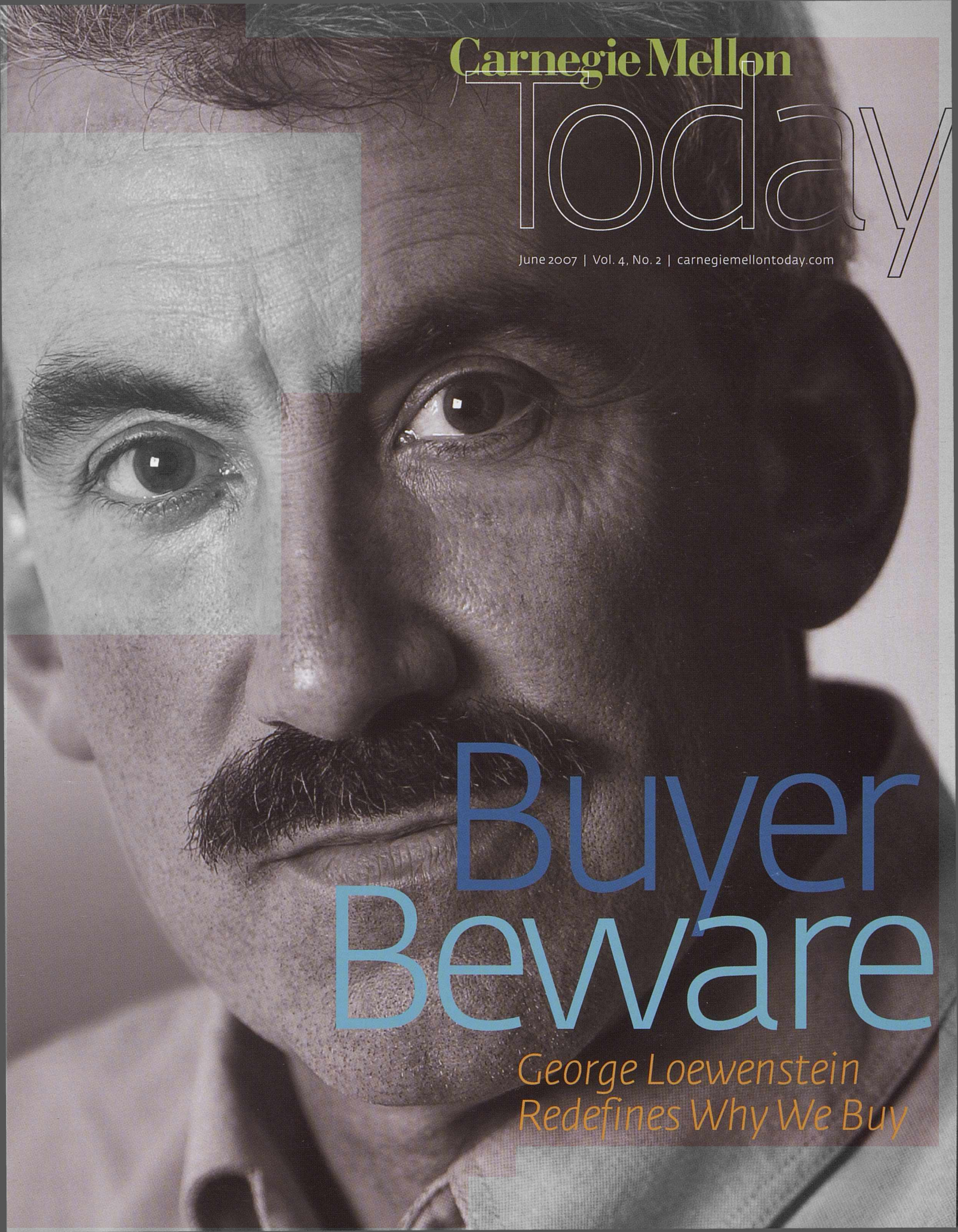


Carnegie Mellon Today

June 2007 | Vol. 4, No. 2 | carnegiemellontoday.com

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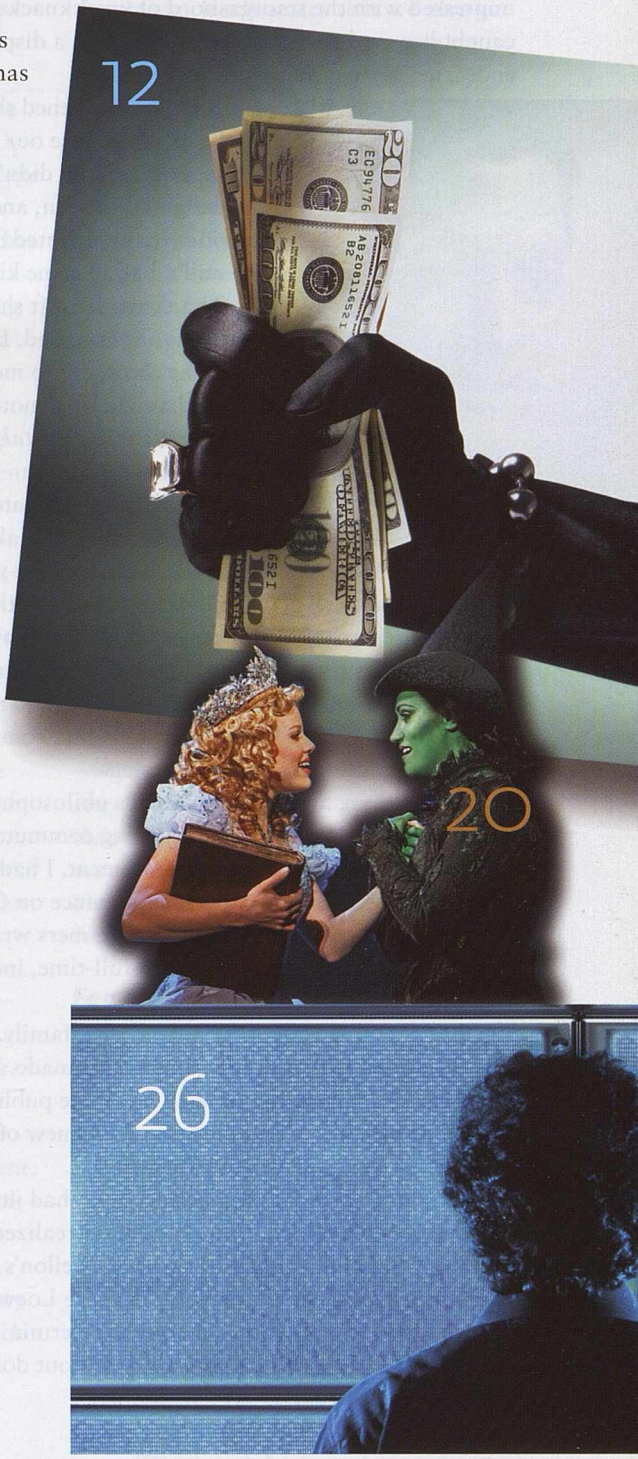
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A COUPLE OF YEARS AGO, during a vacation at South Beach, my wife dragged me into an eclectic gift shop. After browsing for a few minutes, even Deb wasn't impressed with the smorgasbord of knickknacks. But on our way out, something caught her eye by the cash register. It was a display of refrigerator magnets with endearing sayings and pictures.



It just so happened that our refrigerator door had lots of empty space because our two artists-in-residence were growing up. High school didn't demand weekly watercolors from our daughter, Lauren, and the only fifth-grade extracurricular activities that motivated our son, Jesse, involved winning, losing, and a ball of some kind.

Thanks to the gift shop, though, our refrigerator's dark days were about to end. Deb found a magnet she wanted. When she showed it to me, I wanted it, too. It was just a white square that had this quotation:

Always make new mistakes.
—Esther Dyson

The message resonated with me because, in the opinion of many, I was about to make a mistake. I was employed as the editor of a collegiate magazine. Under my four-year stewardship, it won dozens of editorial awards. Yet, when I was presented with the opportunity to write a nonfiction book regarding a prominent physician who endured both heartbreaking loss and tremendous success, I jumped at the chance. That meant no more steady paychecks. No more paid vacations. No more benefits. No more retirement plan. But I had a chance to tell a compelling story in a book, something I always dreamed of doing when I was an English major in college.

So, not long after Esther Dyson's philosophy was featured prominently on my family's refrigerator door, my morning commute to work involved walking with my laptop from the bedroom to the basement. I had no illusions that the next 18 months of my life would lead to a guest appearance on *Oprah* or a home in the Hamptons where I would spend the rest of my summers writing my memoirs. I just figured that once I was done I would thrive as a full-time, independent writer going from project to project.

I'm the primary breadwinner for my family, so writing a book probably wasn't the most responsible decision I have ever made. But, as it turned out, I wrote "The End" just when Marilyn Kail, an associate publisher of *Carnegie Mellon Today,* asked one of my former colleagues if he knew of any magazine editors. He said he did, and, 10 interviews later, I'm here.

Everything worked out better than I had imagined. A small publisher has accepted my book and, with that dream realized, I have the chance to help tell more great stories—those of Carnegie Mellon's students, faculty, and alumni. One example is this issue's cover story. George Loewenstein is on the cusp of identifying what happens in our brains when determining what something is worth. He has discovered that a decision isn't always about dollars and cents. Sometimes, it's about making new mistakes.

—Robert Mendelson
Executive Editor

Carnegie Mellon Today

Connecting the University Community—
Alumni, Faculty, Staff, Students, Parents, and Friends

June 2007, Volume 4, Number 2

Publisher
Robbee. B. Kosak

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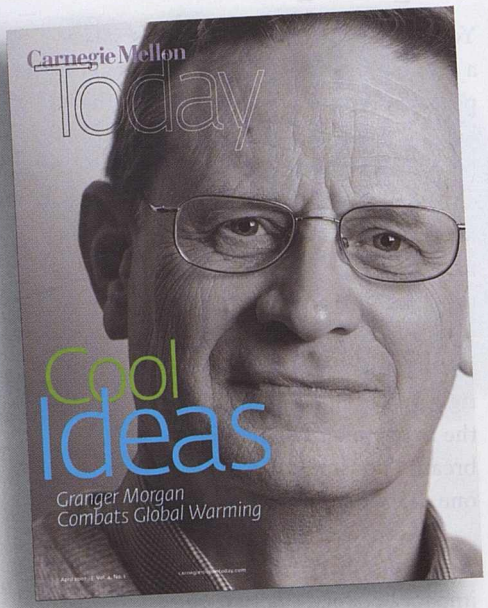
Art Contributors
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Developing Idea

The cover story on global warming remedies raises some difficult questions. Developing nations need cheap energy to develop and help their citizens to rise out of poverty. How can we coordinate a civilization-wide effort to reduce CO_2 emissions to their economic disadvantage when we can't get our rich neighbors down the street to trade in their Porsches for Hybrids and recycle?

The economics of energy is working against us. Energy derived from fuels that emit greenhouse gasses in to the atmosphere is cheaper than clean energy, and as long as that is true, individuals, industries, and governments will act in their short-term interest to the detriment of the planet. There are occasional exemplary individuals, corporations, and governments who act for the greater good, but the sum of their impact is negligible. Not until it is financially beneficial for the majority of us to use clean energy may the problem begin to resolve. We can only achieve this result through technology and innovation over time.

There is a window of opportunity to solve the problem of climate change, but no consensus as to how long we have before global warming is irreversible. In addition to the recommendations outlined in the story above, there are some obvious short-term measures our government could take to extend the window of opportunity while we pour resources into research and development. We could drop tariffs on cheap ethanol produced from sugar cane in South America, raise gasoline taxes to curb consumption, and sign the Kyoto Treaty to mention a few. However, we still lack consensus and the political will to act. I'll be more optimistic when my neighbor's Porsche can go 80 mph without emitting greenhouse gases.

—Burton Roberts (HS'74, TPR'89)
Pittsburgh

This was a very interesting article about global warming. I have always liked the technical writings better than the rambling conjecture that we usually get on this subject. But all I ever hear is that it is the CO_2 that's the problem, whereas the article clearly states that we also get too much sunshine energy staying on the Earth.

Wouldn't it help resolve the global warming if we could change the reflectivity of the Earth's surface to reflect MORE of the sunshine back into space rather than having it absorbed?

I would like to see the investigation of this some day.

—Don Schwartz (CIT'72)
Romeo, Mich.

EDITOR'S NOTE: *Not long after our feature story on Granger Morgan appeared, he was elected to the National Academy of Sciences for his distinguished and continuing achievements in original research. (There was no confirmation that the voting was swayed by last issue's cover story.) Morgan, head of Carnegie Mellon's Department of Engineering and Public Policy, was one of 72 new members and 18 foreign associates from 12 countries named to the academy, which has approximately 2,000 members and 350 foreign associates, of whom more than 200 have won Nobel Prizes.*

Fan Mail

I thoroughly enjoy each issue of *Carnegie Mellon Today* and think it is just a perfect way to keep us old alums connected to our alma mater.

—Robert Gariano (A'71)
Lake Forest, Ill.

This is great reading.

—Nancy Mead
Harmony, Pa.

I just received the recent issue of *Carnegie Mellon Today*. I read the entire issue. That hasn't happened in a while.

I have been hesitant to offer my critique of the layout because my vision as a graphic designer is not always the same as others. However, the changes that you have made in layout in this issue really made it so much more engaging and inviting to read. You may feel it is more

"traditional," but it truly is a beautiful issue. It may have just been the stories and graphics you had to work with that drove the design in this issue, but it all came together for me.

Previously, I felt that I was lost on the page and didn't know where to begin reading each article. I felt I was never getting enough of the story, and if I wanted more, I had to go to read the rest on the computer (which I would never do). The multi-focus needed on any page for article/captions/pull-out info/subheads was too much when it was repeated on several pages.

I feel this was truly a clean, classy issue. Interesting layouts and graphics as well as story selection. I hope you take all my comments in the supportive manner in which they are offered.

Thanks for keeping us all in touch!

—Kathleen Corff Rogers (A'77)
Buffalo, N.Y.

The Cough of Freedom

Your "Hot Topic" on the "freedom" to smoke and pollute was troubling. The question that is posed, "Would such a ban [on smoking] be fair?" is preposterous. Not only would it be fair, it should be mandatory to maintain the University's competitive position in the race to attract students, faculty, and staff, as well as alumni donations. Clean air is no longer a luxury; it's a necessity, particularly for a new generation that comes to expect it in the workplace, in bars and restaurants, and on campus.

If only Carnegie Mellon had encouraged people not to smoke a generation ago it would be home to at least one outstanding faculty member who would continue to make awe-inspiring contributions to the university. A Carnegie Mellon faculty member whose life was cut short by smoking was my own father, Harry Holland (A'61). He quit smoking after 25 long years of the awful habit and started running in the 1970s. But the habit caught up with him in 1988, when he was diagnosed with cancer. He fought it for six years until his death in 1994. Imagine what more this great man could have done for the university.

By asking whether the ban is fair is really ridiculous.

—Dan Holland (HS'91, HNZ'02)
Pittsburgh

I am a nonsmoker ... but I am a LIBERTARIAN first. I would encourage CMU students to employ civil disobedience should any such limitation on their liberty be implemented. Fair enough to not have smoking in classrooms. But do not become a university that enforces "acceptable" behavior into a narrow slot allowed by the herd. Live free or die.

—Dale Amon (CIT'73)
Newtownabbey, Northern Ireland

Carnegie Mellon should ban smoking and tobacco sales on all University property, 24/7/365.

—Joyce Moore
Pittsburgh

As a Tepper alum, I am appalled that Carnegie Mellon is considering a campus-wide ban on smoking, indoors and outside. Though not a smoker, I fully support smokers' rights to engage in their perfectly legal habit.

I had always believed that universities were the bedrock of freedom and liberty. By banning perfectly legal behavior, Carnegie Mellon would be turning its back on the proud, rich history of liberty at American universities.

Freedom has to include the right of people to do things that you do not like. The current policy of prohibiting smoking indoors and within 20 feet of entrances and air-intake systems is more than sufficient to protect the rights of nonsmokers to not inhale second-hand smoke. Going further would make Carnegie Mellon no better than organizations that want to ban offensive speech or eliminate the teaching of subjects that offend their religious beliefs.

I implore the university to remain a force for freedom—even if that means allowing someone to do something that you do not agree with.

—Matt Healey (TPR'01)
Brookline, Mass.



Your article on the smoking ban raises a number of interesting questions about personal liberties. The question at hand here is, "Where is the line between both the smokers' and the nonsmokers' personal liberties?" The question about where that line lies brings to mind the oft-repeated quotation that "Your freedom to wave your fist around ends where my nose begins." The smoker has the right to indulge in smoking, and the nonsmoker has the right to breathe nonsmoky air. Where does one draw the line between the two?

The answer lies in the fact that in a civilized society we try to minimize the impact between the two parties. With the ban instituted, smokers still have the right to smoke, they just need to do it away from where nonsmokers are breathing fresh air. So who is inconvenienced more? The single smoker who will now have to walk off campus to enjoy his or her favorite pastime or the numerous nonsmokers who will smell the smoker's odor if they stay on campus?

And by the way, your comparisons at the bottom of the article don't seem to be consistent. The University is not banning smokers from smoking (as Prohibition did); it is just banning where they can engage in the activity because it impacts nonsmokers.

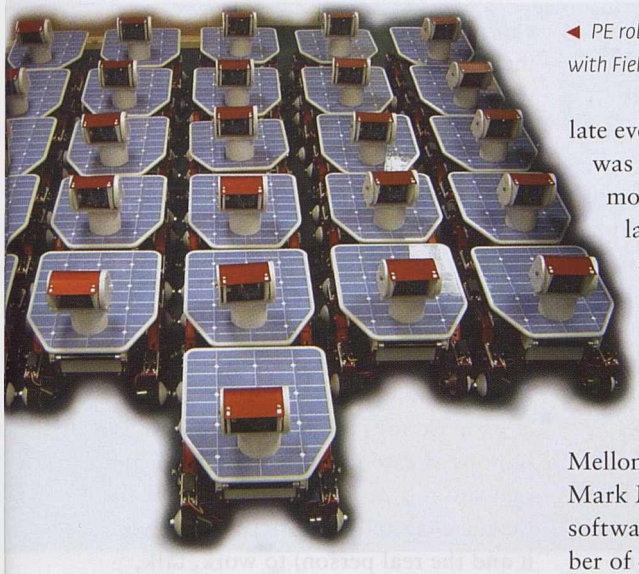
For your argument to be consistent, the University would have to ban any students from using tobacco for the health of those students. This ban doesn't do that.

—Bob Larson (TPR'94)
Folsom, Calif.

Heroic Words

After reading the story *Hero,* about a Carnegie Mellon student coming to the aid of a police officer in a life-and-death struggle with a suspect, I wondered how many of us would do the same. I'm proud that Ben Saks went to my alma mater. He is a real hero in an age that needs all the heroes we can find. My compliments also to another student, Michelle Bova, who did a fine job writing the story.

—Leonard Chottiner (E'48)
Pittsburgh



◀ *PE robots bumper-to-bumper, each equipped with Field D-Star software.*

Traffic Report

Like most Carnegie Mellon faculty, research professor Tony Stentz is too busy to wait by the computer all day. But on February 7, the robotics professor checked e-mail more than his hectic schedule usually permits, hoping for one particular message.

That morning, NASA scientists had challenged the Mars Exploration Rover named Opportunity, to maneuver on its own around a simulated obstacle using software called Field D-Star. The software—developed by Stentz with one of his graduate students, Dave Ferguson—enables a robot to build a detailed map of surrounding terrain, giving it memory of its route and the ability to retrace steps.

NASA is counting on Field D-Star to give Opportunity and its twin rover, Spirit, the ability to avoid roadblocks and find their way out of dead ends. The scientific payoff could be huge—less time troubleshooting rovers trapped 283 million miles away, which leaves more time for unlocking the Red Planet's mysteries.

Stentz knew Field D-Star worked well on Earth, but he wasn't so sure about what would happen in the hostile Martian environment. In its first live test run in space, the software was supposed to steer Opportunity around a virtual six-foot-wide circle on the edge of a stadium-sized impact crater.

Word of success sent by satellite from Opportunity to NASA didn't come until late evening two days later. Stentz, who was still up working, received an email moments later. "I'm not prone to large emotional swings," Stentz says, "but it was certainly a thrill when I got that email." Then, he says, he went to bed.

A few more tests and Field D-Star could be ready to guide the rovers full-time, says Carnegie Mellon alumnus and NASA researcher Mark Maimone (SCS'96). "With Tony's software, the rover can handle any number of obstacles in any combination—and be much smarter about it."

—JENNIFER BAILS

#1

When Norma Chang arrived at Harvard as a chemistry major in 1990, she realized that her secondary education just didn't cut it. She was presented with math and science problems that were much more open-ended than what she'd experienced in high school.

"Of course there's going to be a gap," she says. "But I kept wondering what could have been done differently in high school so that I didn't feel like I had to leap across a chasm when I got to college." She soon added education courses to her load. "I wanted to do something to improve the educational system."

After graduating and then teaching math and science for a few years to high school students, Chang decided to pursue educational research to try to close that chasm she had experienced. She chose Carnegie Mellon's doctoral program involving cognitive psychology, where she could conduct psychological research and apply it to education. "It's hard to find those two components in balance," she says.

The interdisciplinary approach has received national recognition recently. Academic Analytics' Faculty Scholarly Productivity Index ranked Carnegie Mellon's cognitive psychology faculty first among 7,000 doctoral programs nationwide. The ranking—established through collaboration among faculty and researchers at Stony Brook University and Educational Directories Unlimited—is based on the number of published books and journal articles, journal citations, awards, honors, and grants received. Overall, the University's faculty placed sixth among large research universities.

Today, Chang (H'06) is narrowing the chasm between high school and college problem solving as a lecturer in the Graduate School of Education at the University of California at Berkeley.

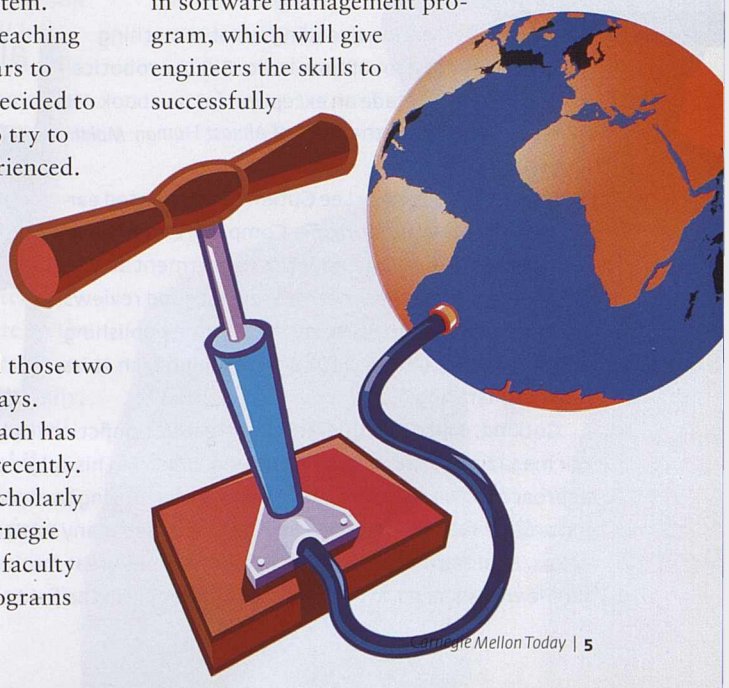
—ALISON D'ADDIECO

The World is Flat

In the 15th century, some people still believed that the world was flat. In a way, they were right—they were just off by about 600 years. Today, advances in technology have made the term "world-flattening" part of our vocabulary, as jobs are outsourced to places as far flung as Bangalore, India.

"The rise of the global economy has shifted the emphasis of software engineering," says James Morris, dean of Carnegie Mellon West, pointing out a short supply of effective global software leaders.

That's a problem the West Coast campus hopes to help change, with the unveiling of its new Master of Science in software management program, which will give engineers the skills to successfully



navigate the changing industry and better seize the opportunities that lie ahead.

And opportunities abound, as software itself continues to evolve, says Timothy Chou, former president of Oracle-On-Demand and author of *The End of Software*. His acclaimed book chronicles the evolution of on-demand software that is delivered over the Internet. Commonly referred to as Software as a Service (SaaS), the trend is the future for software makers and users, predicts Chou. "Anyone who uses Google is using SaaS," he notes. "Were it not for SaaS," he adds, "eBay as we know it could never have existed."

To address the implications of these issues, Carnegie Mellon West helped bring together Chou and several other noteworthy software industry experts by cosponsoring a conference titled, "The New Software Industry: Forces at Play, Business in Motion." Other cosponsors of the spring conference included the University of California at Berkeley's Haas School of Business and the University of California's Services Science, Management, and Engineering Program.

For those in attendance, including students in the new master's program, the conference offered insights for creators, investors, and users on where the best software opportunities will be found.

—ALISON D'ADDIECO

Modeling Clay

Twenty years from now, one of the most high-tech gadgets you will own just might be a pile of stuff. Not impressed? Seth Copen Goldstein, Carnegie Mellon associate professor of computer science, thinks you should be.

He's not talking about any ordinary mound of matter—he's referring to a box with millions of dot-sized robots, known as catoms, which can be programmed to form virtually any shape.

Not convinced yet? Consider this, says Goldstein: claytronics atoms, or catoms, can actually make three-dimensional faxes possible. Want to show a coworker across the country a prototype of a new product you're developing? Push your gizmo into a bucket of claytronics, and the miniscule robots will mimic the form and transmit it to a corresponding claytronics receptacle, thousands of miles away. The copy will look, feel, sound, and work just like the original gizmo.

Claytronics—a joint creation of Goldstein and Todd Mowry, director of the Intel Research Lab, Pittsburgh—is, at the most basic level, the control and manipulation of three-dimensional objects. At its most complex, Claytronics has the potential to change the business world, health care, and almost everything we know. It has certainly captured the attention of the media, including Discovery Channel Canada, which shot a short documentary that aired on the cable channel this spring.

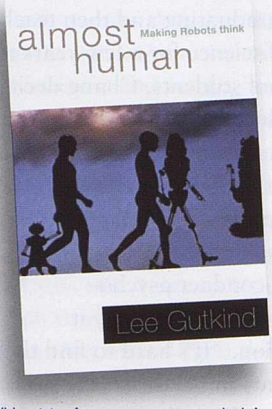
All of the media attention is understandable. Imagine your doctor appearing in your home to perform a physical, though he's really in his office, or your boss being present in the boardroom, when, in actuality, he's on a trip halfway around the globe. This is Goldstein's example of Claytronics at its most advanced—the ability to use billions of catoms to send a precise and realistic copy of an individual (so realistic you can't tell the difference between it and the real person) to work, talk, and interact with others the world over.

It may sound like science fiction, but Goldstein has another word for it: the future. —ELIZABETH MAY

Disease Control

Michael Yonkunas whiled away countless hours of his childhood in his basement, dismantling broken radios and TVs to figure out how they worked. "I was always getting shocked by capacitors," he recalls. Those self-taught experimentation skills are coming in handy for Yonkunas, one of the first graduate students to enroll in the new molecular biophysics and structural biology (MBSB) graduate program

Booked Recreational reading is not something Aaron Morris has a lot of time to do. But the robotics graduate student made an exception for one book. He happens to be one of the stars of *Almost Human: Making Robots Think*.

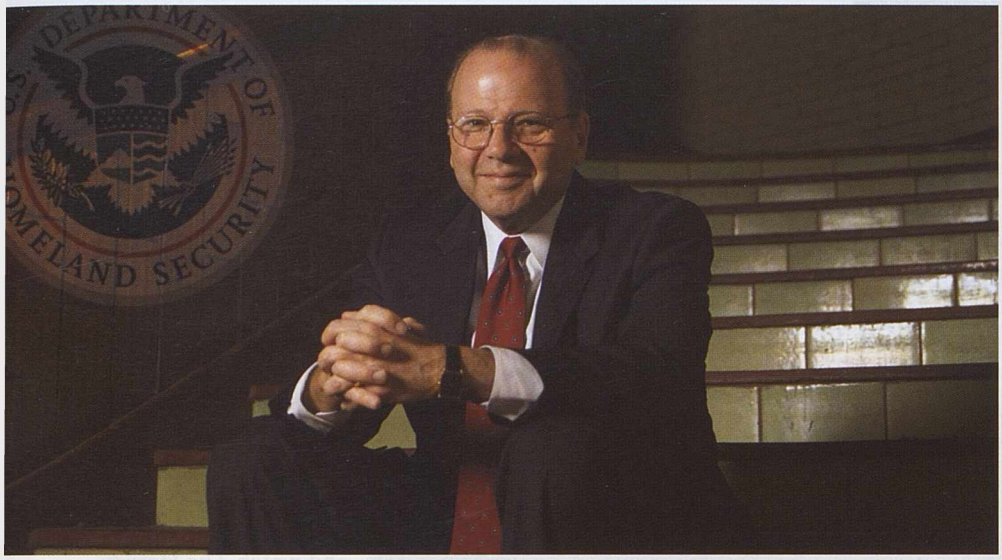


The book, written by Lee Gutkind and released earlier this year by W.W. Norton & Company, chronicles day-to-day life inside the robotics department at Carnegie Mellon. It has received several good reviews; *Kirkus Reviews* a well-respected voice in the publishing industry noted that the book showed "high tech at its most exhilarating."

Gutkind, called the "godfather of creative nonfiction" by *Vanity Fair* magazine, is known for immersing himself in his subjects. His approach to *Almost Human* was no exception. During four years hanging around the department, Gutkind witnessed many trials and errors. He describes the seasoned professors as great motivators, but he was shocked to discover that the people in the field executing the projects are mostly graduate students. With the evolution of robots as "thinkers" just beginning, Gutkin learned there is no seniority or blueprint for success.

In the book, Morris is one of the students making things happen. Huge chunks of his time are spent developing robots, such as Groundhog, who can map mines. It is impossible to know what lies behind the dark entrance to an abandoned mine, which makes it extremely hazardous for miners to enter. It's hazardous for Groundhog, too, who blindly enters black tunnels to "see" what's in there while Morris waits outside anxiously. If Groundhog gets stuck, he will likely be lost forever. Chapter 4 reveals his fate.

Morris has contributed to many scholarly articles about his robots. Yet nowhere in those articles is he or anyone else referred to as "strikingly handsome." After reading page 30, where Gutkind describes the student's good looks, Morris has a better understanding of the creative nonfiction genre. —KATE DUNFEE



offered together by Carnegie Mellon and the University of Pittsburgh.

Instead of dissecting old electronics, 30-year-old Yonkunas now uses mathematical models to deconstruct the glutamate receptor—a key regulatory protein found in almost all nerve cells. Understanding how the molecule functions might enable scientists to prevent neurological damage after a stroke or develop better drugs to treat brain trauma.

Applied problems like this are at the heart of the new interdisciplinary graduate program, says codirector and Carnegie Mellon biology professor Gordon Rule. Approximately 40 faculty and 18 students involved the MBSB program are working at the interface of modern physics and the life sciences to unravel biological systems molecule by molecule.

"Getting down to the single molecule is really critical because that is how things actually happen in the cell," Rule says. With that kind of knowledge, he says, we could make better drugs for treating a wide range of diseases, such as cancer and AIDS.

Yonkunas believes that he and his classmates in the joint doctoral program are receiving world-class training in technologies that will position them to help lead the molecular revolution. "It's a very demanding field," he says, "and that's the way I like to work—on the edge of my seat." —JENNIFER BAILS

▲ Homeland Security

Some Arab businesspeople are invited to New York City for a special meeting designed to build international trust. They arrive at John F. Kennedy Airport anticipating a productive stay in the United States. Instead, they're taken aside and grilled for hours by Department of Homeland Security officials before being released—angry and humiliated.

The recent incident wasn't unique. Since 9/11, security designed to keep America safe has made it difficult for some visitors to enter the United States.

A new committee operated by the Department of Homeland Security and the Department of State is charged with changing that—and Carnegie Mellon President Jared Cohon *(above)* has been named chair. The Secure Borders and Open Doors Advisory Committee (SBODAC) will consider ways to create a new balance between security and hospitality.

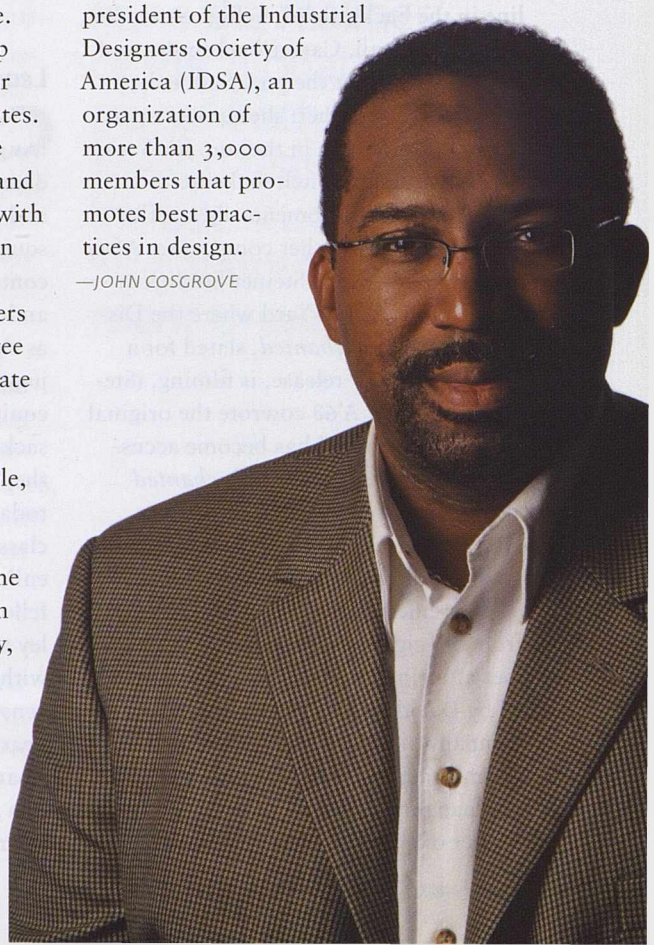
It's a significant issue. For example, difficulties in obtaining visas are shrinking the U.S. share of international students, who contribute to the American economy and leadership in science and technology. Additionally, the National Foreign Trade Council says U.S. companies have lost billions of dollars because of delays and denials in processing business visas. Also, tourism in to the United States is declining.

Among the possible solutions SBODAC will consider are new uses of technology—for instance, visa interviews via videoconferencing rather than in person and electronic passports rather than the traditional paper versions. The committee, which includes experts from academia, business, tourism, health, and media, also is expected to recommend new rules for academic study in the United States. —SUSAN COSGROVE

Grand Design

Eric Anderson *(below)* is quietly passionate about product design. "Design affects every thing we touch," he says. "Good design, like so much we see from Apple, Motorola, and others, improves the user experience and makes life better. Bad design, like the problems we encounter in many remote controls, introduces pain and annoyance."

Anderson, who designs products himself, now is in a position to do something about the issue of quality. The associate professor of design and member of Integrated Product Development has recently been elected executive vice president of the Industrial Designers Society of America (IDSA), an organization of more than 3,000 members that promotes best practices in design. —JOHN COSGROVE





It's a hot summer afternoon, and Katy Carmichael pauses outside to take a swig from her water bottle. While she's standing there, with the Manhattan skyline in the background, a dog runs to her, wagging his tail. Carmichael smiles and leans down to pet the pup. Suddenly, a shadow falls over her; she squints up at the imposing figure in the sun. It's Susan Sarandon, in full witch makeup.

Carmichael is momentarily startled but quickly regains her composure. After all, she's working at Steiner Studios in the Brooklyn Navy Yard where the Disney fairytale, *Enchanted*, slated for a November 2007 release, is filming. (Stephen Schwartz A'68 cowrote the original music.) Carmichael has become accustomed to seeing scores of *Enchanted* extras flitting around the back lot in lofty powdered wigs and elaborate ball gowns, talking on cell phones.

She remembers well the star sightings from her eight-week internship last summer at Steiner Studios, which was founded by David Steiner (E'51), who heads the company along with his son, Douglas. Carmichael was there as a member of the inaugural class of Carnegie Mellon's master of entertainment industry management program. She and her six classmates directly experienced the behind-the-scenes operation of the 285,000-square-foot Hollywood-style studio that handles everything from motion pictures to television programs to commercials to music videos.

"Three movies were shooting over the summer," recalls Carmichael from Los Angeles, where she's taking classes at the University's Los Angeles Center and apprenticing at United Artists as part of the program's final year. "We could go on the stages, just be a fly on the wall. Being exposed to the crews, the equipment, the lingo ... it was so valuable."

She also thought it was a "pretty cool" bonus to look out one window and see the *Spider-Man 3* stunt double practicing tricks on a motorbike, or look out another and spot Scarlett Johansson acting in front of a blue screen for *The Nanny Diaries*.

—ELIZABETH MAY

Leading Ladies

Carnegie Mellon graduate students Eileen Maxson and Ben Kinsley squint up at the contemporary, glass-and-concrete façade as they approach, juggling recording equipment and knapsacks. Even though they're not on campus today, they're still in class. Maxson has enlisted the help of fellow student Kinsley to tape interviews with the senior citizens who live at the nearby Fairmont Apartments as part of a film she plans to create for class.

Once inside, they meet the "Breakfast Club," a group of women who gather every morning in the commons area of the senior living complex to catch up on resident gossip, debate politics, or simply enjoy one another's company. Today, the lively group chats with Maxson about their earliest memories of television.

Kinsley records and Maxson talks. "When did you first see a television? What shows did you watch? When did you get your first color television?"

The women chime in at different points. Adrienne Knox remembers watching television as a social event—family and friends would congregate, make popcorn, and watch *The Howdy Doody Show*. Janet Spells recalls how her father invented his own kind of color television by putting tinted cellophane over their black-and-white TV—until the momentous day when a color set finally arrived.

A few weeks later, several of the seniors interviewed gather in anticipation of their first feature film. *The Fairmont*, a 12-minute video produced, directed, and edited by Maxson, is being screened for the community through Tent Show Productions—an offshoot of Carnegie Mellon's Art in Context course, which challenges graduate and undergraduate students to use their art to interact with local communities.

As the film gets under way, Maxson sneaks a glance at the women. She's pleased to note that they're laughing, smiling, and pointing as they see themselves projected on screen, larger than life. —ELIZABETH MAY



◀ *Three of* The Fairmont's *leading ladies: from top, Adrienne Knox, Barbara Johnson, and Helen Finch.*



Baker Hall, nighttime home of the students in Randy Weinberg's undergraduate information systems program.

Nightshift

9 p.m. Darkness envelops the buildings and walkways along Frew Street. Most of the campus faculty and staff are settled at home, yet there are lights ablaze in the basement of Baker Hall. Five students sit expectantly around one side of a conference table, in clear view of a camera pointed at them from its perch on the ceiling. They are waiting to meet their new team members. The teleconference screen brightens to a tropical locale where it's 9 a.m. tomorrow, a 12-hour time warp. Four students from halfway around the world greet their new partners.

And so begins a pioneering adventure spearheaded by Randy Weinberg, director of Carnegie Mellon's undergraduate information systems (IS) program. All IS seniors must complete a semester project in which teams of students provide information systems help to nonprofit clients. This term, two of Weinberg's groups will learn even more about teamwork. They will learn firsthand the realities of the "global workplace." Both Carnegie Mellon teams will include students from Singapore Management University.

Karin Burns, a member of one of the Pittsburgh-based teams, waits apprehensively as the first "face-to-face" meeting with her Singapore teammates begins. Her international group's mission is to provide Suguru Ishizaki, Carnegie Mellon associate professor of rhetoric and communication design, with a tool that will allow him to create online tutorials for students who need help with presentation software, such as PowerPoint.

As the transglobal meeting gets under way and the students become better acquainted, Burns' apprehension disappears. After all, "they're college kids," she says. The hardest thing, she jokes, is remembering to "hit the little button to speak" so she can be heard in Singapore.

Burns' Carnegie Mellon team members have volunteered to work the late shift because the Singapore students have no campus housing and must commute to school, making evening meetings difficult for them. Teleconferencing isn't the only way for the group members to stay in touch. During the semester, Burns, who is from Greenwich, Conn., talks to her teammates primarily through email, instant messaging, and Internet phone.

By semester's end, a very pleased Ishizaki lets Burns know that he got "more than he wanted." Burns isn't surprised that the Singapore/Carnegie Mellon team worked well together. "We're getting to an age right now where it doesn't really matter if you can't see their faces." —*MELISSA SILMORE*

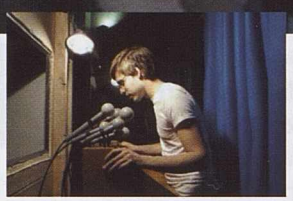
This term, two of Weinberg's groups will learn even more about teamwork. They will learn firsthand the realities of the "global workplace." Both Carnegie Mellon teams will include students from Singapore Management University.













...a young man hopped onto the podium and excitedly screamed into the silent microphones to the unhearing crowd outside the gallery windows.

Rent

Noise from the passing cars and buses mingle on a busy downtown street. Business suits and T-shirts share the sidewalk with the crisp white uniforms of culinary students on break from their school next door. A professionally dressed woman with curly brown hair waits patiently at her bus stop, located directly in front of the intriguing storefront windows of the Future Tenant gallery. A young artist works on the sidewalk nearby. She is busy taking final snapshots of her creation, *Lost Broadcast,* before it must be dismantled from its prominent window position.

The artist, Eileen Maxson, is a 2nd year student in Carnegie Mellon's Master of Fine Arts program. She has just completed a 2½ week show at the Future Tenant gallery featuring her work and the art of five of her classmates. The gallery, an unfinished chunk of space owned by the Pittsburgh Cultural Trust, has essentially been lent to the University on a month to month basis since 2002. It's run by arts management graduate students from the Heinz School and the College of Fine Arts. If a 'future tenant' ever moves in, the gallery must move on, hopefully nearby. Future Tenant provides 6-8 weeks of opportunity each year for up-and-coming Carnegie Mellon MFA artists to show their works in a downtown setting, smack in the middle of Pittsburgh's Cultural District.

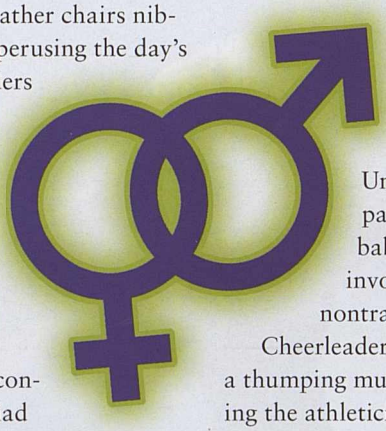
The curly haired woman waiting in front of the gallery watches Maxson take pictures, clearly interested in the installation filling the windows. A casually dressed man walks by and joins the scene, also drawn to this piece. In the gallery's left front window, *Lost Broadcast* is composed of a podium bursting with blue wooden 'microphones' set in front of an imposing blue curtain backdrop. On the right side of the storefront, that window is jammed with TV screens of differing sizes, endlessly broadcasting videos that appear to be live conferences.

Evidently, the man who has interrupted his walk has passed *Lost Broadcast* before. He recognizes Maxson as the woman who is reading lyrics in one of the videos. "Isn't that you?" he asks. The curly haired woman moves closer to join in the conversation. Soon, three strangers at a bus stop are engaged in a thoughtful discussion of *Lost Broadcast*. Maxson couldn't be more pleased. This spontaneous exchange is one of the responses she had hoped for, and "one of the great things about doing something in a space like Future Tenant downtown." It is also in sharp contrast to the very different reaction the installation art received the week before at the Cultural District's well-attended gallery crawl. During that event, a young man hopped onto the podium and excitedly screamed into the silent microphones to the unhearing crowd outside the gallery windows. That exuberant display also thrilled Maxson. The reactions represent the "two sides of the spectrum that I wanted."

The buzz of the traffic on the street continues. The three strangers at a bus stop end their conversation. The man walks on, the curly haired woman spots her bus, and Maxson steps inside to begin dismantling. —*MELISSA SILMORE (TPR'85)*

An Alternative Day

Groups of students congregate on the University Center's lower level, clutching their morning cups of coffee. Women and men, casually attired, lounge in overstuffed leather chairs nibbling at croissants and perusing the day's scheduled events in folders marked in purple with conjoining gender symbols. A soft flutter permeates the hallway as the Tartan cheerleaders arrive, their red pompoms at their sides.



The growing crowd continues to represent myriad ages, races, and styles—older men with suit jackets and hats beside young female athletes in oversized gym shorts, their hair piled high in tight buns. The draw for such diversity is Carnegie Mellon's annual one-day conference on gender issues, Mosaic, and from the looks of the audience and presenters, the conference is aptly named.

Signs are posted outside almost every room on the University Center's upper level announcing what activities will take place inside. The day's headliner is inside the McConomy Auditorium; WNBA basketball star Sheryl Swoopes tells the overflowing crowd what it was like for her to publicly reveal that she is a lesbian in the heterosexual-dominated world of professional sports.

Upstairs in the Skibo Café, a much more intimate crowd gathers to hear students read short stories that weave gender issues seamlessly into a variety of plots ranging from shoe shopping to spousal abuse. Ashley Birt, a fourth-year creative writing and drama student, is among the student readers. Her work of fiction, titled *Sorry,* depicts a young girl struggling with the concept of her older sister's homosexuality.

After the reading, Birt joins her friends for one of the catered lunches in the Rangos Ballroom. The room is full of students, families, and members of the Pittsburgh community sharing both their tables and their thoughts on the day's events. When Birt finishes her rosemary-seasoned potatoes and grilled chicken, she and her friends go to a panel discussion on how sexuality is portrayed in movies shown on campus and in advertising for student events.

The rest of the lunch crowd also disperses to different discussions throughout the University Center. Same-sex parents, rocking cooing babies in their arms, are involved in discussions about nontraditional family structures.

Cheerleaders perform their routine to a thumping musical beat before discussing the athleticism of cheerleading, body image, and the spectrum of body types.

For the rest of the afternoon, the University Center is an alternative hive, a mosaic of voices and attitudes and lifestyles sharing the day.

—ALAYNA FRANKENBERRY (HS'08)

Five-Star Year

The Creative Writing Center, complete with packed bookshelves and literary weathered leather sofas, seems an unlikely place for someone with an information systems degree to hang out. Yet this is where Michael Szczerban *(below)*, spends much of his time. Szczerban is in his fifth year at Carnegie Mellon, not because he fell into "fifth-year slacker" status but because he is one of four students selected for the fifth-year scholars program.

To qualify, students must first complete all requirements for their majors. In addition to taking an extra year of classes, each scholar chooses a year-long project to improve a lacking element on campus.

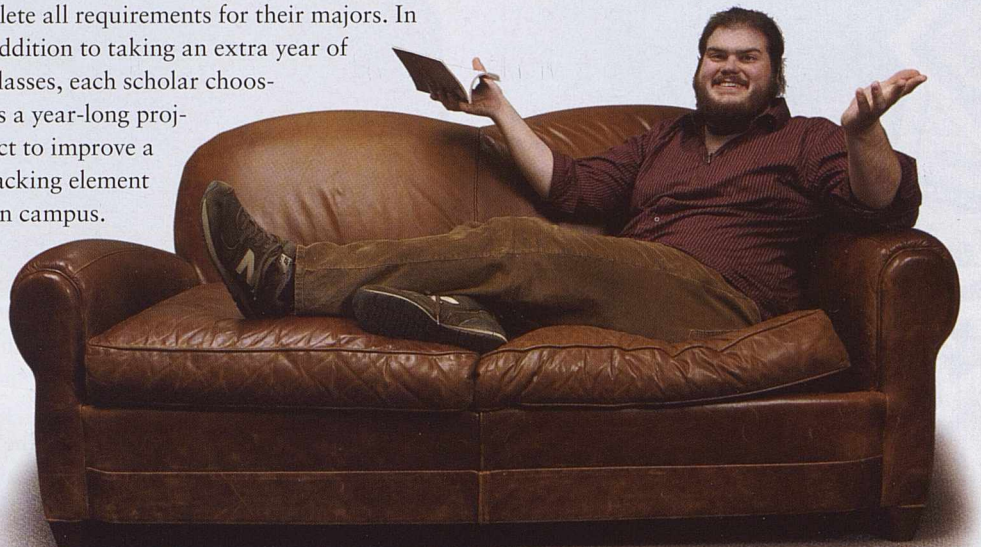
Szczerban decided to work with the career center and volunteer's office, streamlining a portfolio of internship opportunities available for students and finding student funding for unpaid internships. Few undergrads realize those resources exist, which allow them to build their résumé while earning extra money.

"It's better than working at Dunkin' Donuts!" says Szczerban.

Although Szczerban enjoyed his project, it was not the most memorable part of his fifth year. He also pursued an additional degree completely different from information systems: creative writing. A few creative writing courses he took on the way to his diploma piqued his interest and convinced him to put his high-tech career on hold: "Even though it seemed like a good time to start paying bills, I felt I wasn't done with Carnegie Mellon just yet. I knew that there was more for me to reap and sow here and that hopping into a career right away would leave my goals here unfinished."

Students are selected for the fifth year program, in part, to more fully explore their interdisciplinary interests, so Szczerban was an ideal fit. He says he found his niche in the creative writing center, where the sofas felt like home and those who sat in them became good friends.

While degrees in information systems and English seem to be opposing forces, Szczerban disagrees. "They reinvigorate one another." It took five years, but he is optimistic he will draw on both disciplines now that the time has come to start paying bills. —KATE DUNFEE



Buyer Beware

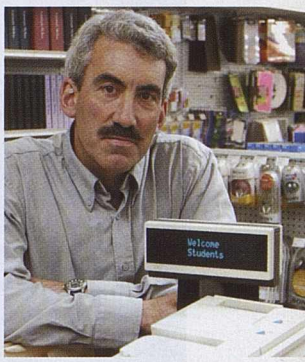
DECIDING WHETHER SOMETHING IS WORTH BUYING SHOULD BE A SIMPLE, RATIONAL DECISION. YET, TOO OFTEN, ALL OF US MAKE A PURCHASE THAT NOT LONG AFTERWARDS HAS US ASKING, "WHAT IN THE WORLD WAS I THINKING?" GEORGE LOEWENSTEIN HAS ASKED THAT QUESTION, AND WHAT HIS RESEARCH UNCOVERED MAY CHANGE CENTURY-OLD ECONOMIC THEORY. BY MIKE RANSDELL

George Loewenstein's heart quickened when he saw the envelope. "I can't open it here," he thought to himself while standing in the mailroom in the University of Chicago's Graduate School of Business. "It's bad luck." He walked to his office, closed the door behind him, and sat down at his desk.

He was understandably anxious. The contents would either lift a huge weight off his shoulders or pile more on, darkening the shadow he felt creeping across his young career in economics. Loewenstein realized he was just being superstitious by heading to his office, but he had stood in the mailroom when he read the first two letters, so maybe ... well, it couldn't hurt. Besides, if it was to be the third rejection of his research, he didn't like the thought of having to lug that disappointment through the busy hallways trying to avoid his colleagues as he made his way back to his office to collect his thoughts. It was best to be alone.

Loewenstein had been in his position as assistant professor of behavioral science for about two years. But in that time, he hadn't yet grabbed the first brass ring needed not only for rising up the academic ranks toward tenure, but for keeping his job. He hadn't published a paper. And he was starting to feel the pressure.

That's why the letter was so important. It was from the editor of a British publication called *Economic Journal*. About six months prior, Loewenstein had submitted a research paper on an unconventional topic: *Anticipation and the Valuation of Delayed Consumption*. It was the first paper he had written as a professor. It had already been rejected twice by two of the most prominent economic journals—first by *The Quarterly Journal of Economics*, the oldest professional economics journal in the English language, and then by its slightly younger counterpart, *American Economic Review*. Their brief, dismissive replies basically said, "Sorry, this is not economics." Both times, the news landed like a blow to the stomach and chipped away at his confidence that he would ever be published. To make matters worse, because of the exclusive submit-and-wait process, two years had passed.



Loewenstein

The unpublished paper was born from his dissertation on intertemporal choice—the tradeoffs between costs and benefits that occur at different points in time. In other words, how purchasing decisions we make today affect the purchases we can and cannot make tomorrow. For example, if we buy a new laptop today, that's money we won't have to spend on other goods in the future. On the other hand, if we save or invest our money today, the opposite will be true—we'll have more spending options in the future.

Most economists, at the time, relied on the theory of discounted utility (DU) to explain intertemporal choice. ("Utility" is defined by economists as happiness or enjoyment.)

According to the DU model, people are impatient. We want rewards now,

and we want to delay unpleasant experiences as long as possible. But Loewenstein's research proved differently. He reintroduced an argument that dated back to 1789 that states that anticipation plays as much of a role in our utility as the actual consumption of a product. In other words, anticipating an outcome—whether positively or negatively—affects our happiness and guides our behavior. That's why, for example, we schedule an appointment for a root canal (an unpleasant experience) sooner rather than later. Or why, instead of taking a vacation right away (a pleasurable experience), we plan several months in advance. The anticipation of such events affects our utility.

Loewenstein fundamentally believed that there was much more going on in consumers' brains than logical, cognitive decision making when choosing what to buy. His thinking went against the grain of conventional economic thought, which espouses that people make decisions based on rationality—logically weighing the expected pros and cons of purchases and then deciding based on what will bring them the greatest utility. But Loewenstein disagreed with that logic. He had noticed too many exceptions to the rational-choice rule in his own behavior, which made him question some of the core beliefs of conventional economic theory.

His concern about the letter from the *Economic Journal* was not unjustified. The bitter recollection of one particular annual meeting of the American Economic Association remained fresh in his mind. It took place as Loewenstein neared the completion of his PhD, not too many months before he landed a position at the University of Chicago. The conference included a career-placement component, with university recruiters on hand, searching for the best and brightest in the field. While each of his Yale classmates had 15–20 interviews lined up (by invitation only), Loewenstein, whose research didn't exactly align neatly with conventional economics, had just one. Worried about how he was going to earn a living, he decided to check out the nonacademic openings at some of the corporate booths and ended up interviewing with Quaker Oats for a brand manager position. Having always desired to work in academia, he wondered whether he'd wasted four years of his life getting a PhD to sell oatmeal.

Ultimately, he landed a job in academia, but as the unpublished professor sat alone in his office two years later with his unopened letter, his future was far from secure. After he nervously opened the letter and read the publisher's decision, he immediately called his wife to share the news. He would not be unemployed anytime soon. "That was a lifesaver for me," says Loewenstein, now the Herbert A. Simon Professor of Economics and Psychology at Carnegie Mellon. "I still have fond feelings toward the editor of that journal for being so open-minded."

It has been 21 years since Loewenstein opened that letter. He has since published more than 100 papers, edited five books and written one, been an invited speaker 140 times just since 1995, and either authored or coauthored 25 book chapters. Clearly, his work has become more accepted throughout the years, and he is now considered by many of his colleagues to be one of the most influential researchers in his field.

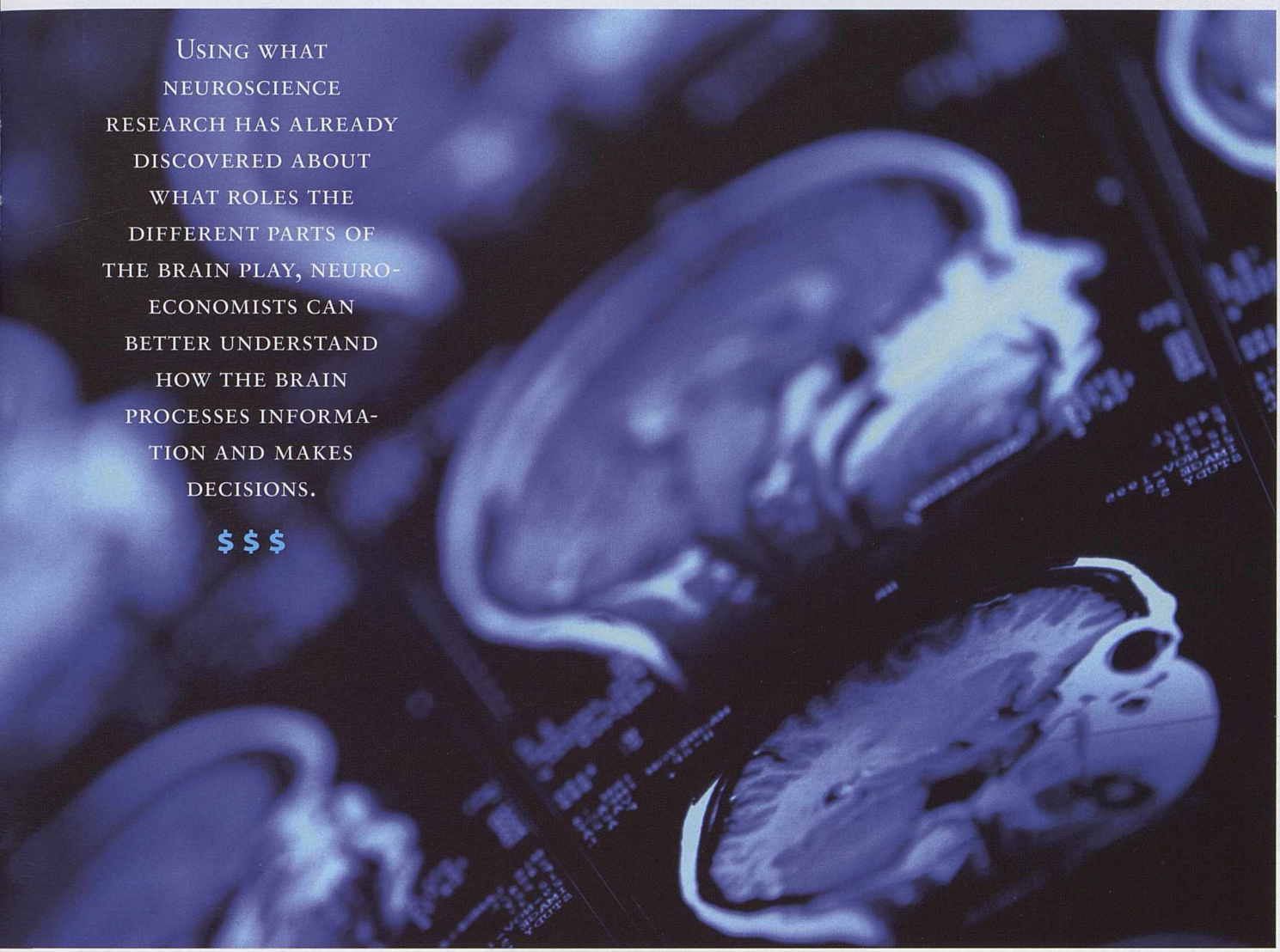
Despite his rise in stature in the academic community, Loewenstein hasn't been complacent. In fact, some of his latest work may turn out to be his most important. It calls into question century-old economic theory. It's certainly grabbing more headlines from mainstream media than anything he published previously.

To understand his latest research, it's important to first comprehend its evolution. In the late 1980s, Loewenstein's papers joined a small but growing body of research that reintroduced psychology into the economic mix. The line of thinking eventually sprouted into behavioral economics, now considered a subset of economics. Mainstream economists, schooled in rational choice, did not necessarily welcome it with open arms. It



included feelings, emotions, and impulses—factors that did not fit cleanly in the mathematical formulas they favored. Interestingly, however, Loewenstein discovered that psychology and economics were very much intertwined before the turn of the 20th century. However, the economic community at that time, looking to gain respectability for its burgeoning field, distanced itself from psychology, also just finding its legs as a discipline, because it was considered less "scientific." To Loewenstein, this was a big mistake.

Now Loewenstein has taken behavioral economics a giant step forward by doing what some researchers think is impossible—measuring thoughts and feelings. Using magnetic resonance imaging (MRI) equipment (the same test hos-



USING WHAT NEUROSCIENCE RESEARCH HAS ALREADY DISCOVERED ABOUT WHAT ROLES THE DIFFERENT PARTS OF THE BRAIN PLAY, NEUROECONOMISTS CAN BETTER UNDERSTAND HOW THE BRAIN PROCESSES INFORMATION AND MAKES DECISIONS.

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pitals use to scan bodies for structural abnormalities such as tumors or strokes), he and his collaborators are scanning people's brains to explore "the most fundamental economic activity"—what goes on inside our heads when we're deciding what to buy. His research with MRI has helped launch the promising new field of neuroeconomics, a combination of neuroscience, psychology, and economics. In the past few years, it has caught the attention of the popular press, including *The New York Times, The Economist,* and *The Wall Street Journal,* which have featured Loewenstein's work.

An MRI machine is a large metal box that looks something like a giant porcelain flower vase lying on its side. It includes a sliding gurney that juts out from its narrow, tunnellike mouth. Subjects in Loewenstein's buying choices studies lie face up on the gurney, with a high-tech mask of sorts placed over their heads, and are slid into the machine headfirst. While lying inside, the volunteers view images through the mask in four-second intervals. First they see a college-friendly product such as a USB flash drive; a *Napoleon Dynamite* DVD; or a waterproof, disposable camera. The product is followed by its price, which is followed by a screen asking them to make a decision. The volunteers, while remaining as still as possible, answer using handheld devices. They are given a $40 credit at the start of testing and are told that if they decided to buy any of the products (at about 75 percent below retail), two of their choices would be randomly given to them at the end of the test and they could keep any leftover change. If they choose not to buy, they pocket 40 bucks.

Throughout the process, the MRI snaps pictures of the brain, registering where the blood and oxygen are flowing, which tells researchers what parts of the brain are active. The end result is a series of high-resolution images that show a detailed outline of the brain in black and grey with colored boxes clumped together representing brain activity at any given point in the test. Using what neuroscience research has already discovered about what roles the different parts of the brain play, neuroeconomists can better understand how the brain processes information and makes decisions.

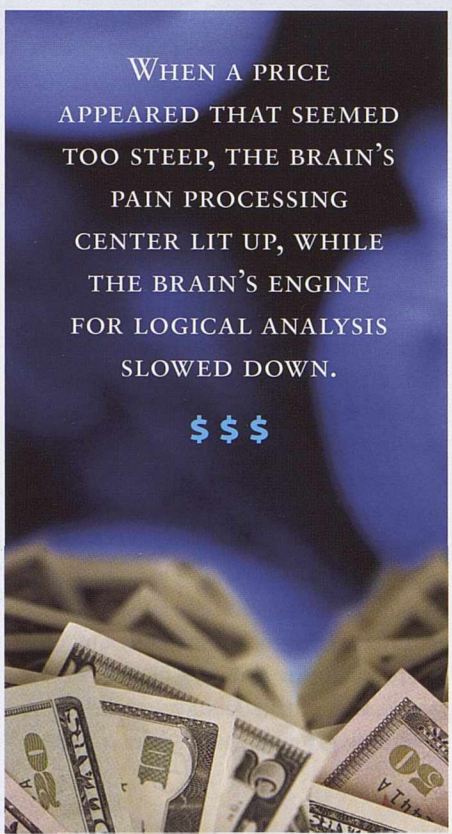
In Loewenstein's MRI study, with Brian Knutson of Stanford University

and Drazen Prelec of the Massachusetts Institute of Technology, he discovered new neuroscientific evidence to support what he had long suspected—parting with money is painful. Different parts of the brain were at work at different stages in the decision-making process. When volunteers were first presented with a product, especially something they found desirable, the nucleus accumbens—a region of the brain known for processing actual and anticipated rewards and pleasures—jumped into action. When the price popped up on the screen, however, two other regions fired up—the insular cortex, associated with the anticipation of pain and monetary loss, and the medial prefrontal cortex, a region associated with rational analysis. Most telling was the direct correlation between the latter two regions when subjects made their decisions. When a price appeared that seemed too steep, the brain's pain processing center (the insular cortex) lit up, while the brain's engine for logical analysis (the medial prefrontal cortex) slowed down. Conversely, when a subject decided to buy a product, the prefrontal cortex was the most active region, suggesting that the brain quickly crunched the numbers and determined that the product was a good purchase. The results were so clear that Loewenstein and his colleagues were able to predict with some reliability whether subjects decided to buy or reject products just by looking at the MRI scans right before volunteers made their decisions. For example, if the insular cortex was active, chances are the subject clicked the "no" button.

Their findings, recently published in *Neuron,* suggest that there's a battle in the brain between immediate pleasure and immediate pain when we're deciding what to buy. This contradicts conventional economic theory, which states that people make decisions based on immediate pleasure versus saving their buying power for some future pleasure. The subjects in the MRI study weren't thinking about what benefits they would gain at some later date if they chose not to purchase *The Family Guy* DVD set now. Rather, they were deciding based on how painful (or not) they thought paying for it would be right now.

Loewenstein says that the findings helped confirm what he and Prelec first noticed (i.e., that spending money can be painful) in the early 1990s while collaborating on a paper. At the time, they had to rely on mathematical models to prove their point. But MRI technology now allows them to back up that claim with hard data—real pictures of human brains that show real activity in the brain's pain center. Hard data is what Loewenstein hopes will eventually lead to the acceptance of the field among doubters who still hold fast to traditional economic theory.

Revolutionizing economic thinking was never Loewenstein's agenda, even when he hosted the first-ever conference on neuroeconomics at Carnegie Mellon, which was attended by economists, psychologists, and neuroscientists. Loewenstein's longtime collaborator Colin Camerer, a behavioral economics professor from the California Institute of Technology who helped host the conference, says, "We didn't have any illusions that we were going to look back on this as the beginning of some dramatic new paradigm shift. It was just like, 'Let's find some interesting people who are studying interesting things that we don't know that much about and get them together.'"



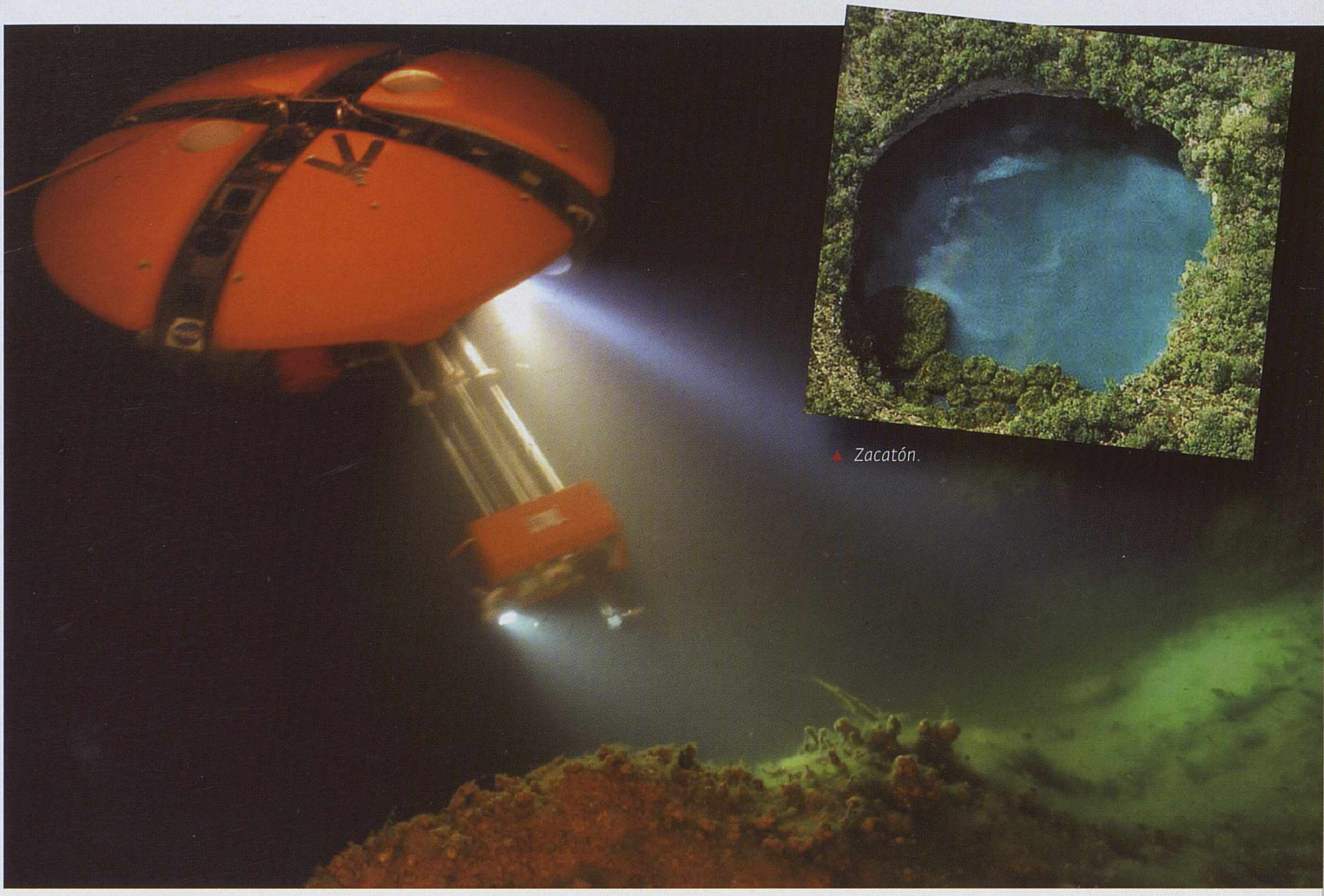
If they didn't shift the paradigm at that 1997 conference, they at least started leaning their shoulders into it, suggests Jonathan Cohen, professor of psychology and director of the Center for the Study of Brain, Mind, and Behavior at Princeton University, who at the time of the conference was an associate professor of psychology at Carnegie Mellon. "There was no question that there was a buzz, and that buzz, one could say, ignited into a whole field ... Whatever claims some may want to lay to having contributed to the beginning of neuroeconomics, if you had to pinpoint the moment in time in which that field first had its manifestation, that was it."

Loewenstein hopes to follow up his research regarding the "pain of paying" by exploring a growing and looming problem in the United States—why so many people run up so much credit card debt. Much like he did in the study with Knutson and Prelec, he wants to see what goes on in the brain when someone pulls out plastic instead of money when making purchases. His hypothesis is that credit cards numb the brain's pain center (i.e., reduce activity in the insular cortex) because no currency is exchanged and costs are postponed, thus weakening the body's built-in defense mechanism against unnecessary purchases. He believes that MRI testing could provide definitive answers.

With all the recognition, Loewenstein says he no longer feels like the outsider as he did in his early days at the University of Chicago. "I'm sure there are [still] a lot of people who don't like what I do," he says, "but there are enough people who do." As for that first paper he wrote, the one that caused him so much anxiety because he was unsure that it would ever be published, it has been cited, according to Google Scholar, nearly 200 times. ■

Learn more online: carnegiemellontoday.com

Mike Ransdell is a Pittsburgh-based freelance writer.



▲ Zacatón.

Sinking Feeling
Journey to the Center of the Earth

On his way to visit friends in upstate New York, David Wettergreen heads north on I-79 from Pittsburgh. While behind the wheel, he navigates through the minefield of potholes with little concern. And why not? When you're a professor at Carnegie Mellon's Robotics Institute and involved in a project that explores the mother of all potholes, what's a few interstate craters along the way?

"This one can swallow quite a few cars," Wettergreen says, referring to the Zacatón Cenote, a 100-meter-wide sink hole located on a jungle plateau near northern Mexico's Tamaulipas, a volcanic region pockmarked with numerous water-filled basins that offer no shoreline or lip. For anyone who hacks through the tangled brush of cacti and palms, sink holes can appear suddenly, as if out of nowhere.

What makes the Zacatón so enticing is the unknown. To date, there is no conclusive data of its depth, with estimates ranging as far down as 1,000 feet, which would make it the biggest sink hole in the world. To find out more about Zacatón, Carnegie Mellon has partnered with Stone Aerospace, the major contractor for NASA, in a $5 million, three-and-a-half year scientific project known as the Deep Phreatic Thermal Explorer (DEPTHX). The plan is to use an automated, tether-free underwater vehicle operating with technology that could be transferred to explore the surfaces and seas of other planets and moons in the future.

The seven-foot, 1.3-ton robot resembles a giant orange bicycle helmet complete with 36 onboard computers and 56 sonar sensors. It also possesses cameras; an onboard microscope to detect possible living cells; and an expandable appendage to gather samples of rock, water, and debris. Using Carnegie Mellon software, the submersible can work on its own for hours at a stretch, constructing three-dimensional maps of the sink hole's interior. It hugs the hole's sheer limestone walls, using specialized environmental sensors that allow it to float along at a safe distance.

Zacatón is mysterious, for the first 60 feet it drops straight down into warm water that lacks oxygen. "The water temperature is about 90 degrees," says Wettergreen, "which tells us there's some thermal source, but we don't know where." Could the region's sink holes be interconnected? Are they heated by volcanoes? Could there be life? To Wettergreen and the many geologists, biologists, and roboticists attached to the project, DEPTHX may provide the answers.— CHRIS A. WEBER

See the Light

Carnegie Mellon Duo's Shining Behind-the-scenes Work

Light bulbs of all shapes and sizes shine throughout Peggy Eisenhauer's Brooklyn loft. Spotlights glow against framed artwork. Lamps enhance texture and space. Neon letters salvaged from Broadway's rooftop marquees enjoy a second chance at life, washing part of her home's interior in a whimsical red hue.

For Eisenhauer (A'83)—who partners with alumnus Jules Fisher (A'60) to do stage and screen lighting for Broadway musicals and motion pictures, most recently the movie *Dreamgirls*—the bulbs are simply "task lights." Nothing more.

But as she conveys her lighting preferences, the parallels follow. "Task lights basically point at things," she explains. "They have direction and purpose."

Eisenhauer is no different. The Nyack, N.Y., native had an idea of what she wanted to do from the time she was a teenager. After summers of amateur theater lighting experience, she entered Carnegie Mellon's School of Drama at age 17, with a goal of meeting Fisher, a Broadway veteran whose lighting and stage production she admired while catching weekend musicals in New York City.

"During my sophomore year, Jules was invited to campus to talk to us about his work on Broadway. I was so excited to meet him that I told my folks it was worth the price of tuition," Eisenhauer remembers. "Somehow, my mom found his address and wrote him a note saying how thrilled I was to meet him. He actually wrote back to her and said if there's anything he could do to help to call on him."

Eisenhauer followed up. Not long after graduation, she began work with Fisher as an assistant. Twenty-two years later, the mentor and former student are partners with Third Eye LLC, a Manhattan-based entertainment studio. With more than 30 stage productions to their credit, the pair has garnered 27 Tony Award nominations and two Tonys. Because of their stage expertise, they rank among the top lighting experts in the musical film genre as well, earning acclaim for their work on such movies as *The Producers*, *Chicago*, and *Dreamgirls*.

"Light is our paintbrush," says Fisher. "It's thrilled me since I went to Carnegie and still does today. Working with Peggy is a privilege because one of her great strengths is her musicality. She has a rhythm to her work and an ability to make the movement of the light move [the audience] emotionally."

Working on the Motown-themed *Dreamgirls* was a challenge for the partners. Beyoncé Knowles, Jennifer Hudson, and the movie's other performers take the stage in divergent venues—from a worn-down Detroit theater to a luxurious Caesars Palace in Las Vegas, with many sets constructed in between. Each scene was meticulously crafted under intense pressure.

"Fine artists can paint by themselves, working in peace and quiet," says Eisenhauer. "Lighting is very similar to painting except we're doing it on demand. But you get used to being able to deliver creative content on the clock with 50 or 100 people standing around waiting for you to do it." —CHRIS A. WEBER





Double Feature

Acting is not a profession that offers job security or a guaranteed six-figure income. What it too often offers is plenty of self-doubt and steep odds of becoming a "star." But for two recent Carnegie Mellon graduates, it also offers a chance to follow their dreams.

BY SALLY ANN FLECKER

Introduction

They were each en route when they got the call that would change everything.

Scene I

Megan Hilty was about to catch the overnight Greyhound. She had just sublet an apartment in New York City and was heading back to Pittsburgh to sell her car and pack her things. In a few days, she would graduate from Carnegie Mellon's musical theater program. She already had her first job lined up—the national tour of *Little Shop of Horrors*. She was all set, she thought. No more community theater or waiting tables for her. That was good.

But it was about to get even better. Forget the *Little Shop* tour. The blockbuster musical *Wicked* wanted her as Glinda's stand-in. By the time the bus rolled into Pittsburgh early in the morning, every passenger knew. Megan Hilty was going to Broadway.



Scene II

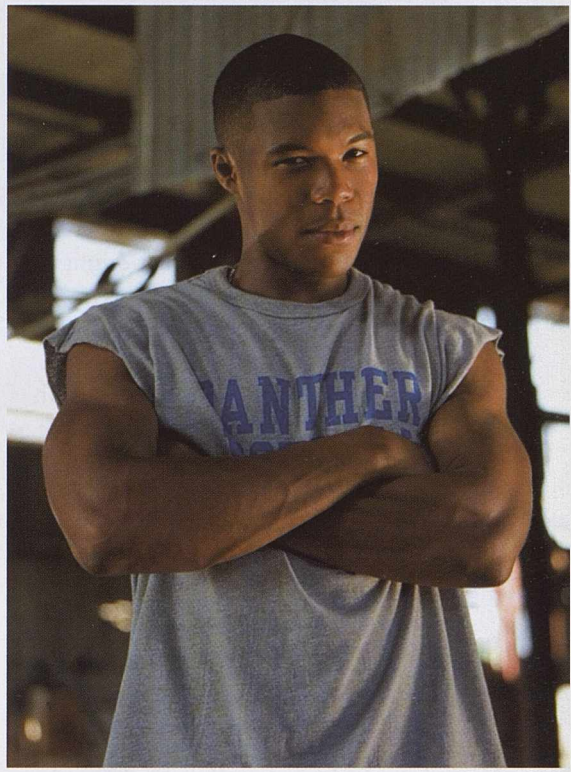
Eight months after the acting major's graduation from Carnegie Mellon and about 100 auditions, one commercial, and a few bit parts later, Gaius Charles was in a rental car, driving down a busy LA freeway, when his cell phone rang. He had spent the whole day trying to stay fresh as he auditioned for a role in a television pilot again. And again. And again—until pretty much all of the creative staff from the studio and the network had seen him. It was his manager calling, with Charles' agent, the guy who negotiates the contracts, already on the line. Whenever the two were conferencing, it usually meant something good had happened. Charles pulled over. He listened to what his manager was saying. For a moment—right there in the middle of frenetic Los Angeles—he felt like the world around him had stopped. *Friday Night Lights*, a new television series, wanted him in the ensemble cast. Two weeks later, he's in Austin, baby, as his character, Smash, would say with a cocky smile.

Scene III

If you're a drama student in Carnegie Mellon's College of Fine Arts, life outside the Purnell Center is pretty much a theoretical construct.

You've gotten by on four hours of sleep, which is about the only time you have to call your own.

You've spent all day in classes, reaching deep down and pulling out your very own messy soul, right there, on command, in front of everybody. Then, for first- and second-year students, it's off to work on mandatory production and set crews while upperclassmen have rehearsals that last easily until close to midnight. Finally, you're back at your room or apartment, which just means it's time for homework.



Gaius Charles, above, as Brian "Smash" Williams and Megan Hilty, left, as Glinda the Good Witch.

For four years, you've worked as hard as anyone can. And you know that there's still only one guarantee: The line on your résumé—graduate of Carnegie Mellon's School of Drama—will make you stand out.

The School of Drama could rest on its laurels—the first school in the country to award a drama degree (1914), or its reputation for rigorous conservatory training in a university setting, or the stars it can claim like Cherry Jones, Rob Marshall, Stephen Schwartz, Holly Hunter, Albert Brooks, Steven Bochco, Ted Danson, Nancy Marchand, James Cromwell. That's all without mentioning the constellation of grads in the industry—successful directors; producers; lighting, costume, and set designers; casting directors; agents; production technicians. There are so many alums in the business that some call them the Carnegie Mellon Mafia. They help make connections—getting new actors into auditions or bringing the top talent agents, casting directors, personal managers, and directors to the Carnegie Mellon senior showcases in New York and Los Angeles.



In some cases, usually for the students in design, directing, and production, they might be able to offer actual jobs. In any case, they're the ones bringing the rookies into the pipeline.

"Even at that, the swift ascension of Hilty (A'04) and Charles (A'05) into the spotlight is astounding," says drama professor Don Wadsworth. "This is *not* how it happens for 99 percent of the world," he says. "Not even for the fortunate and talented world of Carnegie Mellon actors."

Scene IV (i.e., the backstory)

Hilty sang everywhere she went. She sang in the living room, she sang sitting at the computer, she sang while she cleaned her room—all of which was kind of odd because neither of her parents sang. They liked music, though, and they played the soundtrack from the original *Music Man* and *Manhattan Transfer.* Hilty's mother was tone deaf. She'd read somewhere that if tone-deaf mothers sang to their children, their kids would be tone deaf, too. So at bedtime, when Hilty begged for a lullaby, her mother got Hilty's dad.

As it turned out, Hilty had a big, big voice. She tried to sing like an opera singer and copy the styles of other people. Secretly, she wanted to be Whitney Houston. She always knew in her bones she would make it to Broadway—someday. And the two years she had spent in southern Oregon after high school, doing cabaret theater and waiting on tables, made her confident she could make a living as an actress. It didn't hurt that older actors from the renowned Oregon Shakespeare Festival encouraged her to set her sights higher. "You need to audition for Carnegie Mellon University," they told her. "And if you get in, you need to go." And so she did.

When she was invited to audition for the replacement cast of *Wicked*, the casting director first sat her 5th row center at the Gershwin Theatre to watch the original company. "There's no way *anyone* can do this show after Kristen Chenoweth," she thought, "let alone me, from nowhere, who has no credits." She had absolutely no expectations going into the audition. Later she would say that gave her a leg up in the end. All she wanted to do was make them laugh, make them think they hadn't wasted their time bringing her up from Pittsburgh. She would have had a heart attack, she says, had she known that she was actually in the final callback.

Her audition was in front of the whole creative team— the producers along with director Joe Mantello and composer Stephen Schwartz (A'68) of *Godspell* and *Pippin* fame. They studied her for eight minutes as she performed. They laughed. *You did your job,* she told herself afterward. *You can go back and graduate now and go on tour.* Then her agent called to tell her congratulations—she was going to be the standby for Jennifer Laura Thompson, who was taking over the role from Kristen Chenoweth. She was thrilled. Then, when she came back down to earth, she panicked. "I thought for sure, since they only saw me for eight minutes, that they were going to call me out at any second and see I was a fraud," she says now. "I didn't think I belonged there. It took me a while to get comfortable in my performance and to know what I was doing was OK. I didn't have to do someone else's show."

Scene V

The first thing you probably want to know about Gaius Charles is what the heck is with the name? Did he switch first and last names, maybe, for a stage name? The second thing you want to know is how to pronounce it. Here are the answers: It's *guy-us*, and he was named after his father.

Charles had decided, by the time he was five or six, that he would be an actor. He made his decision after seeing how much his grandmother enjoyed soap operas. *I could do that. That would be easy.* He tested the notion in seventh grade, when he was in his first play. The spark was real. Acting classes, school productions, and a neighborhood performing arts program followed.

After attending a high school for performing arts, he applied to six of the big-name acting schools. Five of them accepted him in a flash. Carnegie Mellon wait listed him. *If they're putting me on the edge,* he thought, *then that's the school for me.* He laughs about being an academic overachiever. The first few months, he carried a briefcase to class. He was looking to score high, get a great GPA, maybe make the dean's list. Finally, one of his professors took him aside. "Listen," he told Charles, "we have to grade you because we're at the university. But this is more about your work, your craft." Charles nodded and smiled. He understood it on paper, he says, but it took him a long time to accept that simply being a good student was not going to do it for him.

After graduation, he moved back to



Teaneck, N.J., to live with his family while he tried to get his start. He went on scores of auditions, just kept grinding along, he says. By November, he was worn down, ready to throw in the towel. But Charles is a deeply religious man. In what he calls a moment of faith, he wrote this down on a piece of paper: *I want to be the lead in a TV show in months. In God I trust.* He put the paper on the wall right above his desk so that every time he flopped down after an audition, whether it went well or not, he would see it and keep his faith. By February, he was signed to a contract.

Friday Night Lights, set in the fictional town of Dillon, Texas, captures the high-pitched fervor many Texas communities have for their high school football teams. Charles plays his character, Brian "Smash" Williams, large. Smash is the star running back, all bravado and emotional bling—the anti-Charles. The night before Charles taped his audition in New York for the role, he was worried. *I'm not this jock, I don't play football, I'm from New Jersey,* he was thinking. *What am I supposed to do?* To clear his head, he decided to go for a jog. He ended up in the ER with what he thought was a broken foot. It turned out to be a sprain, but still, it reinforced his insecurity about playing an athlete. As luck would have it, he didn't have to show up at the audition on crutches; the casting call was moved back a week, giving him a little time to relax, do some research, and work his script. Now people who know him can't believe he's Smash. People who don't know him can't believe he's *not* Smash.

Scene VI

As the standby for Glinda, Hilty had her own dressing room—with cable. (She didn't even have cable in her own apartment, she says.) All she had to do was be in the building or within five blocks of the building with her pager and cell phone while the show was going on. She could have dinner with friends; she could go to see another show. She could go to the gym. She could watch the show. But after a while, she was so nervous about stepping into the role that the stage manager told her to *stop* watching the show.

"They hired you because they want *you*," he said. "They don't want you to do Kristen's show. They don't want you to do Jennifer's show. They want to see you and what you brought in the audition."

"So I had to sit down with the script and let go of all the things that made me nervous and approach it like I'd approach any other script, the way I was taught in school," she says now. "And that's something I learned, too. If I don't make it my own, it's not going to be honest."

Hilty's name went up on the Broadway marquee in May 2005 after a year as a stand-in. And it stayed up in lights for another year, to generally good reviews.

Scene VII

Charles had no idea how things worked the first time he walked on the set of *Friday Night Lights*. He didn't know that several pieces were being filmed at once. So when he saw players doing tackle drills over in the corner, he jumped right into line. Meanwhile, all the production assistants were on walkie-talkies trying to figure out where he was. All the other stars were sitting behind the lush video village with their names on the backs of their chairs, taking it easy, getting into character. "You know you don't really have to do that, right?" they said when they finally found him. "We'll call you when we need you."

"I was so green," he says now.

But not so much anymore. He has 22 episodes under his belt. As played by Charles, Smash has become a nuanced, conflicted character who has dealt with racism, the loss of his father, and the use of steroids during the season.

Friday Night Lights was a critic's darling all year. Along the way, because of the raw way the show is filmed, Charles says he learned a lot about acting as well as cinematography and directing and being a camera operator. Whether he continues to play Smash next season, the early tally for Charles' career is indisputable—he scored big in his first real gig.

Scene VIII

And so did Hilty. She's now in Los Angeles, playing Glinda in an open-ended production at the Pantages. What does the future hold for her? She says she's exploring some wonderful opportunities to return to the Broadway stage.

Closing Scene

So, although nothing is ever a guarantee in the arts, one thing is clear: The Carnegie Mellon Mafia has two new members. ■

Learn more online: carnegiemellontoday.com

Sally Ann Flecker is a Pittsburgh-based freelance writer.



Global Education

Money Isn't Everything for Business Major

BY LAUREL BOSSHART

AFTER SPENDING FOUR YEARS EARNING his undergraduate degree at Carnegie Mellon, Michael Choe is ready for the next phase of his life—full-time employment. With graduation just a few weeks away, the business major attends the University's job fair. He walks from booth to booth in his good interview suit, talking to company representatives and gathering more and more information along the way. Nothing seems appealing, though. In fact, he realizes that he doesn't want to work for any of these companies.

That is, until he arrives at the final booth. It seems to him that it is the only booth that doesn't dwell on consumerism, that offers him a chance to travel outside of the country and experience other cultures, and that embraces the compassion instilled in him by his parents and his favorite high school teacher. Almost one year later, the business major begins a road less traveled, finding himself in the Republic of Kazakhstan as a volunteer with the Peace Corps.

After three months of language and cultural training by his host family, Choe, now semi-fluent in Russian, moves to Kapchagai, the city he will call home for the next two years.

He begins his days by teaching English and economic development classes to teenage students. After the first few classes, he realizes that teaching economics and free-market principles in a former communist country won't be easy. So he shifts gears and starts teaching the basics of marketing and business. "They are not used to thinking about things like we do in America. We're so used to being consumers, and they're not. But I know they want to be—especially the young kids," he says.

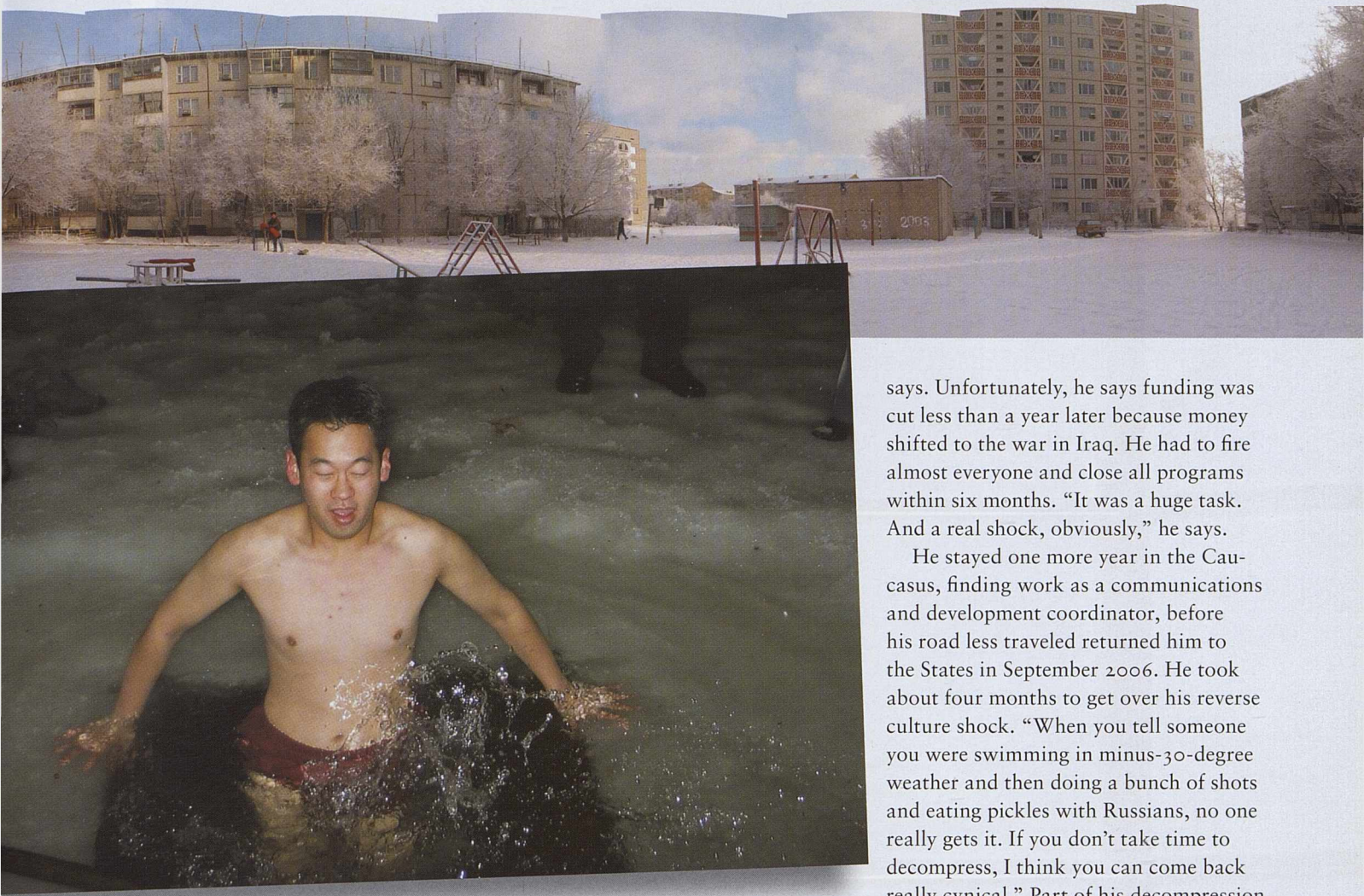


Additionally, Choe teaches computer programming classes and agrees to take charge of a local computer lab. He thinks, "Wow, that's impressive for a country that doesn't even have enough books for students—this is going to be great!" Then, on his first day, he opens the heavy iron door and sees 15 IBM PS/2 Model 30 computers, first introduced in 1987—all in pristine condition, complete with plastic covers on each keyboard.

"It was like stepping back into the '80s—instead of hard drives, there were cassette tapes. It was very Soviet in fashion—no frills." The lack of resources teaches Choe a lesson. "When you're desperate, you figure things out as you go. And you see things for how they are. Yeah, sure, it might be a 20-year-old computer, but you're trying to do what you can with it."

Ingenuity lessons are everywhere in Kazakhstan, even at bus stops. While Choe waits for a bus in 100-degree heat, with sweat pouring down his face, he eventually sees a bus in the distance. When the bus comes into focus, he notices something is wrong. The front windshield is missing; in its place is a huge piece of cardboard with a 4-inch-high, foot-long slit in the middle that allows the driver to see if he crouches just right. "It's a different kind of ingenuity than the States. And that's the cool part—

Top: A photo-stitched panorama of the Kazakhstan village Choe called home. Right: Choe joins a few friends in a very exhilarating pasttime.



for me, at least," he says. Choe chooses to wait for a bus with a windshield.

At times, it's difficult for him to ignore the poverty—burning garbage everywhere, roaming wild dogs, poor health care. "Lack of health care and education—those are the two worst things happening. Those things are basic human rights," he says.

One of the most difficult aspects of being a Peace Corps volunteer, Choe believes, is simply accepting reality. He says that you go into the experience wanting to save the whole world and "fix everything," but you quickly realize that it's just not going to happen. There is always more to do. There is always injustice. "It's hard, but you have to be able to say, 'This is the part I'm going to fight.'"

When Choe's two years in Kazakhstan ended in July 2004, he left good friends behind, including Alexey Avdeev, chosen by the Peace Corps to be Choe's counterpart—his "go to" person within Kapchagai. "I became good friends with him, his son, and wife," he says. In fact, he proudly adds that he now knows how to make homemade jam because Avdeev's wife, Luba, taught him. "All in all, it's about the simple things—it's all the simple victories."

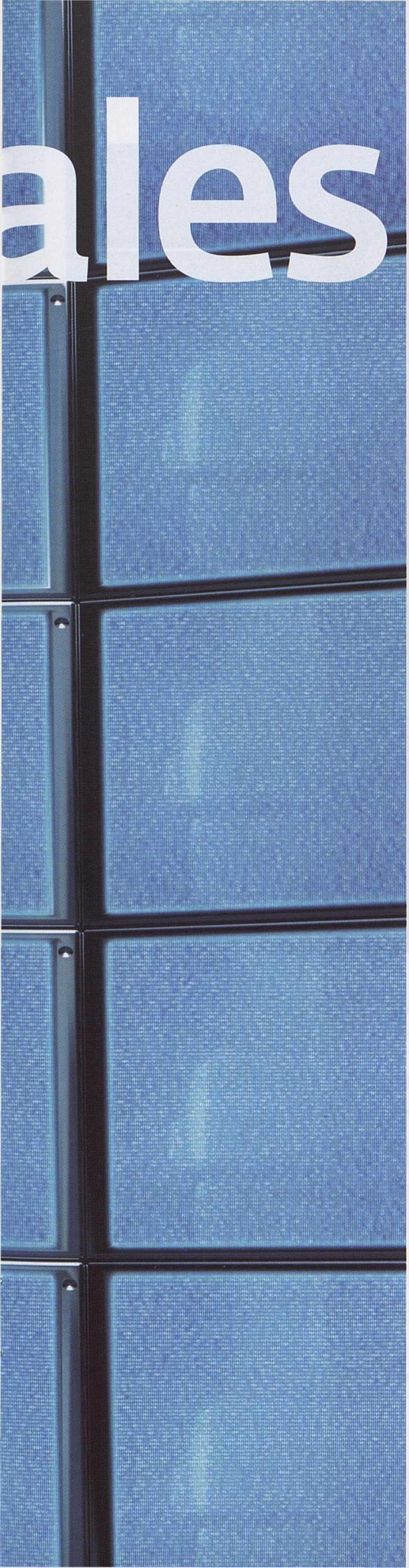
After leaving the Peace Corps, Choe didn't return home, he comanaged more than 30 computer labs across the Caucasus (which includes Azerbaijan, Armenia, and Georgia), though he was based in Armenia. Unlike the lab in Kazakhstan, the labs had updated equipment and a dedicated staff. It was very different from his grassroots efforts in the Peace Corps. "This was about international development—real international development—and it was exactly what I wanted to do: using technology to build society," he says. Unfortunately, he says funding was cut less than a year later because money shifted to the war in Iraq. He had to fire almost everyone and close all programs within six months. "It was a huge task. And a real shock, obviously," he says.

He stayed one more year in the Caucasus, finding work as a communications and development coordinator, before his road less traveled returned him to the States in September 2006. He took about four months to get over his reverse culture shock. "When you tell someone you were swimming in minus-30-degree weather and then doing a bunch of shots and eating pickles with Russians, no one really gets it. If you don't take time to decompress, I think you can come back really cynical." Part of his decompression involved reacquainting himself with his favorite snacks. "I ate a lot of Cheetos and burritos," he laughs.

Choe (TPR'01) now envisions having a future in "Internet space" within the private sector, perhaps with one of the companies represented at the job fair years ago. In hopes of finding a satisfying career, the San Francisco resident has been active in the University's Network Nights, hosted by the Alumni Association, where alumni and companies have informal get-togethers. Wherever he chooses to turn next, he is sure that one of the attributes he learned during his time overseas will serve him well. "You always have to be able to think on your feet." ■

Information about Network Nights can be found on the Carnegie Mellon Alumni Web site: www.alumni.cmu.edu





ales Force

With digital video recorders making it easy to skip through television commercials, satellite radio offering commercial-free stations, and newspapers struggling for readers, retailers are looking for new ways to get their advertising in front of consumers. Monte Zweben, whose background is in artificial intelligence, has a captive-audience alternative. BY JONATHAN SZISH

Monte Zweben is in the middle of something that requires his nonstop concentration.

He and the 15 employees of his year-old media company, SeeSaw Networks, are hurrying to launch their biggest, most tangible product: SeeSawAds.com. It is the online destination that advertisers will use to plan ad campaigns on SeeSaw's network of 14,000 digital advertising screens in venues like health clubs, airports, gas stations, and grocery stores. So some nights Zweben is up at 2 a.m. coding with his software developers. HTML. Java. JavaScript. Then he's in New York, then Philadelphia, meeting with media buyers, luxury retailers, and financial services providers. He's doing market research, refining the product, listening to people, creating buzz. He's working the floor of the big American Association of Advertising Agencies Tradeshow in Las Vegas, pulling people into the SeeSaw booth, and demonstrating the product. With a few clicks of a mouse, an advertising buyer can identify and purchase digital screen ads for any size target audience in practically any locale.

"Not only will we make sure your audience *sees* your ad," he tells them, unwrapping the riddle of the company's name, "But we'll even tell you who *saw* it in terms of impressions and demographics."

He's generating new leads. He's wooing advertisers, talking to *The Wall Street Journal*. He is at headquarters in San Francisco. He's laying out the SeeSaw vision to three partners from Sutter Hill Ventures, the firm that invested $10 million to start SeeSaw and capture the red-hot digital advertising market. He's putting the finishing touches on a white paper about how advertisers can achieve "ubiquity" in their digital ad campaigns.

Since its whirlwind creation last year, SeeSaw Networks has gone from an idea, to getting incorporated, to getting funded, to getting "market validated," to hiring employees, to getting people to use it. Already, 140 media planners and buyers are planning ad campaigns through SeeSawAds.com. Zweben, 43, is its busy chair and cofounder.

It's been like this ever since he graduated from Carnegie Mellon University in 1985 with a bachelor's degree in computer science and industrial management—adrenaline-drenched projects and multi-million-dollar tech companies; the thrill of being at the top of the

dot-com industry; the despair when the dot-com bubble burst; having a job at age 24 in which 20 PhDs reported to him; saving government agencies millions of dollars through computer science breakthroughs; unprecedented awards; coauthorship of a landmark artificial intelligence book.

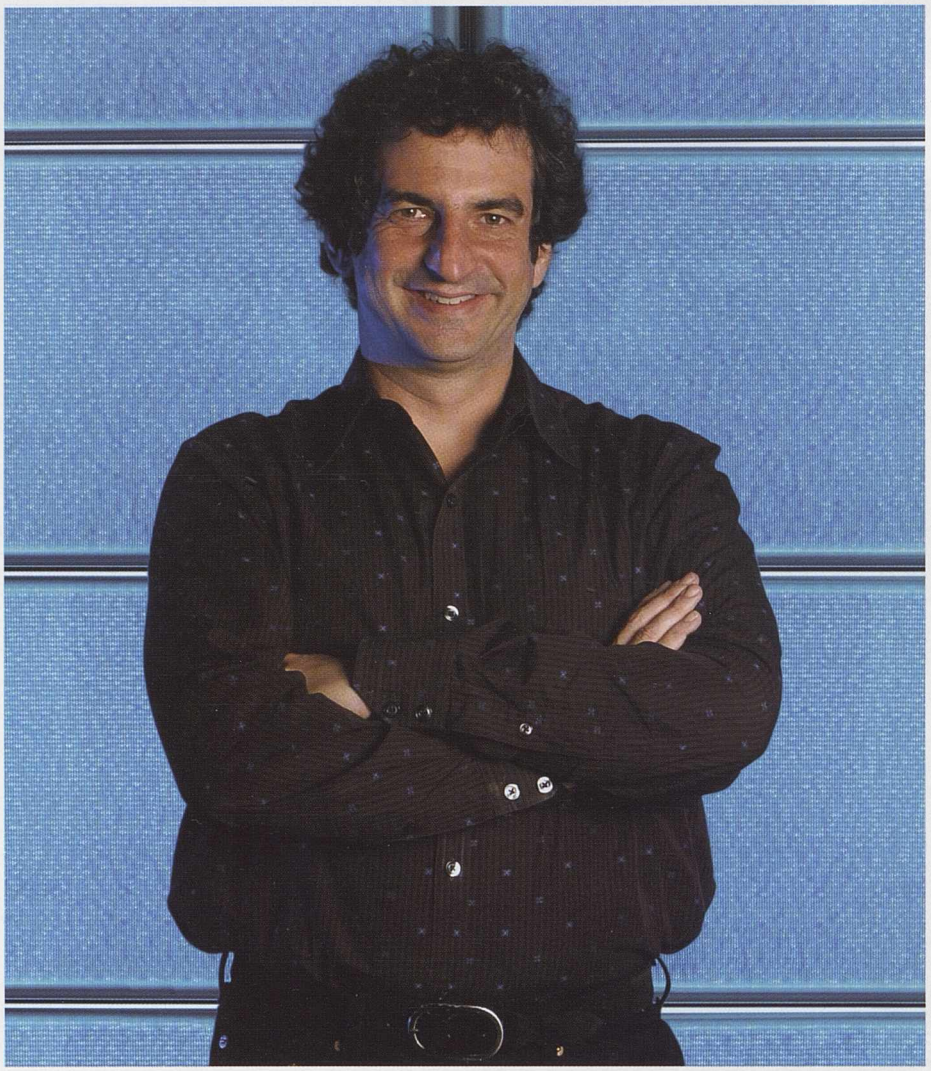
It's grandiose, visionary stuff. These are the kinds of things that happen, say those who know Zweben best, when you're a gifted technologist with uncanny communication skills, loads of business acumen, and an inner drive that few others possess.

His victories in starting million-dollar companies have been so huge that it's easy to forget that he was an artificial intelligence pioneer first and a next-generation marketer second. Artificial intelligence has permeated his career. It has driven him to solve real-world problems by programming software to make computers "reason" like humans through heuristic search algorithms and the recognition of data patterns.

Today, banks use artificial intelligence software to catch fraudulent transactions. Cell phone companies use it for voice recognition. Internet search engines use it to scour the Web and organize data. Zweben has made his own contributions to the field by developing intelligent software programs, applying them to real business problems, maturing them, commercializing them, selling them, and implementing them where they deliver value to American industry.

He still gets back to Carnegie Mellon, too. Zweben has served six years on two School of Computer Science advisory boards: the Dean's Advisory Board and the Alumni Advisory Board. In addition to maintaining his allegiance to his alma mater, it keeps him connected with the research community, where he can see emerging technologies and bounce business plans off professors.

He also brings a piece of Carnegie Mellon to his neighborhood. Many of the 4,800 alumni of the School of Computer Science work in Silicon Valley like Zweben does. So, two years ago, the Alumni Advisory Board started a "Tour



"In the relatively snooty academic world, Monte didn't have a PhD because he was busy doing other things," says Peter Friedland. Yet, *Intelligent Scheduling* gave Zweben unparalleled credibility, according to Friedland. "It certainly is an important reference work for modern AI-based scheduling."

de Silicon Valley," which sends several dozen Carnegie Mellon students to meet with executives from Salesforce.com, Facebook, Become.com, Tellme Networks, Mozilla, and other West Coast companies. The students learn about the respective companies and possible job and internship opportunities. Zweben uses his contacts to help make the connections happen.

The roots of his innovative thinking can be traced back to his hometown of Forest Hills, N.Y., an upper-middle-class neighborhood of Queens. At age 13, he spent hours in the computer lab at Halsey Junior High School with one of his favorite teachers, Howard Weinman, the kind of mentor who would shoot hoops with his students after teaching them how to program a computer. With his interest piqued, Zweben continued his study of programming languages like BASIC, FORTRAN, and COBOL at the well-known Stuyvesant High School in Manhattan. Although typical summer jobs for teenagers might be stocking grocery shelves, Zweben spent his high school summers operating and programming computers on Wall Street for the Muller Data Corporation. That gave him enough money for a 1971 Pontiac Firebird and a start in saving for college, where he planned to study artificial intelligence.

"I just always wanted to break new ground with computers, and it was clear that meant making them think more like humans," Zweben recalls. "It seemed so obvious that artificial intelligence was the next major breakthrough to make these computers really useful."

Zweben chose Carnegie Mellon University because the literature he received convinced him that computer science was a major focus at the university. He wound up choosing a university where the roots of artificial intelligence run deep. In 1956, Herbert Simon, associate dean of what was then the Carnegie Institute of Technology's business school, established the study of artificial intelligence with his student and associate Allen Newell (IA'57), along with their colleague J.C. Shaw of the RAND Corporation. While Zweben was in junior high school, Simon and Newell were winning the 1975 A.M. Turing Award, the most prestigious technical award from the Association for Computing Machinery. In 1978, Simon won the Nobel Prize in Economics for his theory of bounded rationality, a theory of human decision making. Fittingly, many computer science courses at Carnegie Mellon are taught in Newell-Simon Hall, named after the late pioneers.

The summer before Zweben arrived at Carnegie Mellon, he learned the Pascal computer language on his own so he could skip freshman computer science and move ahead to sophomore courses. He helped pay for his college education by writing expert systems for Westinghouse, leaving campus three times a week to work in the company's quality and productivity center. The job didn't hurt his schoolwork. By his senior year, he was taking PhD-level artificial intelligence courses.

His first position out of college was at a quasi-governmental lab called MITRE, a sister company of RAND. At MITRE, he began researching artificial intelligence subfields of natural language and planning and scheduling. Within six months, he was promoted to a senior position, allowing him to work on MITRE projects with the Air Force, Army, and NASA.

He became intrigued with the new artificial intelligence branch at NASA Ames Research Center that opened near San Jose. He called Peter Friedland, from Stanford University, who started the lab, and offered his services as deputy chief. Friedland liked the bright 24-year-old and hired him. They worked together for the next seven years.

Their crowning achievement was Zweben's research project that revolutionized the way NASA space shuttles are repaired and maintained. Each year, NASA launched eight to ten space shuttles, and each of them needed a lot of refurbishing after the rough atmospheric re-entry to Earth. It took an average of 60 workdays and 40,000 hours of technician labor to refurbish a space shuttle for its next mission.

When Zweben arrived at NASA, he formed a close relationship with the maintenance managers in charge of the shuttles Columbia (Wayne Bingham) and Endeavour (Eric Clanton). The flow managers scheduled their technicians' jobs entirely by hand on long strips of paper—high-tech "to-do lists" cut out and rearranged with X-ACTO knives on a conference room wall. (NASA had an annual budget of $12,000 just for reams of paper and X-ACTO knives, Friedland says.) With that system, technicians often were double booked or underused while their managers struggled to schedule 10,000 separate maintenance tasks, only half of them predictable. There was a lot of overtime added to daily processing costs, which exceeded $1 million per day, Friedland says.

First, Zweben gave the flow managers a computer terminal to get rid of all that paper. Then, during the next three years, he worked with them to create a computerized scheduler that would "understand" the physical state of the shuttle and give managers a real-time glimpse into progress toward the 10,000 separately scheduled tasks that needed to be done.

"We thought Zweben was nuts when we first talked about the size of the challenge," says Clanton. "He wanted to climb the Mt. Everest of scheduling mountains."

Clanton and Zweben began to model all of the tests and inspections typically performed in shuttle maintenance. Their collaborative innovation—the Ground Processing Scheduling System—greatly enhanced shuttle maintenance, says Clanton. Zweben's software gave the flow managers customized reports on their computers and a true window into their operations. This helped them better determine which technicians should do what tasks, when, and with what resources. Schedule conflicts were foreseen and avoided, Clanton says, dramatically reducing overtime. This saved NASA $4 million a year in shuttle maintenance, acknowledged in NASA's book *Atmosphere of Freedom: Sixty Years at*

the NASA Ames Research Center. The book notes that Zweben shared in the largest NASA Space Act Award to date for saving the government money. A version of his scheduler is still being used today at NASA.

Zweben left NASA in 1994, shaving his beard, trimming his hair. He would wear a suit and tie to work instead of his usual blue jeans. He had decided to go corporate, leaving NASA to fulfill his long-held dream to start a company.

He formed Red Pepper Software, where he used the same planning and scheduling technology he honed at NASA and applied it to solve problems in manufacturing and distribution for companies like Cisco, Sun Microsystems, and 3Com. Red Pepper Software helped businesses automatically adjust their manufacturing and distribution plans to react to changes in orders, inventories, and materials.

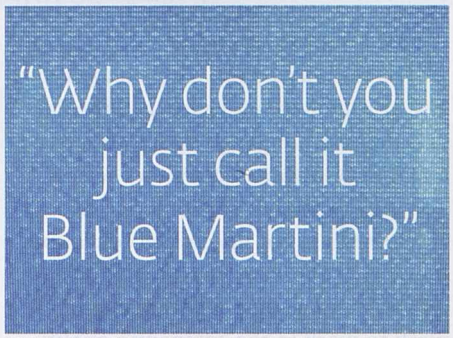
Zweben also found time to coedit *Intelligent Scheduling,* a 1994 anthology of technical papers and case studies about planning and scheduling breakthroughs.

"In the relatively snooty academic world, Monte didn't have a PhD because he was busy doing other things," Friedland says. But, he adds, *Intelligent Scheduling* gave Zweben unparalleled credibility. "It certainly is an important reference work for modern AI-based scheduling."

The planning and scheduling technology at Red Pepper became the heart of the manufacturing product at PeopleSoft, which eventually bought Red Pepper for about $250 million in 1996. "I was finally able to buy a home," Zweben says modestly. He was put in charge of a sales group for all manufacturing clients in the United States.

After being a "big company" executive at PeopleSoft for a couple of years, he again got the itch to do something entrepreneurial. He started Blue Martini Software in 1998 as a software solution for companies selling directly to consumers over the Internet. The software helped companies to understand who is buying, who is not, and why. Blue Martini's software often sold for more than $1 million, the Cadillac of e-commerce applications.

Credit Zweben's wife, Louise, for the company's uncommon name. Zweben wanted to continue the edgy branding he used at Red Pepper by adding a color to an object. The inspiration came to Louise when she, Zweben, and the director of product management went to a bar in San Francisco's Mission district. As they drank Cosmopolitans, Louise asked,



"Why don't you just call it Blue Martini?" They finished their drinks, returned home, and were ecstatic to find that the URL was available.

Levi Strauss & Co. became the company's first customer; dozens of others followed suit. By 2000, Blue Martini had more than 30 customers and held its first public offering of company stock shares. This raised $150 million for Blue Martini and set the stage for company expansion. It swelled to 600 employees, made new versions of its e-commerce software, expanded into Europe and Asia. Customers like Saks Fifth Avenue and the U.S. Olympic Committee signed up, choosing Blue Martini software to create Web storefronts.

Then Blue Martini experienced a serious downturn as a result of the dot-com bubble burst. "What was a mad dash to get on the 'Net turned into a group of major companies saying, 'Why are we spending so much money on the 'Net?'" Zweben says. Blue Martini, like so many other tech companies, had to slash expenses. Layoffs reduced the company to 150 employees. "The most difficult period in my career was trying to turn that ship around and survive," Zweben says.

Estimates of his net worth by *Forbes.com* went from $1.4 billion in August 2000 to $100 million in June 2001. An accompanying article implied that the dot-com downturn caused the huge decline.

Zweben took Blue Martini private and merged it in 2005 with a number of companies. It exists today in a different form under the brand of Escalate Retail, a software provider focusing on merchandising, commerce, and customer relationships. Zweben is a minority shareholder of Escalate Retail.

After Blue Martini's merger, he and some former Blue Martini colleagues got together and decided to conquer another market: out-of-home digital media (advertising on digital outdoor billboards and in-store or place-based video networks). Some others were brought in, and the result is SeeSaw Networks.

On just another typical day inside his office at 220 Montgomery Street in San Francisco, Zweben is almost ready to finalize a deal with the chief marketing officer from a $2 billion retail clothing chain. The company wants to advertise its newest store opening on the West Coast and hopes to reach the on-the-go 18- to 34-year-old audience with the message.

"That's a mobile group that doesn't respond as much to print advertising," Zweben tells his potential client. "They record their TV programming, skip commercials, use the Web to get news, and listen to satellite radio. But if they see ads when they're out and about, they can't turn that off. Let us give you a campaign that finds all of the possible digital advertising venues within a certain radius of your new store that matches that audience."

The chief marketing officer is intrigued. Zweben keeps selling. He shows her SeeSawAds.com on his computer. After downloading a map of all of the places the ad would run—along with traffic numbers and demographic profiles, available for every last digital sign—the marketing officer decides to book a SeeSaw campaign to broadcast the digital ads in bars and restaurants, supermarkets, gas stations, and music stores that are near the new location. Another sale is made. ■

Learn more online: carnegiemellontoday.com

Jonathan Szish is a Pittsburgh-based freelance writer.

From the Classes publishes current news about alumni. We will publish all pertinent and timely items; however, we may edit submissions. For more class notes and alumni photos or to submit your item for *From the Classes*, visit carnegiemellontoday.com.

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College Codes

A	College of Fine Arts
AM	Administration and Management Science
BHA	Humanities and Arts
CMU	Joint college programs
CS	School of Computer Science
E	Carnegie Institute of Technology (engineering)
H	Honorary doctorate
HA	Honorary alumnus (a)
HNZ	Heinz School
HS	College of Humanities and Social Sciences
I	Industries
INI	Information Networking Institute
L	Library School
MET	Master of Entertainment Technology
MI	Mellon Institute, honorary alumnus (a)
MM	Margaret Morrison Carnegie College
PE	Program for Executives
PM	Printing Management
S	Mellon College of Science
TPR	Tepper School of Business
*	Attended



Ray Jenkins *(A'52) was awarded the Morrison Family Award at the Opening Reception of the 25th Anniversary Adirondacks National Exhibition of American Watercolors in Old Forge, N.Y. The award-winning piece (above) is titled* Out for Repairs.

1938

Joseph Thomas (A) of Pasadena, Calif., received a Lifetime Achievement Award from the Pasadena and Foothill Chapter of the American Institute of Architects for outstanding dedication to the chapter and architectural profession, the first such award in the 58-year history of the chapter. Joseph is retired from NTD Architects, a company he cofounded, which received more than 30 local, regional, and national awards for design. Throughout his life, Joseph has served in various capacities for the American Institute of Architects, including chapter president, national board member, national treasurer, and fellow in 1970. He was also founding director of both the Bank of Pasadena (which merged into Wells Fargo) and Syncor International, a pharmaceutical research, development, and sales company. He also has served as chair of the Pasadena Planning Commission and as a member of the Design Commission. He received the Golden Circle Award from the Pasadena Arts Council for Achievement in Visual Arts.

1940

Leonard "Buzz" Blair (A) of Santa Barbara, Calif., recently completed his second three-year term on the Montecito Association. In his retirement years, he has written newsletters for the Santa Barbara Library, as well as articles for the Channel City Club and a column, Buzzwords, for the *Montecito Journal*.

1949

Bennard Perlman (A) of Baltimore, has been elected to the Hall of Fame of Baltimore City College, the country's third-oldest high school (founded in 1839). His accomplishments were listed as "more than 60 years of contacts and consistent service to arts and culture and the teaching profession." He has authored eight books on American art and has held 76 one-man art shows since 1950.

1963

Vic Dobras (E) of Newport Beach, Calif., retired in March of 2006. He and wife, Sandy, recently moved to Newport Beach in April.

1969

Louis Mendelsohn (IM) is the founder, chief executive officer, and president of Market Technologies, LCC, which received recognition as the "2006 Best Place to Work" and a "Top 25 High-Tech Company" in Tampa Bay, Fla. A pioneer in applying personal computers to the analysis of financial markets, his latest software forecasts 90 global markets, including the effects of hurricanes on markets. His second book, *Forex Trading Using Intermarket Analysis*, was published this year. His wife of 30 years, Lois, and youngest of three sons live on a ranch outside Tampa, where they raise Paso Fina horses, cattle, and other livestock.

1971

Class Correspondent **Bernard Meisner** (S) is the chief of science & training for the National Weather Service Southern Region.

1972

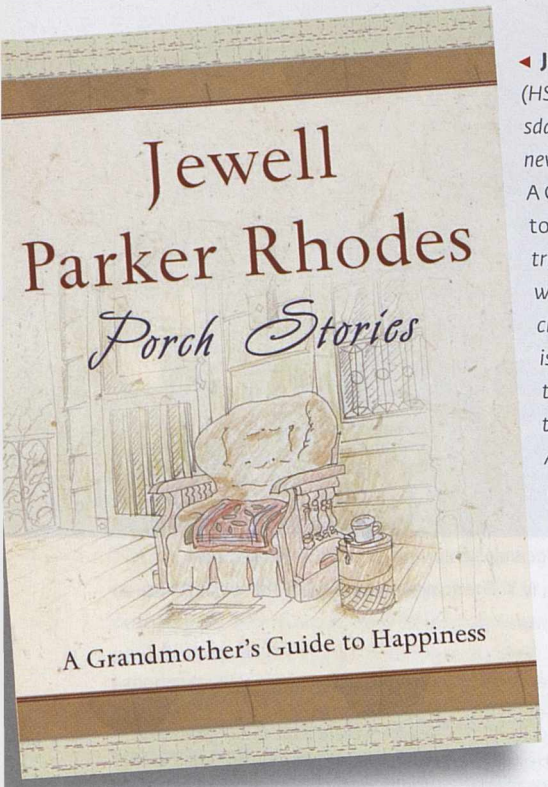
Mary M. Mazziotti (A) of Pittsburgh exhibited her miniature watercolor paintings at the Borelli-Edwards Gallery this past summer. The new, highly detailed body of work is based largely on medieval manuscript illuminations and includes arcane symbols and imagery from the worlds of alchemy, tarot, astrology, and mythology. Mary used bright, clear colors touched with reflective gold and silver, inspired by the jewel-like originals. Her works are available online at http://borelli-edwardsfineart.com.

1973

Dennis Fedock (E) of Marshallville, Ohio, was named the 28th recipient of The Babcock & Wilcox Company's (B&W) prestigious Engineering Honors Award for his numerous and innovative contributions in power generation construction technology applications. He began his career with B&W in 1974 as a structural engineering associate. He contributed to the authorship of B&W's flagship publication, *Steam: Its Generation and Use*. Dennis is a member of the following organizations: American Society of Civil Engineers, National Society of Professional Engineers, Ohio Society of Professional Engineers, American Concrete Institute, American Institute of Steel Construction, and Structural Engineers Association of Ohio. **Arthur Williams** (A) and his wife, Jacqueline, have recently retired and moved to Springfield, Tenn. They would love to hear from friends: 4330 Kinney Rd., Springfield, Tenn, 37172, 228-223-0468, or jlwmusic@cableone.net.

1975

David Macerelli (A) of Ligonier, Pa., will play the role of a cemetery worker in the upcoming movie, *Mysteries of Pittsburgh* starring Nick Nolte, Jon Foster, Peter Sarsgaard, and Mena Suvari. The movie will be released later this year.



◂ **Jewell Parker Rhodes** *(HS, HS'76, HS'79) of Scottsdale, Ariz., has written a new book,* Porch Stories: A Grandmother's Guide to Happiness, *which is a tribute to the grandmother who helped raise her as a child in Pittsburgh. Jewell is the artistic director of the Virginia G. Piper Center for Creative Writing at Arizona State University. Her previous books include* Douglass Women, *which was awarded the 2003 American Book Award. For more information, visit www.simonsays.com/content/book.*



Gary Ropski *(S'72) of Chicago, helped to bring in the first-ever USA victory in the Patent Cup Regatta held at the Chicago Yacht Club on Lake Michigan this past fall. Participating for the first time in this event, Gary and his crew sailed a Tartan 10 called the* American Flyer. *As winner of this year's race, he now has the honor of exhibiting the handsome silver* Patent Cup *in Chicago until next year's race, which is scheduled to be held in Scotland. Gary writes: "This event is a wonderful opportunity for patent attorneys to develop contacts and friendships among various law firms across the world. The competition was tough, but with our tactical expertise, boat-handling skills, and knowledge of the local sailing conditions, we were able to win." Gary is the president of Brinks Hofer Gilson & Lione and has practiced intellectual property law exclusively since joining Brinks in 1976. His practice now focuses on litigation, but has included patent prosecution and litigation; trademark prosecution, including oppositions; and litigation, trade dress litigation, copyright registration and litigation, trade secret litigation, right of publicity counseling and litigation, and related unfair competition and antitrust matters in federal and state courts. He races a Shields one-design sailboat in Chicago during the summer months and has consistently been second in the fleet championship series. [Above, left to right: coskippers Gary Ropski and Leif Sigmond.]*

1977

Judith Goldman Shahn (A) of Seattle is in her 14th year as head of voice and speech at the University of Washington's Professional Training Program. Judith recently directed *Othello* and *As You Like It* for the graduate actors, and she also coaches in the Seattle Theatre. She and her husband, Jay Lurie, have an 8-year-old daughter, Ella.

1987

Jeffrey Nagel (E, TPR) of Schenectady, N.Y., was recently named vice president of services, oil, and gas at GE Infrastructure. Prior, Jeffrey was president of GE Inspection Technologies. He joined GE in May of 1997 as the manager of business development at GE Lighting.

1989

Steve Webster (E) of Novato, Calif, was featured on the show "Baby Please Don't Go: Five Customer Retention Tips That Maximize Lifetime Value," which aired on *Marketing Matters LIVE!*, an Internet radio show presented by the American Marketing Association. Steve is the chief strategy officer for iPost, a leading email service provider with hundreds of top-brand clients, including Keds, Armani Exchange, and Fujitsu.

1990

Susan LaFiandra Reid (HS) appeared as Nerissa in *The Merchant of Venice* with the Not Just Shakespeare Company in Round Hill, Va. Previous roles have included the Nurse in *Romeo and Juliet*, Mistress Ford in *The Merry Wives of Windsor*, and Eleanor of Aquitaine in *The Lion in Winter*. She lives with her husband, Robert, and three sons in Sterling, Va. For the past 10 years, she has been actively involved in community theater, including, costuming, directing, and writing. **Gary Schaub Jr.** (HS) has accepted a position as an assistant professor at the Air Force's Air War College at the Maxwell Air Force Base in Montgomery, AL. He will teach strategy, air power, and (U.S.) foreign policy, as well as pursue his research into coercion as a tool of foreign policy and civil-military relations.

1996

Charles Elliott (A) of Phoenixville, Pa., was recently on *Extreme Makeover: Home Edition*. His wife, **Laura** (IM'95), writes: "ABC said 'It was the best run build.' Charles' team only had half the time of a normal builder to plan it." Laura, who works at Accenture, was actively involved as well, whether making food or cheering on the team. Laura and Charles recently celebrated their 10-year anniversary. **Lisa Kim Ng** (A) and her husband, Samson, are parents of Felicity, born on November 22, 2005. Lisa is a stay-at-home, freelancing mom, having left her senior art director position at Smashing Ideas in Seattle. **Mark Paat** (A) was married in May of 2005. Several alumni were in attendance, including: **Mark Baskinger** (A), **Jen Zieserl McNulty** (A), **Lisa Kim Ng** (A), and **David Yun** (A). **Darren Prouty** (A) has been in the United Kingdom for five and a half years and earned permanent settlement status last November. For the past two years, Darren has been contracting as a project manager and just recently started at Channel 4, where he works on news Web sites. In his down time, Darren plays a lot of softball and is the local league development coordinator. During the summer, he runs development sessions, and he has helped eight teams join the league. **Sindu Meier** (A) and **Geoff Meier** (A) met up with **Andy Owens** (A) and **Nootan Bharani** (A'99) in Chicago in August and thought fondly of Judith Hull (Carnegie Mellon faculty), who helped them develop an appreciation for Burnham and Root's architecture. The Meiers explored the spaces of the Overture Center in Madison, Wis., during a tour by **Jessica Klehr** (A) and her kindergarten-bound daughter, Lucie. During a trip to Game 4 of the World Series, they ran into Bruce Lindsey (former professor), the newly appointed head of the architecture department at Washington University in St. Louis. Sindu writes, "Bruce is the same lovable professor we all remember from freshman year."

1999

Stacey Jenkins (HS) of Charlottesville, Va., married Jeremy Sweeney on June 25, 2006. Despite the rainy weather, the happy couple celebrated their vows outside at the Harding Allen Estate in Barre, Mass. Other alumni in attendance include **Norbert Malamud** (IM'98), **Robert Dean** (CS, E), **Tara Washlack** (S'01), and **Geoffrey Barbanell** (TPR'01). Stacey has recently completed an internship after her first year at the University of Virginia's Darden MBA program.

2000

Juan José Cukier (INI), from Buenos Aires, Argentina, has successfully completed all courses to graduate as a Software Engineering Institute (SEI) authorized SCAMPI lead appraiser, and he will become Argentina's first lead appraiser, able to evaluate companies adopting the Capability Maturity Model Integration (CMMI) model. **Stephanie Toth Kates** (A) and **Jesse Kates** (HS, CS'01) of Kansas City, Mo., are parents of Tobias Sebastian Kates, born December 15, 2005. **Lilian Lee** (TPR) graduated and received her juris doctor from New York Law School in May 2005. In June 2006, she was awarded a master's of law in Chinese law from the prestigious Tsinghua University School of Law in Beijing. She graduated in China's inaugural class. Currently, only nine people in the world



Catherine Sakach *(HS'89) of Cherry Hill, NJ, was made a partner of WolfBlock, a multipractice law firm with offices in Delaware, Massachusetts, New Jersey, New York, Pennsylvania, and Washington, DC. Catherine concentrates her practice in the area of complex commercial litigation.*

Elana Hoffman Larson *(A'94) of New York City appeared at Carnegie Hall as part of the Special Presentation Winners Series in March. She has performed the flute throughout the United States and Austria and is an active freelancer in New York City, as well as a teacher at the Park and Closter Conservatories in New Jersey. She is the recipient of several Evelyn Preston Grants for Public Performance, and she has broadcast live concerts on KBPX in Spokane, Wash., and has recorded for the Discovery Channel. Elana has more than 10 years of teaching experience, including leading the flute department for two summers at the Hartwick College Summer Music Festival and serving as a flute instructor at the Skidmore College Summer Flute Institute.*

hold such a degree by an accredited Chinese law school. **Christopher Loucks** (HS'03, E'05) and **Tammy Manski** (TPR, TPR'05) were married in Pittsburgh on June 10, 2006. They held their reception at PNC Park and honeymooned in St. Barth's. They reside in Cleveland. **Cris Martin** (HS'99, HS) recently earned her master's degree in international education policy from Harvard University. She will remain in the Boston area with her husband, **Jason Martin** (HS'99), as she is now the outreach director for the Davis Center for Russian and Central Asian Studies at Harvard University. **Michael Onda** (TPR) of Smyrna, Ga., married Heidi Teague near their home in Atlanta, last year. After graduating from Emory University's MBA program (also last year), Michael accepted a senior consultant position with Deloitte's consulting strategy and operations practice.

2003

Lacey Acres (A) and **Moshe Mahler** (A) married last summer and honeymooned in Jamaica. She teaches elementary and middle school band in the Deer Lakes School District, and he is an animation designer at Carnegie Mellon. The newlyweds live in the Squirrel Hill neighborhood of Pittsburgh. **Leslie Good** (HS) financed a nine-month MBA at the University of Montana at Missoula by working for a small hotel while she "enjoyed the scenery." She then moved to New Jersey to work for Marriott Hotels and Resorts in guest services before relocating to Boston, where she is a manager with the Ritz-Carlton Boston. She is "very excited" to be in Boston. **Fayette Shaw** (E) finished a master's degree in mechanical engineering at the University of Washington, Seattle. Her research involved self-assembly approaches in nanotechnology. She writes that her primary influence is engineering, "namely dynamics and controls, to characterize reaction pathways in biological systems." **Amy Tsao** (HS) married **Matt Demmler** (TPR'00). Her maid of honor was **Leticia Arslanian** (TPR), and bridesmaids were **Samantha Olschan** (A) and **Anna Gilbert** (A). The best man was **Peter Yeung** (TPR'00), and groomsmen were **Lou Campero** (A'01) and **Shevey Westbrook** (E'00). Class Correspondent **David Kaplan** (E) attended a Broadway Cares/Equity Fights AIDS benefit concert after *Mamma Mia*, where he discovered that **Will Reynolds** (A'05) was in the ensemble. David writes that "Will's cast mates tout him as 'the next Sondheim.'"

2004

Lisa Detwiler (TPR) of Seven Fields, Pa., was named chief marketing officer of SSD Inc. Technology Partners in New Castle. Prior, Lisa spent the majority of her 19 years in business with a Fortune 500 company performing various

60 Seconds With ...

Colin Raney (T'07) was last year's William G. McGowan Scholar. (McGowan organized MCI Communications and helped to create a competitive telecommunications market.) The McGowan scholarship is awarded based on a student essay, faculty recommendation, academic performance, involvement in campus and community activities, leadership abilities, and character. Raney received an $18,000 scholarship.

How did your MBA road lead to Carnegie Mellon?

Through San Francisco. I graduated from the University of North Texas and after a short stint as a consultant, I landed at a small software company building communications software in San Francisco. I was there six years, met my wife, and eventually came here because it had a great business school. Plus, I was interested in design and knew there was a good design school right across the sidewalk from the business school. I definitely wasn't looking for a traditional MBA. I didn't apply to Cal. I didn't apply to Harvard. I didn't apply to Stanford, all those places where you get cookie-cutter MBAs.

Talk about your future plans.

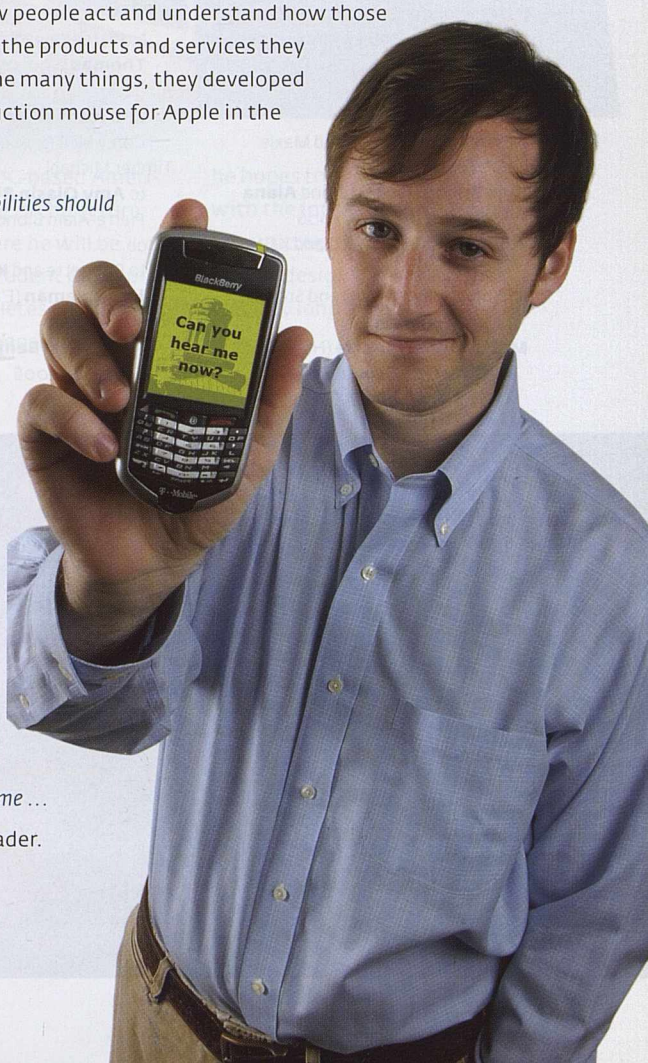
I recently accepted a job with Ideo in San Francisco. They're kind of a maverick firm because they have a different approach to problem solving. They take a user-centered approach to problem solving, observing how people act and understand how those actions affect the products and services they use. Among the many things, they developed the first production mouse for Apple in the early 80s.

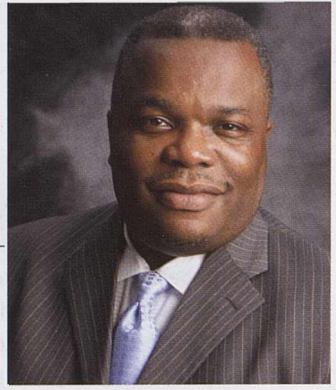
What responsibilities should MBA graduates remember in today's workforce?

You need to put things into a framework, even as simple as: "Would I be comfortable telling my mother I did this?"

The Tepper School has helped me become ...

A confident leader.





Howard Slaughter, Jr. *(HNZ'95) has been appointed to the board of the Pennsylvania Housing Finance Agency. He is the director of Fannie Mae's Pittsburgh Community Business Center, overseeing the organization's affordable housing investment for a six-county area. As part of his Fannie Mae duties, he has worked with local housing partnerships that have helped 24,000 low- and moderate-income families become homeowners. Prior, he was director of preservation services for the Pittsburgh History and Landmarks Foundation, where he led community and neighborhood restoration programs, established lending partnerships with banking institutions, advocated for historic preservation, and directed the religious properties initiative. He is a member of the board of the Urban League of Pittsburgh and the Board of Visitors at Robert Morris University. He founded the Financial Literacy Program for minority high school students, was an adjunct faculty member of the University of Pittsburgh's Graduate School of Public and International Affairs, and previously taught at the Community College of Allegheny County. He also served honorably in the U.S. Navy and the U.S. Army Reserves—which included assignments at the Pentagon with the Defense Intelligence Agency—and he was singled out in a letter of laudatory recognition for his superior work on the China-Vietnam Intelligence Task Force.*

leadership roles and working in product development, plant management, account management, and business development.

Marriages

Kevin Kroen (HS'00) and Maxie Plante 04/2006
Kyle Billingsley (A'04) and **Alana Schmidt** (A'04) 07/2006
Youko Watari (HNZ'93) and Kai Johnson 08/2006
Alison Berliner (E'03) and Steven Norris 10/2006
Matthew MacKenzie (HS'91) and Dianne Cowan 10/2006

Births

Asher Morgan
to Marcy Kawadler and **Daryl Thomas** (S'90) 09/2005
Abigayle Lisa
to **Erica Weiner Bleil** (HS'93) and Corey Bleil 12/2005
Timber Michael
to **Amy Olasin Bionda** (A'96) and Pierre-Alain Bionda 09/2006
Jacob
to Bridgette and **Keith Heintzleman** (E'83, IA'88) 08/2006
Joshua William
to Rocio and **Benjamin Roberts** (HS'99) 10/2006
Eliora Calanit
to Shoshana and **Keith Rothschild** (E'99) 12/2006

Deaths

Edna Arons Charlson (MM'30) 11/3/2006
Anne Ophelia Todd Dowden (A'30) 01/04/2007
Isobel Sheppard Haines (MM '30) 01/30/2006
Virginia Morgan Obrig (MM'30) 10/15/2006
Ruth Gray Rymer (MM'30) 11/13/2005
R. Edward Campbell (E'31) 10/2006
Robert Green (A'31) 02/05/2007
Catherine Mong Heinaman (MM'32) 10/12/2005
Sylvia Lyon Morris (MM'32) 02/09/2006
Sue Mitchell Query (MM'33) 12/22/2005
Dorothy Bliss Dale (MM'34) 03/13/2006
Valentine Luedeke (E'34) 09/07/2006
Theodore Charletta (E'35) 01/01/2006
Margaret Anderson Nelson (MM'35) 04/06/2006
Vida Hurst Kerr (MM'36) 11/11/2006
R. Schulze (E'36) 10/16/2006
Thelma Brown Neuworth (MM'37) 10/18/2005
Eugene Simons (E'37) 12/22/2006
Wilfred Slocum (A'37) 11/17/2006
Beatrice Marsh Schwartz (MM'38) 01/23/2006
Natale Christiano (E'39) 01/01/2007
David Emmel (E'38) 01/26/2007
Herbert Moscow (PM'38) 11/28/2006
Clarissa Benedik Stein (A'38) 06/14/2006
W. Shafer Jr. (E'39) 12/15/2006
Robert Steinman (S'39) 08/07/2006
H. Cox (E'40) 03/15/2006
Alexander Taylor Forrest (E'40) 12/11/2006
Robert Holmes (E'40) 11/29/2006
John Phillips (E'41) 01/23/2007
Egon De Zubay (E'42) 12/14/2006
Corinne Harter Hartfield (MM'43) 04/02/2006
Esther Hudson Ridinger (MM'43) 10/29/2006
Emile Rutner (S'43) 05/01/2006
Adele Sedler Fargotstein (A'44) 11/22/2006
George Ingald Jr. (E'44) 03/02/2006
Marie Sunseri Madigan (MM'44) 01/08/2007
Frederick Ollett Jr. (E'44) 12/28/2006
Milton Rudick (E'44) 09/27/2006
Arthur Uber Jr. (E'44) 11/23/2006
Martha Atkins Hunter (A'45) 05/26/2006
Davis Benton Jones Jr. (E'45) 08/28/2006
John T. Fleck (E'46) 10/17/2006
William Scherb (E'46) 07/22/2006
Clara Herron (MM'47) 02/08/2007
Anna Groomes Schnorr (MM'47) 03/30/2006
Charles Haber (E'48) 01/14/2006
Harold Lipchik (E'48) 12/30/2005
Donald McGraw Jr. (PM'48) 06/11/2006
George Minton (S'48) 10/25/2005
John Shott Jr. (S'48) 01/06/2007
Milton Sniderman (E'48) 09/09/2006
Lois Schafer Baldrige (MM'49) 10/31/2005
Clifford Klick (S'49) 10/09/2006
Mary Weikel Remy (MM'49) 11/22/2006
Thomas Stelson (E'49) 11/02/2005
Louis Valentour (A'49) 11/21/2006
Clifford Foreman (A'50) 07/27/2006
Gene Geiger (E'50) 07/10/2006
Donald Green (E'50) 11/15/2006
Joan Brown Levy (MM'50) 07/11/2006
F. Beckley Smith Jr. (S'50) 10/19/2006
Rudolph Guyon (E'52) 10/29/2006
Fredrick King (E'52) 12/12/2006
Edward Kramer (S'52) 12/18/2005
Duncan Whiteford (E'52) 01/31/2006

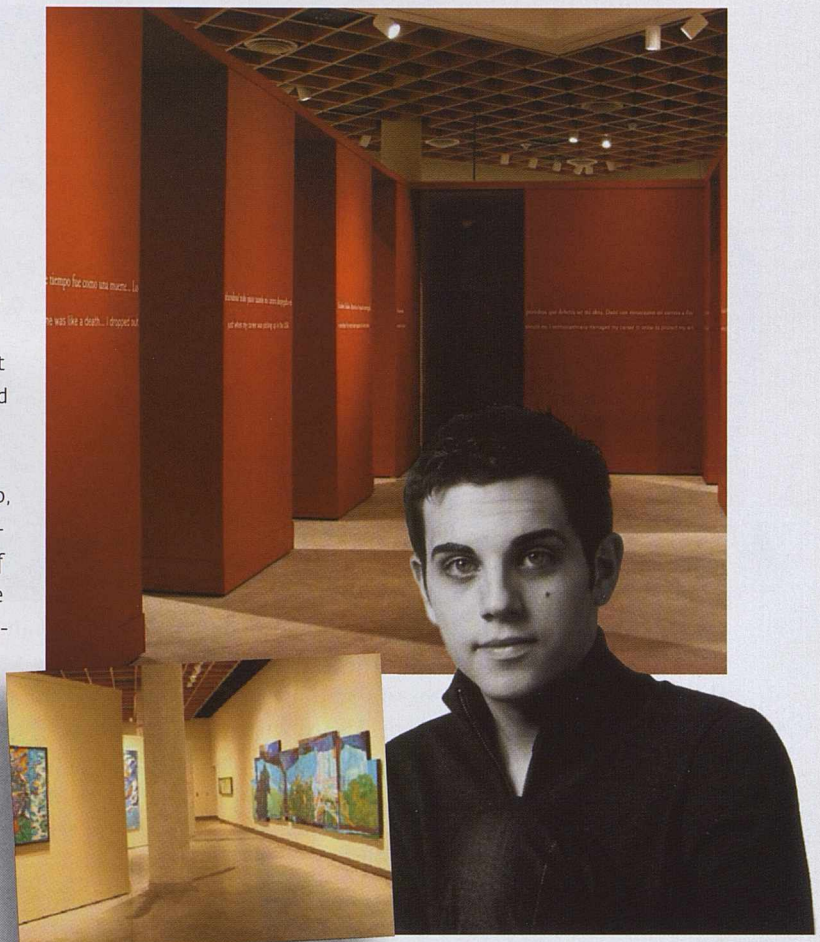
Climb Any Mountains Lately?

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Thomas Bittner (E'53) 10/01/2006
Joan Green Marcus (MM'53) 03/19/2006
Philip Ring (E'53) 03/07/2006
Jack Ritchie (IM'53) 01/26/2007
Herbert Spiro (TPR'53) 10/26/2005
John Kinter (E'54) 10/30/2006
Robert Lascheid (E'54) 11/11/2006
Carl Robeson Jr. (E'54) 03/25/2006
William Dosey (IM'55) 10/04/2006
Joseph Easly (IM'55) 11/11/2006
John Gumaer (E'55) 12/04/2006
Malcolm Malloy (E'55) 11/28/2006
Charles Slentz (E'55) 12/10/2006
Paul Duensing (PM'56) 11/09/2006
Harvin McFaddin (E'57) 11/19/2006
Rudolph Minarik (E'57) 10/15/2005
Richard Ellis Smith (E'57) 11/26/2006
Lois Volk Wick (L'57) 12/08/2005
Norman Gjostein (E'58) 04/05/2006
Robert Kessler (E'58) 07/11/2006
D. Reinsel Lawton (MM'58) 01/05/2007
George Phillips (E'58) 10/06/2005
Leonard Sedor (A'58) 12/24/2005
James Bane Jr. (E'59) 10/25/2005
Steve Kolenik (E'62) 10/25/2006
Colyn Phillips (S'62) 11/24/2006
Thomas Fagan Jr. (E'63) 10/23/2006
Frank Jones (E'63) 10/22/2006
Harold Liff (E'63) 10/17/2006
Stanley Jarecki (E'64) 11/04/2006
George Milliman (S'64) 12/15/2006
David D'Appolonia (E'65) 11/19/2006
Bernard Meister (IM'66) 06/01/2006
Joseph McArdle (A'67) 01/20/2007
David Newton (E'67) 02/20/2006
Suzanne Szokoly Newman (A'68) 02/01/2007
James Steinbach (HS'68) 10/05/2006
Fae MacCamy (HS'69) 07/06/2006
Catherine Saum (A'91) 01/08/2007
William Major (HNZ'99) 11/06/2006
Jarek Babicki (A'02) 02/2007

Rising Star by Chris A. Weber



For **Andrew Caruso** (A'06), San Juan offers a siren call. It is there where he recently enjoyed his first international commission, designing a gallery for Caribbean painter Maria de Mater O'Neill, billed as "Artist Interrupted," at the Smithsonian-affiliated Museo de Arte de Puerto Rico.

"The intriguing thing about the project is that it was based on collaboration, which is where our [architecture] profession is headed," says Caruso, who is president of the 6,000-member American Institute of Architectural Students, where he oversees advocacy and policy initiatives. "As an emerging professional, it was quite an experience working with a curator, a museum, and an international artist."

Caruso presents O'Neill's midcareer retrospective using bold hues and subtle textures, placing visitors into rooms of creative interior space. The exhibit is just one of many in which the 22-year-old Morristown, N.J., native has participated.

Later this summer, Caruso will take his ideas to the Washington, DC-based American Institute of Architecture Students, where he will be the national student director. Once he completes all of his profession's licensing exams, he hopes to eventually team with the International Olympic Committee on future Olympic Village designs, ensuring their viability long after the games are gone.





In this BlackBerry, text-messaging, Wi-Fi world, there is little time to glance at anything that doesn't feel like a priority. Brochures, newsletters, even glossy publications that are sent to me unsolicited often go unread.

I'm sure it's no different for many of you, so I know that merely publishing a magazine won't guarantee it's actually read by anyone. *Carnegie Mellon Today* must compete with your daily mail, local newspaper, favorite magazines, bookmarked Web sites, and high-definition programming.

For this magazine to grab your attention and not end up in your junk mail pile, it needs to tell great stories. Fortunately, great stories are easy to find around here. Global achievements from the University's faculty, students, and alumni have become the norm. In fact, we created *Carnegie Mellon Today* three years ago so we could share the impressive triumphs of our University's transcontinental family—from the Nobel Laureates to the Academy Award winners to the robotics pioneers to the freshmen who are just settling in. These pages are meant to connect all of us.

Starting with this issue, the first with our new executive editor Robert Mendelson, we've added some exciting enhancements. We want to make sure that once you peek inside, you will stay for awhile.

First, there are more stories being told. There are also several new departments—*The First Word*, *Inbox*, *News Flash*, *The Fence*, *Making Noise*, and *Beyond the Cut*—that are packed with expanded University news, alumni achievements, campus happenings, and readers' opinions. We've also changed the look of the pages, making sure that our layouts are dynamic and eye-catching as they tell the stories visually. We didn't overlook the writing, either. Every word on every page is part of a narrative "storytelling" style that is meant to bring to life every article, large or small.

The editorial and design changes aren't limited to the print version of the magazine. We've improved, as well, its online counterpart, carnegiemellontoday.com, by expanding its content and making it more interactive and easier to navigate.

To make sure we're strengthening our readers' connection with each other and with our University, we need your help. This issue includes a readership survey card. Please take a moment to review, fill out, and return it to us. Or, if you prefer, you can always pass along your praise, criticisms, and suggestions by visiting carnegiemellontoday.com.

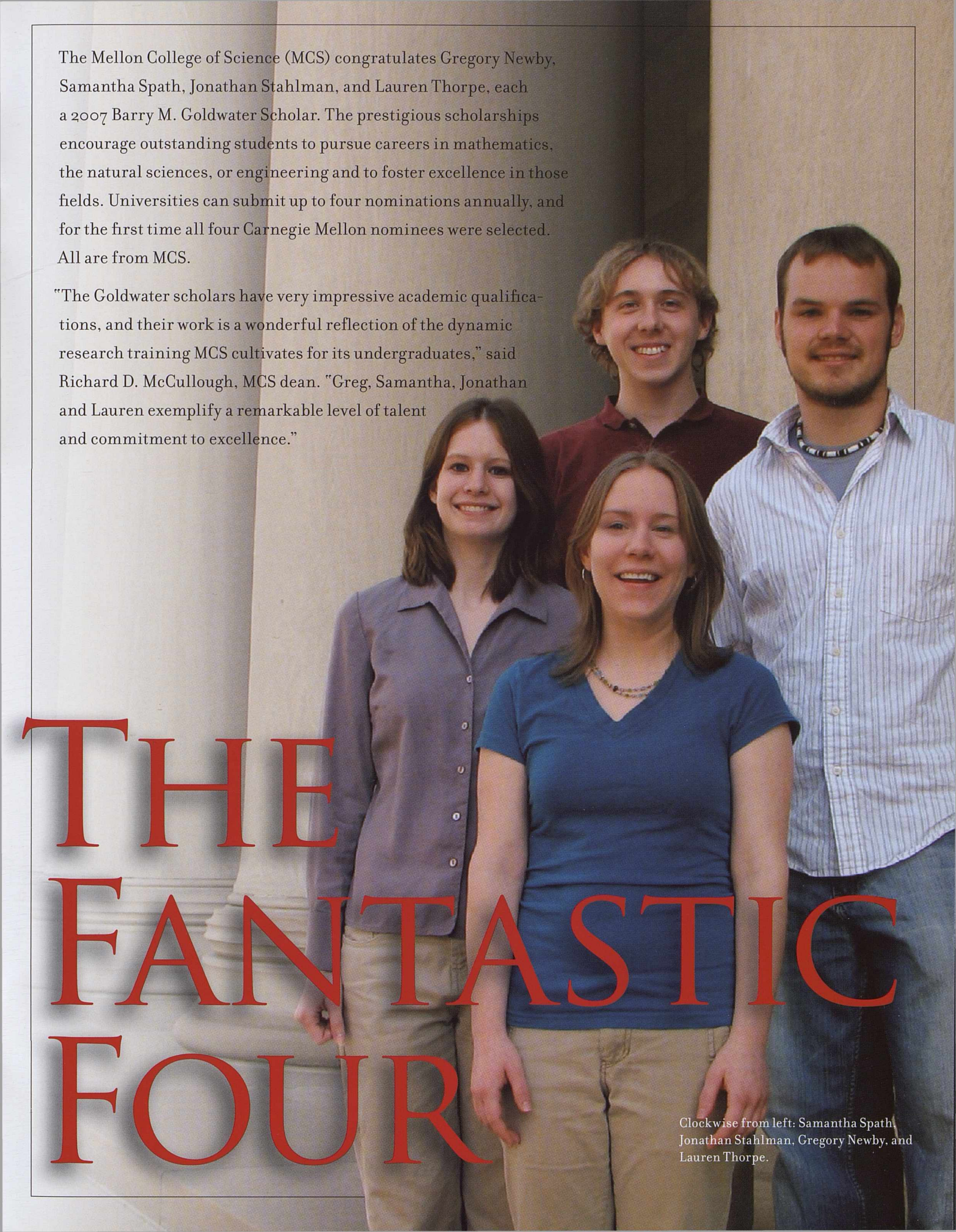
Whether it's through the survey card or going online, please let us know what you think of our flagship publication. I promise we'll listen closely because this magazine is for you. With your helpful feedback, I will do my best to ensure that *Carnegie Mellon Today* never ends up in your junk mail pile.

—Robbee Baker Kosak
Publisher, Carnegie Mellon Today
& Vice President of University Advancement

The Fantastic Four

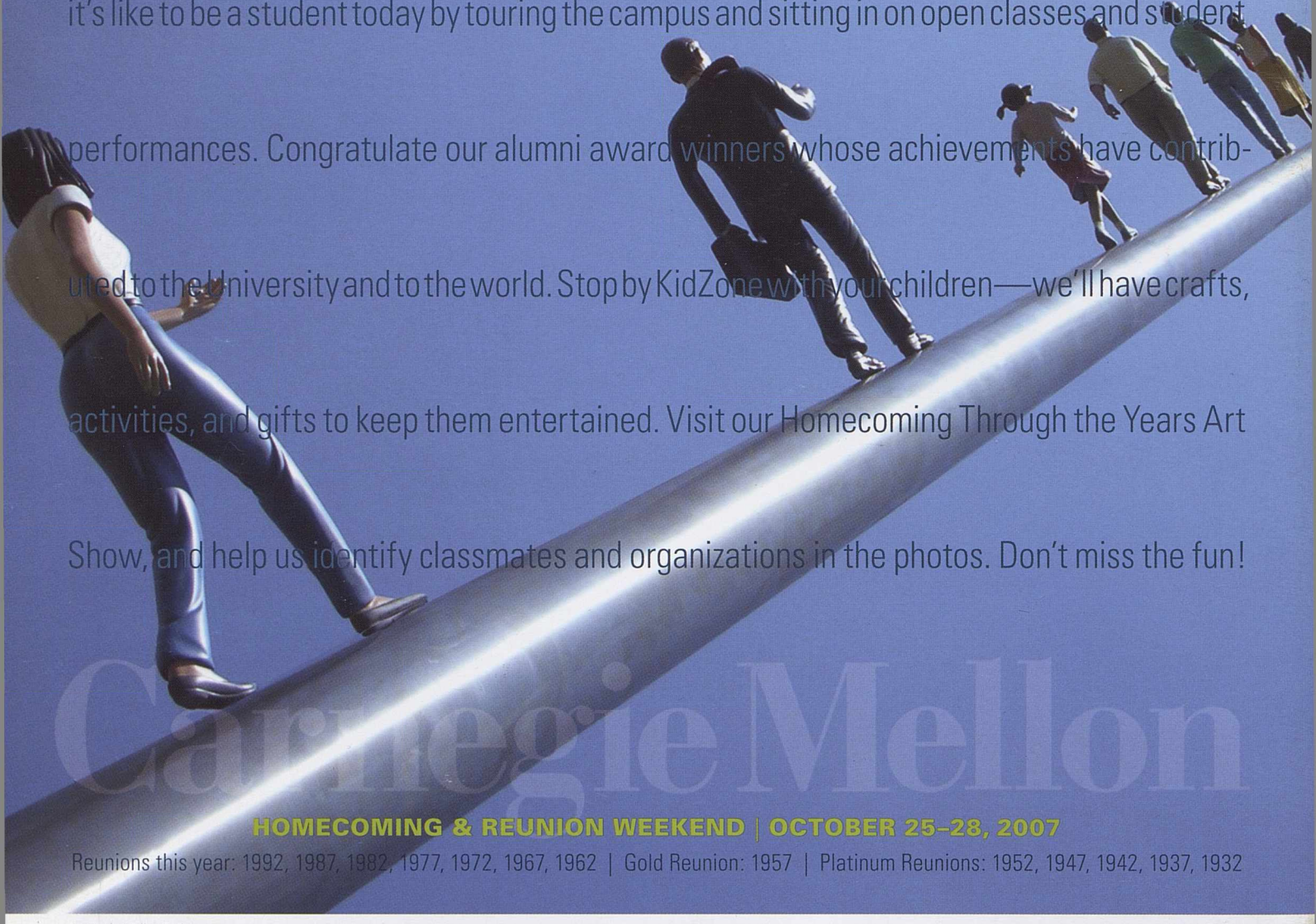
The Mellon College of Science (MCS) congratulates Gregory Newby, Samantha Spath, Jonathan Stahlman, and Lauren Thorpe, each a 2007 Barry M. Goldwater Scholar. The prestigious scholarships encourage outstanding students to pursue careers in mathematics, the natural sciences, or engineering and to foster excellence in those fields. Universities can submit up to four nominations annually, and for the first time all four Carnegie Mellon nominees were selected. All are from MCS.

"The Goldwater scholars have very impressive academic qualifications, and their work is a wonderful reflection of the dynamic research training MCS cultivates for its undergraduates," said Richard D. McCullough, MCS dean. "Greg, Samantha, Jonathan and Lauren exemplify a remarkable level of talent and commitment to excellence."



Clockwise from left: Samantha Spath, Jonathan Stahlman, Gregory Newby, and Lauren Thorpe.

reConnect | reDiscover | reExperience Re-connect with Carnegie Mellon through a variety of events that bring together alumni, family, friends, and students. Re-discover old friendships and make new ones, too. Re-experience life at your alma mater. Find out what it's like to be a student today by touring the campus and sitting in on open classes and student performances. Congratulate our alumni award winners whose achievements have contributed to the University and to the world. Stop by KidZone with your children—we'll have crafts, activities, and gifts to keep them entertained. Visit our Homecoming Through the Years Art Show, and help us identify classmates and organizations in the photos. Don't miss the fun!



Carnegie Mellon

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Reunions this year: 1992, 1987, 1982, 1977, 1972, 1967, 1962 | Gold Reunion: 1957 | Platinum Reunions: 1952, 1947, 1942, 1937, 1932

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