Advances in brain science and technology raise hard questions about who we are and where we’re headed. Neuroethicist Martha Farah asks, What does it all mean?
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For me, the great pleasure of summer lay in the intense work of research and writing.
Interdisciplinarian

The School of Arts and Sciences is pleased to welcome John Jackson Jr., the first Penn Integrates Knowledge Professor, to its faculty ranks. Jackson comes to Penn from Duke University and will share a joint appointment in SAS and the Annenberg School for Communication. He also will be affiliated with the Center for Africana Studies.

Jackson is at the vanguard of a new type of professorship that seeks to bring top thinkers to Penn whose research and teaching emphasize the integration of knowledge across disciplinary boundaries. Jackson is a leading scholar of cultural anthropology and a documentary filmmaker. His chair will be the Richard Perry University Associate Professor of Communication and Anthropology.

“It is quite a privilege to be offered such an expansive academic appointment,” he says. “Penn is the perfect institution for intellectual pursuits that methodologically and thematically traverse the boundaries of traditional fields. I look forward to my intellectual exchanges with colleagues in the Annenberg School for Communication, the Department of Anthropology and all across the University.”

Jackson spent much of last summer researching and writing his next book, Racial Paranoia: The Paradox and the Heart of Black and White, which will be published by Basic Books. He also spent several weeks conducting ethnographic research in Israel for a forthcoming book on black Judaism. The book will focus on a network of African Americans that live communally in southern Israel’s Negev region.

International Excellence

Four international centers in the School of Arts and Sciences will receive $1.5 million in federal grants this year from the U.S. Department of Education to serve as National Resource Centers for their regions.

The four-year grants are part of a program that recognizes academic institutions for their outstanding commitment to the world’s key areas. While SAS has received these grants since 1959, this is only the second time that these four centers — African Studies, Middle East, South Asia and East Asian Studies — have held the designation simultaneously.

“We are especially pleased that our centers received this prestigious distinction,” says Rebecca Bushnell, dean of the School. “It shows our continued strength in area studies and reaffirms the primacy of the arts and sciences in tying Penn to the global community. By engaging key world regions, these centers answer the call of the Penn Compact at the highest level.”

National Resource Centers are called on to foster international expertise for national security purposes and enhance citizens’ knowledge and skills for the global workplace. To receive the designation, an applicant must

- Teach at least one modern foreign language;
- Provide comprehensive instruction on an area where the language is commonly used;
- Employ scholars engaged in training and research relating to the region;
- Provide opportunities for graduate student research;
- Offer outreach and consultation on a local or national level;
- Maintain a specialized library collection.

In addition to the NRC grants, three of the centers (East Asia, Middle East and South Asia) received $590,000 in Foreign Language and Area Studies fellowships for this academic year to support graduate training. Federal FLAS fellowships provide opportunities for intensive study of less commonly taught languages and world areas during the academic year or the summer. They are also renewed annually until 2010.

Chaucer Reimagined

Geoffrey Chaucer wasn’t thinking of Sigmund Freud when he wrote the Canterbury Tales. Nor was he pondering Jane Austen’s Emma or Virginia Woolf. But that didn’t stop Wendy Steiner from including those characters in an operatic adaptation of “The Wife of Bath’s Tale.” Steiner, the Richard L. Fisher Professor of English, has worked for eight years to create “The Loathly Lady,” a fanciful animated version of the tale that includes characters from throughout history. By her own account, it will be the first new opera to premier as an animated film. Visitors to the Institute of Contemporary Art on July 19 were treated to a seven-minute short that will eventually grow into the full-length feature.

SAS JOURNAL

Campus News

John Jackson Jr.

John Kindness
What began as an experiment in guerrilla teaching has grown into a campus staple and a favorite stop for students traversing Locust Walk’s leafy pathway. The 60-Second Lecture series celebrated its fourth year of showering kernels of knowledge on the eager ears of the Penn populace.

SAS premiered its incarnation of the series on September 3, 2003, when Bruce Kuklick, the Jeannette P. and Roy F. Nichols Professor of History, delivered a talk on “John F. Kennedy’s Sex Life.” The title, Kuklick acknowledged, was a bait and switch.

“Kennedy treated women like pieces of meat, but it is of minor historical interest,” he explained. “What is of interest is another expression of that view, that in matters of public policy, he was much more dispassionate and impartial and detached than those around him.”

Each season has drawn speakers from the upper levels of SAS faculty and from diverse departments from English to philosophy to physics. This fall’s lineup opened with Professor Philip Rea from the biology department, who discussed “Intracellular Landfills.” The following week, Bill Labov, the John H. and Margaret B. Fassitt Professor of Linguistics, gave a brief analysis of “Language Change in Philadelphia.”

The series finished with Kathy Peiss, the Roy F. and Jeannette P. Nichols Professor of History, who took the audience “Beyond the Founding Fathers” and Samuel Preston, the Fredrick J. Warren Professor of Demography, who gave numbers on “U.S. Military Mortality in Iraq.” Go to http://www.sas.upenn.edu/home/news/sixtysec_lectures_archive.html to review these and past 60-Second Lectures.

City Security

Eighteen students were recently given a chance to address their homeland security concerns in a very real way, thanks to the Fels Institute of Government. As part of a special course given through Fels, they became members of a Philadelphia task force assigned to deconstruct, analyze and refine the city’s emergency preparedness.

The students were charged with assessing how well the city is prepared for catastrophic threats, both natural and deliberate. To accomplish this, they examined planning and evacuation procedures as well as the strategy for ensuring continuity of the city’s government and businesses.

“The course represents the 21st-century application of the University’s historic commitment to pragmatic problem solving,” says College dean Dennis DeTurck.

“Future leaders will need cutting-edge skills, and this course helps bring some of the nation’s most important issues into the classroom — and uses the classroom to help solve them.”

With the students’ help, the task force found communication gaps between the city government and the hospital sector, inconsistent documentation of city-wide emergency plans, a lack of preparedness for disasters outside the city limits and insufficient planning in most areas of Philadelphia government. A final report was submitted to Mayor John Street’s office in May.

“We have learned from recent events, including Hurricane Katrina, that we will not have done our best job if we cannot secure our most vulnerable. We have to do our best to secure our critical infrastructure,” explains Harvey Rubin, director of Penn’s Institute for Strategic Threat Analysis and Response, who co-chaired the task force and taught the course.
Dino Cornucopia

Fossil hunter Peter Dodson and Swarthmore statistician Steve Wang have great news for dinosaur lovers. By their estimate, more than two-thirds of the various kinds of dinosaur fossils are still in the ground, waiting to be dug up. “It is a safe bet that a child born today could expect a very fruitful career in dinosaur paleontology,” says Dodson, a professor in the Department of Earth and Environmental Science as well as the School of Veterinary Medicine.

Using a statistical method called “abundance-based coverage estimator,” Dodson and Wang calculate that 1,844 genera of dinosaurs will eventually be found. About 530 of them have been discovered thus far. Over the last decade, the pace of dino discovery has nearly tripled. If their findings are correct, that upward trend will increase sharply. They project that nearly 400 new varieties will be uncovered in the next 30 years alone. Since fossilization is a rare event, the two scientists expect that nearly half of all dinosaur genera will never be known.

Some experts say the fossil record shows that dinosaurs were already in decline 10 million years before the prehistoric creatures suddenly became extinct, but Dodson and Wang’s method suggests that the population was stable then and that paleontologists have simply not yet found the fossils from that era.

The bad news, the researchers say, is that new discoveries will fall off early in the 22nd century. The grandchildren of the dinosaur-bone hunters born today will have to be content to live after the golden age of dinosaur discovery.

In Sickness and in Health

A study that looked at more than half a million elderly couples found that illness in one partner poses serious health risks for the other. A spouse’s hospitalization for certain ailments, the study showed, increases the partner’s likelihood of dying, highlighting the extent to which longtime couples “become one flesh.” For partners of hospitalized spouses, the short-term risk of dying approaches that of elderly people after a spouse’s death.

The research, by Paul Allison, professor and chair of sociology, and Harvard physician and sociologist Nicholas Christakis, G’92, Gr’95, indicates that the greatest risk for “interpersonal health effects” is during the first month after the onset of illness. The greater risk of death remains elevated for up to two years.

“What surprised us was that diseases that are highly lethal, like lung cancer or pancreatic cancer, had very little impact on the partner’s mortality rise,” says Allison. “On the other hand, dementia and other psychiatric diseases showed substantial increases — 10 to 32 percent — in the risk of death for the partner, for both husbands and wives.” The more disabling the disease, the more likely the care-giving spouse will experience sickness or death.

Looking toward the implications of their findings, the researchers write, “Health care might indeed be more socially efficient, and more cost effective, than is suggested by looking at individual cases alone.”

Explosive Change

“America is undergoing a transformation as profound as the one driven by the industrial revolution,” write Michael Katz and Mark Stern. In their book, One Nation Divisible: What America Was and What It Is Becoming, the co-authors analyze a century’s worth of data to tell the story of social and economic change in America from 1900 to the beginning of the second millennium. “The great transformation began in the years following World War II,” says Katz, the Walter H. Annenberg Professor of History, “and burst through old social and demographic structures with great force following the oil shock of 1973. It gained a name, globalization, mainly in the 1990s.” Stern is a professor of social welfare and history in the School of Social Policy and Practice, and director of urban studies.

Their book looks at the persistence of inequality in America’s social structure. It probes the nation’s changing ethnic diversity and the “new African American inequality” as well as the varying experiences across overlapping...
The influence of government in shaping American life is also closely analyzed. The broad societal shifts the authors detect shattered conventional assumptions about American life, upsetting patterns of work, family and social experience. The changes, Katz stresses, were “discontinuous,” not the gradual unfolding of trends already underway. “Americans confronted a transforming world with old ideas whose underpinnings had been exploded,” he says. “Understanding those changes is essential for interpreting the issues around economy, family, immigration, race and the role of government that trouble Americans today.”

### 100 Caterpillars

There are more than 225,000 species of butterflies and moths in the world. One hundred of their caterpillars from Area de Conservación Guanacaste in northwestern Costa Rica are photographed and described in a new book by Penn biology professor Daniel Janzen, research associate Winifred Hallwachs and Jeffrey Miller, a professor at Oregon State University. The full-page, close-up images capture the exquisite colors and striking features that often elude the casual observer, making 100 Caterpillars, say the authors, “an expression of art as well as a demonstration of science.”

Caterpillars spend most of their life eating, consuming billions of tons of foliage. “Natural selection has crafted caterpillars to convert a vast and diverse palate of vegetable matter, mostly leaves, into an even more vast and diverse array of butterflies and moths,” the authors write.

Janzen, the DiMaura Professor of Conservation Biology, started the ACG caterpillar inventory in 1978, while suffering from boredom brought on by the need to recover from broken ribs. Sitting under a 60-watt bulb, he started collecting moths that came to the front-door light. He estimates that there are over 9,500 caterpillar species in the conservation area. The largest weighs about the same as a mouse.

The book’s gallery of photos contains mostly aposematic caterpillars, those that “warn” predators with brilliant color patterns that they are poisonous or distasteful. “[T]he gorgeous caterpillars in this volume do not necessarily have a gorgeous adult,” the authors write. “The next book will emphasize species with ostentatious adults,” that is, butterflies and moths.

### Decline of King Coal

What happens when a region’s principle industry dies, and what happens to the workers and their families? In *The Face of Decline: The Pennsylvania Anthracite Region in the Twentieth Century*, history professor Walter Licht answers that question in vivid, multidimensional detail, using as a case study the communities that drew their life from northeastern Pennsylvania’s coal fields. With coauthor Thomas Dublin, a professor of history at SUNY Binghamton, Licht combs through newspapers, company records, census data, surveys and personal interviews to trace the trajectory of coal from boom to bust in the last century. The book highlights the decline of anthracite from several points of view: employment and population statistics, national politics, union conflict, community activism and the individual struggles of mineworkers and their families. The authors maintain that institutions — governments, coal companies and unions — failed to help the people as the collapse gathered momentum. They write, “Compared to the more socially conscious initiatives enacted in Western European nations in the face of coal’s worldwide decline in the second half of the twentieth century, the road taken in the Pennsylvania anthracite region appears particularly wanting.” *The Face of Decline* won the 2006 Merle Curti Award, which is given by the Organization of American Historians for the best book on U.S. social, intellectual or cultural history.
Brainstorms

What should we make of an ethical discipline that understands the voice of conscience to be the whispering of electrical impulses across a network of 20 billion nerve cells? In which moral thought and action are a pattern of lightning leaps across a trillion synaptic gaps? In which consciousness, the sense of a self, is a brainstorm that flickers throughout a three-pound organ encased in a skull vault?

“There is something self-referential about brains understanding brains,” observes cognitive neuroscientist Martha Farah, “and increasingly, we are going to have brains changing brains, remaking ourselves and each other with the tools of neuroscience. This is what makes it such an exciting field and why neuroethics is so urgently needed.”

The discipline of neuroethics is one of the newest fields on the academic scene and has begun to attract the attention of scholars from bioethics and neuroscience. Farah, the Walter H. Annenberg Professor in the Natural Sciences and director of the Center for Cognitive Neuroscience, is among the leaders.

Even as an undergraduate at MIT, she was curious about the nuts and bolts that hold the hardware of the material world together. She liked asking the big questions too, so she double majored in philosophy and metallurgy. As a researcher, her work spans many areas of cognitive neuroscience, including visual recognition, attention, mental imagery, semantic memory, decision making and more.

“It’s one thing to demonstrate that color vision or motor control are functions of specific brain circuits, but it’s quite another to be confronted with the idea that everything we are — our character, our personality, our consciousness — is also just brain function.”
Not Normative Nannies
As neuroscientists learn more about how the brain works and come to understand better its close connection to human behavior and even human nature, some researchers have started to take responsibility for that knowledge. But it’s not just worries about some scary, sci-fi future that have them trying to wrap their minds around where the latest discoveries and innovations are headed. The invention of powerful drugs that alter brain chemistry (and personalities) and neurotechnologies that can monitor the human mind are here now. We already feel the impact of psychopharmaceuticals like Prozac and Ritalin, and neuroimaging devices like MRI and PET scanners can literally read our minds (and reveal psychological information we may not want to share). Neuroethicists like Farah are asking the hard questions about what it all means for the rest of us.

Some of them are provocative. Instead of sending criminals to prison, could we alter their brains with drugs or implants? Should our private thoughts, inclinations and moral fiber be reported to parents, employers, police or college-admission officers? How far should we go to boost cognitive abilities like memory or attention, and who should have access to pills that might lend a competitive edge in the classroom or the workplace?

“Some of what we’re learning challenges deeply held beliefs,” Farah explains. “I mean, it’s one thing to demonstrate that color vision or motor control are functions of specific brain circuits, but it’s quite another to be confronted with the idea that everything we are — our character, our personality, our consciousness — is also just brain function.” What does it mean for believers and religious institutions if traditionally “spiritual” qualities turn out to be no more than the whirl and click of biomachinery between our ears?

Neuroethics is not here to tell us what we should or shouldn’t do, Farah insists. “I don’t want to be a normative nanny. Even if we wanted to tell people what the right thing to do is, I’m not sure we could.” Part of the reason is that brain imaging, brain drugs and brain-machine interfaces are all new and rapidly developing technologies. “We don’t know how far and in what directions they’re going to go, and we don’t even completely understand their capabilities today. But what neuroethicists can do now is raise questions and point to relevant data and relevant concepts and ethical principles.”

Better Brains
Ever since the invention of social lubricants like alcohol, humans have been practicing better living through chemistry. Thanks to the manufacture of effective antidepressants and antianxiety medications, not to mention aggressive marketing, the public is more aware and more accepting of the benefits of tweaking the brain’s chemistry. But in many cases, Farah notes, people have started using brain-altering drugs for non-medical purposes, reasoning that they will reap the expected benefits. “An important issue for neuroethics to resolve is what the effects are. Do they make normal people ‘super’? Are there trade-offs?”

One of the data-gathering projects she is working on is measuring the effects on normal, healthy people of prescription stimulant drugs like Ritalin, which treats attention-deficit hyperactivity disorder. “Huge numbers of people in the United States are using these drugs to help them study and to help them get ahead at work,” observes Farah. Recent epidemiological studies report that their use is as high as 25 percent on some campuses, but little is known about what these drugs do to people who don’t suffer from attentional disorders. Research findings indicate that memory may be enhanced, but the data on better attention spans are conflicting. Farah speculates that improved concentration may depend on things like a person’s natural ability for paying attention or the genes they have for regulating levels of neurotransmitters.

“These questions have not been systematically looked at,” she maintains, “and nobody knows whether the help, if any, that you get in focusing your attention comes at a cost to your more creative cognitive abilities. These are things that you would want to know before you arrive at a conclusion about whether these drugs should or shouldn’t be used under this or that circumstance by these or those people.”

There are also weighty questions for society posed by widespread use of neuroenhancers. If everyone were affected to the same degree, the whole range of attentional ability in a population would shift upward. While that would bestow no competitive advantage to anyone, it could produce a less distracted, more focused society. That might be good. But if people at the bottom receive a benefit but not those at the top, then the effects of pervasive use would shift...
"Like the field of genetics, neuroscience concerns the biological foundations of who we are, of our essence. The relation of self to brain is, if anything, more direct than that of self to genome."

The bottom upward, narrowing the range. That’s an advantage for the low-end people — maybe that’s a good thing too — and perhaps it would make teachers’ jobs easier. But would childhood change, if all kids were superfocused and didn’t need to run around at recess? Maybe that would be a bad thing. And what if the advantages go only to affluent people who can afford the pills and thus reap a competitive edge with better attention and brighter moods?

"The point is that there is a lot of basic information we just don’t have about what these new technologies can do for us," Farah points out, "and we don’t know all the medical side effects and, even more interesting for a neuroethicist, the social side effects."

**Mind Reading**

Today’s neuroimaging tools take real-time “pictures” of the brain that can reveal which segments and neural pathways are active while a person experiences certain thoughts, sensations or bodily movements. Cognitive neuroscientists use these images to associate extroversion, conscientiousness, schizophrenia, alcoholism and other psychological states and illnesses with particular regions and activation patterns. Farah has been analyzing published data from brain-imaging studies, and while the technology is not advanced enough to pinpoint predilections and personality traits, she has found that “the scans are not totally uninformative either.”

Racial prejudice is a good example. In one study, white subjects were shown a mix of black and white faces. Investigators found that negative attitudes toward black people corresponded with heightened activity in the amygdala region of the brain when subjects viewed unfamiliar black faces. "For the first time it may be possible to breach the privacy of the human mind and judge people not only by their actions but also by their thoughts and unspoken attitudes," Farah says.

The ability of science to reach inside a person’s mind raises novel questions about "brain privacy." It isn’t necessarily in a person’s interest to give brain-scan findings to marketers or employers, although they would no doubt be happy to have them. Who should have access? Should a brain’s "owner" be the sole proprietor?

What are the dangers of governments probing citizens’ inner preferences and attitudes to increase national security?

As neuroimaging improves, police academies may want to scan amygdalas for traces of unconscious racism in candidates. But the brain is a complex, multitasking organ with intricate, overlapping circuits and parts. In more recent experiments, researchers watched as subjects’ amygdalas lit up. Then, as the prefrontal cortex ramped up, activity in the amygdala dampened down. The amygdala is a primitive region of the brain involved in strong emotional responses, and the cortex is associated with conscious, abstract thought. Cognitive neuroscientists speculate that they might be watching the old brain responding to an unknown or threatening experience when subjects view the faces of strangers. Reversing that automatic gut reaction in the cortex could be the result of social conditioning. Are they seeing a brain that’s racist or not? Prejudice, it turns out, may not be just one thing in the weather of the brain.

"In principle and in practice,” Farah wrote in a neuroethics paper, “imaging can be used to infer people’s psychological states and traits.” In our security-conscious era, there are powerful incentives to build brain-reading technologies that can detect terrorists and liars. But the untrained public tends to attribute more authority to shiny, high-tech images than they deserve, Farah cautions. Neuroethicists can wield the “complex set of assumptions required to interpret the psychological significance of such images” and help the public approach brain-reading technology “with a healthy dose of skepticism.”

**Matter over Mind**

Farah wrote recently that, “Like the field of genetics, neuroscience concerns the biological foundations of who we are, of our essence. The relation of self to brain is, if anything, more direct than that of self to genome.” The discovery that human behavior, human character and human consciousness are a cascade of chemical reactions and lightning leaps poses troubling questions about what it means to be human.

Early in the last century, British philosopher Gilbert Ryle dismissed the long-held doctrine that saw the body as a machine and the mind as the nonphysical entity that governs it. He derided the mind-body dualism as “the ghost in the machine.” Farah maintains that neuroscience has begun to spread across the laboratory bench the intricate brain machinery of thoughts, feelings, memories, pains, meanings and dreams that were once attributed to the ghost. In a radio interview, she made the point bluntly, “What neuroscience highlights is that people are
things: they're very complex biophysical things."

The breakthroughs of neuroscience pose similar challenges to believers in a human soul as evolution does to believers who embrace the literal truth of the Genesis story. "Is human behavior caused by anything other than physical mechanisms in the brain?" she inquires. "So far, the evidence says that all there is causing behavior is brain function." Recent neuroimaging research has mapped out distinctive patterns of brain activity associated with prayer and meditation. "Cognitive neuroscience is further along the path than people might realize toward explaining all kinds of human behaviors and human qualities as the functioning of a material system."

How America's religiously minded public will face this news could prove as stormy as the longstanding clash over evolution and creationism. Farah stresses that educating the public about brain science is the best way to proceed and keeps her eyes on the clouds of change that neuroscience is bringing.

She has noticed a "scary synergy" between information technology with the mental demands it makes and amped-up abilities that neuroenhancing drugs can bring. There are pills now that let you go for days without sleep and leave you feeling fine and performing well. Imagine what we could achieve with more attention and less sleep. "If you want to work 20 hours a day, maybe with the right equipment and the right drugs you can," she predicts. "But it's a different kind of life, and it may not be the one you want. I'm sort of hoping that people will ask themselves what this would do to a person's life, to a family and to society before they just automatically say, 'Oh, more productivity! Let's go!'"

If people aren't asking these questions, Farah is. Knowledge might be power, but it can also be a curse to a society not circumspect about its science. "The question is therefore not whether, but rather when and how, neuroscience will shape the future," she recently wrote. What kind of life do we want?

To learn more about neuroethics, visit http://neuroethics.upenn.edu/.
Professor Ian Lustick says that before September 11, al Qaeda was “so small that they were actually more irrelevant to the Islamic world than the Aryan Nations are to American politics.”
The Americans took the bait and fell into our trap,” crowed al Qaeda security chief, Seif al-Adl.

The bait was the terrorist attack of September 11, 2001. The trap is the war on terror — both the war in Iraq, which has boosted al Qaeda leaders to a level of prominence and rallying power that had previously been denied them, and America’s rush to achieve an impossible level of security.

That’s the thesis of a new book by Ian Lustick, the Bess W. Heyman Professor of Political Science. Trapped in the War on Terror asserts that in terrorism, as in judo, the strategy of the weak is to exploit the strength of the powerful. The 9/11 terrorists used box cutters to turn American airliners into missiles.

That day’s events, Lustick argues, set off a disproportionate response that continues to draw the nation’s resources into a vortex of anti-terrorism activity.

The author of several books and many articles, Lustick has two areas of particular expertise: Arab-Israeli relations and the use of computer simulation to predict the effects of shifting social and political factors in a society. In 1989, he spent an hour-and-a-half with the first President Bush and his top national security staff discussing American policy toward Israel and Palestine. He has consulted at lower levels of every administration since 1979, when he spent a year in the State Department.

Lustick affirms the importance of sensible security measures to fight terrorism but insists that national fears have been inflated by “massive exaggerations of the likelihood of terrorist attacks capable of inflicting levels of destruction at or above that experienced” on September 11.

Most of the “terrorist cells” that the government turns up, he says, like the one exposed last June that was said to be planning an attack on Chicago’s Sears Tower, turn out to hold only minor or premature threats, or no real danger at all.

Before September 11, al Qaeda was “a small group of the extreme Muslim school of the Salafis and the jihadists,” Lustick contends, “a group so small that they were actually more irrelevant to the Islamic world than the Aryan Nations are to American politics.” Un able to inspire Muslims to create a regional caliphate or even to overthrow the governments of Saudi Arabia or Egypt, al Qaeda decided that “in order to become relevant, they needed to get the United States to play by a script that they had written to make the world look like it was really based on crusaders and Jews fighting against Muslims.”

That they have done, Lustick maintains. They have drawn into their “trap” thousands of Americans and Europeans who, while serving as targets, also kill Muslims on Muslim soil, thereby legitimizing the position, power and worldview of al Qaeda among many Muslims.

Lustick’s book focuses primarily on America’s mounting efforts to keep the nation safe. He describes the forces in that trap, including officials’ eagerness to defend the country, the “irresistible” exploitation of fear by political and commercial interests, and the difficulty of anticipating the effectiveness of security measures and thus the inability of officials to choose the best ones, which leads them to fund too many.

Lustick details one way such funding expands. In “red-teaming,” groups of scientists, intelligence operatives and even Hollywood screenwriters are assigned to imagine scenarios for new kinds of terrorist attacks. “Every scary and plausible idea produces its own requirement for countermeasures,” he explains. “These are almost always more difficult and more expensive [than existing measures]. Nor will they ever be foolproof, especially against the most imaginative schemes that subsequently constituted red-teams can produce.”

According to Lustick, funding for the war on terror is “so high, so widely distributed through the government and so rapidly changing” that real costs are hard to calculate. He points out that since 2001 the war, including its central front in Iraq, has cost more than half a trillion dollars. How appropriately is the stateside share of that money being spent? In 2004, Lustick asked an official in close touch with allocations to rank the terror war on a scale of one to ten, with ten representing appropriateness of funding and one being responsiveness to political posturing and pressure. The contact’s response was “between 1 and 1.5.”
A particularly insidious force, Lustick insists, is our Madisonian or interest-group form of democracy, which encourages groups to urge their own claims for funding. Agencies and states are not alone in wrestling over the spoils. The airline and insurance industries were among the first of many commercial interests to make claims. Professional associations, including district attorneys, veterinarians, pharmacists, pediatricians and psychologists, have made appeals for funding. Even Dunkin’ Donuts franchises have pulled out a plum — $22 million in Small Business Administration loans.

Universities also have their forks deep into the pie. “Along with hundreds or even thousands of new counterterrorism consulting firms,” Lustick notes, “dozens of new institutes dedicated to studying terrorism, counterterrorism, homeland security, bio-security and so on have sprung up in universities across the country, while previously established centers have seen their funding rise sharply.” Hundreds of colleges and universities — and 80 percent of community colleges — offer courses in homeland security designed to enhance their eligibility for such funding. (See “City Security,” p. 5.)

Harry Kreisler, executive director of the Institute of International Studies at the University of California, Berkeley, says that “Ian is uniquely positioned because of his understanding of Middle East politics to question the assumptions of the war on terror and also to show its domestic impact — how it corrupts our interest-group politics.”

Formerly affiliated with Penn’s Solomon Asch Center for Study of Ethnopolitical Conflict, Marc Sageman, Res’95, is a government consultant on al Qaeda and author of Understanding Terror Networks. He calls Trapped in the War on Terror “a courageous book that runs counter to conventional wisdom.” America’s “overreaction” to the 9/11 attack “may play well with the public,” Sageman says, “but it’s a disaster on an international level. It is fueling the hate against the U.S. and inspiring young Muslims to join the jihad.”

The way out of America’s fear and spending, Lustick believes, is a new presidential administration, followed by a more realistic analysis of how much security we can sensibly hope to attain. He points to the 1947 analysis of the Soviet Union’s nuclear threat by adviser and diplomat George Kennan, who showed how the United States could stand against the Soviet Union without going to war. That analysis, Lustick asserts, laid the foundation for two generations of American foreign policy and strengthened the nation for decades of life under the peril of annihilation, a far greater threat than the one posed by terrorism.

Given the tenacious trap Lustick’s book describes, such a national redirection will not be easily achieved. The “wounds inflicted by the ... use of our own enormous power can be the most damaging result” of a terrorist strike, Lustick writes. “We can recover” from even the worst imaginable act, but “only a society based on confident resilience ... and leaders acting out of courage and discipline rather than impulse and bravado could survive such an ordeal without lashing out so massively as to render the planet unsafe for Americans for generations.”

Sue Rardin writes for magazines, nonprofit institutions and corporations.
W
hen autumn comes to Kananaskis country, a wilderness southwest of Calgary, Alberta, the Columbian ground squirrels living near the R.B. Miller Field Station have already begun their winter hibernation. If they dream, it’s likely of peanut butter and a horse feed containing oats, barley and dried corn. The treats were training inducements used by Anna Vlasak, Gr’06, a biology grad student who spent 20 months over a period of five years studying how these rodents navigate. Fieldwork is generally descriptive, but Vlasak’s methodology is experimental. “You mix field and lab components,” she says, “and I think you get very interesting results” — plus a new approach to animal studies.

In 2001, when Vlasak was at the field station helping another scientist, she noticed a ground squirrel dig out from under four feet of spring snow, travel 60 feet on top, then disappear below again. When she checked where its trail through the snow had ended, she found a tunnel leading directly to a burrow entrance. How could the squirrel have pinpointed it so accurately? she wondered.

Apparently, life depends on it. According to Vlasak, a ground squirrel (Spermophilus columbianus) must remember many burrows under extreme time pressure. “A predator comes, and if the squirrels cannot find their burrow within a few seconds — a fraction of a second actually — they will be dead.”

Vlasak, who was born in a mountainous region of Kazakhstan and came to the United States for undergraduate study at Cal Tech, devised navigation experiments that used set-ups common in laboratory work. Her subjects, however, were non-captive animals, which she repeatedly trapped and trained with food rewards and released. The setting for her studies was the squirrels’ own subalpine meadow or one adjacent where the animals already knew the landscape.

The research showed that Columbian ground squirrels find foraging patches primarily through global landmarks like the distant outline of forests or mountains. To locate escape burrows, older squirrels use global cues while pre-breeders depend on local ones, like nearby rocks, logs and bushes. Prior to her experiments, scientists hadn’t noted what she calls “the overwhelming importance of global markers,” because navigation studies of other animals had been done in the lab.

Vlasak also tackled a currently popular question in animal cognition: Do animals — ground squirrels in this case — have some form of mental map of their environment? She wondered if they could reach a food reward through a combined above-ground and underground route she set up. Since the animal cannot see both places simultaneously, a successful trip might involve a mental representation of the unseen part. The results were mixed. In some tests, the number of immediately successful squirrels was beyond chance; in other tests, all initially failed. “It’s a complicated task,” she explains, “and while everybody eventually solves the problem, only some individuals are good at it.”

Not all scientists have Vlasak’s ability to work in so primitive an environment (no phone, Internet, or even running water until the creek melts). But she loves the outdoors, especially mountains, which she often explores alone.

Vlasak welcomes the challenge of fieldwork. “It’s a constant battle between you and the environment,” she says, “and you and the animals, who outsmart you all the time” and even try to become experimental subjects. “When they see you setting up traps somewhere else, they will actually travel there. Some even learn to roll the traps over and get in from underneath.”

She must be using some awesome kind of peanut butter.

—MARTHA LEDGER
I am sitting in the office of Peter Bloom, C’05, director and co-founder of Juntos, a social service agency that supports the Mexican immigrant community in Philadelphia. Juntos is on the first floor and basement of a row house in South Philadelphia. It has that neutral-office look — fluorescent lights, pale gray wallpaper and industrial-grade carpet — overlaid with the bright colors of Mexico. A postcard taped to a computer reads, “There are no illegal people.” Bloom’s phone has been ringing all morning. Over the weekend, a local cheesesteak shop posted a sign telling customers, “This is America: When Ordering Speak ENGLISH.” In a month of tension over President Bush’s immigration bill, this small provocation in the window of a neighborhood eatery has become national news. Everyone in the press, it seems, wants a statement from Bloom.

The phone rings. It’s clear the reporter wants to speak with him right now, so I pantomime that I can come back another time. Bloom smiles, shakes his head and arranges an interview for later. He ends the call, but the phone rings again. This time, he switches to Spanish for a call from a Juntos client. “Excuse me just one more moment,” he tells me. “I have to take this, but it won’t be long.” I nod and he sprints from the office, still speaking in the Mexican Spanish that has become his second tongue.

I wondered why he didn’t cancel our interview when the crisis broke. Later, I realized that, although he is only 24, Bloom has a mature conception of the big picture. “There is always some new crisis coming up,” he laughs. “There is no point in putting something off that you might not be able to do later.” He is speaking about our interview, but I think the remark sums up his philosophy of life.

Bloom is the son of late Penn medical-school professor Bernard Bloom, Gr’75, and a lifelong resident of Philadelphia. He came to Penn in 2000, declaring a major in urban studies, but after a few semesters he became restless. “The quality of the education at Penn is really amazing,” he recounts, “but it began to bother me that we were learning it solely in the abstract, as an intellectual challenge.”

He began asking family and friends how he might gain more hands-on experience. A Catholic church in the city was offering English classes to parishioners newly arrived from Mexico. There were more people eager to learn the new language than there were volunteers to teach it. He took a course in teaching English as a foreign language and went right to work at the church, fitting in his teaching around his Penn schedule. Says Bloom, “The urban studies program talks about different themes like gentrification, revitalization, labor-market shifts, et cetera, et cetera — all things we read about in books. Volunteering, I actually got to meet and understand people who were part of these processes and hear about it from their point of view.”

Disturbed by how few resources there were for this invisible but rapidly growing population, Bloom decided to take a leave from full-time study and see what he could do to help. His high-school friend Adam Ureneck, also stricken with practical idealism, took a leave from college as well. The two young men plunged into the world of grant writing and fund raising, learning Spanish and finding out about the Philadelphia Mexican community as they went along.

There was little information about the city’s Mexican community besides the “ridiculously low” 2000 census number of 6,200. According to Bloom, the population is actually somewhere around 25,000 with a majority (80 percent) living in South Philly. “As it turns out,” he notes, “we learned so much about the Mexican community that Penn now invites me to speak to faculty, alumni, grad students and undergrads about it.”

Bloom and Ureneck were lucky and brash enough to land some grants almost immediately. “We had a kick-ass proposal to serve this totally underserved community,” Bloom recalls. “There was no way they could say no, but we just kept hoping they didn’t ask how old we were.” They were 19.
From the start, they had one major goal: Do not set up a conduit for pouring in outside help but work to make the community self-reliant. They named the agency Juntos, which means “united” or “together.”

With a shoestring budget, they offered more English classes and began a partnership with Women Organized Against Rape, helping to open a satellite office that supported immigrant women and shared space with Juntos. With the help of Women’s Way and other grants, they leased the row house Juntos currently occupies.

With a home base, Juntos moved to serve even more needs. The people of Juntos, which includes Latinos and non-Latinos, help the community organize political-awareness events and encourage them to understand the legal system. Juntos now sponsors computer literacy classes on donated computers. Since many clients bring children, there is a play area outside the classroom. The group also has programs to help Mexican-born parents figure out how to make sure their American-born children get a decent education and appropriate services. To build bridges across the culture gap of America and Mexico, Juntos recently worked with the Philadelphia Museum of Art to sponsor a parent and children’s art day in conjunction with a recent exhibit on Latin American art.

Taking courses part time and getting credit for his real-life studies, Bloom finished his degree only slightly later than his classmates, receiving the Martin Luther King Jr. Urban Studies Program Award for Commitment to Social Justice in the City.

Our interview at an end, my eye catches on the carved masks, drawings, paper flowers and other brightly colored decorations on the office walls. They are gifts from the people whom Juntos has served and remind me of the milagros one might see in a Latin American church. Milagros are medallions or charms pinned to altar cloths or nailed to the wall, offerings to a saint that ask for help or give thanks for prayers answered. The word translates as “miracle.” I joke with Bloom that he will need a much bigger space to hold all these modern-day milagros. “You know what?” he laughs. “We are working on that right now!” Then he excuses himself to answer the ringing phone.

Nancy Bea Miller, C’85, is a painter, photographer and (part-time) writer. Her work can be seen at www.nancybeamiller.com.
THE ROAD AHEAD

CHARTING THE
FUTURE OF NEW ORLEANS AND THE GULF COAST

More than a year has passed since Hurricane Katrina crashed ashore at New Orleans and across the Gulf Coast region, causing the deaths of more than 1,800 people while ripping asunder one of America’s most colorful and diverse cities. Despite myriad newspaper retrospectives, PBS specials and a mammoth multi-part HBO documentary, it remains nearly impossible for anyone outside the affected area to grasp the damage wrought by the nation’s worst natural disaster.

BY JOSEPH MCLAUGHLIN
"The devastation is indescribable," says Donald Kettl, the Stanley I. Sheerr Endowed Term Chair in the Social Sciences. "Imagine that everything from the Schuylkill River to the Penn campus has been flattened and everything from campus to Wayne, Pa., has become a ghost town." That's just New Orleans. The storm left a trail of destruction from the east Texas border all the way to Alabama and beyond. A new hurricane season has come and gone, yet little has been done to restore the area, and even less has been decided about how New Orleans and the surrounding communities should build a future for the region.

Part of the problem, Kettl says, is that the astonishing ruin makes it difficult to know where to begin. "What's the first mile of road you should rebuild? The first mile of sewerage? The first mile of electric cable?" he asks. And if a site were chosen, what would go there? "You've heard a lot of people say that New Orleans will come back bigger and better, but we don't want to create more hurricane bait. Anyone who makes judgments about what should go where immediately triggers questions of a racial and economic nature that aren't easily answered."

Kettl has spent the past year working with Congress to develop an effective response plan for future disasters. Believing that calamities like Hurricane Katrina exceed the ability of state and local governments to handle them, he is calling on the federal government to assume the role of emergency coordinator for all relief units. As for FEMA, the much-maligned agency that tried to negotiate the disaster from within the deepest recesses of the Homeland Security Department, its focus also must change. "FEMA must concentrate its efforts on coordinating all the related bits of governmental capacity," he argues. "It must take responsibility for all of the first responders."

That may eliminate much of the confusion and ineptitude that reigned in the days following the storm, but what concerns Richard Walden, C'68, L'72, is what happens in the ensuing weeks and months. The founder and CEO of Operation USA, a Los Angeles-based disaster-relief agency, Walden has helped rebuild devastated communities around the world. His group has provided roughly $7 million in aid to the Gulf Coast region, including $700,000 in direct cash grants to public health clinics — first in places like Baton Rouge, La., and Jackson, Miss., and later in Biloxi, Miss., and New Orleans.

Walden has come under fire from the Red Cross for saying that Americans should give more support to relief agencies like his, which focus on long-term recovery and rebuilding efforts. He criticized the Red Cross in particular, which defines itself only as a first responder yet grabbed the lion's share of Hurricane Katrina contributions. "The Red Cross got 55 percent of the money donated to Katrina victims — that's $2 billion — even though they were initially only offering immediate disaster relief," he says.

Discussing how the next Katrina-style disaster should be handled is cold comfort to thousands of displaced New Orleans residents who wonder if they will ever return to the Crescent City. Many of those hit hardest by the storm were poor blacks with no way of leaving the city when Katrina struck. At present, they continue their lives in states as close as Texas and as far away as Oregon.

Reuniting this far-flung community is essential to restoring New Orleans' vibrant cultural pastiche, says

"You've heard a lot of people say that New Orleans will come back bigger and better, but we don't want to create
Elijah Anderson, the Charles and William Day Distinguished Professor of the Social Sciences. “The first thing the government must do is restore people’s faith in the system by doing what it promises, namely, serving and protecting its citizens,” he says. “Faith and confidence must be built through deeds, not just talk.”

Anderson points to a recent study by the National Science Foundation that shows how Katrina chiefly affected poor and black residents who were concentrated in the city’s lowest-lying areas. Black neighborhoods were disproportionately destroyed, and now Anderson fears that their destruction may be permanent, mostly because he believes the Republican-dominated government has no real interest in restoring them. Even worse, he says, is that blacks assumed from the outset that they would bear the brunt of the devastation and the past year’s inaction has only proven them right.

“If George W. Bush were concerned about this and made an honest public appeal, I’m sure that many good people both black and white would give him an opportunity walk the walk,” Anderson says. “But his administration is really out to lunch on this issue. In fact, they’re not generally concerned with social issues at all.”

More and more residents from all backgrounds are beginning to believe that New Orleans’ problems will have to be solved by New Orleans’ people. People like Sydney Besthoff, W’49, whose family has been tied to the city since his grandfather opened the first Katz and Besthoff drug store on Canal Street in 1905. Before last year, Besthoff had never evacuated due to a hurricane. He might have stayed on for Katrina, except that his grandchildren were with him at the time. “With them in my care, I thought I’d better do things safely,” he says.

Besthoff is content to work at his own pace, re-establishing his home and doing his part to bring the city back to life. “We have to be continual about it, just work little by little on a regular basis and get things done,” he says. In addition to refurbishing his house, one of his top priorities is restoring a prized five-acre sculpture garden he established in 2003 at the New Orleans Museum of Art. A gift to the city, it charged no admission fee and attracted nearly 300,000 visitors a year.

This past spring, the region attracted roughly 100 visitors from Penn — undergraduates who spent their mid-semester break gutting houses and laying foundations. Spread across the Gulf Coast region from Gulfport, Miss., to Lafayette, La., they came together for a forum in New Orleans sponsored by the School of Arts and Sciences’ Fox Leadership Program. There they heard from several Penn alums who are active in the rebuilding. Many of the students returned after classes ended in May — between 10 and 15 new arrivals each week for the next two months.

While the fate of New Orleans hangs in the balance, concrete ideas about how to rescue the city are scarce. It remains to be seen whether those strategies that have emerged will bear fruit. “New Orleans is the single greatest public planning opportunity in generations, if not ever, and yet nobody’s been able to come up with anything like a consensus,” Kettl says. “There is the chance for people to think big thoughts about this, but right now nobody really knows how it’s going to come out.”

Into the vacuum has stepped a small group of New Orleans residents who aren’t waiting for help from outside sources to reclaim their former lives. Over the past year, Kettl has watched them return to their demolished city and work tirelessly to raise their homes from the rubble. “Imagine living in an area the size of West Philadelphia and you’re one of only three or four people who live there,” he says. “There are no people, no lights except for the ones in your house, and you’re all on your own because the police can’t possibly cover the entire area.”

Kettl likens these people to 19th-century settlers who created from nothing the trading posts that would grow into great Midwestern cities. “These people are doing in the middle of their city what homesteaders used to do in the Wild West,” he says. “Maybe it will happen that way in New Orleans — block by block, homesteader by homesteader. But for every Kansas City and Denver that has thrived, many others have faded into oblivion.”
Casino gambling offers more than amusement and the occasional jackpot. For American Indians, it can mean significant income, but only if they can prove their Native American bloodlines. DNA Diagnostics Center in Ohio will parse the eminent double helix of any person wishing to establish a genetic link to a tribe.

DNA technology is the information highway for humanity, decoding the software that identifies us as individuals, unfurling the blueprints that have designed us. By probing DNA, scientists can identify long-lost siblings, confirm grandparent status and solve crimes. Genetic analysis even builds DNA databanks that can be used for purposes from criminal forensics to tagging disease predispositions.

“DNA technology has become a very powerful, powerful tool for us to understand ourselves,” says Richard Lee, Gr’86, founder and CEO of DNA Diagnostics Center (DDC).

One of the most popular Web searches, genealogy, has translated into big business for DDC and companies like it. Curiosity seekers want to know if they are related to Thomas Jefferson or Genghis Khan, but DDC’s bread and butter, about 90 percent of its casework, is paternity testing. Welfare regulations drafted in the 1980s heralded the age of paternity testing, requiring moms seeking government aid for dependent children to name possible fathers. “It’s about family, and it’s about child support,” says Lee.

In addition to serving individuals and government agencies requesting paternity tests, DDC is contracted with most of the TV shows, like Judge Hatchett and Court TV, that pry open the fatherhood box. In the early ’90s, when DDC first started working with television, the tests took about two weeks. Guests would sometimes bail out of their scheduled TV appearances. Today, the results are available in a day or two, and they’re broadcast live. Talk show host Maury Povich, C’62, whose program, The Maury Show, contracts DDC for more than 500 paternity tests a year, sums up the effect: “We can deliver six months’ worth of soap-opera conflict, drama, lust and sex in 15 minutes.”

Less lusty endeavors for DDC include twin zygosity testing, which reveals whether twins are fraternal or identical. Joint ventured with Touched by Adoption, a group that connects adopted children and parents, DDC also offers mitochondrial DNA analysis, which shows whether individuals are related through their mothers. Working with United States Citizenship and Immigration Services, DDC also runs DNA tests for immigration clients overseas.

Lee and his wife, Susannie, Gr’85, director of operations at DDC, learned to tease apart DNA while doing their Ph.D. studies in chemistry at Penn. Then they left for Cincinnati, where Susannie took a research position at Procter & Gamble and Richard started a molecular genetics lab at a major hospital. Richard became interested in applying genetic testing on a large-scale basis. He took one look at the divorce rate and its attending issues of child support, custody and visitation rights, and in 1994, became incorporated.

Chemistry professor Ponzy Luchaired Richard’s dissertation committee and oversaw Susannie’s lab work. He comments on their sweeping approach to applied genetics: “A lot of people take their DNA know-how to these little biotech companies that make drugs. The Lees have taken it and gone Wal-Mart!”

DDC performs three out of every four paternity tests in the U.S. and provides testing for more than 900 affiliates in 168 countries. For some nations — Japan, to name one
— DDC is the official testing lab. This year, DDC will perform some 60,000 DNA tests.

The assays are a series of tightly controlled steps that begin with a cheek swab. Using a technique called polymerase chain reaction, the DNA is amplified into many copies. Generally, 15 gene markers are evaluated. To reduce error, each test is run by two separate teams, and the results are then compared by the Ph.D.s and M.D.s on staff. Robotics are used to complete the most sensitive steps. Lu explains that this work requires “incredible attention to detail. If they make one mistake, they’re out of business.”

For a standard paternity test, which runs $475, DDC guarantees (with at least 99.99 percent probability) that the father named is the biological father. Povich notes that while guests on his show often second-guess the results of lie-detector tests, DNA findings are almost never challenged.

One of the more exciting areas for DDC is forensics, which uses DNA to identify victims of disasters and crimes, and to finger suspects. “DNA is the biggest revolution in solving crimes since the advent of fingerprinting 100 years ago,” says Paul Ferrara, director of the Virginia Department of Forensic Science. “It serves society by helping to identify perpetrators of crimes and exonerate those who have not committed those crimes.”

While DNA has brought unmatched precision to solving crime, it has raised the bar on the proof juries demand to convict criminals, a phenomenon popularly known as the “CSI effect.” “Juries are much more skeptical of eyewitnesses. They want cold, hard science,” Ferrara observes.

Detectives who once may have gathered a few pieces of evidence from a crime scene now collect hundreds as they follow the DNA trail. One forensic expert estimated that 10,000 additional forensic scientists will be needed during the next decade to handle the growing mounds of evidence. According to a study by the Department of Justice, at the end of 2002 (the latest available data), more than half a million cases were backlogged in forensic labs. With government labs unable to handle the workload, private labs like DDC are filling in the gaps. They analyze all manner of evidence, from chewing gum to airbags to entire cars. One of a handful of labs accredited by the American Society of Crime Laboratory Directors, DDC holds on-site police training seminars on processing crime scenes.

While DNA evidence answers many questions, explains Barry Scheck, co-director of the Innocence Project, a criminal-defense advocacy organization in New York City, it raises others. Since 1992, DNA testing has exonerated 183 convicts nationwide. “Each of these cases reveals flaws in the criminal justice system that lead to wrongful convictions,” says Scheck. A recent Supreme Court ruling will give prisoners more opportunities to prove their innocence when scientific evidence invalidates “facts” that helped convict them.

Another boon to crime solving is the proliferation of DNA databanks, which most states maintain for convicted felons. Virginia pioneered the practice in the early ’90s and claims to have drawn about 3,500 investigative leads from its database. Many human rights advocates argue that DNA data banking can lead to genetic discrimination by those who misuse the information and advanced technology. Says Penn anthropologist Janet Monge, who sometimes serves as a forensic expert witness, “The human psyche has not advanced to the same level as the technology.”

But the psyche may be the next terrain opened up by DNA technology. Scientists are fast plotting the genetic basis for ailments like heart disease, diabetes and cancer, and even diagramming the genes that influence human character and behavior. Using DNA technology, says Richard Lee, “We will one day be able to not only predict physical tendencies but also do psychoanalysis. We will probably be able to give you a pretty good map of what you are like, what makes you tick.”

Joan Capuzzi Giresi, C’86, V’98, is a writer and veterinarian.
The assignment seemed simple enough: break into groups and write down the meanings of a dozen ethnic slurs displayed on the blackboard. The students in last summer’s Immigrants to America class appeared ready. But the phrases they encountered — Frenchified… Dutch courage… Irish club house… Greek ease — left them stumped.

The students began to squirm. Like so many others who have trod Penn’s leafy pathways, they were unaccustomed to not knowing the answer. The expressions, which attributed disease to the French, drunkenness to the Germans, crime to the Irish and laziness to the Greeks, had fallen out of common use nearly a century ago.

How did those antiquated idioms relate to modern immigration? After a lesson from doctoral candidate Elizabeth Vaquera, the class understood: immigrant ethnicities may change as successive waves arrive in America, but the false criticisms levied against them have remained the same.

Vaquera came to Philadelphia five years ago after completing her bachelor’s and master’s degrees in sociology at the University of Barcelona in her native Spain. Since then, she has completed the Penn master’s program in sociology and expects to receive her doctorate next May. This was the second time she had taught the department’s course on immigration, which typically attracts students whose parents or grandparents were born elsewhere.

“I don’t make them memorize things,” Vaquera says. “I make them hook together elements from my lectures and what they read in books and newspapers. Instead of saying, ‘Define immigration,’ or ‘What happened in 1965?’ I want to ask questions that will cause them to develop their own ideas.”

She will spend this year completing her dissertation, which studies how friendships formed by Hispanic high school students affect their educational outcomes. Her research, she says, has been strengthened immeasurably by her teaching. “It’s a learning experience for me as much as for the class,” Vaquera admits. “Even though I study the lives of Hispanic immigrants, I didn’t have a global sense of what I was doing. Teaching made me realize how everything connects. It made me do research every day.”
Elizabeth Vaquera (front row center) and the Immigrants to America class.
Life-Saving Gift

“As Hitler’s armies consumed ever larger portions of Europe in the late 1930s, the Philadelphia pharmaceutical company Sharp and Dohme was pressed to perfect techniques for freeze drying medical products,” explains C. Hilyard Barr, C’48. His father was superintendent of the company’s biological laboratories. The process had already been patented, but procedures for doing “lyophilization” efficiently and on a commercial scale had not been worked out. “Dad had a staff under his direction to develop the process, which took 10 years. He provided many innovations to freeze drying personally. The first successful commercial product was dried blood plasma, of which 15,000 packages were delivered to Great Britain during the Second World War. Due to technical contributions provided by Stuart Mudd of Penn’s medical school and other faculty members, the University held one-third of the patent rights.

To honor his mother and father, Barr made a gift to the School of Arts and Sciences to name the Courtland H. and Edna Hurlock Barr Research Wing on the second floor of the new Carolyn Lynch Laboratory. Photos and some of the freeze-drying equipment developed by Barr’s father will be displayed there.

PARTNERS A Big Deal Over Little Things

SAS dean Rebecca Bushnell and Eduardo Glandt, GCh’75, Gr’77, of Penn Engineering, are not your typical deans. “Although deans are very collegial,” observes Glandt, “deans going out into the street to raise money together is a breakthrough.” Both schools have put nanoscience high on their priority list, and with two federally funded nanoscale research centers on campus — the Nano/Bio Interface Center and the Laboratory for Research on the Structure of Matter — there is already a lot of scholarly collaboration between them. “But a partnership in raising funds for a new building,” notes Bushnell, “sends an important message about how we’re going to move forward in pursuing President Gutmann’s vision of integrated knowledge at this University.”

Glandt explains that nanoscience, the study of minuscule phenomena and the creation of molecule-size devices, demands cleanroom facilities that are costly and rare — vibration free, dust and microbe free, temperature controlled and unaffected by electrical fields from nearby subways. The physicists, chemists, biologists and engineers who will work together in a nanoscale building would be able to share expertise, and the two schools will share the expense. That economy of scale is what’s sending Bushnell and Glandt into the street as collaborative fundraisers.

The new 80,000 square foot research-and-teaching facility they envision will stand on Walnut Street, just east of 33rd. It will have two cleanrooms and 15 laboratories as well as an auditorium, classrooms and offices. The two deans hope to start planning and design of the nanoscale building next year. “Our dream is to break ground in 2008,” Glandt says. “Science, in many fields, is on the brink of revolutionary discoveries,” Bushnell adds, “and nanoscience is going places we haven’t been before. We want to be part of it.”
Path Beyond Penn

It’s the old SAS career conundrum: Students in professional schools are on a well-defined career track, but arts and sciences majors (and their parents) often feel themselves on an unmarked trail whose destination is not always easy to see. “The idea that that’s OK is hard for students to accept,” says College dean Dennis DeTurck.

Parents Lisle and Roslyn Payne have funded a College Alumni Mentoring Series that will get undergraduates thinking early about how their educational experience fits into career planning. The gift provides for several mentoring lunches and dinners during the academic year when students can meet in groups and one-on-one with alumni who have been down the same path.

“Parents often find themselves not in a good position to advise a son or daughter on these issues,” Roslyn explains. “Getting them involved with people who have been down a career path their children have an interest in can be really productive.”

The series will culminate in a Career Institute at the end of the spring semester, which will introduce about 30 freshmen and sophomores to strategies for job searches, interview skills, resume review, etiquette and other career tools. The institute will target minority and under-privileged students. DeTurck hopes the program will help “undergraduates to see that it’s possible to have a fulfilling existence and to eat three meals a day doing something that grows out of having been a liberal arts major.”

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Cast Thy Bread Upon the Waters

When Bernice Green, CGS’00, Ged’06, graduated, her mother was 82 years old. Green was 53. “From the day the teacher told my mother I was college material, that’s what she wanted for me,” says Green. “When I graduated, my mother told me it was the happiest day of her life. Bread Upon the Waters helped me — and my mother — realize a dream.”

Bread Upon the Waters is a unique program that gives full scholarships to women over the age of 30 who have financial need and the desire to complete an undergraduate degree through part-time study at Penn’s College of General Studies. Over the last year, five named scholarships were established to support Bread scholars. Gifts to create the endowed funds came from Kristine Billmyer, GrEd’90, Debra A. Carrier, Elin Danien, CGS’82, G’89, Gr’98, Joseph J. and Donna Nicoletti Ferrier, Par’09, and Helen P. and Richard E. Winston, G’48.

Billmyer, the associate dean for continuing education and executive director of the College of General Studies notes that “endowed Bread scholarships provide access for many outstanding students who would otherwise be unable to obtain a Penn degree.”

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Danien, who founded Bread in 1986 and created a named scholarship this year, observes, “When I was at the age when most people go to college, I was totally focused on other things. It was only as a mature adult that I realized how important education was.” As an older student, she watched talented women struggling with family responsibilities as well as the financial burden of college. “I could see that there were women out there who were falling between the cracks and who deserved to be Penn students. The proof is that all of our 60 alumnae graduated with at least a B average — 33 of them graduated with honors.”

To make a gift of any size to the Bread Scholarship Fund, contact Laura Weber at 215-898-5262 or lweber@sas.upenn.edu.
THE SOCIETY OF ARTS AND SCIENCES

The Society of Arts and Sciences recognizes individuals who have enhanced the excellence of the School of Arts and Sciences by giving a gift of $100,000 or more over the last five years. Its members embody the spirit of the School with their dedication to achieving and maintaining distinction in the liberal arts. They demonstrate a unique awareness of the importance of balancing tradition and innovation in higher education and champion both in equal measure. Their vision informs our pursuit of excellence, and their generous support moves us forward.

Individual Members

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Sunil Ahuja
Vairam Alagappan, C’84
Edward Aloisio, Jr., C’53
Ralph D. Arnold, professor of physics-emeritus
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List current as of June 30, 2006.
One of my most lasting impressions of Italian culture hit me when I first went to Milan for a year, the first time I was in Italy as a member of the community rather than a tourist. As I was settling into my new neighborhood, a friend made sure to introduce me to the lady who ran the cartoleria (paper store) down the street. “If you need any school supplies,” she said, “la Signora will take care of you.”

“Oh,” I answered, “if I need anything like that, I will just go to Upim” (an Italian department store).

“Never mind Upim,” she retorted, “if you need anything for your work, show a little solidarietà for la Signora, and she will look after you.”

“What is solidarietà?” I asked.

It is a question I have been thinking about for some 20 years of going back and forth to Italy, a question that becomes more pressing every year.

Solidarietà starts with the idea of people coming together for a common goal. It means we feel with others and expect them to feel with us, to recognize each other’s dignity. Born in the medieval Italian communes, solidarity is intrinsic to the Italian sense of belonging, a concept shared by both ends of the political spectrum. The long tradition of Italian socialism makes a big deal of “la solidarietà del popolo,” solidarity with the people. In the recent elections, Silvio Berlusconi and Romano Prodi both claimed to be the candidate of solidarity in the way, I suppose, that George Bush and John Kerry each claimed to be the truer American. Italian Catholic politics also claims solidarietà as a civic and moral virtue. In this sense, it has to do with helping and supporting others, often those weaker than ourselves. This is the solidarity with the poor seen in Catholic social services like Rome’s Comunità di Sant’Egidio or, in an American Catholic version, Philadelphia’s Project H.O.M.E.

The mission of these groups, to give witness and stand with those being helped — not just to give them things but to give them, in a sense, ourselves — is deeply rooted in Christian values.

But the Italian mode of solidarietà that has made the deepest impression on me is not preached by politicians or bishops. It is lived by the common people in the community. Solidarity involves respect, an appreciation of other points of view, a belief that other experiences and other people are every bit as important as your own. It is a wonderful social virtue, but it is deeply challenged by changes sweeping European society.

Will solidarietà survive in a multicultural world? This question is explored in a recent Italian film by Marco Tullio Giordana, Quando sei nato, non puoi più nasconderti (Once You Are Born, You Can No Longer Hide). Here, the young hero, Sandro, falls off his father’s yacht and is rescued by a boatload of clandestine immigrants. By the time the boat has limped ashore in southern Italy, Sandro finds himself in complete solidarity with two Albanian youths, Radu and his sister, Alina. Sandro cannot understand why his friends are not welcomed and given the rights of citizens, not even when he learns that Radu is a thief and a pimp who sells his sister. Because of what he has been taught in school and by his family, Sandro thinks their lives are just as important as his. The genius of this film is that it shows at once the clarity of Sandro’s ideal of solidarietà and the extreme complexity and difficulty of a situation to which there is no immediate solution.

Solidarietà and how it is strained by modern realities is a question for all of us. Will we find a way in the 21st century to stand in solidarity with others? Will we be able to make a culture based on mutual respect? These are questions to be pondered by politicians and religious leaders, but also by cities, neighborhoods and, yes, universities.

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Penn Arts & Sciences Magazine is published by SAS External Affairs.

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