

ideation

FALL 2007

RESEARCH & SCHOLARSHIP AT WILLIAM & MARY

¡En español, por favor!

plus:

OPTICAL ILLUSIONS

MERCURY AND FILM EVENTS

25 YEARS IN THE 'WHOMPING PIT'

you know, I've never been to Spain

But Cindy and Steve have and they brought back a story and some pictures so that you can read about William and Mary's study-abroad program in Cádiz, Spain. Cindy and Steve are Director of Publications Cindy Baker and Campus Photographer Stephen Salpukas, who, through special arrangement with the Spanish government, journeyed to Cádiz to document the research experiences of some of our high-performing undergraduates. The arrangements with the Spanish officials were only possible through the good offices of George Greenia. (See page 28.) The trip sounds to me like a language-immersion Outward Bound program and it's our cover story.

Even though I didn't get to go to Spain (or even get a T-shirt), I had the privilege of staying here in Williamsburg and talking with William and Mary faculty about their work. So, there's a story about what optical illusions reveal about workings of our visual systems on page 8. This summer, I also got a tour of the Tric Wesp retrospective, "What's That On Your Head?," guided by the artist herself. Tric is a raconteur worthy of a one-woman show and, of course, a dynamite costume designer. She's on page 22. While we're talking theatre, we have a little piece about two student-penned plays that were staged in New York—page 7.

I spent a pleasant portion of an afternoon talking about ancient scientists with Georgia Irby-Massie, a classics professor who uses Latin salutations and closings in her e-mails. Perhaps at one time you were held down and pounded with the ablative absolute and you now believe the experience did you good. (I know I do.) If you know what I'm talking about—or even if you don't—you might enjoy reading about her latest work on page 18.

If each time you look at a new set of college rankings, you wonder if there isn't a better way, turn to page 20. There's also a twofer archaeology feature beginning on page 11. And there's an introduction to the GIGs—the Global Inquiry Groups that show such promise as seeds for projects that combine collaborative interdisciplinary scholarship with an international component. See page 14.

Now then. This is the fifth issue of *Ideation* and, as good stewards of the money of the College and the Commonwealth, we have to determine if a four-color print magazine is the best and most efficient way of getting the word out. People like print, but it does require resources in the form of money and person power. Maybe *Ideation* should be a web-only magazine? The powers that be have asked me to include a little questionnaire. Your answers will help us determine the best way to spend our time. (Please note: I'm *not* soliciting subscriptions for the magazine—just your thoughts.) If you prefer, there also is a web-based response mechanism at www.wm.edu/ideationfeedback or, as always, you can e-mail the magazine at research@wm.edu. Thank you for your interest.

Joseph M. McClain
Editor



'traditionally innovative'

The College of William & Mary in Virginia

Chartered February 8, 1693, by King William III and Queen Mary II of Great Britain. Phi Beta Kappa, the nation's premier academic honor society, and the honor code system of conduct both were founded at William & Mary.

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I would like to see more:

- ☐ Keep *Ideation* in print twice a year, whatever it takes.
- ☐ A good, continually updated web version would be fine.
- ☐ Do both!

- ☐ Humanities/arts
- ☐ Scientific research
- ☐ Social-science stories
- ☐ Stories about students and faculty working together.

Please let us know your thoughts:

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A woman from Cádiz practices with her flamenco group at the city's *Centro municipal de arte flamenco la Merced*, a major cultural hub in southern Spain. This summer, a group of our undergraduates conducted research projects on flamenco and other Spanish subjects.
In Spain.
In Spanish.

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On the cover: Francie Cate-Arries studies the collection of the Museo de Cádiz

All photography in *Ideation* is by Stephen Salpukas, unless noted.

En España, y en Español

Undergraduates conduct research projects in Spain...and in Spanish

by Cindy Baker

You feel the music, taste it, see it, smell it. Skirts twirl and flash like the jumble of colors in a kaleidoscope's eye. Pounding rhythms echo the elevated heartbeats of listener and performer. The piercing, poignant melodies bring tears. Cádiz, and the rest of the Andalusian south of Spain, is flamenco country. Here, it is more than music. For even the most stoic Andalusian Spaniard, flamenco is a gut-wrenching experience.



Francie Cate-Arries (right) treats her students to a working dinner. Each student presents her research and fields questions in Spanish. From left: Kendall Simmons, Jillian Brown, Kathryn Mooney, Katie McCarney, Maya Sapiurka, Jessica Boten and Cate-Arries.

When Sam Rizzo traveled to Spain last summer with 12 other William and Mary students, he knew next to nothing about flamenco. Then, he and his classmates spent five weeks in Cádiz, the oldest city in Western Europe, immersed in Spanish language and culture. By the end of his stay, his research into flamenco fusion had whetted his appetite for further study of the genre. When he returns to Spain in the spring to participate in the semester abroad program in Seville, he will continue his investigation.

Flamenco is incredibly passionate music, he says. "As the sound was so foreign to me, it didn't impact me the same way it might a Spanish native, but, I think I can equate the feeling

to how I feel sometimes playing jazz," says Rizzo, a junior Hispanic studies major with a minor in music. "They're both the kind of music that become so ingrained in the performer's psyche that once mastered, the music flows out of the guitarist's hands, like the musician is conversing with the audience almost."

But there's more to Spain than flamenco. Each year, under the watchful eye of Francie Cate-Arries or Carla Buck, students take classes in art history and Spanish culture (a total of five credit hours). But a huge part of the experience is conducting research in Spanish using Spanish sources and, at the end of five weeks, presenting their findings in Spanish on paper and orally.

"They're not just students consuming information in the classroom or reading books about something in the library," says Cate-Arries, resident director for the 2007 William and Mary Summer Program in Cadiz. "They're doing that, but they're also in the streets, knocking on doors, calling up people, making appointments."

"Students are introduced to a different culture while connecting that introduction to an area of scholarly inquiry at the same time. And they start making discoveries they couldn't in Williamsburg, Virginia," says Cate-Arries, a professor in William and Mary's Department of Modern Languages and Literatures. She also was one of the College's two 2007 recipients of Outstanding Faculty Awards from the State Council of Higher Education for Virginia.

She explained that the genesis of the students' research begins the spring semester before going to Cádiz. They are required to take Hispanic Studies 376, an intense one-credit hour course that introduces them to the social and political issues in today's Spain and also provides an academic vehicle to explore the historical and cultural background of the program city. But the major focus of the course is the preparation of the research proposal in Spanish, the final assignment of the prep course.

Beyond the beach

When students begin the prep course, they aren't sure of what they would like to research. "I tell them to connect to something they care about," says Cate-Arries. Once students step off the train in Cádiz, they are confronted with a beautiful, picturesque city of narrow streets, Roman and Phoenician ruins, squares with Gothic churches and splendid Atlantic Ocean beaches. In their classes at the Universidad de Cádiz, they start to discover their Cádiz world. But it's not until they embark on their research that they really begin to understand the culture.

"The key to gaining entry to another peoples' culture, another community's life is to be found, academically speaking, in the research activity, conducted beyond the classroom and beyond the beach visible from that same classroom," says Cate-Arries.

Students read extensively about their research topic. Once in Cádiz they continue to investigate through reading, taking particular advantage of recently published research in Spain.

After amassing a significant amount of material, the students "hit the streets of Cádiz forging the local connections that enhance



Katie McCarney (top right) examined community celebrations. Sebastian Perez (bottom right) organizes youth in his Cádiz neighborhood to prepare for the traditional Night of San Juan. The teams get together to build floats that are burned at dusk on the summer solstice.



Jessica Boten discusses Phoenician sarcophagi in the Museo de Cádiz with Juan Alonso de la Sierra, the museum's director. Her research centered on the significance of the sarcophagi, symbols of the city's ancient roots. Cádiz was founded as a trading outpost of the Phoenicians.

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It certainly wasn't easy to make calls and conduct interviews in Spanish. I always prepared myself beforehand and made sure to write down the questions, in case my pronunciation failed me.

understanding of their topics," Cate-Arries says. The local connections allowed the student researchers to switch their inquiries into high gear.

Rizzo's research focused on a kind of flamenco that emerged after the 1975 death of Francisco Franco, the dictatorial head of the Spanish government. The new flamenco sound melded the pure with other musical forms like jazz, rock, hip hop and punk. "Pure flamenco" is something of a misnomer, Rizzo says, because the genre naturally blends Spanish folk music with French, Arab, Jewish and other foreign musical traditions. During Franco's decades-long regime, "pure flamenco" was exported as a symbol of Spain. Franco's very presence discouraged any innovations to the art form.

"In the late '70s, musicians started integrating jazz into flamenco and from there a lot of interesting things happened," says Rizzo, a jazz guitarist. "What developed in the '70s and '80s was a liberating period in Spanish cultural history known as La Movida." With it came a rejection of long-established Spanish emblems like flamenco. Artists began to fuse flamenco with other kinds of music. What emerged was a multitude of flamenco fusion styles that showcased new artistic trends as well as the impact globalization continues to have on Spain's traditional music.

Rizzo developed his thesis through the people he interviewed as much as through written material. Music works well as a research topic because everyone is willing to talk about it.

"My host mother's brother played the guitar, so while he was renovating his kitchen, I would just go up and ask him questions. He's actually

the one who turned me onto the idea of globalization impacting flamenco," says Rizzo. "Another day, we had a flamenco guitarist come to class, so afterward I went out to breakfast with him and we chatted about El Barrio, a musical group, and some stylistic elements of flamenco. The bartender at our favorite little establishment loaned me his entire CD collection and turned me onto flamenco fusion music I might never have heard."

Persistence pays off

Not all contacts were as immediately productive as Rizzo's flamenco circle. Take Sara Beck for example. When she went to Cádiz she had just finished her freshman year, had never lived outside the United States and had the minimum of Spanish classes required for the program. She researched tourism in Cádiz, partly because she hails from a region of Florida that relies heavily on tourism and partly because she became interested in sustainable tourism during her preliminary research in the prep course.

Not at all shy, Beck made cold calls several times on the city's tourism center and each time explained in her halting Spanish the purpose of her visit—to talk to the director. Each time she was gently rebuffed. Finally, after a number of attempts to interview the director, she told the women at the information counter that she would wait until he was free. Beck sat down to wait and soon was granted an interview.

"It certainly wasn't easy to make calls and



Sarah Beck (left) and Adriane Lepore go online from a seat in the Plaza de Mina. In many of the plazas of Cádiz, the wifi signal is almost as strong as the sun.

conduct interviews in Spanish," Beck said. "I always prepared myself beforehand and made sure to write down the questions in case my pronunciation failed me.

"I definitely think I learned more by making the calls myself. It was an eye-opening experience for me," Beck continues. "I realized how much Spanish I actually knew when I was forced to use it and didn't have anyone to rely on except myself."

Talking about sexual mores and sex education can be difficult and even embarrassing in the United States, especially between comparative strangers. So imagine a young woman raised

in this country researching and talking about sex—in Spanish—with members of her host family. But that's just what Larisa Cicila, another Cádiz program participant, did. At first the junior women's studies and psychology double major found discussing the subject daunting, but she began to appreciate the openness with which Spaniards speak about sex and display affection to one another.

"I realized my host family spoke so freely about sex because it was not seen as something that had to be kept secret. They viewed it as a natural part of life, so why shouldn't it be talked about," Cicila says. "After I got over the initial shock, I found it really refreshing to speak candidly to an older couple, to hear stories about when they were young, what sex meant to them then and now."

She found that not every aspect of Spanish society appreciates such a degree of openness on intimate topics. Cicila arrived in Spain at a time when the Catholic Church and the most conservative Spanish political party were very vocal about their disapproval of a recently passed nationwide law that required the instruction in citizenship in both public and private schools. But the new law's concept of "citizenship" covers many bases, including information about nontraditional families in which both partners are the same gender and discussing how to practice safe and healthy sex.

The new law stirred up a firestorm of protest. One archbishop near Toledo even threatened to bar children from catechism classes, necessary for first communion, if their parents didn't renounce the law.

Grounded by a very thorough bibliography of research sources, Cicila had pretty much figured out that the Spanish attitude toward sex and sex education was very different from that in the United States. But it was from observation and from discussions with her host family and school psychologists that she was able to confirm her hypothesis. Being in Cádiz was key to her research, she says.

"I learned the most about Spanish notions of sexuality through direct observation," she says. "It was only after I noticed that people were much more public and unashamed about their physical attraction for each other, that I even became interested in studying Spanish attitudes toward sexuality, which led me to gauge these attitudes through studying the comprehensiveness of the sexual education system."

And after Cádiz?

Research begun through the Cádiz program can instill in students a desire to do more, Cate-Arries maintains. She cites the example of

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Reves Center helps build study-abroad programs

Guru Ghosh arrived at the College in 2000 to become director of global education at the Wendy and Emery Reves Center for International Studies. At the time, William and Mary sponsored no study-abroad programs in Spain, yet most of the majors in the modern languages and literatures department were in Hispanic studies.

He soon learned that significant numbers of William and Mary students were going to Spain through a program sponsored by the University of Virginia. Ghosh decided it was time to do something about the situation.

At about the same time, Francie Cate-Arries and Carla Buck, both professors of Hispanic studies, went to Ghosh about the possibility of putting together a study-abroad program in Spain, Cádiz in particular.

In early 2003 the Reves Center decided to support a program in Cádiz that fostered strong student/faculty research. "It was a roaring success," says Ghosh. The first year the program drew a record number of students. Success of the Cádiz program was built in part on the brainchild of another Hispanic studies professor.

"The faculty-mentored research component of the Cádiz program was inspired by the William and Mary program in Morelia, Mexico," Cate-Arries said. "My colleague Teresa Longo conceived of this research project model in 1999 and we eagerly followed her example with the Cádiz program."

Other programs are now working toward adding a research component. Both the Russian and China programs are adding a one-hour prep course so their students are better prepared for the experience abroad.

"Cádiz is a great model because it builds on the core of what the William and Mary undergraduate experience is about and then transplants it abroad," says Ghosh.

It takes 18 to 20 months to establish a study-abroad program, which usually grows out of collaboration between faculty and Reves staff. The Reves Center staff and the faculty member work together to create the budget and write a proposal presenting the idea to the Study Abroad Committee of the College. Once the program is approved, the reins are handed to the faculty member who controls the curricular and administrative structure of the program.

"Not every program has a similar mission. It's up to the faculty member to determine what focus their particular program takes," says Ghosh. "Much of what I do is help build the program."

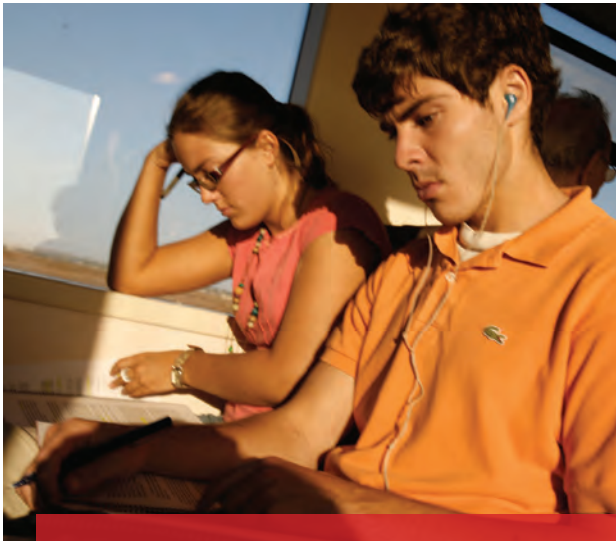
"I have always looked at William and Mary as a fertile cradle for bright minds and providing these bright minds a really powerful experience outside the boundaries of the campus of William and Mary is possible when you have exemplary programs like Cádiz where you can go and immerse yourself in language, culture and history of the people," he says. "I have worked closely with William and Mary faculty who have a passion and commitment to undergraduate learning and research."

Right now, there are 14 faculty-led study-abroad summer programs, five William and Mary-sponsored semester/year-long programs and 14 exchange programs with six under development. To date, 100 William and Mary students have studied in Cádiz.



Guru Ghosh of the Reves Center

Cindy Baker and Stephen Salpukas of William and Mary's Office of University Publications were able to join the undergraduate group in Spain to document the experience.



Sarah Beck and Sam Rizzo—along with the other William and Mary students—take advantage of down time on the train from Jerez to study for final exams.



A patron executes a digital veronica in a bullfighting museum in Seville. Hispanic studies major Alison Mika's research was based on the state of contemporary bullfighting, including the perspectives of animal rights activists in Cádiz.

recent graduate Laura Smith, who began studying flamenco and issues of gender in the Cádiz program the summer after her freshman year at William and Mary. Under the supervision of Anne Rasmussen, associate professor of ethnomusicology, she enlarged on her research each year afterward and presented her findings at a national conference while still in school. Today she is back in Spain on a Fulbright scholarship studying the cross-cultural influences immigration—mostly from North Africa—is having on traditional Spanish music.

Some of the students would like to use their research in Cádiz and apply their findings to similar problems in the United States. Cicila, for instance, believes that American schools could benefit from aspects of Spanish-style sex-education programs.

Although research done by the students she leads doesn't directly inform her own work in Spain, Cate-Arries hopes to connect with them by sharing her passion for the discovery, for the chase, for the detective work involved, for the thrill of the hunt for the answers to research questions.

"That's what I want to help teach my students. I want to provide the opportunities for that to happen for students, that excitement when it all comes together on a problem you're trying to solve," Cate-Arries said.

Her enthusiasm must be contagious because most of the students began to echo her excitement. Cicila says it has been rewarding for her to hear that other people are genuinely interested in the results of her investigation and want to learn more. Rizzo is surprised at how gratified he feels that many of his sources bore out what he originally hypothesized.

"It's nice when thoughts you've been formulating for weeks are reaffirmed in published works," he says. "Whenever I made a concrete connection between one of my own ideas and something I found during my research, I knew there was a point to what I was doing. For example, it made sense that with the fall of the dictatorship, the emblematic music of Spain would change to reject the conservatism of Franco, but actually finding that stated in texts was really satisfying. It legitimized your research in a way, and with a topic I originally knew very little about, that was really nice."

Sharing those "a-ha" moments with her students happens in Cádiz where Cate-Arries actually has the opportunity to see the process unfold. "I am able to participate in their discovery and watch them emerge as student-scholars." **i**



On a field trip to Jerez, from which sherry takes its name, the group toured a winery to learn about this important Spanish export.

FRINGED!



Student playwrights take their plays and companies to New York theatre festival

by Erin Zagursky

Michael Johnson directs rehearsal of a scene from *Tragedy! (A Musical Comedy)*, one of two plays from William and Mary featured at the 2007 New York International Fringe Festival.

When Michael Johnson talked to his composition professor about taking what is widely regarded as Shakespeare's bloodiest tragedy and turning it into a musical comedy, he wasn't expecting the response he got. She told him it was a great idea.

"She called my bluff, so I had to write it," he said.

He had no idea that, a few months later, his adaptation of Shakespeare's *Titus Andronicus* would be playing to hundreds in New York City.

Johnson, a member of the class of 2009, was one of two William and Mary students to have original works performed at the New York International Fringe Festival this summer. The Fringe Festival is the largest multi-arts festival in North America, with more than 200 companies from all over the world performing for 16 days in more than 20 venues—a total of more than 1,300 performances.

Along with Johnson's *Tragedy! (A Musical Comedy)*, Emily Rossi's play, *The Hollow Men* was performed at the festival. Rossi's play is set during the Holocaust and is based around T.S. Eliot's poem of the same name.

"I've always had an interest in the Holocaust and, in 10th grade, I had written a short story about a girl who had been prisoner at Auschwitz," said, Rossi, a member of the class of 2008. "Last year, after my parents had moved, I was digging through some boxes and came across the story and it struck me that I should combine my interest in Holocaust studies with my love for theatre."

Rossi said one of the key elements of her play was created by accident.

"As I was writing the final scene—I was writing it first as it was the only one I really had fully formed in my head—I decided I needed a really emphatic final line and the line 'This is the way the world ends, not with

a bang but a whimper' popped into my head from T.S. Eliot's poem, 'The Hollow Men,' she said. "I checked online to see the full poem and realized the poem itself acted as a really beautiful counterbalance to the story I was trying to tell, and so combined them to create the final product we have today."

Loveable flaws

Johnson first became interested in *Titus Andronicus* in high school.

"I recognized from all of the critiques I read that most scholars hate *Titus Andronicus*—and for good reason. It's not very well put together, and it showed me for the first time that Shakespeare had flaws—but I really loved it for that," he said.

When he came to William and Mary, Johnson was in a performance of *Titus* with Shakespeare in the Dark. While talking with some of the other actors about funny lines they had wanted to say in the performance, the idea of turning the dark play into a musical comedy began to take shape.

Both Rossi and Johnson said they were encouraged in developing their plays by professors at the College.

Johnson approached Sophia Serghi, associate professor of music and composition, with his idea and she encouraged him to pursue it.

"Really, anywhere else I don't think I could have done this," Johnson said. "If I told someone I want to write a musical, and they had asked me, 'What is it about?' And I said I want to base it on *Titus Andronicus*, I think Sophia Serghi is the only teacher in the world who would say, 'Oh, I think that's a great idea!' Because it doesn't really sound like a great idea. It sounds like a pretty awful idea, actually."

Rossi said she was helped from start to finish in writing her play by Laurie J. Wolf, associate theatre professor.

"It was her idea to send it to the NYC Fringe, and, when we were accepted, she agreed to direct the show for me, which was absolutely incredible," said Rossi.

Johnson's musical ran in the Fringe Festival Aug. 21-26, and was performed five times over six days with a cast that included several William and Mary students. It was billed as a "high show," and was marketed to

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Changing your

OPTICAL ILLUSIONS
CAN BE DECEIVING,
BUT ARE WE JUST
FOOLING OURSELVES?



Participants in Peter Vishton's perception lab discuss methodology and results. From left are lab coordinator Heather Guiffre, Sarah Morra, '08; Vishton; graduate student Natalie Brito and Allison Cutright, '09. The Ebbinghaus array is in center foreground.

Optical
illusions are
everywhere.

You see them
in the comics
sections in newspapers
and in little books full of
odd facts and trivia. The
caption is usually a
question: Which of the
two lines is longer? Do
you see faces...or a vase?
Do you see a young
woman or an old hag?

One of the most common optical illusions is also one of the most useful to scientists studying the brain. "It's called the Ebbinghaus illusion or the Titchener circle illusion," Peter Vishton explained. "It's been studied for more than 100 years."

You probably know the Ebbinghaus illusion from its caption asking which of the two center circles looks larger. Vishton, assistant professor of psychology at William and Mary, believes he saw his first Ebbinghaus illusion on the back of a cereal box. He now leads a group of psychologists conducting experiments using a slightly more sophisticated version of the Ebbinghaus illusion to explore how the human visual system processes information. Vishton demonstrated his group's methodology one fall day in his lab in Bell Hall, showing a visitor two black disks.

The illusion begins

"Here are two disks that are approximately the same size. We put them on a piece of paper and people will be about fifty-fifty as to which one they pick as the bigger. We expect that," he explains. Then he takes out a third disk, noticeably larger than the first two. "If we put one that's a little bit bigger on one side, people pick the one that's bigger almost 100 percent of the time. Nothing interesting there."

The interesting part comes when the two circles are inserted in an Ebbinghaus array. "One is surrounded by big circles and one is surrounded by smaller circles," Vishton said. He plucks the disk from the center of a ring of smaller circles and holds it up. "Now most people say this one looks bigger than the one surrounded by the big circles."

It gets even more interesting. If the Ebbing-

S P O T S

by Joe McClain

haus illusion “fools your mind,” as the cereal boxes usually have it, then the deception is far from complete. In a paper published recently in the journal *Psychological Science*, Vishton and a group of colleagues presented evidence that when subjects reach—or even plan to reach—for a target disk, the effect of the illusion decreases.

Reaching for an answer

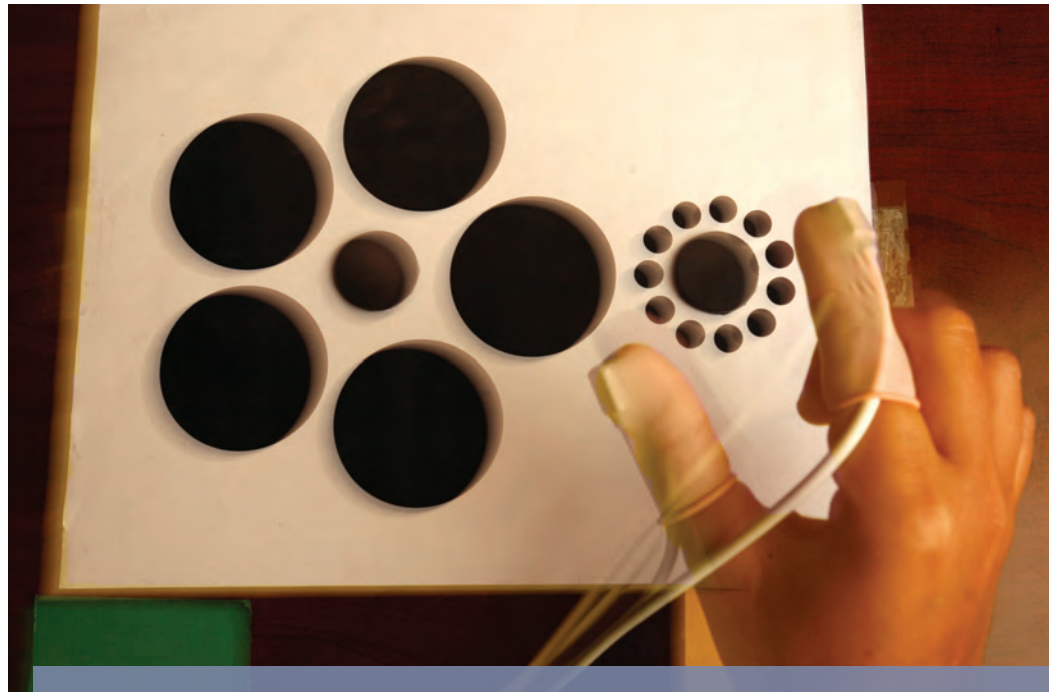
“The way that this has worked for most of the 100 years that the illusion has been studied is a task much like what we just discussed. I say look at this display and you make a conscious decision about which one looks bigger,” he said. “More recently we and other people have been using techniques in which we don’t ask people to make an overt explicit judgment about them but we ask them to engage in a visual motor-action task.”

To monitor the motor-action task, subjects were fitted with position sensors—a wired glove on their thumb and forefinger—and asked to pick up the disk that appears larger. The position sensors allow researchers to monitor the subjects’ grip aperture, the distance between thumb and forefinger, as they reach for the target disk.

“You start with their fingers close together. Then you move them apart until they’re quite a bit bigger than the target you’re reaching for. That happens about 65 percent of the way through the reach. And then you close them down until at the end of the reach it matches the size of the target,” Vishton explains. “When we know what that maximum aperture is, we know pretty precisely how big you think the target is—even before your fingers are there. If I give you a target that’s one millimeter bigger, your grip aperture’s going to go up by a little more than a millimeter in size. There’s a very precise correlation there.”

Co-authors of the *Psychological Science* article included Nicolette J. Stephens, Lauren A. Nelson, Sarah E. Morra and Kaitlin L. Brunick, undergraduate and graduate students from William and Mary, as well as Jennifer Stevens, an assistant professor in the psychology department. The group’s studies showed that the grip apertures of subjects matched the real size—as opposed to the apparent size—of the target disks. In other words, when people reached for a target disk, their neural system was able

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Maximum grip aperture while reaching, measured by position sensors, is a reliable indicator of how large a subject judges an object to be. Most people judge the center circle on the right to be larger than the one on the left, but the grip aperture measurements often tell a different story.



The Ebbinghaus array is hidden behind a binder from Sarah Morra, '08, as Allison Cutright, '09, prepares to administer a perception test. In this series, the tester will lift the binder and ask the subject, outfitted with position sensors, to reach for the center circle that appears larger.



This time, the one on the right really is larger. Natalie Brito displays a set of target disks used to compensate for the Ebbinghaus illusion. When they are placed in the array, most people will judge them to be the same size.

Now which one is bigger?

Peter Vishton's favorite version of his lab's tests involves substituting an oversized disk on one side of the Ebbinghaus array. The oversized disk compensates for the "shrinkage" of the Ebbinghaus effect. It creates the visual illusion, for most people, that both disks are the same size.

"When the subject says that the circles look to be about the same size, you'd think they would use the same size grip when they reach for the two," he said. "But even if the one on the left looks to be the same size as the one on the right, somewhere in your head there's an accurate representation of just how big each one of them is."

A small percentage of the population is immune to the Ebbinghaus illusion, Vishton said, but for most of us, that one circle is smaller than the other, even if we're familiar with the illusion if not its name. We continue to be fooled, even as we know we're being fooled.

"Most people have heard of this before. Every intro psych class talks about pictorial illusions so they've at least seen this once," he said. "I still see the illusion. I think I've seen this maybe more than anyone else on the planet. I've looked at this thousands and thousands of times now and that disk still looks bigger to me than the one over there."

Ebbinghaus illusion

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to somehow neutralize the optical illusion presented by the Ebbinghaus array, Vishton said.

"If one thing looks bigger than the other, then you might expect that people would use a larger grip when they reach for it," he said. "But by and large, they don't." He added that results showed that the illusion had a small effect on reaching—but much smaller than the judgment by eye alone.

Some researchers suggest that a motor action's ability to break the power of the illusion suggests the presence of two distinct neurological visual systems, one governing perception and a second that regulates actions, such as

reaching. Vishton and his colleagues favor another explanation, however.

"If there are really two separate streams of processing, one controlling the choice and the other controlling the action, they should be influenced by the illusion regardless of what the task is," he said. "Our take on it is that maybe there's not two separate visual systems that operate in parallel," he said. "Instead, maybe there are two different modes of processing, so that when you reach for something, your visual system shifts operating characteristics." **i**

Fringe festival

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high school students. One reviewer called the musical "my favorite of the Fringe plays I saw this year," and another noted it was "full of sick humor, social commentary and a terrific cast."

"New York was fantastic," said Johnson. "Everyone was very nice and supportive. We became good friends with the staff at the Lucille Lortel Theatre, and we got a ton of reviews. Not all were good, of course, but that's not the way the show was designed, and we were happy that we got some stronger reactions."

Rossi's play ran in the festival five times between Aug. 10 and Aug. 19 in the Flamboyant Theatre. Like Johnson's musical, her play also included a cast with several William and Mary students, including Rossi herself. The official Fringe Festival review said that "in her treatment of the prisoners, especially Anna, Rossi taps into a vein of moral ambiguity that's rarely seen in writing about the Holocaust."

Rossi said the experience was amazing and responses they received were incredible.

"One of the actors in the show, Billy Finn, is a New York native and brought his family to the show, including his grandfather, who happened to be POW in a Nazi camp during World War II," said Rossi. "Afterwards when I asked Billy what his grandfather thought, he said that the feeling his grandfather got about the camp during the show was exactly the feeling he had about the camp when he was there. That was quite possibly one of the greatest compliments I could have gotten from someone as a writer and an actor."

Both Rossi and Johnson said they have taken away a new confidence from their experience with the Fringe Festival.

"Sometimes it's easy in theatre as a college student to look ahead and get a certain sense of pessimism, but this summer reminded me that if you continue to work at what you want to do, opportunities will open up," said Rossi, who is now working on her own adaptation of a Shakespearean play.

Johnson is now working on an adaptation of the Legend of Sleepy Hollow. He said his goal when he started writing *Tragedy!* was merely to finish something. He never imagined how far his idea could go.

"Getting to conduct my own musical ranks way up there as one of the greater experiences of my life," he said. **i**



Digging up the old garden

Under the supervision of Lord Botetourt, a crew of student archaeologists has spent the last three summers searching for evidence of formal gardens that centuries ago graced the front of the Wren Building. This summer, they found some of what they were seeking.

The campus just doesn't look like it used to.

Digging up the past isn't a favored pastime for most. But this summer a number of William and Mary undergraduates did just that and they relished it.

"I did not know that just digging can be interesting," said Hiroaki Umehara.

Hiroaki was one of a half-dozen William and Mary undergraduates who spent the summer digging for evidence of former gardens in the College's Wren Yard with anthropology instructor Steve Archer. Under Archer's tutelage the students uncovered what appears to be evidence of an 18th-Century ditch, hedge rows and pathways.

"It's a really well preserved cluster of features that align really well—the ditch and the planting holes, matching with the next line of at least one tree hole," Archer said.

The Wren Yard surrounds the oldest building on the William and Mary campus, the Sir Christopher Wren Building. The building once housed the entire College and is still in use today as an academic building.

From the most visible spot on campus to ultra-secret sites deep in the woods, our intrepid shovelers have been busy.

This summer's excavation was the third conducted by student archaeologists under Archer's guidance. Though the first dig turned up little, Archer wasn't deterred. Last year's dig was more fruitful—the team found evidence of topiary planting holes and some pathways. But this year's finds have been the most impressive by far.

Recorded descriptions of the grounds appearance are few. One possible view came to light in the late 1920s when researchers discovered a printing plate in England's Bodleian Library depicting the Wren Building and its grounds. (*See sidebar, page 12.*) Still, little was known about the presence of the formal gardens depicted in the plate until Archer's teams began digging for evidence two years ago. This year the team

also found evidence of two closely configured planting holes—one cutting into the other, Archer said.

"You can actually see where one of the hedge plantings died and they had to dig it out and put in a new one," Archer said. "It is, sort of a repair there to the hedging. You can actually sort of see them maintaining the garden a little bit, which is a neat find." Archer, who is also a research archaeologist at the Colonial Williamsburg Foundation, noted they found other signs of the garden.

"We have sort of a consistent division where there is marl on the north half of these units (the digging squares) as we come down to the features but it's not on the south half," he explained. Archer noted that this marl would be

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‘It’s all little bits and pieces. You have to find out how everything fits together.’

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consistent with an area depicted on the Bodleian Plate between the hedgerows flanking the center pathway.

With the answers to the mystery of the Bodleian Plate seemingly in hand, the team is turning its attention to what might have been the next design.

“What’s a little intriguing is that we keep getting hints that go in and out about what was happening out here in the late 18th Century,” Archer said.

The team also found evidence this summer of two diagonal walkways—one believed to be a 19th-Century path following a line that would have connected the Wren Building to the Brafferton and another 18th-Century path. Archer explained that the amount of fill found with the 18th-Century feature suggests that it was the active path between the Wren Building and the Brafferton in the latter part of that century.

“That means the formal garden would have been gone by then,” he said. “So we are trying to get the tail end of that Bodleian Plate design. It’s all little bits and pieces; you have to find out how everything fits together.”

The student archaeologists, some participating in a dig for the first time, enjoyed the opportunity.

“Archaeology has nothing to do with anything else I’m doing academically, but I enjoyed the change of pace,” said senior Caroline Lindsey. “It was also valuable to take advantage of W&M’s location and have an experience that is only possible in Colonial Williamsburg. I’ve done lots of undergraduate research through the Monroe Scholar program, but it’s always involved lots of time in the library. It was great trying something more hands-on.”

While Caroline was happy to be out of the library, others clamored to get in and do more research. The answers found by the archaeological evidence, as well as the new questions they raise, are the topic this semester of a special class taught at the College by Archer.

The class, Garden Archaeology, is taking a closer look at the artifacts discovered in this summer’s dig and, in some cases, looking for historical clues to support or refute theories on the summer’s findings.

“The class is a really good idea,” said senior Graham Callaway, one of Archer’s summer researchers. “It allows for questions to be asked of the data that an individual researcher would never have had time to ask.”

Each member of the three-credit class is designing their own research project. The



Courtesy Colonial Williamsburg Foundation

Archaeologists have unearthed solid evidence of formal gardens in the Wren Yard as depicted in the top panel of the Bodleian Plate, circa 1740. To the left of the Wren Building is the Brafferton, while the President’s House is to the right. The back of the Wren is in the center of the plate.

The Bodleian Plate

The engraved copperplate is the only known 18th-Century rendering of William and Mary’s Ancient Campus and of other structures that would become the principal buildings of Colonial Williamsburg.

The Bodleian Plate was discovered in England by historian Mary F. Goodwin, just before Christmas, 1929. Goodwin was conducting research for the restoration of Williamsburg when she located the plate at Oxford University’s Bodleian Library amid a large collection of books, manuscripts, prints, copperplates and other objects bequeathed to the library in the mid-18th Century by Richard Rawlinson, an English antiquarian and collector.

“The discovery of the copperplate—or perhaps more accurately, the recognition of the subjects and realization of its significance—came just in the nick of time to correct the restoration architects’ design for the west roof of the Wren Building,” said Louise L. Kale, executive director of the historic campus. “The image of the back of the Wren, on the middle register of the plate, provides the only known image of the five small transverse roofs across the back of the building. Roof construction was halted when the plate was discovered, and restoration architects redrew the plans based on the image in the plate.”

The plate was characterized by Colonial Williamsburg benefactor John D. Rockefeller, Jr., as “the foundation upon which we have based the restoration of the Wren Building and the reconstruction of the Governor’s Palace and the Capitol. Without it, we would have been acting in the dark; with it, we have gone forward with absolute certainty and conviction.”

The curators of the Bodleian Library later presented the copperplate to Rockefeller. It is now a part of the Colonial Williamsburg Foundation collections.

“You can imagine the excitement,” says Kale, “of learning, through archaeological investigations all these years later, that the garden in front of the Wren Building was rendered on the copperplate with as much accuracy as were the buildings.”

—Lillian K. Stevens

topics range from examining the influence the introduction of the Brafferton had on the Wren Yard to researching the use of digital mapping to “unearth” archaeological features on the grounds.

The Wren Yard digs and class are supported by Board of Visitors Secretary Suzann Matthews, a member of the class of 1971.

While the research continues, Archer notes that a lot of progress has been made. He plans to present all the findings of the Wren Yard excavations and the classroom research in an exhibition and report in spring semester. Currently, there are no plans for further excavations in the Wren Yard—“leaving that,” he says, “for future generations.”

—Suzanne Seurattan

...somewhere along the Colonial Parkway

“I’m intentionally going to be a little vague,” warns Joe Jones, director of William and Mary’s Center for Archaeological Research, as he sits down to discuss the center’s latest project.

It isn’t that he’s modest, but there are risks when archaeological efforts or results are widely publicized. “People might try to identify new areas where they could go dig up stuff to sell on eBay,” says Jones. Not only are such practices bad for archaeology, he said—they’re also illegal.

Jones and his colleagues are continuing their systematic quest for buried historic—and prehistoric—sites on federally owned parkland along the Colonial Parkway that stretches between Jamestown and Yorktown. The archaeologists are about three months into what may become a four-year survey commissioned by the National Park Service.

The procedure for visiting a team in the field has an air of mystery. You park at a prescribed place along the 23-mile Colonial Parkway and punch a number into your cell phone. Someone answers. You identify yourself, then lean against your car fender until Elizabeth Monroe walks out of the woods to guide you in to where the shovel testing is going on.

“We’ve excavated well over 2,600 shovel tests at this point,” says Project Archaeologist Monroe. Shovel testing is a kind of an archaeologist’s version of the board game *Battleship*—digging numerous small holes in a grid to identify potentially significant sites.

“We have identified at least 21 sites, which include 18th- and 19th-Century farmsteads or plantations, Civil War-era earthworks and 20th-Century recreational facilities,” Monroe added.

Jones said that workers have located evidence of Native American occupation on some of these land forms out near College Creek dur-



Joe McClain

At a shovel test site on National Parks land, Jack Aube screens while the finds are logged by Courtney Birkett, field archaeologist for the William and Mary Center for Archaeological Research. This particular hole—one of thousands—yielded a couple prehistoric stone flakes.

ing the Middle Woodland period, which dates between approximately A.D. 300 and 1000 in Virginia.

The process is slow and the funding somewhat unpredictable. Though Jones hopes that the full slate of appropriations will be realized over four years, funding is linked to federal fiscal year budgets so it is allocated in installments.

“This means,” says Jones, “that the work is done one segment at a time, within specific parameters provided by the Park Service.”

It is a close and complementary collaboration with the Park Service—one that Monroe describes as “extremely gratifying.”

“Every week we make copies of our field-maps and Park Archaeologist Andrew Veech and Geographic Information Systems specialist Dave Frederick locate our positive shovel tests in the field, using a GPS device to record their locations,” Monroe said. That information can then be used to place the clusters of positive shovel tests—or sites—on modern maps for planning purposes.

“But it is also possible to overlay them on historic maps which can help identify historical associations for the sites we’re finding,” she said.

The Park Service boasts an extensive collection of map resources which leads to other research possibilities. The survey team can, for instance, evaluate the sites they are finding by their proximity to fresh water, types of soils, elevation above mean high tide or slope—and predict where other sites might be found on



Joe McClain

Project archaeologist Elizabeth Monroe uses a digital compass to line up the next spot on the team’s shovel test grid.

similar settings outside of the parkway.

For the time being, however, the team will continue its work along the parkway—sometimes beyond the woods’ edge and other times close enough that they are able to view the occasional parade of Model A cars motoring by. **i**

—Lillian K. Stevens

We call them GIGs

Every other Monday, behind closed doors, a group of people huddle over a platter of sandwiches in Millington Hall to discuss and refine their plans to disperse mercury throughout the College of William and Mary.

Relax. These folks want to spread mercury throughout the curriculum, not the campus environment. They're participants in a GIG, or Global Inquiry Group, a new type of program at the College that combines research, interdisciplinary collaboration and an international component. The mercury group is one of two new s-GIGs, or sustained GIGs. (See page 15 for a fuller explanation of the Global Inquiry Group concept.)

"If we're successful, we will reach every student at William and Mary," said Dan Cristol, associate professor of biology. "In two years, every student here will come to the conclusion that mercury is a problem worth their thinking about and that the solution is international and requires interdisciplinary action."

Cristol and Sharon Zuber are coordinators of the mercury s-GIG. Zuber, a specialist in documentary films, teaches in the English department and the Film Studies Program and directs the Writing Resources Center. Cristol, an ornithologist, has been researching the effects of mercury in wildlife for years, including a current study of birds near particularly contaminated sections of the Shenandoah River near Waynesboro, Va. The GIG had its genesis in a number of informal connections with Zuber at the hub.

"Dan (Cristol) had worked with a student a couple of years ago who did a documentary film about an endangered parrot in Puerto Rico," Zuber recalled. "He asked if I had a student who might be interested in doing a documentary about the mercury issue up around Waynesboro. I also happened to have, living with me last year for a year, Xiong Li, a visiting scholar from Wuhan, China, and she was working with

they're interdisciplinary
they're international
they incorporate research



by Joe McClain

Those CFC "swirly" bulbs reduce your home's carbon footprint, but Dan Cristol and Sharon Zuber know they also contain mercury and lose a large hunk of their environmental friendliness unless they are recycled. The two are coordinators of an s-GIG centered around mercury.

Mike Newman at VIMS in environmental science and heavy metals."

Newman is a professor of marine science at VIMS—the Virginia Institute of Marine Science. He has written the book on ecotoxicology—literally. It's title is *The Fundamentals of Ecotoxicology*. Newman's a guy you'd want involved in any mercury group. Meanwhile, Liz Budrionis, a neuroscience major, began working with Zuber on a video about Cristol's group studying mercury in birds in the Shenandoah. The thematic tentacles of mercury were beginning to spread.

First it was an e-GIG

The group coalesced last winter in the form of an exploratory inquiry group, or e-GIG, and rapidly expanded to include faculty and students from a number of departments and disciplines all working on mercury or interested in incorporating mercury into their work. Kelly Joyce, from sociology, and Monica Griffin, from the Sharpe Community Scholars Program, got involved early. So did Kris Lane, an associate

professor of history who has done considerable work on small-scale gold mining throughout South America, operations that often leave a legacy of mercury pollution from the extraction process.

Other faculty members saw the potential to incorporate mercury into their own work. Elizabeth Mead, an assistant professor in art and art history, began attending the early e-GIG meetings and is now arranging for a Muscarelle Museum exhibition of some of the "Minimata" works of W. Eugene Smith. Smith's photo essays of people suffering from the effects of mercury poisoning around Minimata, Japan, helped to bring international attention to the dangers of industrial mercury pollution.

"When we got together, we realized that half a dozen faculty or more here are already working on some aspect of mercury," Cristol said. "Already, mercury is planted all over campus—conceptually! So what we're going to do with the s-GIG is to put it into the curriculum through three different means."

He said s-GIG members expect to develop

eight new courses incorporating mercury, either as a case study or in a thematic sense. Mead is developing one such mercury-themed class, Heavy Metal and the Delta Blues: Sculpture and the Global Environment. Students in the course will create original works in response to two case studies—one involving mercury pollution and the second on the aftermath of Hurricane Katrina.

“It is a way for students to begin to understand that there are things that art can communicate that can’t be communicated in any other way,” Mead explained. “Of course I have nothing against formalist approaches that value ‘art for art’s sake,’ but as artists we can also use our distinctive ways of looking and seeing to position ourselves as artists within the world and the challenges facing the world.”

The second strategy for getting mercury into the curriculum, Cristol said, is for members of the s-GIG to incorporate a mercury element into existing classes, using it as a case study. “I teach introductory biology, and we always spend a week or two talking about cycles of a pollutant through the globe,” he said. “That pollutant can be mercury now. I need a fresh example anyway, so all the students taking freshman biology now will spend a week or two studying how mercury moves around the globe instead of how, say, nitrogen moves around the globe.”

Cristol says the third way will probably reach the most people. You might call it mercury evangelism.

“We’re going to offer small stipends to faculty to attend a two week seminar, probably in the summer, to work with a member of the s-GIG to work up an example using mercury for their class,” he explained. “Without this little incentive, they’re probably not going to go out and learn a whole new field just to get a new example. They’re probably going to use their old example. We want to encourage them to work with one of us to add a case study to their class involving mercury.”

‘Almost sinful’

As members of the s-GIG work to incorporate mercury into various aspects of research and scholarship, Newman, the VIMS ecotoxicologist, is adding an international element to his Fundamentals of Ecotoxicology course, a refinement that is “so easy, it’s almost sinful,” he said.

He is working out the details of an exchange program with Xiong Li, the Chinese scientist who roomed with Sharon Zuber. Xiong has since returned to her university in Wuhan and has been teaching a class in ecotoxicology, using not only Newman’s textbook but also the Blackboard materials and PowerPoints.

“We’re going to be teaching parallel courses in both places so we’ll have a common background when we do the exchange,” Newman explained.

The two ecotoxicology groups will have opportunities to get together twice. In February, as the plans currently stand, Xiong Li will bring a group of Chinese students to William and Mary. In June, Newman and Zuber will journey to China with a number of students, a reciprocal and mutually beneficial exchange.

“We’ll be able to develop the same background in the same context for these students and we’ll be able to do a dialogue of compare-and-contrast, which should be wonderful,” Newman said. “China is the United States after

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Neuroscience major Liz Budrionis is working with Sharon Zuber to produce a documentary video on Dan Cristol’s research on mercury in birds along the Shenandoah River.



Mercury is used in many South American gold mines. The silvery mercury is mixed with the ore, then boiled off, leaving pure gold—and serious environmental issues.



Laurie Koloski wanted to begin an initiative ‘that would make faculty want to stay at William and Mary.’

What’s all this GIG stuff?

As soon as Laurie Koloski became director of the Reves Center in August of 2006, she began thinking. “Faculty are doing amazing things here, but I found from my own experience in the history department that it’s often very difficult to find out what people outside your own department are doing,” she said. “What I really wanted to do is to try to create the kind of initiative that would make faculty want to stay at William and Mary.”

She knew, of course, that any initiative coming from the College’s Wendy and Emery Reves Center for International Studies had to have an international focus, but Koloski also wanted to incorporate interdisciplinary and research components. She began collaborating with Joel Schwartz, director of the Roy R. Charles Center, which coordinates interdisciplinary programs. They came up with the idea of the Global Inquiry Group.

“We came up with an idea last year to launch a series of what we called e-GIGs, which were exploratory gigs,” she said. “The idea with e-GIGs was that a group of faculty come together with an idea and they get just a tiny bit of money for some books or material and maybe to bring in a speaker and they meet every couple of weeks and talk about it. You know, they read an article, they have a discussion, they talk about this particular issue that they are interested in.”

Four e-GIGs were funded, with the idea that some of them might evolve into a sustained GIG—an s-GIG. An s-GIG would have more funding, Koloski explained, accompanied by higher expectations. “For each of these Global Inquiry Groups, the idea was that the initiative would grow out of faculty research interest,” she explained. “But they would also lead to curriculum innovation and public good—conferences, exhibits, film series, documentary films, web sites—whatever.”

The s-GIGs will be funded for two or three years, she said, with the hope that they will then become long-term, signature programs.

“My hope is that these two projects are going to be sustainable and live long past the Reves funding,” she said. “The mercury GIG is not just about mercury: It’s about the broader issues of science and society. And I certainly hope we are going to have an international film event every year for the next 50 years.”

The movies come to town (& vice versa)

The Global Film s-GIG has hit the ground running, scheduling its first film program for mid-February at Williamsburg's Kimball Theatre.

The event, *When the Movies Come to Town: Williamsburg and Film History*, will not only examine the role that local movie houses served as portals to culture, but also will celebrate the longevity and service of the Kimball itself.

"January is the 75th anniversary of the Kimball Theatre, which until 2001 was called the Williamsburg Theatre," explained Arthur Knight. "The Kimball has run—with very short interruptions for cleaning and painting and then the larger renovation of two years ago—for 75 years. In a small town, this is fairly exceptional."

Knight is director of William and Mary's Film Studies Program and an associate professor connected with both the English and American studies departments. Other coordinators of the Global Film s-GIG are Christy Burns, associate professor of English, and Timothy Barnard, a visiting assistant professor of American studies and English.

Like the mercury group, the Global Film s-GIG grew out of an exploratory e-GIG venture that included 11 faculty members. The February Kimball event is the first of what is expected to be an annual film event, which, Burns stresses, differs from a film festival.

Not just movies

"They are like film festivals but instead of just showing films we also bring in scholars who are expert on a particular field. We usually try to bring in filmmakers themselves to talk about the making of the films."

In programming the event, Burns said the coordinators intend to expand on the successful formula characterized by the late September visit of Andrew Higson, an English scholar who specializes in the national cinema of Britain.

"He visited classes. He gave a major talk and we had a screening of *A Constant Gardener*," Burns said. "We also had him in a seminar and he went out to dinner with some of the faculty. So we really did everything we could have and he was very gracious and really enjoyed it as far as I could tell. He also conducted a faculty seminar on theories of national cinema and went out to dinner with us afterwards. So his visit reached the general public, our students and faculty, all in a variety of ways."

She pointed out that the larger film events will involve multiple screenings and multiple speakers. Directors and scholars coming to these events will be more focused on giving talks and leading public discussions after the films, making the events scholarly and accessible at the same time.

"That's a high demand to make on a speaker, but we will let them know that we wish to serve Williamsburg's extensive and intelligent retirement community as well as our undergraduate population," she said. "As for the students, they can often follow these talks at a high level of intellectual

When the Movies Come to Town: Williamsburg and Film History

Feb. 14-17, 2008 at the Kimball Theatre, Williamsburg

challenge, although speakers will know that some students will be prepared from courses and others will walk in as regular audience."

The schedule for the first film event is coalescing around a number of film screenings supplemented by one or more lectures, discussions or other contextual presentations. Barnard teaches Cinema and the Modernization of U.S. Culture and has developed an "add on" course involving a number of students who have begun conducting movie-based oral history surveys among Williamsburg residents. The organizers intend to use the students' oral histories as a basis for writing the program notes. The event, like the oral histories being compiled, will meld entertainment with serious scholarship.

Big screen/big issues

"We're trying on the one hand, to represent the history of the theatre and the things that have been programmed in the theatre over the 75 years," Knight said. "So we want the overall spirit of the event to be attractive, light—celebratory I suppose—but we also don't want to lose sight of the fact that the movies have been a place where Americans have really wrestled with big issues. Sometimes they are kind of big abstract issues like war or legends about your country—the West and the like. But sometimes the issues are much more direct, segregation being the obvious one in lots of places, certainly in Williamsburg."

Knight said that the Williamsburg Theatre didn't admit African American patrons until the 1950s or early 1960s, and so the local moviehouse might not have the same set of positive associations among all members of the Williamsburg community today. One element of the program will, in part, address segregation at the movies and include screenings of *In the Heat of the Night* and *Gone with the Wind*.

DOG Street goes ape

The film event will show a lighter side of Williamsburg's past, as well. Knight said the group obtained a still photo of Duke of Gloucester Street from 1933. "We think of that little stretch of Duke of Gloucester Street as a high class, pristine block that's very controlled in its atmosphere," Knight said. "Well this photograph shows that the ballyhoo for the showing of *King Kong* was two large painted flats of King Kong on either side of the doors that were like about a story and a half high and a big banner across the front that said 'King Kong Comes to Town,' or something like that. Tim and I and the students are all very fond of this image because it shows a slightly more—I'm trying to think of the right adjective—rough and tumble, low brow, kind of Duke of Gloucester Street than maybe what we feel like we often encounter now."

The s-GIG participants intend to present regular film events, usually with a global theme and often focusing on national films. Burns mentioned that the theme for the next film event may be Bollywood. **i**

—Joe McClain

Mercury s-GIG

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the Second World War as far as the economic boom is concerned. So it's going to be fascinating for them to see what the U.S. is doing and visa versa.

"Mercury is something that people envision right now as localized. That just simply is not

true," he said. "Mercury because of its release with burning fossil fuels—especially coal—is dispersed very, very widely. It no longer is something where you can point to a pipe and say there's where the mercury is coming from. You look all around you and whether or not you're standing in China or Williamsburg, Virginia,

it's all the same global process. I would say that a good portion of it comes from China, but you can't point the finger with no shame at all at China and say, it came from you, because I could get up from my desk right now and look out my window and there's a coal-fired plant." **i**

Conference in Ghana

Scholars from around the globe gathered this summer in Ghana to discuss the history of efforts to end the Atlantic slave trade.

The conference was decades in the making. Ronald Hoffman recalled one participant that had received his Ph.D. at Northwestern in the 1950s and then returned to Africa. Though his scholarship was known in Tanzania and Zambia near his home, he hadn't had any contact with scholars in West Africa.

It wasn't an isolated incident of scholarly isolation, but rather a situation common enough throughout Africa to be a major challenge in assembling scholars throughout the continent.

"Imagine a university of 12,000 or 15,000 people and only one person will have e-mail and that's the president or the provost," said Hoffman, the director of the Omohundro Institute for Early American History and Culture at the College of William and Mary. "The problems of identifying scholars who are working in these situations are pretty formidable and that's the area to which we devoted such a huge effort."

The August conference, "The bloody Writing is for ever torn": Domestic and International Consequences of the First Governmental Efforts to Abolish the Atlantic Slave Trade, was sponsored by the Omohundro Institute and hosted in Elmina, Ghana, by the Historical Society of Ghana and the University of Cape Coast in Accra. Attendees included scholars from 24 countries including the United States, Zambia, Mozambique, Kenya and Lesotho.

"It was the first major historical conference of this character to be held in Africa in 40 years," Hoffman added.

For three days, the delegates participated in sessions that explored the abolitionist influences that persuaded Great Britain, the trade's dominant carrier, to end its involvement in the international slave trade. Hoffman said one delegate equated the impact of ending the "traffick" in human cargo to the effect that cutting off oil imports would have today. The presentations that focused on the United States explored the substantial expansion in the domestic slave trade's geography and volume that resulted from the decision to stop importing slaves from Africa.



Marcus Wood

by Suzanne Seurattan

The Omohundro Institute's conference in Ghana examined Britain's 1807 decision to outlaw the slave trade and subsequent action of the United States to discontinue importing slaves in 1808. The conference included visits to historic sites along the "slave coast," such as Cape Coast Castle.

For Hoffman, having African scholars present was imperative to the success of the conference. African scholarship on the issue of the impact of the Atlantic slave trade and its abolition is not one often heard, he said.

"The slave trade was a European-run operation from the coastline out, but from the coastline in, it was run by the African people, the African nations," Hoffman explained. "It's a point that should be made but hasn't been focused on officially."

There were 15 African historians featured on the panels, but, in addition, the Omohundro Institute raised funds to pay for the travel and accommodation expenses of 58 African scholars and graduate students based in sub-Saharan African universities. The Travel Scholarships Initiative was a mammoth enterprise, Hoffman

said. Communication barriers on the African continent made even alerting scholars to the conference and the scholarships challenging.

"It was a mass, Herculean effort," said Hoffman. The Gilder Lehrman Institute of American History and the Mellon Foundation were among the meeting's major financial backers, along with several other foundations and individuals including Omohundro's two permanent co-sponsors, the College of William and Mary and the Colonial Williamsburg Foundation.

The conference's location in Ghana presented challenges for Omohundro, but also had advantages. Elmina, Ghana, is located on Africa's "slave coast." Trading ports along this coast served as administrative centers for the conduct of the slave trade in the 17th and 18th Centuries, Hoffman noted.

"The conference took place in a location that sits between two of the most important trading capitals on that coast," he said. Holding the conference in Ghana also helped to facilitate the attendance of the numerous African scholars.

At the conference, the attendees gathered to discuss issues ranging from the national and international contexts of the trans-Atlantic slave trade to whether the most profound effects of this decision occurred in Africa or throughout the Atlantic world. **i**

On web and in print

All of the conference proceedings are available on the Internet at <http://oieahc.wm.edu/conferences/ghana/index.html>. In addition, selected papers from the conference will be published in a future special issue of the Omohundro Institute's academic journal, *The William and Mary Quarterly*.

The GIANTS

upon whose shoulders
we all are standing

by Joseph McClain

The bathtub scene made the cut... but just barely.

The most familiar story of ancient science relates Archimedes' be-tubbed solution to a knotty problem requiring the nondestructive evaluation of a crown that may or may not have been solid gold. The story concludes with a naked victory lap through the streets of Syracuse by the scientist-philosopher, punctuated by his shouting "Eureka, eureka!" The *Encyclopedia of Ancient Natural Scientists* is dismissive about the bathtub story, noting that it has "the ring of legend." Georgia Irby-Massie doubts that it ever happened.

Irby-Massie, an assistant professor in classical studies at William and Mary, is one of the editors of the *Encyclopedia*, along with Paul Keyser. The work, in production at Routledge Press, contains around 2,000 entries on the leading (and lesser) lights of science from the ancient Mediterranean world. The entry on Archimedes asserts his status as "the most important scientist of antiquity," his alleged bathing habits eclipsed by accounts of his seminal contributions to modern physics, mathematics and engineering. For example, his eponymous Principle is not only a staple of elementary-school science demonstrations, but also keeps submarines at the proper depth.

Mother of invention

There's always been plenty of sources for information on Archimedes, Socrates, Aristotle and the other giants of the ancient scientific world, but how about people like Salpe of Lesbos or Andreas of Karustos? Andreas was the personal physician to Ptolemy Philopator—the lackluster Egyptian king who lived centuries before the great geographer-astronomer Ptolemy. Andreas was mistaken for his patron and murdered in an assassination attempt, but not before he made a number of important medical discoveries, particularly in obstetrics



Georgia Irby-Massie demonstrates how close Eratosthenes came to calculating the circumference of the earth using measurements from a pair of sundials, one on the Tropic of Cancer and another in Alexandria. His measurement was accurate to within 15 percent.

and pharmacology. The work of classicists through a couple of millennia had not produced a single-source reference on ancient scientists, Irby-Massie said, even though more scientific texts survive antiquity than any other genre. Necessity, as Plato might say, became the mother of invention.

"Six or seven years ago, Paul and I were at a conference and we decided that what we wanted to see was an encyclopedia of ancient scientists," Irby-Massie said. She pointed out that scholarly interest in scientists of the Classical Era is growing, and the *Encyclopedia* will fill a niche for those wanting a brief introduction to the work of philosopher-scientists from Thales of Miletus up through the Hellenistic and late-antique scientists, including the Greek-influenced Romans.

"What we want to do is provide as complete a snapshot as possible of what there was of

ancient science," Irby-Massie said. "Who was producing it, what texts were produced, what texts still survive, what the content of those texts were."

Divide and conquer

They began their task by searching through existing texts, modern and ancient. The ancients had a working habit of citing previous authorities—much as today's scholars—a handy point of reference for the encyclopedists.

"Pliny the Elder, for example, has lists and lists of people to whom he referred. Galen also has lists of physicians whom he consulted," Irby-Massie explained. "So we compiled the list of names and divided them up by category as much as we could—say, for example, Hippocratic physicians—then we went through recent scholarships looking for names of people we thought could produce articles on these groups of entries." In their matching process, they

‘Pliny the Elder prescribed a contraceptive that involves inserting a particular hairy spider into a piece of jewelry and wearing it around your neck.’

found and drafted a scholar who had recently published a book titled *Plato and Science*, but not all matches were so easily made.

As editors, Irby-Massie and Keyser assigned a number of entries to themselves. Irby-Massie has a background in mathematics, but it didn't cause her to limit her scope of interest. "I have written entries throughout the gamut of Greek science, she said. "Mathematicians, astronomers, astrologers, architects—lots of medical people because there are just so many more of them than there are of anything else—biologists, mechanics."

Astronomy, mathematics, engineering and other categories of science cited by Irby-Massie are more representative of today's culture than the scientific world of the ancients. The scientific process of the age was based more on reason and argument and less on empirical observation—although she cautions that Classical science was not completely based on abstractions.

"They were philosophers as well as scientists," Irby-Massie said. "They had a holistic outlook on the world and there was much less specialization. Take Archimedes, for example, who was renowned as a designer of bigger and better weapons to kill the enemy. He considered himself primarily a mathematician which meant that he considered himself a philosopher—a person who loved wisdom and knowledge for its own sake."

Awe and shock

The beliefs and discoveries of scientists in the ancient world are still capable of delivering shock and awe in the 21st Century. Irby-Massie holds thumb and index finger an inch apart as she relates that Democritus "came this close to inventing integral calculus.

"And he did it without algebra, which was unknown," she continued. "He did it all with geometry."

And then there was Zeno of Elea, famous for his mathematical paradoxes, whose precept "all is one" sounds tantalizingly Einsteinian. Was

Zeno, back in the Fifth-Century B.C.E., standing near the door of relativity, if not knocking on it?

"I think he was. I really think he was. Zeno had a very unusual view of the world," Irby-Massie said. Along with Zeno and other ancients who accurately mapped the neural system or wrote about atomic structure and evolution, there were plenty of people back then who believed what Irby-Massie describes as "a lot of crazy things." People learned astronomy in order to practice astrology, for instance. The Etruscan "scientists" had bronze maps of pig livers for handy reference during acts of divination.

"One of my favorites was from Pliny the Elder, who prescribed a contraceptive that involves inserting a particular hairy spider into a piece of jewelry and wearing it around your neck," Irby-Massie said. "That doesn't sound the least bit scientific to me, and Pliny would have described it as folk magic."

Anyone tempted to dismiss some of the oddities of ancient scientists should consider the four-humor theory founded by Hippocrates around 450 B.C.E. Hippocrates and his followers believed that health was maintained through a proper balance of the body's four humors—blood, black bile, yellow bile and phlegm. The Hippocratic four-humor school had rivals, such as the pneumaticist school, which believed that health was determined by the flow of breath through the veins, but eventually won out. Physicians were still basing their practice on the four-humor theory well past the Age of Reason and into the Industrial Age.

"Because, I think, the four-humor theory worked to some degree," Irby-Massie said. "Hippocrates' reputation just increased over the years. But it's not just the philosophical framework of this theory. He and his students were observing the courses of disease and were writing case histories to the point where they were able to predict the course of a fever, whether a patient would come out of pneumonia, or at what point the patient would die." **i**

Science vs. religion in ancient Greece

Ideas that passed muster among the olive groves of Academe didn't always fly in downtown Athens. Ancient Greek scientists often ran into opposition from religious/philosophical groups, Georgia Irby-Massie said. One concept, heliocentrism, might be considered the era's equivalent of Darwinism in terms of the controversy it caused.

"The Greeks knew that the earth was round," Irby-Massie said. "and several of them kept bringing up evidence that the earth seemed to go around the sun. But heliocentrism was too big a blow to the Greek ego—for them not to be the center of the universe."

So, according to the accepted dogma of the time, she said, the sun—and everything else—revolved around the earth.

Another conflict between science and religion/philosophy in ancient Greece stemmed from their ideas about shedding of blood. Irby-Massie said that even soldiers had to undergo purification rites after spilling blood in battle.

"The Greeks had very strict rituals about shedding blood of any kind. Menstruating women are not allowed within a temple precinct," she explained. "Killing someone in a temple precinct is the worst crime you can possibly commit. It's not so much the murder... it's the desecration of the temple."

Ideas about bloodshed extended to dissection of human cadavers, she explained, effectively limiting most of the Classic anatomists to comparative anatomy, using apes for dissections and even vivisections. However, some scientists found ways around the strictures of religious orthodoxy.

"Herophilus did work with cadavers in the Third Century B.C.E. It remained a touchstone," setting an anatomical standard that lasted until the Renaissance, she said. Herophilus probably didn't get into trouble for violation of religious mores of the time. "He enjoyed the patronage of powerful men."

The ancient religious right didn't always get it wrong, she said.

"Heliocentrism was a point of controversy, like human dissection, on religious grounds," Irby-Massie explained, "but the spherical earth was widely and readily accepted for many of the same reasons: the sphere was considered the perfect geometrical shape, and a spherical earth appealed to the Greek sense of symmetry and aesthetics."

Moving up the RANKINGS

It's not so much comparing apples to oranges. It's more like comparing apples to pizza, airplanes and kangaroos.

In part because institutions of higher education have vastly different missions and student populations, comparing universities and colleges has long been challenging and controversial. Still, college administrators, parents and prospective students look in earnest each year to rankings such as those that come from *U.S. News and World Report*.

But two William and Mary economics professors have found that there may be a better way to compare schools. When they run the numbers, the difference in outcomes is significant.

Robert B. Archibald and David H. Feldman actually never intended to create a new ranking system for American colleges and universities.

The two professors for years have been investigating issues of cost, price and access in higher education with the goal of helping people understand why college costs rise more rapidly than inflation rates. In that process, they started looking into how college outputs are measured.

Because of an accountability movement that started in K-12 schools, they said, people are increasingly looking for measurable outputs from colleges and universities for the money that is being put into them.

Standardized testing is commonly used to compare K-12 schools' successes, but no comparable set of measures exist among the nation's colleges. Instead, they said, typical rating systems for the effectiveness of colleges are based on what the colleges start off with—the SAT scores of incoming students, the percentage of students at the top of their class and the amount the school spends on each student. One of the few common measurable outputs that colleges do have are graduation rates.

However, comparing schools on graduation rates alone gets to be problematic because of the different populations schools serve. And so, traditional ranking organizations like *U.S. News* have employed a statistical technique called regression analysis, using input data, such as per-student expenditures and the student body's SAT scores and high-school grades, to determine a school's expected graduation rate. The rankers then compare their computed expected graduation rate with the raw graduation rate.

Comparing against an average

"If you do better than your expected graduation rate, you get a plus and if you do worse than that, you get a minus," said Archibald. The problem with regression analysis, said the professors, is that it compares schools against an average—not against the best-performing schools. Archibald and Feldman thought there was a better way to compare graduation rates, using a tool called production-frontier analysis. They co-authored a paper outlining the benefits of comparing graduation rates using production-frontier analysis, a method often used in the corporate world. The paper is slated for publication in early 2008, but already has generated a lot of interest, with stories in *The Chronicle of Higher Education* and all over the web.

"What our paper did was say there's another way to think about this," said Archibald, "not in terms of what is the expected graduation rate, but in terms of what, for a given set of inputs, is the best graduation rate any college has achieved and then to compare yourself to the best instead of to the average."

TWO ECONOMISTS PROPOSE A BETTER WAY TO COMPARE GRADUATION RATES

by Erin Zagursky



William and Mary economists Robert Archibald (left) and David Feldman believe they have a better way of determining college graduation rates, but aren't ready to replace the *U.S. News* college rankings.

AND HOW DID WILLIAM & MARY DO?

About the same.

The economists explained that William and Mary is one of the colleges that receives a positive "bump" among its peers in the course of traditional regression analysis because its graduation rate is higher than its expected graduation rate. Using the production-frontier analysis, the College didn't move much.

"Although in our method, we were not efficient as in being smack on the frontier, but we were within an eyelash of it," said David H. Feldman. "So, we did fine by both measures."

PRODUCTION-FRONTIER ANALYSIS

- Commonly used in business world
- Based on graduation rate of highest-performing schools
- Identifies most efficient performers, given their inputs



First, using the raw data collected by *U.S. News and World Report* from the past six years, the professors took 187 schools in the report's "National University" category and compared their graduation rate performance using traditional regression analysis. The professors then applied production-frontier analysis to the same set of schools. That analysis resulted in a frontier, or set, of 35 universities whose graduation rates were higher than any other school with similar inputs. A school with a low graduation rate could be efficient if no other school did better without using more input. The standings of all the other schools were determined in comparison with that group.

When both the regression and production-frontier analyses were complete, the professors compared the results.

"Not surprisingly, in a lot of cases, what we got with production-frontier analysis was very similar to what we got with regression analysis," said Feldman. "The interesting thing was to explore the situations in which we got different results."

A set of 12 schools that did very well using the regression technique were found to be "quite inefficient" using the frontier technique, said Feldman. These schools ranked well in *U.S. News*. However, because members of this group did not do as well in the production-frontier analysis, they should be careful in being smug about their *U.S. News* ranking and look instead to the best among their peers to measure their success, the professors said.

"Just because *U.S. News* pats a school on the back, it does not necessarily mean a school is doing as well as it could with the input it has," said Feldman.

Some win, some lose

On the other side of the coin, the Archibald and Feldman comparison also included a set of 27 schools that *U.S. News* downgraded because their graduation rates were below predicted. However, using production-frontier analysis, those same schools were shown to be very efficient.

Another significant finding of the professors' study showed that the set of schools that serves large numbers of science and engineering students ranked poorly using both analyses.

"This tech-school bias is one of the biases that we uncovered that I don't know if anyone else has ever talked about," said Archibald. Feldman said that the amount of money required to produce a science or engineering graduate plays a large part in that outcome.

"A school that has 85 percent of its students studying non-tech disciplines isn't going to have to spend as much per student as a school that has 85 percent of its students in chemistry or physics labs," he said. "In other words, there's another reason why a school that spends more

isn't seemingly getting any output for that—they are. They are getting the output. It's just that their graduate and your graduate aren't the same. They're different. And if you lump them together, you're mis-measuring things."

The professors said that their study demonstrates the need for universities to examine rankings carefully and to look for better ways to measure their outcomes.

Quantifying the academy

"Universities are very good at telling stories, but we're very poor at coming up with measures that can be quantified and compared across universities or across time," said Archibald.

Even typically elite colleges need to show how the extra money that goes into their students results in improvements in the education they provide, said Feldman.

"What we are suggesting is that if other schools spend a third of what you spend per student, are you saying that your students get that much better of an education? How do you demonstrate this?" said Feldman. "There's a spotlight being shined on what universities are doing and they're going to have to think more clearly how they measure what they do."

The paper is scheduled for publication in the February, 2008 issue of *Research in Higher Education*. Their work already has attracted a lot of attention—both positive and negative. But the reaction isn't unexpected, they said.

"I think some of the pitches that have been thrown at us, like the ones being thrown at *U.S. News*, reflect a deep-seated anxiety about comparing schools on the basis of overly simplistic measures of output," said Feldman.

"Or any single way of doing it," added Archibald. "Because the best school in the nation for student X might not be the best school in the nation for student Y—but one school is the best school in the nation for *U.S. News* and that gets lots of publicity."

Both professors said they are not trying to be the new *U.S. News*. They merely hope their study will make people think twice when looking at college rankings.

"People ought to think very seriously before they look at these rankings because when you throw schools together that have very different missions and you use the same technique to generate the score, there are biases that aren't obvious until you think about them for a while," said Archibald.

"We readily plead guilty to the charge that rankings are problematic and I think if you read our paper as though we're trying to overturn *U.S. News* with a better way of ranking schools, then you are not taking the right message from the paper," said Feldman. "We really didn't write this to come up with a new, sexy ranking of schools." 

REGRESSION ANALYSIS

- Used by *U.S. News and World Report* for computing annual college ranking list
- Also used by the Education Trust
- Based on computed average graduation rate



Corsets and doublets and fans.

by Lillian K. Stevens



Oh, my!

After 25 years of designing theatre costumes, Patricia Wesp's is one show that must go on.

Patricia Wesp models an ostrich-plumed burlesque dancer's fan from a production of *Gypsy*. The fans and other Wesp stage creations were featured in "What's That On Your Head?," a retrospective of the past 25 years of her costume design work exhibited in Andrews Gallery during the summer of 2007.

The audience doesn't leave singing the costumes." It's a bit of advice Patricia Wesp has carried from her undergraduate days at William and Mary. But Wesp, associate professor of theatre and veteran costume designer, knows how to make a costume sing. Or laugh.

"I have been extremely fortunate to dress people funny for a living," says Wesp, who is universally known as "Tric" (pronounced "Trish"). "It's a great privilege to be able to earn a living this way—sitting on the floor doing a whacky craft project."

Whacky crafts aside, her passions—theatre, literature and art—are intrinsically linked. At a summer retrospective, "What's That On Your Head?," visitors were treated to creations ranging from Lady Capulet's gown, from the Virginia Shakespeare Festival's 2007 production of *Romeo and Juliet*—to the ram and the owl in *Batboy: The Musical* from William and Mary Theatre's 2004 season.

The exhibit, celebrating the past 25 years of Wesp's costume design, ran from July through late August at Andrews Hall. Some creations were made from fabrics rare and exotic, others dime-store finds. As the name of the show suggests, it included many, many headpieces—

headpieces being the artist's favorite. No matter how whimsical or fun, each article of clothing or accessory represents the execution of a scholarly vision.

"The longer I've done this, the more intrigued with the historic research I have become. I'm increasingly fascinated with the opportunity to work with original garments, in museum collections and with historic objects," Wesp said.

National influence

Wesp's reputation and professional influence go far beyond the stage of Phi Beta Kappa Memorial Hall. This fall she received a three-year, \$112,000 grant from the U.S. Institute of Museum and Library Services, on behalf of the Costume Society of America, a professional non-profit.

The grant will fund two ongoing projects at the national level, administered by Wesp. The first is the Museum Professionals Preserva-

tion Workshop, offering intensive training sessions for staff and volunteers at primarily small museums with varied collections and limited resources. The second part will fund the Costume Society's Angels Project, in which professionals—textile and costume scholars, museum personnel, conservators, curators, students—donate a day's labor to a small museum with a big problem/project.

"Next May we're at a U.S. Army National Guard museum in New Orleans" says Wesp, "It was hit by both Katrina and Rita, and was under at least 12 feet of water twice in 2005."

Romeo and Juliet V

This past summer, during the Virginia Shakespeare Festival, Wesp worked on her fifth production of *Romeo and Juliet* (her third at William and Mary alone). It was a little different this time—deliberately set in Italy, but in the later Italian Renaissance, closer to the period in which Shakespeare lived.

"We were clearly responding to the Jamestown 1607 mania" she said, noting that other productions have set the play in the early Italian Renaissance or in England during the reign of Elizabeth I—with only a nod to "Italian" detail in the clothing.

To prepare for this production, her research took her back to the primary sources, to paintings in the later Italian Renaissance. First came the conceptual part, the design conferences—each designer asking questions and sharing examples, based on some of the ideas that Wesp had assembled from her initial research. From these conversations, she began the process of studying images and producing some visuals to show the director.

"I started searching for specific details, for characterizations or interpretations that might work well for a particular individual, and then selecting the visual images, compiling them into a photocopied collage for the director to respond to," she said.

Behind the seams

Great care is taken to ensure that the clothes fit both the play and the players. Next the garments are sewn and then adapted, as necessary, to the movement of the performers or to the changes that occur in the rehearsal process.

Wesp rarely uses the term "costume," and almost always calls her creations "clothes." It's

continued on page 24



Tric Wesp needs a ladder to navigate the upper reaches of the Costume Shop's stockroom.

A visit to the 'whomping pit'

The Costume Shop in Phi Beta Kappa Memorial Hall looks like the result of an experiment that spliced genes from Hogwarts Academy, your grandmother's basement, an Elizabethan fabric store and one of the world's classier sweatshops.

A washer and dryer sit inside the entrance, across from dye pots large enough to be used as props for the opening scene of *Macbeth*. There is a rack holding dozens of scissors, from tiny nippers up to lethal-looking things big enough to shear sheep. Bolts of cloth line the far wall, beyond an array of sewing machines, some of which may be from Patricia Wesp's personal collection.

"My mother asked me, 'Why on earth do you need sixteen sewing machines?'," Wesp said during an impromptu tour of her domain. "I said, but mom, you're the one who gave me number fifteen."

In the weeks and days leading up to opening nights for stage productions of the Virginia Shakespeare Festival and the William and Mary Theatre, the Costume Shop validates all the usual clichés associated with work performed under an approaching deadline—beehive, hub of activity, whirlwind. Wesp says the technical term for the Costume Shop in a state of high productive frenzy is "whomping pit—as in a pit where whomping has occurred." She has an office upstairs in PBK, but don't bother dropping by. During the final week of the Virginia Shakespeare Festival's final production of the season, Wesp said "I haven't been in my office for probably six months."

Adjacent to the Costume Shop is the stockroom, crammed with approximately ten gajillion costumes, hats and accessories. Uniforms, gowns, tuxes, dresses, clown suits, doublets, tunics and other items that go on hangers stretch to the ceiling on racks to your left. On your right are shelves loaded with boxes bearing such labels as "Bowler hats" and "18th-Century corsets," again stretching to the ceiling.

"If you don't know where something is," Wesp said, "the first place you look is in the bra box. It's practically the first box you come to and things have a tendency to just get jammed in there."

Items have been accumulating in the stockroom since 1958. Wesp said that smoke damage from a 1991 fire required the contents of the stockroom to be sent out for cleaning and the inventory at the time exceeded 50,000 pieces. "I think we have twice that number now," she said.

Anyone visiting the stockroom for the first time would be willing to bet money that its contents could dress the casts for a Shakespeare extravaganza, involving the simultaneous presentation of all of the Bard's 38 plays in full period costume, tossing in productions of the major works of Ibsen, Shaw, Aristophanes and Tennessee Williams. But it doesn't work out that way; for a number of reasons, new costumes must be designed and created.

"We have well over a hundred capes in here, and I always think there's no reason we should ever have to make another cape," Wesp said. "But we always have to make one or two for each production."

—Joe McClain

Don't call them 'costumes'

continued from page 23

an important distinction for a scholar-designer-artisan who is careful enough to begin her design with a careful study of the dress of subjects in period portraits. Lady Capulet's gown, for instance, was inspired by Bronzino's portrait of Eleanor of Toledo, circa 1550.

"The satisfaction comes from seeing the parts come together," Wesp explained. In the case of Lady Capulet, the parts include "familiarity with the images from the period, finding the patterned fabric with an appropriate scale of the design, finding a solution to the construction problem that improves the weight and drape of the fabric so the garment moves in a more satisfactory manner, and being able to put the finished product on a performer who gives life to both the character and the dress and makes us believe that these are clothes belonging in the wardrobe of that character, not 'costumes' that somebody 'designed' for a play."

Sometimes, it's comic books

Not all the research is so highbrow. "Right now," she said in September, "I'm working on *Superman: The Musical* and so I've been—God help me!—reading comic books and watching the George Reeves TV serial!"

With only a full-time shop manager to assist her—who came on board in 1997—Wesp relies on student interns and assistants, whose numbers, experience and skill levels vary from year to year and production to production. Often, she said, students become quite involved in the process depending upon the tasks or production responsibilities they assume.

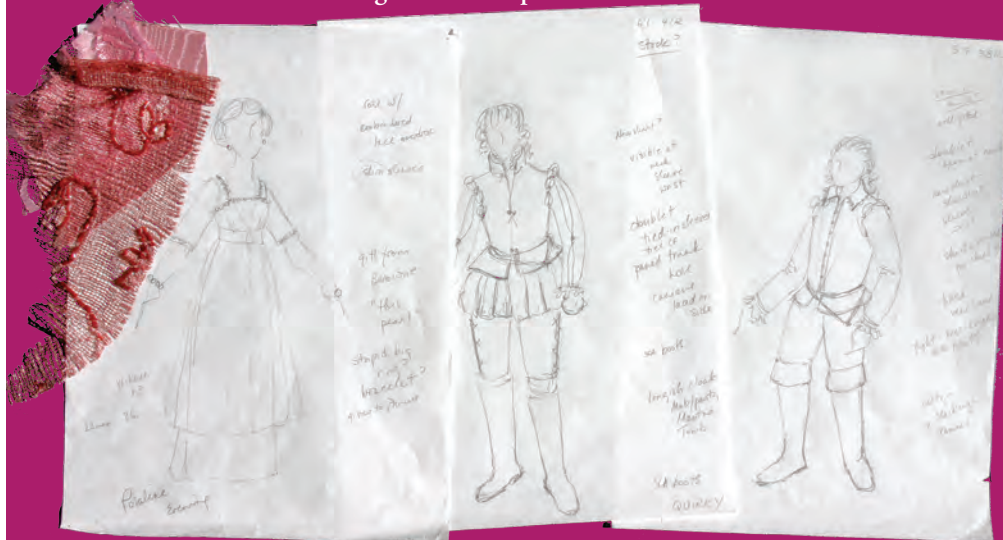
"I have a student working with me on *Superman* who has been doing some fairly specific research looking for images from around 1963, so that she can help me zero in on kinds of images that will suggest college students back then as opposed to college students today."

Wesp also works closely with faculty colleagues like Professor of Dance Joan Gavalier. Currently they are working on a composition that Gavalier is creating, informed by her collaboration with Native American dancers and musicians.

"Joan is not trying to imitate or reproduce in any way—the piece is very much informed by the work that she is doing with Native American musicians who will be dressed in some of their regalia while they're performing."

"So for that one, there's no script," she explains. "You start listening to music and you start watching movement patterns and you start discussing some of these kinds of influences with other Native American performers and you try to create something that is respectful but at the same time individualized and also serves the choreographer's artistic intent." **i**

Swatch & sketches from Virginia Shakespeare Festival



"Up until about 10 years ago, when I got a shop manager, I'd have to say to the director, 'Do you want pretty pictures, or do you want some clothes on these people?'"

Countess Aurelia from *The Madwoman of Challiot*
William and Mary Theatre
2005

"I like to give the lighting people something to work with. It's not just the color of this underskirt; it's the reflectivity, the iridescence, that does it."



Gnat from *In the Garden of Live Flowers*
William and Mary Theatre
2004

"The first time I saw a respirator, I said: Aha! There's got to be something else you can do with one of those things beside breathe through it."



Juliet from *Romeo and Juliet*

Virginia Shakespeare Festival 2007



"I'm big on detail. Everyone says that you need to design the costume for the audience in the back rows of the theatre, but how about the people up close, in the front row? They deserve to see something too."

Art and artifact

What possibly could be controversial about an art museum in Paris? You have no idea.

But Sally Price does. She is the author of *Paris Primitive*, an examination of a set of French cultural debates that led to the building of a museum near the Eiffel Tower dedicated to what Price often refers to as “so-called primitive art.”

One person’s “art” often is another’s “artifact,” an ideological difference that fuels this book by Price, the Duane A. & Virginia S. Dittman Professor of American studies and anthropology at William and Mary, and author of an earlier book, *Primitive Art in Civilized Places*, which has been translated into seven languages.

Pair of Jacques

The controversies depicted in *Paris Primitive* had their genesis in the formation of an alliance between Jacques Chirac, soon to be president of France, and art collector Jacques Kerchache.

The two formed a friendship around a common interest in primitive art. They wanted to raise the profile of what Chirac had been calling “the art of three-quarters of the world.” To accomplish their ambition, they set their sights on an exhibition in the Louvre. Cue the fireworks.

“The whole discussion there is whether the Louvre is supposed to be a universal museum,” Price explained. “The director of the Louvre, who was in charge while all this was going on—he’s now retired—was adamant that the Louvre does not do everything. Impressionist art, for example, is in the Musée d’Orsay, which is a different museum and Asian art is in the Musée Guimet, which is a different museum.”

The debate over the Louvre was a precursor to the hubbub surrounding the creation of the Musée Quai Branly, in which the primitive art of Paris found a home of its own. *Paris Primitive* discusses the strange bedfellows created by this peculiar sort of museum politics. Predictably, the fight to keep primitive art out of the Louvre was championed by a group characterized as “the very elitist curators of the Louvre museum, the art historical people.” The Louvre’s purists had allies in the anthropological community, who didn’t so much want to keep the objects out of the art museums as they wanted them to remain in ethnographic-oriented institutions such as the Musée de l’Homme.

“That’s the whole debate between art-history-oriented museum curators and anthropologically oriented museum curators,” Price explained. “It’s important to realize that an object in an anthropological museum already has lost a lot of its context, because it’s been taken out of its original setting.



Sally Price: Esthetics versus ethnography

So, it’s already re-contextualized in one sense, but then, when it moves into a more esthetically oriented museum, it loses a lot of its power to help people understand other cultures.”

On the other side of the debate were Kerchache, who was circulating petitions and taking out full-page newspaper ads advocating for primitive art to be displayed in the Louvre, and Chirac, speaking not from only the bully pulpit of the French presidency, but also as a connoisseur who was known to question authorities on arcane points of primitive art.

Into the Louvre

Primitive art made its way into the Louvre in 2000, but that was hardly the end of the controversy. Price said Chirac initially resisted, but eventually embraced the concept of a new and separate museum for primitive art. Proposals for a site bounced from arrondissement to arrondissement, finally ending up in the shadow of the Eiffel Tower.

“It’s very prime real estate there and the people who live there didn’t want their view of the river obstructed,” Price said. “So there were restrictions on the height of the building. Every aspect of this project was a big, big debate.”

The big, big debate continued during and after the construction of the museum, most notably along the ethnography versus art controversy. The finished Musée du Quai Branly was stocked with objects selected from other collections and which had been subjected to what *Paris Primitive* calls “the most advanced museological makeover in the world.”

The makeover included extensive cleaning, repair and disinfecting—and incorporated extensive recontexting of numerous items of anthropological interest. In a reprise of the Louvre debate, the art



Paris Primitive: Jacques Chirac’s Museum on the Quai Branly

Sally Price

University of Chicago Press

collector’s esthetic propounded by Jacques Kerchache trumped all other concerns, even though Kerchache himself died before the Musée du Quai Branly was completed.

She explains that the Kerchache perspective was endorsed by the museum’s architect, who was given control of the curatorial aspect “to a degree many consider quite astounding.” In a tour of the finished museum, Price found a textile from South America that she had worked with in past research. “It’s a horizontal textile,” she said. “But because the architect designed that particular case as a vertical case, it’s turned 90 degrees to suit the architectural plan. It makes no sense, ethnographically.”

She concedes that the exhibits do have contextual information, but the meatier stuff is often separated from the actual items.

Price said she had been critical of the Louvre’s “estheticising” ethos and its tendency to remove anthropological context. “But after I went to the Quai Branly museum and went back to the Louvre, it looked pretty good, because you could see these objects, you could walk around them and it’s well lit,” she said, compared to the dark, faux-jungly Quai Branly, a product of the architect’s conception of a primitive environment.

“It picks up on stereotypes,” she said. “That’s the bottom line.” **i**

—Joe McClain



Objects may be closer than they appear

Victorians in the Rearview Mirror

Simon Joyce

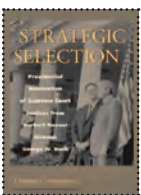
Ohio University Press

Many of us suspect that the avoidable horrors of the future may be more familiar to readers of Dickens than to readers of Orwell, if only because people keep reminding us of the glory days of the Victorians. Simon Joyce looks at the ways we preserve the heritage of the 19th-Century, with points of view that include nostalgia, longing and loathing. Please, sir...may I have some more?

—Joe McClain

Simon Joyce is an associate professor of English and director of literary and cultural studies. His interests include the literature and sociology of crime, cultural representations of the past and the globalization of culture.

So you want to be a Supreme Court justice?



Strategic Selection: Presidential Nomination of Supreme Court Justices from Herbert Hoover through George W. Bush

Christine Nemacheck

University of Virginia Press

In *Strategic Selection*, Christine Nemacheck offers a window into the political and institutional dynamics that underlie the White House's selection of nominees for the Supreme Court and reveals the pattern of strategic action which is visible from the earliest stages of the selection process.

Who was on the president's short list? How are these lists developed in the first place? What is the role of Congress and what propels the choice of one nominee over another? These questions and more are answered in this creative and insightful work which will be enjoyed by anyone who cares about the past and the future of the nation's highest court.

—Lillian K. Stevens

Christine Nemacheck is an associate professor of government. Her research interests include American and judicial politics. Her work has also appeared in *Congress and the Presidency* and a number of edited volumes.



Looking for joy (in all the right places)

The Story of Joy, from the Bible to Late Romanticism

Adam Potkay

Cambridge University Press

Joy offers a literary and intellectual history of joy or, more specifically, the ways in which joy has been addressed in Western literature and art, philosophy and religion, psychology and statecraft with particular emphasis on British and German works from the Reformation through Romanticism.

What is true of love, Potkay sets out to show, is equally true of joy. Emotions or passions are not simply constant components of human psychology and physiology, the hard wiring of who we are. They are shaped, as well, by histories: the case history of each individual, and the cultural history of each emotion term.

This book is of particular interest to scholars of the Renaissance to the late Romantic period but will also appeal to those interested in literature, philosophy, history, musicology or theology.

—Lillian K. Stevens

Adam S. Potkay is the Margaret L. Hamilton Professor of English Literature. He is the author of four books (working on a fifth) and dozens of articles on 18th- and 19th-Century literature and philosophy in journals.

Master of space and time



Travels with Tooy: History, Memory, and the African American Imagination

Richard Price

University of Chicago Press

If *Travels with Tooy* had come out in the early 1970s, many lives may have turned out completely different, because people who are now middle-aged might have read Richard Price's book and been inspired to do something productive (such as ethnography), rather than being inspired by Carlos Castaneda's books to do other things (such as experiment with jimson weed.) Price encountered Tooy, a rain forest priest-philosopher, in the course of his research among the Saramakas, descendant populations of rebel slaves. *Travels with Tooy* would make an interesting buddy film, as Tooy himself is described as a

"time-traveler" and the settings of the narrative sections go way beyond the rain forest in terms of exoticism.

Sound files from *Travels with Tooy* are available on line at www.richandsally.net/worki.htm.

—Joe McClain

Richard S. Price is the Dittman Professor of Anthropology at William and Mary. His research combines history and anthropology and often centers on African American cultures in South America.

AWARDS, PLAUDITS, UPDATES

Wages of Wins placed on 'noteworthy' list

Princeton University Library's Industrial Relations Section has added *Wages of Wins: Taking Measure of the Many Myths in Modern Sports* to its Noteworthy Books list for 2006. Martin B. Schmidt, associate professor of economics at William and Mary, is co-author of *Wages of Wins*, along with David J. Berri and Stacey L. Brook. The book's "ESPN meets freakonomics" approach and companion web site (www.wagesofwins.com) has ensured it a long life in the blogosphere. An updated paperback edition of *Wages* is out, with a basketball-themed cover.

Evolving God listed on ALA religion top 10 list

Evolving God: A Provocative View of the Origins of Religion was listed among the top 10 religion books of the year by the American Library Association. *Evolving God*, featured in the summer, 2007 issue of *Ideation*, was written by Barbara King, class of 2007 professor of anthropology. King's views of religion as a consequence of primate evolution shares space on the ALA list with works by humorist Christopher Hitchens and Pope Benedict XVI.

Steel Drivin' Man wins Library of Virginia honor

Steel Drivin' Man: John Henry, The Untold Story of an American Legend took top nonfiction honors at the 10th Annual Library of Virginia Literary Awards. The Library of Virginia honor is only the most recent award for the book by Scott Nelson, Legum Professor of History.

Among the finalists for the nonfiction award was *Sold American: Consumption, and Citizenship, 1890-1945*, by Charles McGovern, associate professor in history and American studies.

Steel Drivin' Man was also a finalist for the People's Choice Award, which was won by *Jamestown: The Buried Truth* by William M. Kelso, head archaeologist at the Jamestown Rediscovery Project and lecturer in the history department.

David Willard



Cindy Hahamovitch

Nick Kelsh



Timothy Barnard

Two professors earn Fulbrights

Two College of William and Mary professors were awarded Fulbright Scholar Program grants this fall to conduct research abroad.

Timothy Barnard and Cindy Hahamovitch will travel to France and Ireland, respectively, at the end of the year to teach and conduct research projects during the spring, 2008 semester.

Barnard, visiting assistant professor of American studies and English and coordinator of Mellon projects in the humanities, will research Franco-American film relations and history, specifically French reception of Hollywood cinema in the 1920s. Hahamovitch, associate professor of history, will teach a graduate course on U.S. Immigration History at University College Cork.

Barnard's research will also benefit his work on the Williamsburg Theater Project, a web site database of local film exhibition and reception that is part of the international History of Motion Picture Exhibition and Reception Project. Barnard's grant is co-sponsored by the

Franco-American Commission for Education Exchange, and he will be hosted by ARIAS, a research consortium of scholars from the Sorbonne Nouvelle (Paris III), the École Normale Supérieure and the Centre National de la Recherche Scientifique.

"Participating in this Fulbright exchange will create the perfect opportunity for me to pursue my research goals as an American studies and film scholar dedicated to global perspectives," he said. "It will also allow me to expand my interests in both transnational American studies research and global and local film reception studies."

In addition to teaching at University College Cork, Hahamovitch will seek to inform her larger research on international labor migration and will work on a document reader, which is an edited collection of primary sources, or historical documents, for use in history classes. She also plans on learning more about the history of migration out of and into Ireland.

"Ireland is certainly more diverse now that

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School of Ed. to research literacy

William and Mary's School of Education has received a grant for \$152,500 from the State Council of Higher Education for Virginia to help fund middle school literacy efforts.

"This is an area of critical need," said Virginia McLaughlin, dean of the William and Mary School of Education. "Schools have made great progress in improving literacy in the elementary grades, but the demands for reading become much more intense at the middle school level. Many times, students' performance in science, social studies and math is more reflective of their lack of reading skills than their lack of knowledge of the actual subject area. Not being able to read textbooks or tests is a real handicap."

The grant is the latest in a line of "No Child Left Behind" grants that have been submitted by William and Mary on behalf of the School-University Research Network (SURN), a partnership between the College and 26 area school divisions. This year's grant will fund a SURN project entitled, "SURN Collaboratories: Middle Grades Literacy Across Content." The project will develop and mentor teachers at middle schools in Hopewell, Norfolk and Petersburg that have not met accreditation standards for literacy.

"The College has been partnering with Petersburg on a number of community-building and service-learning opportunities. We were particularly excited to target this No Child Left

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Grad students get funds for environmental projects

Two graduate students in William and Mary's biology program received external grants totaling \$42,900 to continue their work on environmentally sensitive projects.

Ryan Burdge was awarded \$27,500 by the National Fish and Wildlife Foundation for his project on the effects of golf course pesticides on bluebirds, while Jonathan Holley received \$15,400 from the Virginia Environmental Endowment to study the effectiveness of current storm water management practices. Both Burdge and Holley are in the Master of Science program and expect to receive their degrees in 2008.

Burdge will continue research by his advisor, Dan Cristol, and by John Swaddle, both associate professors of biology at William and Mary. Their work has shown that eastern bluebird nestlings on golf courses have poorer body conditions than found among comparable chicks in pesticide-free locations. Burdge's contribution will be to examine blood levels of organophosphate pesticides in bluebirds on heavily treated golf courses, comparing them with birds from sites with no pesticide management.

Holley's advisor is Randy Chambers, director of the William and Mary's Keck Environmental Field Laboratory. Water retention ponds are a standard feature in runoff management across the Commonwealth, and Holley's work will add to the knowledge of the ponds' effectiveness in filtering heavily polluted runoff. Holley also will examine the outflow of retention ponds and will examine its effects on aquatic invertebrate communities in managed streams.

"Students in our M.S. program provide an invaluable boost to the productivity of the faculty," said George W. Gilchrist, director of graduate studies for the biology department. "Many masters' students work as research assistants to professors, mentor undergraduate research and aid as teaching assistants. Their independent work, however, regularly contributes quality research on a variety of projects ranging from cells to ecosystems."

—L.H. Brumfield

Spain's top honor awarded to Greenia

George Greenia, known for his work in medieval studies and on the Camino de Santiago pilgrimage, received Spain's highest cultural achievement distinction for foreign nationals this fall.



The Cross of Isabel the Catholic was conferred on Greenia, professor of modern languages and literatures, for his contributions to research and dissemination of Spain's cultural heritage. Greenia is the first person in the College's history to

receive the honor, which is bestowed by the king of Spain and akin to the Order of the British Empire or France's Legion of Honor.

"It's pretty stunning news since this is an honor that's existed for over 200 years in Spain and they give it to foreign nationals very selectively," said Greenia.

Carlos Westendorp, ambassador of Spain to the United States, conferred the distinction on Greenia and three other honorees at his home in Washington, D.C., as part of a pre-Columbus Day celebration.

The distinction is awarded only once a year and some years no awards are given at all. Nominations are made by the ambassador of Spain and are approved by Spanish King Juan Carlos I, who is the master of the Order of Isabel the Catholic.

Formerly a Franciscan brother, Greenia has worked at William and Mary for 26 years and specializes in the Spanish Middle Ages. He served for ten years as director of William and Mary's program in medieval and renaissance studies, and over the past three summers has guided William and Mary undergraduates in retracing on foot the entire 500-mile route of the Camino de Santiago across northern Spain. He is both editor of the *La corónica*, a journal devoted to medieval Iberia, and editor of *American Pilgrim*, a magazine that presents public scholarship to the international pilgrimage community.

—Erin Zagursky

NSF grant funds undergraduate computational math initiative

The College of William and Mary has entered the vanguard of undergraduate computational mathematics instruction, fueled by a multiyear \$800,000 grant from the National Science Foundation.

The NSF grant will fund the operations through 2012 of an interdisciplinary program called CSUMS—Computational Science Training for Undergraduates in the Mathematical Sciences. The goal of CSUMS is to increase undergraduate proficiency in computational mathematics, by development of new courses and by incorporation of computational mathematics examples into existing courses.

Chi-Kwong Li, Ferguson Professor of Mathematics, is director of the CSUMS program at William and Mary. He also is the principal investigator on the NSF grant and was department chair when the application was filed.

"At the NSF, they see the need that the current generation, the younger students, should be trained to have a good sense about computation in the mathematical sciences," Li said. He stressed that CSUMS is not just for mathematicians and the William and Mary program includes students and faculty from applied science and computer science.

The nucleus of a computational mathematics initiative had been forming at the College for some time. Michael Lewis, an associate professor of mathematics, had spearheaded an NSF-funded initiative to establish a computing cluster in the department, a good start on the hardware infrastructure necessary to support a program.

"The main goal of the NSF is to support research in science and mathematics, but it's also interested in keeping the curriculum in these disciplines as modern as possible," said David Lutzer, Chancellor Professor of Mathematics and current chair of the department. "When we saw the NSF call for proposals, we asked if this was something we wanted to do. As it happens we had recently hired several people whose strong interests were on the computational side of mathematics."

One such new hire is Sarah Day, an assistant professor of mathematics, who is teaching a senior seminar titled Computational Dynamics and Topology, one of the CSUMS training courses. At the other end of the undergraduate computational experience, Lewis is teaching a freshman seminar he says is "innocuously titled Mathematics and Computation," but which takes first-year students to mathematics's jumping-off point.

"The idea is to make the students aware of the whole other interesting set of questions that arise when you go to actually solve problems," Lewis explained. "Mathematical analysis can tell if solutions exist. Finding those solutions is apt to be a much more difficult problem, a computational problem."

Lutzer said CSUMS will facilitate the introduction of computational techniques at every level of the curriculum. "You can just ignore computing in freshman calculus if you want to. But you can also address computation issues that arise when calculus is used, if you want to," he said. "Part of this project is because we want to."

Virginia Torczon, associate professor of computer science, says that CSUMS will encourage interdisciplinary thinking among students in two departments. "We want computer science students to take more math courses to complement their computing curriculum and we want more students in mathematics to take classes in computer science to complement their research there," she said. "We also want to incorporate projects within individual courses to involve more computers, to show the students that they can use computing as a tool."

Li noted that CSUMS will have an intensive undergraduate research component in addition to the curricular restructuring. "New courses are only part of it. What we are doing now is to increase the sense—the sense and sensibility—of students about computational issues," Li said. "Do we expect a freshman seminar to train students to be competent in computational math? No. But it will increase the sense that there are many problems related to computational issues."

—Joe McClain

Fulbright scholarships

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it was when I studied there as a sophomore a quarter century ago, and I'm particularly interested in comparing the Irish and American responses to recent immigration," she said.

In addition to the two faculty members, 11 students and recent graduates of the College were awarded Fulbright U.S. Student scholarships. They are: Chuck Abbott, Amy Benoit, Will Dolve, Helen Wong, Neah Monteiro, Amanda Norris, Jean Rose, Hakan Seyalioglu, Laura Smith, Catherine Williams and Aisa Martinez.

They will work in countries around the world including Oman, Germany, Taiwan, Poland and Hungary. Many of the scholars will work as part of English-teaching assistantships, while others will conduct research on topics ranging from cross-cultural interchange through mathematics to musical connections across the Mediterranean.

The Fulbright Scholar Program is sponsored by the U.S. Department of State and sends 800 U.S. faculty and professionals abroad each year.

—Erin Zagursky



Anthropology graduate students (from left) Chris Crain, Grace Turner and Autumn Barrett with Michael Blakey at the African Burial Ground National Monument in New York on Oct. 5.

African Burial Ground in NYC is now a national monument

Michael Blakey's work as lead scientist at the New York African Burial Ground led to the designation of the site as a national monument. A memorial at the site was dedicated Oct. 5.

The ceremony, sponsored by the National Park Service and the Schomburg Center of the New York Public Library, included a concert and a candlelight procession to honor the Africans who helped build the city of New York. The African Burial Ground National Monument is the first National Monument dedicated to Africans of early New York and Americans of African descent.

Blakey, National Endowment for the Humanities Professor at the College of William and Mary, first became informed about the 6.6 acre African burial site in October, 1991 when the *New York Times* reported that 12 bodies had been uncovered by a team of construction workers making way for a federal office building. Eventually, more than 400 human skeletal remains were uncovered.

During his 10 years of work at the burial ground, Blakey coordinated research of the site and its remains among teams of physical archaeologists, historians, anthropologists and others. The archaeological and historical contexts of the remains were analyzed by Howard University research teams and the Institute for Historical Biology at William and Mary.

In 2003, the remains found at the site were reburied in Manhattan following ceremonies in five East Coast cities.

Over the last few years, a comparative database on the bioarchaeology of the African diaspora was developed at the Institute for Historical Biology at William and Mary, which Blakey directs. Next year, the Interpretive Center at the Monument will open, and its content will be largely derived from the research that Blakey directed.

—Erin Zagursky

Literacy grant

continued from page 27

Behind grant to the Petersburg schools because it connects so well with the work the university is doing there," said McLaughlin.

The project began when teams of interdisciplinary teachers from the three divisions attended a two-day summer training academy in Petersburg at the end of August. The teachers will learn instructional and motivational strategies and then will implement those strategies in their classrooms when school begins in the fall. Throughout the year, the teams will reconvene to receive more information and share what they have learned. Additionally, members of the project faculty will visit classrooms and provide

one-on-one coaching to the teachers.

A new component of this year's grant allows project faculty members to set up model classrooms in local schools with experienced teacher-mentors. Members of the project teams may set up appointments to visit the model classrooms and see the strategies they are learning in action, said Jan Rozzelle, director and lead faculty member of the project.

The project will conclude with a conference in March, 2008 in which the teams will share their findings, lesson plans and research with the other SURN partners.

—Erin Zagursky

Noise disrupts monogamous bonds in birds

Loud levels of white noise have been shown to disrupt monogamous bonds between zebra finches. In a series of on-going experiments, William and Mary biologists are testing the connection between environmental noise and bird behavior.

In their natural setting, zebra finches form strong, monogamous pair bonds, making all the behavior related to mating generally predictable. Bird song, territory squabbles, dances and most male-female interaction are all mating behaviors.

John Swaddle, associate professor of biology, worked with student Laura Page on this experiment, and the two recently published the paper in the July *ScienceDirect* journal. In their paper, Swaddle and Page show a connection between environmental noise levels and mating behavior. The louder the white noise, the less preference the females show for their pair-bonded males, contrary to normal zebra finch behavior, Swaddle said.

"At the highest level of environmental noise that we had, the female spent just as much time with an unknown male as she did with her pair-bonded male," said Swaddle. "We think that the soft, whispery type of calls they make at each other to maintain their pair bond is masked by the environmental noise."

A number of other studies have found that environmental noise levels do affect bird song and bird behavior, but the William and Mary research is the first to study the direct implications of that change. Mating behavior and its disruptions can greatly influence a species, with evolutionary consequences, although the topic does require more research, Swaddle said.

—L.H. Brumfield



John Swaddle with a pair of finches

ISC update: Looking forward to spring break

We've passed the halfway point in the three-year construction process of Phase I and II of William and Mary's Integrated Science Center and progress is on track to meet the first important deadline—spring break.

"We have to move the chemistry department lock, stock and barrel over the spring break," explained Dennis Manos, vice provost for research and graduate and professional studies. Chemistry will move out of Rogers and into the new ISC I building adjoining. "It isn't so much that chemistry has to move in by spring break, but that they have to move out of Rogers, so that we can begin the process of turning it into ISC II," Manos continued. "Rogers will get what is referred to gently as a 'gut-out.' That means being torn to shreds—ductwork being removed and walls being disassembled—and no one can be in there."

Groundbreaking for ISC I was February, 2006. The projected cost is \$54.6 million, of which only a portion will be borne by funds from the Commonwealth of Virginia. The development of the Integrated Science Center is an expensive and lengthy process for William and Mary, but a necessary one. The work not only will provide researchers with new state-of-the-art lab facilities, but the design also facilitates initiatives that cross departmental boundaries. A good example of such a program is neuroscience, which has grown in a few years to be one of the most popular undergraduate majors as well as fertile grounds for research.



New construction of ISC Phase I (left) is still very much hard-hat territory. ISC Phase II will be a gutted and refurbished Rogers Hall (right).

"The general philosophy in 25 words or less is that disciplines are not unimportant, but that, increasingly, *inter-disciplinary* is the thing," Manos said. "Bringing chemistry together with psychology in a neuro program and bringing biology together with psychology to look at anatomical and physiological effects—all this interplay and overlap is what the ISC is designed to maximize."

Spring break is the first week of March, 2008, but it won't be much of a break for anyone involved in the construction of the ISC. The work will continue for some time, with the teaching labs from the biology department scheduled to move over to the ISC I from Millington Hall this summer. Moving a chemistry or a biology department is a great deal more complicated than a household move. Mov-

ISC Phase I (new building)

Ground floor	Psychology and biology labs
First floor	Chemistry offices and labs
Second floor	Chemistry offices, labs and large instrument facilities
Third floor	Biology labs and offices

ISC Phase II (Rogers Hall)

First floor	Psychology labs and offices
Second floor	Biology labs, offices and herbarium
Third floor	Greenhouse (proposed)

ing lab instruments such as lasers, nuclear magnetic resonance devices and mass spectrometers is sensitive, specialty work requiring careful coordination. Most of the instruments will need to be recalibrated after relocation to their new labs.

It will take a year for Rogers to be gutted out and refurbished into ISC Phase II. The schedule calls for full occupancy by biology and psychology into ISC II over spring break of 2009.

Even then we may not be done. The College has requested funds for an additional science facility near the same location once ISC II is done. The new facilities will have wide benefit for researchers and also for undergraduates.

"Every student at William and Mary will use the Integrated Science Center," says Dean of Arts and Sciences Carl Strikwerda. **i**

—Joe McClain

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