstone* received an Award of Excellence among external newsletters and tabloids published by colleges and universities in the nine Southeastern states comprising the Council for the Advancement and Support of Education's District III.



Nationally prominent political scientist dies

Avery Leiserson, a distinguished Vanderbilt University political scholar who served in a variety of leadership roles, died Feb. 14 in Nashville. The professor of political science, emeritus, was 90 years old and had been suffering from pneumonia.



Avery Leiserson

Leiserson was a former president of the American Political Science Association and the Southern Political Science Association as well as chair of his department for 11 years. He helped found the Tennessee Political Science Association.

Leiserson helped bring many outstanding professors to campus and was part of the group that first proposed a Black Studies Program in the College of Arts and Science. In 1967 he received the Harvie Branscomb Distinguished Service Award.

Professor of Political Science George Graham, who worked closely with Leiserson, said that more than one dean and many professors called him "the conscience of the faculty."

Kudos



Barsky

Robert Barsky, professor of French and comparative literature, has launched a new journal called *AmeriQuests*, which will feature important issues related to the Americas.

Marshall Eakin, professor and chair of the Department of History, is the new executive director of the Brazilian Studies Association.

John Geer, professor of political science, is the new editor of the *Journal of Politics*, one of the discipline's three most prestigious scholarly journals.

Steve Hollon, professor of psychology, recently became a Fellow of the American Psychological Society.



Geer

Business Tennessee has included Jon Kaas, distinguished professor of psychology, and Alexander Ol'shanskii, Centennial Professor of mathematics, along with Professor Frank Parker from the School of Engineering, in an article titled "Top 10 Scientists."

Philip Rasico, professor of Spanish and Portuguese, has been elected to the Real Academia de Buneas Letras de Barcelona, one of the oldest and most prestigious learned societies in Spain.

Virginia Scott, associate professor of French and chair of the Department of French and Italian, has received the Chevalier dans l'Ordre des Palmes Académiques from the French Minister of Education. Created in 1808 by Napoleon, the honor went to Scott for her contributions to the teaching of the French language and culture.



Scott



Swain

Carol Swain, professor of political science and of law, recently was inducted into the Nu of Virginia chapter of Phi Beta Kappa at Roanoke College.

Susan Ford Wiltshire, professor and chair of the Department of Classical Studies, recently was nominated for Nashville's 2004 Athena Award.

A World War II Diary and Lost Love

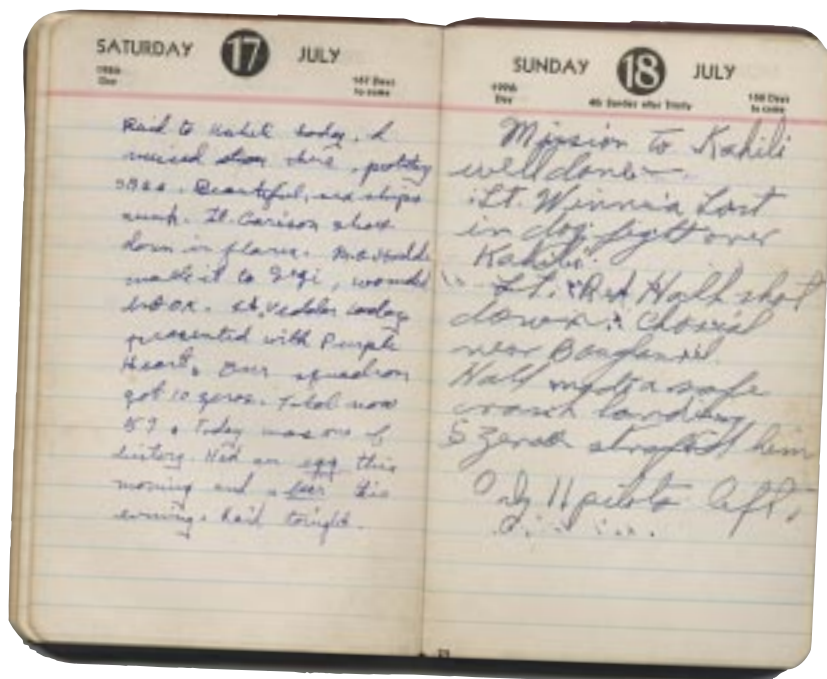
In 1940, Charles C. Winnia and Violet Jane "V.J." Watkins, MA'40, sat next to each other in Professor Fleming's political science class at Vanderbilt. Propinquity grew into a romance that was interrupted when Winnia became a fighter pilot in the U.S. Marine Corps in 1941. For several years during the early days of the war, he kept a diary chronicling his missions against the Japanese in the Pacific. He also wrote of his love for Watkins, and his dream of marrying her at war's end.

Tragically, Winnia's plane was shot down over Bougainville in the Solomon Islands in 1943, and he was officially declared dead in 1946. His diary—nearly forgotten for over 60 years—was discovered recently and read by Watkins for the first time. Their story was the subject of a National Public Radio program that aired in March 2004. More information about the couple and the diary is available at <http://www.npr.org> or at the Agnes Scott College Website, <http://www.agnesscott.edu>, where Watkins earned her undergraduate degree.

Watkins and Winnia were at the forefront of a wave of wartime romances that started on the Vanderbilt campus during World War II. Here are some photographs of that long ago era courtesy of the Vanderbilt Photographic Archives, Agnes Scott College, and the U.S. Marine Corps.



*Star-crossed lovers
V.J. Watkins and Lt.
Charles C. Winnia*



The famous Gym Dances fostered wartime romances.



*Members of the Second Infantry,
Tennessee State Guard, march in front
of a flag-topped Kirkland Hall.*

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