VANDERBILT MAGAZINE

winter 2004

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Winter 2004, Volume 85, Number 1

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DOWN TO GO BALL ON

Seizing the Day

Vanderbilt fans tear down the goalposts in celebration following the Commodores' Nov. 15 victory over Kentucky. The 28-17 win over the Wildcats marked the end of Vanderbilt's 23 consecutive SEC-game losing streak. Sophomore quarterback Jay Cutler was named Southeastern Conference Player of the Week, the first Commodore so honored since 1999. Photo by Neil Brake.

1,000 Words

One image frozen in time

DoreWays

A forum for exchanging ideas

From the Editor

Magic Moments

Publishing a magazine brings lots of satisfying moments—little touchstones when, as editor, I know we're on the right track with a particular issue. Discovering a new writer, a photo shoot that yields the perfect image, or building an editorial structure that I know pushes the boundaries of what we do as university magazine editors. These happen pretty frequently—one or another every issue—and that's a good thing because it keeps the magazine staff engaged on those occasions when production isn't proceeding as planned.

But there's something that happens less frequently, something that beats them all. That's when a good story comes to me "over the transom." Unsolicited. Fully formed and engaging. Shedding some light onto what it means to be affiliated with Vanderbilt University. These stories are like little gifts that I'm able to pass on to readers. This issue the unexpected happened when I received two: "Li'l Duck" and "Mr. Quinq."

JON KRAUSE

I'm not going to summarize them here. Part of the joy of reading these two rather short gems is the humanity behind each, the obvious care for the people who make up Vanderbilt and the bonds that can be shared. Both Rob Hammond, who wrote "Li'l Duck," and Allan Drash, who wrote "Mr. Quinq," take us back to an earlier time at Vanderbilt. They prove that the connections made while a student can have resonance for years.

And while these stories originate in the past, I'd like to think they are also talking about the present. In fact, I know they are. I often receive phone calls from recent graduates telling me about a fellow alum or a faculty member they met while a student at Vanderbilt. "Do a story about [him or her] because what they're doing is important." What those people are doing *is* important, though not always appropriate for a story in *Vanderbilt Magazine*. What I always hear in these conversations, however, is the importance of that person to the caller.

People at Vanderbilt forge strong connections and carry the intensity of those connections for a long time. "Li'l Duck" and "Mr. Quinq" are just two such Vanderbilt personalities. I'm happy to bring them to our readers' attention.

Ken Schexnayder

From the Reader

20 Gifts

I was enjoyably enlightened by the article on Vanderbilt's gifts to the world in the Fall 2003 issue ["20 Gifts Vanderbilt Gave the World," p. 42]. I was pleased to see the inclusion of the world-famous astronomer E.E. Barnard, but I think the section about him contains a couple of minor errors. First, according to Robert Lagemann's *History of Physics and Astronomy at Vanderbilt*, p. 57, the "house that comets built" was located on 16th Avenue near Division Street, not near Kirkland Hall as the article states. While associated with Vanderbilt, Barnard and his wife, Rhoda, lived in a house owned by Vanderbilt located on the [present-day] site of Rand Hall, which is not far from Kirkland, but Barnard had nothing to do with building this house.

The other error states that Barnard was the only person to receive an honorary academic degree from Vanderbilt. He did receive an honorary doctor of science [degree] in 1893 from Chancellor Garland, but Lagemann states on p. 86 [of his book] that Milton W. Humphries, professor of Greek, received an honorary doctorate from Vanderbilt in 1883.

You correctly included Marx Delbrück in your list. It is not widely known that the work for which he shared the 1969 Nobel Prize was largely carried out in a third-floor lab in Buttrick Hall, the biology building, while a faculty member in the physics department (see Lagemann, p. 181).

I am sure you will receive many suggestions as to what should have been included in this article. I have two. The first relates to Francis Slack, head of the Vanderbilt physics department from 1938 to 1950. While on leave at Columbia from 1941 to 1944, Slack led a group of about 40 to 50 physicists, including Professor Newton Underwood of Vanderbilt and seven others who had been physics students at Vanderbilt, to invent a porous barrier that would separate by gaseous diffusion of uranium hexa fluoride the fissionable uranium 235 isotope from the much less fissionable but much more abundant uranium 238 in naturally

occurring uranium. Most experts said a workable barrier could not be made, but Slack's group succeeded in making one that was produced by a company in Illinois and installed in the enormous K-25 gaseous diffusion plant at Oak Ridge [Tenn.] that produced enriched U-235 for nuclear plants to produce electrical power, and for the atomic bomb dropped on Hiroshima that was instrumental in forcing the Japanese dictators to end World War II. While many citizens of Hiroshima perished, ultimately the lives of millions of Japanese and American military men, which were being lost daily by the thousands, were spared.

A second gift to the world was made by Professor Newton Underwood who, while working at Oak Ridge on leave from Vanderbilt, devised a way to manufacture the diffusion barrier by a continuous rather than a batch process, saving the U.S. government probably millions of dollars annually. For more details about these developments in nuclear energy, see Chapters 7 and 8 of Lagemann's book.

Wendell G. Holladay, BA'49, MA'50
Professor of Physics, Emeritus
Provost, Emeritus
Nashville

Maybe the article about 20 "gifts" should have been titled "gifts and plagues." William Walker seems a precursor to U.S. rejection of Latin America's civil governments in favor of training their military in the methods of torture at Fort Benning, Ga. As I write this note, MaryRuth Matlock Weir (BA'63) and one of our daughters is standing at the gates protesting this torture training at the formerly named School of the Americas.

Below is just a short sample of myriad problems with Corrections Corporation of America. The shares bottomed out at 18 cents a share, leading an analyst to comment "the company has taken a dive that would make a dot-com blush." However, the same report indicates that "we expect the industry to have more growth opportunities in difficult economic times." College campuses boycotted Sodexho-Marriott because its "close ties to the scandal-ridden Corrections Corporation of America make it an unfit provider of campus dining services." Yes, that's the Marriott as in hotels and food services, because private prisons work on an occupancy rate basis (higher vacancies, less profit) and have thousands of people who require regular feeding. The campus movement pressured Sodexho-Mariott to divest itself of CCA, but they have retained an operating interest in British and Australian private prisons.

C. Ed Weir, BA'64
Barnesville, Ga.

What a tremendous article! Inspiring, humbling and gracefully written. Whomever is responsible for the pellucid description of the electromagnetic spectrum in #17 (about the Keck Free-Electron Laser Center) deserves a raise.

Garrison Cox, JD'81, MBA'81
Louisville, Ky.

I was very offended by the article in the latest magazine listing "De-stigmatizing Homosexuality" as one of Vanderbilt's greatest accomplishments! Also including it in the same breath as heart transplants! There are many people who believe homosexuality is morally wrong, and to shove your polarizing agenda down my throat makes me livid. If this is where my Vanderbilt donations are being used, maybe I need to rethink my priorities.

Marie Munsch, BA'87, MBA'88
Tampa, Fla.

In the article "20 Gifts Vanderbilt Gave the World," you have inexplicably included a bourbon whiskey as a "gift" of note.

The article fails to tell how Vanderbilt is responsible for this "gift" and only links the whiskey to the school through the fact that its current president (and owner?) was a 1967 graduate of the Vanderbilt Law School. This seems to be a tenuous, if not contrived, connection. Further, even if Vanderbilt were truly the donor of this "gift," one must ask why Vanderbilt would wish to take credit or responsibility for offering this substance up to the world?

I think all but the most hardened users or sellers of alcohol would agree that, on balance, alcohol causes much more harm than good. Highway fatalities, domestic violence, lost productivity, neglected children and alcoholism are some of the very negative consequences flowing from the use of alcohol. The only apparent benefit is that it gets people high, intoxicated, helps take the edge off, etc.

During my freshman year at Vanderbilt, I was required to change classes three weeks into the semester because my political science professor had to enter rehab. He literally passed out during class one day—and another professor came in and told us, effective immediately, that we would be reassigned to different sections. During my senior year a fellow student died from alcohol poisoning. I point these out simply because they are two concrete examples of alcohol's impact at Vanderbilt. Numerous other examples could be given. In short, whiskey, under any brand name, is simply a legal mood-altering drug. Notably, for the vast majority of Vanderbilt students, it is an illegal drug. It is both telling and ironic that this Vanderbilt "gift" could not even be purchased by most Vanderbilt students without subjecting them to criminal penalties. The inclusion of this prod-

{Featured Letter}

A Gift for Whom?

This letter regards your article in the Fall 2003 issue titled "20 Gifts Vanderbilt Gave the World." Most of the "gifts" you mentioned would fit the description, especially the persons who have actually *given* to humanity by way of healing or helping the poor, etc.

But I must contest the idea of Corrections Corporation of America being a gift to anyone—except, of course, its stockholders. Making money off incarcerated persons, to me, is even worse than making money off sick persons. At least the HMOs are trying to heal all the time they are taking in big bucks.

It's a disgrace that the State of Tennessee ever allowed privatization of its prisons. There may be less overcrowding and lower recidivism, as they claim. But of course the reason for this is that no one is ever released. The more inmates housed, the more money CCA takes in. There is never any thought of rehabilitation or treatment, just longtime housing for those poor unfortunates who have no defenders and no merciful judges.

A company that grew out of a cocktail-party brainstorm? Give me a break! Even Vanderbilt should have recognized the incongruity of such a cruel idea.

M. Smith, '53
Goodlettsville, Tenn.

uct was wrong. It is an embarrassment to the University and demeans the other 19 "gifts" immeasurably.

I wish I could tell you some way to correct it, but I don't know of any way to "unring" a bell.

Dunbar Healy, BA'83
Covington, La.

Surviving Enron

The corporate scandals that have been rocking the country for the last few years are, indeed, disgraceful. But if they can teach young people like Stephen Plauche [Fall 2003 issue, "S.P.O.V.: Surviving Enron," p. 68] the importance of integrity, responsibility and accountability for people in positions of power, some good may come from them after all. The idea that responsibly managed firms can gain an "ethical advantage" that enhances their economic performance is increasingly accepted in business circles. Our recent book, *Redefining the Corporation* (Post, Preston and Sachs; Stanford, 2002), explains how and why some actual firms have pursued this goal; and some consulting firms are now making a living by helping companies to achieve it. There can be no excuse for Enron, but experience shows that the corporate system, if properly managed, can produce wealth and benefits that have widespread, and largely favorable, impact throughout society.

Lee E. Preston, BA'51
Professor Emeritus
Robert H. Smith School of Business
University of Maryland
College Park, Md.

The Search for God

I thought this article [Spring 2003 issue, "The Search for God at Vanderbilt," p. 46] was absolutely wonderful. I'm very happy to see the University taking an active role in discussing religious diversity. As a recent graduate of Vanderbilt, I'm even more proud to have attended the University.

Thank you very much.

Faisal Saddique, BS'02
Ras Tanura, Saudi Arabia

Yes, We Work Out

I was quite impressed with the photo on the back cover of the Spring 2003 *Vanderbilt Magazine*.

Not one of these young men is obese or has a beverage belly. Given the national trend, this is amazing—unless these are the only 11 on campus!

A. Gil Belles, PhD'72
Macomb, Ill.

Fugitives

It's a little goof, but worth correcting. In my letter on page 9 of the Spring 2003 issue, it says that Robert Penn Warren published a "long book" titled *Segregation*.

He wrote a long article by that title, almost the entire issue of *Life Magazine*. It was published later as a very small book under the same title.

We won't pursue whether you or I made the goof!

Morton King, BA'34, MA'36
Georgetown, Texas

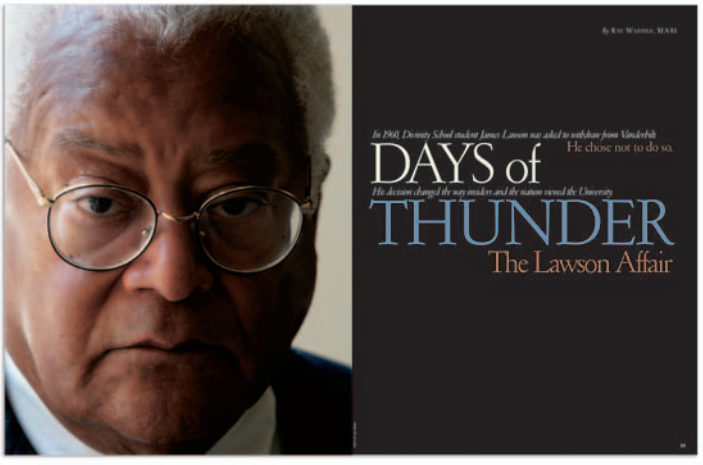
A distinguished musician and graduate of Yale and Peabody sent me the "Pride and Prejudice" article [on the Fugitives and Agrarians] plus letters from your *Vanderbilt Magazine* issues of Winter and Spring 2003, respectively, and let me say I was toughly able to thole the views of Vanderbilt's English department professors Michael Kreyling and Kate Daniels.

Why would they drop John Crowe Ransom from the curriculum? He didn't fire the shot in Memphis. And his "Here Lies a Lady" doesn't demean women. He merely wrote some of the best American poems of the 20th century and devised a *constructive* type of literary criticism. In 1956 I was a struggling English major at Wesleyan University and wrote a paper that was graded A+, the highest mark I ever received from that school. I received the grade because I had taken the time to read [Ransom's] poems closely and was enthralled. Years later my older son chose to attend Kenyon partially because I was a Ransom fan (and even today am a subscriber to the *Kenyon Review* as well as the *Sewanee Review*) and had seen what impact he had had as a teacher at that college on undergraduates Lowell, Taylor, Wright and Doctorow, to name a few. The man is a gentle giant of letters. But I will admit he smoked a pipe and hung around with that argyle-socked Tate and that bow-tied Warren and, most damning, he probably never

taught any female students. But Ransom doesn't need my protests; those letters to you from the Vanderbilt alumni and retired academics are testimony to his immortality. "I am a gentleman in a dustcoat trying … ."

Read Katherine Anne Porter's 1949 letter to the editor of the *Saturday Review of Literature*. (I assume KAP's credentials and opinions are unassailable even to the subject professors.) While explaining her reason for voting in favor of Ezra Pound for the Bollingen-Library of Congress Award for Poetry—he was the best of the listed candidates, none of whom she had been able to select—she says: "I should have preferred to vote for John Crowe Ransom or Wallace Stevens; for Louise Bogan, Leonie Adams, Robert Penn Warren, Randall Jarrell, Marianne Moore, Allen Tate, Robert Graves, W.H. Auden, Archibald MacLeish, E.E. Cummings; if they were citizens T.S. Eliot or Edith Sitwell." I know, I know. Katherine Anne Porter has some knocks against her: She wrote a best seller (*Ship of Fools*), indulging herself on the profits by buying a huge emerald ring, and even into her last years was a fine-looking woman (a Texas knockout).

Horace Deacon
Philadelphia



The Lawson Affair

The newly redesigned and expanded *Vanderbilt Magazine* is beautiful. Or, as today's generation of students might say, "Awesome!" As editor, you are to be congratulated.

The article I have enjoyed most was "Days of Thunder: The Lawson Affair" in the Fall 2002 issue [p. 34] because it showed the courage my University had (and still has) to face a subject which has been very sensitive to Americans throughout our entire nation for at least over the course of the last century and a half.

While it made me "mad" that it had to occur on our campus, it made (and makes) me "proud" of my University because we were (and are) brave enough to recognize that when we were going down the incorrect path, we took (and are probably still taking) corrective measures to ensure that: (1) our student body is fairly represented ethnically from within our national population; (2) our faculty is not only highly educated, but also similarly diverse in representation; and (3) our administration, as excellent as it is currently, still represents a crucial portion of our overall University.

To sum it up, intelligence is not measured by the color of one's skin.

If, indeed, the Lawson affair brought so much negative national publicity upon our University, it is still not too late to let the nation observe our change and see how we make amends and peace as a 21st-century institution of higher learning.

The board of trust and our present chancellor can still offer a former student who was just three months shy of graduation, as a gesture of goodwill to a now-retired minister, an "honoris causa" doctor of theology degree.

Jarl Roberto Hellemalm-Ashfield, MA'81
Marietta, Ga.

Reading the articles on the events begun by James Lawson and John Sergent and others reminds me of my own sense of loss. I was a freshman at Vanderbilt in 1960. Coming from a rural south Georgia town, I was somewhat immature and unaware of the ways of the world. I knew nothing of my own racism because I grew up in a very segregated world, and it seemed no different at VU. I was in search of something but it turned out not to be college. I rue the day that I did not meet James Lawson or know about the events in downtown Nashville. I think I would have made the move sooner to where I am now—committed to Christian non-violent resistance to oppression, etc. This past spring my wife, MaryRuth Matlock (BA63), and I were fortunate to spend a week with people who were and still are involved in the resistance movement in Greensboro, N.C., where the very first sit-ins took place. In the nearby town of Barnesville, Ga., we were able to meet for two years with local black folks and learn more about our own racism and the racism around us. The local golf course still excludes black people so that white folks can work out political and economic policies unhindered.

It took us 13 years to shake off Vanderbilt and our U.S. government jobs at the CIA and NSA. Maybe we could have done that sooner if there had been more openness about the 1960 events in the undergrad setting.

C. Ed Weir, BA'64
Barnesville, Ga.

Thank you for your article about the Fugitives and the Agrarians. Although I spent two years at Vanderbilt (1944–45) and they were mentioned, I had no idea what they were all about until I read "Pride and Prejudice."

I enjoy your magazine and read most of what is interesting to me. I still haven't figured out what a digital X-ray looks like, though [referring to article "The X-Ray Goes Digital," Winter 2003 issue, p. 58]!

Juliette Senturia, A'48
Westport, Conn.

Kudos

What an incredible issue (Fall 2003). I realize I should have read it immediately, but trying to finish three book projects leaves an alum rather time-deprived.

Everything about the issue was stunning. I was moved by Stephen Plauche and Shelli Yoder's perspectives.

Thanks for the hard work you invest in making this magazine dance. I assure you the next issue will be more immediately read.

Harold Ivan Smith, EdS'74
Kansas City, Mo.

Letters are always welcome in response to contents of the magazine. We reserve the right to edit for length, style and clarity. Send signed letters to the Editor, Vanderbilt Magazine, VU Station B 357703, 2301 Vanderbilt Place, Nashville, TN 37235-7703, or e-mail: *ken.schexnayder@vanderbilt.edu.*

"Mr. Quinq"

A planned visit to Reunion stirs memories of a fortuitous rescue more than 50 years ago. By Dr. Allan L. Drash, BA'53

I missed the Quinq induction ceremonies with my classmates last October. In fact, I missed the entire Reunion. I became quite ill on the drive down to Nashville and was admitted to Vanderbilt University Hospital where I remained for the next three days, missing all the Reunion activities. It was not all bad. I had the opportunity to experience Vanderbilt medicine "up close and personal." A number of my classmates managed to slip in to see me.

These personal reunions were great, despite the surroundings. My major motivation to return for Reunion was the Quinq induction and my strange attachment to Mr. Jim Robins (1892), known at Vanderbilt during my years there as "Mr. Quinq" because he founded the Quinq Society back in 1947. Over the years, I had come to believe that the Quinq "induction ceremony" was really a cover for the public, while the real action was the ordination of each of us as angels.

Explaining what I mean by that is a complicated story:

I arrived on the Vanderbilt campus in mid-August 1949, several weeks before most of my classmates. I had been very fortunate to be awarded a full athletic scholarship to play football, having come out of the highly competitive Birmingham, Ala., city football league. My school, Ramsay High School, had won the Alabama State Championship for three of my four high-school years. During my senior year I was voted "outstanding running back" in our conference, sharing the honor on a tie vote with Bobby Bowden (MA'53 Peabody) from Woodlawn High School. You may recognize the name. He is the great Florida State University coach who has just taken over first place in career college victories.

My first year at Vanderbilt can only be described as "wonderful." I became entranced with the joy of learning—everything. In high school my academic performance was only marginally above average. At Vanderbilt I became an increasingly excellent student.

Vernon Sharp (BA'53, MD'57) was a "walk-on" for the football team. What he lacked in physical attributes, he more than made up for in grit, determination and character. He became a special friend. We decided to do something unique for the summer of 1950 in order to get in great shape for the fall football season. We wound up in Washington state, working for the Weyerhauser Timber Co. in the deep forests of southwestern Washington. We lived in a snug log cabin, where we were met each morning at our front door by several deer, patiently waiting for a daily nutritional supplement. By day we worked very hard, cutting fire trails through the forest and burying large metal drums to be used as water storage to fight fires. In the evenings we listened to the national and world news on our little radio, very aware of the expanding American presence in Korea. Our one escapade of the summer was to drive our fire truck across the Canadian border into British Columbia where we watched the movie "Ecstasy" at a drive-in. The film was not allowed into the United States because of its pornographic nature. How times have changed!


JIM HSIEH

Most of the current television shows are far more explicit.

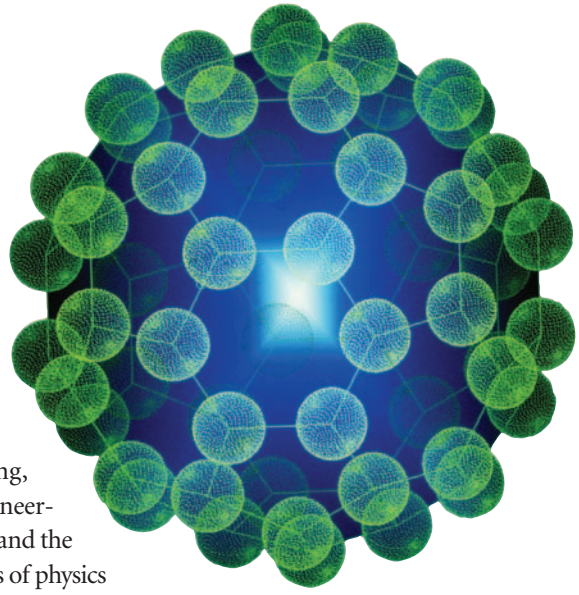
In the spring of 1951, I and thousands of male college students across the country received a letter from our draft boards. The letter explained that since the end of World War II, the draft policy had been to defer the drafting of college students until their classes had graduated. Because of the increasing requirement for American soldiers in Korea, the policy was being changed. Students now were required to identify their career goals, and the local board would rule whether those goals met a national priority, thus leading to a deferment. I was directed to complete the enclosed questionnaire and return it to my draft board in Birmingham.

If the truth be known, as I headed toward the end of my second year at Vanderbilt, I had no idea about career goals. On arrival two years earlier, I expected to become a football coach. To my dismay, I soon learned there were no "football coach courses" in the Vanderbilt curriculum.

continued on page 83

The Campus

"One night four Maya elders *showed up at my tent. They told me that a woman had been*



VU, Fisk Win $2.9 Million to Study Nanotechnology

Vanderbilt and Fisk universities will conduct joint research and train doctoral students from both institutions in the rapidly growing interdisciplinary field of nanoscience and nanoengineering, thanks to a $2.9 million National Science Foundation grant.

The five-year grant will fund research leading to creation and application of nanoscience materials while also enhancing collaboration between the two schools and advancing recruitment of underrepresented minorities to the field. The goal of the Vanderbilt-Fisk Interdisciplinary Program for Research and Education in the Nanosciences is to create nanoscale materials for basic science and a variety of applications ranging from medicine to microelectronics.

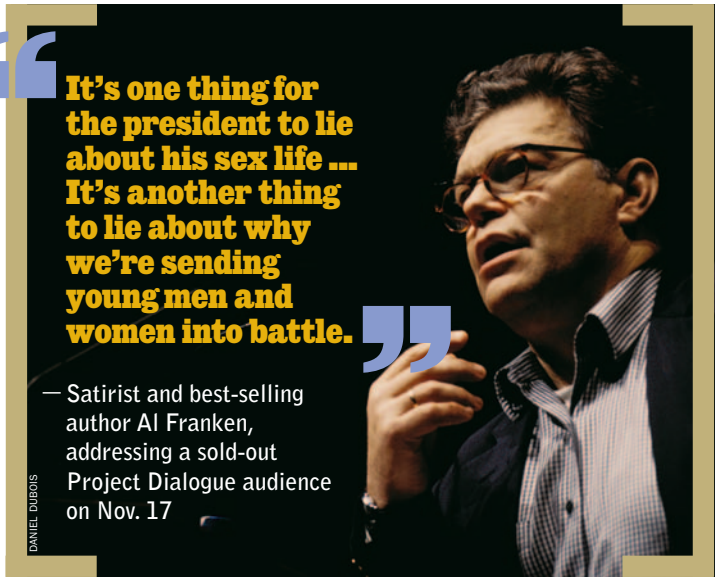
"This program will give students a complete background in the interdisciplinary materials sciences, which provide the underpinnings of nanoscience and nanoengineering," says Vanderbilt professor of physics Leonard Feldman, director of the Vanderbilt-Fisk program.

"Nanoscale" describes objects that measure approximately a millionth of a millimeter, or roughly 1/100,000th the thickness of a human hair. Nanotechnology is based on understanding the behavior of materials at the nanoscale level and how they can be used to accomplish goals such as the continued miniaturization of computer components and genetic engineering.

The Vanderbilt-Fisk program will involve more than 30 professors from the Vanderbilt departments of biomedical engineering, chemical engineering, chemistry, civil engineering, electrical engineering, mechanical engineering and physics, and the Fisk departments of physics and chemistry.

Under the program Fisk students may earn their master's degrees at Fisk, which does not offer doctoral degrees, then transfer automatically to Vanderbilt to complete doctoral degrees in materials science. The doctoral program, to begin fall 2004, will immerse students in nanoscale science and engineering.

The Vanderbilt Institute for Nanoscale Science and Engineering (VINSE) will provide critical support for the Vanderbilt-Fisk program. VINSE is constructing a new nanoscience and engineering complex that will include five laboratories specializing in various aspects of nanoscale science and engineering.



Court Rules on Name Change

A Davidson County Chancery Court has cleared the way for Vanderbilt to remove the name "Confederate" from one of its residence halls and supported the University's argument that continued use of the word contradicted Vanderbilt's goal of achieving "the kind of inclusive and welcoming environment that is essential for a world-class university."

The Tennessee Division of the United Daughters of the Confederacy had filed suit against the University in an effort to block the decision to rename the building on the Peabody College campus.

In issuing his decision, released in September, Davidson County Chancellor Irvin Kilcrease said Vanderbilt "sufficiently complied with its obligations to UDC" by installing a plaque on the building explaining the history of its construction. Vanderbilt has said that the historic marker will remain in its current location. Kilcrease further stated, "Van-

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brutally beaten by men who were searching for a great altar. —ARCHAEOLOGIST ARTHUR DEMAREST

derbilt may remove the name 'Confederate' from the building without any further obligations to UDC, other than to maintain said plaque on the building."

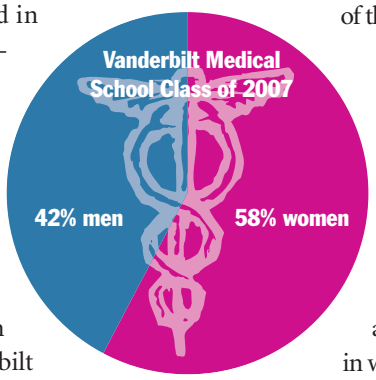
The former Confederate Memorial Hall was built in 1935 in part with funding by the UDC in order to house, at no or low cost, women descendants of Confederate soldiers who were nominated by the UDC and accepted for admission to what was then called George Peabody College for Teachers. Vanderbilt University assumed ownership of the building when the institutions merged in 1979. The housing provision was discontinued after Vanderbilt first leased and then acquired the dorm through merger. Vanderbilt paid for significant renovations to the building in the 1980s. In 1989 a plaque was added to the building to explain its origins and historical significance, as well as the contributions of the UDC.

In renaming the building Memorial Hall in September 2002, the University said the new name was intended "to honor the men and women who have lost their lives in this country's armed conflicts."

Sorry, Guys, You're Outnumbered

For the first time in Vanderbilt University Medical School's 128-year history, women in the incoming class outnumber men. Of the 104 students in the Class of 2007, 60 of them—or 58 percent—are women.

"We look for the best people, regardless of gender, race or ethnicity," says Dr. Steven Gabbe, dean of the VUSM. "We look for people who are going to make a difference in medicine, who will contribute as leaders and scholars."



Competition to be one of those 104 students is stiff, with 35 applications received for every student's spot. Other medical schools have also seen a steady increase in women, although the gap isn't quite as large. The medical school class of 2007 at Johns Hopkins University has 57 men and 63 women. The first-year medical school class at Duke University has 51 women and 49 men.

The first Vanderbilt University School of Medicine diplomas were given to 61 men in 1875. The first women to graduate from VUSM were Thelma Byrd Bowie and Louise Rector Allen in 1929. Over the years the number of women students slowly increased. By 1977 there were nine; by 1981, 20.

{Details}

Looking Inward


NEIL BRAKE

Alex Simon's "Solipsis" is one of four sculptures unveiled on campus in November. They are the final pieces in a collection of 16 bronze statues donated to the University by the Newington-Cropsey Foundation. Simon's piece, which may be seen on the Peabody campus at Magnolia Circle, takes its name from solipsism, defined as "the theory that the self can be aware of nothing but its own experiences and states; or that nothing exists or is real but the self."

"Lost Boys" Find Home at Vanderbilt

Three years ago a group of young men came to the United States from Kakuma, a United Nations refugee camp in Kenya. Civil war in Sudan had left an estimated 30,000 children orphaned or cut off from their families. They migrated to Ethiopia until civil unrest drove them back into Sudan. Facing rebel armies, wild animals and hunger, they fled again, this time for Kenya. Only a few thousand made it. After a decade in the camp, an international effort was made to resettle the remaining boys. The United States accepted 3,000, and they came to be known as the Lost Boys of Sudan.

One hundred of these young adults live in Tennessee, and nine work for Vanderbilt on the grounds crew or in the Medical Center's environmental services department. Members of the cattle-farming Dinka tribe, some had never experienced snow, cars or electricity.

Because refugees must be financially self-sufficient within a short time before their aid runs out, dreams of going to college are on hold. Achouth Deng Kur works mornings at a grocery store before clocking in at Vanderbilt at 3 p.m., where he brings hospital beds to LifeFlight and the emer- »

{Inquiring Minds}

Flu Shots Recommended at Younger Age

Flu among young children is a bigger problem than once thought, according to the results of a study now in its fourth year at Vanderbilt. Last fall the Centers for Disease Control and Prevention voted to recommend that children as young as 6 months old receive the influenza vaccine starting with the 2004 flu season. The decision was based in part on data provided by a CDC-sponsored study led by Vanderbilt researchers Drs. Marie Griffin, professor of preventive medicine and professor of medicine, and Kathryn Edwards, professor of pediatrics and vice-chair of pediatric research. "Flu is not just another cold. It's worth preventing, and it's also worth not transmitting it to other people," says Griffin.

Cooking the Books

Despite attention called to the audit industry for its complicity in corporate scandals, audit firms under pressure from major clients bending the rules are still prone to produce inaccurate audit opinions—if they think they won't be caught.

"Our study demonstrates that audit firms may lie to keep a profitable audit client if the expected benefits of keeping the client happy outweigh the expected costs of an audit failure if the firm gets caught," says Debra Jeter, associate professor of accounting at Vanderbilt's Owen Graduate School of Management and co-author of a study published in the November/December 2003 issue of the *Journal of Accounting and Public Policy*.

"Top management should require managers at various levels within the firm to certify the numbers they are responsible for. Companies should make sure that most—if not all—audit committee members are financially literate and that they meet more than once a year."

Treatment Allows Radiation for Liver Tumors

Vanderbilt is one of eight U.S. medical centers offering a new radiation treatment for inoperable liver tumors. Selective Internal Radiation Therapy (SIRT) targets a high radiation dose to tumors within the liver, regardless of their cell of origin, number, size or location. The procedure uses biocompatible radioactive microspheres (SIR-Spheres®) that emit high-energy beta radiation.

"The liver doesn't tolerate external beam radiation in sufficient doses to affect tumor without damaging the remaining good liver," says Dr. C. Wright Pinson, the H. William Scott Jr. Professor of Surgery. "These spheres emit radiation for a short distance, less than a centimeter. If you can cluster radiation right around the tumor, the radiation exposure at the tumor site compared to normal liver is favorable."

The spheres are implanted using a catheter placed in the artery feeding the liver and travel via the bloodstream, where the spheres are targeted to tumors within the liver and become trapped in the small blood vessels.

gency department. Then he goes to night classes at Cohn Adult Learning Center. He has a wife and child back in Kakuma to whom he sends money.

He has helped newer arrivals adapt to American culture, handling some of the "women's work," though he wasn't eager to lose face in front of the others. "I cook the tea, put it on the table, then I go to work and they say, 'Who cooked the tea?'" he says with a smile. "I say, 'Don't worry who cooked the tea.'"

"Talk about resilient," says Jan Holton, doctoral student in the graduate department of religion and VUMC chaplain, who has befriended Achouth. With a grant funded by Vanderbilt's new Center for the Study of Religion and Culture, Holton spent five weeks last fall at Kakuma, which still houses some 85,000 refugees.

"Some of them, within a year, had their GED. Their whole world has changed, and they have adapted and conquered."

Rare Artifact Recovered in Dramatic Rescue

Collaboration among Guatemalan undercover agents, Maya villagers and American archaeologists that included a six-month pursuit and arrest of a ring of antiquities looters has resulted in recovery of a rare piece of ancient history.

Vanderbilt archaeologist Arthur Demarest, who helped recover the 600-pound elaborately carved altar, says the relic is one of the finest Maya altars known and provides important clues about one of the wealthiest Maya kingdoms. Demarest, with co-director Tomás Barrientos, leads the Cancuén Archaeological Project, which is supported by Vanderbilt and the National Geographic Society.

The altar is one of two from Cancuén known to exist. The other, unearthed in 1915, is on display in Guatemala's National Museum of Archaeology.

Demarest learned of the altar's existence while working at the site. "One night four Maya elders showed up at my tent," he recalls. "They told me that a woman had been brutally beaten by men in ski masks who were searching for a great altar that had been looted from Cancuén, one that I hadn't even known existed."

The visit set in motion a secret investigation by Cancuén project members, Guatemala's Ministry of Culture, and the Ecological and Cultural Patrimony Division of Guatemala's Servícios de Investigación Criminal. Guatemalan officials state that this may be the first time an entire network of looters and dealers of Maya artifacts has been exposed.

The Cancuén Archaeological Project has been the scene of a series of spectacular discoveries in the remote southwestern region of the Petén rainforest. The project has been unearthing the lost city of Cancuén, an ancient Maya mercantile port city. The great altar was placed in 796 A.D. at the royal ball court of Cancuén, site of one of the largest royal palaces ever found. The king pictured on the altar, Taj Chan Ahk Ah Kalomte, was the greatest of Cancuén's long dynasty of rulers.

Building Anticipation

Nearly 1,000 people turned out for a December ribbon-cutting event at the new $172 million Monroe Carell Jr. Children's Hospital at Vanderbilt. Many of the children who celebrated the occasion with Children's Hospital mascot Champ are former patients.

ANNE RAYNER

A Forum for Dialogue

VANDERBILT'S NEW CENTER for the Study of Religion and Culture is nothing if not ambitious.

"The subject of our center's work is global in both nature and scope," says Volney P. Gay, professor of religious studies in the College of Arts and Science and co-director of the new center. "CSRC faculty investigators will be challenged to examine the world's cultures as they intersect with any and all forms—and understandings—of religion."

The center is part of Vanderbilt's effort to develop intellectual centers that foster collaborative research by scholars who might not otherwise interact with each other.

Gay and colleague Douglas Knight, Divinity School professor of Hebrew Bible and co-director of the CSRC, developed a proposal for the center that last spring won a $3.1 million grant from the Academic Venture Capital Fund. Faculty members from across the University are eligible to participate in CSRC research groups, publication projects and conferences. Principal investigators will convene faculty research groups to wrestle with an approved topic for up to three years.

© RICHARD I'ANSON/GETTYIMAGES.COM

The group furthest in development is examining the relationship among religion, economics and poverty. The center also funded a weeklong conference at Vanderbilt in July involving editors from Cambridge University working on the *Cambridge Dictionary of Christianity,* an 800,000-word reference. Also in early stages of development are groups who wish to study civic justice and religious thought; ecology and religion; art, spirituality and culture; religion, music and HIV/AIDS in Africa; theories of religion; Christianity and world literatures; and violence, terror and religion.

Graduate education is a second focus. Last fall two graduate fellows received full tuition and stipend awards for five years of doctoral study at Vanderbilt. Four $4,000 summer stipends enabled graduate students to examine Christian fundamentalism in the Southern U.S., female shamans in Korea, sexual consumerism in Thailand, and Dinka refugees.

Student Life Center to Fill Demand for Social Space

A NEW $11.4 MILLION STUDENT Life Center will feature a 10,000-square-foot social hall, a comprehensive career center, and consolidated space for international scholars and study-abroad services. The project also includes renovation of Branscomb South Dining Room, which will be linked to the new 55,400-square-foot building.

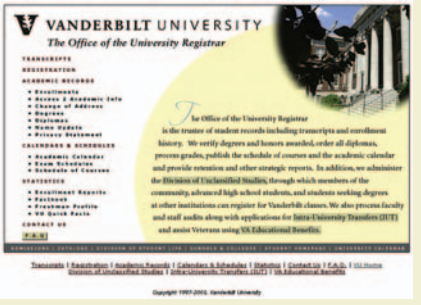
Vanderbilt broke ground on the building in October. It will be located near 25th Avenue South and Kirkland Place, in keeping with the University's Land Use Plan, which designates that area as the new central campus. The construction has a projected completion date of January 2005.

"The best part will be the new social space," says Madani Adjali, Vanderbilt Student Government Association president. "It can be configured as one large room for concerts or segmented into three separate rooms. This flexibility will help student organizations plan large events without scrambling to find a location." The social hall will comprise nearly all of the first level. There will also be meeting space on the lower level and in the renovated Branscomb South dining hall.

The second level of the building will house an expanded career center as well as offices for pre-professional advising and international scholarship. For more than 50 years, the Career Center has been located in Alumni Hall, but

Virtual Vanderbilt

http://www.registrar.vanderbilt.edu/index.htm



Last August the University Registrar's Office announced that alumni will no longer be charged a fee for transcripts, though they will continue to pay for special handling and delivery charges such as via FedEx and Priority Mail. Also new as of last fall, first-time students pay a $30 one-time transcript fee that replaces the per-transcript charge.

Ordering transcripts online is just one of the options alumni have when they go to the Registrar's Web site. You'll also find information about enrollment, Vanderbilt statistics, answers to frequently asked questions, and quick links to Vanderbilt calendars and course schedules.

the space is "unprofessional and uninviting," says Career Center Director Francene Gilmer, adding that it isn't in a location typically visited by students. The new space places staff, employer interview rooms and the resources center on one floor and will simplify logistics of the Center's four annual career fairs. The Study Abroad program and International Scholars and Student Services will also be located on the second floor.

"The project is a direct response to the wishes of our students," says Chancellor Gordon Gee. "They have told us that their No. 1 priority is the development of a large social space on campus."

Office Centralizes Scholarship Quest

Vanderbilt's year-old Office of Honors Scholarships is helping students succeed in the hypercompetitive field of post-graduate awards. Of the 40 or so students who applied for post-graduate scholarships through the office last year, 13 won awards.

NEIL BRAKE

Truman Scholars Jessica Heaven (left) and Amber Wallin with Professor Paul Elledge.

"Not too shabby for the first year," says Paul Elledge, professor of English and director of the Office of Honors Scholarships. Elledge has supervised campus administration of the Rhodes, Marshall and Churchill scholarship competitions since 1998, and now oversees at least 26 additional fellowship opportunities.

Before formation of the office, students were largely left to uncover the various awards offered and apply for them without help from informed sources. "Historically, institutions with such offices as this one annually produce more scholarship winners than those without one," says Elledge, "in part because the collection, in a single facility, of data over many years from many applicants for many different scholarships creates an ever-enlarging resource for candidates to draw upon when preparing application packets."

Since opening the office Elledge has worked to contact eligible students from each undergraduate class. The office hosts informational gatherings and receptions throughout the year to pitch its services. "We're not here to promote or foster trophy-hunting," he says. "We're here to help people interested in continuing their education at an advanced level.

"Preparation for successful participation in the scholarship competitions cannot begin too early," he adds. "It includes cultivating certain habits of mind, developing intellectual disciplines, seeking out culturally enriching events and dialogue, maximizing the potential benefits of spring break and summertime, diversifying interests, volunteering, and keeping abreast of current events through appropriate media."

{Top Picks}

NEIL BRAKE

Joe Hamilton, Landon C. Garland Distinguished Professor of Physics at Vanderbilt, received the National Prize of International Scientific and Technological Collaborations of China—the highest award bestowed on foreign scientists by the Chinese government. Hamilton traveled to Beijing in September for presentation of the award, which was presided over by China's minister of science and broadcast on national television.

In 1978 Hamilton made his first formal trip to China and gave a series of lectures that were translated into Chinese and published in booklets that were used for many years. That same year he hosted the first group of Chinese physicists to visit the United States. "One of the most important things I did," says Hamilton, "was to encourage the Chinese to submit articles for publication in international journals and allow foreign scientists to publish papers in their journals. That helped move them into the international scientific community."

Two Vanderbilt University Medical Center faculty members have been elected into the Institute of Medicine of the National Academies, an elite group of scientists called upon for independent analysis and recommendations on issues related to human health.

Moses

Harold Moses, MD'62, director of the Vanderbilt-Ingram Cancer Center, is internationally known for his research in growth factors, particularly transforming growth factor-beta, which Moses' team discovered as the first growth factor to act as both a cell-growth stimulator and suppressor under different circumstances. He recently began a two-year term as president of the Association of American Cancer Institutes.

Peter Buerhaus, senior associate dean for research at the Vanderbilt School of Nursing, is considered the leading expert on issues relating to the national nursing shortage. Buerhaus has published nearly 50 peer-reviewed articles, numerous book chapters, and various papers on topics concerned with the nurse labor market and changes in the health-care system.

DANA JOHNSON

Vanderbilt LifeFlight nurse **Kevin High** has been named National Medical Crew Member of the Year by the Association of Air Medical Services. High has been instrumental in Vanderbilt's "EMS Night Out" program, which has provided training to more than 3,500 emergency medical technicians (EMTs), paramedics, first responders and nurses. Topics have ranged from treatment of the cardiac patient to the role of the Secret Service in providing patient care for the president. An RN for 18 years and an EMT for 15 years, he lectures and teaches on a local, state and national level and has authored numerous articles on emergency medicine.

Sports

A look at Vanderbilt athletics

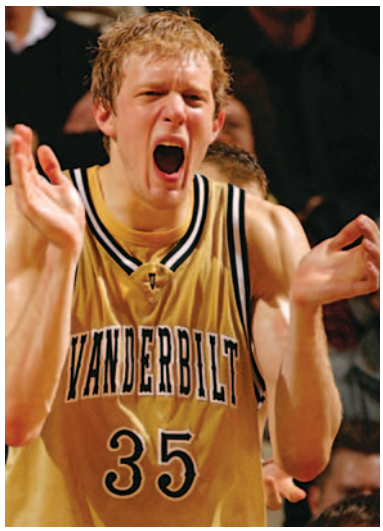
There's No Place Like Home

Matt Freije is thriving with his Vanderbilt family.

By Nelson Bryan

It can be argued that Kansas is the home of college basketball. James Naismith, who invented the game at the YMCA training school in Springfield, Mass., started the ball bouncing at the University of Kansas in 1898. More than 100 years later, senior Matt Freije brought that basketball-rich tradition with him from Kansas to his collegiate basketball home at Vanderbilt.

A native of Overland Park, Kan., Freije grew up playing basketball in the school yards and at home. He is the second oldest of seven children, with a brother and five sisters, and began playing organized ball in the fifth grade.



"Growing up, ever since elementary school, you were either a KU or a K State fan," he says. "It made for a good rivalry between friends and classmates."

After completing a high school career during which he was named Mr. Basketball by the Kansas Coaches Association, First-Team All State, Metro Player of the Year, and MVP of the Sunflower League, it was time to pick a college. There was some family sentiment that he remain close to home. However, an early recruiting visit by Coach Kevin Stallings was key in his decision to put Kansas in his rearview mirror and set his sights on Nashville.

"They were one of the first schools that started recruiting me," Freije says of his choice to attend Vandy. "I built a good relationship with Coach Stallings, and I picked Vanderbilt because of him. Prior to my visit, I pretty much knew I wanted to come here, as long as the facilities were decent."

Beyond decent facilities, the Freije family wanted to make sure Matt's collegiate home would be just that—a home. "They did a good job showing us that it's a good family here, and I could surround myself with good people. We liked it."

During his collegiate career, the 6-foot-10-inch, 249-pound forward was named to the SEC All-Freshman team, Third-Team All-SEC as a sophomore, and Second-Team All-SEC as a junior. He entered the 2003–2004 season with numerous preseason accolades. *Media Day* named him Preseason SEC Player of the Year, as did *Athlon* magazine. Five publications tapped him as preseason All-SEC.

Early this season he set a school record for single-game consecutive free throws made with 18 of 18 in a 70-63 victory over Indiana, while scoring 32 points and grabbing 13 rebounds. He entered his final season as Vanderbilt's 19th career-points leader with 1,284 points, 440 points shy of Phil Cox's career record. He scored 520 points last season for a 17.9 per-game average.

As his career has developed, so has his on-court composure and focus. "When I was a freshman and it was so loud in here," he says of Memorial Gymnasium, "I lost focus a little bit and wasn't really thinking about what I should be doing. Now, like in the Michigan game, when it gets really loud it helps get you fired up. Now I'm able to keep thinking about what I need to be doing, not lose myself in the volume of the crowd, and be able to keep my composure."

Freije's growth has been reflected in the team as a whole and in his fellow seniors in particular: guards Russell Lakey and Scott Hundley, and forward Martin Schnedlitz. "When we came in we were so little and immature in a lot of ways," Freije recalls. "We came in with six, and we're leaving with four. The friendship we've built with each other, and how much we've grown as people and basketball players, has been amazing. I've made friends who are going to last me a lifetime. I wouldn't trade that for anything."

Freije will finish his collegiate career with a major in economics and hopes to parlay his talent and expertise into a professional basketball career. "I'm just going to wait to see how the season unfolds, and hopefully that opportunity will be there. Whether it's in the States or somewhere else, I'd really like to keep playing."

PHOTOS BY NEIL BRAKE

Matt Freije

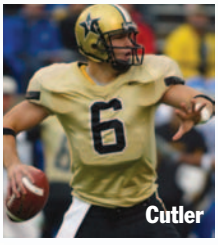
{Sports Roundup}

Football: Cutler Named SEC Player of the Week

Sophomore quarterback Jay Cutler was named Southeastern Conference Offensive Player of the Week by SEC officials after leading the Commodores to a 28-17 victory over Kentucky on Nov. 15, throwing for four touchdowns and rushing for 129 yards.

A native of Santa Claus, Ind., Cutler is the first Commodore offensive player honored by the SEC since quarterback Greg Zolman was selected on Sept. 20, 1999.

The Commodores also were named Team of the Week by SI.com, *Sports Illustrated* magazine's Web site.


Cutler

Cutler's 129-yard rushing total was the second-best performance ever by a Commodore quarterback against an SEC opponent. Marcus Wilson rushed for 136 yards against LSU in 1980. Cutler's 18 touchdown passes in a single season is the second-highest total in Vanderbilt history. Whit Taylor completed 22 touchdown passes in 1982.

Men's Golf: Commodores Win Tournament of Champions

The Vanderbilt men's golf team won its fourth tournament in three years by claiming the Coca-Cola Tournament of Champions, hosted by the University of Tennessee in October.

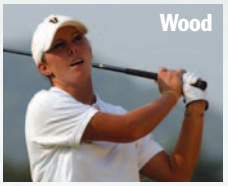
The Commodores stormed back from fourth place on the final day, shooting 9-under-par to finish at 15-under-par for 54 holes. The Swedish National Team, the leader after 36 holes, was second while Tennessee finished third, seven shots back. Mark Donnell, a junior from Mobile, Ala., led the Commodore golfers. He placed sixth individually at 7-under-209.

Two years ago the Commodore men won the Adams Cup championship. A year ago Vanderbilt won its own Mason Rudolph Championship and the Johnny Owens Invitational at Kentucky.

Women's Golf: Wood Wins LPGA Futures Qualifier

Vanderbilt senior Courtney Wood parlayed a rain-shortened tournament into a first-place finish in the 2004 LPGA Futures Golf Tour Qualifying Tournament in November. She finished with a three-day total of 211, 5-under-par.

Because the Futures Tour begins in March, in the midst of Vanderbilt's season, Wood will miss the first part of the tour. "I'll start playing as soon as school golf ends," she says. "The tour ends in September, so I'll play as many tournaments as possible." The Brentwood, Tenn., native earned honorable mention All-America honors along with first-team All-SEC and Academic All-SEC accolades as a junior.


Wood

She won the 2002 Trans National Championship and the 2002 Tennessee State Open, and shared the 2002 Tennessee Amateur of the Year award with teammate Sarah Jacobs.

Soccer: Women Named to All-SEC Team

Vanderbilt soccer player Jennifer Lewis was named to the All-Southeastern Conference First Team at the SEC Tournament Awards Banquet in November. It was the second consecutive year Lewis earned first-team honors. Lewis, a senior midfielder from Birmingham, Ala., played in all 17 regular-season games and scored her first goal in the regular-season finale at St. Louis. She helped lead the Commodores to a No. 6 seed in the SEC Tournament after missing the tournament last season for the first time.

Defender Monica Buff of Lilburn, Ga., was named to the 2003 SEC Freshman Team. She had an assist on the game-winning goal against LSU.

Kendra Sasa, a senior defender from Wheat Ridge, Colo., was named to the SEC Good Works Team. Sasa's community service projects include serving as chair of the Kids Field Day at Vanderbilt and as the NCAA representative to the Student-Athlete Leadership Conference.

The Commodores ended the regular season with an 8-6-3 record.

Vanderbilt hockey against Middle Tennessee State University

PHOTOS BY NEIL BRAKE

Pro Players Host Nashville Youth

Fifteen Nashville high school students got a December trip to San Francisco, courtesy of Jimmy Williams, BS'01, and Jamie Winborn, BS'03.

Williams and Winborn, teammates on the football field as Commodores, remain teammates as San Francisco 49ers. The two financed and hosted a Bay Area weekend for students from inner-city Nashville. The itinerary included sightseeing, visits to Stanford and San Jose State universities, dinner with players, and attendance at a 49ers game. The students also assisted at a toy drive outside Candlestick Park.

It is the second year that Williams, a cornerback, and the first year that Winborn, a linebacker, have flown a group of Nashville youth to the Bay Area. The players are working through Backfield in Motion, an organization that operates academic and athletic programs for Nashville fifth and sixth graders. The high school students mentored the younger kids through the program's VIP adjunct, and the trip was a reward. In addition, they receive scholarship money toward a college education.

Williams, below center, with Nashville students in San Francisco

Cora Named White Sox Coach

Joey Cora, A'86, has been named third base coach with the Chicago White Sox.

The former Vanderbilt shortstop played for the White Sox during 1991–94. He also played with the San Diego Padres (1987, 1989–90), Seattle Mariners (1995–98) and Cleveland Indians (1998), hitting .277 with 30 home runs, 294 RBIs, 624 runs scored, and 117 stolen bases in 3,374 at-bats and 1,119 games. He made the All-Star team in 1997, hitting .300 with 11 home runs and 54 RBIs.

Before being named to his new position, he managed Montreal's Single-A Savannah, Ga., affiliate in the South Atlantic League, finishing with a 58-80 record. He began his coaching career in 2000 with Class A Daytona in the Chicago Cubs System.

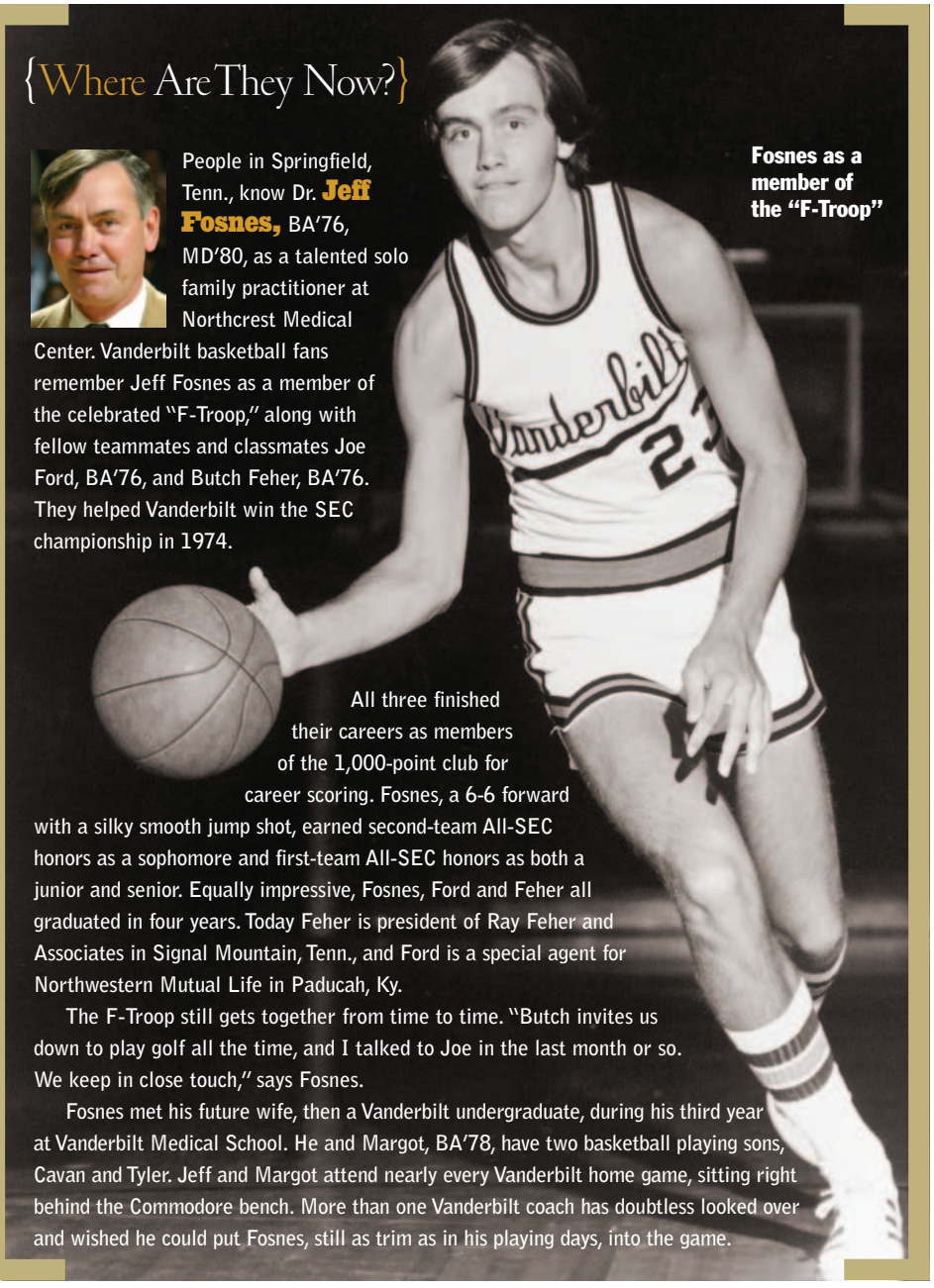
Taylor Named Living Legend

Whit Taylor, who quarterbacked Vanderbilt to its last bowl game in 1982, was honored during the 2003 Southeastern Conference Football Championship festivities as a "Living Legend." He and representatives from the remaining SEC schools were honored at a Friday night banquet and introduced to a crowd of 80,000 at the championship game in the Georgia Dome.

During his Vanderbilt career Taylor owned nearly every Vanderbilt single-season and career passing record and was named consensus All-SEC as a senior in 1982. Since 1994 each SEC-member school has nominated a football alumnus to the Living Legends team who has either been a first-team All-SEC performer, an All-American or an academic All-American.

{Where Are They Now?}

People in Springfield, Tenn., know Dr. **Jeff Fosnes,** BA'76, MD'80, as a talented solo family practitioner at Northcrest Medical Center. Vanderbilt basketball fans remember Jeff Fosnes as a member of the celebrated "F-Troop," along with fellow teammates and classmates Joe Ford, BA'76, and Butch Feher, BA'76. They helped Vanderbilt win the SEC championship in 1974.



Fosnes as a member of the "F-Troop"

All three finished their careers as members of the 1,000-point club for career scoring. Fosnes, a 6-6 forward with a silky smooth jump shot, earned second-team All-SEC honors as a sophomore and first-team All-SEC honors as both a junior and senior. Equally impressive, Fosnes, Ford and Feher all graduated in four years. Today Feher is president of Ray Feher and Associates in Signal Mountain, Tenn., and Ford is a special agent for Northwestern Mutual Life in Paducah, Ky.

The F-Troop still gets together from time to time. "Butch invites us down to play golf all the time, and I talked to Joe in the last month or so. We keep in close touch," says Fosnes.

Fosnes met his future wife, then a Vanderbilt undergraduate, during his third year at Vanderbilt Medical School. He and Margot, BA'78, have two basketball playing sons, Cavan and Tyler. Jeff and Margot attend nearly every Vanderbilt home game, sitting right behind the Commodore bench. More than one Vanderbilt coach has doubtless looked over and wished he could put Fosnes, still as trim as in his playing days, into the game.

Collections and collectibles

Tools of the Trade

Vanderbilt's Garland Collection brings to life the nerdy glamour of 19th-century science. By MICHAEL SIMS

If the Garland Collection of Classical Physics Apparatus sounds like a quaint set of extinct artifacts—merely a dust-gathering historical footnote—consider a recent event. The scene is the Arthur J. Dyer Observatory, a small mountaintop haven operated by Vanderbilt astronomers and situated a few miles south of the University campus. The date is Wednesday, Oct. 29, 2003. On the deck of the observatory, under a sunny sky with only occasional clouds, sits a handsome glass box housing a brass implement that looks as if it has been borrowed from a museum. In a striking juxtaposition of past and present, a computerized camera is trained upon the instrument, streaming its image live on the Web. Viewers can interact with the camera and manipulate the zoom control for a virtual visit with a science instrument built in the mid-19th century, a seasoned professional tool that today is working alongside its 21st-century colleagues.

The instrument is an inclination compass, a large magnetic compass mounted on a brass tripod with adjustable legs. Its casing is a glass box about 16 inches square and 6 inches deep, in a beautiful walnut frame with tongue-and-groove corners and quaintly antique hook-and-eye closings on the sides. It is an elegant instrument crafted for an elegant use. Because of variations in the Earth's magnetic field, magnetic force upon a compass needle will cause it to incline away from the horizontal to a varying extent depending upon location. This compass measures the amount of inclination.

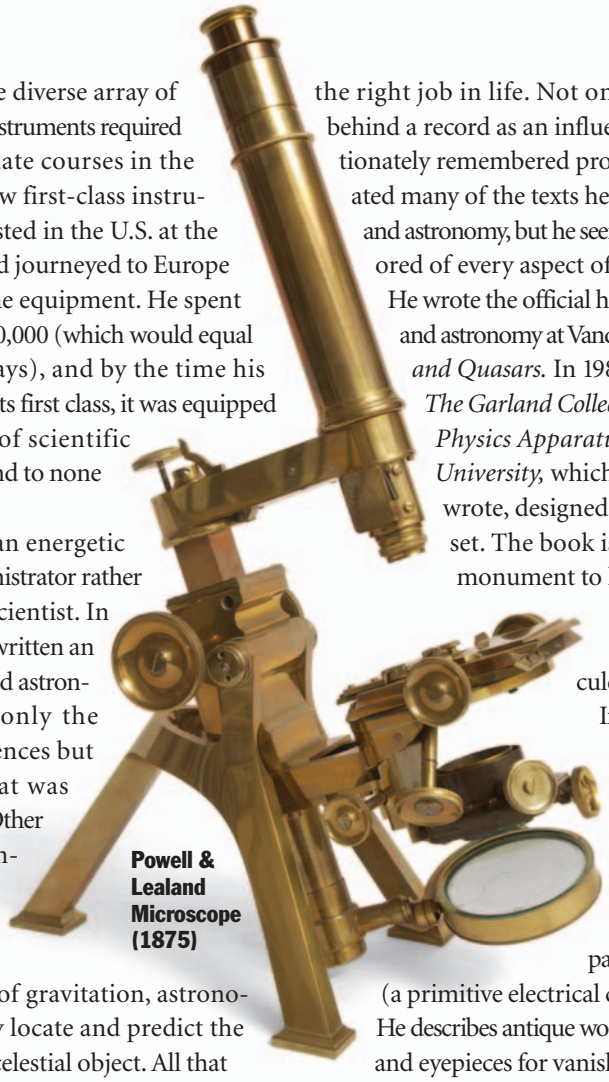
The compass is in use today because Rocky Alvey, superintendent of the observatory, wants to know if this elderly instrument can successfully measure fluctuating magnetism. Also present are Rick Chappell, director of the observatory, and Arnold Heiser, emeritus professor of astronomy. For several days solar flares have been disrupting the Earth's magnetic field. Only the day before, the sun flung into space one of the largest solar flares ever recorded. This morning Alvey took the inclination compass out of the display case and set it up outdoors to see if it would register disruptions of the magnetic field caused by the unusual solar activity. It turns out that the compass still works beautifully—as the video camera conveys to online kibitzers. Scientific instruments are always constructed with more care than household appliances, but it's a safe bet that not every instrument in use nowadays will function 13 decades from now.

Inclination Compass

This inclination compass, built in the mid-19th century, is one of 300-plus instruments in the Garland Collection of Classical Physics Apparatus at Vanderbilt University. As anyone who attended Vanderbilt knows, Landon C. Garland was the first chancellor of the University and its first professor of physics and astronomy. A walking advertisement for intellectual youthfulness, he had already reached retirement age before he launched his 20-year Vanderbilt tenure with the opening of the new school in 1875. Unlike most astronomers or physicists, Garland had the opportunity to design the curriculum for an entire newborn department. Immediately, he began

acquisition of the diverse array of quality scientific instruments required to teach up-to-date courses in the hard sciences. Few first-class instrument makers existed in the U.S. at the time, and Garland journeyed to Europe to buy most of the equipment. He spent an astonishing $40,000 (which would equal millions nowadays), and by the time his department held its first class, it was equipped with an arsenal of scientific instruments second to none in the nation.

Garland was an energetic teacher and administrator rather than a research scientist. In his youth he had written an article that declared astronomy to be not only the queen of the sciences but the only one that was already "perfect." Other sciences, he maintained, still had some growing to do. But thanks to Newton's law of gravitation, astronomy could already locate and predict the motion of every celestial object. All that remained, argued Garland, was to refine the calculations. Fortunately for his students and their intellectual descendants, like every other scientist who has ever predicted that his field had reached its zenith, Garland was wrong.



Powell & Lealand Microscope (1875)

The collection's name seems particularly apt. The word "garland" can refer not only to an adornment, but also (redundantly in this case) to a collection. And the Garland Collection very much adorns the history of science at Vanderbilt. It may be unscientific to phrase it this way, but the spirit of science, like the spirit of everything from Roman imperialism to Victorian repression, lurks in the artifacts of its era. Nothing brings to life the nerdy glamour of 19th-century science like the instruments with which its practitioners questioned the cosmos.

Thanks to the efforts of Robert T. Lagemann, we know a great deal about this collection of scientific instruments. Like Garland the century before, Lagemann, who retired as the Landon C. Garland Professor of Physics in 1977 (he died in 1994), was a man who found the right job in life. Not only did he leave behind a record as an influential and affectionately remembered professor who created many of the texts he used in physics and astronomy, but he seemed to be enamored of every aspect of his profession. He wrote the official history of physics and astronomy at Vanderbilt, *To Quarks and Quasars.* In 1983 he published *The Garland Collection of Classical Physics Apparatus at Vanderbilt University,* which he researched, wrote, designed and even typeset. The book is an impressive monument to human ingenuity—and to its author's Herculean scholarship. In this exhaustive catalog, Lagemann explains the workings of everything from the inclination compass to Leyden jars (a primitive electrical condenser). He describes antique wooden clamps and eyepieces for vanished microscopes. For each instrument or portion of an instrument, he denotes function, dimensions, gradations, even manufacturer's information. The collection includes some prosaic implements, such as tuning forks and ear trumpets, prisms and balances, lodestones and voltmeters. But many sound exotic to the unschooled ear: a Cartesian Diver, a Hero's Fountain, even a Jolly Balance. You can find a Phenakistoscope, which sounds like something Tom Swift would have invented but is actually a distant ancestor of the motion picture camera. Because its quick succession of images gives the illusion of movement, the name comes from Greek words meaning "to cheat the eye." Many of the instruments carry the names of their inventors or improvers: Arago's wheel, Quincke's tube, Daniell's hygrometer, Kater's pendulum, Oersted's piezometer. These names document one of science's great virtues, and one reason why it is so successful: its multinational, cooperative approach (barring occasional rivalries, of course).

The Garland Collection remains a testament to the spirit of inquiry that defines a healthy university. Alumni and visitors will recall the many antique instruments on display in the halls of the science buildings over the last couple decades. Some of these instruments are now on display in the lobby and the library of the Dyer Observatory. Others are displayed in the departmental office, while some are currently in storage because of renovations. The display cases include other significant artifacts from the history of Vanderbilt astronomy: textbooks, a telescope and other materials used by Edward Emerson Barnard, who grew up in poverty during the Civil War to become the world's most famous comet hunter.

The inclination compass, which performed so well alongside its newer colleagues, is not the only original Garland instrument still in use. On the 10th floor of the Stevenson Science Center, Vanderbilt astronomers continue to gaze through the 6-inch Cooke refracting telescope, although they call it the "Barnard telescope." Like his reputation, Barnard's name lingers on. It encourages his intellectual descendants to keep asking the universe to reveal its secrets. Fortunately for the human imagination, Landon C. Garland was wrong in his prediction about the future of astronomy. There is still plenty to learn.

Oersted's Piezometer

FURTHER READING

You will find more information in two books by Robert T. Lagemann: *The Garland Collection of Classical Physics Apparatus at Vanderbilt University* and *To Quarks and Quasars: A History of Physics and Astronomy at Vanderbilt University* (edited by Wendell G. Holladay), both available from the Vanderbilt Department of Physics and Astronomy.

Antique Scientific Instruments by Gerard L'E. Turner. Berkeley: University of California Press, 1980.

Bright Ideas

"The optical surgical guidance system has

Several times our techniques

Declaring War on Side Effects

1. Collateral damage, in military jargon, refers to unintended carnage that is a consequence of waging war. At Vanderbilt biomedical engineers are attacking the problem of "collateral damage" that results from battling disease. Their goal is to make medical procedures free of side effects. New technology-guided therapy, the result of collaborations between biomedical engineers and surgeons, is helping medical practitioners wage war on diseased tissue while leaving healthy tissue and organs intact.

In brain surgery a small error can cause a lot of unintended damage. CAT scans reveal the blueprint of the brain, but surgeons may have difficulty locating *exactly*—the operative word—how the specific site in the brain relates to the scan. Robert Galloway, professor of biomedical engineering, surgery and neurosurgery, has perfected a device that helps neurosurgeons "see" what they are doing, using optical techniques to track the position of surgical tools on the CAT scan or MRI.

On the operating room wall, an optical device "finds" the tool in space and then relates the tool to images of the patient's brain. The brain is located using four inserts in the patient's skull, placed by the surgeon. Using those four points, software developed by Galloway's team rotates the CAT scan on the screen and shows its relationship—within millimeters—to the surgeon's tool. Surgeons guide themselves by looking on the screen, at the patient or both.

A cancerous tumor looks very similar to brain tissue, so the scan is used to define the edges of the tumor. Many other cerebral procedures require great precision, as in treatment for Parkinson's disease in which a neurostimulator is placed at a specific node in the brain.

"The human eye can see in maybe two and a quarter dimensions—length, width, and a little bit of depth," says Galloway. "But it can't see [through tissue to] the back of someone's head, and brain tissue is opaque. This device lets the surgeon know what's underneath."

Anita Mahadevan-Jansen, assistant professor of biomedical engineering, is also advancing the tools available to aid cancer surgery. She has developed a probe that will perform a tissue biopsy on the fly. Her device uses two light sources, each delivered to the area under study by a slender fiber-optic probe. The first uses broadband white light reflected out of the tissue in a scatter pattern that is read by an optical device. The second uses a nitrogen laser, which causes certain molecules in the body to fluoresce. "We use the reflectance data from the white light to account for blood and the fluorescence data to give us a sense of the biochemistry and morphology of the tissue," she says.

Anita Mahadevan-Jansen

DANIEL DUBOIS

The tissues are analyzed by comparing the reflection/scattering pattern of a given tissue with known patterns of normal and cancerous tissue. "The optical surgical guidance system we've developed has achieved nearly 100 percent accuracy in identifying the margins of brain tumors," says Mahadevan-Jansen. "Several times our techniques indicated that the surgeon had not quite gotten the entire tumor, and the histological results of the laboratory proved that the optical data were correct."

Unlike brain tumors, the cervix and ovaries have healthy tissue, cancerous tissue, and tissue that is in-between. Mahadevan-Jansen uses a different optical technique to diagnose

achieved nearly 100 percent accuracy.

indicated that the surgeon had not quite gotten the entire tumor. —ANITA MAHADEVAN-JANSEN

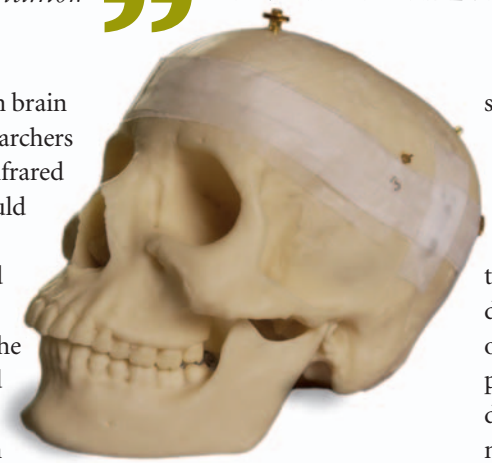
cancers of the ovaries and cervix. "We found that using fluorescence produced too many false positives," she says.

Instead, Mahadevan-Jansen uses a form of spectroscopy called Raman Scattering. The technique measures vibrational energies of the tissue's molecules. "Most photons enter and exit material at the same wavelength or energy level," she says. "But a small fraction of light emerges in directions other than the incoming beam, with greater or lesser energy than the initial light. We measure those frequency shifts and produce a pattern that is characteristic of particular molecular species."

Like the equipment used in the brain research, Raman Scattering equipment uses a laser light source, fiber to deliver the light and return data through a probe, a spectrograph to measure the data, a charge-coupled device camera to digitally record the data, and a computer to control the process and graphically present the results.

In neurosurgery a fraction of a millimeter can spell the difference between success and failure. Researchers have tried to use conventional lasers for brain surgery in the past but largely abandoned the effort because collateral damage to surrounding tissue was too great.

The goal is to find a wavelength that destroys a tumor without harming the rest of the brain. Using non-human brain material, Vanderbilt researchers first tried a part of the infrared spectrum that water would absorb. But the water became superheated and created mini-steam explosions throughout the material. They next tried an infrared wavelength of 6.45 microns, a length that both proteins and water would absorb. It worked very well, ablating (vaporizing) the tumor without harming surrounding brain matter, all at a level of precision sharper than a surgeon's scalpel. And ablation is less invasive than removal would be.



E. Duco Jansen, an assistant professor of biomedical engineering, has a special interest in the relationship between lasers and human tissue. The problem facing Jansen was to deliver the laser in a tool that surgeons would find workable. The intensity of the laser pulse melted the fiber-optic cables, so instead Jansen used small, lightweight, flexible, hollow-core tubes called "waveguides," which have a mirror coating on the interior. The reflecting quality of these tubes "bent" the light at the behest of the surgeon. Jansen designed a comfortable handpiece, together with a lens that would focus the beam down to 0.2 millimeters, the degree of precision needed in this type of surgery.

Ultimately, Vanderbilt neurosurgeons hope to use the University's free-electron laser, together with a computer-assisted guidance system, to remove tiny brain tumors near vital nerves and arteries that are too risky to excise with conventional medical lasers or by traditional brain surgery. Some of these applications will be based on the clean cutting of soft tissue. Other uses may include welding tissue to assist in wound healing, repairing nerves, reattaching retinas or monitoring neurological activity—applications where infrared light proves superior to other wavelengths.

Probably no medical therapy is more notorious for side effects—and riper for better therapeutic tools—than cancer treatment. Ales Prokop, research professor of chemical engineering, works on drug delivery systems, using techniques of nanotechnology—that is, he designs a molecule that will perform a particular function.

"Drugs are a medical problem," he says, "but drug delivery systems are an engineering problem." A drug exists that will cut off growth of blood capillaries in a cancerous tumor, effectively killing it, but the problem is to deliver the drug without affecting the rest of the body. Prokop constructs protein molecules specifically designed to bind to the tumor, molecules that are large enough to carry the drug. Because the drug is delivered directly to the tumor site, it can be stronger than currently used chemotherapy potions, which course more or less randomly through the bloodstream, causing the catastrophic side effects associated with chemotherapy today.

Throughout the stories of these breakthroughs, the theme is cooperation between engineering and medical faculty. In both fields, the goal is to cure the problem without creating new ones. No more collateral damage.

Genetics, Fiction and Public Debate

2. Ever since Mary Shelley first brought *Frankenstein* to literary life nearly 200 years ago, readers have been both fascinated by and fearful about the ways science affects our lives. From masterpieces like Aldous Huxley's *Brave New World* to camp movies like "Attack of the Killer

Tomatoes," works of literature and film can affect our thinking on issues like cloning and genetic coding.

Jay Clayton, chair of the English department at Vanderbilt, thinks such works of popular culture deserve closer scrutiny. He's made the case for serious study of genetics in popular culture so compelling that he recently won the first National Institutes of Health (NIH) grant ever awarded to a literature professor.

Clayton was awarded the $100,000 grant in September by the National Human Genome Research Institute of the NIH. In collaboration with Professor Priscilla Wald of Duke University, he will lead a 12-member team to study and catalog the topic of genetics in literature, film and popular culture.


NEIL BRAKE

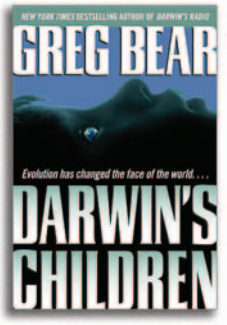
Clayton

"I think the NIH was persuaded by our argument that the way in which the public learns about genetics is a great source of misinformation and that somebody needs to be thinking about the kind of view our public is getting," says Clayton. "That includes a whole spectrum of cultural artifacts—movies and comic books, serious works of literature and provocative science-fiction novels that are not, perhaps, written with a great deal of literary grace or complexity but nonetheless raise really smart, probing issues."

In the debate about cloning, he says arguments are skewed by false assumptions springing from pop culture. "A film like 'Jurassic Park' completely mangles the entire notion of cloning in very damaging ways, creating fears that are groundless," Clayton says. "Certainly, there are legitimate concerns about cloning. But the fears that you'll get a Xerox copy of an animal are utterly groundless. That's not how cloning works."

In the film "Multiplicity," the character played by Michael Keaton is cloned, and then the clones are cloned. The process results in less-and-less intelligent versions of the original. "That taps into the whole 19th-century eugenicists' notion of degenerate populations—of populations getting worse and worse," says Clayton. "First of all, it misunderstands the science behind cloning. But there's also a deeper subtext of the production of defective humans—idiots—that ties in with eugenics notions that need to be rigorously guarded against.

"Common notions of science out of control are encapsulated and given their greatest power



in *Frankenstein*," Clayton adds. "The FDA recently said it was safe to eat cloned beef. But in Europe the public refers to any kind of genetically engineered food as 'Frankenfood.' Everyone still uses Mary Shelley's *Frankenstein* as a touchstone."

The research team will also look into ideas about genetics raised both in pulp works and in serious novels like Jeffrey Eugenides' Pulitzer Prize-winning *Middlesex: A Novel* and Richard Powers' *Gold Bug Variations*, which Clayton describes as "on a par with James Joyce's *Ulysses* in terms of difficulty."

In a way, Clayton has been preparing for this project all his life. An avid reader since childhood, he was drawn to both literary masterpieces and science fiction. "I was never a snob about reading," he says. "And now all those hours I spent under the bed sheet with a flashlight reading Arthur C. Clarke and H.G. Wells and Isaac Asimov when I was supposed to be sleeping are paying off."

His wife, Ellen Wright Clayton, is a physician and law professor at Vanderbilt who studies the ethical, social and legal implications of genetics advances. "After 20 years of discussion around the dinner table, I realized that I had learned a lot about the social implications of advances in genetics," he says.

The research project will produce a book of essays designed to set the future course for scholars on the subject, a list of relevant books and films and a Web site to serve as a central source of information.

"We're going to get this important topic into the literature classroom," says Clayton. "Every student in high school in America takes English literature courses. This is a chance to raise these issues—the future of science, its consequences in society—in classrooms where it's never appeared before."

As the first literature professor of an NIH grant, Clayton says he feels a "huge responsibility to prove the value of funding interdisciplinary research in the humanities through the NIH and other national organizations. The future of education is interdisciplinary teams getting together to study an important issue, and the humanities should not be left behind."

Inside the Brain of Don Juan

When it comes to sex, more is not always better. High-profile cases in recent years have detailed problems of the rich and famous whose personal relationships have been wrecked by a seeming obsession with sex. And letters from women and men whose

spouses are consumed by Internet porn have become standard "Dear Abby" fare.

A group of Vanderbilt addiction researchers is interested in finding out what's going on in the brains of people with problematic hypersexuality, and how their brain mechanisms compare with those of typical individuals.

"No one in the past has stopped to examine the motivation of people like Don Juan," says Dr. Peter Martin, director of the Division of Addiction Medicine at Vanderbilt. "He was viewed as a highly successful man rather than someone suffering from an inability to sustain relationships. That is kind of an empty life, and it takes time away from being able to do other things that are joyful and constructive."

Martin, who is also a professor of psychiatry and pharmacology at Vanderbilt, along with colleagues Dr. Reid Finlayson, assistant professor of psychiatry, and Dr. Mitchell Parks, research fellow in psychiatry, want to determine if such behavior is a true addiction and, if so, how it compares with other types of addiction.

"I do not like to use the term 'sexual addiction' because we do not yet know whether it is in fact an addiction," says Martin. "It could be an obsession or a compulsion. All three involve models of repeated behavior that's dysfunctional, but the brain mechanisms involved are quite different." In a nutshell, addiction is something that involves preoccupation with the pursuit of something that is not necessarily beneficial and may, in fact, be very harmful.

To aid them in their studies, Martin and his colleagues are using functional magnetic resonance imaging (fMRI), a technique that allows them to identify which brain regions become active during the performance of specific tasks.


NEIL BRAKE

Martin

"We have identified activation of parts of the brain that are involved in attention, motor imagery, preparation and planning," says Martin. With heterosexual males as their subjects, the researchers have compared what happens in the brain when the subject views a nude woman alone with what happens when the subject views a more graphic depiction of a heterosexual sex act.

"The part of the brain that seems to be brought into play early on is the region called the anterior cingulate," Martin explains, "which is the same region that other researchers have shown is activated during cocaine exposure." When typical subjects view the more graphic material, Martin says, there is also activation of the motor imaging and motor planning regions of the brain.

Now the Vanderbilt researchers want to explore what happens in the brain of subjects with problematic hypersexuality when those persons view the same material. "We have found that in the few patients we've studied who have problematic hypersexuality, they are actually shutting down this anterior cingulate region of the brain. It is very similar to what cocaine addicts do when they see cocaine stimuli," Martin says. "They are trying to inhibit this sort of pleasure emotion, suggesting that it's uncomfortable for them."

Persons with problematic hypersexuality also seem to have comparatively less activation of the motor imaging and motor planning regions of the brain. "It is almost as if the patients are subconsciously inhibiting it," says Martin. "Or it could be that they have seen such images so often that for them it does not mean as much as for the normal volunteers. The interpretation at this point is not clear."

The patients with problematic hypersexuality "may never attain pleasure no matter what they do," Martin suggests. "They are taking part in this activity seeking something they are never going to find until they get treatment, either talk therapy or medication."

One obvious challenge Martin and colleagues face is recruiting research subjects, particularly those with problematic hypersexuality. "There is a tremendous stigma associated with problems in sexual functioning," he says. But that may soon change: Their work has caught the attention of "Dateline NBC" producers, who have interviewed Martin for a segment tentatively planned for airing early this year.

Although their research to date has focused on men, Martin says problematic hypersexuality is a significant problem for women, too. "It is profoundly affecting lives. People come to work sleepy because they were looking at the Internet all night. They become alienated from their families."

Martin also worries about what's happening to society at large. "The landscape of sexual development, sexual relationships, and other kinds of personal relationships is being changed by the plethora of things we weren't exposed to 20 or 10 or perhaps even five years ago."

InClass

A spotlight on faculty and their work

Frozen in Time

Expeditions to Antarctica shed light on the geologic history of Earth.

By Julie Neumann

Every four or five years, Molly Miller sheds her lab coat to don multiple layers of fleece and fabric in order to collect rock samples in the ultimate geologic laboratory: Antarctica. In this frozen landscape she looks for, and finds, evidence that an abundant animal community flourished there more than 200 million years ago. The evidence she studies is the burrows and tracks that these ancient animals left behind in the rock.

Miller, a professor of geology at Vanderbilt for the past 26 years, uses these "trace fossils" to reconstruct the environment, ecosystem and climate that existed in these ancient times. She is convinced that this forbidding land contains important clues about long-term climate change and the origin and evolution of mammals.

After several weeks in the field, geologists consolidate their food supply, which is stored in wooden boxes and buried in the snow.

Miller

One of Miller's specialties is determining the origin of sedimentary rocks using diverse types of data, including the activity of animals that lived in the sediment before it was compacted and cemented into rock. Even though the animals themselves are not preserved, their movements and dwellings are. These behavioral patterns, referred to as trace fossils or bioturbation, allow geologists like Miller to determine the environment in which the rocks were deposited.

Her fascination with the earth and its history began when she was a young child. While on a camping trip at age 9, she discovered a fossil that she identified in *Golden Book of Fossils* as being 350 million years old. Although her interest had been piqued, in the years that followed it gradually faded for lack of encouragement. When she took a geology course during her freshman year of college, however, she quickly rediscovered her old enthusiasm for seeing herself in the perspective of geologic time and past life.

Miller's desire to gain a complete worldview was fueled by the activist atmosphere of college in the 1960s. She spent one summer working in a refugee camp in southwestern Ethiopia, and after graduation she revisited Ethiopia as a Peace Corps trainee. Upon her return she completed her master's degree at George Washington University, where she met and married her husband, Calvin Miller, and taught earth science in high school. Before starting in the doctoral program at UCLA in 1973, the Millers worked as ranger naturalists at Bryce Canyon National Park.

When the couple was ready to enter academia, they faced a new problem. "It was very difficult, especially at that time, to have two jobs—two academic jobs—and have any kind of normal family life," says Miller. "So we decided very early that the way to do this is essentially to share one job and have both parents involved in bringing up the children." Their emphasis on family brought them to Vanderbilt in 1977, where they were the first couple hired under the University's "full status, partial role" program. They each had an academic appointment but with only half the teaching responsibilities.

"The advantage to the small geology department was getting two people with very different specialties," comments Miller. "Then, when we were ready, Vanderbilt allowed us to become full time."

Her husband's research focuses on the Southwestern United States, where he is studying how volcanic activity—particularly the evolution of deep magma chambers—has shaped the landscape of Arizona and surrounding areas of California and Nevada over the last 2.5 billion years. He and his students also are investigating the protracted geological processes that created the southern

continued on page 84

PHOTOS COURTESY OF MOLLY MILLER

Geologist Molly Miller studies rocks in the Transantarctic Mountains, where plant and animal life flourished 200 million years ago.

Tipper Gore

Remembers

By Frye Gaillard, BA'68

It was a July afternoon in Tipper Gore's office, one of her rare interviews these days, a moment when the memories came flooding back. There were stories of the Clintons and Nelson Mandela and the infested refugee camps of Rwanda where she experienced the horrors of a genocidal war. But there were also the stories from closer to home, more personal and immediate, like the homeless woman outside the White House who was gesturing, talking, walking in a daze, obviously in need of some kind of help.

Mrs. Gore was a volunteer at the time with a homelessness advocacy organization in Washington, and she often found herself searching the streets for people with no place to go. She approached the woman near the White House cautiously.

"What's your name?" she asked. "How can I help you?"

The woman stared back with her large, dark eyes, looking straight into Tipper Gore's own. She was African-American, thin and wispy, maybe 5-foot-3, and somewhere imbedded in her quiet desperation there seemed to be a certain sweetness in her smile.

"My name is Mary Tudor," she said. "You can help me get my reality back."

She has long been a woman who is given to **crusades,** sometimes public,

They talked for a while about the places she could go—like a downtown shelter where she could get a hot shower and a good hearty meal, and where they could begin to evaluate her mental health. But a cloud passed over the woman's face.

"I can't go," she said. "My husband will worry."

"Who's your husband?"

"President Clinton."

"Oh, I see," replied Mrs. Gore, a psychologist by inclination and training. "Well, I know how to get a message to the president. We can tell him you are going with me, and it will be OK."

Together they went to the gate of the White House, where Mrs. Gore introduced Mary to the Marine on duty and told him, please, to let the president know Mary was fine. The Marine said he would, and the two women headed away to the shelter where Mary enrolled in emergency housing and soon began treatment at a mental health center.

They visited often in the months after that, the vice president's wife and the woman of the streets. Mrs. Gore would drop by the shelter to see her, sometimes talking for an hour or more, giving her encouragement as she went through her treatments. Mary (which turned out not to be her real name) came several times to the vice president's mansion, twice for lunch and, along with other homeless people from the capital, a couple of times to the Gores' Christmas parties.

As the people who have known her through the years will tell you, all of this was vintage Tipper Gore. She has long been a woman who is given to crusades, sometimes public, sometimes less so, sometimes quixotic in the eyes of her critics. Whatever the case, she has divided her energy, which was always considerable, between the needs of her family and the demands of the causes she has chosen to embrace.

It is a pattern in her life that continues even now. At the time of her interview last summer, she and her husband, among other things, were putting together a national conference on the family—the 12th in a series of annual meetings at Vanderbilt, which the two of them began in 1991. "We call them Family Re-Unions," she said. "We have met a lot of good people there."

She was sitting at the time in her Nashville office, just across the street from the Vanderbilt campus. She was still moving in, her professional life in cardboard boxes, as she prepared for a series of personal appearances—one in Chicago, another in Dallas, two more in California—but she was happy, she said, to take a little time to reflect on her journey.

She remembered the days in the early '70s when she was still a young bride, working on her master's degree in clinical psychology at what was then George Peabody College for Teachers. She received her degree in 1976, three years before Peabody merged with Vanderbilt as its college of education and human development. There was a beauty about the campus of Peabody College, a feeling of promise as she was beginning her life with the handsome young son of a Tennessee senator.

This was before she knew where all of it would lead her, before she imagined in any realistic way what it might be like as the wife of a congressman or a U.S. senator or, later, the vice president of the United States. But she knew from the start that life with her husband would be something special. In 1964, Mary Elizabeth Aitcheson (nicknamed "Tipper" by her mother) met Al Gore at a high school party in Virginia, and the following weekend they danced to an evening's worth of rock 'n' roll records. It was like nothing she had ever felt in her life.

"He's such a sweet man," she said years later, and that was the thing that struck her from the beginning. It was true he had other qualities as well. Even as a teenager, Al Gore was strong and sure of himself, as one might expect from the son of the most prominent politician in the state. His aristocratic father, Albert Gore Sr., was one of the most stubborn men in the Senate—part of the loyal opposition during the war in Vietnam, a stand that cost him politically in Tennessee. But his son often talked in the years afterward about his own need to follow both his conscience and his heart.

Tipper liked that about him, and even his occasional flashes of petulance seemed to fade easily, subsiding into something more gentle and fair. Once when he was a freshman at Harvard and Tipper was still a senior in high school, Al invited her to come to Boston to see him. The problem was, Tipper's grandmother insisted on coming along, which in many ways was not a surprise. Tipper's parents divorced when she was only 2, and she and her mother went to live with her grandparents. For years after that, Tipper's mother, Margaret Ann Aitcheson, battled the agony of clinical depression, and Tipper's grandmother, Verda Carlson, became like a surrogate parent. She was a sturdy woman with old-fashioned values, appalled at the notion that a pretty young girl might go off to visit a boy by herself.

Al was not at all happy with the news. "I hope this isn't making you mad," he wrote, "but I don't care about spending a week with your grandmother. I want a week with you. … As I think more about it, I don't like it worth a damn."

But when the week finally came, the grand-

sometimes less so, sometimes quixotic in the eyes of her critics.

mother was there and Al could do nothing but adjust. "He was a perfect gentleman," Tipper said years later, a fact not lost on her or her family. Whatever the various frustrations of the moment, Al Gore's stock was still on the rise.

In May 1970 they were married, and after Al served a hitch in Vietnam they moved for a while to the Gores' family farm. It was nestled away near the town of Carthage, in the scenic hill country just east of Nashville, and Tipper thought it was perfect. She could imagine herself in such a place forever, a farmer's wife living close to the land.

In those early days of fantasy and promise, Al went to work as a reporter in Nashville and Tipper tried her hand at journalism, too. She worked for a while as a part-time photographer and soon discovered she was quite good at it. She had taken a class from Jack Corn, the (Nashville) *Tennessean*'s chief photographer, driving the hundred-mile round-trip from Carthage and absorbing his wisdom and sense of the craft. In one class, Corn told his students to photograph someone who loved them—a photo in which that affection was clear. Tipper took a picture of her husband shaving, his dark hair tousled, his face still lathered, but with a smoldering softness in his eyes as he stared at the camera and the young woman behind it.

A short time later, Corn offered her a job.

She juggled photography with work on her master's degree at Peabody, and then came the day in 1976 when her husband decided to run for the Congress. Though it wasn't easy for her, given her own professional aspirations, Tipper quickly made a fundamental decision. She would share in the journey as fully as she could. She would not be like those Washington wives who would make their obligatory appearances at a fund-raising dinner or perhaps at the national convention of the party. She would be there with him every step of the way.

Tipper says it was difficult at first, that the political small talk with total strangers was hard for her to muster in those early days. But she soon discovered an aptitude for it, a natural gregariousness and an ability to look people squarely in the eye.

The people who knew her were not at all surprised.

"With Tipper Gore," says Larry Woods, a Nashville lawyer and Democratic activist, "what you see is what you get. I've known her now for three decades, and she has impressed me as a person of wisdom and substance who has that knack for getting things done."

As Woods had expected from the moment he met her, Mrs. Gore soon emerged as a public figure on her own, and her passionate crusades for the causes she embraced were tied in many cases to her family. Her concern for the homeless, for example, began on a luncheon excursion with her children. They were still quite young, ranging in age from 2 through 10, and three of the four were attending a public school in Washington.

It was a Wednesday afternoon, an early release day for the children to spend with their families, and they had gone to eat lunch with their father at the Senate. On the way back home, they were stopped at a light, and there on the corner was a ragged-looking woman talking frantically to nobody in particular.

"What's wrong with her, Mom?" the children kept asking. "Who's she talking to?"

"Well," said Tipper, "she's homeless and she's probably mentally ill."

The younger Gores were appalled. "You mean she's sick and has no place to go, and we are just going to drive off and leave her?"

Working with the homeless took her into difficult

"Totally nuts," she told

That night over dinner they talked about it—Tipper and Al and all four of the kids—and they resolved that the time had come to get involved. Tipper had already called about the woman on the corner, alerting the people at the homeless hot line, and within a short time her husband would introduce new legislation to create housing for people in the streets.

Her children, meanwhile, began to volunteer at a homeless shelter, making sandwiches, doing what they could, and Tipper herself began a 20-year commitment to the issue. "I stopped turning away," she would later explain. "The children and their innocent compassion got to me. They saw the world with such total clarity."

In an effort to replicate that kind of clarity, she organized a pair of photography exhibitions, betting on the power of her favorite art form to put a human face on an abstract issue. She also volunteered at shelters, and after her husband was elected vice president she became a regular with Health Care for the Homeless, an advocacy organization in Washington that scoured the streets and public parks of the capital, searching for people who needed better care.

It was work that took her into difficult places, which sometimes drove the Secret Service crazy. "Totally nuts," she told one reporter. But most of the agents understood the mission, and on several occasions she was glad they were there, such as the time they took away a knife from one of the desperate-looking men in an alley.

Every so often the payoff was clear, for there were homeless people who responded to treatment and managed to turn their own lives around. But there were others who didn't, who died of AIDS or other illnesses in the streets, and that too was a part of the reality.

Through it all, she made no mention of her efforts to the press, for somehow that would have cheapened everything. "It was a personal commitment I made that meant something to me," she explained. "There didn't seem to be any need to talk about it."

That, of course, wasn't always the case. Other causes on other occasions were much more visible and controversial, with Tipper Gore squarely at the center of the storm. One of those took shape in the 1980s, and once again it was triggered by her children.

In December 1984 she bought a copy of the album "Purple Rain" by the rock artist Prince. Her daughter, Karenna, who was then 11, had been asking for it because of a song she had heard on the radio. They sat down together, mother and daughter, to listen to the music, and were startled by the lyrics to one of the cuts: "I knew a girl named Nikki/I guess [you] could say she was a sex fiend/I met her in a hotel lobby/Masturbating with a magazine."

About the same time, Karenna's two sisters, Kristin and Sarah, who were 6 and 8, began asking questions about videos they had seen on MTV. This time Mrs. Gore was even more shocked, for she was treated to the image of a heavy metal band, Mötley Crüe, locking away semi-naked women in cages.

She had never thought of herself as a prude. She had been raised in the rock 'n' roll generation—had been a drummer, in fact, in a high school band—and she knew that sexuality was imbedded in the music. "I understood the themes," she would later explain, "but I was like, 'Whoa.' Here I was explaining S&M to my 8-year-old."

Her husband by then was a U.S. senator, which put her in touch with other Wash-

places, which sometimes drove the Secret Service crazy.
one reporter. But on several occasions she was glad the agents were there.

ington wives who shared her concerns. Together they formed a nonprofit group, the Parents' Music Resource Center, and in May 1985 they set out to bring pressure on the entertainment industry. They found an ally in the National PTA and began holding public meetings and talking to the media, eventually beginning negotiations with leaders in the industry. They were seeking more responsibility and restraint, and some kind of warning labels on records, and for a while at least, everything got ugly.

Frank Zappa, an aging rock 'n' roller with a national following, labeled Gore and her allies "cultural terrorists." One of the young rockers said Gore was afraid of the sexuality of her children, and an industry spokesman declared that her efforts "smacked of censorship."

In fact, they didn't. As others noted, from the *New York Times* to the ACLU, Mrs. Gore and her friends were seeking voluntary labeling, not a standard imposed by the government, and in the end that was what they got. In 1987 the record industry began to rate its own products, putting warnings on albums with explicit lyrics, and Tipper saw that achievement as a victory.

"It was a tool for parents," she said looking back. "It's up to us to guide our children, and as mine got older I would sometimes say, 'OK, it's your choice. You can listen to this if you want to.' But we would talk about the values, and that's what you have to do as a parent—set the limits, and then loosen up as your children get older. The warning labels were just another tool. I really thought of it as truth in marketing."

Even now, some critics say she was simply jousting at the wind. Peter Cooper, music writer for the (Nashville) *Tennessean,* points out that lyrics once hidden away on albums are now heard freely on the radio, and that a label can do nothing about that. In the largest sense, Mrs. Gore and her friends were resisting the irresistible tide.

Whatever the case, whether it was a victory, a defeat or something in between, for Tipper the whole episode was soon overshadowed—obliterated by a moment of horror that quickly put everything else in perspective. It was the moment she almost lost her youngest child.

April 3, 1989—opening day of the baseball season. The Baltimore Orioles, with the great Frank Robinson managing the team and Cal and Billy Ripkin anchoring the infield, were playing at home, and Al and Tipper Gore and two other couples took their children to the game.

Outside the stadium Albert Gore III, who was not yet 7, was holding tight to his father's hand, when he suddenly jerked free and went running off in pursuit of his friends. It all happened so quickly that the Gores could only stare in disbelief as their son ran squarely into the path of a car. He flew through the air in a horrifying arc and then lay crumpled and still on the pavement.

It took him nearly a year to recover, and during that time there were bedside vigils and moments when nobody knew if he would live. Tipper Gore, a woman of great strength, held it together through all those hours, but the time finally came when the crisis had passed and she felt herself slipping into clinical depression.

"I thought I had dodged that bullet," she said, recalling her mother's mental health problems. But the demons hit her with a devastating force, requiring both counseling and medication to recover.

Typically enough, she would later turn her troubles into a cause, crusading on behalf of better mental health. She would chair a presidential conference on the subject and speak out strongly for insurance benefits comparable to those for any other illness. But for a while she struggled to make it through a day, and even in the delicate period of her recovery, she depended on the love and understanding of her family.

The Gores had always been quite close. Al, she thought, was such a good father, so patient and gentle with all the children, and now it seemed they were getting even closer. Her husband, who had run for president in 1988 but had come up short in the Democratic primaries, decided not to run again in '92 in order to spend more time with the family.

For a while at least, it appeared their time on the national stage was over—just a brief flirtation in 1988, and now it was back to the U.S. Senate, a worthy calling by anybody's measure. But then came the night of July 7, 1992.

It was 11 p.m. when Bill Clinton called, asking Al Gore to be his running mate. Clinton had confounded the political pundits by winning the nomination in the Democratic primaries, and he would surprise them again with his choice of Gore. The two men, after all, were Southern moderates from contiguous states, both about the same age, and according to the conventional wisdom of the time, Gore didn't add a lot of breadth to the ticket.

But Clinton had a feeling, and after a little while so did the Gores. The campaign season was inherently self-contained, the November election less than four months away and far less disruptive to their time as a family than the arduous string of Democratic primaries. Before the call the Gores

When he made the decision not to run a second time, there was that could never be replaced. What he said was exactly what he meant.

hadn't known the Clintons very well, but they quickly discovered an affinity that was rare.

"I felt Hillary was my long-lost sister," Tipper said more than once. And they would laugh sometimes when all four were together about how Tipper was really much more like the president—more outgoing and more animated, far more at ease in the company of strangers.

All in all, they seemed to complement each other's strengths, and they shared a basic understanding of the country. They valued its diversity and hated the pitting of one group against another, and they saw the government as a tool for doing good. There was a sense in which all of them—and maybe most of all the president—had internalized the idealism of the '60s, and it gave them a feeling of possibility and hope. They would tackle the economy and the massive budget deficits, and they would talk to the Russians about nuclear disarmament, protect the environment, and wrestle with waste in the federal bureaucracy.

As the years went by, they would succeed in many of those aspirations, but eventually came to the surface the intricate character flaws of Bill Clinton, which in the eyes of many voters never fully defined him. Whatever his failings, he was also a man of resiliency and grace, and the Gores understood that as well as anybody. But in the end there were strains, as Al Gore made his own run for the presidency and sought to establish a political identity distinct from the double-edged legacy of his friend.

Today Tipper Gore is much more guarded in talking about the Clintons, more reluctant to go into personal detail. When a reporter recently asked about Hillary, her answer was enigmatic and abrupt: "I have my life, she has hers. But we do talk."

And yet, for Tipper, whatever the weight of the personal history, the memories of those eight years in Washington were as rich and compelling as any she had known. Some of them, of course, were deeply disturbing, including her visit to the killing fields of Rwanda. Her poignant photographs—which were featured in her 1996 book, *Picture This: A Visual Diary*—tell the story of the trip: pictures of children and occasionally their parents, staring at the camera with a vague and empty pain.

But she will also tell you that on the same troubled continent at about the same time, there was a moment of inspiration so powerful and pure that it stands head and shoulders above all the rest. In 1994 she was part of the official American delegation attending the presidential inauguration of Nelson Mandela in South Africa.

She had never met anyone quite like him. She knew his story, how he had spent 27 years in a cell on Robben Island, which she would later see for herself—the claustrophobic rectangle that he had somehow known was only temporary. At one of the inauguration ceremonies, she and the other Americans in Pretoria watched in astonishment as Mandela called his former jailer to the podium, put an arm around his shoulder, and talked to the country about the power of forgiveness.

"Al and I were just blown away," she remembered, and the image was never very far from her mind. It was a source of perspective, a lesson against bitterness and regret, as the Gores encountered their own disappointments—the controversial loss of the 2000 election, and the decision in December 2002 to abandon their presidential dreams altogether.

The latter decision was made in New York City, and somehow the richness of memory made it easier—the simultaneous feelings of accomplishment and gratitude for all the opportunities they'd had.

Tipper, Al, and all four of the children came together in New York for a week of rehearsals for "Saturday Night Live," on which Al, improbably, would appear as guest host. The show itself went remarkably well (later it was nominated for an Emmy), and those who were watching had no way to know that the host was working toward a difficult decision.

He had long been worried that the American media had little interest in a Bush-Gore rematch. He thought it was possible to beat George Bush, and because of the economy and the looming war in Iraq, he also thought it was critically important. But would it be possible, if the press corps were bored, to get his own message out?

More and more he was afraid the answer to that question was no, and he told all this to the members of his family. Later he would say the same thing to Leslie Stahl, stunning a national "60 Minutes" audience. Tipper Gore thought it was typical of her husband, putting the interests of the country ahead of his own, and she bristled at even the vaguest suggestion that some more cynical strategy was at work—an angling, perhaps, for a Democratic draft.

She said she knew him as well as anybody, and understood the subtlety of his political ambition. "You win some, you lose some," he had said in his speeches, and if that sounded glib to many of his listeners, particularly the reporters out there taking notes, maybe it was because they saw through a lens that simply didn't fit. They insisted on seeing every national politician as a man or woman of naked ambition, some of them caught in a grand sense of destiny and others obsessed with the concept of power.

But Tipper was certain the man to whom

never any feeling of a destiny denied or a burning ambition He was trying to do what was right for the country.

she was married was not like that. There were ideas and issues in which he believed, and he was deeply confident of his own understandings. But when he made the decision not to run a second time, there was never any feeling of a destiny denied or a burning ambition that could never be replaced. What he said was exactly what he meant. He was trying to do what was right for the country.

Tipper believed that as much as she believed anything. "My husband," she said, "is an honorable man."

By late afternoon, as our interview was ending, Tipper glanced past the reporter sitting across the room toward a picture of Al Gore hanging on the wall—a color photograph she had taken herself.

"Cute picture, isn't it?" she said with a smile, and her face was suddenly the face of a girl. For anyone who had seen it, it was easy to flash back to her wedding photograph, as her blue eyes sparkled and she brushed back a strand of blond hair with her hand. She said they had come a long way in the past 30 years, and whatever the twists and turns still ahead, she was caught in the same old spirit of adventure.

Already, since the end of the White House years, they had written two books on the American family, and she knew other opportunities were out there, perhaps even some teaching possibilities.

"Al is a natural teacher," she said, knowing from conversations with his students that most of them seemed to share that opinion.

Rodney Crumpton, for example, was a former Tennessee truck driver who decided in his 40s to go back to college. He took a course under Gore, a seminar on the family, and found the whole experience surprising. For one thing, there at the front of the room every time was the former vice president of the United States—a man who had missed being president by a handful of votes, and who, in the aftermath of that defeat, could have taught at any school in the country. But he had chosen Middle Tennessee State University, a blue-collar institution tucked away in the hills, and Gore seemed to revel in that opportunity. He was not at all like some people expected, not stiff or awkward as he sometimes appeared on the campaign trail, but a teacher who seemed to "bubble over" with knowledge.

Crumpton got to know Gore outside of class, and soon met Tipper also. He thought of her then, as he does today, as a woman who knows how to light up a room.

"I'm so proud of the Gores," he says. "They could lead an elite lifestyle, but they choose not to. You can be real with them—anybody of any race or any background. Professor Gore was so accessible to his students, and Tipper is like your cousin, your mother, your long-lost friend. There's no pretense about them at all."

Mrs. Gore smiles at such testimonials. She is proud of Al and his ability to reach out, and is ready to push ahead with her own work as well. "I'll continue to make speeches on health care and the status of women and families," she explains. "I'll continue to be an advocate on these issues."

As you listen to her talk, it is easy to believe that life after Washington is exactly as she says. It may be a little less visible now, a little less public in between her appearances. But she still has the passions she has always had—her family and her causes, made richer by her memories—and what more, really, could anybody need?

The answer, she says, is nothing at all. V

By Lisa A. DuBois

With global travel, intrusion into uncharted habitats, and a growing demand for exotic foods, deadly animal viruses are making the jump into humans.

Somewhere in a remote rural province of China, a peasant trapper captures an exotic animal, unknown in the Western world, and sells it for meat at his local outdoor market. A week later an elderly, middle-class woman in Toronto, Canada, dies from pneumonia caused by an acute viral infection. Amazingly, the fates of these two distant strangers are inextricably linked—tied together by that innocuous woodland creature and the virus it carried.

Zoonotic diseases, those transmitted from animals to humans, are not new to the planet. The bubonic plague, rabies and HIV are now entrenched in the worldwide psyche. What is new, however, is the rapid onslaught of "emerging diseases" that scientists are identifying—West Nile virus, monkeypox, SARS—all of which have only recently appeared in the Western Hemisphere and whose origins may be traced to such animals as migratory birds, Gambian rats, civet cats and raccoon dogs.

Pathogen

Wild animal markets help foster the spread of viruses once confined to remote areas. Here, a dead cormorant awaits a buyer at a market in Guangzhou, capital city of southeast China's Guangdong Province.

Pollution

"The emergence of these diseases is absolutely an ecological issue," says Dr. Peter Daszak, executive director of the Consortium for Conservation Medicine at Wildlife Trust, New York—a collaborative effort between scientists at Harvard, Johns Hopkins and Tufts universities and the U.S. Geological Survey's National Wildlife Health Center. "Viruses are rapidly emerging in places where we haven't seen them before. These viruses have been around a long time, but ecological changes have allowed them to make the jump into humans. By environmental changes I mean human population movement, trade, deforestation, and building roads into remote areas, all of which bring human traffic into the area and viral traffic out of the area. We call it 'pathogen pollution.'"

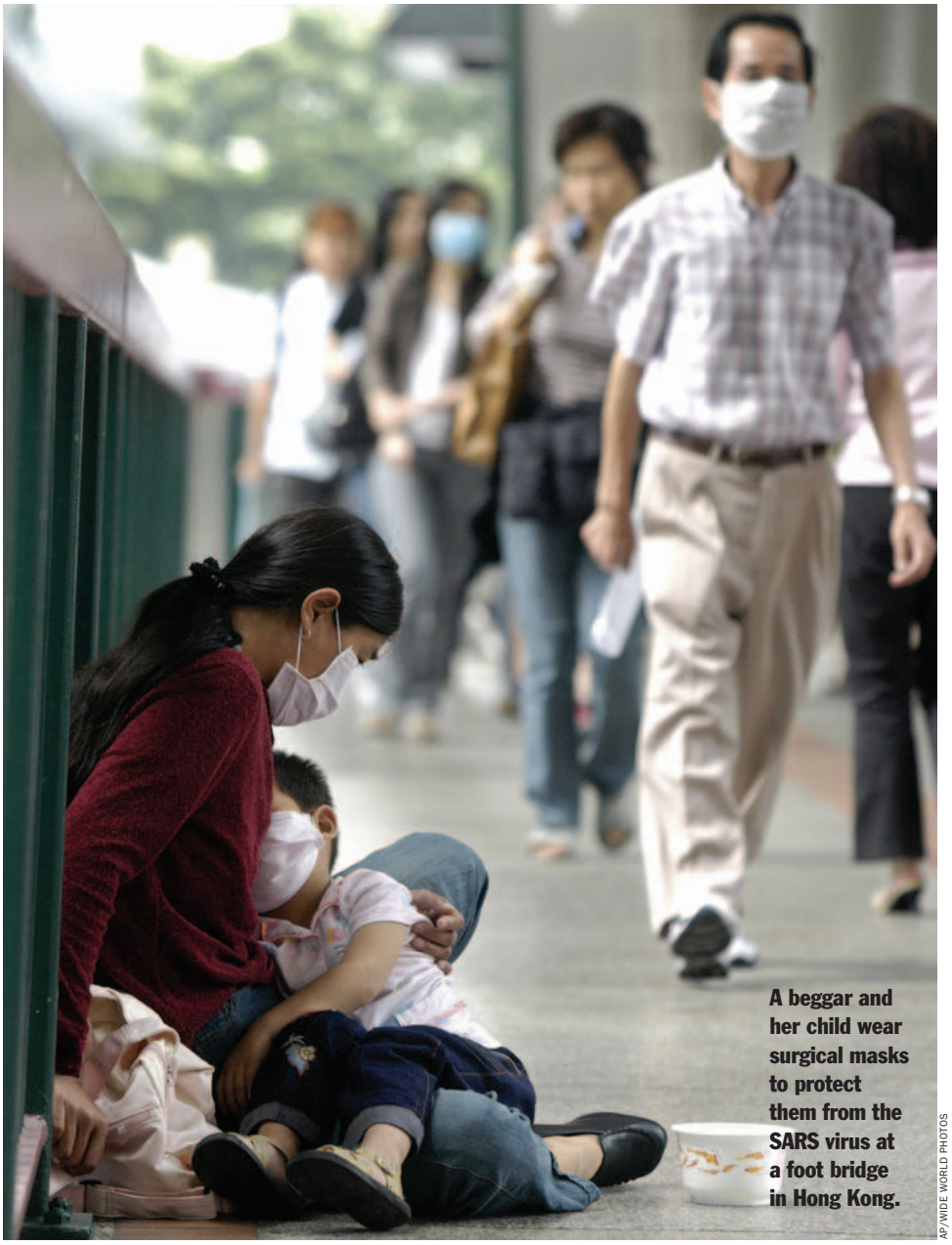
Americans are familiar with the hazards caused by overt man-made environmental assaults: A corporation dumps toxic waste into a neighborhood landfill; a camper lights a match to dry underbrush and torches 100,000 acres of virgin timber; an aging oil tanker leaks gallons of slimy, black goop into a pristine bay. But pathogen pollution, which Daszak defines as "the introduction of new disease-causing agents into a 'naïve' population," is far more subtle. Viruses, after all, are submicroscopic structures. All they really need for reproduction is a living cell to serve as a host.

As human populations increase, people are forced to find more places to live, are residing under more crowded conditions, and must search for more sources of food, which motivates hunters to trap and kill different kinds of animals for meat. "Population density is an issue we've never dealt with before, and we don't really know what the implications are," says Dr. Mark Denison, associate professor of pediatrics and microbiology and immunology at Vanderbilt. "An obvious effect as the population increases is our intrusion into ecological niches. Some of these viruses may exist in a single valley, in a single river, in a single upstream place, in a single species of animal. And they are perfectly adaptive in that small niche." When those viruses break out of that niche into a wider population, however, scientists face a whole new—and frightening—paradigm.

For years Denison had been working away in his lab, receiving little fanfare as he studied mouse hepatitis virus, which is a model for the study of coronavirus growth and diseases. Then in 2003 the coronavirus took on momentous significance when SARS (severe acute respiratory syndrome) emerged and rapidly spread around the globe, causing severe, often fatal, respiratory distress. SARS ultimately spread to 30 different countries, infecting nearly 8,000 people and killing more than 900.

Since the 1960s and early '70s, Denison says, coronaviruses have been known to exist in cats, dogs, turkeys, cattle, pigs, chickens, mice and rats. While the original animal host for SARS remains unknown, scientists do know that last year's outbreak began in China's Guangdong Province, where it is common practice for trappers to sell live forest animals to local meat merchants and exotic pet traders. There the sellers often stack cages of exotic animals one on top of the other or put them together in cages. In the wild, these animals normally would never cross habitats or come in close contact with each other.

Searching for the source of the outbreak, scientists discovered the SARS virus in civet cats, raccoon dogs and ferret badgers, and in the people who had handled them. "These animals may just be an intermediate vector for SARS," says Denison. "Or they were just bystanders that happened to be in cage num-



A beggar and her child wear surgical masks to protect them from the SARS virus at a foot bridge in Hong Kong.

AP/WIDE WORLD PHOTOS

ber three from the top, and whatever was at the top was dropping the virus all over everything below."

In any case, once the virus began to spread into humans, the result was calamitous. In a normal pandemic, or worldwide spread of disease, the number of cases typically increases exponentially—two to four, four to eight, 100 to 10,000, etc. With SARS, however, because it is spread by coughing and fecal-oral transmission, and because it requires intimate contact or close proximity to the infected person, five patients were responsible for exposing hundreds of others to the disease, including health-care workers caring for them. SARS also has an incubation period of seven to 14 days. Some of the SARS carriers hopped on planes and traveled to other countries, spreading the disease to Hong Kong, Canada, Taiwan and Singapore, before the World Health Organization (WHO) stepped in and imposed quarantines and other barriers to its spread.

"Because public-health intervention measures were put into place, instead of seeing 100 cases going to 10,000, you saw 100 cases going to 140 to 165 to 170 to 190 and then stalling," Denison says. "What happened with SARS is unprecedented in public-health medicine. It's a virus with an incredibly high degree of potential for worldwide spread, and it had the most organized global health response ever. Likely, these efforts avoided a pandemic."

The aggressive surveillance and intervention coordinated by WHO was difficult for Chinese governmental officials to accept and they were not initially cooperative, says Dr. William Schaffner, chairman of the Department of Preventive Medicine at Vanderbilt and an expert in international public health response. He explains that within the Chinese culture, it is inappropriate to speak to outsiders about such matters as improper food handling, unsanitary living conditions and inadequate health practices, which catalyzed SARS' rapid transmission in that country. Only by overriding those cultural concerns was WHO able to throw up barricades—quarantining anyone exposed to SARS, ceasing air travel into and out of infected areas, and handing out face masks to protect against airborne viral particles—that stopped the pandemic in its tracks.

"We must contrast the international response to SARS with what happened when AIDS came on the scene in the 1980s," says Schaffner. "The world has changed a lot since then. We're still dealing with the difficulty of addressing AIDS, which involves sexuality—a public health issue that is fraught with difficulty. In the U.S. we're still not responding optimally to AIDS. We live in a country where it's difficult to speak openly about sexuality in a public health context, especially if the sexuality is outside standard moral strictures, such as with homosexuality."

Because AIDS now has such a firm foothold in both industrial and developing nations, researchers can use it as a benchmark for studying the consequence of humans imposing themselves upon fragile ecosystems and the movement of zoonotic viruses around the globe. The ancestry of HIV, the virus that causes AIDS, can be traced to cross-species transmission in west central Africa. According to the journal *Science*, carnivorous chimpanzees preyed on monkeys infected with SIV (simian immunodeficiency virus). Over time the virus recombined in the chimps and evolved into HIV (human immunodeficiency virus), which doesn't make chimpanzees sick. African hunters captured and butchered the infected chimpanzees for bush meat, and through blood-to-blood contact the deadly HIV virus was inserted into the human population.

Although the HIV virus is thought to have moved from nonhuman primates into humans around the beginning of the 20th century, it remained relatively obscure and localized in remote regions of the jungle until African nations started to become urbanized. "The epidemic really came to light because of plane travel," says Dr. Richard D'Aquila, Vanderbilt's director of infectious diseases and director of the Vanderbilt/Meharry Center for AIDS Research. "One of the first cases of outbreak of the disease in North America has been traced to an airline steward."

Unlike SARS, HIV is very difficult to transmit, requiring blood-to-blood contact or contact with genital fluids. Unfortunately, HIV is what Richard Preston terms a "hypermutant," surreptitiously changing its character as it passes through various populations. D'Aquila concedes that HIV is extremely adaptable. "It adapts to the environment within an individual and also to the environment within a whole population," he says. "That environment includes several threats and pressures to HIV—the immune system, which tries to recognize and contain it, and the drugs we use to combat it. It randomly makes mutations, and from this pool of mutations those that are most fit to grow in a particular environment become dominant. So the minute there's something new, like a new drug, there will be an advantage for the rare mutant with resistance to the drug."

HIV uses other strategies for self-preservation, as well. It is most virulent and most easily transmitted in the first few weeks after infection—usually long before the carrier has any symptoms. In fact, says D'Aquila, the symptoms of HIV are related to whatever opportunistic infection or malignancy patients have acquired as the virus weakens their immune systems—which can take up to 10 years or more.

"The most common way people get diagnosed is coincidentally," he says. They have a routine physical or see a doctor for some other problem and discover they're HIV-positive,

Ecological changes have allowed [viruses] to make the jump into humans. *By environmental changes I mean human population movement, trade, deforestation, and building roads into remote areas, all of which bring human traffic into the area and viral traffic out of the area.* We call it "pathogen pollution."

even though they may be asymptomatic. "The reason HIV is spread is because it's flying under the radar. You can't detect it unless there is enough suspicion to look for it."

The virus thrives in its human host for years, escaping through blood and genital secretions, becoming more resilient against each new blitzkrieg. For years a diagnosis of HIV meant certain death. But in the 1990s, researchers discovered that some drugs that had been developed for the war on cancer were actually more effective against retroviruses, and in combination against HIV in particular. Suddenly, HIV patients were living longer and had a better quality of life.

With these new drugs, HIV is now being contained in people seeking treatment in developed countries. However, these medical advances have also led to cavalier attitudes about the disease. The reigning generation of sexually active young adults doesn't remember the scourge of AIDS in the 1980s and often doesn't feel inclined to take precautions. Public health officials are reporting a rise in sexually transmitted diseases, which suggests people are not using condoms as conscientiously as they once were. Alarmingly, the virus seems to be developing resistance to the new armament of drugs.

D'Aquila says, "Across the Western world, [in patients] where HIV-fighting drugs have been used for the first time, roughly 10 percent of people who've never been treated will have a drug-resistant virus. And although we can't prove this in every case, that means they were infected with a drug-resistant strain. So HIV is adapting. Obviously, if this continues, patients who are infected in the future might not derive benefit from any of the current drugs."

Complacency is a demon that public health officials battle every day. West Nile virus, caused by bites from mosquitoes that feed on infected migratory birds, was first reported two years ago in New York City. Once the virus subsided there, people in other parts of the country ignored warnings to lather up with mosquito repellant before going outdoors.

"Those of us in public health knew West Nile virus wouldn't be a one-shot deal," Schaffner recalls. "It was now in the bird and mosquito populations, and we knew we were going to see the spread of this infection."

Although everyone who is infected doesn't become sick, West Nile can lead to a fatal encephalitis or meningitis, usually among the elderly. Last year more than 4,000 people became infected and nearly 300 died. According to the Centers for Disease Control and Prevention (CDC), the virus has also infected horses, cats, bats, chipmunks, skunks, squirrels and domestic rabbits.

Human carelessness is also the reason monkeypox jumped from African mammals to native American mammals to American citizens in 2003. A less dangerous cousin of the smallpox virus, monkeypox appeared in the West when a giant Gambian rat was housed with prairie dogs in a pet shop. The Gambian rat infected the prairie dogs, which were later sold in 15 states. The outbreak was stymied when the CDC blocked exotic pet traders from bringing Gambian rats into the United States.

Aminata Niang, a mother of 10, slips a condom over a soda bottle in front of a room of Muslim women on the outskirts of Dakar, Senegal. This gathering in an impoverished neighborhood is part of a far-reaching campaign that has helped Senegal avoid the worst of the AIDS epidemic gripping Africa.

AP/WIDE WORLD PHOTOS

Ebola is one of the most terrifying of all viral afflictions, and scientists still haven't identified the animal that serves as its intermediary reservoir before it passes into humans. On the other hand, says Denison, Ebola is more easily contained than some epidemics because the symptoms are so severe—patients bleed from the eyes, ears, nose and mouth. That makes the outbreak easily recognizable, and infected areas can be quarantined as the virus quickly "burns through" the affected population.

Aside from the sheer morbidity, the cost of these zoonotic diseases has been astronomical. In the two decades since the discovery of AIDS, more than 42 million people have become infected with HIV and 28 million have died, devastating entire cultural populations, particularly in Africa.

In many cases the spread of these microbes originates in food sources. Mad-cow disease, which causes severe wasting of the brain in people who have eaten infected beef, originated when ranchers fed slaughterhouse waste products to cattle. Eighty people died from the illness and hundreds of thousands to millions of cattle were disposed

of, at a multibillion-dollar cost. Likewise, in order to contain the 1997 outbreak of the Hong Kong "chicken" flu, which killed six people, more than a million chickens, ducks and other edible fowl were slaughtered. To prevent the 1999 spread of Nipah virus, transmitted by fruit bats into swine, more than a million pigs were destroyed in Malaysia. The travel ban imposed after the SARS pandemic cost billions of dollars to Canada and numerous Asian countries. In fact, *USA Today* has reported that infectious diseases have cost world economies more than $100 billion since 1990. SARS alone may have cost world economies more than $80 billion.

"There have been many cases in the past where some change in food-production practices has allowed pathogens to emerge," says Daszak of the Consortium for Conservation Medicine. "Chronic wasting disease involves a microbe similar to the one that causes mad-cow disease and is moving rapidly across the United States in wild deer populations. We think captive and ranched deer in the West are involved in the process. So don't think we're immune here in the States. We have some unusual food production habits, too. And as we intrude more and more into unknown ecosystems, we're going to see more and more of these diseases emerge."

Acknowledging the devastation caused by these furtive submicroscopic agents, the National Institutes of Health have established a new consortium to study microbes that could be used in a bioterrorist attack. Vanderbilt University Medical Center has been selected as one of the participating institutions, and Denison will serve as a co-principle investigator and member of a steering committee. The consortium will investigate known transmissible threats such as anthrax and smallpox, as well as potential and emerging diseases.

Schaffner, who is also serving on various governmental committees, says, "The specter of bioterrorism has lent a new sense of urgency and anxiety to those of us in preventive medicine. It has illustrated to us that we in the United States have permitted much of our public-health infrastructure to erode over the years. We're now trying to rebuild that, and it's coming along—in fits and starts."

Vanderbilt Hospital has a large rotating supply of drugs to combat anthrax so that, if necessary, starter doses could be administered to a large number of people exposed to the disease. Schaffner says a major concern is designing a method of response that addresses any given problem without inundating the delivery system. "We have a project with the CDC that prepares us to enhance the healthcare system but not overwhelm it. We need to be able to respond to the earliest alert, but not be so burdened with background noise that our response becomes ineffectual."

Prevention has become the resounding theme, whether the threat is a bioterrorist or a naturally occurring one. Denison is part of a group of researchers developing various types of SARS vaccines. Although there is no evidence at the moment of live, ongoing SARS, he believes a vaccine might be vital for containing future outbreaks. "We don't know if the virus is being maintained in human populations at a lower level and if the coming of other pathogens, such as influenza, will create an environment that will favor its reemergence as a more severe disease. You can't really make the determination that a virus is gone from the human population for at least five years, and more like 10 to 20 years," he says. "If it reemerges as a pandemic or as an endemic or epidemic disease with high mortality and high morbidity, then we'll need to move quickly."

Experts predict the next big peril will likely come from some form of influenza. Influenza genes can easily cross species, mixing with genes of other animal influenza viruses, mutating to create new and deadly ones. In 1918 and 1919, the "Spanish Flu" pandemic killed more than 20 million people worldwide and was, according to *Science*, triggered by the union of genetic sequences of pig and human viruses.

The Consortium for Conservation Medicine is one of several organizations charged with predicting the next emerging viruses and assessing the risks as countries delve deeper into uncharted lands, building roads and setting up business operations in previously untouched habitats.

"Predictive science is not very interesting to funders and policymakers," admits Daszak. "But we have to think seriously about trade

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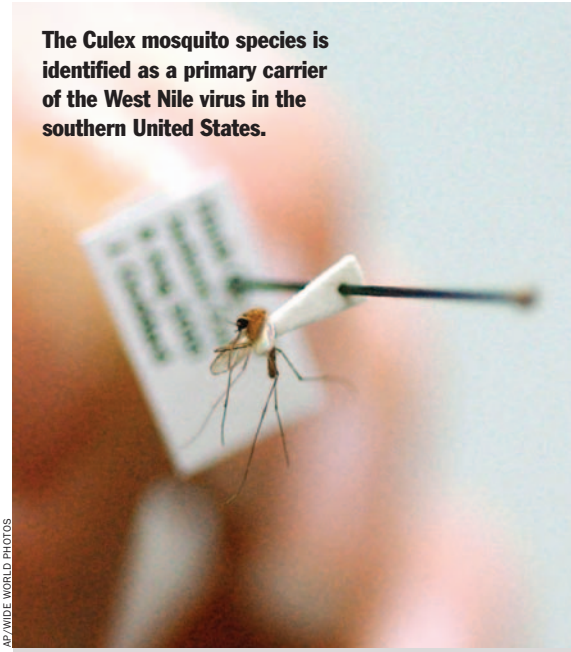


AP/WIDE WORLD PHOTOS

The Culex mosquito species is identified as a primary carrier of the West Nile virus in the southern United States.

Some human viral diseases and their animal hosts:

DISEASE	ANIMAL HOST
SARS	Unknown, but found in civet cats, raccoon dogs and ferret badgers
Ebola	Unknown
HIV/AIDS	Monkeys to chimps
West Nile Virus	Migratory birds to mosquitoes
Nipah Virus	Fruit bats to pigs
Monkeypox	Gambian rats to prairie dogs
Hendra Virus	Fruit bats to horses
Hantavirus	Deer mice
Spanish Flu	Pigs
Hong Kong Avian Flu	Chickens, ducks, other edible fowl
Bubonic Plague	Rats
Lassa Fever	Wild rodents

AUTUMN SURPRISE

Chancellor Gee's reorganization of athletics has raised expectations and questions. How will it affect sports at Vanderbilt?

By Roy Neel, BA'72

On a perfect fall afternoon three weeks into the football season, Vanderbilt's second-year coach, Bobby Johnson, sat in his McGugin Center office and contemplated what it would take to win against Southeastern Conference opponents in an era of ruthless recruiting, academic cheating, and relentless pressure to compete for lucrative television attention. Impeccably dressed in a blue blazer and tie after his regular Monday press conference, Johnson's soft South Carolina drawl softened a serious discussion of Vanderbilt's challenge.

"Sure, there is a small pool of student athletes out there who can get into Vanderbilt and succeed academically and also help us on the football field," Johnson admits. "But it can be done, and we're going to do it. We're going to compete for bowl games and SEC championships."

Photography by Neil Brake


NCAA

Coaches are not paid to be pessimistic, to accept certain failure or even mediocrity, even at Vanderbilt, which has not had a winning football season in 21 years, or won more than two SEC games in a season since 1982. But Bobby Johnson gives off an air of quiet determination and confidence that he, his staff, and their 99 varsity football players are well on their way toward a goal most cynics believe impossible.

Nearly 400 Vanderbilt student-athletes play 14 varsity sports, achieving national prominence in five (men's and women's golf and tennis, women's basketball), and quickly improving in others (baseball, women's track and soccer). But football still dominates the sports landscape in the South, where tradition is rich with national champions and stadiums packed with 100,000 rabid fans each Saturday afternoon.

The pressure on coaches to play in postseason bowls and win conference and national titles is brutal, leading to unprecedented reports of financial and academic cheating, and even a murder cover-up on one campus. Even the fans are losing control: Furious at his beloved Crimson Tide's loss to Arkansas, one Alabama father put a pistol to his son's head and pulled the trigger. The bullet missed, the father is in jail, and Alabama football continues to struggle in the wake of firing its coach in the off-season for using the university credit card to hire lap dancers.

Ramrod fit at 53, Bobby Johnson came to Vanderbilt last year after 25 seasons at Furman, where he racked up an impressive 100-50 record and took his team into a Division I-AA championship game in 2001, winning national Coach of the Year honors. A three-sport star high-school athlete, Johnson won two-time Atlantic Coast Conference All-Academic honors as a receiver and cornerback for Clemson, where he played for former Vanderbilt coach George MacIntyre—then a Clemson assistant coach. His arrival in Nashville was heralded on sports pages around the country as a significant turning point for Commodore football.

ESPN.com wrote what could have been Chancellor Gordon Gee's mandate to the new coach: "He's going to recruit ambitious, smart kids from coast to coast, marching into living rooms with two promises for parents:

Your son will get a world-class education, and he'll never be degraded or dehumanized."

Johnson started his first season in Nashville with none of his own recruits and low expectations. But he made no excuses for the 2-10 season that had few high points other than a close loss to nationally ranked Florida, a win over his old Furman team, and linebacker Hunter Hillenmeyer's selection to academic All-American honors.

"We've got a lot of good things going for us here," Johnson noted, running a hand through thick, prematurely silver hair. "This is the best town in the SEC, the school is recognized as one of the best in the country academically, our facilities are excellent and getting better, and we've got the kind of players who work hard both on the field and in the classroom. When the best high school players visit Vanderbilt, we've got a shot at convincing them they can be part of building a successful football program here. The chancellor and the administration want this, too. And they're doing everything they can to support us."

One week later the support for Bobby Johnson, for Vanderbilt football, for success in all its athletic programs, suddenly became a topic of national interest as Chancellor Gee blew the lid off the collegiate athletics status quo.

On Sept. 9 the chancellor announced that the University would abolish the position of athletic director and bring the department's activities into an Office of Student Athletics, Recreation and Wellness. All activities and facilities formerly under Athletic Director Todd Turner would be integrated into the entire University administrative structure. While appearing to critics as an elaborate way to change staff, Gee cited much more ambitious goals.

"Nothing short of a revolution will stop what has become a crisis of conscience and integrity for colleges and universities in this country," stated the chancellor. "Let there be no misunderstanding of our intention: Vanderbilt is committed to competing at the highest levels in the Southeastern Conference and the NCAA, but we intend on competing con-

sistent with the values of a world-class university."

The national press that would be showered upon the University after the chancellor's announcement was significant. Predictably, the first wave of sports columnists and television commentators ridiculed Gee's plan.

"… self indulgent," sniped *Tennessean* sportswriter David Climer. "Few will follow you very far down this path. Who's piloting this ship, Commodore Pollyanna?"

The *Washington Post*'s Sally Jenkins was more thoughtful, but just as skeptical. "People who want to apply pat reforms or even a consistent philosophy to college athletics are simply barking up the wrong tree—and perhaps the worst tree we can bark up these days is to assume that some schools have found the higher moral ground."

Criticism from vocal Commodore boosters such as prominent alumnus and Nashville attorney Lew Conner, a close friend of Turner, was blunt. On a local radio program, Conner steamed: "I'm confused by it. I don't understand it. I don't think it will work."

But Gee was undeterred. Within moments of the announcement, the chancellor became a whirlwind advocate for the plan, working the press box on Saturday afternoon; buttonholing reporters, athletes, coaches and students; writing newspaper op-ed pieces; and appearing on television and radio programs ranging from local, call-in shows to ABC's "Nightline" and National Public Radio.

After meeting with a shocked athletic department staff, Gee held an informal press conference outside Kirkland Hall. Acknowledging that Vanderbilt would be more receptive to his reforms than the big state schools he previously led, the chancellor noted, "If I had tried this at Ohio State or Colorado or West Virginia, I'd have been pumping gas in my hometown, Vernal, Utah." Questioned about the potentially disruptive timing of his announcement, as the football team prepared for the big Auburn game, Gee was unapologetically direct. "I didn't want to do this when no one was around. I wanted to do it when everyone was on campus, when everyone would be a part of it."

Gee's efforts are only the latest in a 130-year history of Vanderbilt chancellors trying to get control of the University's sports programs. In Paul Conkin's authoritative history of the University, *Gone with the Ivy,* we see a growing interest in athletics on campus, demands for bigger budgets and playing fields, all "diversions" from the University's higher goals. Only two years after its doors opened in 1875, Chancellor Garland shut down students' plans to play baseball games against other schools and later railed against the formation of a football team and student involvement in anything other than "informal competition."

> The pressure on coaches to play in post-season bowls and win conference and national titles is brutal, leading to unprecedented reports of financial and academic cheating, and even a murder cover-up on one campus.

In a few years Vanderbilt would have the South's top baseball and football teams and lead in the formation of the Southern Intercollegiate Athletic Association with Vanderbilt's William Dudley at its head. Garland, like the chancellors to follow, would learn that reining in the University's athletic programs would be a constant headache.

Beginning with the McGugin decade from 1904 to 1914, Vanderbilt remained a Southern football power well into the late 1920s, backed by a powerful athletic association that raised $232,000 to build a new football facility. But by the late '30s, the football team would rarely fill the new stadium. The legendary McGugin would complain about "lower coaching salaries … higher academic standards, no scholarships, high tuition, tough faculty controls." Other than scholarships, which now are uniform in number throughout most Division I schools, these complaints are still cited six decades later as barriers to success in football and basketball at Vanderbilt.

Still, as Conkin writes, "Football fervor also warped campus values. Football heroes such as Jess Neely or Lynn Bomar not only won All-American notices but became big men on campus. Only rarely did anyone but an athletic hero now win the Bachelor of Ugliness," the honor awarded to the most outstanding male student.

Vanderbilt football reached its pinnacle in 1948, when famed coach Red Sanders beat a vaunted Tennessee team and finished 12th in the nation, a ranking it would never again achieve. By the '50s, success would be gauged by bowl appearances. Vanderbilt would reach the Gator Bowl in 1955, beating Auburn. In 1975 Steve Sloan's team would tie Texas Tech in the Peach Bowl, and in 1982 George MacIntyre took the Commodores to the Hall of Fame Bowl, losing to Air Force in Vanderbilt's last bowl appearance.

Yet, three minor bowl bids in 47 years does not a winning tradition make. In each case, success was followed by a string of dreadful losing seasons, dramatic drop-off in ticket sales and, ultimately, coach firings or departures (Sloan's defection to Texas Tech was especially galling to Commodore fans). Since 1982 Vanderbilt has failed to have a winning season, with a record of 60-167 and an average of only one SEC victory each year. The Commodores became the favorite opponent for other teams' homecoming games.

As the football program suffered on the field, Kirkland Hall again would be confronted by boosters with charges of indifference toward athletics. Ironically, in the only NCAA action ever against the school, Vanderbilt was found in 1950 to be subsidizing athletes inappro-

priately. Vanderbilt won its challenge, and the NCAA ultimately approved the award of full athletic scholarships. But the victory backfired, as Vanderbilt was then forced to budget more than $500,000 a year for scholarships alone, a sum vastly exceeding tuition costs at the big state schools such as Alabama and Tennessee. The playing field became even more tilted toward those schools with lower admission and classroom standards. Recruiting top football players alongside these schools suddenly became a near-impossible challenge for Vanderbilt.

> Universities throughout the country have been compromised by television and the revenue chase. And athletic departments operating as autonomous empires have made it worse. This may be the last chance for us to get it right, because we are perilously close to a point where outsiders will reform it for us—college faculty groups are organizing, and there may be lawsuits.
>
> *—David Williams II, vice chancellor for university affairs and student life*

The demand to spend millions for new facilities and coaching staffs to win football games against the SEC powerhouse programs gave Vanderbilt Chancellor Harvie Branscomb his greatest headaches. He secretly—and unsuccessfully—attempted to form an athletic conference of like-minded universities such as Rice, Tulane, Duke and Georgia Tech. "We had a chance to turn things around," he wistfully told me in 1975, "but those schools couldn't stand up to their coaches and boosters." Branscomb wouldn't be the last to attempt athletic reforms, but no future chancellor would dare to abandon the SEC.

As Vanderbilt football struggled, its basketball program would ascend. From 1952 to 1962, Bob Polk began to win big games in the impressive new Memorial Gymnasium, and started challenging for the SEC title. Roy Skinner then took Vanderbilt's first consistently ranked teams to national prominence, climbing to fourth place nationally before barely missing the Final Four in 1965. Memorial Gym was expanded over the years to seat nearly 15,000 as Commodore teams would contend alongside Kentucky for SEC championships nearly every year through the 1970s, even as schools such as Alabama, LSU, Tennessee and Georgia finally embraced basketball and began recruiting top players, especially the most talented and celebrated African-American athletes, from throughout the country.

Celebrated coaches C.M. Newton and Eddie Fogler would keep Vanderbilt basketball competitive for a decade, with four NCAA appearances and a National Invitation Tournament championship in 1990. Eddie Fogler's 1992–93 team would rank as high as fifth nationally and advance well into the NCAA tournament, but Fogler would soon leave for South Carolina in a messy dispute with school administrators. A few years later a prized local basketball recruit would fail to meet Vanderbilt's tough admission standards and, once again, boosters would complain that Kirkland Hall was far removed from the realities of winning in the big leagues.

Yet, Vanderbilt continued to make a major financial commitment to its athletic department, hiring promising coaches and dramatically upgrading facilities in all sports. Memorial Gymnasium got a $25 million facelift, nearly $6 million was raised to build a new baseball stadium, plus $5.5 million for soccer, lacrosse and football practice fields, and $1.7 million for a new track and field complex. New tennis facilities and the purchase of a championship golf course south of Nashville would finally bring Vanderbilt within the range of other Division I athletic programs. More than $70 million was raised toward a $90 million goal for facilities and scholarships.

However, in the most critical area of its athletic program—recruiting—Vanderbilt continued to face its greatest hurdle. "The academic demands for the Vanderbilt player will be much more of a challenge, especially with the competition he'll see in the classroom," says Bobby Johnson. "We're trying to emphasize the positive, and we believe it will attract those players who want to get a good education but also want to win."

The common perception among many Commodore boosters is that Vanderbilt's admissions requirements are unreasonably high for most promising athletes, shrinking the pool of potential recruits who could help win football and basketball games. Even though athletes can be admitted with lower-than-average SATs and GPAs, Dean of Admissions Bill Shain agrees that "the rigorous academic work here is a reality, and it creates a challenge for the coaches with which we are extremely sympathetic. We work hard to make the admissions process a shared enterprise with the coaches. Our goals are the same: to recruit for Vanderbilt students who will have impact athletically, and who can be predicted to graduate."

Rigorous admissions policies, integrity in the classroom, full integration of athletes into

university life—all are unassailable goals for a university that seeks to compete with the Ivies, Stanford, Duke, Emory, and other schools that dominate the much-sought-after *U.S. News & World Report* magazine national college rankings (Vanderbilt rose to 19th this year). In that universe, SATs, admit-enroll ratios, endowments and library size count for points; winning bowl games and Sweet 16 appearances do not.

By midseason this year, only two schools with top-30 academic rankings, Southern California (30) and Michigan (25), were also ranked in the top 30 nationwide in football—Southern Cal at fifth and Michigan at 17th. Among those schools ahead of Vanderbilt on the *U.S. News* list, only two were ranked with the top 100 football teams—Stanford at 44 and Northwestern at 72 (Sagarin/*USA Today* ratings, Oct. 7).

And it is unclear whether Vanderbilt students and alumni care much about success in athletics as a significant reason to attend and support the University. When asked why they chose Vanderbilt in a survey of recent undergraduates, the athletic program ranked 27th of 28 factors. Alumni responded in a similar fashion, ranking athletics near the bottom.

So if the real goal at Vanderbilt is academic excellence, what is all the fuss about? What will change at Vanderbilt, which has run its athletic programs without taint for decades, admits only those athletes with strong academic prospects, and graduates far more of its athletes than any other SEC school?

"We can do a lot better," says David Williams II, Vanderbilt's vice chancellor for university affairs and student life, general counsel and secretary of the University, and now the school's *de-facto* athletic director, presiding over a $30 million athletic budget and a deficit he is struggling to reverse in a period of dropping attendance and ticket revenues.

"When I first realized a couple years ago that he was the real Kirkland Hall decision-maker for athletics," one coach told me in the wake of the reorganization announcement, "I thought, here's a guy who's never run a college athletic department at any level. He's not going to back us. We're in big trouble."

But, unlike most college administrators, Williams understands the fine details and challenges of coaching, recruiting and winning games, having supervised the nation's largest—and arguably most successful—athletics program during his tenure as vice president for student affairs at Ohio State University. And he knows when he's being fed a line. The coach who earlier feared a meltdown in support for the McGugin Center grew to respect the firm grip Williams would bring to his new assignment. "He doesn't suffer fools and he doesn't tolerate bull----. And he'll go to bat for us if we need it."

Most of all, David Williams is Chancellor Gee's "go-to guy" to bring the athletic department in line with the reorganization. If Gee's bold vision of a new culture for college athletics is to succeed, it will likely be Williams who makes it happen at Vanderbilt and, potentially, throughout the country.

David Williams arrives late to his third-floor Kirkland Hall offices after teaching a Law School class and staying overtime for students' questions. Williams' portfolio is substantial, overseeing vast resources and countless high-profile activities. He is a large man physically, fighting a mid-life executive's paunch that belies a star quarter-miler and football standout for his Detroit high school and later at Northern Michigan University. A prolific writer and lecturer on tax law, sports law and legal history, he somehow finds time to coach his son's youth basketball team and attend his daughters' soccer games.

In dress slacks and a black Commodore team polo shirt with a Nike swirl, Williams relaxes and launches knowledgeably into the world of sports, the NBA greats (some of whom he counts as close friends from his years as a Detroit public school teacher and coach), and the darker side of college athletics that has brought Williams and Gee into the national reform spotlight.

"Universities throughout the country have been compromised by television and the revenue chase," says Williams. "Admissions, compliance, money decisions. And athletic departments operating as autonomous empires have made it worse. This may be the last chance for us to get it right, because we are perilously close to a point where outsiders will reform it for us—college faculty groups are organizing, and there may be lawsuits."

After the chancellor's September bombshell, Williams' first job was to finalize the reassignment of Athletic Director Todd Turner. It was well known that the athletic department struggled not only to win football and basketball games, but to balance its budget. Turner accomplished neither and ruffled administration feathers with a style characterized by some as defiant. But he was visible in the community and had supporters among influential alumni boosters who saw the chancellor's reorganization simply as a way to camouflage a plan to dump the eight-year AD.

"Absolutely not the case," said Gee. "There were disagreements about how to run the department, but I have great respect for Todd. This is more about setting an example throughout college sports, about integrating the athletic programs into the larger university. With that new model we don't need an autonomous athletic director."

Gee asked Turner to stay on to help shepherd Vanderbilt's leadership within the NCAA to reform academic standards for athletes. After nearly a month of silence, Turner would decline the offer and blast the chancellor's reforms in an e-mail to former colleagues in the department, obtained by the *Tennessean*. "I do not feel that the strategy [Gee] has chosen for Vanderbilt will produce the results many of us have worked so hard to achieve," wrote Turner. "Being isolated administratively from Division I-A peers rather than in concert with them will challenge Vanderbilt's credibility and effectiveness when it comes to leadership in Division I-A athletics."

But Gee and Williams are focusing as much on the role of athletics within the mission of the University as on the win-loss records of its teams.

"We're going to create new opportunities for student-athletes, and engage the faculty much more in understanding and supporting the athletic program in ways that have never been tried before," says Williams. "The way the campus has worked, athletes can't realistically take part in much of campus life, such as serving on the student council or taking classes abroad. We're going to find creative ways to make that happen."

Williams is most ambitious when it comes to predicting success on the playing fields. "We should see success in basketball this year, and we should have a winning season and be bowl-bound in football in two, three years."

Fine tuning Vanderbilt's athletic program may involve little more than finding the right administrators and coaches who can work within its rigorous academic system, with student athletes who already meet high admissions requirements and who go to class, live and play with other students, and graduate on time. But imposing Vanderbilt's model of probity and academic excellence onto the other 116 Division I colleges and their athletic coaches and players will be a far greater challenge.

Much is at stake in the battle for nearly $2 billion that flows to these schools from television fees and ticket receipts for college football and basketball games each year. (An SEC revenue-sharing agreement sends a portion of every SEC team's television and bowl appearance receipts to Vanderbilt, an arrangement that provides about $7 million annually to a school that rarely appears on national television or in lucrative bowl games.)

In their challenge to other college administrators, Williams and Chancellor Gee have allies in high places. NCAA President Myles Brand weighed in immediately, calling Gee's reforms "a significant commitment to the concept of integrating intercollegiate athletics with the university's mission. … This is more than an experiment; it is a major shift in the collegiate sports culture."

As Vanderbilt prepared to host Auburn, the buzz about Gee's reforms were overwhelmingly positive in editorial pages around the country: "Chancellor Gee's Bold Move" *(The Tennessean)*, "Root for Sports Reforms" *(USA Today)*.

From the *Providence Journal*: "Vanderbilt, to its credit, has chosen to opt out of the NFL/NBA, etc., minor leagues and reclaim its mission for all students, jocks included … striving for a bygone ideal: the notion that a university is a seat of learning, not a station on the road to the Super Bowl, and that scholar-athletes are students who happen to excel at sports."

But these glowing reports did not quell the negative rumor mill fed by athletic recruiters from competing schools seeking to paint the Gee reforms as a wholesale downgrading of varsity sports at Vanderbilt, even a first step toward withdrawing from the SEC and Division I.

Former Vanderbilt Grantland Rice Scholar Mark Bechtel, now a *Sports Illustrated* writer, was in the press box for the Auburn game. In "The Vanderbilt Experiment" in the following week's *SI*, Bechtel would note the caustic assessment of Iowa State's athletic director: "If this is the kind of vision they have for their athletic program, I question whether they belong in the SEC." Bechtel pointed out that "since May five [Iowa State] student-athletes have been arrested and the basketball coach resigned after being caught cavorting with coeds at a party," and concluded that "it's not unreasonable to suggest that other schools might benefit from taking steps to bridge the chasm between athletics and academia."

As Vanderbilt coaches stepped up damage control with key prospects, Chancellor Gee jumped into the fray, personally calling wavering recruits to assure them that the University is committed to winning games and conference titles. A month after his announcement, Gee proudly noted, "We haven't lost a single prospect as a result of this." Indeed, by mid-October two of the country's top basketball and baseball prospects declared their intention to sign with Vanderbilt, citing the chancellor's reforms as a positive force in their decisions.

Throughout the fall controversy, Vanderbilt's athletes were taking it in stride. Notwithstanding the confusion surrounding Turner's departure, most were unaffected, turning to their coaches for guidance. Bobby Johnson became a firewall for the chancellor, refuting every claim of diminished support from Kirkland Hall.

"I haven't thought much about it," said Otis Washington, a senior linebacker from Michigan. "Me, either," agreed Jovan Haye, the star sophomore defensive end from Fort Lauderdale. The two met in a McGugin Center conference room to talk about football and life at Vanderbilt. They reminded me of the players I lived and partied with in Curry Hall in the '60s, except for two significant characteristics: Both are African-Americans, neither of whom would have had the opportunity to play football at Vanderbilt, or any other SEC school, 40 years ago; and, representing perhaps even more change, both have legitimate dreams to play in the National Football League after graduation from Vanderbilt.

"It's been tough losing like we have," said Haye, who was also recruited heavily by Ohio State, Miami and Florida. "Everybody works really hard. If we get some breaks, we can turn it around." Both young men believe Vanderbilt can recruit the best African-American athletes. "All you have to do is tell them the truth," said Haye, who is studying human and organizational development and routinely meets with football prospects. Washington, a sports medicine major, agrees. "They know the degree is awesome, and everyone is really nice. It feels like home."

To Washington and Haye, like all Vanderbilt athletes, hard work and sacrifice are second nature. They shoulder long, physically exhausting hours on the field followed by hours of study as a part of the deal. No questionable grade inflation by sports-friendly professors. No excuses for papers not written, exams not taken. No payoffs from overzealous boosters. No bogus summer jobs. No big, illegal signing bonuses out of high school. No cheating.

Vanderbilt athletes shoulder long, physically exhausting hours on the field followed by hours of study as a part of the deal. No questionable grade inflation by sports-friendly professors. No excuses for papers not written, exams not taken. No payoffs from overzealous boosters.

The Commodores opened the football season with a heartbreaking loss to Ole Miss on a last-second, 52-yard field goal, then bounced back the following week to trounce the University of Tennessee–Chattanooga, 51-6. For a few days Vanderbilt loyalists entertained the dream of beating Auburn, a preseason pick by some observers to win the national championship. The War Eagles had lost their first two games to underdogs, had failed to score a touchdown, and the rabid sports radio talk-show hosts were full of speculation about a dramatic Vanderbilt win on the coming Saturday.

Auburn came to Nashville with thousands of boisterous orange and purple-festooned fans filling Dudley Stadium and seeking respect. The Commodores stayed close throughout the first half, but by the start of the fourth quarter the outcome was clear as the bigger, stronger, deeper Auburn team wore down Vanderbilt, winning 45-7, starting a five-game winning streak that would vault the Tigers back into the national rankings. There seemed to be more War Eagle than Vanderbilt fans in the stadium that day.

The Auburn setback would be followed by tough losses to TCU, Georgia Tech (in overtime), Mississippi State and, worst of all, in its homecoming game against Navy, a team the Commodores were favored to defeat. The team led national power Georgia 2-0 at halftime, but ultimately suffered a 27-8 defeat. After losses to South Carolina and Florida, Vanderbilt finally broke the nation's longest conference losing streak by defeating Kentucky, 28-17, at home. Sophomore quarterback Jay Cutler threw four touchdown passes and rushed for 129 yards, the most for a Commodore quarterback in 23 years. His performance earned Cutler SEC Offensive Player of the Week honors and inspired Vanderbilt fans to tear down the goalposts as if a conference championship had been on the line.

In addition to Cutler's season-long per-

formance, there were other individual highlights: Safety Andrew Pace and defensive end Jovan Haye, among others, gave fans a glimmer of hope for the future. In most games the Commodores were competitive and, with a few breaks, could have been 5-5 instead of 1-9 and headed toward its worst season record. But still Bobby Johnson remains optimistic.

"The biggest thing we're fighting is the lack of a winning tradition," said Johnson. "We're trying to get our guys to believe they can win. We just want to make sure we're making progress, making sure we're getting better."

In the fall, basketball coach Kevin Stallings began practice with a Vanderbilt team that had a lot to prove. The 2002–03 season had been a disaster, with only 11 wins and 18 losses, one a crushing 110-41 thrashing by Kentucky, the worst Commodore loss in modern times. It was Stallings' only losing season in a 21-year career, one that stung all the more as rumors of dissension among players and coaches roiled a once-proud program.

A visit to Stallings' office atop Memorial Gymnasium takes a visitor down corridors decorated with life-size photos of Vanderbilt's basketball greats—All-Americans Billy McCaffrey, Will Perdue, Tom Hagan, Clyde Lee and Billy Joe Adcock; SEC Players of the Year Dan Langhi and Jan van Breda Kolff; Perry Wallace, the SEC's first African-American athlete and an all-conference player. These and dozens of other nationally recognized Commodore players kept Memorial Gymnasium rocking for decades.

After five seasons with barely more wins than losses, Stallings feels the pressure to restore that excitement and draw fans to a gym that rarely was filled over the last few years. (Stallings has received a little help from the administration, which acknowledged that an empty gym hurt the team's chances and announced a deep price cut for tickets for this year's season.) To fill seats Stallings must win big games, legitimately contend for an SEC title, and get into the NCAA tournament, a benchmark that has eluded the Commodores since 1997, when it washed out in the opening round.

"Winning is a relief, losing is misery," says Stallings. "We didn't have fun last year, and it was ugly. Things got out of control. But I really feel a new excitement with this team. We're much stronger physically. Our front line has put on a lot of weight in the off-season, and we're just as quick. We won't be pushed around like last year. We're going to be significantly better."

The key to success will start with Matt Freije, a 6-foot-9-inch senior forward who some analysts have picked as a pre-season All-American and potential SEC Player of the Year. On the verge of becoming Vanderbilt's all-time leading scorer, Freije came to Nashville from Kansas City knowing little about the school but was instantly sold after his visit. "The chemistry here was amazing—the coaches, the players, the campus, everything," said Freije.

Echoing every Vanderbilt athlete I interviewed, Freije admitted, "I want to play pro ball, but it meant a lot to me to go to a good school academically, where a degree really means something." He deflected attention from his accomplishments and talked excitedly about his teammates' progress, including 5-foot-11-inch sophomore guard Mario Moore from nearby Antioch, who showed sparks of brilliance last year. "You won't believe how much better these guys are going to be this year."

Vanderbilt began playing women's basketball 25 years ago and quickly became a powerhouse, with 16 trips to the NCAA tournament. The players sometimes brought more fans than the men's team to Memorial Gym last year.

Across the hall, in the office of women's basketball, the goals are loftier—the Commodores are already among the nation's best. Vanderbilt began playing women's basketball 25 years ago and quickly became a powerhouse, with 16 trips to the NCAA tournament and consistently high national rankings. Four players were All-Americans: Wendy Scholtens, Heidi Gillingham, Sheri Sam, and the phenomenal Chantelle Anderson, who dominated the SEC for three years.

Nothing less than a conference championship and a shot at the national title will satisfy Coach Melanie Balcomb and the players, who sometimes brought more fans than the men's team to Memorial Gym last year.

Balcomb came to Nashville last year from Xavier after an embarrassing few weeks for A.D. Turner, who was forced to oust a newly named coach when it was revealed that he had apparently inflated his résumé. It was later discovered that the coach's résumé was, in fact, correct. With the toughest schedule in the country, the women's team finished 20-12 and made the second round of the NCAA tournament. This winter Balcomb will count on seniors Jenni Benningfield, a 6-foot-3 potential All-American forward, and guard Hillary Hager. Eight players return from last year, boosted by a freshman class that some call the best in the country.

The women's basketball team is not alone in achieving national recognition for Commodore teams. The Vanderbilt men's and women's golf teams have been among the country's best for several years. Top players such as Brandt Snedeker, Courtney Wood, Sarah Jacobs and May Wood have moved Vanderbilt golf into the top tier.

"We really have a chance to contend for a national championship here at Vanderbilt," says Martha Freitag, who won SEC Coach of the Year honors last year. She cites the University's purchase of the Legends Golf Course south of Nashville as a breakthrough for the program. "Our facilities are getting better,

and our players work very hard. Having our own course is huge."

The Vanderbilt men's tennis team won the SEC this spring and came within two points in a single match of winning the NCAA championship for 2003. The recruiting success of coach Ken Flach, another SEC Coach of the Year last year, has made the Commodores a national contender.

In 2002 the women's tennis squad won the NCAA doubles championship and finished the 2003 season ranked 13th in the country with nationally ranked players Sarah Riske, Aleke Tsoubanos and Kelly Schmandt. Coach Geoff Macdonald noted that "our players are real athletes, physically strong and well-conditioned, tough competitors. As the reputation of the program grows, we'll be able to recruit the best in the country."

Vanderbilt's baseball program is also on the verge of greatness, with players with All-American potential, an exciting new coach, and a new first-class stadium. In his second year after a celebrated run as a top assistant at national baseball power Clemson, Tim Corbin makes no excuses as he prepares for the coming season.

"We're building a national program here," says Corbin who, at 42, looks like he can still turn double plays as he did as an Ohio Wesleyan all-conference infielder. "These kids know that Vanderbilt is a great school academically, and we can make that a great asset in recruiting. And when they come here to visit and see this great new stadium and meet these players, they know that we've got what it takes to win baseball games."

Corbin wasted no time in going after the best baseball players available. His efforts have produced what some observers believe is one of the top groups of incoming freshman players in the country. The Commodore pitching staff for the coming season—ace Jeremy Sowers, Ryan Mullins, Jensen Lewis, Ryan Rote, Matt Buschmann, Jeff Sues, and celebrated recruit Greg Moviel—figures to be among the SEC's most talented. Corbin already has won a commitment from David Price of Murfreesboro, Tenn., beating out Tennessee for the lefty who is considered one of the country's top high-school pitchers.

Throughout the six other Commodore varsity teams, there is growing anticipation of success. Vanderbilt now also plays national schedules in men's and women's soccer, lacrosse and cross country, each with professional coaching staffs awarding scholarships and competing for league titles. The women's soccer program reflects new support from Kirkland Hall for the Olympic sports programs: Headed by former Duke star goalie Ronnie Hill, the team now boasts three assistant coaches as it heads toward a coveted SEC tournament berth.

"Title IX," the federal law that requires colleges to field—and fund—women's teams in numbers roughly approximating those for men, has nudged Vanderbilt and all other Division I schools toward gender parity in athletics. Critics decry the law as a politically correct, unfair burden for traditional college athletic programs. Indeed, some schools have threatened to drop traditional men's programs in swimming, track, golf and other sports to avoid spending money on new women's teams.

At Vanderbilt, whatever the motivation, women's athletes are thriving—and making a remarkable contribution to the overall success of the University's win-loss record in intercollegiate athletics. For some coaches, athletes and administrators, there is even talk of winning the coveted "NACDA Cup," awarded each year to the school with the highest composite record in all intercollegiate sports. Last year Vanderbilt climbed from 104th to 54th nationally, even higher in those varsity sports in which it competes, and fifth alongside all private schools in Division 1-A.

While the football team was losing its fifth straight game, Vanderbilt teams won the University of Georgia Invitational (women's cross country), finished strong in a major golf tournament (men's golf, led by freshman phenom Luke List), and appeared on regional television (women's soccer). Over the past two years, the men's lacrosse team has won the American Conference Championship and the women's track team has won the SEC Steeplechase Championship.

So the high-stakes challenge facing coach-

> It is unclear whether Vanderbilt students and alumni care much about success in athletics as a significant reason to attend and support the University. When asked why they chose Vanderbilt in a survey of recent undergraduates, the athletic program ranked 27th of 28 factors.

es Bobby Johnson, Kevin Stallings and Melanie Balcomb—to win games, go to post-season bowl games and tournaments, to make millions to offset rising program costs—is only part of the picture as Vanderbilt pursues a new direction for its athletic programs.

In many ways Vanderbilt is already there, already a leader in demanding academic integrity from its student-athletes, already fielding successful, nationally ranked teams in several sports, already graduating its athletes in every sport at rates near the top of the NCAA—and doing so without the kind of cheating that has come to disgrace so many big-time collegiate programs.

Yet, when Vanderbilt's football and basketball teams line up against SEC opponents with marginal admissions standards, low graduation rates, or a history of NCAA probations from payoffs or other abuses, the Commodores will not start with extra points on the scoreboard. Despite the pride most alumni, faculty and students have in the University's academic integrity, Vanderbilt coaches face enormous pressure to win games, even SEC titles, fill the bleachers, and make money for the program.

Lee Fowler, a first-rate forward on the Commodore's 1974 SEC championship basketball team and now athletic director at North Carolina State University, puts Vanderbilt's dilemma in perspective: "Most Division I schools, even the big state schools, now recruit only players who can graduate. The difference between Vanderbilt and, say, Tennessee, is that it's a hell of a lot easier to graduate from Tennessee."

Hanging over the lobby at McGugin Ath-

The following opinion essay was solicited by and published by the Washington Post *in response to Vanderbilt's integration of athletics into the campus life.*

My Plan to Put the College Back in College Sports

By Gordon Gee

I like to win. I also like to sleep at night. But after 23 years leading universities, I find it increasingly hard to do both.

This has been the most ignominious year in recent memory for college sports. We've seen coaches behaving badly, academic fraud, graft, possibly even murder. Clearly, the system is broken, and fixing it will require more than sideline cheering.

That's why, last week, we at Vanderbilt announced that we would replace our traditional athletic department with a new body that is more connected to the mission of the University and more accountable to the institution's academic leadership. We'll no longer need an athletic director. We're not eliminating varsity sports, mind you, or relinquishing our membership in the highly competitive Southeastern Conference. Rather, we're making a clear statement that the "student-athlete"—a term invented decades ago when college sports was faced with another seemingly endless parade of scandals—belongs back in the university.

Many athletic departments exist as separate, almost semi-autonomous fiefdoms within universities and there is the feeling that the name on the football jersey is little more than a "franchise" for sports fans. As Bill Bowen and Sarah Levin point out in their new book, *Reclaiming the Game: College Sports and Educational Values,* student-athletes are increasingly isolated, even at the best schools in the country. They do not participate in the extracurricular activities that are so important for personal growth. They miss out on opportunities to study abroad or have internships. They spend too much time in special athletic facilities that are off-limits to the rest of the student body. And their world can too often be defined by coaches' insatiable demands for practice and workout sessions.

True, this is the cost of staying competitive in college sports, where tens of millions of dollars are at stake. But should it be? Over the years I have gotten to know thousands of student-athletes. They are as different as any group of individuals could be. What they have in common, though, is a sense that they missed out on an important part of the college experience by focusing only on sports. They also lose out by being stripped of their responsibilities as citizens of the university when we say that "all will be forgiven" as long as their performance on the field is up to snuff.

This must change. At Vanderbilt that means ensuring that every student, every athlete, is part of a vibrant academic and social community.

Shifting Vanderbilt's athletics program to our division of student life and university affairs is merely a step—perhaps bold, perhaps quixot-

letic Center is a 4-by-10-foot mission statement: *"As an integral part of a private University and a charter member of the Southeastern Conference, we are committed to setting and achieving standards of excellence in education and athletics. By developing the full potential of our student-athletes and staff, individually and together, we are accountable for placing the highest value on people, integrity, and winning."*

Otis Washington isn't put off by the challenge or the criticism. The deeply religious son of a pastor and a hair salon owner from Saginaw, Mich., Otis was a 9-year-old victim of a drive-by shooting. On a recent day when controversy about the athletic department roiled around him, Washington was philosophical. "I just want to make a difference in people's lives. I love football; it means a lot to me. And I know with these players, these coaches, we can win here at Vanderbilt. Just be patient." V

ic — in the much-needed reform of intercollegiate athletics. We took this step mindful that Vanderbilt is in an unusual position. It is a highly selective private university with an athletics program untarnished by scandal; our student-athletes graduate at rates that are among the best in the country; and we have loyal, generous supporters who have blessed us with excellent facilities. We can do things here that other universities can't or won't.

I will say this: After our announcement, I received many phone calls from college presidents who said, "You go, Gordon. Walk off the cliff, and if you succeed, we will be right behind."

In recent years, there have been a number of well-meaning and forceful efforts to reform college athletics, but they have not gone far enough. It is time for all those who are concerned about the future of our enterprise to get serious about addressing the crisis of credibility we now face. College presidents, working together, should commit themselves to the following reforms:

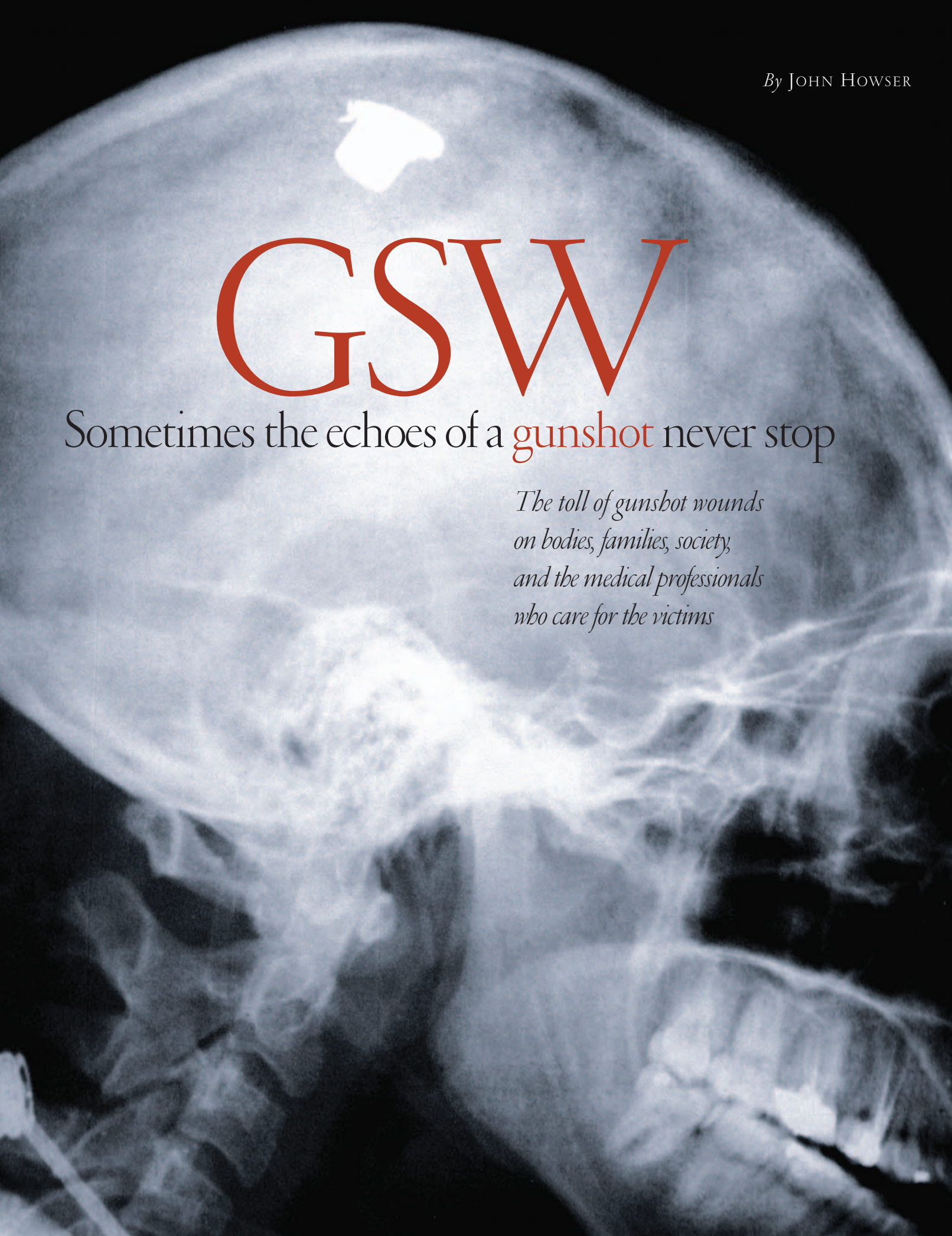
First, all students who participate in intercollegiate sports should be required to meet the requirements of a core curriculum. The "permanent jockocracy" has for too long made a mockery of academic standards when it comes to athletes. We need to end sham courses, manufactured majors, degree programs that would embarrass a mail-order diploma mill, and the relentless pressure on faculty members to ease student-athletes through their classes.

Second, colleges should make a binding four-year commitment to students on athletic scholarships. One of the dirty secrets of intercollegiate athletics is that such scholarships are renewed year-to-year. A bad season? Injury? Poor relationship with a coach? Your scholarship can be yanked with very little notice. Rather than cynically offering the promise of academic enrichment, colleges should back up the promise so long as a student remains in good academic standing.

Third, the number of athletic scholarships a school can award should be tied to the graduation rates of its athletes in legitimate academic programs. If a school falls below a threshold graduation rate, it should be penalized by having to relinquish a certain number of scholarships for the next year's entering class. A version of this proposal is part of a reform package now snaking its way through the NCAA.

Fourth, graduation rates should be tied to television and conference revenues. If money is the mother's milk of college athletics, then access to it should be contingent on fulfilling the most basic mission of a university — educating students.

Finally, college presidents and others need to take a good look at the system we have created for ourselves, in which the professional sports leagues have enjoyed a free feeder system that exploits young people and corrupts otherwise noble institutions. We have maintained the fantasy for far too long that a big-time athletics program is for the students, the alumni and, at public universities, even for the legislators. It is time for us to call it what it has sadly become: a prep league for the pros, who have taken far more than they have given back. We should demand nothing less than a system in which student-athletes are an integral part of the academic institutions whose names and colors they so proudly wear on game day.



By John Howser

GSW

Sometimes the echoes of a gunshot never stop

The toll of gunshot wounds on bodies, families, society, and the medical professionals who care for the victims

Dr. Richard Miller keeps a photo in his office. In it the trauma surgeon stands beside a tall, athletic woman; the two of them have just completed a triathlon, and are wearing running shorts and t-shirts and racing numbers. They are smiling the smile of tired accomplishment that most runners wear after such a grueling event.

The woman, Stephanie Styles, is a friend of Miller's, and on one level that's why he has the photo in his office—a picture of a friend at a happy time together.

But there's another level of meaning to this picture. It is there as a reminder—a reminder of what a bullet can do to the human body, and, just as important to a trauma surgeon, a reminder of how, if everything goes perfectly, things can turn out OK.

It never hurts to be reminded that things can turn out OK because of all the hundreds, if not thousands, of gunshot victims Miller has cared for, Styles' injuries were among the worst he has ever seen.

Miller, who is now associate professor of surgery in the division of Trauma and Surgical Critical Care at Vanderbilt University Medical Center, treated her while practicing in Greenville, S.C. Styles, a schoolteacher who lived alone, owned a .38 caliber revolver for protection. One night after thinking she heard a prowler, she retrieved the handgun from a nightstand. While walking across her house in the dark, she tripped and shot herself in the abdomen. The bullet passed through her body with devastating results.

Even years later with many gunshot injuries in between, Miller still remembers every detail.

"Some bullets are engineered to tumble upon entrance into the body, or to implode upon impact. *Some of these bullets are absolutely designed to maim. And they have an amazing ability to ricochet off things inside the body.* I've had patients shot in the chest whose bullet winds up in the leg."

"The bullet went through her stomach, through the major branch of her abdominal aorta, through her pancreas, and out her back. This was a beautiful, blonde 6-foot-tall woman who was dying in our emergency department. She was in severe hemorrhagic shock. The bullet had blown a huge hole in her stomach, which happened to be full at the time, so food was everywhere inside her abdominal cavity," he says.

"We rushed her to the OR and had to go to heroic efforts to stop the bleeding. On the first resuscitation we used more than 50 units of blood and blood products. After surgery she was so swollen we had to leave her abdomen open and cover it with a sheet of plastic."

The story then takes an even more bizarre twist.

"After we took the woman to the intensive care unit and were trying to stabilize her again, someone in the unit asked who the woman was. Finally, someone else called out the patient's name, and a nurse on the unit upon hearing this exclaimed, 'What! That's my sister!'

"The entire unit went completely silent for a few seconds, then everyone stepped it up a notch and we went right back to work."

Styles survived her injuries. After 12 operations and multiple complications over a year's time, she is now recovered and back to doing two things she loves: teaching school and competing in triathlons.

Miller talks with her from time to time by phone, and keeps this photo over his desk. As a reminder.

Level One

It would be nice to think the story of Stephanie Styles' injuries is an isolated one, but unfortunately it's not. Not in the U.S., not in Tennessee, and not in Nashville. At Vanderbilt University Medical Center, the number of firearm injuries is significant, both in terms of the number of victims and the consumption of health-care resources.

Patients arrive day and night by ground ambulance and by LifeFlight. On occasion a gunshot victim will be driven here by a "business associate" to be deposited unannounced outside the Emergency Department as the driver speeds away.

During the last five years, VUMC has added a dedicated Trauma Unit offering highly specialized care for victims of firearm injuries, and two additional LifeFlight air ambulances to transport patients from as far away as 150 miles.

Thanks to specialized Level One trauma care available for these patients, greater numbers than ever are surviving such devastating injuries.

Gunshot wound (GSW is the abbreviation used in the trade) victims fall into several categories, Miller says.

"While there are many stories of an innocent person at the wrong place at the wrong time, the vast majority are not. [Most shootings] are drug and gang related," Miller says.

"Another group we see in significant numbers is firearm-related suicide attempts. Gunshot wounds are very common in suicide attempts, especially to the face and mouth." And, he adds ominously, "At least half, or more, of suicide attempts are not successful."

Miller says another group of gunshot victims is related to law enforcement—either someone shot by officers while in the commission of a crime, or officers themselves injured in the line of duty. Since finishing his trauma surgery fellowship here at VUMC, Miller has cared for four police officers who suffered gunshot wounds in the line of duty.

Hunting-related injuries round out the list of activities common to firearm-related injuries treated at VUMC.

"About 15 percent of our trauma patients each year are the result of penetrating trauma, usually gunshot wounds. As far as being labor-intensive to manage, these patients take up a lot of resources," he says.

By the Numbers

Over a five-year period ending with fiscal year 2001, VUMC treated 1,302 victims of gunshot wounds. If this violence could be considered an epidemic, it is an epidemic that feeds on testosterone; 89 percent of gunshot patients were male. Unfortunately, no age group is excluded. Typically, about 9 percent of VUMC's gunshot victims each year are under age 18. Young adults, ages 18 to 35, make up the bulk of victims—about 56 percent. About 33 percent are over 35.

The average VUMC hospital charge per gunshot victim over the five-year period from 1997 through 2001 was $30,000. Average physician charges per gunshot victim at VUMC are typically in the neighborhood of $15,000.

Based on average charges, from 1997 through 2001, the cost of care for gunshot victims at VUMC totaled approximately $58.5 million. It is not unusual for combined hospital and physician charges to accumulate into the hundreds of thousands of dollars for the care of a single patient. These charges do not include rehabilitative or long-term care,

which is almost always necessary for patients suffering injuries of this severity.

Caring for the vast majority of Middle Tennessee's gunshot victims requires a substantial financial commitment from VUMC. Typically, about 21 percent of these patients have commercial insurance, 35 percent are insured by TennCare (the state's managed health-care program for low-income individuals), and another 8 percent are insured by workers' comp or Medicare. The remaining 36 percent of gunshot victims are "private pay," which means they have no form of insurance.

Patients treated at VUMC for gunshot wounds have an average survival rate of about 80 percent. About 60 percent of these patients, the lucky ones, are treated and discharged directly to home. Two percent of VUMC's gunshot victims are discharged directly to jail.

Of Ricochets and the Blast Effect

Miller says doctors and nurses often don't want to know details about how a patient was shot. The information usually isn't necessary for patient care. "Sometimes it's just better not to know," he says. "We want to treat every patient the same, and it serves no purpose to have your judgment skewed by a story that may not even be true."

However, Miller says knowing how many times a patient was shot, or where on the body, is vital. Though one may believe the need for this information would be obvious, it's often not the case.

"Knowing how many entrance and exit wounds there are, and what type of weapon was used, is very important to the management of a patient," he says.

Damage done to the body by a firearm depends on a number of factors. Of course, where a bullet enters the body has a significant impact on the outcome. Engineering specifications of a particular weapon contribute to its overall impact on the human body—a phenomenon known to health-care providers as the "blast effect."

The blast effect refers to the zone of damaged tissue around a gunshot wound caused by the bullet itself, and by shock to surrounding tissue caused by the sheer speed with which the projectile enters and travels through the body.

"Blast effect is determined by the size and velocity of the bullet. Some bullets are engineered to tumble upon entrance into the body, or to implode upon impact. Bullets are designed to do maximum damage, which creates a lot of havoc for us," Miller says. "Some of these bullets are absolutely designed to maim. And they have an amazing ability to ricochet off things inside the body. I've had patients shot in the chest whose bullet winds up in the leg.

"The hardest thing for us as trauma surgeons is to determine the bullet's trajectory and locate all the bullet holes, which is not an easy thing at times. Usually, there is an even number of holes in a gunshot victim. If there is an uneven number of bullet holes, then we really have to search around."

There is an entire science on the pathophysiology and management of gunshot victims, complete with in-depth textbooks on the topic.

Human Toll

The human cost of firearm injuries is recognized every day not only by the loved ones who must live without a son or daughter, father or mother, husband or wife, but by the health-care workers who must care for the victims.

When health-care professionals who care for victims of firearm injuries are asked if they remember particular patients, there is

continued on page 85

Dollars and Death

The United Nations study *The International Study on Firearm Regulation, Crime Prevention and Criminal Justice,* published in 1997, noted that the United States and the Czech Republic are the only countries among industrialized nations that do not have a firearm licensing system. The U.S. is among only 22 percent of responding nations, according to the U.N., that do not have regulations regarding the storage of firearms.

A 1996 study by the National Institute of Justice, the research and development agency of the U.S. Department of Justice, found about one-third of all U.S. firearm sales are currently excluded from federal law on background checks: sales at gun shows, through classified ads, or among friends and family.

Thanks to this bountiful supply of firepower, 28,633 deaths in the U.S. were associated with firearms in 2000. On the good side—if such a level of carnage can have a good side—that number actually represents a significant decrease in the number of firearm deaths from the previous decade.

Closer to home, data from the Centers for Disease Control and Prevention (CDC) indicate Tennessee ranks well above the national average in the annual number of firearm-related deaths.

In 2002 Nashville had 65 homicides. Again, if your nature tends toward the sunny and optimistic, you may take heart that this number represents a 30-year low, and was down significantly from 1997's all-time high of 112. Over the last 39 years, the homicide rate in Nashville has varied widely from year to year, with a low of 45 in 1963 to '97's record year.

According to Metro Nashville Police Department spokesman Don Aaron, of Nashville's 65 homicides in 2002, 46 of those were committed through the use of firearms. In Nashville, Fridays, Saturdays, Sundays and Mondays are when most homicides occur. Sunday is currently the most popular day for killing somebody else, with approximately 30 percent more homicides than any other day of the week.

"It appears that a majority of Nashville's gunshot victims come from the inner city," Aaron says. "The obvious question is, Where are all the guns coming from? Illegal drug activity has been, and continues to be, an ongoing theme with Nashville's gunshot victims."

Aaron says most weapons used in drug crimes are cheaply made and inexpensive to purchase on the streets. "In all likelihood the majority of weapons used in these homicides are purchased with proceeds from drug activity."

CDC data indicate that 73.8 percent of U.S. homicides in 2000 were by firearms. In terms of years of potential life lost before age 65, the 28,633 deaths associated with firearms in 2000 equals 738,486 lost years of living for the people killed.

—JOHN HOWSER

The Arts

"One should play new works *as though they are established*


"Mountain #221"

VISUAL ARTS:

Sarratt Gallery took nature as a prevalent theme this fall in showing works by painter Xuhong Shang and in an installation by Nashville artists Ally Reeves and Shaun Silfer.

Shang's **"Mountain Series"** paintings, shown at the Gallery in September, fused Modernist painting with Chinese tradition in works influenced by the Buddhist ideal of human interconnectedness with nature. Using oils and wax to produce scenes that resembled Chinese landscape paintings of the eighth century as they might be seen in photographic negatives, the works explored the duality that exists between reality and vision, metaphor and meaning.

Johnny Appleseed, an icon of the transformation of nature that was necessary to white settlement of the West, was used as metaphor and title in the October gallery installation **"Johnny Appleseed"** by Ally Reeves and Shaun Silfer. Looking at the political implications of the impact of "the human animal" on nature, the artists used familiar materials readily available at places like Home Depot—places which make it possible for homeowners to transform their plots of land in a fashion similar to those early settlers—to construct an ersatz "garden" in the gallery, complete with brick border and monkey grass. Meanwhile, drawings on the walls depicting plants native to Tennessee included seeds for viewers to take and disperse, with instructions on how to use these plants that do not require the kind of tending that non-native ornamentals require.

Vanderbilt Fine Arts Gallery mounted two exhibits this fall that showcased the beauty of line found in etchings and aquatints.


"Le Beguin" by Gerald Brockhurst

"The Sensuous Line: Etchings by Gerald Brockhurst" opened the Fine Arts Gallery exhibition program this fall. A gift from Thomas B. Brumbaugh, professor of fine arts, emeritus, the etchings featured the work of master etcher and portrait painter Brockhurst, who was a chronicler of the fashionably rich and stylish of 1920s- and '30s-era America and Great Britain. Evoking the style of the Italian Renaissance in his etchings, Brockhurst's work nevertheless captured and reflected the modern tastes and aspirations of early 20th-cen-

ACCOLADES

Jonathan Rodgers, BMus'02, showed black and white photographs taken in Africa at Vanderbilt Hospital in the Mezzanine Gallery of the Main Lobby from September through December. The exhibit, **"We Bring Our Drums,"** depicted women's groups in the interlacustrine area of Uganda, Kenya and Tanzania who educate young people about HIV/AIDS through music and dance.

Members of the fine arts faculty, **Marilyn Murphy** and **Michael Aurbach,** as well as Heard Library staff member **Carrie McGee Sprouse,** exhibited work in **"New Directions: Contemporary Art of Tennessee"** at the Frist Center for the Visual Arts in Nashville. The exhibit, part of the sweeping **"Art of Tennessee"** show, ran through January. In conjunction with the "Art of Tennessee," Watkins College of Art and Design's show **"Transforming the Body"** featured artwork by 10 Tennesseans, including **Mark Hosford,** assistant professor of fine art, and **Lain York,** exhibit preparator for the John F. Kennedy Center for Research on Human Development.

Culture

masterpieces and established masterpieces as though the ink is still wet. —CRAIG NIES

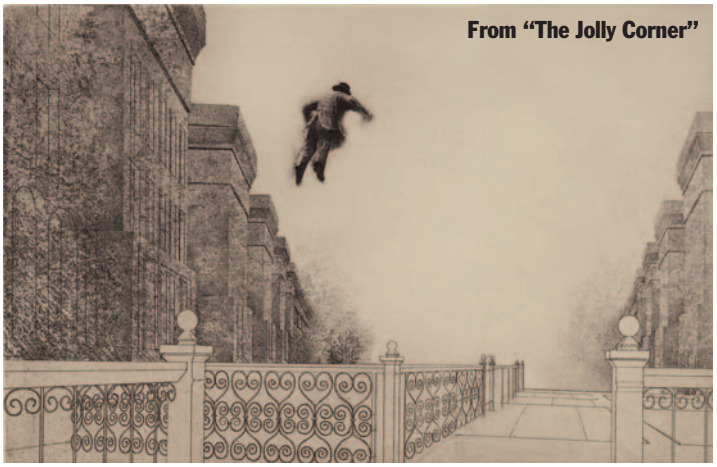
tury American and European sensibilities.

On display from Oct. 23 through Dec. 14, **"The Jolly Corner,"** a suite of 21 etchings with aquatint created by master etcher and engraver **Peter Milton,** illustrated the ghost story of the same name by American novelist Henry James. First published in 1908, "The Jolly Corner" received a new visual treatment in 1971 through Milton's etchings, which employ a wide range of printmaking techniques, including photo-based imagery, that reappear throughout the suite. Milton, whose works are included in more than 150 museum collections throughout the world, utilized a surreal, dream-like quality in these prints that is particularly suited to illustrating James' atmospheric story.

"Creative Expressions IX," on view at the **John F. Kennedy Center for Research on Human Development** during September and October, showcased work by local artists with disabilities. The annual art exhibit offers artists with disabilities a chance to display their talents for the public and be included in the art community. The exhibit was co-sponsored by the Nashville Mayor's Advisory Committee for People with Disabilities.

From "Creative Expressions IX"

During November and December the Kennedy Center hosted a photo exhibit and forum to raise awareness of the education needs of those with vision impairments. **"Focusing on the Future of Students with Vision Impairments: Teachers in Action"** showcased photos taken by the Brentwood Camera Club of teachers and students with vision impairments interacting in different learning situations.



From "The Jolly Corner"

MUSIC:

The **Orpheus Chamber Orchestra,** "one of the great marvels of the musical world," according to the *San Francisco Chronicle,* visited Nashville in September as part of Vanderbilt's Great Performances series. Founded with the goal of intertwining orchestral repertoire with principles of chamber music, the Orchestra's season this year will include a future appearance by the Blair School's **Edgar Meyer,** adjunct associate professor of bass, whose work was honored recently with a MacArthur "genius" award. Meyer was featured in November at Tennessee Performing Arts Center in the world premiere of Concerto for Banjo and Double Bass, a collaborative work by Meyer and banjo virtuoso Bela Fleck commissioned by the Nashville Symphony.

Menahem Pressler, founding pianist of the famous Beaux Arts Trio, conducted a master class at the Blair School in October. Pressler, who is professor of music at the Indiana University School of Music, worked with four piano majors—Krystal Grant, Ralph

NEIL BRAKE

Orpheus Chamber Orchestra


NEIL BRAKE
Menahem Pressler

Blanco, Michael Krewson and Sarah Seelig—who were selected from auditions to perform during the two-hour master class, which was open to music lovers throughout the community.

Vanderbilt's Dyer Observatory hosted a fall **"Music on the Mountain"** community concert in mid-October, featuring the Blair School's **Brass Quintet and Tuba Ensemble.** Highlights included "Mars" from Gustav Holst's orchestral suite *The Planets* in special recognition of the planet Mars' proximity to Earth, as well as other traditional "Octubafest" works. Following the concert the public was invited to tour the observatory and view Mars through the telescope.


NEIL BRAKE
"Music on the Mountain"

The Nashville Mandolin Ensemble, led by **Butch Baldassari,** adjunct associate professor of mandolin, released its fourth CD in September, titled "Bach, Beatles, Bluegrass." It will soon be followed by a double-CD of live performances from 1991 through 2001, along with a DVD documenting the NME as a much larger group that featured the late conductor Paul Martin Zonn.


NEIL BRAKE
Blair String Quartet

Blair BMI Composer-in-Residence for the fall was **Paul Basler,** a French horn virtuoso who is also an acclaimed composer. His choral selections, highlighted by *Missa Kenya,* were presented in performances by Blair's **Symphonic Choir** and **Chamber Choir,** each directed by **David Childs,** assistant professor of choral studies, and accompanied by pianist Polly Brecht during an October concert in Ingram Hall. Basler was the featured French horn player on some of his own works.

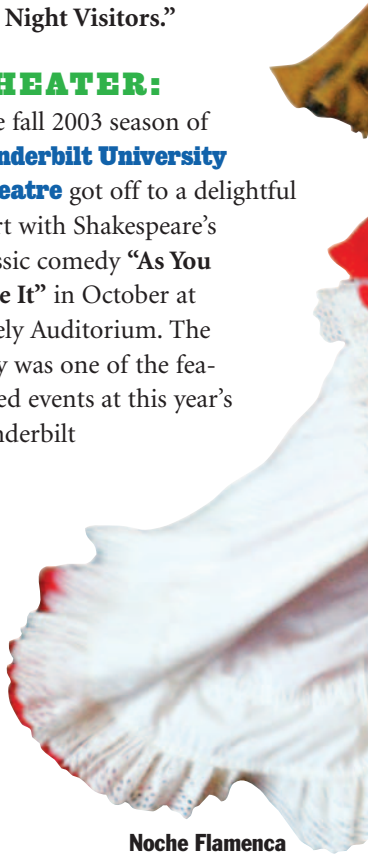
The **Blair String Quartet** presented the first of its "Two by Four" concerts in November focusing on the works of Beethoven and Brahms. The November program consisted of Beethoven's Quartet in A Major, op. 18, no. 5, and the first of the two string quartets of Opus 51 by Johannes Brahms. **Amy Dorfman,** associate professor of piano, was guest artist with the Quartet in Shostakovich's Piano Quintet, op. 57. The second of the two concerts will take place in March.

Chancellor Gordon Gee joined **Maestro Kenneth Schermerhorn** and the **Nashville Symphony Orchestra** on stage as narrator for Benjamin Britten's "Young Person's Guide to the Orchestra, op. 34." The September concert featured guest soloist Itzhak Perlman earlier in the evening performing Beethoven's Violin Concerto.

"Amelia Al Ballo" by Gian Carlo Menotti premiered in 1937, but was given new life in November by **Vanderbilt Opera Theatre** directed by **Gayle Shay,** assistant professor of voice. Paying homage to the heyday of Hollywood musicals, the VOT production was the first of three fully staged and orchestrated productions offered by VOT this year. The **Vanderbilt Orchestra,** under the direction of Blair faculty member **Robin Fountain,** accompanied the singers during this madcap one-act *opera buffa,* in which Amelia seemingly stops at nothing to go to the ball. In December opera lovers at Vanderbilt were thrilled by a holiday presentation of Menotti's **"Amahl and the Night Visitors."**

THEATER:

The fall 2003 season of **Vanderbilt University Theatre** got off to a delightful start with Shakespeare's classic comedy **"As You Like It"** in October at Neely Auditorium. The play was one of the featured events at this year's Vanderbilt


Noche Flamenca

extraVUganza, which combined Homecoming and Reunion.

In November, VUT's production of the British comedy **"Bedroom Farce"** presented a light-hearted look at modern relationships, complete with wit, insight and plenty of pratfalls. Written by Sir Alan Ayckbourn, Britain's most popular comedic playwright, "Bedroom Farce" provided a hysterical look at the bumpy road to love.


"Bedroom Farce"

PHILLIP FRANCK


NEIL BRAKE

Great Performances presented the off-off-Broadway show **"The Guys"** by Anne Nelson in late September, performed by the Los Angeles-based touring troupe **The Actors' Gang.** Nelson, a Columbia University journalism professor, accepted a New York Fire Department captain's invitation to visit his fire station after Sept. 11, 2001, to help him write eulogies for several of his men who died in the tragedy. That experience formed the basis for "The Guys" in which Nick, the fire captain, and Joan, Nelson's alter ego, converse on an empty stage for 75 minutes. Nelson gave a lecture preceding the performance, which took place in Ingram Hall.

DANCE:

Noche Flamenca, featuring authentic live music and dance from the cabarets of Madrid, brought the heart and soul of flamenco to Langford Auditorium in October as part of the Great Performances at Vanderbilt series. The company, which is one of Spain's most successful flamenco troupes, treats all aspects of flamenco—dance, song and music—as interrelated, and each is given equal weight in their performances.

Focusing on one's need to communicate and the strengths and inadequacies inherent in language, Seattle-based **Lingo DanceTheater** brought its risky and physically powerful dance style to Langford Auditorium in October's production of **"Speak to Me."** The night before the performance, Lingo gave short performance peeks at Fugitive Art Center in Nashville as the first "Performance on the Move" event sponsored by Vanderbilt in conjunction with the Great Performances series.

HUMANITIES:

The **Back to the Classroom** events associated with **extraVUganza** in October tackled subjects as diverse as civilians and space to events in the Middle East to a panel discussion on Vanderbilt's role in the progress of the arts in Nashville. About 350 guests listened as members of Vanderbilt's stellar faculty brought them back into academia once again.

Lectures, music performances and film marked this year's **Holocaust Lecture Series,** which focused its attention on the themes of justice, redress and restitution for the crimes committed during the Nazi regime's mass effort to exterminate some 6 million Jews prior to and during World War II. This year's series marked the 26th consecutive year Vanderbilt has held events commemorating the Holocaust, making it the longest-running sustained series of its kind at an American university.

The series kicked off Oct. 9 with a lecture by **Stuart Eizenstat,** U.S. ambassador to the European Union under the Clinton administration and that administration's leader on


Lingo DanceTheater

UPCOMING

THEATER

When it opened in 1925, theater critic Brooks Atkinson wrote, "After seeing **'Hay Fever'** you will never give week-ends again nor accept week-end engagements, but you will go to the theatre forever and ever. Amen." The VUT production of Noel Coward's classic comedy will play April 2–4 and 8–10 in Neely Auditorium.

DANIEL DUBOIS

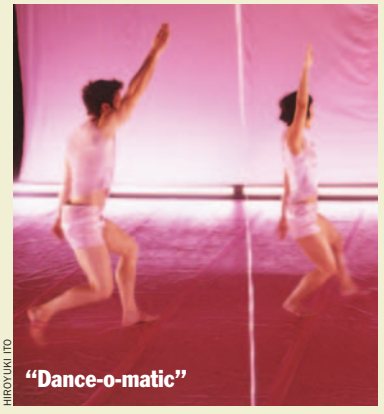
Three on a Bench!

MUSIC

Three on a Bench!, a piano concert featuring the Dorfman/Katahn Piano Duo with special guest Beegie Adair, will take place in Ingram Hall on March 20 at 8 p.m., performing an eclectic program ranging from Brahms to jazz.

DANCE

Brian Brooks Moving Company will present "Dance-o-matic," a series of dances drenched in whimsy and shades of pink, on Sunday, April 18 at 3 p.m. in Langford Auditorium.



HIROYUKI ITO

"Dance-o-matic"

VISUAL ART

To mark a major gift made by Donald and Ruth Saff, **Vanderbilt Fine Arts Gallery** shows mixed-media prints from the artist's *Wax Fire Works* series in **"Robert Rauschenberg: An American Iconoclast,"** through March 18.

DANIEL DUBOIS

InsideOut of the Lunchbox

Holocaust-related issues. His book, *Imperfect Justice: Looted Assets, Slave Labor and the Unfinished Business of World War II,* explores how the Holocaust became a political and diplomatic battleground 50 years after the war's end, as the issues of dormant bank accounts, confiscated property, looted art and unpaid insurance policies consumed courts in Europe and the United States.

The **InsideOut of the Lunch Box** series, sponsored by Vanderbilt and TPAC, kicked off in September with a panel discussion on Alan Lightman's novel *Einstein's Dreams* at War Memorial Auditorium. Panel members included **Volney Gay,** professor and chair of the religious studies department; Mockingbird Theatre's artistic director, David Alford; and Brian Niece, artistic director of the People's Branch Theatre. In October, **Gregory Barz,** assistant professor of musicology (ethnomusicology), took part in a panel discussion with Bill Shannon, a conceptual, interdisciplinary performance artist who suffers from a rare form of arthritis and incorporates his crutches into his street performances.

Tony Kushner, a playwright who won the Pulitzer Prize and two Tony Awards for his two-part stage work "Angels in America," recently adapted for Home Box Office, appeared at Vanderbilt in November as a speaker in the **Chancellor's Lecture Series.** "A Conversation with Tony Kushner" was conducted by **Terryl Hallquist,** associate professor of theatre, in Benton Chapel at the Vanderbilt Divinity School.

NEIL BRAKE

Tony Kushner

BOOKS & WRITERS:

Two classic novels by **Robert Penn Warren,** BA'25, and **Walter Sullivan,** BA'47, professor of English, emeritus, were reissued this fall by Louisiana State University Press.

Warren's *Flood,* originally published in 1963, chronicles the demise of the agrarian South from technological progress in its story of two men—one a long-absent

native son and successful screenwriter, the other a famous director and stranger to the region.

Sojourn of a Stranger was Sullivan's debut novel. Set in 1857, it relates the story of Allen Hendrick, whose pursuit of love proves powerless despite advantages of social standing, wealth and "good breeding" because of his octoroon mother. The novel, first published in 1957, put Sullivan on the literary map.

Coiled in the Heart, the debut novel by **Scott Elliott,** BA'93, is a story of love, loss, guilt and redemption offered through a critical look at contemporary Southern culture and old Southern values. The book, published by G.P. Putnam's Sons in August, is filled with exquisite prose that reviewers are comparing to Peter Taylor, Robert Penn Warren, and other great Southern writers.

Between the world wars, Paris welcomed not only American expatriates such as dancer Josephine Baker and writer F. Scott Fitzgerald, but also jazz—the dynamic musical style then emerging from the States. Jazz soon added to the allure of Paris as a center of international nightlife and cutting-edge modern culture. **Jeffrey H. Jackson,** BS'93, examines why jazz became so widely performed in Paris during the '20s and '30s, as well as why it became controversial, in *Making Jazz French: Music and Modern Life in Interwar Paris* (Duke University Press).

Marshall Chapman, BA'71, better known as a singer and musician whose songs have been covered by artists like Emmylou Harris, Wynonna, Joe Cocker, Jimmy Buffett and John Hiatt, published *Goodbye, Little Rock and Roller* this fall (St. Martin's Press). Using 12 of her songs as entry points to some of her life adventures, the book is a map of the places she's been and what went through her mind as she traveled there.

ACCOLADES

Sarah Byrn Rickman, BA'58, was named a finalist in the 2003 Willa Cather Literary Awards competition, sponsored by Women Writing the West, for her novel **Flight from Fear** (Disc-Us Books, 2002) based on WASPs (Women Air Force Service Pilots) who flew airplanes for the U.S. Army during World War II.

Q&A

Twenty years ago Craig Nies, associate professor of piano at Vanderbilt's Blair School of Music, presented the complete solo works of Claude Debussy in a cycle of four recitals. Last year he completed a two-year cycle of concerts that covered all of Beethoven's sonatas for piano and strings. In October 2003, Nies embarked on a series of concerts exploring the complete piano sonatas of Mozart and Schubert, a cycle that culminates Jan. 26, 2006, the 250th anniversary of Mozart's birth.


DANIEL DUBOIS

Q: *How did the Mozart/Schubert concert cycle come about?*

A: I had been thinking of doing a major solo cycle for about 10 years, but nothing seemed quite right until the idea for the Mozart/Schubert cycle. The Beethoven piano/string sonata cycle I completed last year was a major inspiration, of course—plus, the Debussy cycle I completed 20 years ago was a constant reminder of the benefits of doing such a project.

Q: *What is it about the Mozart and Schubert sonatas that appeals to you?*

A: For a pianist, the sonata is the equivalent of a symphony. In the case of most of the Schubert sonatas, they are large-scale works featuring a wide variety of moods that have a breadth of conception and use of materials not found in shorter pieces. The great melodies in both Mozart and Schubert sonatas are also a big attraction for me.

Q: *You've played so many of the works of the great composers in your career. Do you have a favorite composer?*

A: I can't imagine a more enjoyable combination than Mozart and Schubert, but my pleasure in working on and performing their works has not diminished my admiration and love for the music of Chopin, Rachmaninoff and Debussy—or my interest in the works of living composers. I have worked with 10 Pulitzer Prize-winning composers and have premiered six works by Blair composer Michael Rose. As my last teacher, Gilbert Kalish, once said—and I'm paraphrasing—"One should play new works as though they are established masterpieces and established masterpieces as though the ink is still wet."

—Angela Wibking

S.P.O.V.*

*Student Point of View

Scabs and Scars

For the greater good, a student participates in Vanderbilt's smallpox vaccine trial. By Ellen Stormer, BS'04

In the days following Sept. 11, I didn't know what to do. In fact, I didn't do anything. Nine months later, however, I heard that Vanderbilt Medical Center was looking for subjects for a study to test smallpox vaccine, and something finally clicked: Here was a way I could help. Instead of sending money or blood, I would let my antibodies do the work.

The information gained from this study could save American lives in the future. There was a more tangible compensation as well: As a college student attempting to accumulate the least amount of loans while completing my degree, the monetary payment for participating in the study was also attractive.

When I informed my parents of my intent, they expressed a degree of concern that surprised me. I did not expect this reaction from a chemistry teacher and nurse. But they did have some basis for alarm. Smallpox is the longest-lived human pathogen in history. It begins like any other virus, with symptoms of headache, fever and nausea. Soon the skin turns scarlet and a rash of red spots appears. The spots turn into blisters, then yellow pustules and then scabs—if you are lucky. The unlucky 40 percent die. The survivors live scarred, many without their eyesight.

I explained to my parents that the smallpox vaccine being tested is made from the bovine version of the virus. Contracting this weaker strain does not put human lives at risk. Yet, the similarities between the two strains are enough to build immunity against the deadly human variety.

Before deciding to join the study, I did some research to learn more about smallpox today. I found that two known sources of the human virus exist in the world. Colonies of the virus are frozen in liquid nitrogen in a government laboratory in Atlanta, where the vials lie under constant electronic surveillance. In Moscow another set of frozen vials stands guarded by police around the clock. Since Sept. 11 many fear smallpox as the next biological warfare agent. This raises serious questions: How secure are the facilities in Atlanta and Moscow? In the event of a terrorist attack, will U.S. health officials be prepared for action?

Smallpox vaccination policies in the event of a biological attack have become a hot topic. The year 1972 marked the last vaccination of children against smallpox in the United States. Citizens under 30 (half the population) have never received vaccinations. For those vaccinated, it is uncertain how long immunity lasts. The available quantity of smallpox vaccine is inadequate for the entire U.S. population, and no manufacturers are currently equipped to produce smallpox vaccine in large quantities. Frozen for more than 30 years, the current vaccine's viability was uncertain.

The Vanderbilt smallpox vaccine study examined the two frozen stocks of vaccine possessed by the federal government. One stock, known as Dryvas, has been stored at the Centers for Disease Control in Atlanta. Aventis, the other stock, was created for the military but never tested due to the eradication of smallpox in the '70s. The goal of the study was to determine if the Dryvas vaccine is safe and if both Aventis and Dryvas can be diluted without compromising their effectiveness. If diluted to a one-10th solution, existing stocks of vaccine could protect the entire nation.

To qualify for the study, I first had to pass a physical. It consisted of the typical routine: height, weight, blood pressure, temperature, blood and urine samples. During the physical examination, Kathryn Edwards, the professor of pediatrics who headed up the study, asked me to take off my shoes and socks. Surprised, I complied. She surveyed my hands, feet, arms and legs for any skin disorders, explaining that individuals with an existing skin condition such as dermatitis, impetigo or shingles are at greater risk when receiving the smallpox vaccine.

On vaccination day I gave another blood sample and, along with the other women, provided a urine sample for a pregnancy test. The participants all congregated in a lunch break room. We finished filling out the consent forms and nervously waited. Individuals left when called by name and then trickled back, bandages on their arms. When called to get my inoculation, I entered a small, closed-in room with a nurse and Dr. Edwards. Colorful children's posters hung on the walls. The nurse used a computer to assign randomly the vaccine stock I would receive. No one in

JON KRAUSE

Smallpox vaccination policies in the event of a biological attack have become a hot topic. In the event of a terrorist attack, will U.S. health officials be prepared for action?

the room knew which stock or dilution of the virus I received and against which my body's immune system would soon be waging war.

"One, two, three, four, five …," Edwards counted aloud while repeatedly jabbing a pronged needle in my left upper arm. At first it felt like a pinprick, but by the count of nine the jabs began to hurt. I listened to her steady counting, begging for the end to come quickly. Unlike any vaccine I had received before, Dr. Edwards then rubbed the clear liquid on my punctured skin instead of injecting it into the bloodstream. The 15 punctures were to ensure proper interaction between my body and the vaccine.

The July air hung heavy with humidity when I stepped outside Vanderbilt's Medical Center North. I clutched in my hand a diary card, care instructions, bandage change kit and digital thermometer. Every day I was to record my temperature, symptoms and any medications taken. Most important, I had to take caution not to contaminate myself or others.

One of the biggest surprises I got was the public reaction. Strangers would come up to me on the street to ask, "What happened to your arm?" One stranger went so far as to actually poke the bandage, which was not only embarrassing but quite painful.

The bandage was considerably visible when I wore short sleeves. The bright-white non-stick gauze patch was 1.5 inches square and stood out against my summer-toned skin. The clear, slightly larger, waterproof plastic sheet covering the gauze brought more attention by its sheen. Underneath the bandage, the vaccine was reacting with my skin. My body responded by forming a blister. The blister and the fluids in it contained the live virus. I couldn't remove the bandage, even for showers, because if any fluid transferred to anoth-

continued on page 82

A.P.O.V.*

*Alumni Point of View

Li'l Duck

A wartime love story

By Rob Hammond, BA'71

In the July-August 1998 edition of *American Heritage,* I read an article, "Farthest Forward," by Dick Keresey. The article was condensed from Mr. Keresey's just-published book *PT 105*. At the end of the article, he recognized some of his friends killed in action. One of the men listed was Sid Hix.

Many years earlier my mother, Virginia Trotter, BA'42, had told me the man with whom she was in love at Vanderbilt served on a patrol torpedo (PT) boat and was killed during the war. I showed her the *American Heritage* article, and she confirmed that Sidney Hix from Gallatin, Tenn., Vanderbilt Class of 1941, was indeed the Sid Hix of the article. She pulled out her '41 *Commodore*. Tucked in the back were college and wartime pictures of Sid, as well as newspaper clippings reporting his death.

The next day I ordered a copy of *PT 105*. When the book arrived I hurriedly skimmed it looking for references to Sid Hix. I learned that Dick Keresey was the captain of PT 105 and Sid Hix was the captain of PT 108. They served together in Squadron 5, which included 12 PT boats, and were based at Rendova in the British Solomon Islands. In the summer of 1943, one of their missions was night patrol of the Blackett Strait, which bordered the southern coast of Kolombangara, a large Japanese-held island to the west of New Georgia (for photo and map, see the December 2002 *National Geographic*, pages 82–83). The PT boats were trying to keep Japanese ships and barges from resupplying their troops. John F. Kennedy's PT 109 had been lost on one of these patrols in the Blackett Strait.

Mr. Keresey describes Sid in the book as "very handsome, amiable, and earnest (Sid used four-letter words like 'gosh'). He had a beautiful girlfriend he called 'Li'l Duck,' so he called his 108 the Li'l Duck—the only boat in our squadron with a name." Because of wartime censorship my mother had no idea Sid was captain of PT 108 and had named the boat for her. (Her pictures of Sid on the 108 have the numbers cut out.) At Vanderbilt she had acquired the nickname "Li'l Duck" because her older brother, Bill Trotter, BA'41, had the nickname "Duck."

By Aug. 21, 1943, Japanese barge traffic had diminished as the Japanese retreated from New Georgia. The PT boats were assigned a new mission: to attack the barge installations on Kolombangara. Sid's PT 108 was assigned a specific cove to attack. According to Mr. Keresey the PT boat captains were worried about the raids on Kolombangara because they would begin in darkness, and the charts did not give them all the information they felt they needed. However, on Aug. 22, 1943, the PT boats made their attacks on the coves. Keresey's 105 was not to attack but to support the boats that did.

As the attack began, PT 108 was caught in the crossfire of Japanese machine guns. Sid Hix was hit in the head but managed to say, "Take the boat out." Almost all on deck were killed or wounded. The 108 was still in the water and taking fire. The executive officer and engineer were trying to keep at least one of the three bullet-riddled engines running. PT 105 came to the 108's rescue by passing between the Japanese on shore and the 108, and setting a smokescreen. The 108's wounded quartermaster steered the boat out.

When Dick Keresey returned to base, he learned Sid was dying. "Sid was lying on a cot in the medical tent, removed from the area where the doctor and the pharmacist's mates were working on those who could be saved. Sid looked very dignified and calm, as if he was satisfied he had done his best. I could only look at my friend for a brief moment before I felt myself losing control."

The revelations of PT 105 were bittersweet for my mother. Even after 60 years the memories of Sid and the pain of his death are very vivid. After learning of Sid's death, she rode the train to Nashville and took a bus to Gallatin to spend the weekend with Sid's parents. Returning from vacation on Oct. 2, 1949, Mr. and Mrs. Hix stopped in LaGrange, Ga., to see her. It was the last time she saw them, and it was the day before I was born.

On the happier side, I called Mr. Keresey in Montclair, N.J., and told him my mother was "Li'l Duck," and that she was alive and well. He gave her a call, and they had a long talk. Mother enjoyed talking with him and was very appreciative of the call. We also learned through Mr. Keresey that Sid's sister Dorothy lives in Gallatin, and that her husband, Benarr Cresap, had written a memoir of Sid. At the Sumner County Historical Museum in Gallatin is an exhibit honoring Sid and the PT 108. Geary Sims, who is updating the exhibit, sent copies of Benarr Cresap's memoir to both of us. In one letter home Sid report-

JON KRAUSE

Sid looked very dignified and calm, as if he was satisfied he had done his best. I could only look at my friend for a brief moment before I felt myself losing control.

ed that at mail call he had received 10 letters from my mother at one time. She had written "Li'l Duck" in the return address, and his fellow officers had given him a hard time. My mother called Dorothy, and they both enjoyed talking with each other.

Memorial Gym is dedicated to the more than 4,500 Vanderbilt men and women who served in World War II. A plaque lists the names of the 136 Vanderbilt alumni killed in the war. There are 135 other stories like Sid's—stories of Vanderbilt men who died in the service of their country. Sid was editor of the *Hustler* and a member of Sigma Chi, O.D.K., and the Student Christian Association. He played baseball and basketball. His fellow students and faculty respected and admired him. He had a bright future. In letters home to his family, his thoughts were of peace, coming home, and starting over in civilian life. His life and death deeply affected the lives of many.

When Sid began training for the PT service, he served on PT 108 as executive officer under the actor Robert Montgomery. Upon learning of Sid's death, Lt. Commander Montgomery wrote a letter of condolence to Sid's father. He wrote that Sid was "not only efficient in the performance of his duties, but also a grand companion." He continued, "Out of this war and such sacrifices as Sidney has made must come a better world. When that world comes, it is to men like your son that we must give a full measure of our gratitude."

Rob Hammond, BA'71, has been director of Camp Laney for Boys in Mentone, Ala., since 1974. Rob, his wife San, and their two sons live in Rome, Ga., where Rob currently serves as president of the Rome Vanderbilt Club. His mother, Virginia Trotter Slaughter (BA'42); an uncle, William P. Trotter (BA'41); and his sister, Rosalie Hammond (BSN'73), also attended Vanderbilt.

The Classes

"William

Please Note: Class Notes are only found in the print version of this publication.

extraVUganza
Homecoming*Friends Reunion*Alumni

Return of the 'Dores

Hats—the bigger the better—were definitely in fashion Oct. 10–11 when more than 3,700 alumni, friends, guests and fans converged on campus to reconnect and reminisce at extraVUganza (Reunion and Homecoming) 2003.

New this year, but destined to be an annual tradition, was the Commodore ReVUe Parade, with Chancellor Gordon Gee leading hundreds of alumni and guests through campus to the game. Alumni also gave thumbs-up to "Back to the Classroom" events, which included a rousing discussion on the Middle East and a session on investing in today's economy.

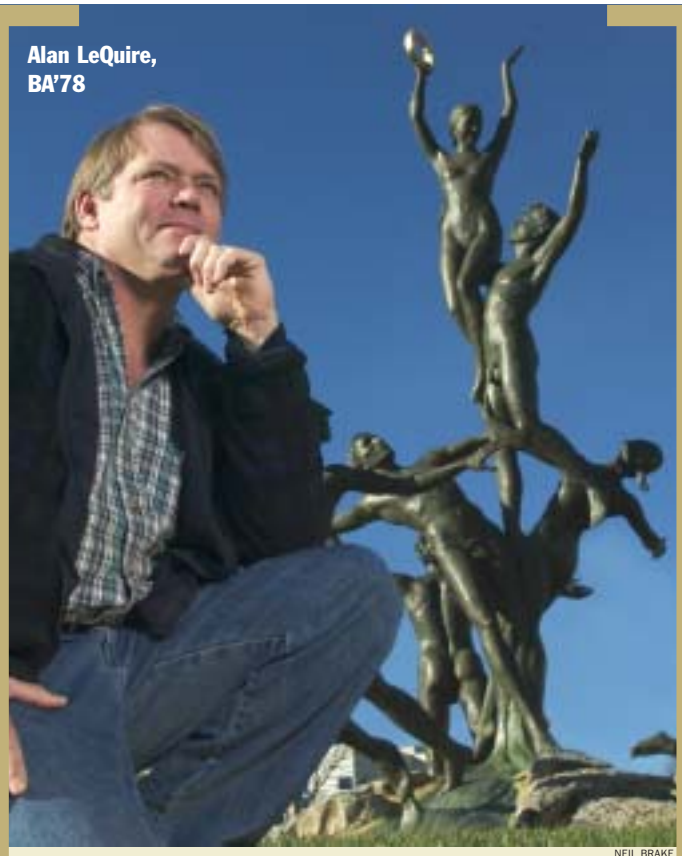
The Quinq Society welcomed 394 members of the Class of 1953. Taking honors for greatest class participation at extraVUganza was the Class of 1993 with 427 registrants. Altogether, a grand total of $20 million was raised by undergraduate and graduate Reunion year classes and the Quinqs.

For more photos and information about this year's extraVUganza, planned for Nov. 5–6, go to *www.vanderbilt.edu/alumni/reunion.*

PHOTOS BY PEYTON HOGE AND NEIL BRAKE

Cabaniss, BA'60, *has been appointed U.S. Ambassador to the Czech Republic.*

Marilyn Jesse Justman Kaman, BA'70, *was selected to serve as an*



Alan LeQuire, BA'78

NEIL BRAKE

Musica on the Row

In 1999 a group of Nashville art patrons approached Alan LeQuire with the kind of proposal most sculptors dream of. They wanted to commission a work of art that would beautify a high-traffic intersection through Nashville's Music Row—an area that was in decline as the Country Music Hall of Fame and Museum and nearby tourist shops moved out.

"It was the first time a group of patrons had approached me directly and said, 'We want you to do this,'" LeQuire says. "There was no competition with other artists."

"Musica" was unveiled last fall to both acclaim and outrage. The bronze work's nine dancing figures, each at least 14 feet tall, are nude, something that fueled local headlines and talk radio for weeks.

"Public art in America is a bureaucratic nightmare because every project creates controversy," LeQuire says. "But in the end it's been gratifying because people have seen that it is beautiful and uplifting."

The creator of several works on the Vanderbilt campus, as well as the massive Athena in the Nashville Parthenon, LeQuire has just opened a gallery to showcase his own and other artists' work.

international judge for the United Nations in Kosovo.

Bill Carey, BA '87, has written *Chancellors, Commodores*

and Coeds: A History of Vanderbilt University.

{Alumni Association News}

Shift in Alumni Relations Responsibilities

In a move to further enhance and expand the work of the Alumni Relations Office, Randy Smith, BA'84, MDiv'88, associate vice chancellor of alumni relations, has announced the appointment of Sheryl Rogers, BS'93, as executive director of alumni relations. Her primary charge is to provide strategic direction and leadership for all aspects of programs and services for alumni in conjunction with the aims of the Division of Development and Alumni Relations. She will also work with Smith on matters involving the Alumni Association Board of Directors. Rogers formerly was director of alumni relations marketing and communications, a position now held by Betsy Hoban. Smith will continue to oversee the functions of the Alumni Relations Office, in addition to the Regional Development and Reunion and Annual Giving offices.

Vanderbilt Club Spotlight

The Nov. 13 gathering of the Los Angeles Vanderbilt Club was a resounding success, with nearly 200 members enjoying a cocktail reception and lecture at the California Club, followed by a private tour of the "Frank O. Gehry: Work in Progress" exhibition at the Museum of Contemporary Art. Leonard Folgarait, professor of art history and director of undergraduate studies at Vanderbilt, shared his broad knowledge of modern architecture. Some of Gehry's most renowned architectural works highlighted in the exhibit were the new Walt Disney Concert Hall in Los Angeles and the Guggenheim Museum in Bilbao. One alumnus who's been attending club events for 40 years commented that it was the best ever. Credit and thanks go to Katy Citron, BS'00, and Carolyn Leslie, BA'99, for the success of this event.

Each month Vanderbilt Clubs in dozens of cities host a wide variety of events for alumni and friends. To find out more, go to *www.vanderbilt.edu/alumni/alumclubs&events.*

“Dave Perozek, BA’99,

has been named Best Reporter in Ohio by the Society of Professional Journalists.

Lauren Gaffney, BS'03, *won the National Collegiate Cycling*

Association championship last May.

S.P.O.V. *continued from page 67*

er location, the virus would spread.

A week after the vaccination, my arm began to hurt—not just at the inoculation site, but throughout my shoulder. Shooting, burning pains traveled across my shoulder, back and neck. The pain hit intensely and unpredictably, producing headaches. For the first time I began to doubt my decision to participate in the study. Although informed of possible pain, soreness, redness and swelling at the vaccination site, I was surprised by the intensity of the effects. But it was too late to turn back.

On each of my return visits to the clinic, a nurse removed the bandage to measure and photograph the blister underneath. Air against my skin felt wonderful, as my skin begged to breathe underneath the shiny plastic bandage. But within a couple minutes, they sent me on my way, arm covered again. Occasionally, blood was drawn to examine antibody levels, which is the only method to determine if the vaccine dilution was strong enough to cause my body to react. About two weeks after the vaccination, all pain and headaches subsided. My blister began the process of scabbing, and with each visit I hoped the scab had fallen off. Only then could my bandage be removed permanently.

Fourteen months after my immunization, I now have a dime-sized scar on my left shoulder, antibodies in my blood, and $375 in the bank. Three small blisters resulted in an asymmetrical scar the deep-red shade of skin healing itself. Instead of being asked about the patch on my arm, people now ask me about the scar.

Discussing the personal choice I made with strangers is still awkward. Many don't understand my decision, and I struggle to explain. But I finally figured out what to tell them. Medical researchers do all they can with animal subjects, but without human volunteers they cannot bring new medicines and vaccines to market.

Last November, President Bush approved preemptive smallpox vaccination of 1 million U.S. military personnel and civilian medical workers. My involvement in the study helped to make these vaccinations as safe as possible. Although I experienced pain and discomfort, in the long run science and society gained some valuable knowledge. That is worth the inconvenience of strangers stopping me on the street.

VJournal *continued from page 11*

Without consultation, or much thought, I filled in the blank for career goal as "law." Shortly thereafter, I received another letter from my draft board, indicating that "law" did not meet the requirements for deferment and that I should prepare myself for induction in the next several weeks.

That letter got my attention. At that time I was moving toward a major in psychology and was very much interested in the therapeutic relationship in clinical psychology. The same would surely be present in medicine. I wrote another letter explaining that I had carefully and seriously reconsidered my earlier decision and had now decided on medicine as my future career. With almost the speed of sound, a third letter arrived from my draft board, ordering me to appear before the full board two days hence.

I took the train home from Nashville to Birmingham, spending the night before the confrontation in my own bed. The next morning my father, J. Wayne Drash, minister of the First Christian Church in downtown Birmingham, dropped me off at the draft board and went on to his office. I don't remember which of us decided that I should face this ordeal alone.

After 52 years my memories of that morning are understandably somewhat cloudy. I was ushered into a room with the appearance of a small court room. At the front sat eight to 10 draft-board members, all male of course. I was directed to a seat in the "dock." To my surprise, there were people in the audience, 15 to 25 in number. Who were they, and what were they doing there?

The questioning got under way, and each of the board members took a shot at me, all suggesting that I was attempting to avoid the draft, which was a criminal offense. Just as I was about to conclude that my next stop would be Korea, a wizened little old man rose in the back of the room and began to speak. Basically, he pointed out that our constitution did not interfere in any way with its citizens changing their mind on any issue. He pointed out that I had changed my mind, something I was perfectly entitled to do. I had chosen to pursue a career in medicine. The draft law was perfectly clear. I could not be drafted until my medical training was complete.

There was a long hushed silence, broken by the chairman who thanked the speaker and agreed that his comments were correct. The meeting was adjourned and that was that—or was it?

Who was the man who stood in my defense? I recognized him immediately. He was Mr. Jim Robins—"Mr. Quinq." He was a Nashvillian and famous on the Vanderbilt campus. He was a frequent observer at our football practices. I think many of the students knew about him and his contributions to Vanderbilt through campus publications, but I had never met him and had not spoken to him either before or after the Birmingham episode. As I do not recall sharing my draft-board problems with anyone at the time it was happening, I am at a complete loss to explain Mr. Jim's presence or actions. For me, he has simply been my special angel. I had not discussed this extraordinary event with anyone until plans for returning to Vanderbilt for the 50th Reunion stimulated many long-buried memories.

My last two years at Vanderbilt were exceedingly busy and demanding. I had to make up for the pre-med requirements I had missed in the first two years, along with completing the heavy science requirements of the last two years. I managed to make Phi Beta Kappa and came in as runner-up for the Rhodes Scholarship from the Southeast region.

I went to the University of Virginia School of Medicine where my interests in children, endocrinology and research began to grow. I was exceedingly fortunate to obtain an internship and residency in pediatrics at the Johns Hopkins Hospital—an indescribably challenging and enhancing experience.

It was at the end of this period in July 1960 that my draft requirement came due. I entered the U.S. Air Force as a captain and was sent directly to Hill Air Force Base, Utah, where I spent the next two years as the base pediatrician. They were so desperate for help that my orders bypassed the usual two-week military orientation for young doctors. I never did learn to salute.

Am I absolutely sure that it was Mr. Jim who came to my rescue in the Birmingham draft-board office 52 years ago? I reluctantly admit that I could have been mistaken. But I am completely sure that my recent Quinq ordination, albeit "in absentia," has conferred upon me *angel status*. My marching orders are to continue to identify young physicians in training who need support, training, encouragement and direction to reach their goal as caregivers for the next generation. **V**

Dr. Allan Drash is a former professor of pediatrics and epidemiology at the University of Pittsburgh, as well as former director of research for the Division of Pediatric Endocrinology, Metabolism, and Diabetes Mellitus at the Children's Hospital of Pittsburgh. In 1997 he retired to Morehead City, N.C.

Pathogen Pollution *continued from page 43*

issues and how these animals and animal products are moving around the globe. We need to build relationships between the environmental lobbies and the food-production lobbies. Our focus is pathogen pollution. Our goal is not to block trade, but to work with people doing these trades and make it more economical for them and, at the same time, more healthy for the environment and for the resident population."

If the transmission of SARS and HIV and other zoonotic diseases has taught us anything, it is that we humans can no longer remain casual observers of the world around us, oblivious to the tenuous symbiosis between the Earth's plants and animals. Instead we must accept that we are, for better or worse, intimate partners in the life-pulse of the global environment, vulnerable to the tiniest mutations and rebellions that can arise in obscure, seemingly harmless pathogens when others intrude upon their territory. **V**

Lisa A. DuBois has been a freelance writer since 1985, and over the course of her career has penned stories for newspapers, magazines, radio and video. She has worked as a regular contributor to the now-defunct Nashville Banner *daily newspaper, the weekly* Nashville Scene *and, most recently, the daily* Tennessean, *among other publications. A native of Greenville, S.C., Lisa resides in Nashville with her husband, Ray, who is on the faculty at Vanderbilt Medical Center.*

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Appalachian Mountains.

In 1985 a group of Ohio State University scientists and collaborators from around the country traveled to Antarctica in hopes of better understanding its geologic history. By determining how various rock layers were deposited, their goal was to distinguish geographical features such as rivers, swamps and mountains. Of particular interest was a widespread rock unit consisting of shale with interspersed beds of coarser-grained sandstone. Geologists who had previously studied the rock were unable to determine whether this unit was deposited under marine or freshwater conditions—whether a large lake or the ocean had covered the area. In order to answer this question, the scientists invited Miller to come along on their next expedition.

Miller quickly determined the strata had been deposited in fresh water. She observed that the trace fossils it contained closely resembled marks made by modern insects, the dominant bottom-dwelling animals in modern lakes and streams. Miller documented the existence of huge lakes that would have tempered the climate and created a suitable environment for plants and advanced animals such as reptiles.

She found the expedition so exhilarating and the geologic problems so intriguing that she returned in 1995. The question she brought to Antarctica on her second trip was how animals developed differently in fresh and salt-water environments. Five hundred million years ago, animals had spread throughout the bottom of the world's oceans. But far less is known about the initial colonization of lakes and rivers. Freshwater deposits are rare in the geological record because they are deposited above sea level where they are subject to erosion. The four-kilometer-thick sequence of rock in the Transantarctic Mountains that Miller identified have turned out to be the best-preserved freshwater deposits in the world.

This unique record has enabled her to study the manner in which life first spread from the marine into freshwater environments millions of years ago. She has done so by analyzing and dating the extent that these ancient lake and river beds show evidence of disruption by animals.

Perhaps Miller's most intriguing and surprising find has been the discovery of very large burrows, 2 to 20 centimeters in diameter, in 245-million-year-old sandstone deposited in an ancient floodplain beside a river. These burrows fall into two distinct size groups. She has determined that the really big burrows, some of which are more than 2.5 meters long, were almost certainly produced by mammal-like reptiles. Skeletal fragments of these creatures have been found nearby. Similar burrows of the same age in South Africa contain skeletons of curled-up, mammal-like reptiles. The identity of the animals that made the smaller burrows is less clear; crayfish or juvenile mammal-like reptiles are good candidates.

She hopes the burrows will lead her to the early mammals as well. "We know that mammal-like reptiles knew how to live in burrows," she says.

Miller has made the trek to the icy continent five times. Now one of the oldest women doing fieldwork in Antarctica, she spent most of November and December on what could be her last visit to the polar continent, continuing her research with the aid of Vanderbilt graduate student Nichole Knepprath.

"Nearly 10 years ago, during a field expedition, my collaborator, John Isbell from the University of Wisconsin, discovered petrified stumps that paleobotanists interpreted as the remains of a fossil forest," says Miller. "This year it was the Vanderbilt team members who were the fortunate discoverers. We found a much larger, but less well preserved fossil forest at Lamping Ridge, located about 20 miles due south of the Beardmore Camp." The tree stumps—more than 80 in all—occur in three horizons of 260-million-year-old rock, giving an unparalleled glimpse into the structure of an ancient high latitude (Antarctic) forest of that time.

"I'm getting a little old for [these expeditions], so I probably won't be able to do too many more," she admits. "We do an awful lot of hiking, which is physically challenging. I would keep going forever except that I don't want to slow down my co-workers."

The fact that Miller views Antarctica as a both a scientific and character-building experience is not surprising. "Experiences that put yourself in the perspective of a larger place are the most meaningful types of experiences," she says. "Working in refugee camps was very similar to learning about geology. In the camps you are putting yourself in the context of world population and the whole world today. In geology you are putting yourself in the perspective of the entire history of Earth and life.

"When you are in Antarctica, you see yourself as part of the entire system. You are a little more vulnerable and thus more a part of it."

Working in refugee camps was very similar to learning about geology.

In the camps you are putting yourself in the context of world population and the whole world today.

In geology you are putting yourself in the perspective of the entire history of Earth and life.

More about Miller's work, including dispatches from her latest expedition, can be seen on Exploration, *Vanderbilt's online research journal, at http://exploration.vanderbilt.edu/news/features/miller/news_miller.htm#.*

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almost always an immediate response. Maybe it's a memorable case of physical carnage left in the bullet's wake; maybe it's the pure senselessness of how a particular victim was shot. Whatever the reason, caring for gunshot victims is not work that is easy to leave behind. Images linger.

Miller, as a trauma surgeon, treats firearm-injury victims almost daily. He's seen lifetimes of the effects of bullets and the damage done. He has vivid memories of many of the gunshot victims he's cared for. One patient in particular stands out, both because of the uniqueness of the injury and the tragic outcome.

"One of the gunshot victims here at VUMC who I remember well was a young woman who happened to be about eight months pregnant. Unfortunately, she was shot when two of her relatives were in an argument and she was trying to break it up. In the midst of all this, a gun went off and shot her in the belly," Miller says.

"She came in, in significant shock. We had to do an emergency C-section to deliver the baby. The bullet had passed right through the baby's head; it was dead on delivery. The mother lived, and actually had suffered very little injury to anything other than her uterus."

Innocent Victims

After working in VUMC's Emergency Department for 14 years, Brenda Smith, R.N., has cared for hundreds and hundreds of Middle Tennessee's gunshot victims. She's literally seen it all. When asked what upsets her most about gunshot cases, she doesn't even have to think: "The children," she says.

Even after 10 years, Smith must choke back tears when recalling the gunshot victim she considers most tragic, a 3-year-old who found his father's gun under a bed and shot himself in the heart.

"Everyone here worked on the child as hard as they could. We had to repair the hole in his heart right here in the ER, but we couldn't get it to restart. He died down here," says Smith. "If you get where things like this don't bother you, then you need to quit. I will never forget that for as long as I live."

Miller says VUMC sees its share of children who suffer gunshot wounds.

"Most of these injuries are accidental because parents do not have appropriate safety measures in place to keep children from getting their hands on the guns," he says. "Some kids we see have shot themselves because they thought the gun was a toy."

Pediatric trauma-prevention specialist Mary Fran Hazinski, M.S.N., assistant in surgery and assistant in pediatrics, has worked for years to educate Middle Tennessee parents about the importance of handgun safety when it comes to their children.

"When you look at the data, younger gunshot victims tend to have higher injury severity scores, along with very high charges associated with their care," says Hazinski. "When you look at the outcomes, about 20 percent go to rehabilitation and 20 percent require home health care—which means 40 percent require ongoing medical care."

About 9 percent of all VUMC's gunshot victims are under the age of 18. From 1997 through 2001, Vanderbilt Children's Hospital treated five children under the age of 4 who suffered gunshot wounds. These patients spent an average of nine days in Children's Hospital with an average hospital charge topping $25,000, not including physician charges. No deaths due to firearm injuries at Vanderbilt Children's Hospital were recorded in this age group between 1997 and 2001, which, Hazinski is quick to say, does not mean every child had a good outcome.

"Studies have shown that 25 percent of children who are injured by firearms are left with chronic health problems," she says. And the reason firearm injuries in children are more devastating than in adults is simple physiology.

"Children are smaller, so the chances of a bullet hitting a vital organ are much higher, and many times the bullet ends up crossing the midline of the body and injuring vital vascular structures."

Hazinski cites Centers for Disease Control and Prevention data stating firearm injuries are the leading cause of death in adolescents. CDC data suggests that more than 66 percent of U.S. households have handguns—which are often stored loaded and unlocked.

From 1997 through 2001, Vanderbilt Children's Hospital treated 48 gunshot victims ages 4 through 15.9. This group didn't fare well. Twenty-one percent died, another 16 percent required long-term care, and a lucky 58 percent were discharged to home. Already at this age, 2 percent of patients were discharged to jail.

"In this age group there are more suicides, so there are a significant number of people with self-inflicted firearm injuries who don't survive. Firearms are a very effective way to commit suicide," she says. "Literally, there isn't time for a second thought."

What's shocking among the under-16 age group is the number of homicides. CDC data from 2000 indicates that 68 percent of fatal firearm injuries in children under age 4 were homicides. In the 5 to 9 age group, 71 percent of fatal firearm injuries were homicides. In children 10 to 14, suicide accounts for 36 percent of firearm deaths, while homicides account for 45 percent of deaths.

Hazinski has studied this issue for years, talked to anyone who will listen, and is passionate about the need for adults to protect children from the damage guns can do.

"If parents want to prevent firearm injuries in children, they need to use trigger locks or store guns in lockboxes. To be skeptical and say these methods won't work isn't true. If the guns are locked up, then the kids can't get to them," she says.

The toll gets to the doctors and nurses, and it gets to the cops, too.

Metro Nashville Police Department spokesman Don Aaron says that any time children are shot, or are in a home where they witness a shooting, it's particularly troubling to law-enforcement officers. "You can't help but feel a great deal of emotion. You can see it in the faces of the officers at the crime scene, particularly if they are parents," he says.

Children, adults, rich, poor, male, female, black, white. A bullet doesn't care, and the cumulative toll is staggering.

Brenda Smith, the trauma nurse who is a 14-year veteran of VUMC's Emergency Department, sums up the state of affairs best. "It breaks my heart that we have to waste so many resources on senseless violence," she says. "We have patients, some as young as 17 years old, who have been here for repeat visits due to gunshot wounds. It's really sad." **V**

John Howser is assistant director for news and public affairs at Vanderbilt University Medical Center. His story originally appeared in House Organ, *a VUMC-published magazine.*

Southern Journal *continued from page 88*
that the South was dead: "The South as South, a living, ever regenerating mythic land of distinctive personality, is no more. At most it is an artifact lovingly preserved in the museums of culture and the shops of tourist commerce precisely because it is so hard to find in the vital centers of the region's daily life. … [T]he South is dead. … What is lurching into existence in the South is purely and contemporaneously mainstream American, for better and for worse."

Historian James Cobb reminds us, however, that epitaphs for the region are nothing new: Dixie's demise has been announced since at least the late 19th century. Still, those of us who came of age before the civil rights revolution, and those of us who study and teach the South, cannot help being astonished at how different the region is (and, for some, viscerally feels) since, say, 1960. This is not to say that the region is indistinguishable from America—if, for no other reason, because its tragic, painful past continues uniquely to evoke commentary, reflection and condemnation—or that it has solved all its racial problems. But the South of the 1950s and 1960s—the Jim Crow, culturally insular, economically impoverished, politically retrograde South—*is* dead. Epitaphs for *that* South are indeed in order.

But what, if anything, does all this imply about Southern identity, about being a Southerner? If the very thing that gives Southern identity gravity and salience—a South distinct and genuinely set apart from the rest of the country—is itself disappearing, are Southerners as a group with a distinct, self-declared identity also disappearing, themselves a dying breed?

The answer to this question is not at all obvious. On the one hand, social identity expressed in terms of membership in a distinct group—identity of the sort signified by statements such as "Yes, I am a Southerner"—no doubt best flourishes when the distinctive culture with which one identifies is, in Hodding Carter III's words, a "living" reality. On the other hand, identification with the South could, for some, mean little more than the happenstance of residence ("I live in the South, so of course I am a Southerner") and thus be little affected by the presumed dissolution of a Southern exceptionalism as much moral as cognitive.

Of much greater cultural significance is that even in the absence of marked regional distinctiveness, some Southerners may continue to identify with the region due to their self-proclaimed membership in what political scientist Benedict Anderson called, in a discussion of nationalism, an "imagined community," by which he means a "fraternity" of "comradeship" in which members "will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion." Southerners of this sort practice what we might call "symbolic Southernness." Largely ancestral, honorific and selectively enacted rather than rooted in the routines of daily life or the attributions of non-Southerners, "symbolic Southernness" need not rest on an actually existing distinctive South. Indeed, symbolic Southerners are able to proclaim their heritage and differentiate themselves from the mass of Americans by grounding their sense of who they are in a mythic place existing mainly in cultural memory—the South as an imagined community—rather than in a "real" space. Southern exceptionalism may be waning, then, but what about Southern identity?

Reliable information from geographically inclusive samples of Southerners about their regional identity exists only since 1991, in a poll administered by the University of North Carolina (UNC), and from broadly representative samples of Southerners only since 1992, when the UNC Southern Focus Poll was first fielded. Until 2000 the Focus Poll was administered twice yearly by telephone to a randomly chosen, representative sample of roughly 700 to 1,100 "geographic" Southerners, defined by the Poll as inhabitants of the former Confederate states plus Kentucky and Oklahoma, and, until recently, 400 to 500 "nonsoutherners." The 2000 and 2001 polls were administered once yearly. Altogether, about 17,600 geographic Southerners were studied in the 19 polls fielded since 1991.

> The decline in identification with the South is seen for both women and men and for all races, ethnicities and age groups. It is observed for all education levels, all marital and employment groups, and most religious groups, income categories and political affinities.

Each of these polls asked an identically worded question about Southern identity: "Do you consider yourself to be a Southerner, or not?" The Southern Focus Polls indicate that although considerable variability in Southern identity exists from year to year, most residents of the region, 70 percent or more, continued throughout the 1990s and into the new century to identify as Southern.

There is no question, then, of the extinction of self-declared Southerners as a group, whatever the reality (or lack thereof) of vanishing Southern distinctiveness. Moreover, to the extent that the existence of the South—at least as an imagined community—depends on the willingness of its residents to identify with the region, rather than their identity being a consequence of regional distinctiveness, as sociologist John Shelton Reed and others have argued, the region itself remains alive and well. That said, the poll data also indicate that identification as a Southerner has clearly suffered a modest decline since 1991: According to the polls, Southern identity has fallen, on average, about seven-tenths of a percentage point per year since 1991, from a high percentage in the

upper 70s just 11 years ago to a (predicted) low hovering at 70 percent in 2001.

Eleven years, admittedly, are not sufficient to establish an actual trend in regional identity. But there are several clues in the Focus Polls suggesting that the decrease since 1991 is not ephemeral. First is the near universality of the trend among Southerners who are otherwise quite diverse: Even those who, in the recent past, have been the most likely to identify as Southern are now less likely to do so. Second is the static or, in some cases, declining traditional demographic base of "Southernness" itself.

The decline in identification with the South is seen, usually fairly strongly, for both women and men and for all races, ethnicities—especially Hispanics—and age groups: Hispanic, black and white, male and female, young and old, all discernibly identify with the region less in 2001 than 1991. The decline is seen, too, for both urban and rural dwellers, for those living in the Southern mountains and in the lowlands, and for those in the deep as well as the peripheral South. It is observed for all education levels, all marital and employment groups, and most religious groups, income categories and political affinities.

The contraction of Southern identity during the decade of the 1990s was minimal for mainline Protestants, obviously a huge group of Southerners, and for the unchurched, but only the region's Republicans, political conservatives and most affluent escaped the decline entirely. No category of geographic Southerners increased their identification with the region during the period of the Southern Focus Poll. If variable across social groups in the region and not generally severe for most of them, the decline in Southern identity nonetheless is quite pervasive.

The second reason the downward movement in Southern identity over the last 11 years is not ephemeral is that the groups who have traditionally exhibited the highest degree of Southernness are themselves somewhat less prevalent in the region's population as the convergence of region and nation continues. As a proportion of the South's population, lifelong Southerners, rural Southerners in the Deep South, and religious fundamentalists and Baptists (groups with a particular affinity for the South) are giving way, modestly but seemingly inexorably, to folks who are much less inclined to identify with the South. For example, three-fourths of Hispanics identified with the region in 1991–92; by 2000–01, only a bit more than half did. During this period, moreover, they increased their representation in the Southern Focus Polls by about 50 percent, from about 5 percent to more than 8 percent.

Likewise, Southerners with religious identities other than mainline Protestant—those without traditional denominational anchoring and, to a lesser degree, Catholics—are proportionately more numerous in the region, up from approximately 33 percent in 1992–93 to more than 40 percent by the turn of the century. They are also shedding their Southern identity at the rate of almost a percentage point a year: Since 1992 the percentage identifying with the region has fallen from 65 to 58 percent. These and similar cultural shifts—and there are many—clearly do not augur well for the maintenance of Southern identity at the high levels observed in the recent past.

Admittedly, these patterns should not be overstated. Too little over-time data exist here or elsewhere to gauge with certainty trends in regional identification. But with the Southern Focus Poll currently on hiatus, these 11 years of data may offer the only opportunity to study Southern identity systematically over time with large numbers of randomly sampled, geographically diverse Southerners.

These patterns also should not be projected without qualification into the future; what appears to be a trend today can be reversed tomorrow. As newcomers to the South, such as Hispanics, experience Southern culture over a sustained period, for example, they may increasingly think of themselves as Southern. By far the single strongest correlate of Southern identity in these data, and one often overriding potentially competing racial, ethnic and religious identities, is how long individuals have lived in the South. The downward trend for lifelong white Southerners—most of whom do not have ready access to competing ethnic or racial identities, for example—was only about one-half percent during the 11 years of the poll. But what we see from the remaining poll data is not so encouraging. All lifelong Southerners, black and white—more than 90 percent of whom have declared their Southern identity in every poll—have reduced their identification rates by 2 percent since 1991. Among Hispanics who had lived in the region all their lives, 81 percent identified as Southern from 1991 to 1993, compared to less than 74 percent in 1999 though 2001. The decline for lifelong Southern Asian Americans, especially, and Native Americans was as precipitous; considered as a group, their rates of regional self-categorization fell from 88 percent in 1992–93 to 81 percent in 1999–2001.

It is not easy to imagine a circumstance that would dramatically reverse the patterns seen in these data. Pockets of the rural lowland and mountain South aside, the region is likely to continue to converge with nation: The South of tomorrow will be more urban, home to more newcomers, and display greater religious and ethnic diversity. Southern identity is apt to suffer as a consequence. In a post-"9/11" America, finally, regional identity of any sort—including identification with the South—may for an extended period take a backseat to a resurgence of national consciousness and identity. Self-defined Southerners are not a dying breed; they have not "vanished," and they have not been displaced by so-called cosmopolitans. But, proportionately, there are visibly fewer of them today than just a decade or so ago for two reasons.

First, Southern identity's core constituencies have shrunk, and second, for now at least, most groups of Southerners—including some of those usually most closely identified with the South—have cooled somewhat in their enthusiasm for the label "Southern." The region apparently no longer mobilizes the identities of its citizens as strongly as it did just a decade or so ago. Why exactly this has happened and whether this should be met with chagrin or relief are questions to be answered. V

This article was adapted from an essay that first appeared in the Fall 2003 issue of Southern Cultures. *A number of charts from the original article detailing trends reflected in the Southern Focus Polls, as well as the authors' notes and suggested reading, may be found at* Vanderbilt Magazine*'s Web site: http://www.vanderbilt.edu/alumni/publications/index.html.*

Southern Journal

Reflections on the South

Enough About the Disappearing South—What About the Disappearing Southerner?

by Larry J. Griffin and Ashley B. Thompson

Most scholarly articles are read by a handful of specialists and, too often, are quickly forgotten. We fully expected a similar fate for the "Disappearing Southerner?" article we published in the Fall 2003 issue of *Southern Cultures*. Were we surprised! Scores of newspapers from Seattle to Cleveland, Miss., have printed or posted the original Associated Press release, and journalists from another dozen or more have written original stories about the article and its findings. CNN discussed it on one of its news programs, and we have been interviewed by NPR and the Federal Reserve Bank of Richmond, among other radio programs. Interest in the piece and the topic we discuss seems even to have international appeal, as the Voice of America interviewed us for a story broadcast overseas.

Why? What is it about the South, the disappearing South and the disappearing Southerner that attracts such interest, not only in the region but also from without? We've no hard evidence here, but we suspect that the reason lies in what the South historically has meant to America: a region apart, but also one tantalizingly near. The South was for so long America's opposite, but, paradoxically, also irreducibly American. It is this paradoxical identity, we think, that continues to fascinate and draw, still, the eyes and ears of America down south. All of which, of course, begs the question of what the South is, *really* is.

Now, to that matter: For those inside the region—perhaps especially those claiming to be Southerners—the South likely represents a homeland, a place of nostalgic remembrance of the past, a place characterized by special ways of cooking, speaking, maybe even a way of thinking and behaving—slower paced, more conservative and traditional—that differs from that of the rest of the nation. Outside the region, the same notions of "Southernness" may ring true, though spiced with perceptions that are distinctly less favorable: racist, backwards, a scar or blight on the image of America.

So, what is the South? The South can be plantation, sharecropping Mississippi, or it can be gambling, showboat Mississippi; it can be small mill towns in the Carolinas, hill towns in Georgia, coal towns in Kentucky. And it also can be, and is, Atlanta and Charlotte, Nashville and Houston, and the Research Triangle Park. It can be, and is, UVA, William and Mary, and Sewanee, and it can be, and is, Fisk, Alcorn A&M and Tuskegee. Southerners can be, and were and are, communists and Christians (sometimes simultaneously), city folk and country bumpkins, traditionalists and modernizers. They can be and were named Jesse Daniel Ames, a suffragette and anti-lynching advocate, and Rebecca Felton, a suffragette and proponent of lynching; they have been named Myles Horton, an authentic white radical from the Tennessee mountains, and James Vardaman, an authentic white demagogue from the Mississippi delta. Southerners have been named Muhammad Ali and Jesse Helms, Martin Luther King and Huey Long, Anne Moody and Willie Morris.

So there is not, and never was, one South; there are, and always have been, many Souths, rural and urban, cosmopolitan and provincial, moral and immoral, radical and reactionary, rich and poor, brown and red, yellow and black and white. And they are all ours.

Profound transformations in the South since the 1960s have led many observers to sound the region's death knell. Distinctive and exceptional no longer, they say, the region has been disappearing, vanishing, shrinking, and converging with mainstream America for decades, a victim of relentless incorporation into mass society. In a brief but stark *Time* magazine essay published in 1990, Hodding Carter III, a former Mississippi newspaper editor transplanted to Washington, D.C., went even further, voicing the judgment

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