

Brandeis University

# Catalyst

VOLUME 4 / NUMBER 1

A MAGAZINE DEVOTED TO RESEARCH AT BRANDEIS

## An Eye on Blindspot

Looking at art, romance, history, and mystery in Colonial America.

## FROM BIOLOGICAL GADGETS TO NANOMACHINES

Brandeis scientists dig deeply into the fertile terrain where materials science meets biology.

# Frontlines



Dear Reader,

Welcome to *Catalyst*, the Brandeis University research magazine that chronicles events and scholarship in the sciences, social sciences, and humanities. The stories in this issue reflect the vibrant, wide-ranging intellectual inquiry taking place in Brandeis labs, archives, and classrooms.

In these pages, you'll find a fascinating interview with historian Jane Kamensky, the coauthor of the critically acclaimed novel *Blindspot*. You will learn about a deadly water-borne pathogen that biochemist Liz Hedstrom is researching in an effort to develop an effective treatment. You'll read how Brandeis scientists are collaborating to create active matter, a new category of materials that mimic nature. Throughout the magazine, you'll discover Brandeis scholars and artists engaged at the forefront of their respective fields.

These scholarly pursuits extend beyond the lab and the library to the classroom, exerting a profound impact on our students. In turn, our students conduct bold research of their own. This year we created an innovative mechanism for experiential learning at Brandeis through our new research internship. Under the supervision of a faculty member, students design, execute, and then report on a scholarly or research project.

All of this activity has taken place during an extremely busy year for grant submissions for external funding. The Office of Research Administration processed about 440 proposal submissions, a 12 percent increase over last year and a 63 percent increase over three years ago. Of these, sixty-five proposals totaling \$53 million were generated by the various programs created under President Obama's stimulus plan. We'll be learning about the success of these proposals over the coming months.

I'm sure you will enjoy the endeavors and exploits of our faculty, students, and alumni chronicled in this issue of *Catalyst*.

Sincerely,

**Adam B. Jaffe**  
Fred C. Hecht Professor in Economics  
and Dean of Arts and Sciences

# Catalyst

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# Incubating Inventions

BY IRENE ABRAMS

**B**efore coming to Brandeis two and a half years ago to lead the Office of Technology Licensing (OTL), I spent nearly two decades in the tech transfer trenches at MIT, a pioneer of university-based innovation. MIT enjoys a well-deserved reputation for excelling at university technology licensing, in large part because the office supports faculty interactions with industry on many levels and the university supports these connections through many programs.

Brandeis could benefit greatly from a similar strategy. One of my goals is to build the entrepreneurial ecosystem to

My program has three elements: faculty grants, industry mentoring programs, and networking events. Most of the activities are organized around the grants program, which will enable faculty to focus on inventions from their labs that have commercial potential but need more financial momentum to get to market. The funding will go toward proof-of-concept studies or prototyping. For example, a biology researcher may have discovered an important biological pathway, but without the funds to screen compounds, or to create an animal model of the disease, it will be extremely difficult to move the technology out of the lab and into the market. I envision small initial grants (up to \$50,000), and larger follow-on grants for the most promising projects (up to \$200,000). I anticipate four initial grants and one follow-on grant each year.

How will these grants help build the entrepreneurial ecosystem at Brandeis? First, we'll organize a group of judges from industry to work with my office to help evaluate the grant applications for commercial potential. Then, grantees will be matched with industry volunteers in their field for an industry perspective. Volunteers will help set milestones and provide introductions to potential licensees, entrepreneurs, and industry partners. Finally, we will hold an end-of-year science showcase on campus at which inventors present their projects to a broad group of industry leaders, venture capitalists, entrepreneurs, and alumni and friends.

I call this model an incubator because, beyond supporting faculty already interested in tech transfer, it will nurture researchers who might not yet be thinking of commercializing their discoveries. The incubator will also provide internships for students interested in

technology commercialization and the business of science, and it will be a focal point for the many people at Brandeis interested in the intersection of business and science.

So what will it cost? I anticipate it will require an investment of \$2 million for a five-year run, which would be enough time to reap the benefits of the project.

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However, we could start incubating discoveries with a smaller investment, say \$1 million over the first three years. Funding for other university incubators has come from donors, venture capitalists, royalties on licensing inventions, state and federal grants, and foundations, such as the Kaufmann Foundation.

I believe my incubator will help focus alumni and friends on our innovative science and our inventors, hatching connections that will benefit the university, our scientists, and our students in countless ways.

Want to learn more or become involved? Please contact me at [iabrams@brandeis.edu](mailto:iabrams@brandeis.edu).

*Irene Abrams is the executive director of the Office of Technology Licensing.*



IRENE ABRAMS

support several kinds of faculty-industry relationships. These connections will lead to technology commercialization, licensing, industry-sponsored research and faculty spin-off companies, networking opportunities for students, and, ultimately, royalties to Brandeis. Many universities have built or are building such programs; the most established are the Deshpande Center at MIT and the von Liebig Center at the University of California, San Diego.

# Science Adventures

BY MARJORIE LYON

**W**hat caused the giant sloth and saber-toothed tiger to disappear mysteriously about ten thousand years ago? Where did the ancient Israelites come from? For that matter, what goes into the making of a doctor? These disparate questions all have one thing in common: they are the brainchild of arguably the most influential science television executive around, Paula Apsell '69.

You might think of her as a curious mind with a scientist's approach, tackling difficult, politically charged subjects (creationism in the schools, stem cell research), curious subjects (a plague of rats in a remote part of India every half century), and just classic ones (flying, feathered dinosaurs). What you won't get from her or *NOVA*, the most successful and longest-running science program in the history of television, are tidy answers to the scientific question du jour. Director of the WGBH Science Unit and senior executive producer of *NOVA* for more than two decades, Apsell has worked with her dynamic team to set the gold standard for creating highly informative, educational, and appealing science programming that consistently pushes the envelope in production values and story content. All this is accomplished while winning every major broadcasting award and juggling more than thirty projects at a time.

"If I didn't thrive under pressure, this would not be a very good place to be," she says softly.

An hourlong program that explores a single topic in depth, *NOVA* attracts more than six million viewers per week on average in the United States alone. Each *NOVA* show offers a companion Web site with articles, interviews, personal essays, slide shows, and interactive features. The most-popular video resource in high schools nationwide, *NOVA* develops classroom materials for every new program, having long ago outgrown its initial billing as "science adventures for curious grownups." *NOVA Science Now*, a spin-off produced in the summer, presents stories on current research and scientist profiles.

Whatever the political fortunes of science in society, Apsell's success in popular-science programming is testament to the huge public appetite for high-quality information and first-rate storytelling. Still, Apsell is heartened by what she describes as President Obama's recognition of the value and the importance of science and science education.

"*NOVA* and *NOVA Science Now* create in the popular culture a more fertile environment for science. Public television is an incubator for ideas," says Apsell. "You want a critically thinking, aware population, and those people in turn want to watch programs about public affairs, art and culture, history, and science. And that, of course, is what public television does very well."

Apsell selects *NOVA*'s story lineup and works with the producers to ensure that each subject balances educational and entertainment values.

"First of all, each program needs to offer a revelation, something new," explains Apsell. "It needs to have exciting scientist characters who can tell the story well. Each program must tell a good story, with twists and turns. Finally, each *NOVA* program needs to present good and important science that will help viewers understand that science is not just a set of answers, it's a real process. And, of course, it needs to have strong visuals."



PAULA APSELL

Born Paula Schwartz in Lynn, Massachusetts, Apsell grew up in Marblehead and is married to Sheldon Apsell, PhD'72, whom she met in a physics lab at Brandeis. She credits Brandeis with giving her the skills for intellectual exploration.

"The general atmosphere at Brandeis was one where critical thinking was emphasized. As a science journalist, I try to apply that to science, to really grasp the whole field, delving into the personalities responsible for discoveries and the social consequences of discoveries in the lab."

*Marjorie Lyon is a staff writer for Catalyst.*

# Small Loans, Big Gains

BY CARRIE SIMMONS

In Faiyaz Talukdar's native Bangladesh, almost 40 percent of the population lives on less than one dollar a day and an estimated seven million children work to help their families survive.

"I've always seen some aspect of poverty, whether in my own family, in my friends' families, or in the city around me," says Talukdar '09, a native of the capital city of Dhaka.

The economics major has focused his studies and summers on poverty issues in his home country. In summer 2006, he returned to Bangladesh to research programs implementing the microfinance model of Grameen Bank, which originated there. The bank gives very small loans—initially \$10 to \$20—to enable those who don't qualify for conventional bank loans to start small businesses.

Last year, Talukdar won a Schiff Fellowship to research the impact of microfinance on households in Bangladesh. Numerous studies have shown the consistent success rates of microloan repayment. Talukdar is taking a unique approach, examining how the income levels of families in thirty-two rural villages have grown over a ten-year period.

Using household survey data collected by institutions like the World Bank, Talukdar has found that families who invested loan monies in resources like cows, chickens, and seeds for crops have seen a 15 percent to 20 percent increase in income.

"A 15 percent increase in income can mean a lot to a family," says Talukdar, who came to Brandeis through the Wien International Scholarship Program. "It could mean that women don't need their children to work to help the family survive, and they can send them to school. It could mean that they have access to safer drinking water."

Last summer, Talukdar also conducted field research in Bangladesh, visiting villages and interviewing loan officers and loan recipients to understand better how the system works.

"His research may help to improve the effectiveness of microfinance by identifying families and household expenditure categories that have a higher potential to lead to long-term results and hence poverty reduction," says Talukdar's adviser, Can Erbil, assistant professor of economics.

Talukdar also visited a slum in Dhaka where the Shakti Foundation, an organization dedicated to empowering poor women by creating strong economic and social resources, has provided microcredit for the last five years. Women are using the loans to buy sewing machines to make clothes and purchase scissors to cut hair in a small area of their tin-roofed shacks. One family Talukdar visited bought a black and white television and an old Atari game console and charged children a nominal fee to play.

"It's just incredible to go to a place like that," says Talukdar. "Amidst skyscrapers and nice homes, there is a

small one-kilometer piece of land where people are living in absolute squalor."

Talukdar is now pursuing a doctoral degree at Georgetown University but ultimately wants to return to Bangladesh and work for an international development organization.

Talukdar is also working from the United States to help the cause. He led a student organization called the Oxfam Collegiate Click Drive, a national fundraising initiative started at Brandeis by Ben Brandzel '03. Over the last eight years, the initiative has raised more than \$100,000 through a click-to-donate Web site to support microcredit-based, anti-poverty efforts around the world.

"Once you can get the world to work together, you will realize that, whether it is one cent at a time or a million dollars, everybody can make a difference," says Talukdar.

*Carrie Simmons is a staff writer for Catalyst.*



FAIYAZ TALUKDAR

# Qur'an Crusader

BY MARSHA MACEACHERN

There has arguably never been a better time to unlock the classical text of the Qur'an in order to open the door to modern Islam. Often obscure in meaning, highly stylized, unpunctuated, and full of myriad interpretations, the Qur'an remains a closed book to many Westerners.

But classical Islam scholar Joseph Lumbard is on a crusade to change that. There are probably few people better qualified to take on such a project. Several years ago, Lumbard became the first interfaith adviser to Jordan's King Abdullah II bin Al Hussein, spending eighteen months counseling royalty on the trickier issues and theological pitfalls regarding Islam, Judaism, and Christianity. Moreover, Lumbard converted to Islam himself while an undergraduate at George Washington University and has studied with classically trained Muslim scholars in Morocco, Yemen, Egypt, Jordan, and Iran.

"This project has redefined my career," says Lumbard, an assistant professor of classical Islam in the Near Eastern and Judaic Studies department. "I've really seen how desperately this is needed, not just for Islamic studies, not just for Quranic studies, but for religious studies and even for studies of the history of the Islamic world."

*The HarperCollins Study Qur'an*, for which Lumbard will serve as one of four editors, will constitute the first study guide to the Islamic text produced in western academia. In addition to an entirely new translation, it will include some seventeen essays on issues connected to the study of the Qur'an, as well as a commentary drawn from influential classical sources to explain and contextualize significant and difficult verses and passages.

The goal of this multiyear project is to create a tool to help people in the

modern world understand the classical text of the Qur'an more effectively. According to Lumbard, Quranic study has been plagued by a lack of well-trained scholars. The project's timing, he says, couldn't be better.

"There's increased interest in all things Islamic, and, by extension, all things Quranic. There has always been a market for this, but now I think it has increased exponentially," Lumbard says. "Every religious studies professor, whether in Buddhist studies, Hindu studies, or Islamic studies, still has a study Bible on the shelf. Our book will serve the same purpose for people who are reading it in different fields—they'll have a study Qur'an on the shelf."

Like all crusades, this one is challenging. In fact, Lumbard says, there is a degree of obsession inherent in the work. He started the project in 2006, and the first manuscript will be complete in 2010. In addition to teaching courses on the Qur'an, Sufism, and classical Islam, Lumbard translates verses and writes accompanying commentary daily.

"Translating the Qur'an is very difficult because the relationship of modern Arabic to classical Arabic is like the relationship of modern English to something between Chaucerian and Shakespearean English. If you were to render the Qur'an in modern English, it would almost be a disservice to the text, yet, at the same time, the reader is going to sit there and say 'What is this?' Even in English, the reader will need a translation of the translation. So we're trying to do something, shall we say, that's closer to the style of the King James Bible."

Lumbard and his colleagues examine other translations to see how previous authors have worked with the text. In addition, they pour through a list of Quranic commentaries to bolster their grasp of the subtle and complex Arabic grammar. Citing

an example, Lumbard says the way a word within a sentence is "voweled" could entail several different readings, and, as the original text was unvoweled, some verses have several alternate readings. Lack of periods and commas in the Qur'an adds another obstacle. To determine where to begin and end sentences within the translation, the editors consult dozens of classical commentaries by earlier scholars.



JOSEPH LUMBARD

Preparing the study guide, Lumbard says, is part of a larger mission to help educate people and clear up misinformation and disinformation surrounding Islam throughout the world.

"People have a general idea," he says, "of how the Bible fits into Christian life or Jewish life. But they have no idea how the Qur'an fits into Muslim life. My goal is to help restore some accuracy to the relationship between this classical text and modern Islam."

*Marsha MacEachern is a staff writer for Catalyst.*

# FROM BIOLOGICAL GADGETS TO NANOMACHINES

**Brandeis scientists dig deeply into the fertile terrain where materials science meets biology.** \ \ By Laura Gardner

It's a common refrain among scientists that nature has taken her sweet time engineering some of her most essential and elegant creations: DNA, flagella, the cytoskeletal protein actin, and other cellular components with important jobs. "Billions of years," goes the usual lament. Researchers, however, have no such luxury of time to figure out how nature has made the cellular universe run so smoothly, with most cellular machines lining up for duty in order, on time, and in the right shape.

A significant new research project at Brandeis is aimed squarely at taking a page out of nature's bioengineering book. The goal is to create active nanomaterials that mimic nature's cellular machines by moving in one direction or assembling in a predictable, uniform fashion, the way proteins do, to build cytoskeletal structures. Digging deeply into the fertile terrain where biology and materials science meet, the highly conceptual project will try to produce a new category of materials known as "active matter." Distinct from normal inert materials, such as plastics and steel, active matter can move on its own and displays properties previously observed only in living materials, such as bacteria and other motile cells.

Called the Materials Research Science and Engineering Center (MRSEC), the project involves more than

a dozen researchers spanning biology, biochemistry, chemistry, and physics in a collaborative and interdisciplinary endeavor. With \$7.8 million in funding from the National Science Foundation over six years, and with a possibility of renewal, the project is the jewel in the crown of biological physics at Brandeis. It also provides a multidisciplinary education to meet the needs of modern biological research and the biomaterials industry, and, through the Science Posse program, targets inner-city students in science.

"In general, we want to understand how biological cellular components are built out of materials, to learn how to engineer functional bio-mimetic nanosystems for important applications, such as biosensors and solar cells," says physicist Bob Meyer, principal investigator on the project.

The center is taking a two-pronged strategy. In a bottom-up approach, the researchers are exploring how the addition of typical biological constraints, such as crowding and confinement, affect materials and their properties on the molecular level. For example, what happens to DNA when it is confined, or squished, into the tight quarters of a cell, where it cannot move around freely? Answers to basic questions like this will help the MRSEC team identify emergent properties, such as polymer segregation, that may be useful in developing new nanomaterials.

In a complementary top-down approach, the researchers are studying functioning cellular components, such as eukaryotic flagella or cilia. These are the specialized cellular subunits or organelles that miraculously move in synchronization to perform their jobs, like keeping the lungs clear of pollutants. Biologist Dany Nicastro is using electron microscopy to analyze the organization of the molecular motors in flagella that keep them beating in perfect harmony. The goal is to elucidate in detail the mechanism behind the mechanical motions of the flagella, a nifty little "biological gadget" whose malfunction is at the heart of many health conditions, including infertility.

"Flagella are living machines whose structure we can genetically modify to



see how their mechanical properties and function are affected," explains Nicastro.

The researchers are essentially reverse-engineering the function and structure of these biological gadgets to understand the laws governing self-assembly. The thinking is that if they can understand how these cellular machines put themselves together,

when it awarded fourteen MRSEC grants last fall—only five of them new—in a fierce national competition. In the current lineup of MRSECs, Brandeis, which won on its first try, is the smallest institution by far (about equal to CalTech), and sits in the company of Harvard, MIT, and Princeton.

As physicist Seth Fraden, a microfluidics expert responsible for reaching

more efficient, cheaper solar cells that don't require silicon.

"One of our goals is to start with simple building blocks such as rod-like particles and learn the rules by which these particles assemble into complicated structures that might be of use," explains Dogic.

In constructing the first carefully controllable example of active matter, the center is studying actin filaments, which propel themselves through space by getting longer at one end and shorter at the other in a process called treadmilling polymerization. One of their jobs is to provide cell motility.

"How do these moving filaments feel the presence of their neighbors in a large, organized array? How do they behave collectively? Are there rules? It's not really clear how these organized systems of self-propelled filaments will behave, but we get hints of some possibilities from observing flocks of birds and schools of fish," says Meyer. "Understanding the rules of behavior of this new kind of matter may help us understand processes like cell motility."

"More than just a large grant, this puts Brandeis on the world map as one of the leaders in the exciting endeavor of combining physics and chemistry with the life sciences," Fraden says.

Laura Gardner is the editor of Catalyst.

**"WHETHER IT'S ALIVE AND CRAWLING, OR DEAD AND INANIMATE, MATTER HAS TO FOLLOW THE LAWS OF PHYSICS. WE'RE LOOKING AT THE PRINCIPLES THAT GOVERN BIOLOGY TO CREATE NEW CATEGORIES OF MATERIALS."**

already a great accomplishment, they may be able to change their function to create new nanomachines.

"Can we take these molecules and put them into a biological gadget that later can be an applicator for medicine?" asks Nicastro.

"This grant is confirmation that we're one of the best places in the world to do this kind of science," says Meyer.

Colleagues say Meyer's pioneering work in liquid crystals in the 1970s helped create the kind of interdisciplinary research environment the NSF lauded

out to industry, says, "Whether it's alive and crawling, or dead and inanimate, matter has to follow the laws of physics. We're looking at the principles that govern biology to create new categories of materials."

Take rod-like viruses, similar in shape to a billiard cue or pencil, albeit on a microscopic scale. Physicist Zvonimir Dogic studies how these particles assemble into complex membranes, twisted filaments, and even more complex objects. The shapes of these particles may be of use in developing

# An Eye on Blindspot

Part history lesson, part romantic romp, a new Brandeis book brings pre-Revolutionary Boston to life.

Although she majored in history at Yale, Jane Kamensky, chair of the Brandeis history department, was not always steeped in the past. A one-time flutist in the precollege division of New York's Juilliard School of Music, Kamensky began her postbaccalaureate career as an investment banker on Wall Street. Unhappy with the field, she took a typing job in the development office at Columbia University, where she used her free-tuition benefit to continue her education. There, she discovered her authentic passion and future career as a specialist in American history before 1830.

A member of the Brandeis faculty since 1993, Kamensky recently pooled her creative efforts with those of longtime friend Jill Lepore, chair of Harvard University's history and literature program, to produce a historical novel. Titled *Blindspot*, the book combines romance, whimsy, politics, art, murder mystery, and sex to spin an endearing story set against a richly textured pre-Revolutionary Boston. Written in dual first person narratives, it has two protagonists. One, a distinguished portrait painter named Stewart "Jamie" Jameson, has fled from creditors in his native Scotland to eighteenth-century Boston. The other, a young "fallen woman" of Boston society named Fanny Easton, has taken on the identity of a working-class lad in the hope of supporting herself respectably while learning the painterly arts from Jameson. Since it was issued by the publisher Spiegel & Grau last December, *Blindspot* has garnered exuberant reviews in a range of publications.

Here, Kamensky talks with *Catalyst* writer Theresa Pease about her maiden work of fiction.

**So many people grow up wanting to be novelists, find their way into other fields, and eventually come full-circle to write fiction. What came first in your case: the writer or the historian?** Historians are writers, but in my case the historian came well before the fiction writer. This is my fourth book, and the first three were works of scholarly nonfiction. *Governing the Tongue*, a monograph that came out of my 1993 dissertation, explored what spoken language meant in New England from about 1620

to 1692. During that period, some one hundred different kinds of speech crimes constituted one of the largest pieces of business before colonial courts. I wanted to figure out what, in their society and culture, made the breaching of norms around the spoken word so threatening that they were adjudicated at the highest level of jurisprudence.

Another book, *The Exchange Artist*, was published in January 2008 and has just come out in paperback. It's a history of the first bank collapse in the United States, which took place in Boston two hundred years ago. In part it's a snapshot of a particular economic moment, and in part a biography of Andrew Dexter Jr., one of the founding fathers of American speculation.

**What made you decide to write a novel?**

My coauthor, Jill Lepore, and I had both worked in graduate school at Yale with American historian John Demos, a former Brandeis professor and a pioneer in what scholars like to call the new narrative history. To celebrate his seventieth birthday in May 2007, the two of us put together a conference. His former students contributed a range of things, including research papers and poetry. Jill and I decided to do an experiment in writing.

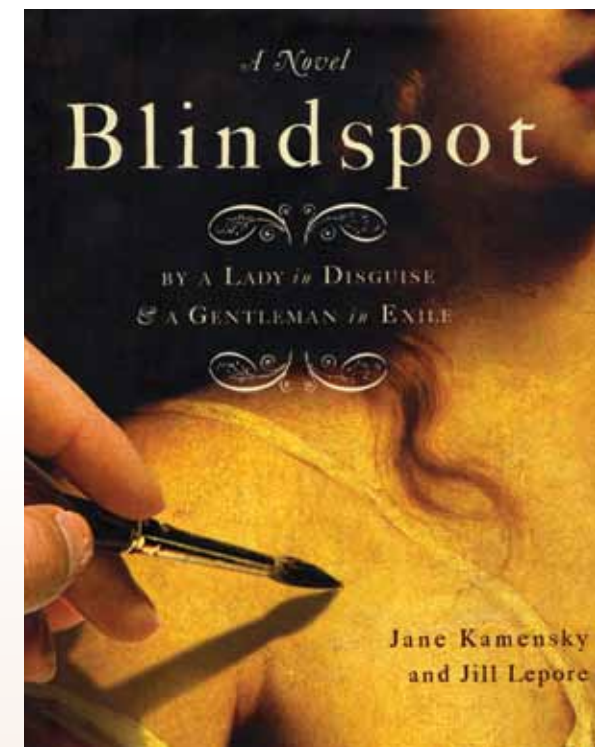
The idea was to present character sketches written as first-person narratives. We were planning to produce about twenty minutes worth of text—a few pages each. But we found, as many novelists do, that the story just ran away with us.

**So you and your coauthor created your characters, and your characters created the plot?**

All we knew about the characters when we began was that they were artists, and that one was from Boston, looking east toward London, and the other came from Edinburgh, looking west. We made them artists for a variety of reasons, one of which was that I was doing a scholarly project on eighteenth-century art, particularly on the Rhode Island-born artist Gilbert Stuart. We knew artists are passionate observers, and, since we wanted the story to render early America in vivid colors, we thought telling it

through the eyes of painters would be useful; the careful visual scrutiny that artists apply to their world would help the plot along.

There were also things we didn't know when we started. We didn't know it was a love story. We didn't know how the two characters would come together, and we didn't know how their twin blind spots would be resolved by the end of the story.



**Your postlude hints of parallels between your characters and some historical figures. Are any of the principals based in reality?**

Both Fanny and Jamie are loosely based on eighteenth-century originals, Fanny on the Boston-born artist John Singleton Copley—who followed his ambitions to London to become a court painter—and Jamie on Gilbert Stuart. Artist readers and art-historian readers have noticed resemblances. There are distant resemblances—they are distorted and cross-dressed and amalgamated in many different ways. But the similarities are visible in their careers and in the painted works that we give them.

The third main character, Ignatius Alexander, a black man of African birth

and high English education, is closely based on several actual eighteenth-century models. He is the character who most surprises non-historian readers, because our stereotypes of the lives of enslaved people don't tend to admit their cosmopolitanism.

**Talking about the painted works of your principal characters seems to give you a dramatic framework for telling parts of the story. I felt I was reading about actual paintings.**

We spent a lot of time looking at eighteenth-century art, much of it in the

**Much is made in the book of Jameson's painting of a serving boy; is that based on anything real?**

Yes, it's based on two paintings, both by John Singleton Copley. *Boy with a Squirrel*, which he sent to London in the 1760s as his calling card to open the doors of the London art world to him, has a schoolgirl sampler quality about it, showing that he can paint glass, a tabletop, a golden chain, animal fur, and other textures. The other painting it draws on is the one we all know of Paul Revere holding his silver teapot; like *The Serving Boy*, it

Jill has written expertly about politics and urban slavery in colonial America, so she took charge of those aspects of the story. I took ownership of the art pass, the urban history pass, and the colonial speech pass, since those were my bailiwicks.

**Is it safe to say that all the historical background is meticulously researched and absolutely accurate?**

No. It's meticulously researched in the sense that we have worked, between us, for nearly half a century studying this period. But the truth claims of the novel are to the characters; there are historical events that we moved and compressed to follow the logic of the story. For example, British regulars are on the ground in the summer of 1764 in *Blindspot*. In history, British troops didn't get to Boston until 1768. We set the novel in 1764 because we wanted the Revolution to loom, but not to eclipse our characters' everyday lives.

**How about the documents and writings that dot the book: newspaper postings, flyers, and the like? Are those drawn from actual historical documents?**

Yes and no. Most of the documents we injected into the novel as elements of pastiche are closely adapted from real colonial writings, but they don't necessarily come from where we said they come from. For instance, some things we put in the mouth of our Boston printer, Benjamin Edes, actually originated with Benjamin Franklin in the *Pennsylvania Gazette*.

**What of the many jokes, puzzles, and riddles you incorporate?**

Those are all authentic. One thing we tend to forget, partly because of our reverence for the country's founders, is that the eighteenth century was a bawdy period in which our current sense of propriety was not operative. Our images of Franklin and Adams—the people we know best because they are well-documented—come to us Victorianized, but in fact their papers are full of the kinds of jokes and innuendo that *Blindspot* makes much of. They sound vulgar to us, but their contemporaries didn't police the line between polite

culture and low culture in the same way we do today.

There was, for example, a vibrant gentlemen's club life in the colonies that imitated the club life of London, and their minutes survive in memoirs and picaresques and manuscripts meant to be circulated among an audience of like-minded gentlemen. They are hilarious! So the ribaldry and the drinking and the pipe smoking and the oath swearing and the mock debating are all there in the documents, if you know where to look.

century New England were not primarily concerned with prosecuting moral crimes.

**While we're on that subject, why the very specific descriptions of sex acts?**

So, have you ever read *Fanny Hill*? The English eighteenth-century author John Cleland wrote *Fanny Hill*, otherwise known as *Memoirs of a Woman of Pleasure*, and it was one of the most popular fiction works of its time. Our descriptions of parts of the body and our sexual vocabulary derive heavily from *Fanny Hill*. In our Web site for

for women of the period; for example, they had to learn anatomy by drawing sculpture, since they could not work from nude models in live drawing classes. And because it was difficult for female artists to obtain commissions, they often were limited to painting flowers, creating shell mosaics, and doing needlework. Still, there were women in the 1760s saying, "No, that's insufficient."

**Many of us grow up knowing about past events largely through the lens of historical fiction. Our most vivid impressions of the Revolution we get first from *Johnny Tremain* or *April Morning*, and what we first know about the Civil War may derive from *Red Badge of Courage* or *Gone with the Wind*. Is there a precedent for the great historical novels being written by history scholars?**

I don't know of any. The novels of the Revolution tend to stink. I think because the period of the Revolution is a founding national mythology, it's very hard to write about it with a proper balance between large events and daily life. Johnny Tremain, I think, is a perfect example of the two-dimensional characters who populate much fiction of the Revolution.

A lot of people, though, have their sense of the past shaped not so much by novels, but by biographies. Independent biographers and scholars have way outstripped what academic historians have been doing in terms of bringing history alive to a general audience. There's a reason millions of readers have flocked to David McCullough's *John Adams* while the history of ordinary women and men is mostly read by academics.

**So you are treading new literary ground here.**

Well, new ground for us. One thing that was important to Jill and me was that we didn't want to fudge the line between history and fiction. We wanted to jump it and do something totally on the other side. What we do in our work as historians is establish facts to the best of our abilities. In our work as novelists, we wanted to convey historical truths of this period, but we were primarily

*All we knew about the characters when we began was that they were artists.*

**One thing that perplexed me as a reader was the attitude toward homosexuality, bisexuality, and pedophilia. One character displays sexual ambiguity of all these sorts, and some observers threaten to charge him with "buggery," while others seem to take his inclinations totally in stride.** One lively field in scholarship is the history of sexuality and the body. As we explore attitudes and practices of ordinary people toward their erotic and romantic lives, we find that the rake and the libertine are well-established eighteenth-century types, permissive and public about their affections. The masquerade, as a cultural device where high-born people pass as low and vice-versa, and where there are all kinds of play around the inversion of gender roles and racial types, has been well documented. What's more, the legal age of consent in Massachusetts started at ten in the 1630s, and it went as low as three at one point in the seventeenth century. We know that, particularly in shipboard cultures, there was pervasive same-sex eroticism. That doesn't mean sexual license was tolerated in the law, but laws against sexual behaviors were seldom enforced. People in eighteenth-

the book, you can see the specific phrases borrowed from *Fanny Hill* and other texts.

It's important for us as modern people to remember that people in the past had sex. They had sex even during the American Revolution. That's how they got all those children. And, yes, they wrote this stuff down. They wrote it in novels, and, while they didn't write about it much in correspondence, there are erotic diaries that have survived, and they are detailed and frank. Men's, not women's, as far as I know.

**Another surprising feature of the book is its feminist overlay. Would it really be credible, from an eighteenth-century perspective, for a woman to aspire to become a portrait artist?**

Fanny's ambitions are uncomfortable for her as a woman, but they are not unprecedented. When London's Royal Academy was founded in 1768, it had two female members. Sir Joshua Reynolds's sister, Fanny Reynolds, was a real portrait artist who had much the same talent as her brother, and Fanny Easton in our novel is partly based on her. Without question, becoming an artist was complicated



JANE KAMENSKY AND JILL LEPORE

Copley Room at the Museum of Fine Arts in Boston. Then, in fall 2007, I was in London doing research for my Gilbert Stuart book. Jill came over and we sat in the National Portrait Gallery among the paintings by Godfrey Kneller, England's leading portrait artist during colonial times, of Kit-Cat Club members; those pictures are discussed in the novel. Our work as historians sometimes uses visual materials like portraits, but this experience was different, because we were trying to imagine these objects in the course of their being made.

features an honest embrace of artisan-ship as great art.

**Can the reader assume each of you was responsible for one of the two first-person narratives?**

For the most part, I wrote the voice of Fanny, and Jill created Jamie's narrative. However, although we bring a lot of shared expertise to the project, we also bring much complementary knowledge, and each of us was responsible for insuring the truth connected with her particular area of specialization.

dedicated to following the truths of these characters.

We're both back comfortably in our historian boots now, but there may be some time in the future when we jump that line again and do another book like *Blindspot*.

**Are you formulating ideas for a second novel?**

I don't think there's anything specific brewing, although we got a wonderful letter from a reader who said, "You have to write the next volume, because I want to know what happened to Fanny!" I do have a strong feeling Jill and I will collaborate again—we co-created the successful online early American history magazine *Common-Place*, and we both enjoyed the companionability of writing the novel together—but I'm not sure we'll jump back into Fanny and Jamie's particular story.

For more on Kamensky's book, see [www.blindspotthenovel.com](http://www.blindspotthenovel.com).



## Another View of the Past

Jane Kamensky's charming romance is not the only hot-selling volume to come out of Brandeis's history department in recent months. David Hackett Fischer, author of nine previous books and recipient of the 2005 Pulitzer Prize for his work *Washington's Crossing*, has likewise been riveting readers with his sweeping biography *Champlain's Dream*.

In the October 2008 release, Fischer sheds light on French explorer Samuel de Champlain (1567–1635). Rumored to be the illegitimate son of French King Henri IV, Champlain made his mark as a spy, courtier, diplomat, warrior, master mariner, ethnologist, mapmaker, and founder and governor of New France—today's Quebec. While previous accounts have portrayed him as an ethnocentric European who dealt harshly with the Native Americans he encountered in his explorations, Champlain emerges in Fischer's telling as a visionary leader who respected, admired, and enjoyed the indigenous peoples he encountered, and who nurtured a humanitarian dream for a peaceful New World society.

In reviewing the book, *New York Times* critic Max Boot mused, "Is there a finer student of American history writing today than David Hackett Fischer? If so, I don't know who it would be."

—Theresa Pease

# SLEEPER CELLS

Liz Hedstrom's research targets a waterborne pathogen and potential biowarfare agent. \\\ By Katherine M. Parisky

Discovered in 1976, cryptosporidium lurks worldwide in water, contaminating swimming pools, water parks, and drinking water supplies. Although it has even been featured on the comedy show *The Colbert Report*, it is no laughing matter—this microscopic pathogen is a leading cause of diarrhea and malnutrition and the most common infection in immunocompromised people such as AIDS patients. Cryptosporidium invades the small intestine, where it opens fire, typically causing severe gastrointestinal distress and even death in people with weakened immune systems.

In 1993, in the largest waterborne disease outbreak in U.S. history, this nasty protozoan parasite infiltrated Milwaukee's municipal water supply, killing more than 100 people and sickening another 403,000. Cryptosporidium is a hardy foe whose oocysts—products of a spore-like phase—remain stable outside a host for long periods and are resistant to conventional water treatment such as chlorine disinfection.

Cryptosporidium is also a possible biowarfare agent with the potential to cause severe economic damage. "All you need is a cow and a centrifuge to harvest enough oocysts to infect a small city," says biochemist Liz Hedstrom. Roughly 20 percent of calves are infected by cryptosporidium oocysts, which are found in their feces.

For the last half decade, Hedstrom has been working in collaboration with Boris Striepen, a parasitologist at the University of Georgia, to develop drugs to treat cryptosporidiosis. Currently approved drugs are ineffective, and there is no vaccine. Her research has generated two patent filings so far, with additional patents soon to follow, all with an eye to bringing to market new drugs to conquer cryptosporidium.

Hedstrom and her collaborators made a critical breakthrough in eroding cryptosporidium defenses when they identified IMPDH, a key enzyme involved in the biosynthesis of RNA and DNA, as a potential drug target. Her research has shown that IMPDH inhibitors block the parasite from proliferating *in vitro*. Importantly, the cryptosporidium IMPDH has very different properties from those of the human enzyme

counterpart. The next step was to identify compounds that blocked the action of the cryptosporidium IMPDH, but spared human IMPDH.

Leading a large-scale screen of a commercial library containing 129,000 compounds at the New England Regional Center of Excellence for Biodefense and Emerging Infectious Diseases, in Cambridge, Massachusetts, Hedstrom discovered more than fifty compounds that specifically inhibit the parasite enzyme. Several of these compounds display antiparasitic activity.

"We have some nice compounds, which we are now trying to improve to make them more potent, more bioavailable, and more metabolically stable. We're a long way from an actual drug at this point, but I like our chances," says Hedstrom.

"Liz Hedstrom has gone beyond the basic biochemistry and has screened compounds that affect cryptosporidium, and we have patent claims on these compounds," says Irene Abrams, executive director of Brandeis's Office of Technology Licensing. "I am very optimistic that the compounds may become a lead candidate for a drug, and we are currently seeking commercial partners to take these compounds in-house and continue their development."

"We are looking forward to working with companies in developing novel drugs to treat cryptosporidiosis and prevent transmission. The team's goal now," Hedstrom explains, "is to achieve proof of concept in an animal model of cryptosporidium infection."

Katherine M. Parisky is a postdoctoral student in biology.



# Seeing the

In artist Susan Lichtman's paintings, people seem to embody their entire history of experience, and light captures all the shifting moods of the day.

\\ By Ingrid Schorr

# Light

The first thing you notice about painter Susan Lichtman is her glasses: black frames with asymmetrical curlicues at the temples, in elegant contrast to her warm brown eyes and moon-white hair. Their razor thinness mirrors Lichtman's acute way of seeing. She constantly frames, reframes, and zooms in to find the detail, the color, and the composition that will transform an ordinary domestic scene into a vibrant canvas full of possibility.

Lichtman, an associate professor of fine arts at Brandeis since 1980 and currently director of the studio art program, is an accomplished painter whose subjects range from Russian literature and politics to real estate and the economy.

Three decades into an artistic career honored early on by the American Academy and Institute of Arts and Letters, as well as by the Louis Comfort Tiffany Foundation, Lichtman is still drawn to the mystery in painting. She begins by making large drawings in ink, washing large areas of paper and leaving significant areas untouched. These initial ideas become more potent interpretations of her subject when she moves to

canvas and employs an intentionally narrow range of colors, "a kind of envelope into which everything is placed," she explained in a recent interview with *American Artist* magazine.

#### The story is in the details

"There's always the question of whether the painting is finished," says Lichtman. "You set the stage and the ideas, and shapes and relationships between them are specific, and that's where you can start manipulating. But something is lost every time you move on. You can't save the rough draft."

But by using detail deftly—not for the sake of being intricate or miniature but rather to illuminate the story that the subject tells—she creates a narrative on the canvas as it might exist over time.

"A problem with a certain kind of realistic painting is that everything is in focus, but that's not the way we see the world. A cinematographer can dwell, move, skip over an image," she continues. "That's how paintings read through time. I want to make a painting that can be experienced the way you can behold a room over time."

This is exactly what occurs in *Front Door*, an eight-inch by ten-inch panel implausibly crowded with a tilted lamp, a female figure, and a door open to a splash of outdoor pink. For all its crowdedness, the interior's lambent greens and blues give the impression of sudden silence, of an emotionally resonant room somehow at odds with the world.

"I was laid up last summer with a broken foot," explains Lichtman, "and this is what I saw from my couch. People would come by and pick up my kids and return them later in the day."

#### Information beneath the surface

"While the surface of Lichtman's work is clearly made of paint, the underlying structure contains a world of information," says Mark Brosseau, an artist and curator in Philadelphia. "This is what makes the pieces so provocative—under that surface the figures contain their entire history of experience, and the light seems to embody all the shifting moods of that day. Her use of color is so specific that she is able to communicate all of this with just a single image."

Coming from a family of scientists, Lichtman appreciates the rigor demanded of perceptual painting and perspective drawing. In this regard, she echoes the English Romantic painter John Constable, who believed landscape painting could be considered a branch of the natural sciences. She earned an undergraduate degree in studio art at Brown University, then an MFA at Yale's renowned School of Art, where she worked with a variety of painters, including the realist William Bailey; Gretna Campbell, known for her plein-air landscapes; and Andrew Forge, who broke from figurative painting in the 1950s in favor of abstraction.

#### Embracing the everyday moment

Just as in the study of music or theater, or even science or history, every generation must sift through accumulated styles and trends and ways of thinking. Today's art student faces the unique environment of postmodernism, which promotes new technology and new ideas of ownership and appropriation. While art critics declare the death of painting every few years, enrollment in fundamental fine arts courses at Brandeis continues to grow even as the university adds courses in digital design and video editing.

"Students are not troubled by the 'death' of painting," says Lichtman. "They understand how computers and cameras are no substitute for the hand." Amid the onslaught of new technologies and ways of communicating through art, Lichtman says, "the everyday moment is being embraced for its poetic potential and even its political implications. I'm seeing young painters savor the details of their apartments, cafés, their clothing, the postures of their friends—all as fodder for visual compositions. Is it because of Frida Kahlo—or Facebook and YouTube?"

Or is it because these students are learning from a painter who pulls form and color from the atmosphere? From the air and the light in her Rehoboth, Massachusetts, studio, Lichtman has found a visual language that carries the weight of the mandate she gives her students: to be honest, complex, and persuasive.

*Ingrid Schorr is program administrator for the Office of the Arts.*



*Househunters*  
22 x 30 in., ink on paper

Fashion advertisements are source material for Lichtman, who interprets the figures quickly in ink, then reinterprets them in paint, in an imagined environment that incorporates time and sensation.

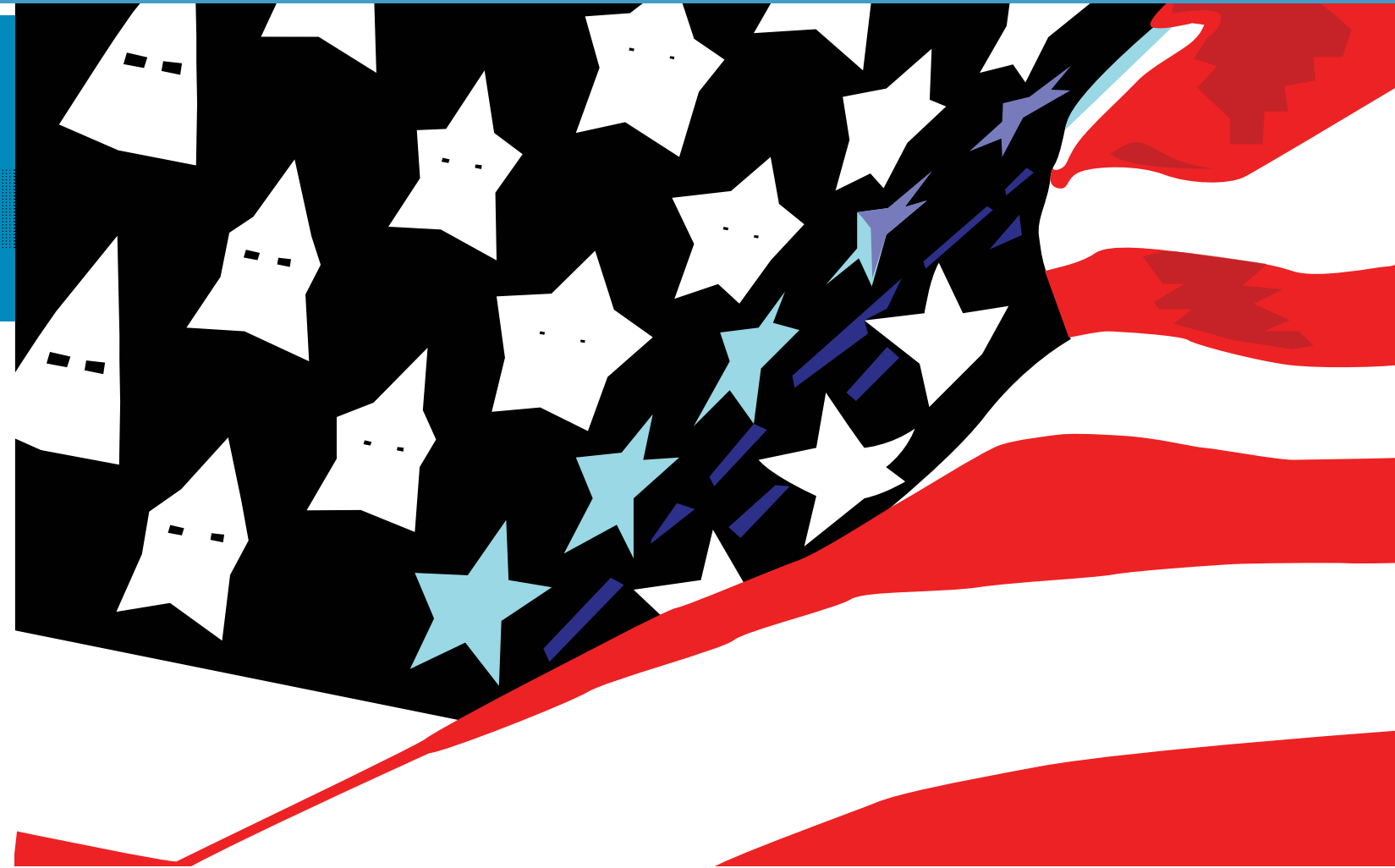


*Night Mother*  
2009  
12 x 12 in., gouache on panel

*I want to make a painting that can be experienced the way you can behold a room over time. —Susan Lichtman*

# Red State, Blue State

BY DAVID CUNNINGHAM



ROBERT BRINKERHOFF

Like many historically minded social scientists, I spend much of my time thinking about continuity rather than change. In part, this is because much of the fabric of our lives takes shape through the power of tradition and our collective engagement with the past. It is rare to witness events that mark a seemingly clean break from past routines and signal fresh possibilities for moving forward.

So it is with a profound sense of wonder that I have observed the political landscape over the past year. My ongoing research focuses on civil rights and racial

Alabama and Mississippi may have received more press for their militant resistance to changes wrought by the civil rights movement, but throughout the 1960s it was North Carolina that was truly—as the *Saturday Evening Post* put it—“Klansville, U.S.A.” The fact that, little more than a generation later, its voters helped to elect our nation’s first African-American president is nothing less than a startling political about-face.

On any given night throughout the mid-1960s, the KKK hosted a rally somewhere in North Carolina. Held generally in cow pastures or on local air

so large that more than two thousand would-be attendees were turned away after the venue’s 3,067 seats were filled. By that point, membership in the Carolina Klan was an estimated 12,000, surpassing the total in all other southern states combined.

Why did the KKK have such broad appeal in North Carolina, a state widely considered the most progressive in the South? In large part, Klan recruitment was aided by the very fact that the state’s politicians maintained a distinctly moderate course. By avoiding the “massive resistance” techniques that resulted in showdowns with federal officials in Mississippi and other southern states, North Carolina politicians successfully promoted the state as a welcoming

“The night always ended the same way, with the ritualized burning of a cross that reached as far as seventy feet into the sky.”

conflict, and I consequently spent much time trying to absorb the significance of Barack Obama’s triumphant presidential campaign. While much of our attention has shifted to the ways in which the Obama administration might best deal with ongoing financial and political crises, it remains important to consider enduring lessons from the 2008 elections.

Among the many historic precedents set by the Obama campaign, perhaps the most remarkable was its victory in North Carolina. With the exception of native southerner Jimmy Carter’s win in 1976, no Democratic presidential candidate had triumphed in the state since 1964. More tellingly, during the civil rights period most of the state’s large political rallies were organized not by Republicans or Democrats, but instead by the Ku Klux Klan.

strips, these events typically had the feel of a skewed county fair. Arriving cars were greeted by robed Klansmen selling small rebel flags and handing out free literature. Spectators could buy food at a concession stand. Various pieces of Klan paraphernalia were for sale, and often other items—TVs, toasters, motor oil, fertilizer, even used cars—were raffled off. A five-piece string band would play its repertoire of segregationist tunes to warm up the crowd for the slate of Klan speakers. The night always ended the same way, with the ritualized burning of a cross that reached as far as seventy feet into the sky.

These events frequently attracted upward of a thousand spectators. In 1966, a large-scale KKK rally at Raleigh’s Memorial Auditorium drew a crowd



DAVID CUNNINGHAM

destination for northern industry and other business interests.

But this willingness to abide by federal civil rights mandates had an unintended, though significant, consequence. Unlike Mississippi, where widely ranging white-controlled institutions were aligned in their efforts to maintain segregation, the Klan gained its broad appeal in North Carolina from the very fact that respectable government and civic organizations chose law and order over defiant support of white supremacy. The result was that many of the state’s white citizens—especially those who perceived that integration would result in increased competition for jobs and other resources—rallied behind the only organized segregationist game in town: the Ku Klux Klan.

But while the progressive course charted by North Carolina officials gave rise to a strong Klan-led backlash during

the 1960s, it also provided the foundation for the changes that culminated in last year’s election results. While the KKK’s rise was matched by its equally rapid fall in the early 1970s, consistent job growth in North Carolina has helped to spur tens of thousands of new residents to migrate to the state. Resulting economic diversification has reduced the racial tensions inscribed historically in industries like tobacco, whose decline is symbolized by a new law banning smoking in restaurants and bars across the state. And drastically increased political participation by African-American (and, more recently, Latino) voters, enabled in large part by civil rights activists’ successful efforts to win passage of the Voting Rights Act in 1965, helped to create a large Democratic-leaning bloc.

Such shifts, of course, have been in process for some time, but they were not enough to swing North Carolina toward

Al Gore in 2000 or John Kerry in 2004. But they did provide a foundation for Obama’s success last November. His well-funded and strategically savvy campaign, combined with his exceptionally strong appeal in communities of color, contributed to his razor-thin margin of victory in the state.

When Lyndon Johnson signed the Civil Rights Act in 1964, he supposedly declared that the Democratic Party had lost the South for a generation. Obama’s win in North Carolina signals perhaps the largest crack to date in a solidly Republican region. From “Klansville, U.S.A.” to Obama blue state in forty years—a momentous change indeed.

David Cunningham is associate professor of sociology and chair of the social justice and social policy program at Brandeis. He is completing work on a book about the rise and fall of the civil rights-era KKK.

# Research Notes

## Chakraborty Named Fellow of American Physical Society

Physics Professor Bulbul Chakraborty was elected a fellow of the American Physical Society. She was cited for "important theoretical contributions to diverse areas of condensed matter physics, including frustrated magnets, diffusion of light particles in metals, the glass transition, and jamming in granular systems."

## Viral Modeling

The National Institutes of Health awarded Michael Hagan, assistant professor of physics and quantitative biology, \$1.1 million for research into novel antiviral therapies. During the replication of many viruses, hundreds of thousands of protein subunits assemble around the viral nucleic acid to form a protein shell called a capsid. Most pathogenic viruses must form a specific capsid structure to be infectious, and Hagan's research uses computational

and theoretical models to understand the mechanisms and factors that enable such precise assembly. By learning how capsid assembly is controlled and directed, Hagan and his colleagues will be able to provide critical information to develop novel antiviral therapies or advanced drug-delivery vehicles.

## Traveling Exhibition

Michaela "Kayla" Mohammadi, visiting art lecturer in drawing and painting in the Department of Fine Arts, is part of a three-person traveling exhibition called Placing Color. The show has exhibited at St. Mary's College, Boston University, the New York Painting Center, and Winona State University. The artist also won a \$25,000 grant from the Joan Mitchell Foundation to complete a series of paintings.

## The Rat Pack

Neuroscientists Paul Miller (biology) and Don Katz (psychology) have won a \$1.36 million grant from the National Institutes of Health to do collaborative research on how different computer models of neural circuitry match the behavior of real neurons measured in the brains of rats while they taste a liquid. The scientists' goal is to test theories regarding how network activity changes with attentiveness of the animal, and how neural circuitry changes when an animal learns that a particular taste produces sickness due to conditioned taste aversion.

## National Jewish Book Awards Names Sarna and Saxe as Finalists

Two Brandeis professors were finalists for the 2008 National Jewish Book Awards. Len Saxe, professor of Jewish community research and social policy, was a finalist in the category of education and Jewish Identity for the



DAVID RAKOWSKI



LEN SAXE



JONATHAN SARNA

book he coauthored with Barry Chazen, *Ten Days of Birthright Israel: A Journey in Young Adult Identity* (Brandeis University Press/University Press of New England). Jonathan Sarna, the Joseph H. and Belle R. Braun professor of American Jewish history, was a finalist in Jewish family literature for *A Time to Every Purpose: Letters to a Young Jew* (Basic Books).

## Musical Maestro

BMOP/sound has released a new album, *David Rakowski: Winged Contraption*, which spans fifteen years of the two-time Pulitzer finalist's musical career. In addition, New York City's Kaufman Center premiered the professor of composition's "Stolen Moments" in a late May Merkin concert hall performance featuring Zephyros Winds and pianist Anthony de Mare. Over the summer, Rakowski's music was performed at two renowned music festivals, the Ojai Music Festival in Ojai, California, and the 2009 Festival of Contemporary Music at Tanglewood in Lenox, Massachusetts.

## The First Banking Collapse

Professor of American History Jane Kamensky was one of two runners-up for the 2009 George Washington Book Prize. The annual \$50,000 prize, cosponsored by Washington College, the Gilder Lehrman Institute of American History, and George Washington's Mount Vernon, is the largest national award recognizing a book on early American history. In selecting Kamensky's *The Exchange Artist: A Tale of High-Flying Speculation and America's First Banking Collapse* from more than seventy-five nominated works, jurors lauded it as a "fascinating window into the pitfalls of unfettered capitalism." In the book, Kamensky chronicles the infamous



CARMEN SIRIANNI

career of Andrew Dexter Jr., who built America's first skyscraper, the Exchange Coffee House in Boston, from funds he raised through a pyramid scheme.

## Office of Citizen

Sociology professor Carmen Sirianni's new book, *Investing in Democracy: Engaging Citizens in Collaborative Governance* (Brookings Institution Press, 2009) was released in March. It makes a case for the central role of public investment and policy design in civic renewal and builds upon Sirianni's work as coordinator of the collaborative governance group in the Obama '08 urban policy committee.

## Musical Sensibility

Neal Hampton, associate professor of the practice of music and director of the Brandeis University Orchestra, debuted his new musical adaptation of Jane Austen's classic novel *Sense and Sensibility* with the Berkshire Musical Theater Workshop at Shakespeare and Company in Lenox, Massachusetts.

## Sleep to Remember

Neuroscientist Leslie Griffith will receive \$1.25 million over five years from the National Institute of Mental Health to study why sleep is required for effective memory formation. To understand this linkage at a cellular and molecular level, Griffith's lab is defining the circuits that regulate sleep in the fruit fly *Drosophila melanogaster* and studying how these circuits affect memory formation.

## Just What the Doctor Ordered

Associate Professor Jody Hoffer Gittell, director of the MBA program at the Heller School for Social Policy and Management and author of the award-winning book *The Southwest Airlines Way*, has written a new book, *High Performance Healthcare*. This book, like her previous one, shows how the power of relationships can be harnessed to achieve and sustain high performance over time.

## Encore for Costume Designer

Work by Jennifer von Mayrhauser, adjunct professor of the practice of



JODY HOFFER GITTELL



LESLIE GRIFFITH

theater arts, was featured in the exhibition *Curtain Call: Celebrating a Century of Women Designing for Live Performance*. The show appeared from November 2008 through April 2009, at the New York Public Library for the Performing Arts at Lincoln Center in New York City.

## Hansen Gets Society Post

Sociology department chair Karen V. Hansen is vice president-elect of the Eastern Sociological Society. She becomes vice president in March 2010 for one year.

## Visionary Research

József Fiser, assistant professor of psychology, has received a four-year, \$1.2 million grant from the National Eye Institute of the National Institutes of Health to study one of the most fundamental questions of vision: What visual information, or "features," are used in recognizing the content of static and dynamic images? Fiser's research will focus specifically on two age-related eye diseases, glaucoma and macular degeneration.

#### Awards for Antler

Joyce Antler, professor of American Jewish history and culture and women's and gender studies, won the 2008 Emily Toth Award from the Popular Culture/American Culture Association for Best Book in Women's Issues in American Culture and Popular Culture. She received the accolade for her book, *You Never Call! You Never Write! A History of the Jewish Mother* (Oxford University Press, 2007). The book also received the American Library Association's honorable mention citation, the Sophie Brody Medal, for outstanding achievement in Jewish literature.

#### Celebrating the Cell

*Physical Biology of the Cell*, an 800-page biophysics textbook, was published by Garland Science in late 2008 to critical acclaim. Professor of physics and coauthor Jané Kondev said the book explores how the basic tools and insights of physics and mathematics can illuminate the study of molecular and cell biology. The book is intended for upper-level undergraduate and graduate students, as well as researchers in different scientific fields curious about how physics can inform biological problems.



YU-HUI CHANG

#### Decoding Synapses

Assistant Professor of Biology Suzanne Paradis has won two grants this year to support her research into how synapses are formed in the mammalian brain. Many disorders of the nervous system—epilepsy, mental retardation, and autism spectrum disorders—are thought to occur in part because communication between neurons breaks down at the synapse. The Smith Family Foundation awarded her a three-year, \$300,000 grant, while the Alfred P. Sloan Foundation named her a Sloan Research Fellow, which includes a two-year, \$50,000 award.



#### Heschel Encore

Humanities professor Edward K. Kaplan, whose two-volume biography of the Jewish philosopher and social activist Abraham Joshua Heschel won a National Jewish Book Award last year, has written an introductory book in French. Titled *Abraham Heschel, Un prophète pour notre temps*, it was published in November 2008 in Paris by Albin Michel. Additionally, papers presented at a Brandeis conference, "Pushing the Boundaries: Abraham Joshua Heschel, a Centenary Conference," were coedited by Kaplan and published in the February 2009 issue of *Modern Judaism*.

#### Play On, Play On

This has been a banner year for Assistant Professor of Composition Yu-Hui Chang, who received multiple awards, including the John Simon Guggenheim Foundation Fellowship for 2009 in Music Composition. Fellows are appointed on the basis of impressive achievement in the past and exceptional promise for future accomplishment. In addition, the composer received a \$10,000 commission and a performance subsidy from the Fromm Music Foundation; a \$15,000 Charles Ives Fellowship from the American Academy of Arts and Letters; and a \$15,000 competitive commission from the Koussevitsky Music Foundation. Finally, she was granted a Radcliffe Institute Fellowship for 2010–11 at the Radcliffe Institute for Advanced Study at Harvard University.

#### Three Faculty Members Elected to Arts and Sciences Academy

Gish Jen, codirector of creative writing, and professors Jonathan Sarna and James E. Haber were elected fellows of the American Academy of Arts and Sciences in April. Jen is the author of numerous novels, including *The Love Wife* and *Mona in the Promised Land*. Sarna is one of the nation's leading historians of American Jews. Haber, a biologist, was honored for his work on how breaks in the DNA double helix are repaired and what effects they have on the cell.

#### Personal Training

Brandeis's Graduate School of Arts and Sciences has been awarded three new training grants from the National Institutes of Health, totaling \$240,000 each year over five years. The awards are in psychology, biochemistry/biophysics, and quantitative biology (a joint program linking biology, biochemistry, physics, chemistry, and computer science).

#### Curling up with String Theory

The National Science Foundation has awarded physicist Albion Lawrence and mathematician Bong Lian \$385,000 over three years to study generalized geometries in string theory. String theory predicts ten dimensions of spacetime; six of these dimensions must be curled up into a small space, and the mathematical properties of this space determine the four-dimensional physics that we experience. The grant will fund research on an important but little-studied class of such spaces known as generalized geometries.

#### Building Walls

Biologist Satoshi Yoshida has won \$200,000 over two years from the Massachusetts Life Sciences Center, a quasipublic agency created to implement a ten-year, \$1 billion initiative to advance life sciences research in the

commonwealth. Yoshida hopes to understand how yeast cells maintain the integrity of their cell walls during environmental stress. Because cell walls are unique to fungi but are not found in human cells, the process of wall construction and maintenance in fungi provides an attractive target for antifungal therapies.

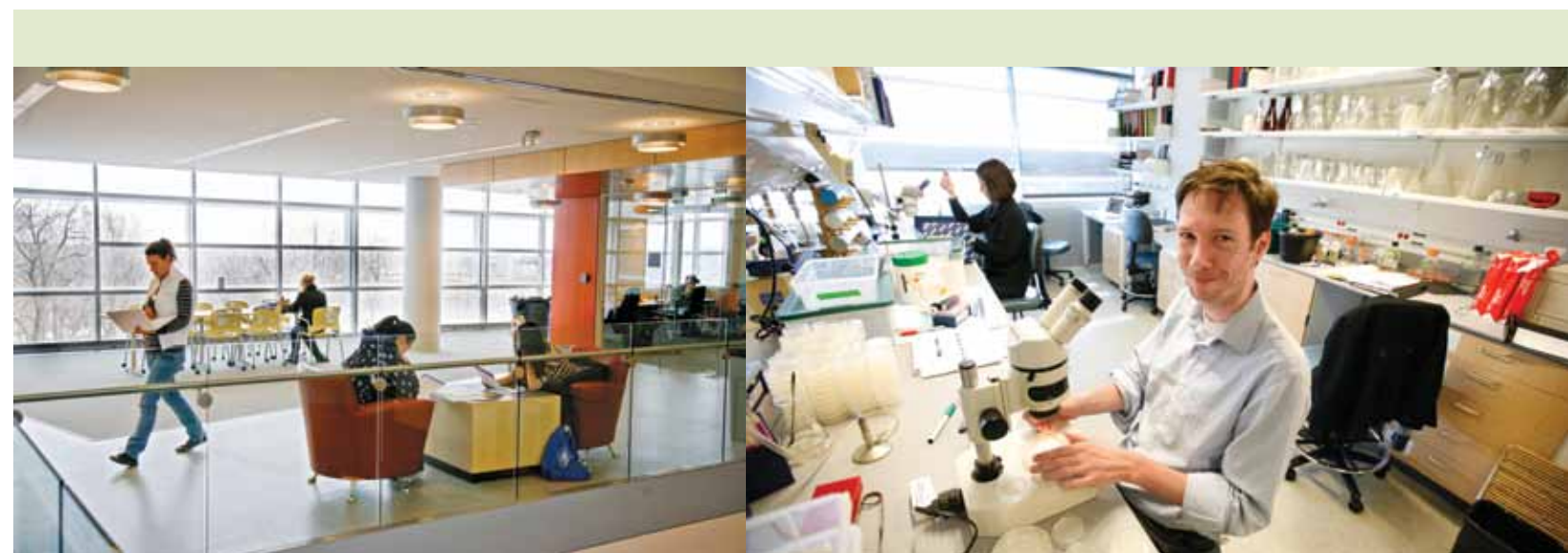
#### Rosbash Wins Gruber Prize for Pioneering Neuroscience Research

Biologist and Howard Hughes Medical Institute Investigator Michael Rosbash is one of three scientists to win the 2009 Neuroscience Prize of the Peter and Patricia Gruber Foundation. Rosbash, director of the National Center for Behavioral Genomics at Brandeis, is sharing the \$500,000 award with Jeffrey Hall, a professor of neurogenetics at the University of Maine who for more than twenty-five years was Rosbash's research collaborator at Brandeis, and with Michael

Young of the Rockefeller University. The three scientists made groundbreaking discoveries of the molecular mechanisms that control circadian rhythms in the nervous system. Their research was the first to establish a simple relationship between single genes and a complex behavior.

#### Lamb's Latest Book Examines the Anthropology of Aging

Anthropologist Sarah Lamb's latest book, *Aging and the Indian Diaspora: Cosmopolitan Families in India and Abroad*, was published in June by Indiana University Press. "Sarah Lamb's compassionate voice and reflexive insights weave around the moving narratives of Bengali elders in this beautifully written, theoretically sophisticated ethnography," wrote one reviewer, calling the book "a classic in the anthropology of India, comparative modernities, and aging."



#### Carl J. Shapiro Science Center

Earlier this year, the Carl J. Shapiro Science Center opened to tremendous excitement and praise from faculty, students, and alumni. The building already has garnered an Honor Award for design excellence from the Boston Society of Architects.

The five-story science center features twelve teaching and research labs and two classrooms, one with 3-D visualization. The center also includes a two-level electronic library, an atrium, a café, conference rooms, and spaces for faculty-student discussions.

Green technologies are used throughout the 108,000-square-foot science center, including daylight harvesting and heat-recovery systems. The facility incorporates recycled and recyclable materials, as well as environmentally friendly paints and adhesives.



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# Scholarly Pursuits

*Four Brandeis graduates garnered national fellowships to study, teach, and conduct research overseas.*

**Charlotte Benham '07** is one of the first two Fulbright English teaching assistants to work in Kathmandu, Nepal. Benham also plans to start a student volunteer group to identify local development needs and implement practical solutions. "I am especially interested in how educational programs can bring about more stability in countries recovering from civil conflict," said Benham.

**Joshua Daskin '09** is studying interactions in Australian tree frogs among beneficial bacteria, a disease-causing fungus, and climate. Based at James Cook University's School of Marine and Tropical Biology in Townsville, Daskin is also sharing his research with local school children through classroom presentations. "I'm excited about being able to apply so much of the basic biology and ecology I learned at Brandeis to really cutting-edge conservation research," he said.

**Anastayzia Vareschi '09** is using her Fulbright grant to teach English in Cameroon and work with a local NGO on developing community-based education and entrepreneurial projects. "Teaching English at the Advanced Teacher Training College in Yaoundé will provide me with an opportunity to develop my skills as an educator while also allowing me to gain on-the-ground insights into the nation's reorganization of its six state-managed universities," said Vareschi.

**Danielle H. Friedman '09** is spending the year in Guadalajara, Mexico, on a yearlong Mortimer-Hays Traveling Fellowship, living and working in one of the city's burgeoning art communities. Following that experience, she will spend several months in Mexico City working with the firm Gapka Handmade Artists' Oil Colour. She will conduct culture-specific color research by investigating new pigments, analyzing both their chemical make-up and their success on canvas.

—Sheilah Coleman,  
director of fellowships