FALL 2010

Boston University Arts & Sciences

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COOL PLACE, NOT MUCH ATMOSPHERE

Astronomer explores why Mars is losing its atmosphere 12

BOSTON UNIVERSITY

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DEAN OF ARTS & SCIENCES
Virginia Sapiro

DIRECTOR OF COMMUNICATIONS
Patrick Farrell

COMMUNICATIONS SPECIALIST
Jeremy Schwab

EDITOR
Jean Hennelly Keith

CONTRIBUTING WRITERS
Rachel Johnson (MET'11), Patrick L. Kennedy (COM'04), Annie Laurie Sánchez, Jeremy Schwab, Corinne Steinbrenner (COM'06), Andrew Thurston

ART DIRECTOR
Rachel York

PHOTOGRAPHY
Boston University Photography, unless otherwise noted

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WRITE TO US

We welcome your letters, which will be edited for clarity and length for this publication. Letters will appear in full online on the Arts & Sciences website at www.bu.edu/cas/magazine. We also welcome your story ideas. Please email the Editor at jkeith@bu.edu or write to the Editor, *arts&sciences*, Boston University, 985 Commonwealth Avenue, Room 145, Boston, MA 02215. Please include your name, address, and BU school(s) and class year(s).

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from the dean

What do you call a place that defies the boundaries of space and time, then brings you back to Earth with a hot set of improvisational jazz? For me, that place is the College of Arts & Sciences. I encounter amazing juxtapositions like these every day here. I am surrounded by the talented people who perform these feats of discovery and imagination—CAS faculty members and students who make doing the amazing look easy.

CAS has always been a generator of great ideas, but lately, it seems, more remarkable ideas come to fruition every day. This issue of *arts&sciences* is a window into what's been going on recently at the College as well as with you, our alumni.

Our cover story highlights the work of Professor of Astronomy John Clarke on how Mars is losing its atmosphere and the implications for possible past and future life on the Red Planet.

Another feature investigates the more earthly complexities of the relationship between Pakistan and the United States through the observations of our very knowledgeable Arts & Sciences experts in this field.

Associate Professor of Archaeology Kathryn Bard takes us back in time to ancient Egypt to explore that empire's exotic trade with a mysterious Red Sea realm called Punt. Bard's stellar research has just earned her election to the American Academy of Arts & Sciences.

Of course, there is more to CAS than intense scholarship, as you'll see in our story about an undergraduate jazz combo that collaborated with former U.S. Poet Laureate and Professor of English Robert Pinsky to create a unique presentation melding music and the spoken word.

Among the alumni you will read about is Clara Drummond (GRS'02, '04), a new breed of curator who takes a fresh approach to exhibiting Jane Austen's papers at Manhattan's Morgan Library & Museum.

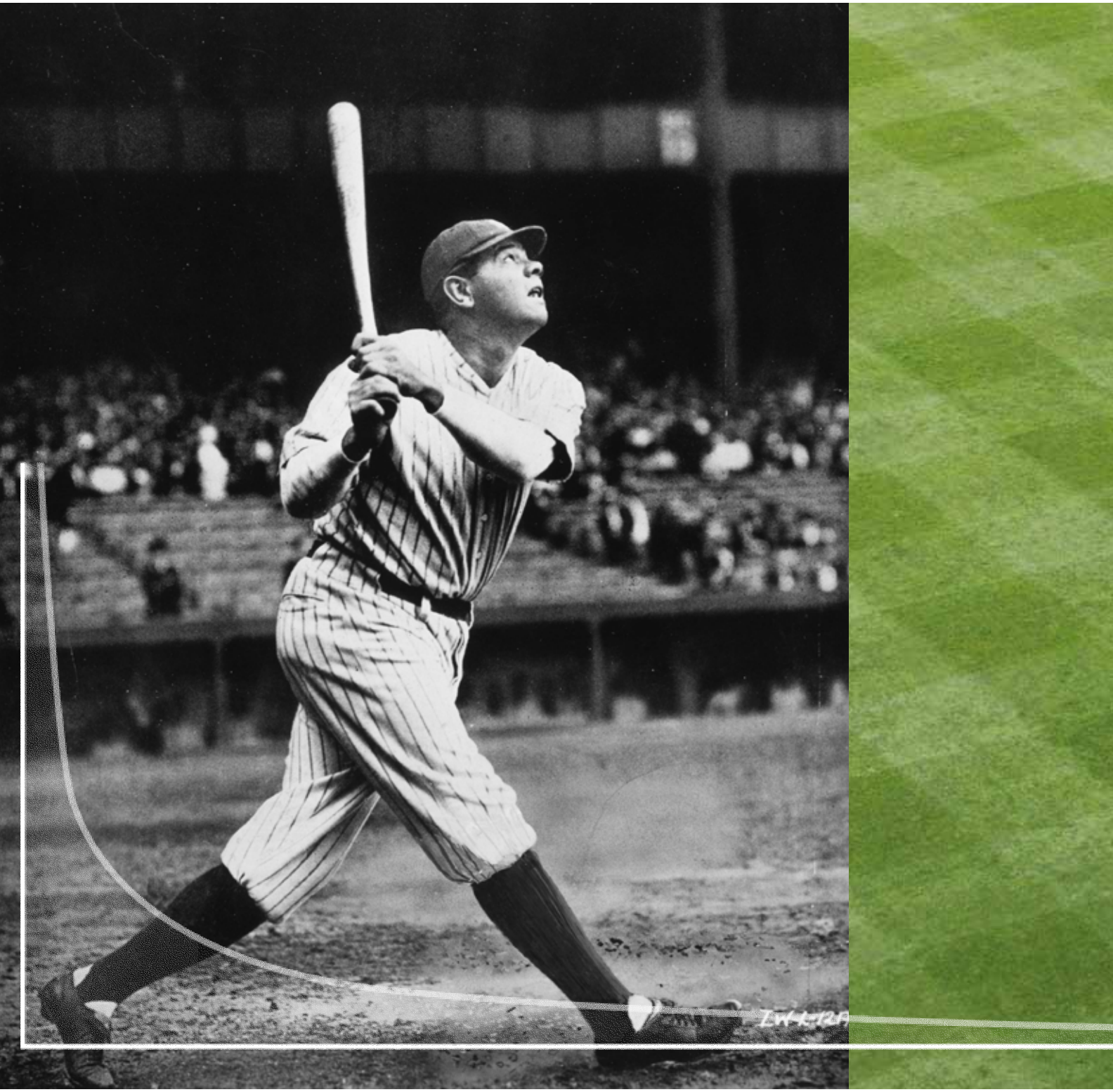
This issue also includes the latest report of donors, which recognizes and thanks alumni and friends who helped make the telling of these stories possible, and who support the initiatives and accomplishments detailed in the latest edition of our annual report, "The Difference a Year Makes," viewable online (details on page 5).

Why is so much happening now? In fact, much has been happening for years, but our pace is surging as a result of the careful planning and building we've been telling you about in these pages. This is what happens when you recruit the best scholars and teachers and the most qualified students, then make their interaction an everyday occurrence. This is what happens when we give our scholars, scientists, and students the infrastructure and support they need to scale the breadth and height of their imaginations. This is what happens with the support of active and involved alumni.

Our sharing these stories with you is just one expression of our appreciation. We hope that by demonstrating the value of this work, we'll persuade you to continue your generous support. Without you, none of this would be possible.

Virginia Sapiro
Dean of Arts & Sciences

VISIT THE COLLEGE OF ARTS & SCIENCES WEBSITE AT www.bu.edu/cas.



Babe Ruth takes a mighty swing during pregame batting practice in Yankee Stadium, New York, circa 1923.
Photo by Mark Rucker/Transcendental Graphics/Getty Images

A Physics Curveball

Red Sox fans will be pleased to have confirmed what they've long suspected: A-Rod really *isn't* as hot stuff as he thinks he is.

That is, according to Alexander Petersen (GRS'11), a passionate baseball fan and physics doctoral student. Using statistical physics theory, he's found a way to compare baseball players over the generations, whether they played in the "dead-ball" era in the early 1900s or the "steroids" era beginning in the 1990s. While his baseball findings will interest fans of the game, the larger patterns he's discovered across many kinds of careers may have greater implications for measuring individuals' success relative to others in diverse fields.

These patterns emerged after Petersen, with H. Eugene Stanley, an Arts & Sciences professor of physics, and Orion Penner (GRS'06), a PhD student in the complexity science group at the University of Calgary, "detrended" historical American baseball statistics using power-law probability density functions, which scientists use to understand competition-driven systems. "Basically," says Petersen, "detrending corresponds to removing the inflationary factor; so, we could compare two items like the cost of a candy bar in 1920 to the cost of a candy bar in 2000. In this case, we compare Babe Ruth's home runs—the ability of someone to get a home run then versus now—and you see Babe Ruth actually hit a lot of home runs on this relative basis." Petersen's new statistics compare career longevity, success, and productivity. When comparing the baseball statistics, he was startled to discover a statistical pattern, what he calls a "beautiful" power-law curve (a type of bell curve), emerging from seemingly random careers.

The three researchers present their findings in a paper titled "Detrending career statistics in professional baseball: accounting for the Steroids Era and beyond." In Petersen's rankings, which emphasize how a player performed relative to his contemporaries as well as to players over the decades, the recent big-name home run hitters—Sammy Sosa, Jim Thome, Mark McGwire, Manny Ramirez—drop significantly down the list of top hitters throughout history. The aforementioned New York Yankees slugger Alex Rodriguez drops 425%, from number 8 to number 42. "The relative significance of their accomplishments gets reduced because their contemporaries are hitting a lot of home runs as well," says Petersen. Players like Babe Ruth, Lou Gehrig, and Ted Williams shoot up the list because they were giants in their own era as well as across the decades. Petersen says his approach is a way to make the statistics fairer: beyond just accounting for the possible effects of steroids, detrending allows for changes in equipment, diet, conditioning, even medical procedures like "Tommy John" surgery (replacing a ligament in the elbow with a tendon to lengthen a pitching career), none of which are illegal but all of which have changed the game since Ruth's time.

Alexander Petersen

While Petersen's work has implications for both historical rankings and Baseball Hall of Fame inductions, it has even broader implications for human enterprise in general. The power-law pattern that emerged through his detrended analysis of American baseball stats stayed the same when the physicists compared Korean baseball statistics, then those of other professional sports, and eventually data on nonathletic careers, such as academic research. The pattern remained consistent, a statistical regularity across disciplines and careers. "In every career," says Petersen, "there are metrics for success and productivity." And when mapped out, those metrics form a distinct pattern.

"The idea of a statistical regularity is not so hard to understand in the case of the bell curve that quantifies human height," says Stanley, who is Petersen's advisor and director of the Center for Polymer Studies, which conducts interdisciplinary research. "But any regularity with free will just blows my mind because I was brought up believing everything depended to a large extent on my choices. And now here's the idea that despite my actions, I just end up fitting into some formula."

Petersen originally looked at baseball statistics both because he loves the game and because the sport uniquely has very meticulously recorded data going back to the 1800s. But although baseball had the most complete data, he points out, when a different type of career is analyzed, a similar statistical regularity appears: "You can quantify it with a law—a law of human success, a law of human productivity." Petersen's data indicates that how well we succeed relative to others has less to do with our own drive and more to do with the drive of those around us, whether on the baseball diamond or in a physics lab.

—Rachel Johnson

Architectural rendering by Bruner/Cott & Associates, Inc.

Location, Vocation

On Bay State Road, a new hub for student support services is in the works.

Starting in fall 2012, College of Arts & Sciences students, along with students from BU's other schools and colleges, will get help in a centralized facility on deciding whether to major in English or economics, whether to pursue a career in finance or law, and whether to dine on burritos or salad, all in the same building, the East Campus Center for Student Services.

Among the ten goals the University has set for itself in its strategic plan is the expansion and enrichment of the residential campus and its programmatic experiences for students, including improved dining facilities, community spaces, and career counseling.

To that end, the planned center at the corner of Bay State Road and Deerfield Street (now the site of a parking lot) will pull together the University's existing student services into one intuitive central location.

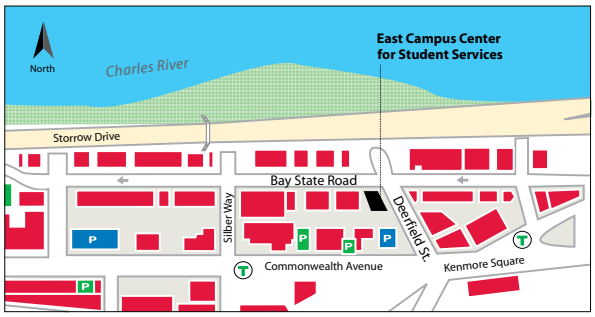
"The building is going to be a natural combination of student support services: everything from advising on majors to tutoring in a specific course," says Steve Jarvi, the College's new Associate Dean for Student Academic Life. "That's the neat thing about it, that students can explore interests and majors and careers, and work on their chemistry problems in the same setting."

Joining the University in June, Jarvi oversees the CAS Dean Ralph W. Taylor Academic Advising Center, familiarly known as "CAS 105," where faculty advisors and full-time academic counselors help first- and second-year students plan their degree programs, select majors, register for courses, and address academic difficulties. His new neighbors in the six-story, 106,000-square-foot edifice will be Career Services, which provides students with résumé help, career counseling, and job fairs; and the Educational Resource Center (ERC), which offers tutoring, language group discussions, and writing and reading workshops. While the three departments do collaborate today as best they're able from their current locations scattered between the Student Union and Kenmore Square, once they're housed in the same building—which begins construction this winter—synergies will abound. When students are struggling with their coursework, the CAS academic advising staff can refer them to the ERC for tutoring, or work in tandem with Career Services to help them reconsider their major, and perhaps choose one that better suits their strengths and interests.

Steve Jarvi

"I think it allows us to look at students from a more holistic point of view," says Jarvi. "Just the architecture allows you to do that—it almost forces you to do that. As professionals, you can't *not* work with one another when you bump into one another on the elevator, in the hallway, when you share a space. The collaboration happens naturally."

Jarvi speaks from experience: he was



The new East Campus Center for Student Services will offer BU students academic advising, career counseling, and dining facilities under one roof just outside of Kenmore Square.

instrumental in creating a similarly centralized student services center at the University of Connecticut, where he worked for two decades previously. (He's no stranger to BU, however; Jarvi earned a master's degree in guidance and counseling from Boston University's School of Education in 1981.)

The building will also feature state-of-the-art dining services, convenient for students who live in Bay State Road and Kenmore Square residences such as Shelton Hall and Myles Standish Hall. The structure itself will bridge two neighborhoods—the Bay State Road side will be built of brick and sit only three stories tall, in keeping with that street's Back Bay character; the six-story Kenmore side will have a modern facade.

Jarvi says that as students pass through the center's doors regularly for their meals, as well as to visit the records office, they'll be drawn more easily to the resources the University offers, and they'll get a head start on planning their future. "This is a great opportunity to expose first- and second-year students to Career Services," he says. "Frankly, preparing for a professional career should start before your senior year!"
—Patrick L. Kennedy

The Difference a Year Makes

The College and Graduate School of Arts & Sciences Annual Report for 2009/10 highlights progress made in all key areas of CAS and GRS during the year. The report includes faculty developments, new programs and courses, and updates on fundraising.

FOR A DETAILED LOOK AT WHAT'S BEEN HAPPENING AT ARTS & SCIENCES, PLEASE VISIT www.bu.edu/cas/ar.

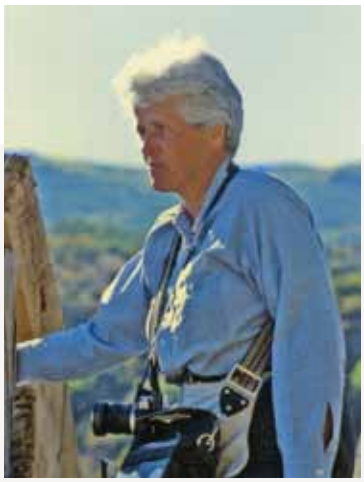


Photo courtesy of the Golisano Children's Museum of Naples

Big-hearted Donor

Like her mother before her, Ernestine O'Connell (CAS'43, GRS'46, SED'58) believed in supporting the next generation of Arts & Sciences students who show outstanding ability in the sciences and mathematics. Before she died in October 2009, she left $7.4 million to Boston University to greatly increase the T. George and Ernestine O'Connell Memorial Scholarship endowed fund that her mother, also Ernestine (CAS'11), had established in 1961. Her daughter's gift last fall is the largest of its type in the University's history.

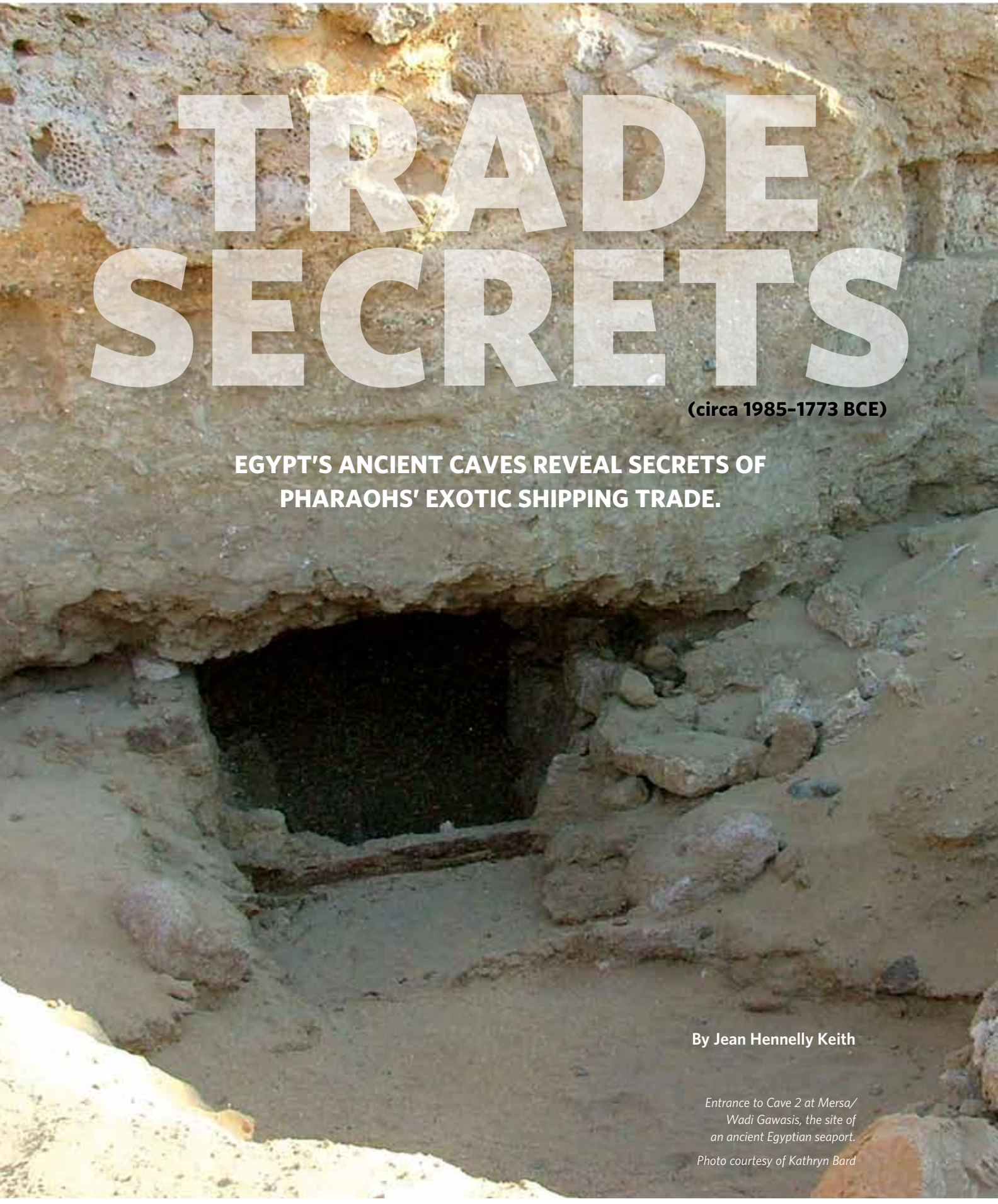
The O'Connell Scholarship is awarded annually to juniors and seniors in the sciences—astronomy, biology, chemistry, geology, physics—and math.

Read more about this colorful and loyal alumna at www.bu.edu/bostonia/summer10/oconnell/.

TRADE SECRETS

(circa 1985–1773 BCE)

EGYPT'S ANCIENT CAVES REVEAL SECRETS OF PHARAOHS' EXOTIC SHIPPING TRADE.



By Jean Hennelly Keith

Entrance to Cave 2 at Mersa/ Wadi Gawasis, the site of an ancient Egyptian seaport.

Photo courtesy of Kathryn Bard

Ancient Egyptians called it "God's Land." During the Old Kingdom (2686–2125 BCE), when pharaohs were constructing massive, towering pyramids on land, they were also sending ships to sea in the hopes of enriching their kingdom. Carved in stone, scenes and texts tell of sailing expeditions sent south on the Red Sea to Punt ("poont") and Bia-Punt (land of Punt) to acquire highly prized raw materials that were unavailable in Egypt: ebony, ivory, and gold; leopards, baboons, and other exotic live animals for the royal zoo; and the coveted aromatics frankincense and myrrh, required for use in temple ceremonies and some mortuary rituals.

Punt was the premier destination for Egypt's sailing ships in the Red Sea trade network in the Middle Kingdom/12th Dynasty (circa 1985–1773 BCE). But, despite chronicles of long-ago expeditions to this bountiful land, and more current scholarly theories about its likely location in a variety of places either in eastern North Africa or Arabia, Punt's whereabouts remains an elusive mystery.

EVIDENCE UNEARTHED

Archaeologist Kathryn Bard and her longtime colleagues in African research, Rodolfo Fattovich and Andrea Manzo, professors of archaeology at the University of Naples "l'Orientale" in Italy, have made some extraordinary discoveries that shed light on Egypt's Red Sea trade with Punt. An associate professor of archaeology at Arts & Sciences, Bard has co-directed excavations with Fattovich since 2003 at Mersa/Wadi Gawasis, the site of an ancient Egyptian Red Sea port. The "valley (wadi) of the spies," as it translates to English, "probably because contraband came through there in more recent times," Bard says, was the land route to the port from which flotillas set sail to Punt.

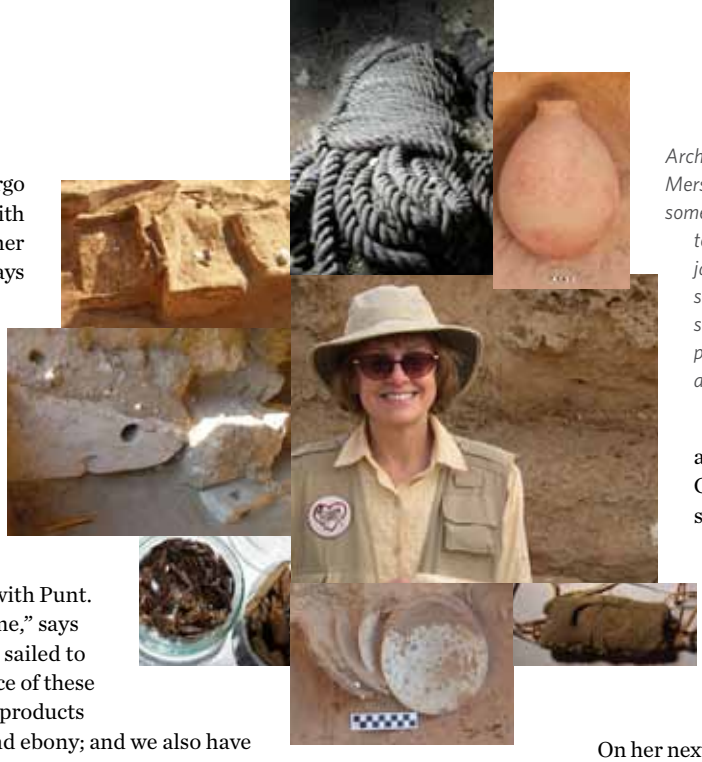
"I've been excavating in Africa for over 30 years, and I've never seen anything like this. Ever!"

On Christmas Day 2004, barely an hour into a dig on a sandy bluff above the port, Bard stuck her hand into a fist-sized hole that appeared in a hillside. She felt only empty space. On further excavation, she was "thrilled" to realize she had discovered a man-made cave. A few days later, Bard and the rest of the research team found an entrance to a second cave, excavated into fossil coral bedrock. On subsequent exploration, the storage caves revealed chambers with a trove of nautical items dating back approximately 3,800 years.

"I've been excavating in Africa for over 30 years, and I've never seen anything like this," says Bard. "Ever! It's just an astonishing site with incredibly well-preserved evidence."

Inside the caves, the archaeologists found stone anchors, ship timbers, and two curved cedar planks that they believe were steering oar blades for a ship that was about 65 feet long. The most surprising find, Bard says, was what she calls "the rope cave," containing an estimated 26 coils of ropes used for rigging that, even though they turned out to be "microscopically bored by tiny insects," she says, "looked to be in great condition, frozen in time," just as they must have appeared when sailors left them on the cave floor nearly four thousand years ago.

In carved niches outside the second cave, the team discovered stelae ("steely"), flat monuments made of limestone slabs, with badly eroded inscriptions. However, Bard found one, face down in the sand, that was "perfectly preserved," she says. On it, hieroglyphic inscriptions recount two royal sailing expeditions, one to Punt and the other to Bia-Punt. The text was the first evidence the team found that King Amenemhet III, who ruled Egypt 1831–1786 BCE, had dispatched such voyages.



Archaeologist Kathryn Bard at Egypt's Mersa/Wadi Gawasis excavation site and some of her team's finds: (clockwise, from top) ship ropes in Cave 5, a storage jar from the Middle Kingdom, papyrus sealing, ration bowls, emmer wheat stored in Cave 3, anchors used to support the entrance corridor of Cave 2, and cargo boxes.

Also outside the caves, the researchers found more than 40 cargo boxes, two of which were painted with hieroglyphics describing their former contents, "like packaging labels," says Bard. These two boxes also bear the name of King Amenemhet IV, who reigned circa 1786–1777 BCE, with the inscription "the wonderful things of Punt."

The nautical artifacts Bard's team found at Wadi Gawasis, along with the stelae's hieroglyphic inscriptions, reveal much about the complex nature of Egypt's Red Sea trade network with Punt.

"It was the finding of a lifetime," says Bard. "We have parts of ships that sailed to Punt; inscriptional/textual evidence of these expeditions to Punt and Bia-Punt; products that came from Punt—obsidian and ebony; and we also have pottery from the southern Red Sea region. It's rare that you have so much of different forms of evidence at one site."

Since their initial discovery of the caves and their contents at Wadi Gawasis, Bard and her colleagues have returned five times to excavate the site, where they continue to unearth evidence that expands the story. They've even found a record of meal preparation for 100 men inscribed on a piece of pottery—"The Egyptians were great record keepers," she says. Last winter, they discovered an additional cave, above the harbor, "right where I predicted it would be," says Bard. And for their upcoming trip this December, they will send a "snake robot," an invention of Carnegie Mellon Associate Professor of Engineering Howard Choset, into two unexplored caves.

PATHBREAKER

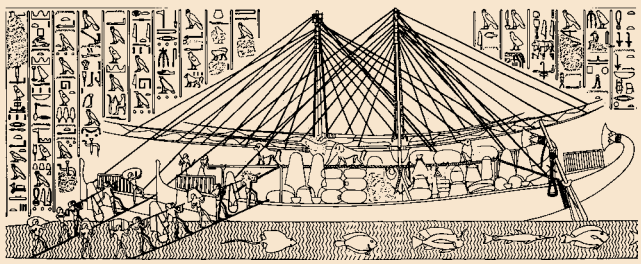
Bard was born in Boston, but raised in Park Ridge, Illinois (where she was a schoolmate of Hillary Rodham Clinton). On a visit to The Field Museum in Chicago as a child, Bard was drawn to an Egyptian amulet depicting a cat and kittens. Her fascination with Egyptian antiquities stuck. After first earning degrees in art, which she taught for awhile, she returned to her early love and took a PhD in archaeology at the University of Toronto.

For Bard, fieldwork as a real archaeologist isn't a brush-with-death-a-minute, like it is for film daredevil Indiana Jones, but she does have some hair-raising adventures on the job. In 1998, while conducting research funded by the National Geographic Society in the high mountains near Aksum, Ethiopia, she and Fattovich saw a bomb explode nearby. War had just broken out along the Eritrean border, and the U.S. and Italian embassies ordered them out pronto, resulting in their making a mad 223-mile descent in a hired car with a leaky radiator on a single-lane dirt road that wound through the mountains. Their research on early African civilization in northern Ethiopia won Bard the National Geographic Society's Chairman Award for Exploration.

Forced to relocate their efforts when research in Ethiopia became uncertain, in 2001 they turned to Egypt's Red Sea coast. When they discovered the caves at Wadi Gawasis in 2004, excavations there presented different challenges. Lined with faults—"huge cracks in the rock"—the caves could collapse. And during the summer, not only are the caves unbearably hot and humid, they are swarming with deadly vipers. Like Indy, Bard "hates snakes." She and her team conduct their Wadi Gawasis digs for about four weeks starting in late December, when the temperature is cooler and the vipers are safely hibernating.

For her "pathbreaking excavations in Egypt," Bard was inducted as a fellow in the American Academy of Arts & Sciences on October 9.

On her next big adventure, Bard aims to prove a theory that could place her in another risky spot. She and Fattovich intend to solve the mystery of where Punt actually was—in Eastern Sudan, she says, but she's keeping mum on the exact location—that will take them into unfriendly territory, but, she says, "We gotta do it."



Two ships from Queen Hatshepsut's expedition to Punt: drawing from the relief in her temple at Deir el-Bahri. Hatshepsut was one of the few female rulers in ancient Egypt.

BUILDERS AND SAILORS

The artifacts that archaeologist Kathryn Bard and her team have found suggest that expeditions to Punt were logistical feats of engineering, travel, and coordination on a gigantic scale, involving thousands of men—"just amazing!" she calls it.

To build the ships, cedar timber was hewn from the hills of Lebanon about 1,000 meters above sea level and brought down to the coast to be transported south on the Mediterranean to the Nile delta. There the timbers were loaded onto boats and transported upriver to a shipbuilding site at Coptos, where they were constructed into seafaring vessels. Ships would then be disassembled and their parts would be trekked by donkey caravan for approximately 10 days across 100 miles of desert, along with food, rope, pottery, and other travel supplies. Once at Wadi Gawasis, the ships would be reconstructed and readied to sail south on the Red Sea to Punt to gather Pharaoh's treasure.

Watch video of the *NOVA* documentary "Building Pharaoh's Ship," detailing the construction of a replica of a seafaring vessel that sailed from Wadi Gawasis to Punt, at www.pbs.org/wgbh/nova/pharaoh/.

Photos and illustration courtesy of Kathryn Bard

FICKLE FRIENDS

By Andrew Thurston

Four experts look at the bumpy relationship between Pakistan and the U.S.

(and how to smooth the way forward).

Pakistan and the United States have been allies since 1947. Not that you'd always believe it. The partners in the War on Terror (now officially dubbed the "Overseas Contingency Operation") seem to swing between affable accords and stinging rebukes. Pakistan can be praised for sending troops into tribal frontiers, then blasted for playing nice with terrorists; the U.S. thanked profusely for sending billions in aid, as its flag is torched on the streets of Lahore.

Is it time for the U.S. to leave Pakistan alone or strive harder to help it shape a more stable future?

From a Pakistani-born adviser to the United Nations to a scholar of Muslim cultures and director of women's studies, some of the international relations experts at CAS give their take on what comes next for Pakistan and the United States.

Adil Najam

Director, Frederick S. Pardee Center for the Study of the Longer-Range Future
Professor, International Relations and Geography & Environment

"As with any other messed-up relationship, you have to start by asking not only what the other person did wrong, but what you did wrong."

The U.S. and Pakistan need therapy, according to Adil Najam. He can't decide if the two nations remind him of an interminably divorcing couple or perpetually misunderstood teenagers—"You just don't get us"—but either way, he says, it's painful to watch.

"It's a relationship based on a long history of mutual distrust," says Pakistani-born Najam. While Pakistan complains of being exploited by the U.S., first to help take down the Soviets in Afghanistan in the 1980s, then the Islamic militants, the U.S. wonders about an ally that accepts its money but keeps turning out anti-American terrorists.

Najam says this suspicion is the natural result of a transactional relationship focused on short-term targets; the two countries concentrate "on their immediate interests with no attention to the longer range." Forget the troubles plaguing Kashmir and Waziristan, successive Pakistani governments just want to survive—in a "crushed economy," says Najam; they "need a cash daddy." The U.S., he adds, only rides into town when it wants enemies smashed or troops moved (75 percent of supplies for the Afghan front line travel over or through Pakistan).

And when the transactions go awry, when drone strikes pummel remote villages or a faulty bomb is driven into bustling New York City, both countries, from government officials to local media, are quick to blame the other. "For too long, everyone's been trying to pass the buck," says Najam, a member of the United Nations Committee on Development Policy.

Perhaps the marriage can be saved, however: "I think for the first time in 30 or 40 years, there is a real seriousness amongst the powers in both Pakistan and the U.S. to mend the relationship," says Najam. Rather than just dictating tactics for a war on terror, the Obama administration is talking trade, energy, and sustainable development; Najam calls them the "common goals and interests" of a long-term relationship.

The alternative to a trusting partnership is bleak: 8,600 Pakistanis were killed in terror attacks in 2009, while many Americans have grown wary of Pakistanis and Muslims. "The stakes are really the safety of the planet," Najam adds with a flash of the drama that made him a star talk show host in his native country in the 1980s.

"With all this displacement, with all this dying, there's a generation building up with distrust, even hatred," he says of those affected by the war raging in northwest Pakistan. "A different government you can deal with, but a generation with a mindset of distrust, you cannot."

Andrew Bacevich

Professor,
International Relations & History

"We need to consider the possibility that there are some problems the United States can't fix."

The best defense might be, well, defense. If the U.S. thinks the way to defeat jihadism is with bigger guns, says retired U.S. Army Colonel Andrew Bacevich, the only thing it'll gain is a couple of zeros on its budget deficit.

Bacevich, author of *The Limits of Power: The End of American Exceptionalism,* takes a dim view of the current U.S. approach in Pakistan: "I think the West has pretty much bollixed it up across the board," he says.

He argues the U.S. shouldn't be throwing money and "American hard power" at Pakistan and Afghanistan, but should "erect effective defenses," starting with improved surveillance and border control for the West, not just the U.S. In becoming an "exemplar, not a crusader state," the U.S. can show that it's not "engaged in some sort of effort to twist their way of life" into line with its norms.

"There needs to be greater attention to demonstrating that the liberal values we profess to represent are not necessarily antagonistic to Islam," says Bacevich. "We need to live up to [those] values and help people in the Islamic world come to the realization that we are not their enemies."

And so, while the Muslim world struggles "to reconcile the demands of modernity with the imperatives of Islam," the U.S. should acknowledge that its ability to offer a solution to the region's problems is limited.

"The people best equipped to solve the problems of the Islamic world are the people who live there," says Bacevich. "Imagine that. What a concept."

The conservative commentator sees a Pakistan hampered by problems—government institutions that "lack legitimacy," an overbearing security community, unsatisfactory schools—that the U.S. doesn't have the resources or goodwill to fix.

"If you were a Pakistani, why would you have trust and confidence in the United States?" wonders Bacevich. "We have professed to be friends with Pakistan when it's convenient for us...and when it's not convenient, we have basically had little to do with them."

While he believes the U.S. and other Western powers are unlikely to see the error of their ways when it comes to relations with Pakistan, Bacevich does think we have a tendency to worry too much about the threat we're facing from the greater Middle East.

"To some degree, we overstate the problem," he concludes. "Our existence is not threatened by the Islamic world or by hostility in the Islamic world."

Shahla Haeri

Associate Professor, Anthropology

"The U.S. should be a little more humble, more understanding in its relationship and expectations."

Midriff-baring fashion trends, 24-hour food networks, a vibrant music scene. Pakistan has more in common with the U.S. than people might think, according to the author of *No Shame for the Sun: Lives of Professional Pakistani Women*, Shahla Haeri. With one possible exception: "The cinema is not good because it can't compete with Bollywood," she adds lightheartedly.

Iranian-born Haeri has spent decades studying the culture of Pakistan—she has produced reports on the country for the UN and the American Institute of Pakistan Studies—and says the U.S. has much to gain by pushing its understanding of the region beyond religious fundamentalism. "Here in the U.S. we see Pakistan as a homogenous society with a monolithic political system, but it is a highly complex, multilingual, multiethnic, and fractured society; I hope to get that critically looked at," she says.

Until the U.S. deepens its view of Pakistani society, argues Haeri, it'll continue to make misjudgments in its dealings with the country. When the White House publicly upbraids high-profile officials, for instance, it offends valued regional behavior protocols. Although Haeri believes many Pakistanis "do want the U.S. to be involved," such slips are "undiplomatic, and upset a public" that's increasingly skeptical of current American intentions.

Some contend that Pakistan is quick to blame the U.S. for all its problems, but Haeri, a frequent reader of the English-language Pakistani press, sees more "well-thought-out, self-critical analysis" there than in the States. She notes that after the failed Times Square bombing attempt in May 2010, the American media consistently traced the problem back to Pakistan.

Haeri remains in regular contact with colleagues in Pakistan and, although recognizing the country is beset by myriad problems, doesn't get the impression of a backward country seething with insurgents. In writing *No Shame for the Sun*, Haeri admits she feared she'd see "oppressed and wimpish" Pakistani women subjugated by men; instead she found many to be "amazingly confident, active, articulate, and opinionated." This window on "the other images of Pakistan" reaffirms the wider lesson. According to Haeri, if the U.S. can shake up its view of Pakistan, the American public might show more support for a country that shares "its diversity of people, traditions, rituals, and food." Pakistanis, too, might see an understanding ally, rather than the ogre vilified by anti-American extremists.

The mercurial diplomatic relationship between the two countries presents "a very difficult and intractable problem," says Haeri, but if we can "pay more attention to the civil society, to people," there might be reason for hope.

Moeed Yusuf

South Asia Adviser,
United States Institute of Peace

"The U.S. and Pakistan governments have not been forthcoming about the real nature and extent of their relationship."

Photo courtesy of Moeed Yusuf

It's a negotiating tactic, and Pakistan and the U.S. have it down to a fine art. Some well-placed bluff and bluster to get what you want.

According to the South Asia adviser at the United States Institute of Peace in Washington, D.C., Moeed Yusuf (GRS'04), the two countries bad-mouth each other in public—Secretary Hillary Clinton told CBS's *60 Minutes* in May 2010 that the Pakistani government leaders were "more focused now than they have been, but we are still not satisfied"—so when they bargain in private, they can "show there's a lot of public pressure against the other side" and win "more concessions." It's also a vote winner.

"They gain political mileage," says the Pakistani native and former Pardee Center fellow. "Obama is a Democratic president; he has to show he's not weak. The Pakistani government needs to show it's as strong as Musharraf was."

But when both countries "exaggerate the other's problems and understate what they're doing to make things worse," they leave their relationship hanging by a thread and foment hostile public opinion. The effect is especially dangerous for Pakistani-Americans, says Yusuf: "That's serious...more scrutiny, more profiling."

He describes that thread in the relationship as being Afghanistan, but says "there is so much potential commonality in this relationship, which neither side has explored." He gives improved trade as an example of something that could make relations "sustainable over the long run": Give Pakistan more market access and its economy will prosper, bringing greater stability.

"Pakistan, despite what everyone is saying, is the single most moderate Muslim country," contends Yusuf. "To get a moderate Muslim country on your side...is a big opening for the U.S. into the Muslim world."

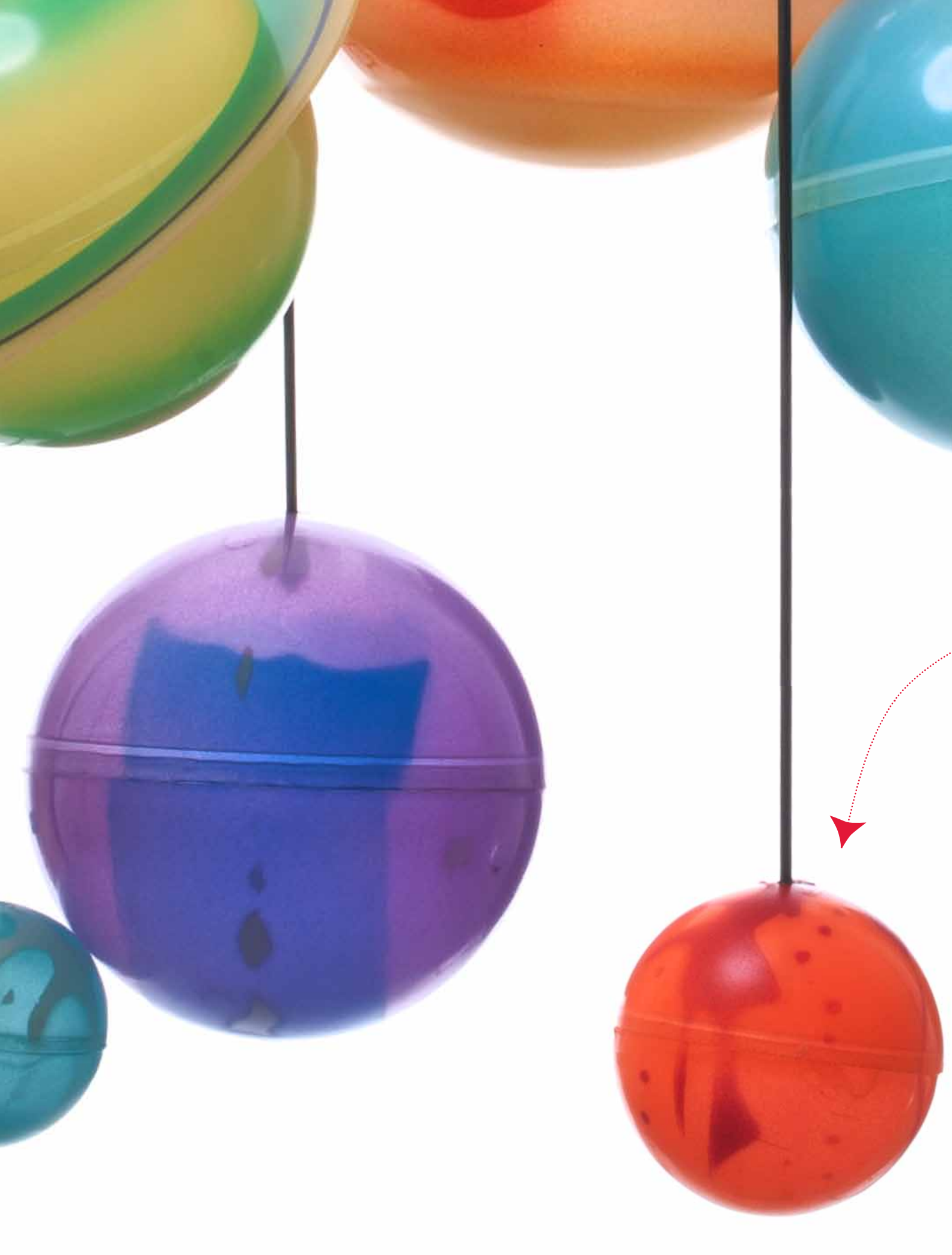
The U.S., says Yusuf, needs to cut out the "hard-hitting rhetoric," while "frequent high-profile visits can seem like they're trying to micromanage Pakistani politics." Pakistan, in turn, has to drop the conspiracy theories: "The U.S. president doesn't get up in the morning and think, 'How are we going to take out Pakistani nukes?'"

Both sides should instead concentrate on their common enemy, the extremists, and "figure out why the other side is not doing what they want them to do," rather than publicly lambasting each other. Yusuf notes that he has seen some improvement; the U.S., for instance, has released more statements in support of the Pakistani government.

He adds that there's one potential game changer, too—Kashmir. Pakistan and India have disputed each other's claims to the territory, often through the barrel of a gun, since the 1940s. If the U.S. can "show sincerity" in solving that intractable problem, it "would really change hearts and minds."

WATCH ANDREW BACEVICH AND SHAHLA HAERI DEBATE RELATIONS BETWEEN AFGHANISTAN, PAKISTAN, IRAN, AND THE U.S. AT www.bu.edu/buniverse/.

THE FLOODS' TOLL: ADIL NAJAM TELLS *BU TODAY* ABOUT THE POTENTIAL LONG-TERM IMPACT OF THE SUMMER'S DEVASTATING FLOODS ON PAKISTAN'S STABILITY AND THE NEED FOR A SHOW OF "REAL COMPASSION" BY THE U.S. AT www.bu.edu/today/node/11398.



By Jeremy Schwab

COOL PLACE, NOT MUCH ATMOSPHERE

Astronomer John Clarke and his team of researchers want to find out how Mars is losing its atmosphere.

The history of Martian exploration is marked by bold attempts—and some spectacular failures—to send unmanned probes to learn more about the geology, hydrology, and atmosphere of the Red Planet. The Soviet Union and United States raced to be the first to explore Mars during the height of the Cold War in the 1960s and '70s. Most of the Soviet craft and many American probes failed: some failed during launch, others lost communications, and at least one probe's landing vehicle crash-landed on Mars. But a few attempts succeeded, sending back reams of data, including evidence that water once flowed freely across the Martian surface.

While the technology of space flight has improved over the years, sending a probe to Mars remains a dicey business. That is why, when he found out that his research team had been chosen to lead NASA's next mission to the planet, CAS Professor of Astronomy John Clarke had mixed emotions.

"It felt great for about 24 hours, and then I realized we actually have to do this," he recalls. "I wondered, 'Did we ask for enough money and enough time?'"

Clarke's team of researchers, led by Bruce Jakosky at the University of Colorado at Boulder, outdid more than a dozen other teams competing for the opportunity to conduct the second Mars Scout Program voyage. The first Scout mission successfully deposited the *Phoenix* lander in the northern polar region of Mars in May 2008 to search for environments suitable for microbial life. The second mission, which will be overseen by NASA but designed and developed by Clarke's team, is an orbital mission that will examine the atmosphere rather than land on the surface. It is scheduled to launch in November 2013, with a budget of $485 million.

The team's mission, dubbed MAVEN (Mars Atmosphere and Volatile Evolution), will send its probe into orbit around Mars for one Martian year—or approximately two Earth years. Armed with an array of instruments, the probe will transmit data that will allow the scientists to understand more precisely how the Red Planet's atmosphere is lost into space, and at what rate. Establishing this information is crucial if human beings are one day to live on Mars—the planet that, of all the known planets, is most similar to our own.

A MIGHTY WIND

Today, the Martian atmosphere is an insubstantial veil composed of 95 percent carbon dioxide with traces of other gases. It is 200 times less dense than Earth's atmosphere.

But this wasn't always the case. Evidence of erosion—streambeds, floodplains, and valleys—shows that at one time there was liquid water on the Martian surface. This implies that the average temperature was warmer then (today the temperature never exceeds the freezing point of water) and the atmosphere much thicker, or else the water would have immediately evaporated due to the low atmospheric pressure.

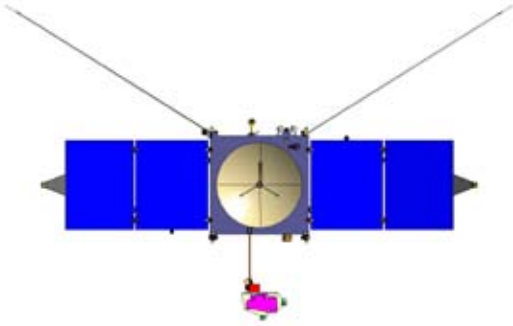
So what happened to the Martian atmosphere? The solar wind provides part of the answer.

The solar wind—a blast of ions and electrons ejected from the upper atmosphere of the Sun—tears through interplanetary space at 400 kilometers per second. Earth's magnetic field interacts with the solar wind to form a magnetosphere that protects us from this plasma stream by harmlessly deflecting nearly all of the charged particles into space. Mars, however, is too weakly magnetized to have a magnetosphere. Instead, it has an ionosphere that sets up a current that partially deflects the solar wind. Upon reaching Mars, the ions and electrons that are not deflected by the ionosphere smash into the planet's upper atmosphere. They can break gas molecules into their component atoms and splinter atoms into subatomic particles. The force of these collisions knocks some particles out into space, beyond the grasp of Mars's relatively weak gravitational pull.

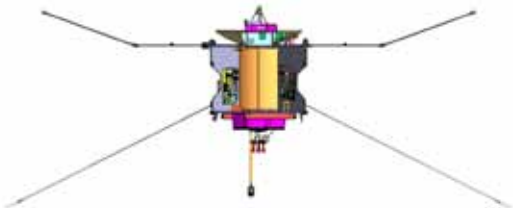
Clarke and his colleagues want to know precisely what these collisions look like, and how often they occur. They also want to find out how ultraviolet radiation—which also contributes to Mars's atmospheric loss—is reacting with particles in the upper atmosphere. UV light is electromagnetic radiation with a wavelength shorter than visible light but longer than X-rays. Unlike visible wavelengths of light, UV radiation from the Sun reacts easily with gases in the atmosphere. The solar UV rays transfer energy to the gases, heating them up and accelerating their motion. This increased movement over time causes gases to rise, pushing them higher up in the atmosphere.

Clarke's team believes that these high-energy gases, hydrogen in particular, can escape from the upper atmosphere into the exosphere, and then out into space. The exosphere is a region beginning around 120 miles above the surface and extending many Mars radii from the planet's surface until eventually tapering away into space. In the exosphere, the gas molecules are very diffuse. With few other molecules to collide with, the energized gases can maintain their trajectory and escape into space, overcoming the pull of Mars's weak gravity.

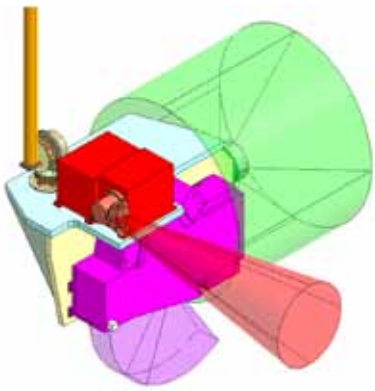
The team is currently designing a host of instruments to tackle the phenomenon of Mars's atmospheric loss from different angles. The MAVEN probe will take an extremely elliptical orbit that will allow it to pass through the upper Martian atmosphere at certain points. During these passes, a mass spectrometer will gather up Martian air and analyze its composition by measuring the mass of its component molecules. Another package of instruments will detect ions and electrons. A magnetometer will measure the strength of the solar wind. And, finally, remote sensing equipment will view the planet from above and reveal the UV rays bouncing off the atmosphere.



(above) A computer rendering of the MAVEN space probe, which will orbit Mars to measure its loss of atmosphere into space. (below) A side view of the MAVEN space probe



(below) A close-up of MAVEN's sensing equipment. The ultraviolet sensing package, highlighted in purple, will be monitored by Astronomy Professor John Clarke.



This is where Clarke shines. He has spent most of his professional life studying other planets in our solar system by analyzing the UV radiation that is reflected by hydrogen molecules in their upper atmospheres. He has been conducting UV research regularly using the Hubble Space Telescope since it was launched in April 1990. Last year, he published his findings on the impact of the solar wind on the upper atmospheres of Jupiter and Saturn in the *Journal of Geophysical Research*.

The researchers hope that the upshot of this overall surveying will be a much clearer picture of how quickly the Martian atmosphere is escaping into space. By taking into account fluctuations in the strength of the solar wind over time (scientists believe it was much stronger when the Sun was younger), they should be able to extrapolate backwards in time to determine how thick Mars's atmosphere was during particular periods.

They also want to learn how the atmosphere's composition has changed with time. There is evidence that billions of years ago the Martian surface contained much more water and its atmosphere much more water vapor than is present today. Research shows that Mars has lost an entire ocean's worth of water. The evidence takes the form of deuterium, an isotope of hydrogen that is heavier than stable hydrogen molecules. In Mars's atmosphere, deuterium occurs at five times the rate that it normally does in a drop of water on Earth. The likely explanation is that there were once more water molecules in the Martian atmosphere (today there are only traces of water), but they broke apart into hydrogen

and oxygen, and then the lighter hydrogen atoms escaped into space, leaving the deuterium behind.

Clarke has successfully lobbied to include on MAVEN's probe an Echelle spectrograph, a device that will measure the ratio of deuterium to hydrogen at the top of the atmosphere—the first time an Echelle spectrograph will be used while orbiting another planet. The spectrograph should be able to tell Clarke and his colleagues how much water has been lost from the atmosphere, and at what rate.

FOOTPRINTS ON MARS

The MAVEN orbital spacecraft will be the size of a small car, with long, thin appendages covered in solar panels, which will power the vehicle's systems (communications, steering, etc.). A battery will be used when the vehicle is in the shadow of Mars. MAVEN will be propelled toward Mars by booster rockets at approximately 10 kilometers per second. Even at this speed, it will take the MAVEN probe roughly one Earth year to reach its destination.

The MAVEN team hopes its craft becomes the next in the series of probes that have enhanced our understanding of Mars. In 1965, the U.S. probe *Mariner 4* sent back the first up-close images of the Red Planet. Six years later, *Mariner 9* became the first spacecraft to orbit the planet, sending back images of riverbeds and other features indicating that water once flowed across the planet's surface. Later, the U.S. *Viking* probes greatly expanded our understanding of Martian geology, while today the *Spirit* and *Opportunity* rovers transmit data to Earth from the planet's surface.

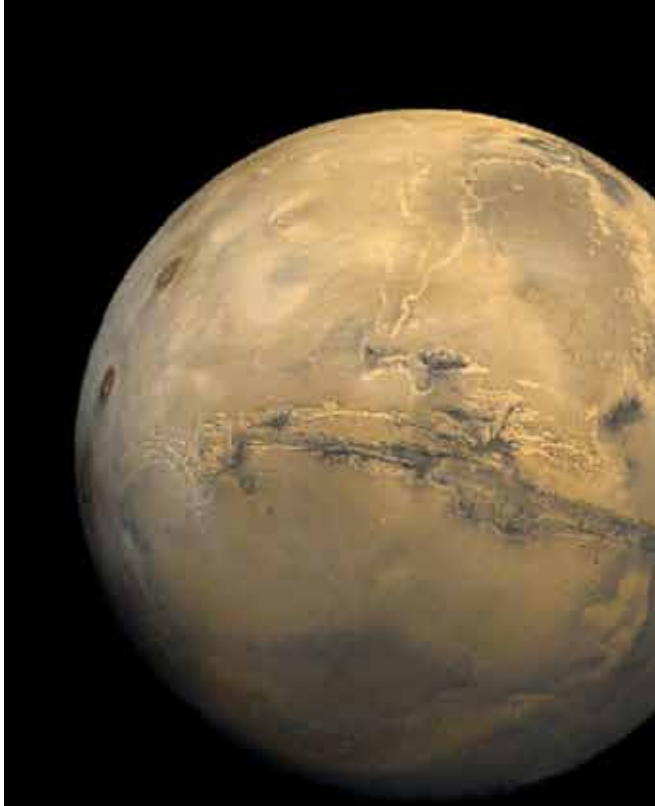
Someday, the spacecraft sent to Mars may no longer be unmanned. In April, President Barack Obama announced that he was jettisoning the plan approved by former President George W. Bush to return astronauts to the Moon in 10 years, replacing it with a plan to launch a manned mission to Mars by 2040.

While government leaders' long-range timelines can change, few space researchers doubt that sooner or later humans will attempt to reach and establish a presence on Mars.

If we are to survive for long on the Red Planet, though, we will probably need to thicken its atmosphere somehow—essentially reversing the effects of the past three billion or so years. A thicker atmosphere would retain more heat and help raise the temperature. It would also protect against damaging UV radiation.

Living on Mars and "terraforming" it—transforming it into a more Earth-like planet—may seem like science fiction. Indeed, realizing these goals remains hypothetical and a long way off. One of the most daunting challenges to sending humans to Mars is the need to protect the crew from the solar wind. When astronauts traveled to the Moon, they did so during a period when the Moon was safely enveloped in Earth's magnetosphere. According to Clarke, NASA is currently researching ways to shield astronauts from the most energetic solar particles; however, the technology is not there yet. The MAVEN team's research on the behavior of the Martian atmosphere and solar wind will provide data that will take us one step closer to a human venture to Mars.

(Left) Graphic images courtesy of the MAVEN project at the University of Colorado, Boulder



IS MARS OUR BEST HOPE?

The universe is vast. Just consider:

- The *Voyager 1* spacecraft, which will probe the far reaches of the outer solar system, is now flying away from us at approximately 38,000 miles an hour, thanks to gravity assists from Jupiter, Saturn, Uranus, and Neptune.
- A craft hurtling through space at this speed would take roughly 76,000 years to reach the nearest star, Proxima Centauri, which is 4.3 million light-years away.

Given this vast distance, the likelihood of human beings reaching other solar systems seems remote, as does the likelihood of alien civilizations reaching ours. Since Mars is the planet in our solar system that has an environment most like Earth's, it would appear that Mars is our best shot at finding another habitable planet.

Image courtesy of nasaimages.org, NASA/JPL/Malin Space Science Systems.

Defining Beauty

Women come in all colors. Why don't fashion models?

By Corinne Steinbrenner

A recent issue of *Vogue*—arguably the world's most influential fashion magazine—included only eight nonwhite models in its advertising pages and just three in its editorial fashion spreads. A look at *Vogue* competitor *Elle* yields similar tallies: seven models of color in advertisements and one in the editorial spreads. Why the imbalance? And why are nonwhite models such a rarity in fashion on the whole?

These are among the many questions Assistant Professor of Sociology Ashley Mears aims to answer in her forthcoming book examining the business of modeling, tentatively titled *Pricing Beauty: The Making of a Fashion Model.* Mears describes herself as an ethnographer (someone who studies and records human culture) with interests in popular culture and markets. She became interested in studying the fashion model market as an undergraduate, when she learned in a sociology course that her seemingly glamorous part-time editorial modeling work could be classified as "precarious labor"—unpredictable and unstable employment prospects on par with that of day laborers. The business of modeling later became the subject of her doctoral dissertation, which she researched by continuing to model while attending graduate school, giving her a unique insider's view of the fashion world.

The first step in understanding the sparse distribution of ethnic models in the pages of *Vogue* and *Elle*, as well as many other peculiarities of fashion, says Mears, is to realize that the modeling industry is divided into two distinct categories—commercial and editorial—that are shaped by different market forces.

Commercial models appear in catalogs and advertisements and earn competitive, steady money, making them the "bread and butter" of modeling agencies, says Mears. A commercial model posing for a JCPenney catalog can earn $2,500 for a day's photo shoot, she says, with a percentage going back to her agency as a commission. These models rarely make a name for themselves, but they do make a living.

By contrast, editorial models—who walk the Fashion Week catwalks and appear in the editorial spreads of high-end and avant-garde fashion magazines—work for exposure and prestige rather than money. A day of shooting for a *Vogue* spread can pay as little as $150. What keeps these models going, and what keeps their agencies paying their bills, says Mears, is the hope that they'll gain enough status and name recognition to land contracts for high-end marketing campaigns, such as the advertisements for Versace handbags and Calzedonia swimwear that helped supermodel Gisele Bündchen earn an estimated $25 million last year.

Such superstardom is rare, but the chance at a grand payoff often lures modeling agencies into spending thousands of dollars on a young hopeful's plane tickets, photographs, and New York living expenses while they wait for her to make it big. "The agents are seduced by the gamble," says Mears. "It's like playing the lottery. You keep buying your tickets because the possibilities are so big, so seductive—and yet the probability is quite slight."

While the divide between commercial and editorial modeling is well understood in fashion circles, what Mears set out to explore in her research is how modeling agents (known in the industry as bookers) and their clients choose models—or pass models over—for particular commercial or editorial jobs.

The choice of commercial models turns out to be relatively easy to explain, especially for catalogs. The decisions are more about profits than aesthetics. The goal of casting directors in selecting models to appear in clothing catalogs is to sell clothes to consumers, so directors choose models they believe will appeal to those consumers. The "look" of most commercial models, then, says Mears, is "the standard, classic, heterosexual 'pretty,'"—what one booker described to her as "a better-looking version of the girl next door." And because most catalogs are trying to appeal to a broad demographic, commercial casting directors usually choose at least some nonwhite models for their projects. Measuring a casting director's success in choosing catalog models is a simple matter of tracking which clothes sell and which ones don't—and in the Internet age, a matter of tracking which models' photos get the most clicks.

*"They tried really hard to say, ...**'This isn't anything about race. It's just an aesthetic.'**"*

The choice of editorial models is more complicated. "It's a very peculiar realm," says Mears, "because it's a place where consumers almost don't matter. The people who are making the latest fashion spread for some avant-garde magazine aren't concerned with what the average consumer wants to see. They don't really care." What they care about, Mears argues, are the opinions of other fashion tastemakers—the elite photographers, magazine editors, and fashion designers of New York, Paris, London, and Milan. "They're concerned with what other high-end producers want to see."

When editorial bookers and casting agents talk about the look of editorial models, says Mears, the word they always use is "edgy." Editorial models are often not conventionally pretty, but instead push the boundaries—the edges—of convention in some new and different way. Modeling agents are constantly trying to discover the next edgy look, she says, a task that's fraught with uncertainty and economic risk. With no catalog sales or corporate specifications to guide them, they're left to anxiously guess at what fashion editors like *Vogue's* Anna Wintour will want to see next. As the pages of *Vogue* and the Fashion Week runways reveal, their guess is almost always an ultra-tall, ultra-thin, white model.

Mears interviewed bookers and other fashion producers in an attempt to understand these guesses. When asked directly about their preference for white models, they insisted racism plays no part in their decisions. "They tried really hard to say, 'We're not racist. This isn't anything about race. It's just an aesthetic,'" says Mears. It just so happens, they told her, that ethnic models don't fit the image they're trying to project. When they're searching for a face and a body for the sophisticated, high-class aesthetic they're trying to create, they say they just don't find minority women who fit the bill.

They don't realize, says Mears, it's a white bill to begin with. "So it comes down to race," she says, "but it's a more subtle way of thinking about how race matters." The market for editorial fashion models, she argues, follows an invisible hand of racism, a subconscious association of whiteness with status that's deeply rooted in Western cultural history. With time—and with the Obamas in the White House and on the covers of *GQ* and *People*—this perception may change, says Mears, but she hasn't yet seen evidence of that on the fashion runways.

Studying high fashion is fascinating, she says, because aesthetics are an embodiment of culture—studying the things we consider to be beautiful reveals much about the society in which we live. The scarcity of models of color in editorial fashion spreads, for example, is strong evidence that America hasn't yet become the post-racial society many would like it to be.

*Photo by Tony Cenicola/*The New York Times*/Redux*

Stories Under Glass

By Annie Laurie Sánchez

Who doesn't love a good story? Whether chanted around a fire, inked over creamy pages, or flickering on a screen, a well-told tale sparks curiosity through the generations—the ability to tell it is a gift. Such a gift belonged to Jane Austen, whose works are more read today than she ever anticipated. But who tells her story? Scholars, admirers and fans ("Janeites," they're often called), and film directors tell pieces of it. Objects tell tales, too. In a recent show at The Morgan Library & Museum in New York, Assistant Curator Clara Drummond (GRS'02, '04) had Austen's story ringing out from the pages of manuscripts, letters, and documents that once belonged to the author herself.

"To let the objects tell the story," Drummond says, was her aim in becoming a curator. The prospect of working on *A Woman's Wit: Jane Austen's Life and Legacy* (November 6, 2009–March 14, 2010) gave her just such an exciting and challenging opportunity. Drawn from the Morgan's impressive Austen holdings—almost a third of her remaining letters, the only complete manuscript of one of her novels *(Lady Susan),* and other documents not seen by the public in a generation—the show had a guaranteed audience of Janeites. "People who love Austen would come to see the actual remnant of her hand on the paper," Drummond notes. "But it has to appeal to a general audience, not just specialists."

To attract a broader audience, Drummond and cocurator Declan Kiely needed to present a story about Austen as engrossing and colorful as her novels. No small feat. Although the subject is popular, the medium is a harder sell: manuscript exhibitions have a reputation for being sleepy. "The real challenge for a manuscript show," says Drummond, "is how to make manuscripts visually interesting." Drummond first developed her own zeal for manuscripts at BU's Editorial Institute, researching author Elizabeth Barrett Browning. "They're one-of-a-kind objects," she points out. However rare the documents, the curators needed more to entice the public.

"It came down to that idea of wit," Drummond recalls. "Austen is so funny; it's a very sharp humor." It wasn't Austen's wit alone. The show got a needed splash of color when the curators selected satirical prints by the author's contemporary James Gillray—brightly hued commentaries on themes of cultural standards, social traditions, and fashion—as a flashy echo to Austen's epistolary witticisms on the same subjects. Drummond notes that these pairings were a fresh surprise even to Austen experts.

New displays helped bring viewers up close to these witticisms. Manuscripts and letters were framed and hung at eye level rather than encased less accessibly. That arrangement let patrons get nose-to-nose with the author through the *Lady Susan* manuscript (a "fair copy," meaning largely clean), as well as marked-up sections of *The Watsons,* a novel Austen abandoned. These pages offered a rare glimpse of Austen revising her story. "Austen's novels are so perfectly conceived that you could think everything came out perfectly from her pen," says Drummond. "But she struggled, as all writers struggle."

Other items told of Austen's social life: a letter to Austen's sister Cassandra featured cross-writing—writing at a 90-degree angle across what's already written for a longer letter on a single sheet of paper.

(above left) This satirical Gillray print dovetails with Jane Austen's quips on fashion. (above right) Austen's cross-written letter reveals her economy and consideration of the recipient, who would owe postage for an additional sheet.

Photos by Schecter Lee, courtesy of The Morgan Library & Museum

The Morgan also commissioned a new chapter to Austen's story: a short documentary film reflecting on Austen's legacy and the experience of interacting with her manuscripts. Drummond explains, "The idea was to pick surprising people in the more public sphere: Who would think Cornel West was a huge fan of Austen?" Along with West's poignant reflections on Austen's impact on him as a civil rights activist and philosopher, the documentary features remarks from actress Harriet Walter, Urban Decay Cosmetics founder Sandy Lerner, and authors Colm Tóibín, Fran Lebowitz, and Siri Hustvedt, who thrilled at interacting with Austen's pages.

"This reaching beyond the museum walls, which I think all younger curators take as part of their mission, that's what a film like that can really achieve," Drummond says. The film has a permanent home as part of the online exhibition, which also includes images of works featured in the exhibition, historical and technical information, and more clips of the documentary's commentators. Reaching further, a strong presence on Facebook and Twitter—as well as some consistent Janeite blogging—spread word of the show to a broader, and younger, audience.

Relatively new to the museum world, the use of social media is still being explored for its capacity to extend the impact of exhibitions and collections. It's difficult to track just how much it drives visitation, but an overwhelming turnout for opening gallery talks and high numbers at related events were strong indicators of the Morgan's success. "It's very rare that so many people are interested in something you've had a hand in," says Drummond. "People came and then said, 'Now I want to reread Austen,' or 'I want to read Austen for the first time.' It's a spark of curiosity."

With the book on Austen closed for the time being, Drummond is organizing the next story she'll tell. It, too, began at BU, as the proposal for a course Drummond once planned for the Writing Center. Her topic: animals in the imagination. Although she'll need to refine her criteria, such a universal topic will give her the chance to draw on all the Morgan's collections—from illuminated medieval bestiaries to Aesop's fables to Poe's *The Raven* and the works of Lewis Carroll. It also begs for the incorporation of contemporary counterpoints, from animated children's tales and popular movies to wildlife conservation and family pets.

Slated to take place in Winter/Spring 2012, the show is sure to attract audiences young and old with a subject that has such continuity throughout human society. From the time they were pigmented onto cave walls to their depiction as political quadrupeds in *Animal Farm,* animals occupy nearly as major a role in human culture as fictional *Homo sapiens* like Mr. Darcy and Miss Bennett. Whatever its evolution, Drummond promises it will be another ripping-good tale. "There are endless possibilities," she says.

DISCOVER MORE OF AUSTEN'S STORY IN THE MORGAN'S ONLINE RENDITION OF *A WOMAN'S WIT:* www.themorgan.org/austen/.
FIND OUT ABOUT THE ROLE MANUSCRIPTS PLAY AT BU'S EDITORIAL INSTITUTE: www.bu.edu/editinst/.

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Passing It Forward

The history department's six new Doctors of Philosophy, who graduated in May, formed an exceptionally tight bond while at BU. As a group, they've raised $5,000 to help fund the history graduate students who follow them as well as department faculty travel and research. They presented their gift to History Department Chair Bruce Schulman at a celebration on May 13 at the home of Robyn Metcalfe (GRS'06, '10), pictured at far left along with classmates Kate Jewell, David Atkinson, Melissa Graboyes, Ronald Lamothe, and Bob Black. The new grads' specialties range from the history of medicine in East Africa to 19th-century agriculture, a passion of Metcalfe's, who, with her family, runs an animal conservation farm in Maine. To learn more about this group and their meaningful gift, go to ***www.bu.edu/bostonia/web/metcalfe****.*

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The Catalyst

JOHN CARADONNA WINS A METCALF AWARD

CAS Associate Professor of Chemistry John Caradonna is fascinated by transitions—those moments when one thing becomes another. In his lab, dubbed the Caradonna Group, he and his colleagues study the role of transition metals in catalyzing—or facilitating—chemical reactions in living things. They then try to synthesize these reactions in the lab. His team's findings could lead to better therapies to treat phenylketonuria (PKU), a rare disease resulting from an inability to break down the amino acid phenylalanine. PKU can cause mental retardation and death at a young age if patients do not adhere to a strict diet.

To Caradonna, the transitions he facilitates in the classroom are just as important as the reactions he studies in the lab. In more than two decades of teaching, he has made it his mission to guide his students from a passive approach to learning—rote memorization—to an active one—critical thinking. It is this fundamental leap forward, he says, which delineates high school students from college students and allows for deeper intellectual growth.

"In college, what is more important is what can you do with those facts you have memorized," says Caradonna, a winner of this year's Metcalf Award for Excellence in Teaching. "Do you understand the implications of those facts? Once they get that, it's wonderful. Because once they can do that, it doesn't just stop in college; they can do that for the rest of their careers."

One way he gets students to think critically is with non-chemistry-related brainteasers at the outset of class. This exercise allows the students to relax and clear their heads before he launches into a detailed lecture. It also serves a deeper purpose.

"What it's doing is getting them to trust what they know, and learn to use what they know," he says. "For instance, I'll ask them how much tea there is in China, and by the end of the semester most students can get the answer to problems like this within a factor of two or three. By learning to guesstimate things, you can sort of fill in the gaps in your knowledge. Then when you ask them tough questions in chemistry, they can apply this way of thinking and stay away from just plugging in a formula."

When he learned that he had won this year's Metcalf Award, which comes with a $5,000 prize, he says he was "very pleased and surprised. I am the fourth member of my department to win the Metcalf Award. So teaching is something we take very seriously in the Chemistry Department and at CAS. There's a serious mission of training people to think." —*Jeremy Schwab*

HAPPY BIRTHDAY TO THE 10TH DEGREE!

Alfred Webber (GRS'40) of Chadds Ford, Pa., turned 103 on 10/10/2010. A Maine native, he graduated from Bates College in 1928, then taught physics and was a housemaster at Brookline High School in Massachusetts. He earned a master's in physics at BU and worked for DuPont Corp. in its Plastics Research Division for three decades, retiring in 1972. Webber was a fellow in the Optical Society of America. In Chadds Ford, he was a friend and neighbor of the late Andrew Wyeth, and continues to be active in local lapidary, photography, and astronomy clubs.

Carroll Parrott Blue (CAS'64), formerly Carroll Ann Parrott, of Houston, Tex., was honored in late May with a UCLA Film & Television Archives appointment to work intermittently at the archive from June to December 2010 as a visiting researcher with the L.A. Rebellion project curators. She is a University of Houston research professor with appointments in the history department's Center for Public History and Texas Learning and Computation Center (TLC2).

Mark Meltzer (CAS'67, SED'68) of Los Angeles, Calif., celebrated 30 years as executive director/CEO of the Jewish Free Loan Association (JFLA) of Los Angeles, in June. This important milestone was recognized at JFLA's Annual Gala Dinner on May 26, when he received the Ben & Anne Werber Communal Service Award. Since he joined JFLA in 1980, he has been the main catalyst for JFLA's tremendous growth over the past three decades, garnering funding and implementing dozens of new loan programs. He is a consultant to national and international Jewish organizations requiring expertise in émigré transmigration and relocation. He is a founding member and past president of the International Association of Hebrew Free Loans, and consults with communities worldwide that wish to start up local free loan programs. He is a past president/chair of the Jewish Communal Professionals of Southern California and the Los Angeles Council of Federation and Agency Executives. Email him at mark@jfla.org.

Richard H. Cummings (CAS'71) of Düsseldorf, Germany, wrote the book *Radio Free Europe's "Crusade for Freedom": Rallying Americans behind Cold War International Broadcasting, 1950–1960*, published by McFarland & Company. The book takes an in-depth look at the Crusade for Freedom, revealing how its unmatched pageantry of patriotism led to the creation of a dynamic movement involving not only the government but also private industry, mass media, academia, religious leaders, and lastly, "the average Joe." Email Richard at richix9@gmail.com.

Ellen Sara Kitzis (CAS'72) worked at Gartner Inc. for 15 years, leaving to pursue other interests. While there, she published the *New CIO Leader*, Harvard Business School Press.

Ellen Pober Rittberg (CAS'74) has just launched her first book, *35 Things Your Teens Won't Tell You* (Turner Publishing), a humorous book about how to be a savvy, stealthy, responsible, authority figure, while at the same time not lose one's sanity or sense of humor. A former award-winning journalist, essayist, and cable television host, she had three children in three years (now grown) and represented teens in court for 13 years. Her book is available in chain bookstores, independent bookstores, and on Amazon. Her website is www.ellenpoberrittberg.com, and her email address is erittberg@gmail.com. She would love to hear from her former classmates.

Arthur Lazarus (CAS'75) was recently awarded the Administrative Psychiatry Award by the American Psychiatric Association. This top honor is given to a psychiatrist who has demonstrated extraordinary competence in psychiatric administration over a substantial period and has achieved a national reputation in this area. The association praised Dr. Lazarus for his "dedication as a clinician and executive; inspiration as

a teacher and role model; dedication as a public servant; and eminence as a productive clinical investigator and author in the field of psychiatric administration." He is currently senior director of global clinical development at AstraZeneca Pharmaceuticals in Wilmington, Del.

Da Zheng (GRS'87, '94) of Brookline, Mass., just published a biography of Chiang Yee, a Chinese American artist and travel writer. The title of the book is *Chiang Yee: the Silent Traveler from the East*, Rutgers University Press, 2010.

Jacqueline Lentini McCullough (CAS'88) of Geneva, Ill., has opened a solo law firm, concentrating her practice in business employment immigration. She may be reached at jacki@lentinivisas.com, or 630-262-1435, and looks forward to catching up with classmates!

Alexandra L. Chan (CAS'93) of Pound Ridge and Westhampton Beach, N.Y., is vice president of dental services/dental director and medical director for administrative services in Hartford, Conn., where she continues to lead a multi-million-dollar oral health program and a multi-practice expansion within the state of Connecticut. She attended the New York University Dental School and completed her postdoctoral residency training at the Albert Einstein College of Medicine and Montefiore Medical Center in 1999. In 2004, she earned a master's in health policy and management at Columbia University's Mailman School of Public Health. In 2005, she was the recipient of a Fellowship award from the Academy of General Dentistry. She has held several leadership positions in community health centers since 2003. She holds a faculty appointment at the University of Connecticut School of Dental Medicine and oversees the training of dental residents and fellows at her dental sites.

Jo Anne Domingo Lemus (CAS'94), formerly Jo Anne Ordinado Domingo, and her family have recently moved to San Diego, Calif., due to her husband Abel's promotion to the FAA's Pacific Operations Control Center in San Diego. She is still with the FAA as well, but has now been reassigned to the Southern Calif. TRACON. She can be reached at jodomingo@hotmail.com.

Eric Matthew Stryker (CAS'98) of Dallas, Tex., was awarded his PhD in Art History from Yale University in May, having written the dissertation "After the Blitz: Figurative Art and Social Space in London, 1945–1962." He is now employed as assistant professor of art history at Southern Methodist University in Dallas, Tex., where he teaches courses in contemporary art history, theory, and methodology. Email him at eric.stryker.1998@alum.bu.edu.

Kate Burian Chase (CAS'00), formerly Kate Burian, and her husband, Patrick, of Upper Saddle River, N.J., announce the birth of their first child, Nathan Robert, on January 8, 2010. Contact her at kbchase@gmail.com.

Cesar Cardenas (CAS'01) of New York, N.Y., is director of intergovernmental affairs at the NYC Workforce Investment Board. He has been with the WIB since February 2010. Email him at ccardenas@gmail.com.

Jessie (Lemovitz) Lee (CAS'01), of Shrewsbury, Mass., and her husband, Erik Lee, welcomed their second son, Ryan Scott, on February 13. This newest addition to the family joins his older brother, Justin, who was two in July. Ryan was born six weeks early, and came home healthy and strong after only 10 days in the UMass Memorial NICU. The Lee family wants to remind everyone to support the March of Dimes and their efforts to support healthy babies—either by donating or participating in local charity events. The Lee family participated in the local March for Babies on April 18 in honor of Ryan!

Gustav Schmidt (CAS'02) graduated from the University of Florida Levin College of Law, receiving his JD *magna cum laude*, and is an associate with the law firm Gunster, Yoakley & Stewart P.A. in Fort Lauderdale, Fla.

Krista (Farese) Wallace (CAS'02) of Milford, Mass., married John Lincoln Wallace II on September 12, 2009, in Boston, Mass. She is an assistant district attorney in Worcester County, and John is a court officer. Email her at kfarese@yahoo.com.

Jenny M. Estes (CAS'04) of Kenbridge, Va., was recently admitted to the Virginia-Maryland Regional College of Veterinary Medicine, Class of 2014, for the doctor of veterinary medicine program.

Christina Gerstel (CAS'05) is helping to coordinate and implement a massive response to the earthquake that rocked Haiti. She is a staff member of Pittsburgh-based medical relief organization Global Links. As volunteer program manager for Global Links, she is facilitating the agency's mobilization of resources to respond to the Haiti earthquake disaster.

Cassandra Nelson (CAS'05, GRS'07) published an edition of Samuel Beckett's *More Pricks than Kicks* with Faber & Faber in June 2010. She is currently a PhD candidate in English at Harvard University.

Kimberly Rescigno (CAS'05, COM'05) graduated from the MIT Sloan School of Management on June 4, 2007, earning an MBA. She is working as a consultant in New York City.

Matthew Cogan (CAS'06) of Phoenix, Ariz., married Kasey Boike in Flint, Mich., on June 12. Email Matthew at matt.cogan@gmail.com.

Maya Siddhanta Sloan (CFA'99, GRS'07), formerly Maya Sloan, of Brooklyn, N.Y., released her first novel, *High Before Homeroom*, published by Simon & Schuster, on June 22. She can be reached at www.mayasloan.com.

Matthew O'Connor (CAS'08) was engaged to Kimberly McKee in Boston on November 15, 2009. The wedding is scheduled for this fall, on the morning of October 2, 2010, with the ceremony and reception at Wachusett Mountain in Princeton, Mass. Matt is involved in surgical research at the Massachusetts General Hospital and Kim works in a residential treatment facility while pursuing her MSW. The couple resides in Northborough, Mass.

Sarah Prager (CAS'08) became engaged to Elizabeth Oliver on March 13, 2010. They live together in Boston and are planning a wedding for June 2011 on Cape Cod. You can contact Sarah at sarahprager@gmail.com.

The Advocate and the Activist

Photo courtesy of Denise Nearis

Although only a T ride away, the Ashmont/Lower Mills section of Dorchester, the mostly working-class Irish enclave where Alex MacDonald (CAS'72) grew up in the 1950s and 1960s, was far removed from the ivory towers of Harvard, MIT, and BU. MacDonald describes the neighborhood of his youth as "preposterously homogeneous. None of our fathers went to college; they were police officers, house painters or, like my dad, union organizers. Our purview of the world was, in retrospect, very limited. We had the sense that everybody lived the way we did."

But MacDonald wanted something different. He decided early on that he would aim to become a trial lawyer, so he saved up $5,000 by working on construction sites—enough to cover his first year or two of college. In September 1968, he matriculated at BU. His first week on campus was an exercise in culture shock.

"I remember being at the George Sherman Union for freshman orientation and overhearing two young women talking about their summers in Europe," he says. "I felt as if I was listening to people talking about being on Mars."

He threw himself into his studies, and into the left-wing politics that pervaded campus at that time. Like many other student activists, he idolized Political Science Professor Howard Zinn, a prominent force in the antiwar movement, and took all of Zinn's large lecture hall courses. Selected to do a Senior Year Distinction Work Project, MacDonald asked Zinn to be his faculty advisor. The two formed a close relationship that would be rekindled over 30 years later.

After graduating from BU and Harvard Law School, MacDonald reached his goal of becoming a trial lawyer representing catastrophically injured individuals and families. Between 1997 and 2000, he led the prosecution of diet pill manufacturer Wyeth-Ayerst on behalf of Mary Linnen. The 30-year-old Quincy, Massachusetts, bride-to-be had been diagnosed with primary pulmonary hypertension (PPH), a disease that causes the veins and capillaries in the lungs to thicken until the heart gives out. Linnen died of PPH in February 1997. MacDonald and his staff demonstrated that Linnen's use of the diet pill popularly known as fen-phen, manufactured by Wyeth-Ayerst, had greatly increased her risk for PPH, and that the company had knowingly withheld that information from the drug's labels. The Food and Drug Administration promptly took fen-phen off the market. In January 2000, the Linnen trial resulted in the largest wrongful death recovery at that time in the history of Massachusetts.

Five years ago, MacDonald wrote Zinn a letter about how his professor's teachings had inspired him throughout his adult life and legal career. Along with the letter, MacDonald and his wife, Maureen Strafford (MED'76), offered to create and endow an annual Howard Zinn Lecture Series at CAS. Zinn and MacDonald began a weekly correspondence of phone calls, dinners, and emails. The main topics of conversation? Politics and world events, of course. "We didn't reminisce much," says MacDonald. "He was a man who lived his life in the present tense."

On January 27, at age 87, Zinn died of a heart attack while swimming in a hotel pool in Santa Monica, California. But the conversations that he helped foster—about war, democracy, and individual rights—continue at BU and around the world. —*Jeremy Schwab*

TO CONTRIBUTE TO THE HOWARD ZINN GRADUATE FUND FOR STUDIES OF DEMOCRACY, VISIT bu.edu/giving. PLEASE ENTER THE NAME OF THE FUND IN THE GIFT DESIGNATION BOX.

Groovin' with The Combo, bassist James Tobin (CAS'10, COM'10) and drummer Ryan Hershkowitz (CAS'11, COM'11)

Bebop Spoken Here

BY PATRICK L. KENNEDY

It isn't amateur hour when these student jazz musicians get together

People often mistake them for School of Music students, but they aren't.

"The students in this particular combo are all out of the College of Arts & Sciences and yet they are playing at a high level," says Andrew Goodrich, a trumpeter and CFA assistant professor of music education. "I think music is a passion for all of our students, but particularly for the CAS students, it's a great release. They love to play."

"These are all amazing musicians," says bassist James Tobin (CAS'10, COM'10). "BU's such a big school, it's great to have a program that brings together like-minded musicians who are at the same skill level.

"And a lot of them had been accepted to music school but decided to go to CAS for other reasons. Myself included: I applied to Berklee at the end of freshman year and got in, but decided to stay at BU because I wanted that well-rounded education. I'm glad I did; glad I didn't pigeon-hole myself."

Tobin double-majored in political science at CAS and film & television at the College of Communication. Drummer Ryan Hershkowitz (CAS'11, COM'11) is also a poli-sci major. Pianist Paul Lepro (CAS'11) double-majors in English and philosophy. And guitarist Dan Mainardi (CAS'13) majors in philosophy.

All have a great deal of experience with a variety of styles and instruments. Mainardi also plays saxophone and has performed in gospel services. Hershkowitz and Tobin have played in rock bands. Lepro "used to play classical when I was younger, but I eventually wondered why I was wasting my time perfecting someone else's musical voice," he told BU student magazine *The Quad*. "Then I decided to waste the rest of my time trying to perfect my own uninteresting musical voice," he added jokingly.

Members of The Combo share not only talent but diverse tastes and a love of experimentation. "I let them pick the music," says Goodrich. "This combo seemed to gravitate towards Frank Zappa."

Robert Pinsky

But they also performed renditions of hits by everyone from Paul McCartney to Erykah Badu. "We'll do contemporary pop or hip-hop," says Goodrich. "And then they would occasionally play jazz standards but bring their own personal voices to them through their instruments. Maybe change the groove up on a standard like 'All of Me,' and all of a sudden they alter some of the chords. They get pretty insane with it, but it's fun to be around that energy."

In coaching the group, Goodrich sets goals, including rehearsing for upcoming concerts. "But I'm also looking at long-term musical growth," he says. "How can they grow and develop into musicians while they are here at Boston University?" He teaches them how to listen to one another, "how to negotiate their role within a combo—when it is time for them to step up to the mike and when it is time for them to be in the background . . . the sorts of skills that will allow them to play in any type of music setting at, hopefully, a higher level than when they began here."

Goodrich also helps The Combo members get gigs off-campus. "I made all my spending money from playing gigs," Tobin says. Students have even sat in at Wally's Cafe, Boston's South End jazz club that over six decades has hosted jazz greats from Charlie Parker to Branford Marsalis.

A major highlight was when The Combo played in New York City in April with Robert Pinsky, former U.S. Poet Laureate and an English professor in the College of Arts & Sciences and in the GRS Creative Writing Program (and a former aspiring jazz saxophonist).

"It was a really organic experience," Tobin says. Pinsky "wanted to make sure that he performed as a member of the band," not merely as a poet reciting over background music. "He has such a command of the language and a command of rhythm and time—it's like playing with a professional musician. His presence was really inspiring. Everybody played better—the best that this band has ever played."

TO SEE AND HEAR THE COMBO PERFORM WITH ROBERT PINSKY, VISIT www.bu.edu/today/node/10896.

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