

# arts AND SCIENCE

The magazine of Vanderbilt University's College of Arts and Science

SPRING 2012

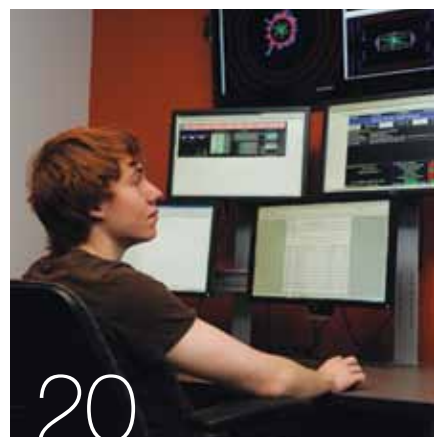


whereAREYOU?



STEVE GREEN

*Answer found on the back cover*



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Editorial offices are located at 2525 West End Avenue, Suite 700, Nashville, TN 37203.

Nancy Wise, EDITOR

Donna Pritchett, ART DIRECTOR

Jenni Ohnstad, DESIGNER

Carolyn Dever, DEAN


Jonathan S. Petty, ASSOCIATE DEAN FOR DEVELOPMENT AND ALUMNI RELATIONS

Joanne Beckham (BA'62), Nelson Bryan (BA'73), Mardy Fones, Jim Gray (BA'75), Jennifer Johnston, Nate Marshall (BA'12), Mitch Roberson, Sandy Smith, Fiona Soltes, Cindy Thomsen, Anna Williams, CONTRIBUTORS

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

**COVER:** *One of the oldest buildings on campus, Benson Hall has housed the English department—and Vereen Bell (p. 16)—for more than 30 years. Photo by Daniel Dubois.*

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DANIEL DUBOIS

**THIS ISSUE OF ARTS AND SCIENCE OFFERS A WORLDVIEW OF THE VANDERBILT COLLEGE OF ARTS AND SCIENCE:** demonstrating the impact of our school in the world at large, and the impact of the world at large on our school. From my vantage point in Kirkland Hall, Arts and Science seems at once vast and localized. Approximately 4 percent of our undergraduates and 23 percent of our graduate students hail from countries other than the U.S., yet they are all at home here on this beautiful residential campus where their courses, research and service activities are emphatically global in emphasis and effects. The work of our faculty touches every continent on this planet. And our community as a whole has dedicated itself to a yearlong emphasis on sustainability and the environment that addresses the future of the planet itself.

My own travels on behalf of Arts and Science in the past year have extended from Melbourne, Australia, to Aix-en-Provence, France, to Belfast, Northern Ireland, and throughout North America. Yet wherever I travel on behalf of Arts and Science, I feel entirely at home. Meeting far-flung friends who love this place as I do, and advocating for Arts and Science within new environments, partnerships and possibilities—these are privileges unique to my job. Invariably I return to campus inspired by our current work and our future potential, rededicated to our mission of excellence in research, teaching and service, wherever that takes us.

Sometimes the most profound lessons take place fairly close to home.

On a crisp, clear day in the fall, I took a road trip with three good friends: Mona Frederick, executive director of the Robert Penn Warren Center for the Humanities, and Arts and Science alumni Will (BA'66, JD'69) and Lillias Johnston (BA'67). We drove the 50 miles or so up to the Tennessee–Kentucky state line to the small town of Guthrie, Ky., where we had the warmest of welcomes from Jeane Moore and Melba Smith, two of the founders of the Robert Penn Warren Birthplace House Museum. As you will read in the pages ahead, Jeane, Melba and a small team of friends have dedicated years of their lives to the establishment and maintenance of a beautiful museum in the birthplace of Robert Penn Warren, poet laureate, three-time Pulitzer Prize winner and Vanderbilt alumnus and professor.

In that house, among fascinating exhibits and memorabilia, hangs a simple ring with the keys from Warren's room from his days as an Arts and Science undergraduate.

From his home in Guthrie to his home on campus to his home in the pantheon of U.S. letters, Robert Penn Warren was a poet, a novelist and a journalist. Warren was a master at connecting the local and the global, the quotidian concerns of small-town life with the global questions of his day. Realizing this profound insight was made possible only by the efforts of Jeane, Melba and the citizens of Guthrie, who have dedicated themselves to preserving Warren's legacy within their community on behalf of the world at large. They invited us in and welcomed us to new insights about Warren as a person, a poet, a local boy, a great man, a son, a father, a friend.

No matter where we go in life, we all start somewhere. I will never forget the sight of those room keys hanging on a hook on a wall in a house in Guthrie, Ky. What doors they opened in the life that ensued.

A handwritten signature in black ink, appearing to read 'Carolyn Dever'. The signature is fluid and cursive, with a long horizontal line extending to the right.

Carolyn Dever  
Dean



Junior **Valerie Kuznik's** reading list reflects her interests in Spanish and communication studies. In addition to material for class, she just finished

*Qué les pasa a los hombres* (the Spanish version of *He's Just Not That Into You*) by Greg Behrendt and Liz Tuccillo

*Hey Whipple! Squeeze This* by Luke Sullivan (a witty take on advertising—her field of interest)

*The Bride Quartet* series by Nora Roberts

*The Scarlet Gang of Asakusa*  
by Yasunari Kawabata

—**Alex Wagner**, junior, mathematics

*Naked Economics: Undressing the Dismal Science*  
by Charles Wheelan

—**Bryann DaSilva**, senior, economics

Even with course work, studying and research, Arts and Science people always make time to read for pleasure and to stay current on world happenings. Here's what some have been enjoying lately.

*USA Today*

*The Tennessean*

*Good Housekeeping and People*

—**Paulette Lynch**, manager, chemistry storeroom

*Invisible Cities* by Italo Calvino

*The Archaeology of Disease* by Charlotte Roberts and Keith Manchester

—**Rachel Witt**, senior, anthropology

*Infinite Jest* by David Foster Wallace

*Stuffed and Starved: The Hidden Battle for the World Food System* by Raj Patel

*Autobiography of Red* by Anne Carson

—**Sebastian Rogers**, junior, anthropology

# Planning your legacy with Vanderbilt

Build a lasting legacy with a planned gift to the College of Arts and Science. Your gift today will support student scholarships, faculty chairs and groundbreaking research for generations to come. Help the people who will help change the world.

Talk with your planned giving team about tax-effective options: establishing a trust, setting up a charitable gift annuity or creating a gift through your estate.

Contact Rachel Wierenga in **Vanderbilt's Office of Planned Giving** at (615) 343-3113, (888) 758-1999 or [plannedgiving@vanderbilt.edu](mailto:plannedgiving@vanderbilt.edu).

[vanderbilt.edu/alumni/plannedgiving](http://vanderbilt.edu/alumni/plannedgiving)

## Becoming Emeritus

The Vanderbilt University Board of Trust honored seven College of Arts and Science faculty with emeriti status this spring. Those honored were Tracy Barrett, senior lecturer in Italian, emerita; Ford F. Ebner, professor of psychology, emeritus; Leonard Feldman, Stevenson Professor of Physics, emeritus; Robert Fox, professor of psychology, emeritus; Thomas A. Gregor, professor of anthropology, emeritus; Gary Jensen, professor of sociology, emeritus; and Wallace LeStourgeon, professor of biological sciences, emeritus.

## Four Take a Bow... and Chairs

Four outstanding professors in the College of Arts and Science have been awarded endowed chairs, one of the most prestigious honors a university can bestow. The professors were honored as some of the university's most distinguished faculty and recognized for academic achievements and ongoing work. The new chair holders are John G. Geer, Gertrude Conaway Vanderbilt Professor of Political Science; Jon H. Kaas, Gertrude Conaway Vanderbilt Professor of Psychology; Peter Lake, Martha Rivers Ingram Professor; and David E. Lewis, William R. Kenan, Jr. Professor of Political Science. Their recognition brings the number of endowed chairs established in the College of Arts and Science to 94. Vanderbilt has a major university initiative to increase the number of endowed chair holders in support of recruiting and retaining top faculty.

## Forget Macs or Droids—These Students Use Blackberries

**HIGH SCHOOL STUDENTS FROM TENNESSEE** got a taste of college research when they made solar cells using blackberry juice and measured the electrical power that the cells produced. Students from nine schools participated in daylong field trips to the Stevenson Center to get a hands-on introduction to nanotechnology and how it might lead to more efficient, less expensive devices for solar power. The solar cell project involved mashing and extracting juice from blackberries, soaking an electrode in the juice, and clipping it with another electrode covered with graphite to make a solar cell. The crude devices produce about enough to power a small electronic calculator, but they can give a person a nice shock, says Scott Niezgoda, a chemistry graduate student who works on the project. The educational outreach program was started this year by the Vanderbilt Institute of Nanoscale Science and Engineering, directed by Sandra Rosenthal, Jack and Pamela Egan Professor of Chemistry.



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STEVE GREEN

## What is an Excellent Accomplishment, Alex?

Arts and Science senior Zack Terrill was one of more than 12,000 undergraduates competing for just 15 spots available in the annual *Jeopardy!* College Championship and went on to finish as one of the competition's top three winners. Terrill, a double major in chemistry and philosophy from Winter Springs, Fla., beat out competitors from schools such as Duke, Columbia, George Washington University, Harvard, MIT and Stanford to finish third overall and collect \$25,000. A runner and member of Vanderbilt's fencing club, Terrill plans on teaching math in Nashville in the fall.

# Undergraduate Support beyond the Classroom

**ASSOCIATE PROFESSOR OF ANTHROPOLOGY TIFFINY TUNG** received the 2011-12 Chancellor's Cup for her work with undergraduates. Chancellor Nicholas S. Zeppos surprised her with the university award during an anthropology department meeting.

Tung, a bioarchaeologist, studies past cultures through the clues found in mummies, skeletal remains and other artifacts. In addition to her own research and teaching, she worked with 27 different students on independent research projects and theses both in Nashville and in far-off lands.

Established by the Nashville Chapter of the Vanderbilt Alumni Association in 1963, the chancellor-selected award is given annually to the faculty member most contributing to undergraduate student-faculty relationships outside the classroom.



SUSAN LEMAY

*Chancellor Zeppos, Tiffany Tung and Nancy Gentry, BSN'73, education co-chair of the Alumni Association's Nashville Chapter.*



**“It’s beyond wonderful. The opportunity that I’ve been given is amazing.”**

Angel Abbott, Class of 2012  
Undergraduate Scholarship Fund for Arts and Science  
Eugene H. Vaughan Undergraduate Assistantship in Geology



## CHANGE A LIFE— SUPPORT OPPORTUNITY VANDERBILT

Vanderbilt popped up on Angel Abbott's radar during her high school research project, which focused on the best college for a person with disabilities. Vanderbilt shone brightly, but financial aid was a necessity.

“Without Opportunity Vanderbilt, I never could have come here. I’ve come so far and done so much,” she says. “It’s beyond wonderful. The opportunity that I’ve been given is amazing.”

Supporters like you help provide solutions for students like Angel, making certain that access to a Vanderbilt education is based on ability, not ability to pay. Consider a gift through Opportunity Vanderbilt to support the university's initiative to replace need-based undergraduate loans with scholarships and grants. Be a part of this year's goal to raise \$20 million. Help us change their lives so they can change the world.

# OpportunityVanderbilt

Make a gift to Vanderbilt online—[www.vanderbilt.edu/givenow](http://www.vanderbilt.edu/givenow). Questions—Jonathan Petty, [jonathan.petty@vanderbilt.edu](mailto:jonathan.petty@vanderbilt.edu), (615) 343-3118.

# Sal, Salz, Sel, Со́ль, 塩 and Salt

*McTyeire builds community, fluency and cultural understanding in many languages*

Can you say, “Please pass the salt” in another language? Residents of McTyeire International House can. Table conversation might be in any of the seven languages spoken at McTyeire, a residence hall where cultivating language fluency is a community commitment and expanding that fluency a 24-hour opportunity.

Founded in 1981 and now celebrating its 30th anniversary, McTyeire is a project of the College of Arts and Science in partnership with the Office of Housing and Residential Education and Dining Services. Open to students from all Vanderbilt colleges, McTyeire provides cultural and language immersion for residents without leaving the Nashville campus.

“It’s like a giant classroom but without the grades,” says Anja Bandas, McTyeire’s program director. “It’s a community. Some people come with only a year’s language study, others have no formal training and learn (a language) as easily as drinking from a straw. Some have studied abroad and want to maintain fluency. Others are planning to go abroad.”

Organized around six language halls—French, German, Japanese, Spanish, Russian and Chinese—McTyeire residents are encouraged to speak their target languages daily. Monday–Thursday suppers in the house’s dining room—when students are required to converse exclusively in their designated language—are the cornerstone of the McTyeire experience. The dining room is renowned for its international meals. Other activities include weekly study breaks, social events and parties.

Residents just learning their target language and others with greater fluency live side by side. Each hall has a faculty adviser from the College of Arts and Science and a hall coordinator—typically a native speaker—who spearheads cultural understanding in the context of increasing fluency at dinner conversations and activities.



JOE HOWELL

A seventh hall is dedicated to international topics. Demand for specific language halls varies, with strongest interest recently in Japanese and Chinese; Spanish has always been in high demand.

## Life Changing

For Shana Wamuhu, a native of Kenya majoring in political science, the McTyeire melting pot is a lush, yet level, cross-cultural playing field.

“McTyeire has helped me learn to interact with other cultures. Without that, the potential for cultural misunderstandings is enormous,” says Wamuhu, a senior in her second year on McTyeire’s International Interest Hall.

“I wouldn’t be where I am today if it weren’t for McTyeire,” says Adam Hunter, BA’00. Hunter parlayed his two years on McTyeire’s German Hall, his German and European studies majors and study-abroad experience into jobs with the German Marshall Fund and Robert Bosch, one of Germany’s largest foundations. He later worked in the German parliament with Cem Özdemir, co-chair of the Green Party. After earning his master’s in public policy at the





JOE HOWELL



JOE HOWELL

Kennedy School of Government, he joined the U.S. Citizenship and Immigration Service.

“McTyeire isn’t a foreign students dorm, it’s an everyone dorm, a place that mixes cultures and ideologies,” Hunter says. “It’s a place where people with varying levels of fluency can grow and learn. In many ways, it’s a testament to the character and diversity of our nation.”

### More than Fluency

Associate Dean Fräncille Bergquist was one of McTyeire’s founders and has oversight responsibility for the academic program. “McTyeire isn’t so much about creating language fluency as about giving students an opportunity to enhance their language ability,” says Bergquist, also an associate professor of Spanish. “McTyeire is unique because we mix the languages in one residence hall, providing a deep cultural experience as well as a cross-cultural one.”

When it comes to joining McTyeire, fluency carries less weight than motivation and commitment.

Cross-cultural is an apt description of Todd Miller’s application of his three semesters at McTyeire while studying economics. “I have lived abroad continuously since graduating, except when I earned my MBA from Columbia,” says Miller, BA’88, who spent 17 years based in Hong Kong as an executive with Sony Entertainment. “Practically everything I have done since Vanderbilt has had some international dimension. I have traveled to more than 100 countries for work and for play. McTyeire nurtured, whetted and shaped my international outlook.” Miller recently took an 83-day bicycle trek from Portugal to Turkey to raise funds for an Asian children’s charity and credits his German fluency with helping him make friends along the way.

For some residents, like Erika Leicht, a junior majoring in German and public policy studies, McTyeire fulfills multiple goals. “I was close to fluent in German, but McTyeire lets me speak spontaneously, to have conversations,” she says. “Unlike in class, here you can’t plan everything you say.” Leicht says McTyeire also builds unity and camaraderie.

“There’s a sense of community among the people in the halls. We’re close. It’s totally different than the dorm I lived in previously,” says Leicht, who has set her sights on study in Germany and a postgraduation Fulbright Fellowship or internship with a German company.

### Needed: Desire and Commitment

McTyeire is open to sophomores, juniors, seniors and graduate students. A committee that includes residents, faculty and staff makes selections. Bandas, a cultural anthropologist and native of Germany who also serves as the German Hall’s coordinator, says that when it comes to joining McTyeire, fluency carries less weight than motivation and commitment.

McTyeire Spanish Hall alumna Clarissa Adams Fletcher, BA’86, MA’90, was a Latin American studies major. “I came to McTyeire with a love for languages and found it to be a place where I could use it (Spanish) every day,” says Fletcher, who was named the 2011 National Language Teacher of the Year by the American Council on Teaching of Foreign Languages. “I met people there from all over the world and that opened my eyes to different points of view.”

She tells her Spanish students at Georgia’s Dunwoody High School that fluency is only one benefit to language study. “It helps create globally competent citizens who are flexible and able to learn and relearn, apply new skills and communicate with a broad spectrum of people,” Fletcher says.

*Opposite: McTyeire’s kitchen is known for its international-themed dinners. Above, left: During dinner on Monday–Thursday, students must speak exclusively in their designated languages. It can be a challenge—and it can be fun. Above, right: Junior Ben Juvelier in his room at McTyeire’s German Hall.*

# Anthony B. Hmelo

Tony Hmelo's research has taken him from NASA to nanoscience and from New York to Nashville.

Hmelo is associate director for operations and outreach for the Vanderbilt Institute of Nanoscale Science and Engineering, the interdisciplinary group researching new science and technology based on tiny—nanoscale—materials. (Nanotechnology is widely considered the next great scientific frontier.)

As research professor of physics and of materials science and engineering, Hmelo himself is interdisciplinary, since he holds appointments in both the College of Arts and Science and the School of Engineering.

## Tell us why you came to Vanderbilt.

I have always been interested in the science and engineering of materials. I arrived at Vanderbilt in 1988 shortly after receiving my Ph.D. from the State University of New York at Stony Brook. While earning my degree, I held down a job to design and manage an X-ray research beam line at the National Synchrotron Light Source . . . my first engineering career.

I had the opportunity to work with researchers from all across the nation who used that facility to characterize different kinds of single crystal materials, including some very interesting specimens that were manufactured in space. This captured my imagination and resonated with one of my childhood aspirations—to become an astronaut.

Vanderbilt was staffing the new Center for Microgravity Research and Applications under the direction of engineering professor and former astronaut Taylor Wang. I saw an opportunity to link my passion for materials with my childhood dream, and Vanderbilt became my ticket to ride, literally.

I understand that users are focused on their research and my responsibility is to make sure they go home at the end of the day able to enjoy the fruits of their labor.



JOHN RUSSELL

### How did you come to join VINSE?

The late 1980s and 1990s were an exciting start to my materials science career at Vanderbilt. I was a co-investigator for several fluid physics experiments that flew on three different space shuttle missions. In support of those experiments, I think I visited every NASA center several times, tested flight hardware aboard zero-gravity aircraft, worked with and helped train the mission specialists who flew and conducted the science on-orbit, and was able to support the missions in person inside the Payload Operations Center in Huntsville, Ala.

But nothing lasts forever. During the mid-1990s, national priorities changed, and new opportunities emerged. Visionary Vanderbilt faculty worked to establish the Vanderbilt Institute of Nanoscale Science and Engineering in 2002. This was an opportunity for me to shift gears and take on new challenges. I formally joined VINSE in 2003, in time to manage the construction of the original core laboratories.

### Can you explain the “clean room,” “bunny suits” and other things unique to VINSE?

Imagine preparing a novel material or engineering a new device with critical features so tiny that dust particles floating in the air make the difference between success and failure during the manufacturing process.

At VINSE we provide a special environment called a clean room, where we take great care to control the presence of these airborne contaminants. At 1,636 square feet, this is the largest general-purpose facility of its kind on campus. The laboratory air is scrubbed clean after passing through a grid of HEPA filters comprising the ceiling of the room.

Bunny suits are special white garments we wear over our street clothing that zip closed, and together with a hair cap, shoe covers and other safety items, help protect the room from potential contaminants that may be present on our persons. The room is brightly illuminated and constructed of white panel walls with glass windows. With users in their white bunny suits, the laboratory can appear surreal.



Students don bunny suits to enter the clean room.

### You're also a safety manager. What is an interesting safety issue you've dealt with, and do you have a safety-related pet peeve?

We perform cutting-edge work that involves the routine use of hazardous chemicals and flammable and toxic gases in a confined space. These need to be managed carefully and disposed of properly.

My challenge is to work with my staff to ensure that all users are well-trained in clean room procedures. At any given time, we have around 100 authorized users of the facility, with a large turnover every semester. The lab constantly evolves over time with the addition of new equipment and new hazards. Keeping the changing user population informed of the changing laboratory hazard profile is a significant challenge.

If I must name a pet peeve, it is that too many people need to be reminded to wear their personal protective equipment: safety glasses, gloves, lab coats, etc. I understand that users are focused on their research and my responsibility is to make sure they go home at the end of the day able to enjoy the fruits of their labor.

### What's a work week like for you?

I spend my typical week maintaining and repairing instruments, attending research group meetings, writing proposals to acquire new instruments and improve facilities, engaging in outreach activities that give talented high school students in middle Tennessee an opportunity to learn more about Vanderbilt and VINSE, and training users. There are many administrative duties required to keep the laboratories running properly that ensure I am constantly occupied.

One of my priorities is to spend at least a few hours every week working with students on projects of particular interest to me, such as novel applications for diamond films and devices.

### In your transition from New York to the Southeast, do you miss certain things from there and have you taken a shine to certain things down here?

When I lived in the New York area, I enjoyed having ready access to the cultural amenities, especially off-Broadway theater, the Public Theater in particular. I miss Montauk Point in the summertime and its dramatic seascape. However I have learned to love the Southeast and consider myself a true Nashvillian. I know

every trail around Radnor Lake like the back of my hand. If you cannot find me at the symphony, you might look for me at the Bluebird Cafe. I even have my own black-eyed pea recipe I fix every New Year's Day.

# NOW AND Later

*Yearlong project sets out to change the campus and the world for the better.*



Would you refuse to drink bottled water if it would help you yet-to-be-born great grandchild?

That's a delicate balance—the contemporary demand for immediate gratification and the responsibility to secure and protect resources for the future. From debates about oil drilling in the Arctic to the use of reusable bags, the tension between having it now and having enough for later generations crosses all spectrums.

Understanding and managing these competing issues has been the topic of the Sustainability Project, a yearlong Vanderbilt-wide exploration under the aegis of the College of Arts and Science's American Studies program and funded by the College of Arts and Science's Fant Fund.

Sustainability—broadly defined as meeting the needs of the present generation without compromising the ability of future generations to meet their own needs—is the most pressing issue of the 21st century, says Teresa Goddu, associate professor of English and director of American studies. “The ultimate goal of the Sustainability Project is to create a campuswide conversation that emboldens Vanderbilt's efforts toward sustainability while deepening our understanding of what we are working toward.”

Dean Carolyn Dever puts it more directly. “We're applying the full diversity of Vanderbilt's academic expertise to one of the most complex and urgent human challenges of our time,” Dever says. “In the year to come and for many years ahead, our shared work on sustainability will change this campus and the world for the better.”



*A fall rolling seminar took participants to Kentucky to see the effects of mountain top removal.*

## Across Disciplines

The initiative began with the Cumberland Project, a spring 2011 two-day intensive workshop for faculty. Faculty from various schools and across campus met to discuss sustainability and to develop curricula that incorporated the topic. A second workshop is scheduled for May 2012 to carry the project forward. While the Sustainability Project will conclude officially in 2013, a new minor in environmental and sustainability studies was recently approved by Arts and Science faculty.

A concurrent goal was to create course collaborations between the sciences and humanities that discussed sustainability as a societal issue. More than 30 courses were offered, ranging from Water and Social Justice in Bangladesh, taught by faculty from Earth and environmental sciences and political science, to The Psychology of Sustainability and even an intensive elementary Spanish course with a sustainability focus.

For Dana Nelson, Gertrude Conaway Vanderbilt Professor of English, delving deeply into a compelling topic by drawing on resources across disciplines represents the best of a liberal arts education.

“Fundamentally, the Sustainability Project opens pathways where students learn to speak in the languages of other disciplines,” says Nelson, who is also a professor of American studies and women and gender studies. “Doing so opens them to new ways of thinking and seeing the world around them.”

Nelson's fall 2011 class, Writing for an Endangered World, captured both the multidisciplinary ground of American studies and the core objectives of the Sustainability Project. Using works ranging from Henry David Thoreau to Barbara Kingsolver, she challenged students to think and write persuasively about the allocation and distribution of common resources.

In the spring semester, she and John Ayers, chair of Earth and environmental sciences, taught a graduate seminar exploring



society's ability to manage valuable resources in common and the role of government, corporations and other institutions in protecting those resources in a fair, equitable way.

Such issues inspired Katie Ullmann, a rising senior and American studies major, to look closely at the environment, climate change and resource scarcity within the context, ethics and morals of American culture and history. Ullman, an environmentalist since high school, spent the spring 2012 semester in South Africa, where she focused on urbanization and ways to reduce individuals' environmental impact through shared consumption and space.

“Our shared work on sustainability will change this campus and the world for the better.”

—Dean Carolyn Dever

“The Sustainability Project has changed my viewpoint,” she says. “I’ve always felt one person could make a difference. At the same time, however, Sustainability Project speakers often stressed collective action and that helped me see how much top-down environmental change we need to expedite the cultural shift to more sustainable practices in America.”

### Impact and Implications Everywhere

Beyond the classroom, speakers such as Peter Gleick, cofounder of the Pacific Institute for Studies in Development, Environment and Security, and Bill McKibben, environmentalist and author of *Eaarth* and *The End of Nature*, brought environmental discussion to public forums on campus.

Road trips—open to any Vanderbilt student but a core component in American studies courses—took participants to Hindman, Ky., to learn firsthand about the impact of mountain top removal, an environmentally contentious method of coal mining. Other activities included visiting the water reclamation operation at Metro Nashville’s Water Treatment Plant and exploring environmental justice in Nashville.

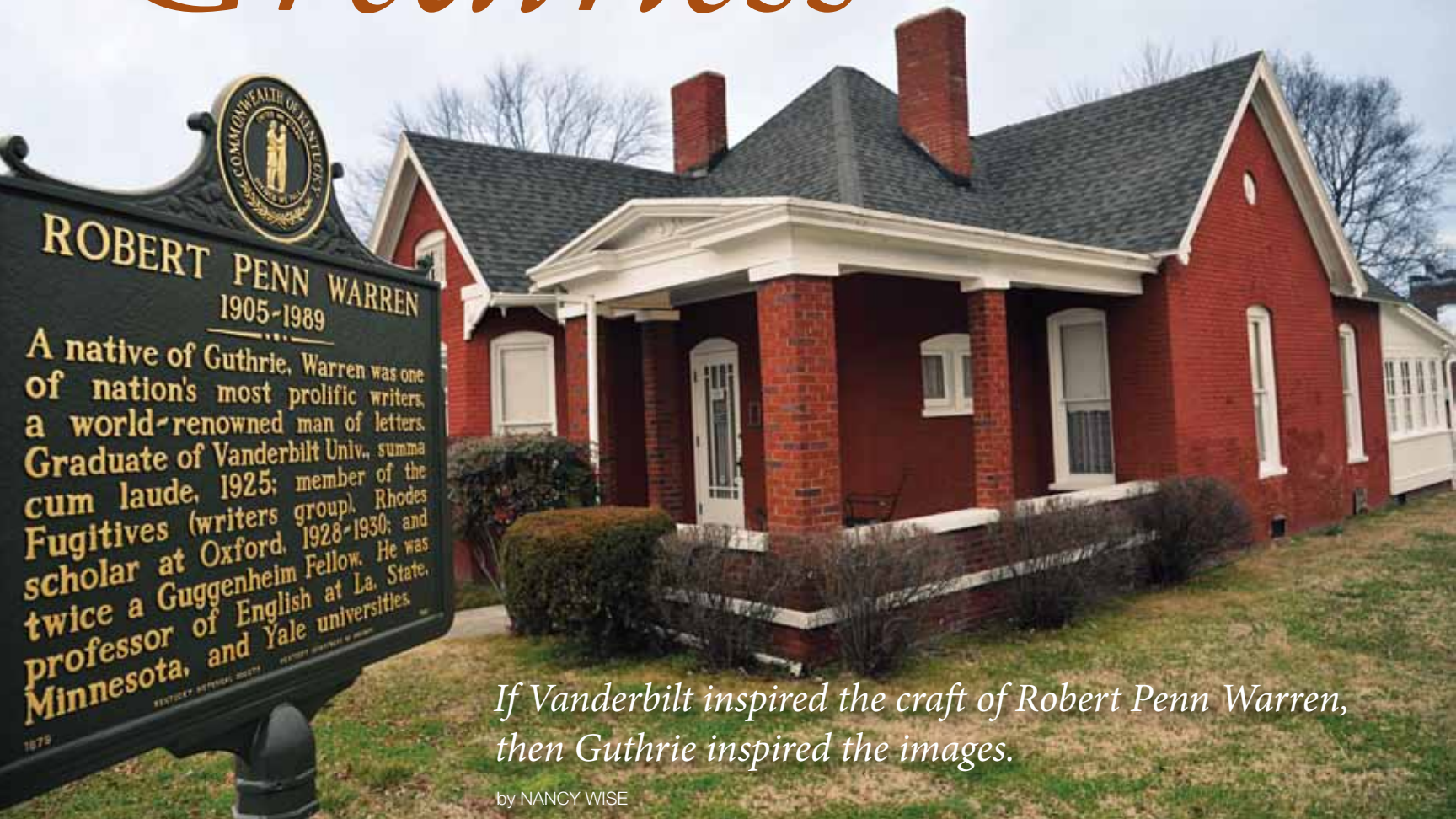
Yearlong green lunches cosponsored with the university’s Sustainability and Environmental Management Office addressed practical topics ranging from cooking with local foods to composting and alternative transportation. One symposium explored sustainability in connection with legal issues and another with creative writing. The Film Studies program and campus film series sponsored films that involved sustainability issues.

Awareness and action galvanized students who participated, including some who began studying the topic even before the project was officially launched. Jill Vaum, BA’11, took a course on water in American studies last year. She says the topic opened her eyes to numerous ideas that previously had not been on her radar, including the environmental impact of fracking—a controversial method for retrieving oil—to water rights and their intersection with religious beliefs.

Vaum says she’s become her family’s moral environmental compass, advocating against beverages in disposable plastic bottles and for using recyclable shopping bags. “Now, when I hear stories on the environment, I’m interested and I’m taking small steps in my own life to lessen my environmental impact,” Vaum says. “Change is fundamentally about one person making a different decision.”

*Above, left: Creativity and new ideas emerged from faculty brainstorming sessions during the spring 2011 Cumberland Project Workshop. Above, middle: Students on an environmental justice tour discovered the issues facing some Nashville neighborhoods. Above, right: McKibben and students discussing how to change things globally by acting locally.*

# BIRTHPLACE OF *Greatness*



*If Vanderbilt inspired the craft of Robert Penn Warren, then Guthrie inspired the images.*

by NANCY WISE

Two places shaped Robert Penn Warren, the man who became a Rhodes Scholar, the first poet laureate of the United States and three-time Pulitzer Prize winner: Vanderbilt University and Guthrie, Ky.

Vanderbilt honors him with its Robert Penn Warren Center for the Humanities and Fugitive and Agrarian Collection; Guthrie has the Robert Penn Warren Birthplace House...although it nearly lost that.

In spring 1986, Guthrie resident Jeane Moore read a newspaper article reporting that Western Kentucky University wanted to buy the small home where Warren had been born in 1905 and move it to the university's campus.

Moore immediately called the person quoted in the article. "We had quite a conversation," Moore recalls. "I'll never forget her last

words...she said to me, 'Well, you know, Mrs. Moore, that Guthrie isn't a proper place to have the Robert Penn Warren house.' I said, 'Well, it was good enough for him to be born here,' and I hung up the phone."

The fight was on.

Moore, Guthrie native Melba Smith and a handful of other residents set out to prevent the relocation of the brick bungalow on Third Street.

"Our mayor said, 'Well, now, you know we can put up a little monument there on the site,' and I said, 'No, Mr. Mayor. We're not going to be putting up any monument.' I was ready to lie down out there in the street," Smith says. "It was like, if you're going to come and take this house away, you're going to have to do it over my dead body."

Moore says her opposition was based on historic legacy. “He was one of the most famous writers in the world, and I just didn’t want them to take the house. You can’t change history,” she says. “The man was born here; you can’t move it somewhere else and have it have meaning.”

That Guthrie had meaning for Warren is unmistakable. Although he left in his teens for Vanderbilt and came back only for visits, the people, places, experiences and memories of Guthrie remained with him.

“But as far as writing is concerned, the basic images that every man has, I suppose, go back to those of his childhood. He has to live on that capital all his life,” Warren told an editor of *Studies in the Novel* at Yale University in 1969.

The acclaimed poet and novelist returned to that theme often in his writing. He wrote the poem “True Love” when he was 83 about a beautiful girl he saw when he was a boy in Guthrie.

“It seems to me that all your vital images are ones you get before you’re seven, eight, nine years old,” Warren told *The New England Review* in 1978. “That’s true for my life anyway.”

### The Battle Won—Now What?

With so much of Guthrie having shaped Warren, it was important for the Kentucky town of approximately 1,500 to keep ties to its most famous citizen. By the mid-1980s, the community was changed from the one Warren knew. His parents, siblings and many friends were gone. The railroad presence was a shadow of what it had been. Places he recalled and the houses his family lived in were in private hands. The town didn’t have anything to honor its native son.

“First we got the townspeople and the county people all riled up,” Smith recalls. Then the small group called politicians. They wrote Warren scholars. They alerted the media. The media turned the tide, the women say. “*The Atlanta Constitution* came up and did a two-page story on us,” Smith says. Then newspapers all over the country took up the story.

In a few weeks, the battle was over. The sale to the university didn’t go through and the 17 members of the Committee for the Preservation of the Robert Penn Warren Birthplace found themselves called upon to sign a legal agreement making them personally responsible for the house’s mortgage.

“That was one of the things that hit us,” Moore recalls. “We’ve made all this fuss—now it was ours. We’ve got it and we’ve got to do something with it, or we’d have egg all over our faces. So we had to go on. We couldn’t stop.”

The house had had several owners since the Warrens moved to another Guthrie house during Warren’s boyhood. Most recently, it had been rental property owned by two Air Force colonels at nearby Fort Campbell. It would require renovation, collections and period-appropriate furnishings to make it a proper museum. And funds.

### Grassroots and Gumption

The committee registered as a 501(c)(3) nonprofit and raised the money needed to purchase, repair and run the house. “We actually paid for the house with grassroots fundraising, mostly luncheons that we catered in the house,” Moore says of the group that



Left page: The home where Robert Penn Warren was born in 1905 is now a museum in Guthrie, Ky. This page, from top: Robert Penn Warren’s Vanderbilt yearbook picture; the museum has Warren’s keys to his Vanderbilt room on display; Vanderbilt’s Wesley Hall, one of the places Warren lived.

JOHN RUSSELL

Top: Jeane Smith and Melba Moore are two of the local volunteers who saved and renovated the house. Below, left and right: The museum includes items related to Warren and his family and friends.



PHOTOS BY JOHN RUSSELL



“But as far as writing is concerned, the basic images that every man has, I suppose, go back to those of his childhood. He has to live on that capital all his life.”

—Robert Penn Warren

continues to oversee the birthplace. “That was over a long period of time. We had yard sales, we had auctions, we had walks, everything we could think of.

“At the same time we were doing that, we were making people aware of Warren, going to schools, giving programs, having schoolchildren here—once the house was to a point that we could have people inside,” she says. “We wanted the schoolchildren to know that this man had made it to the top of his profession and he was from Guthrie, Ky.—so they could do it, too.”

Today, the meticulously restored house is furnished with antiques and Warren materials. Visitors can stand in the room where Warren was born and view memorabilia, books and photos, including a portrait created for *Life* magazine and donated by Annie Leibovitz. They can learn how Guthrie shaped him and his work.

Moore, Smith and others on the committee tell personal stories, tales handed down from people who knew the Warren family. They

share wonderful anecdotes, ranging from how childhood bullies tried to hang Warren in a nearby barn to the opinion most locals had of the family (“Everybody in town knew that Thomas was the successful Warren boy. The other one had gone off and he was making a job out of going to school. He was continually going to school,” Moore relates dryly.)

It was that going to school that brought him to Vanderbilt, where Warren found where his true interests lay: in poetry, writing, literature and teaching.

The women say that when they read Warren’s work, they find Guthrie. “Warren drew on everything around us,” Smith says. “The woods, the railroad, the bullbats and the cinders. The people, the characters...Unless you’re from here, and knew of some of those people, you don’t even realize he’s writing about Guthrie. I think his whole life here spoke to him and he just valued it so much. It’s just amazing.”



**Larry Bartels**, May Werthan Shayne Professor of Public Policy and Social Science, and **Randolph Blake**, Centennial Professor of Psychology, were elected to the National Academy of Science. Election is considered one of the highest honors accorded U.S. scientists.



*Blackett*

**Richard Blackett**, Andrew Jackson Professor of American History, has been named the Harold Vyvyan Harmsworth Visiting Professor of American History at Oxford University for 2013-14.

**Colin Dayan**, Robert Penn Warren Professor in the Humanities, has been elected to membership in the American Academy of Arts and Sciences.

**Vivien Green Fryd**, professor of history of art, has been awarded the visiting professorship at the John F. Kennedy Institute at the Freie Universität Berlin for fall 2012.



*Fryd*

The Smithsonian has appointed **Gary Gerstle**, James Stahlman Professor of History, as Goldman Sachs Visiting Scholar for 2012. He will work with curators to develop a permanent exhibit on immigration for the National Museum of American History.

**Joseph H. Hamilton**, Landon C. Garland Distinguished Professor of Physics, has been elected a member of the Academia Europaea, a nongovernmental association of independent scientists and scholars in arts and sciences.



*Hamilton*

**Julian F. Hillyer**, assistant professor of biological sciences, is the 2012 recipient of the Recognition Award in Insect Physiology, Biochemistry and Toxicology from the Southeastern branch of the Entomological Society of America. The award recognizes and encourages innovation in insect research.



*Hillyer*

Associate Professor of Political Science **Cindy Kam** received the Emerging Scholar Award from the Elections, Voting Behavior and Public Opinion section of the American Political Science Association and the Erik H. Erikson Early Career Award from the International Society of Political Psychology.

**Jonathan Lamb**, Andrew W. Mellon Professor of the Humanities, and **William Luis**, Gertrude Conaway Vanderbilt Professor of Spanish, received 2012 Guggenheim Fellowship Awards. The two are among only 181 scholars, artists and scientists chosen from nearly 3,000 applicants.

**Sokrates T. Pantelides**, University Distinguished Professor of Physics and Engineering, was honored for career achievement at the 27th Panhellenic Conference on Solid State Physics and Materials Science, held at his birthplace, Limassol, Cyprus.

**M. L. Sandoz**, senior lecturer in communication studies, was named 2011 SEC Debate Director of the Year.

**Mitchell Seligson**, Centennial Professor of Political Science and director of the Latin American Public Opinion Project, has been confirmed to the General Assembly of the Inter-American Institute of Human Rights, the IHR's highest governing body. He is one of only four U.S. members.



*Seligson*



# Still *Transformative* After All These Years

*Vereen Bell changed the face of the English department... and continues to change lives.*

by JOANNE LAMPHERE BECKHAM, BA'62

Vereen Bell, an iconic figure in the Department of English, has been making waves at Vanderbilt for 50 years. And he shows no signs of letting up.

“He’s a brilliant and caring teacher, a productive and admired scholar, a supportive if sometimes provocative and crabby colleague, and a witty, refreshingly naughty presence around the department,” says Paul Elledge, professor of English, emeritus.

Mark Schoenfield, professor and chair of English, echoes that sentiment: “He’s a transformative figure in the department. I respect him enormously. He cherishes his Southern tradition but is a relentless critic of what needed and still needs to change.

“Fifty years ago our department was full of white men teaching about dead white men,” Schoenfield says. “Today it’s enormously diverse not only in terms of our faculty, but also in what we are teaching: Caribbean literature, African-American literature, film, women’s literature and gender studies. Vereen was very much a part of that change—a voice for transformation.”

Often, Bell’s was a lone voice. As a young professor during the turbulent 1960s, he was a strong advocate for civil rights and academic freedom and an opponent of the war in Vietnam.

“He marched, protested, joined the Nashville sit-ins and delivered petitions on campus,” Elledge says. “He was forcefully behind hiring African Americans, other ethnicities and women, even when it was not popular.”

## Literary Roots

The grandson of a Georgia Supreme Court justice, Bell was born in Cairo, Ga. His father, novelist Vereen McNeill Bell, was killed in action during World War II when the younger Bell was barely 10 years old.

“He was a wonderful father,” Bell remembers. “We’d go fishing and hunting together with his friends, and then he’d take some pictures and write an article about it for *Sports Afield* or *Field and Stream*. It gave me a warped idea of what real life was going to be like.

“My stepfather was a very literate person himself, a small town, Faulknerian lawyer who had me reading Hardy and Hemingway and Dostoyevsky before I was out of high school,” Bell says. “I guess all of this steered me to study English literature.”

Bell came to the College of Arts and Science in 1961, after earning degrees from Davidson College and Duke University. Today the professor of English has received just about every teaching honor Vanderbilt offers, including the Madison Sarratt Prize for Excellence in Undergraduate Teaching, the Outstanding Graduate Teaching Award, and the Chancellor’s Cup for contributions to student-faculty relations beyond the classroom. He also received a university award for contributions to diversity and equity.

Bell is a favorite of both students and alumni, Schoenfield says, and his classes are always full.

“He is the best example of ‘Gladly would he learn and gladly teach’ that I ever came across. And he can fish good.”

—Humorist Roy Blount Jr., BA'63

Former student Nancy Page Lowenfield, BA'10, says, “Professor Bell taught me to think critically and act thoughtfully in a way that no other professor or class has.” First-year Vanderbilt law student Andrew Preston, BA'09, remembers Bell’s lectures as “funny, engaging and incisive.”

“Professor Bell brings a wealth of experience to his lectures,” Preston continues. “Once, upon returning from a summer abroad, I told him that I had gone running with the bulls in Pamplona. Professor Bell responded with a story about how he had met Hemingway during his own trip to Pamplona some 50 years earlier. I didn’t think that anyone would be able to make my running of the bulls experience



DANIEL DUBOIS

seem boring by comparison, but, sure enough, he did. And, honestly, I should have seen it coming. Professor Bell is just that legendary.”

Being a legend has hardly slowed him down. He teaches both undergraduate and graduate students and serves as associate chair of the department. His scholarship includes the modern British and American novel, modern British poetry, W.B. Yeats and Irish history, film studies and literary theory.

In addition to books on Robert Lowell, Cormac McCarthy and Yeats, Bell has written about Charles Dickens, Robert Frost, T.S. Eliot and Virginia Woolf. “I’m interested in a lot of different things that don’t connect with each other,” he says wryly.

He is currently working on a book about British and Irish writers in the 1920s and early ’30s. “I’m looking at the nature of their interest in Italian fascism, what it seemed like from that end of history as opposed to our end.”

### Lasting Relationships

Bell and his wife, Jane, have five children and more than half a dozen grandchildren. He nurtures old friendships, annually traveling to Florida for saltwater fishing with humorist Roy Blount Jr., BA’63, and four other friends—a ritual that has lasted for 33 years—and to Montana for fly fishing with two other Vanderbilt alumni, Will Johnston, BA’66, JD’69, and his brother Duck Johnston, BA’71. The families of all these friends get together every fall for a long weekend in the Smokies.

“Vereen came to Vanderbilt as a young professor during my junior year, and we have been friends ever since,” Blount says. “He is the best example of ‘Gladly would he learn and gladly teach’ that I ever came across. And he can fish good.”

A baseball fan, Bell has visited the Yankees spring training camp in Tampa several times with friends Roy Gottfried, professor of English, and August Johnson, a 60-year Vanderbilt employee and former Negro League baseball player.

“We met in the 1970s and from then on our relationship began to grow,” Johnson told the *Vanderbilt Register* in 2001. “We were all interested in baseball, but mostly we shared some of the same ideas. Over the years, we became close.”

During his half-century in the College of Arts and Science, Bell has witnessed academic, racial and cultural changes on campus. “Vanderbilt has changed over the years just like the rest of the world,” he says, “but usually about five years later than everyone else.”

Called a “catalyst for change” by many, Bell pauses when asked what, if anything, needs to change at Vanderbilt today. “Vanderbilt is racially diverse, but I would like to see it also become more socio-economically diverse,” he finally says, noting that rising tuition seems to make the university less accessible to students of modest means. “The administration seems to be moving us in the right direction on this score,” he says, referencing Vanderbilt’s national leadership in eliminating need-based loans and meeting fully demonstrated financial needs for all undergraduates.

“Most of the good things in my life right now are associated with having been at Vanderbilt—my wife, my children, my friends and students, my colleagues, my intellectual life. It’s an amazing thing to be able to work in a place where everyone working around you is way smarter than you are. I couldn’t be happier doing what I’m doing,” he says. “What other job could someone like me have where every day you get to be around such attractive, articulate and intelligent young people? Going to work every morning is like going to the show.”

## wood

its hard to write  
at times,  
but not impossible  
to cut.  
this is not diamond,  
not a precious piece  
of eternity.

this poem is wooden.

a carpenter does not  
wake up, brush the sleep  
and sawdust from his eyes  
and proclaim himself uninspired  
to make chairs  
or chests.

he takes blade to oak  
every day because that  
is how he survives.

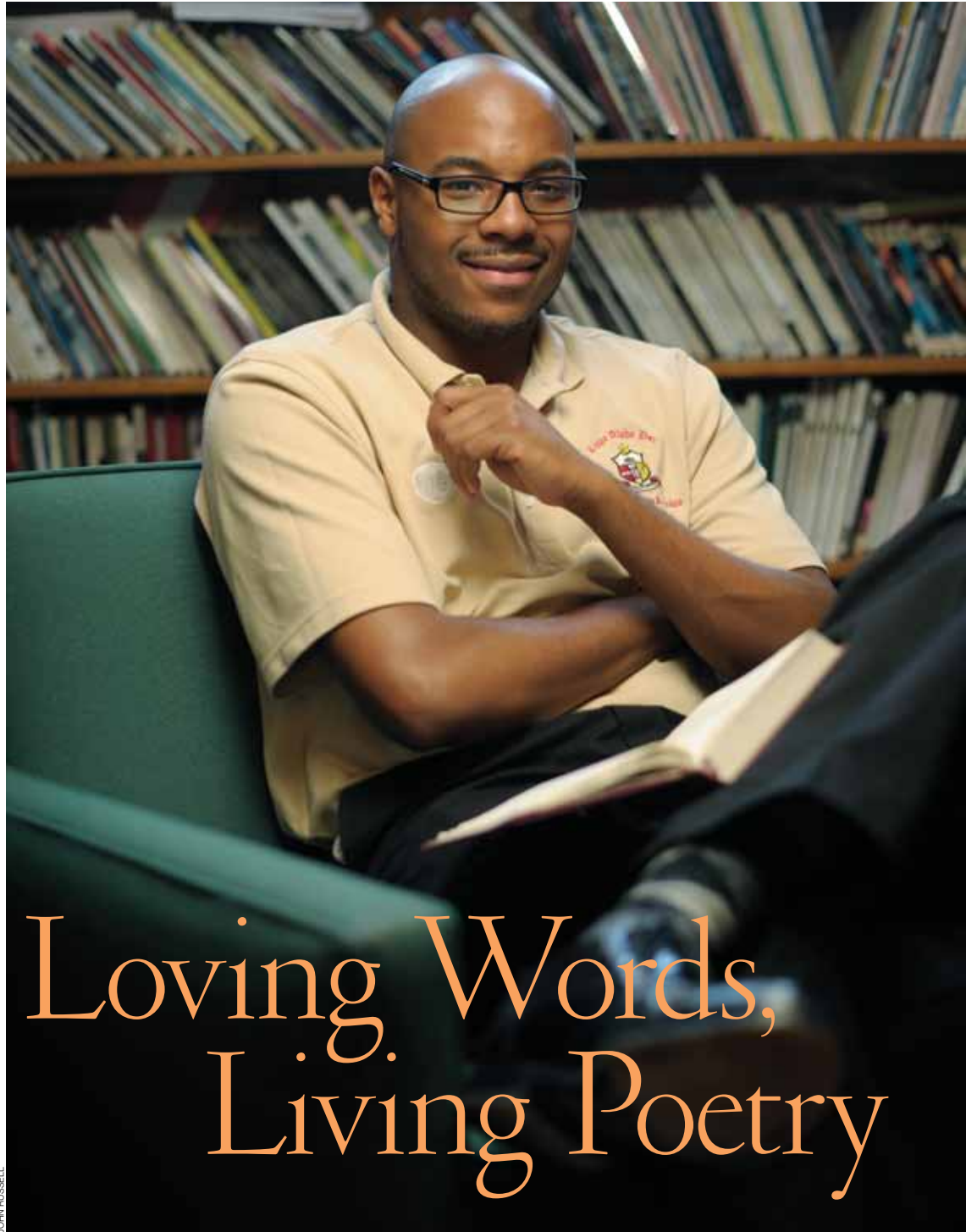
this is a craft.

build something i can sit on,  
something of some use.

build  
and rebuild.

this is a craft,

no such thing as  
carpenter's block.



JOHN RUSSELL

# Loving Words, Living Poetry

**WHEN I WAS YOUNG, I USED TO READ THE DICTIONARY.** My grandmother, who helped raise me, was a high school librarian and kept multiple dictionaries in the house at any given time. Whenever I didn't know the meaning of a word, she would send me to one of those books and eventually I began to dive into them on my own accord.

By the age of about 12, this search was one of my favorite things. That love of language blossomed into more. I was a huge fan of hip-hop music and through that art, I was introduced to poetry. I was amazed by the dexterity of the language exhibited by my favorite rappers and poets and I decided to try my hand at writing.

## Poetic Competition

At 13, I reluctantly entered my first poetry slam. The poetry slam, *Louder Than a Bomb*, is the major youth poetry festival in Chicago. The talent of the top performers astounded me and inspired me to continue writing diligently. Throughout high school, I was recognized as a finalist in that competition and then in 2008, to win it as an individual. I went on to compete at the International Youth Poetry Slam, Brave New Voices, and be a finalist there.

When it came time for me to choose a college, my writing was a major factor. I wanted a place that would challenge me academically and allow me to study and develop my creative writing skills. I wanted a place that would supplement and enhance my knowledge of literature and teach me how to appreciate classic canonical works as much as I had grown to appreciate contemporary poetry.

## The Stage to the Page

I've found that ideal environment being an English major in the College of Arts and Science at Vanderbilt. The creative writing program here has given me support and guidance in my writing and I know I'm an exponentially better writer after my Vanderbilt experience. It wasn't always easy but my professors have guided me into bringing the same sort of effort and energy to the page that I bring on the stage.

Vanderbilt is a miraculous community. I remember being skeptical when I applied. I felt like it might be too Southern or homogenous to be comfortable for a young black kid from Chicago. What I've found in Vanderbilt is a place that welcomes and engages all. Vanderbilt is a home to all who come to 21st and West End. It is a place that has challenged my perceptions about people, education, and myself, and I am a better person for those challenges.

During my sophomore year, a documentary, *Louder Than a Bomb*, premiered and began making the rounds at various film festivals. The movie followed the 2008 poetry slam competition that I was part of in high school. The film profiled me and a few other participants. Since it premiered in March 2010, the film has won 17 festival prizes, including 10 audience awards. I've had the opportunity to travel all over the U.S. and Canada promoting the documentary and working with kids. I'm looking forward to traveling internationally, as the film has been shown across Europe and Africa. This has added another layer to the whirlwind of going away for school and has been an amazing experience in itself.

I'm a senior now. I'll be attending the University of Michigan for graduate school in creative writing next year. In the long run I hope to be a professor and also work with youth and creative arts to afford young people the same sort of outlets that were so vital to my education.



"Marshall displays prodigious talent, whipping out wordplay the way other kids punch out cell-phone texts, and doing it with a keen sense of wit."

—Robert Koehler, *Variety* review  
of *Louder Than a Bomb*

# VIRTUAL science

*Arts and Science physicists conduct experiments from 4,600 miles away.*

by SANDY SMITH

To the casual observer glancing through the glass windows, the room in Stevenson Center could be just about any on campus. Flat-panel displays hang in an organized cluster, covering most of three walls, emitting a gleam of red or green, depending on the day.

But the room is much more than a quiet computer lab. Instead, it is a window to the very forefront of modern physics, allowing Vanderbilt University researchers to transport half a world away to the border of Switzerland and France, where collisions of protons and heavy ions occur at nearly the speed of light.

The Stevenson facility is one of eight virtual control rooms in the United States that collect data from experiments at the Large Hadron Collider (LHC) outside Geneva, Switzerland. For most of the year, physicists study the results of collisions of protons that occur in the vacuum-sealed chambers 50-175 meters underground. One month each year, the focus is on heavy ions.

Each collision generates mountains of data and, as a Tier 1 computing center for the project, Vanderbilt plays a key role in collecting and storing the data and disseminating it to thousands of other researchers around the world. Vanderbilt also took a lead role in creating the Compact Muon Solenoid (CMS) experiment, one of two main particle detectors in the LHC.

“People will say, ‘You’ve got 2,000 people on this experiment; what can one group [Vanderbilt] matter?’” says Victoria Greene, professor of physics and senior associate dean of graduate education, College of Arts and Science. “You’re developing a reputation with these 2,000 people. There are entire research areas where the annual conference is less than half that. This is significant.”

## Astonishing Results, Astonishingly Fast

Since the collider beam was first turned on in March 2010, it’s already yielded significant results. None has gained more attention than results indicating that scientists are getting closer to discovery

of the Higgs boson, which could help explain why particles have mass. The CMS team and another team, Atlas, completed “astonishingly fast analysis of this data,” Greene says. “Neither result is big enough to reach the level needed for a discovery and it seems clear that we will need at least another year’s worth of data.”

While finding the elusive Higgs boson—sometimes called the “God particle”—may be one of the major goals of the LHC, it is far from the only research that’s being conducted. Greene, Professor of Physics Charles Maguire and Professor of Physics Julia Velkovska received one of Vanderbilt’s own IDEAS grants to study jet shapes in heavy ion collisions. Associate Professor of Physics Will Johns performs research that makes him the “go-to person for the pixel tracking detectors, the fine tracking detectors at the heart of CMS,” Greene says.

Vanderbilt plays a key role in collecting and storing the data and disseminating it to thousands of other researchers around the world.

“All top physics departments have a presence in fundamental physics like this,” Greene says. “Ultimately, you need to be able to understand matter in its essence. It’s also attractive to students. As soon as LHC turned on, we had more students than we knew what to do with. Students want to work at the energy frontier and that’s something we can provide.”

## Middle-of-the-Night Meetings

To be sure, there are modern-day challenges, such as the weekly meetings that alternate between convenient times for those in Europe and for researchers in the States. That may mean that a Vanderbilt postdoctoral researcher like Monika Sharma makes a

“As soon as LHC turned on, we had more students than we knew what to do with. Students want to work at the energy frontier and that’s something we can provide.”

—Victoria Greene

presentation at 2 a.m.—ensuring that her web camera is turned off so no one can see that she’s ready for bed. It also requires physics graduate student Eric Appelt to be available any time the green on the screen turns red, indicating that there’s an issue with the quality of the data that’s being sent. He has five minutes to respond to avert a flurry of panicked calls from researchers from around the world, concerned about data being lost.

“We actually rotate being on call,” Appelt says. “There is actually a human being looking at these all the time. If one of these turns red, there’s someone somewhere in the world with a beeper.”

While the LHC is itself a marvel, the sheer volume of data that it creates brings both challenges and potential. In December 2010, the heavy ion collisions generated 30 million separate events, all of which had to be analyzed. In all, the LHC provides enough data to fill 1.7 million dual-sided DVDs each year; Vanderbilt has devoted more than 1,000 computer cores to store the information.

“It’s a different scale and a different amount of data that is being collected,” Sharma says. “There’s definitely more pressure with it as we’re managing the needs of the Tier 2 centers and doing the physics analysis ourselves. It’s really keeping your feet on two different poles and trying to manage.”

But as the research continues to yield impressive discoveries, the juggling has proven productive.

“In this field it is especially important to choose your experiments wisely, because the experiments take such a long time to plan, build and conduct that you can’t work on very many in your career,” Greene says. “Tantalizing results like these underscore that fact that we physicists chose well when we joined CMS, and Vanderbilt chose well in supporting our efforts.”



PHOTOS BY JOHN RUSSELL

Top: Data from Large Hadron Collider experiments are monitored 24/7 in Stevenson’s virtual control center. Middle: Victoria Greene. Bottom: Vanderbilt physicists communicate with researchers around the world.



**K**eivan Stassun sat down with fellow astronomers at Queen's University Belfast a few years back with no preset notions about how the two research teams might partner. What developed is a collaboration that is, well, out of this world.

The newly introduced researchers, normally separated by an ocean, didn't begin by asking what they were doing already that could be enhanced by sharing. Instead, they immediately began to talk about projects they couldn't have envisioned on their own, remembers Stassun, director of the Vanderbilt Initiative in Data-Intensive Astrophysics and professor of physics and astronomy.

Stassun and his colleagues at Queen's were both "dealing with sort of an embarrassment of riches." Between the two universities, they had access to reams of data from observatories around the world. What they needed were intelligent computer tools to sift and winnow data in an automated way, alerting scientists to critical findings. So the teams developed them together.

# Opening 'Dores





*Irish Arch and Old Physics Tower,  
Queen's University Belfast*

# Internationally

*Global connections are on the increase and more important than ever.*

by JENNIFER JOHNSTON



STEVE GREEN



Far left: Keivan Stassun; left: Tim McNamara; below: A post-grad at work at Queen's University Belfast.



COURTESY OF QUEEN'S UNIVERSITY BELFAST

"It turns out that Vanderbilt and Queen's both, for very different reasons, are at this very interesting point in history."

—Keivan Stassun, professor of physics and astronomy

College of Arts and Science and Queen's scholars work together on two different research thrusts: to locate and better understand exoplanets, which exist outside our solar system, and to detect and study supernova explosions. These efforts involve a host of graduate students, postdoctoral researchers and faculty members.

That collaboration is one part of several strong and emerging core partnerships between Vanderbilt and universities overseas, partnerships that are essential to the vitality of the college and to research institutions today.

"Looking forward, universities are going to have to create these kinds of global networks to compete effectively for students, faculty and resources. It's really turning into a global marketplace," says Tim McNamara, vice provost for faculty and international affairs.

### Building a Pyramid

McNamara likens the school's international efforts to a pyramid. Institutional agreements with core partners, like the one with Queen's, form the top of the pyramid. Other core partnerships—a recent but very well-developed association with the University of Melbourne, a longstanding one with the University of São Paulo in Brazil, and the rapidly expanding relationship with Queen's in Belfast, Nashville's sister city—have blossomed lately. Other core partners include China's Fudan University, Chile's Pontificia Universidad Católica de Chile and South Africa's University of Cape Town.

Faculty collaborations and graduate student exchange, such as bringing Queen's students to the Robert Penn Warren Center for the Humanities as they complete their doctoral dissertations, comprise the pyramid's next tier.

And the all-important base of the pyramid will always be study abroad and student exchange, McNamara says.

The College of Arts and Science's global connections and international scholarship are natural extensions of a vibrant, meaningful liberal arts education, Dean Carolyn Dever says. "It's part of the college's mission to expand students' interest in other cultures and provide diverse experiences," she says. "Our increasingly global society makes it both possible and vital for students and faculty to be citizens of the world."

### Strengthened by Institutional Support

Institutional collaborations with core partners require a great deal of commitment from both participants, McNamara notes. Recently, Vanderbilt and Melbourne jointly provided \$344,000 to support partnership grants for faculty.

One of those projects has Terry Lybrand, professor of chemistry, joining forces with colleagues at the University of Melbourne to analyze data from studies of small peptides and proteins that produce anti-microbial effects. Lybrand provides the in-depth computational work to analyze the

data. His Melbourne counterparts will provide something Vanderbilt doesn't have—solid-state NMR spectroscopy.

Lybrand says the association is enhanced by the many common aspirations and features between the two universities and the fact that there is no language barrier. Well, almost no language barrier. Lybrand says Aussie slang takes a little getting used to.

These types of associations build slowly but yield surprising benefits. Melbourne has poured money into a gorgeous new eye institute, says Associate Professor of Chemistry Eva Harth. The Arts and Science professor develops targeted drug delivery for cancer treatment and researches nanoparticles to treat glaucoma. Melbourne's eye institute is eager to work with world experts to enhance their productivity and global standing. Already Harth was part of a plenary lecture in nanomedicine at Melbourne and is considering more possible collaborations.

The improved access to talent, resources and funding benefits both institutions, Harth says, adding, "You can accelerate only so much without good collaborators."



Above: Eva Harth; left: University of Melbourne's gothic Old Quadrangle.



COURTESY OF MARCUS SANTOS/USP IMAGES

“Our increasingly global society makes it both possible and vital for students and faculty to be citizens of the world.”

—Dean Carolyn Dever

### Synergies

The third blossoming core partnership actually began many years ago with Chancellor Harvie Branscomb, who traveled to Brazil’s University of São Paulo following World War II. He wanted Vanderbilt to be more than a Southern university and began by recruiting renowned scholars—Brazilianists—who formed the core of what is now the Center for Latin American Studies.

Nashville has “a natural synergy with Brazil,” explains Jane Landers, Gertrude Conaway Vanderbilt Professor of History and CLAS interim director.

Landers, whose research focuses on Brazilian slavery and related issues, says the Southern United States and Brazil have a common history that included eradicating the indigenous population, seizing their land and bringing African slaves to work on plantations.

A great deal of research and collaboration has come out of this shared history, Landers notes. Brazil is working to elevate the lives of its poor black citizens and is intensely interested in the experiences of the American South, she says.

The South’s difficult history with fair treatment and equal opportunities for minorities is also something that unites Nashville and Queen’s University Belfast. Stassun says Queen’s and Vanderbilt each have an institutional commitment to boosting educational and professional prospects for populations that have been underrepresented or faced prejudice.

Stassun co-directs the Fisk–Vanderbilt Masters-to-Ph.D. Bridge program, the university’s alliance with the historically black university. “It turns out that Vanderbilt and Queen’s both, for very different reasons, are at this very interesting point in history. Vanderbilt, through our partnership with Fisk, is attempting in an aggressive and progressive way to respond to the need for increased diversity in the sciences and to train diverse future leaders for the scientific professions,” Stassun says.

“Northern Ireland is emerging from an era of great challenge and unrest. They are now addressing the challenges of successfully integrating traditionally self-segregated religious groups for full inclusion in the scientific professions,” he says. “We’re approaching those challenges institutionally in a similarly broadminded and positive and inclusive way.”

### Bridges and Connections

Arts and Science’s international interests support individual students and scholars, too. Building international connections early in a scholarly career can be a critical early marker of success, says Mona Frederick, executive director of the Robert Penn Warren Center for the Humanities. That’s a discovery that has characterized the Warren Center’s graduate fellowship program with Queen’s, which provides a fellowship to a Queen’s graduate student to be part of the Warren Center for a year while the scholar works on his or her dissertation.

As dissertation adviser for Queen’s graduate student Clive Hunter, Queen’s University Senior Lecturer Maeve McCusker traveled to Nashville for a public lecture Hunter presented in conjunction with the program. She noted that the Warren Center’s Graduate Student Fellows program projected “the very model of what a postgraduate community should look like.”

“While students came from different disciplines and had an eclectic range of interests, I was genuinely dazzled by the connections and bridges they found between their varied fields,” McCusker says. She was further dazzled when her Irish boyfriend, a Queen’s faculty colleague who accompanied her on the trip, proposed in Tootsie’s Orchid Lounge with a ring purchased at Tiffany in Nashville. Married now, the couple has a painting of Nashville’s “honky-tonk strip” hanging in their dining room.

It’s not just faculty and students learning from each other, either. Dean Carolyn Dever and other leaders have visited Queen’s University Belfast and the University of Melbourne, and key officials from core partner institutions have visited and learned from Vanderbilt. Additionally, Queen’s

University has consulted with Vanderbilt as it builds its own humanities center in Belfast.

### The Pyramid's Foundation—Study Abroad

Each year, more than 40 percent of College of Arts and Science juniors study abroad in Vanderbilt-sponsored programs. The most popular one is Vanderbilt in France, which has been in existence for 51 years. The longstanding program has adapted over the years to accommodate changes in French culture and politics, and continues to develop new emphases. As part of the program, some students now choose to do internships with French companies or nonprofits, gaining valuable international work experience.

In addition to Vanderbilt's own programs in countries ranging from Argentina to New Zealand, the university works with other institutions to offer an even wider array of study abroad options.

For undergraduates seeking a unique abroad opportunity that combines travel and service overseas with a strong academic and research focus, there is the Vanderbilt Initiative for Scholarship and Global Engagement (VISAGE), begun in 2008.

Students first take a spring class centering on a country and topic of interest with the faculty member who will lead their four-week summer service trip. The course provides students with a foundation that equips them for more thoughtful service work and community engagement during their time abroad, explained Shelley Jewell, assistant director of the Global Education Office.

Participants typically travel to sites with a Vanderbilt presence, frequently involving Vanderbilt's core partners, making the program more sustainable.

Once the service abroad is complete, students have the option to follow up with a related, intensive research-based course. The experiences are often profound, Jewell says. "When students return to Vanderbilt, many confront their sense of privilege in relation to the communities they served," she says. "As a result, they often change the focus of their careers and want to return to those communities."

While the more traditional programs last a semester, increasing numbers of students now are taking advantage of monthlong Maymester experiences between spring semester exams and the start of summer sessions.

"For some students, a semester abroad sets them back," says Martin Rapisarda, Arts and Science associate dean. "Maymester fills a particular niche. It's time-intensive, it's thematically focused, and it's taught by Vanderbilt faculty who have special expertise on the topic and provide experiences

that you couldn't necessarily have on campus."

The experience, he says, can be unforgettable and unmatched. "If I'm an English major and I can go to England and study reformation literature with (director of undergraduate writing) Roger Moore, going to pilgrimage sites as well as reading those texts, it brings those texts alive in a way that complements and enhances the experience," Rapisarda says.

### Looking to the Future

Other relationship opportunities are emerging in other areas of the world, such as Germany and China and other parts of Asia, according to McNamara. "We try to find important areas of the world that will yield interesting and productive collaborations not necessarily looked at by others," he says.

"At a very high level our goal is to increase the impact and visibility of Vanderbilt worldwide in a very strategic, focused way."



COURTESY OF PATRICK WILLIAM SMITH

*Vanderbilt in France*

Some students now choose to do internships with French companies or nonprofits, gaining valuable international work experience.

BRIEFS



JOHN RUSSELL

### Bigger IS Better

*When it comes to researching proteins, the fundamental molecules of biology, anyway.* College of Arts and Science researchers have created the largest human-designed protein contain 242 amino acids, more than doubling the previous record. The super-sized protein, FLR, is a computer model of the protein that creates the amino acid histidine. Associate Professor of Chemistry Jens Meiler and his team used algorithms and 400 processors of the supercomputer at Vanderbilt's Advanced Computing Center for Research and Education to engineer large proteins with shapes unseen in nature. "This gives us the tools we need to create new, more effective antibodies and other beneficial proteins," Meiler says.

### The Real Big Bang Theory

*Senior Justin Menestrina had more than a grade to worry about when he submitted his senior honors project in physics—he was also submitting his research as a paper to the very prestigious journal, Physical Review D.*

*(continued opposite)*

## Dance the Plight Away

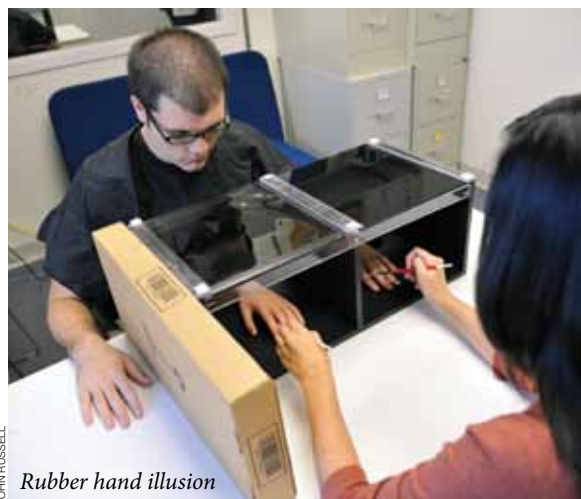
**IN THE MIDDLE AGES, PEOPLE WHO FELT DISCONNECTED FROM THEIR OWN BODIES WOULD PROBABLY HAVE BEEN SUBJECT TO EXORCISM.** Today, modern medicine prescribes pills to banish such sensations from patients' brains. Research led by Sohee Park, Gertrude Conaway Vanderbilt Professor of Psychology, sheds new light on this common symptom of schizo-phrenia and suggests that patients may benefit from an alternative type of treatment—dance.

Park, along with doctoral candidate Katharine Thakkar, MA'08, and research analysts Heathman Nichols, BA'10, and Lindsey Gilling McIntosh, BA'11, measured schizophrenics' deficient sense of body ownership by employing a procedure known as the rubber hand illusion. The researchers placed a rubber hand in front of each subject while hiding one of the subject's own hands from view. As researchers stroked each hand simultaneously, subjects were asked to estimate the position of their hidden hand using a ruler atop the device hiding it.

"After a while, patients with schizophrenia begin to 'feel' the rubber hand and disown their own hand. They also experience their real hand as closer to the rubber hand," Park explains. "Healthy people get this illusion too, but weakly. Some don't get it at all." The susceptibility of schizophrenia patients to the rubber hand illusion suggests that they have a more flexible body representation and weakened sense of self compared to healthy people.

The findings may mean that movement therapy, which trains people to be focused and centered on their own bodies via some forms of yoga and dance, might help some of the more than 2.2 million people diagnosed with the mental disorder. "Exercise is inexpensive and obviously has a broad range of beneficial effects, so if it can also reduce the severity of schizophrenia, it is all to the good," Park says.

She says that, decades ago, schizophrenics' weakened body awareness was considered "[one of] the core features of schizophrenia...but in recent years much of the emphasis has been on cognitive functions." This research, published in Public Library of *Science ONE*, brings the body back into the mind of the psychological community. It also may offer schizophrenia patients the age-old solution for mind-body disconnection put forth by Lady Gaga in 2008: "just dance."



JOHN RUSSELL

Rubber hand illusion

## Come Out Swingin'

**NOTHING STIRS THE OL' JUICES LIKE A GOOD FIGHT.** Whether it's the Thrilla in Manila, the 'Dores vs. Kentucky or a heated election, people come together over fights and contests. And that's good. According to Steven Tepper, so it is with the arts.

Tepper is an associate professor of sociology and associate director of the Curb Center for Art, Enterprise and Public Policy at Vanderbilt. In his book, *Not Here, Not Now, Not That! Protests over Art and Culture in America*, he makes the case that art is most relevant when people care enough to fight over it. Tepper did not come by his conclusion idly. He examined more than 800 conflicts across 71 U.S. cities, studying fights over visual art, film, music, theater, history exhibits and books.

In an interview on *PBS NewsHour's* "Art Beat," he noted a correlation between social change and protest. "The argument in the book is that when people feel unsettled by the rate of social change, when the things around them are changing fast—economics, demographics, technology—art becomes something that they fight over as a way to reassert their values, reassert a sense of who their community is and where they fit into their community," he said. "Art becomes this amazing arena in which people



Tepper

negotiate their differences of opinions around the contours of their expressive lives together."

A good scrap over art can be good for the community. "I think in the future, going forward, as our cultural world gets noisier, as there are more things to offend more people, that there will be more opportunities for people to work together to figure out which

forms of expressions are good representations of our community and which ones we don't feel we're ready for or represent us well," Tepper told PBS.

Touch gloves and come out of your corners fighting.

## BRIEFS (cont.)

"It is virtually unheard of for an undergraduate to be a co-author, let alone the lead author of a paper that will appear in *Physical Review D*," says David Weintraub, professor of astronomy. Yet Menestrina's *Dark Radiation from Particle Decays during Big Bang Nucleosynthesis*, co-authored by Professor of Physics Robert Scherrer, was published by the journal recently.

Menestrina studied the effect of particles decaying in the early universe on the production of elements during the first few minutes of the Big Bang. The physics major says that the ability of new technologies to make precise measurements of the radiation left over from the Big Bang has allowed established ideas about the universe to be experimentally tested. His paper attempted to reconcile some surprising discrepancies between what has long been believed about the universe and what the experiments have actually found.

### Vanderbilt for *life*

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Alumni Association

## A PLACE TO LEARN, A PLACE TO GRIEVE... *a place to thrive*



Jim Gray, BA'75, history  
Mayor, Lexington-Fayette Urban  
County Government

PLACE OF RESIDENCE  
Lexington, Ky.

FAVORITE PLACE TO VISIT  
Maine

FAVORITE BOOK  
*John Adams* by David McCullough

FAVORITE MOVIE  
*It's a Wonderful Life*

As mayor, I can see clearly why the humanities and the sciences are fired together in a liberal arts college, how creativity influences technology and art influences engineering.

WHENEVER I THINK ABOUT MY YEARS AT VANDERBILT, I STILL SHAKE MY HEAD WITH A TAD OF DISBELIEF and think, "How did circumstances even allow me to apply to Vanderbilt?"

It was 1972. I had completed my freshman year at Emory in Atlanta. My father had passed away that September and I'd transferred to Western Kentucky University in Bowling Green to help with our family construction business, James N. Gray Co.

In October, I applied to Vanderbilt. I offer everlasting thanks to my mother for insisting I fill out that application in the fall of '72. After being accepted to the College of Arts and Science, I transferred to Nashville and began to spend a lot of time on the road back and forth to my hometown of Glasgow, Ky., which lies just across the Kentucky line from Tennessee.

As a transfer student, it was hard. It was hard to make friends, hard to focus on classes, and hard because I was trying to adjust to life without my father and to help with the business as well.

But Vanderbilt provided a sanctuary and taught me a lot about discipline, persistence and determination.

I got some extraordinary instruction too ... especially in an English composition course, where a full grade point was the penalty for any one (yes, just one!) grammatical error. That's when I learned to write ... and the difference between a colon and a semicolon, and how to identify split infinitives and dangling participles. I learned who Kate Turabian was, too, and about her legendary guidebook, *A Manual for Writers*.

The campus itself was like a private park. I discovered something remarkably inviting, uplifting and motivating about the walk leading to the library. I remember that walk down the hill, then into the building and to my favorite study hall, the Fugitive Poets room in the basement. The building itself, with its Gothic Revival architecture, represented a touchstone, an inspirational bricks-and-mortar dimension of Vanderbilt's mission and purpose.

Philosophy classes taught by John Lachs and Charles Scott aided my grieving and deepened my curiosity for studying the puzzles in





life, whether personal or business ones, or those I work on today: political and policy puzzles.

So, in shorthand, what did Vanderbilt give a kid from a small town in Kentucky?

It gave me what education at a great institution is supposed to do: the tools, discipline and fascination for lifelong learning and—I like to think—a little courage as well.

When I made other transitions later in life—through financial adversity in a family business, through coming out and into public service, first as vice mayor of the city of Lexington and later as mayor—I would often go back to papers I wrote at Vanderbilt, papers I kept in a file at my office, and just read those papers for meaning and for value and encouragement that I needed at the time.

Today, in my role as mayor, I can see clearly why the humanities and the sciences are fired together in a liberal arts college, how creativity influences technology and art influences engineering. Steve Jobs got it right when, at the end of a new product launch, he would show a slide that showed a sign at the intersection of Liberal Arts and Technology Streets. That's what Vanderbilt is all about. Creating the framework for learning and connecting the dots.

Years after I graduated, I was happy when my niece, Rebekah Hinson Gray, BA'03, chose Vanderbilt and studied art history, the same major her grandmother—my late mother, Lois Howard Gray, MA'42—studied almost 70 years ago at Peabody. That niece has joined our family business today. Rebekah got the full four years in at Vanderbilt and gained friends and relationships that will help her throughout life.

My college experience was different. But even though I didn't gain the host of lifelong friendships others may in a Vanderbilt experience, I thrived in other ways. Vanderbilt offered a cloister for reflection at a time I needed it. It helped me build strength. It helped me build the fortitude and capacity to recognize that the human spirit triumphs during times of adversity—it doesn't fail us.

That's a big lesson. And Vanderbilt helped in a big way.



*Top: Lexington skyline. Center: The ribbon cutting for a revitalized park delighted children and mayor alike. Bottom: Gray's favorite campus study spot.*



# Heart's Content

*Transition—not retirement—is ahead for cardiovascular expert and former Cornell medical school dean Antonio Gotto.*

by FIONA SOLTES

WHILE IN THE COLLEGE OF ARTS AND SCIENCE IN THE MID-1950S, YOUNG ANTONIO GOTTO JR. CAUGHT THE ATTENTION OF HIS SIGMA NU FRATERNITY BROTHERS, WHO CONSTANTLY SOUGHT OUT THE CLEVER STUDENT FOR CRASH COURSES IN THEIR OWN STUDIES.

The biochemistry major also found himself with no shortage of eager mentors (in particular Dean Madison Sarratt and Dr. F. Tremaine Billings) who encouraged him to apply for a Rhodes Scholarship, modeled discipline and diligence, and taught him how to write—elements that would enrich his career and life in unforeseen ways.

This year, Gotto (BA'57, MD'65)—now a world-renowned expert of atherosclerosis, the primary cause of cardiovascular disease—retired as Cornell University's provost for medical affairs and the Stephen and Suzanne Weiss Dean at Weill Cornell Medical College in Manhattan.

During his 15-year tenure as dean, Gotto oversaw the raising of \$2.6 billion in various campaigns. He established a school branch and biomedical research program in Qatar, joined forces with the Catholic church and Tanzanian government to start a medical school in Tanzania, and formed an affiliation with Methodist Hospital in Houston. He also quadrupled Weill Cornell's endowment and created 122 new faculty endowments during what benefactor Sanford Weill considered the school's "golden age."

Beneath the titles and accolades, those who know Tony Gotto say he is first and foremost a devoted dad, quick wit, voracious reader and the kind of man to put Weill at ease by ordering less-than-heart-healthy eggs Benedict—one of Weill's favorites—at a breakfast meeting.

## No Leisurely Retirement

"He's the most comfortable person you'll ever meet," says longtime family friend Barbara Gregg Phillips (BA'58, MA'70), who roomed with Anita, Gotto's wife of 53 years, while they were students at

Peabody College. "He always makes you feel like he's glad you're there, a Southern gentleman through and through."

But make no mistake: There's no peaceful rocking chair in this Southern gentleman's immediate future. Gotto is transitioning into a new role of co-chairing the Board of Overseers of Weill Cornell Medical College. His first year of retirement is looking less and less like a sabbatical by the hour, says Anita Safford Gotto, BS'59. Dr. Gotto won't have the day-to-day running of the medical school under his purview, but there still will be meetings and plenty of travel.

"He's planning the international section of our trips, and I'm getting together the national section," she says. "It is still to be determined just how this retirement is going to work out."

If anyone would know, it would be Anita Gotto. His partner in vocation as well as in life, she has been a constant confidante, encourager and helpmate. They each tell the story of how they met on a bus to summer camp when they were 13 and 15—but only Anita adds the fact that she spent most of her first year of high school in the girl's bathroom avoiding his pursuit. She eventually gave in when she saw how many others thought highly of him; by the time Gotto left Nashville on the Rhodes Scholarship for the University of Oxford, they were engaged.

## Researcher, Scholar, Physician and Dad

Under the leadership of Sir Hans Kornberg and Sir Hans Krebs, Gotto's time at the British university opened his eyes to the underlying pathophysiology of disease, and a focus on lipidology came next. He enjoyed a season at the National Institutes of Health, then spent 20 years chairing the Department of Internal Medicine at Baylor College of Medicine in Houston and the Methodist Hospital, all the while researching the link between cholesterol carriers (the good and bad cholesterol) and heart disease, and became a pioneer in educational efforts aimed at cardiovascular risk reduction.

He also kept a steady roster of patients, ranging from international dignitaries to everyday folks. And he became the father of three daughters—two of whom developed diabetes early on,



Above: Dr. Tony Gotto, Stephen and Suzanne Weiss Dean at Weill Cornell Medical College, speaks at commencement in Qatar in 2011. Right: Anita and Tony Gotto. This is the second time Tony Gotto was photographed in the Memorial Room in Alumni Hall. The first was in 1957 for a Vanderbilt Alumnus story about Vanderbilt's Rhodes Scholars.



JOHN RUSSELL

deepening his passion for helping those who are sick become well. One developed further complications that have disabled her; the Gottos travel to Houston to be with her every few weeks.

“It resets your priorities when one of your children has a serious, life-threatening illness,” Gotto says. “It does alter everything.”

Future days, of course, will bring more time with family, more time with friends and more time spent on the visionary, big-picture ideas that are a hallmark of Gotto’s career.

### Preparation and Hard Work

Among those visionary concepts was proving a link between cholesterol and hardening of the arteries and thus the connection between lowering cholesterol and lower incidence of heart disease. Another was the transformation of complex medical information into layman’s language in the groundbreaking books by Gotto and longtime friend, heart surgeon Dr. Michael DeBakey. Their *The Living Heart*, *The New Living Heart* and *The New Living Heart Cookbook* championed healthy, good-tasting food. A revised edition, *The Living Heart in the 21st Century*, was published in April.

Today, Gotto looks back on his time in the College of Arts and Science as a season of great preparation—and a lot of hard work.

“I had grown up knowing about Vanderbilt, and it was the only place I wanted to go,” says Gotto, named the university’s Distinguished Alumnus in 2000. “It had a reputation for having very high academic standards.” It also had a rigorous, disciplined

“To use a football metaphor, Dean Gotto is a ‘triple threat.’”

—David Skorton, President  
Cornell University

program that set good habits for the more independent, less structured format he found at Oxford.

“I worked very hard,” he says. “Particularly my first year. It got a little easier, but not much. ... I can’t say whether students then were any more or less smart. But I’m glad I don’t have to compete to get into medical school today.”

He’s also glad, he says, that his career ended up taking him to the dean’s office at Cornell, where his everyday presence will be sorely missed.

“To use a football metaphor, Dean Gotto is a ‘triple threat,’” says Cornell University President David Skorton. “If he were playing gridiron football, he would be equally adept at running, passing and kicking, and thus a very valuable player on his team—as he has been on the Cornell team for 15 years.

“He excels in teaching, research and clinical care,” Skorton says. “He combines empathy for his patients, students and colleagues with an incisive intellect and a strong commitment to engagement for using his enormous and varied skills to lift the world’s burdens.”

# TURNING PRO

*Undergraduate Scientists Have Their Game On.*

WHAT DOES IT MEAN TO BE A LIBERAL ARTS MAJOR IN THE HEART OF ONE OF THE COUNTRY'S LEADING RESEARCH UNIVERSITIES? For some undergraduates, it means getting to do cutting-edge laboratory-based research—hands-on work that can help launch careers.

Undergraduates in Vanderbilt's Systems Biology and Bioengineering Undergraduate Research Experience (SyBBURE) Searle Undergraduate Research Initiative work side-by-side with internationally recognized experts. One of only a handful of multiyear, year-round undergraduate research programs in the nation, SyBBURE Searle prepares students—primarily from the College of Arts and Science and the School of Engineering—for careers in research. SyBBURE Searle alumni can be found in labs and medical schools ranging from Stanford, Berkeley and Rice to Northwestern, MIT, the University of Washington, Cambridge and Vanderbilt.

SyBBURE Searle participants explore science at the intersection of systems biology and bioengineering. To date, about 110 undergraduates have participated in the program, which owes its existence to the financial support of D. Gideon Searle, BS'75.

In 2006, Searle committed to funding the Searle Undergraduate Research Initiative within the Vanderbilt Institute for Integrative Biosystems Research and Education. The aim of the initiative is to provide undergraduate students with mentored experiences in advanced scientific investigation with some of the university's leading faculty. Searle, who doubled majored in sociology and psychology, continues the interest in science and research that was the hallmark of his great-great-grandfather, G.D. Searle, founder of the pharmaceutical giant that bore his name (the company is now part of Pfizer Inc.). Gideon Paul (G.P.) Searle, BA'07, D. Gideon Searle's son, also graduated from the College of Arts and Science.

While SyBBURE Searle is open to any Vanderbilt undergraduate, most participants are nascent scientists and researchers who crave more focused educational experience. The majority are selected by Kevin Seale, MS'97, PhD'00, SyBBURE Searle's director, and John Wiksw, who directs VIIBRE.

## Puzzles and Answers

Wiksw says that SyBBURE Searle's success stems from its selection of students who have a passion for scientific inquiry, and who persevere in viewing failure as just another step in the process and integral to advancing knowledge.

"In class, students know the professor knows the answers to the questions. Here we're asking questions to which no one knows the answers. How do you measure this? What does that mean?" says Wiksw, Gordon A. Cain University Professor, A.B. Learned Professor of Living State Physics, and professor of biomedical engineering, molecular physiology and biophysics, and physics. "SyBBURE Searle is a place where it's totally acceptable to be ignorant. There are no stupid questions."

One of only a handful of multiyear, year-round undergraduate research programs in the nation, SyBBURE Searle prepares students for careers in research.

Although most SyBBURE Searle participants are high achievers, selection for the experience isn't based on GPA or transcripts alone, explains Seale, assistant professor of the practice of biomedical engineering.

"We look for people who can take responsibility, who are self-starters," he says. "We try to involve students as freshmen so we can have them as long as possible. That's different than in most labs, where the belief is that younger students don't know enough to be helpful."

Katherine Roth, a rising senior majoring in molecular and cellular biology, is passionate about questions and challenges. A



*Left: SyBBURE Searle Director Kevin Seale, left, and rising senior Jake Brady study leukocytes from trauma patients using a computer-controlled and automated Nikon microscope funded by D. Gideon Searle last year; below: Katherine Roth with Professor John Wikswo. The rising senior plans a career in immunology.*

SyBBURE Searle student since her sophomore year, Roth says, “I like the puzzle research presents. It’s like following a chain of questions and answers. The answers just bring up more questions.”

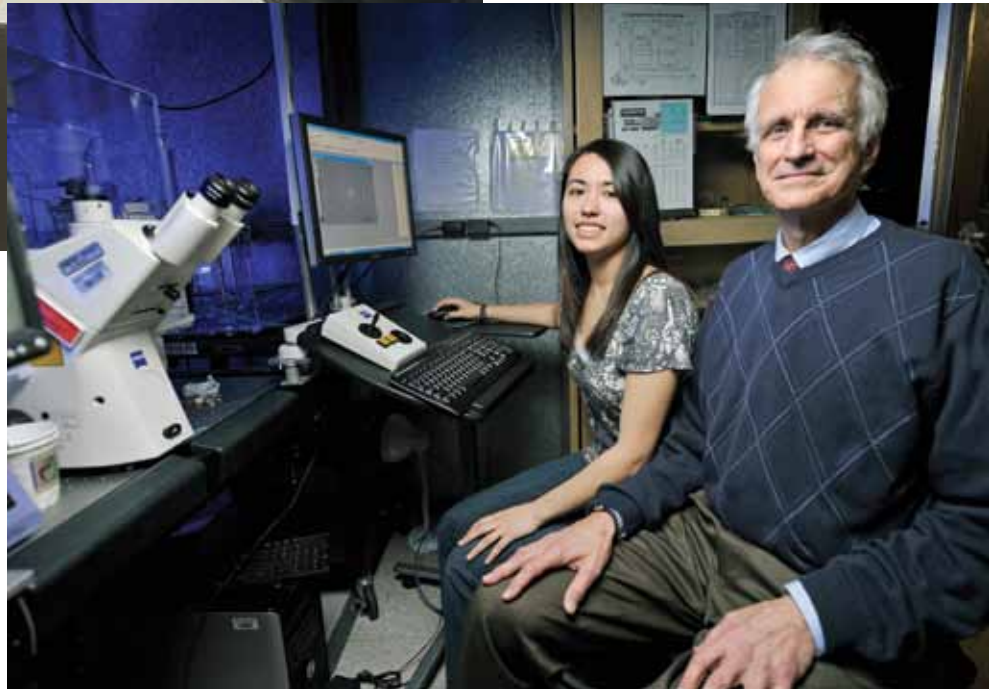
Roth was drawn to SyBBURE Searle by its balance of independent work and access to mentors and research-motivated graduate students and undergraduates. She comes by her curiosity naturally: Her father, Brad J. Roth, MS’85, PhD’87, is a professor of physics at Oakland University. Wikswo was his dissertation adviser here, and Katherine’s mother, Shirley Oyog Roth, MS’86, also earned her degree in physics at Vanderbilt.

Katherine Roth has her sights set on obtaining a doctorate in immunology. Her research, which involves manipulating yeast cells so they produce specific proteins, has the potential to help explain cell activity.

“We don’t understand how many biological and disease systems work,” she says. “If we have a better understanding, we have a better chance of changing that behavior.”

### Opportunities to Thrive

In addition to receiving stipends, SyBBURE Searle participants benefit from the kind of support and exposure some institutions reserve for graduate or doctoral students. Wikswo notes that the initiative awards prizes for the best research paper and provides funds for undergraduates to attend major conferences. “We have a dozen peer-reviewed publications with SyBBURE Searle students as authors and are filing patents with students as inventors,” he says.



Those experiences have a profound impact. “They become credible instantly,” Seale says. “They find that they have a voice and they have value. It raises their confidence to learn that while they may not necessarily be the best performers in the classroom, they are good at research and innovation.”

For Seale, the program is valuable not only in helping young researchers thrive with basic training and experience, but also in addressing a larger problem.

“There’s a lot of talk about American students not being able to compete in math and science,” he says. “We find the greater issue is that students don’t often get the opportunities they need to grow in these areas. Through SyBBURE Searle, students have that.

“In academia there’s a tendency for there to be ‘stars,’ but in SyBBURE Searle, everyone—undergrads, faculty and graduate students—is an equal player when it comes to discussing research and doing the work.”

—A version of this article originally appeared in Vanderbilt Magazine



A GREEN WORLD PERCHES ON THE TOP FLOOR OF MRB III, WHERE THE COLLEGE OF ARTS AND SCIENCE'S GREENHOUSES ARE NURTURED BY GREENHOUSE MANAGER  
**Jonathan Ertelt, MEd'99.**

The greenhouses span seven rooms and are home to upwards of a thousand plant species—several of which are so recently discovered that they don't yet have scientific names. Ertelt has collected, acquired, cultivated and maintained these plants and their environment for 17 years, sharing plant knowledge with students, faculty and researchers in a sort of living lab and library.



- 1 This dried vine hanging from the ceiling is of the large genus *Aristolochia*, a genus with plants predominately from Central and South America. Now decorated with butterflies and feathers collected on Ertelt's travels, the vine with a cork-like bark serves as a starting point for students' questions as well as a sort of hanging sculpture.
- 2 The baseball cap behind Ertelt's desk is from Cooperstown, N.Y., home of the Baseball Hall of Fame. Ertelt's son, Sam, a promising 14-year-old pitcher, played in the 2011 Cooperstown Dreams Park National Invitational Tournament, and his team was inducted into its American Youth Baseball Hall of Fame. Ertelt proudly wears the Hall of Fame ring he received as one of the coaches (or he did until the plating started to wear off).
- 3 The plants in this terrarium are so sensitive that they would start to wilt within 10 minutes if the top was removed. The species, including a *Gasteranthus villosus* (the genus name translates as "belly flower"), are mostly gesneriads. Their natural environment is near streams in rainforest areas of high humidity. Ertelt describes them as being hard to find and hard to keep.
- 4 Ertelt, who earned a master's in education from Peabody, wears a T-shirt from the Gesneriad Society. The gesneriad plant family is one of his favorites because of the vast variety it encompasses, from African violets to lipstick plants and from thimble-sized to tree-sized specimens. It includes many common houseplants along with esoteric, rare species.
- 5 Botanical paintings on the walls were done by Ertelt's wife, Bonnie Arant Ertelt, BS'81, editor of *Peabody Reflector*. This work depicts *Anthurium pseudospectabile*, found in the Panamanian rainforest. The first one Ertelt ever saw was clinging to a tree too high for him to reach even holding a machete and standing on tiptoes, yet its 9-foot-long leaves draped the forest floor.
- 6 The terrarium holds blue frogs that seem to be straight out of the movie *Avatar*. From Suriname, the frogs are *Dendrobates tinctorius*, commonly known as dart frogs because the toxin on their skin is used to make poison darts. Aside from their colors, the frogs are unique because—unlike tree frogs—they are active during daytime, which means they can sometimes be heard singing.
- 7 Microscopes are used to identify plant pests, look for plant health problems and examine cellular structure. Ertelt prepares slides that show cytoplasmic streaming in the cells of plants for botany students, greenhouse volunteers and anyone else who is interested.
- 8 Ertelt lives within biking range of campus and takes advantage of this most days of the year. Living close also makes it easier for Ertelt to come in on weekends and holidays to care for tender plants.

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Where Are You? Answer: Viewing the exterior staircase leading to the Science and Engineering Library in Stevenson.



#### BE NOT AFRAID OF GREATNESS — *Twelfth Night*, Act 2, Scene 5

It was “methinks” and “sooth” and Shakespeare filling the air as College of Arts and Science students worked with classically trained actors during an intense week of workshops, classes and study with Actors From The London Stage. The residency of the five-person theatre company was made possible by the endowed Fred Coe Artist-in-Residence Fund set up by alumnus and Academy Award winner Delbert Mann, BA’41. Left, British actor Richard Daniel Stacey coaches junior Megan Seely and senior Jessica Owens in a scene from Shakespeare.