

WPI transformations

WINTER 2009

A JOURNAL OF PEOPLE AND CHANGE

A close-up photograph of a hand holding a glowing green globe of the Earth. The globe is the central focus, with a bright light source behind it, creating a soft glow and highlighting the continents. The hand is positioned at the bottom and right sides of the globe, with fingers visible. The background is dark and out of focus.

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“Far and away the best prize that life offers is the chance to work hard at work worth doing.”

—Theodore Roosevelt

I recently learned that a WPI colleague, Adam Epstein '05, leaves a copy of *Transformations* in the seat-back pocket of every airplane in which he travels. “Sometimes I’ll even take a few and, awkwardly, put them in seats other than my own,” he says. “On a trip last year, I remember a gentleman in my row who was actually reading it during the flight, and we made conversation.”

In short, it’s some extra visibility for WPI with an especially captive audience. It makes me smile to think about all the JetBlues and Deltas of the world, unknowingly transporting this very magazine back and forth across the country, around the globe, and into the hands of people who may have never before heard of WPI. Lucky for me—and for all of us, really—Adam’s job in Admissions involves a good amount of travel.

If you’re reading this column, this magazine, you’re likely invested in some way in WPI. Perhaps you’re an alum, a professor, a retired staff member, or a parent—or grandparent—of a current student. (Perhaps you’re traveling on an airplane at this very moment and you’ve stumbled by accident onto this issue of *Transformations*. If so, please keep reading!) Whatever your connection to this university, won’t you follow Adam’s example and share this magazine with someone you know, or even someone you don’t know. As a community, it’s our collective duty to educate just a few more prospective students, parents, faculty members, or corporate partners, about why WPI is such an exceptional place.

I imagine such people would be interested in, or even surprised by, the impact that a WPI education can have. Take this issue of *Transformations*, for instance, in which we tell the stories of the significant work and activities of WPI alumni, students, and faculty in areas as diverse as health, safety, the environment, and the Worcester community. In an uncertain economy—or any economy, for that matter—this work remains of utmost importance to advancing our knowledge, improving our standard of living, and contributing to the world in myriad ways.

In Chicago, Bruce Minsky '77 (page 21) has improved the course of treatment for patients with colorectal cancer, the result of which has increased the survival rate for the devastating disease. In Paris, while traveling for work, Romiya Glover Barry '04 (page 25) is meeting with clients to bring to market technologies and products that will aid those with blood clotting disorders. In Anchorage, Peter Bellino '08 (page 30) helps protect the gas pipeline there, where the threat of fire stretches on for thousands of miles. In our own backyard, Barbara Haller '83 (page 34) is improving our way of life, as a Worcester city council member and longtime concerned citizen.

There’s more: Faculty research improves the safety of our cars, and a student project helps a community in Morocco come up with solutions to relieve the water crisis there.

While it may be difficult to whittle down the essence of WPI in just a few words or phrases, I’m hopeful that we’ve captured at least some of the spirit in these 56 pages.

This is The Important Work We Do. Pass it on.

Thanks for reading.

Charna Mamlok Westervelt, *Editor*

Charna Mamlok Westervelt
Editor

Chris Ritter
Vice President for Marketing and Communications

Joan Killough-Miller
Alumni News Editor

Peggy Isaacson
Graphic Designer and Copy Editor

Dianne Vanacore
Print Production Coordinator

Judith Jaeger
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wpi.edu/+Transformations
email: **transformations@wpi.edu**

Diverse views presented in this magazine do not necessarily reflect the opinions of the editor or official WPI policies. Address correspondence to the Editor, Transformations, WPI, 100 Institute Road, Worcester, MA 01609-2280. Phone: 508-831-6715; Fax: 508-831-5820.

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Proper Head Count

The “Women of WPI” article in the Spring 2008 *Transformations* states that 26 percent of the class of 2008 are women. It seems to me that 26 percent is still lower than it should be, but don’t short-change the progress WPI has made. Although women make up one-quarter of the Class of 2008, the ratio of women to men is 1:3, not 1:4 as stated.

Steve Delfino ‘89
Somerville, Mass.

Editor’s note: Oy! We are still smacking our heads over this one. Thanks to Mr. Delfino, who was a math major at WPI, for pointing out our error.

Further Explanation Needed

I enjoyed “The Women of WPI” in the recent issue of *Transformations*. I had to laugh at the comment by Mary Farren McDonald ’79 about the men memorizing all the women’s names. That happened to me too, over 20 years later!

One thing I didn’t like was the statement, “For years, girls did not attend institutions like WPI because they weren’t taking the high-level math and science needed for admission.” This is whitewashing the sexist reality. Women were not allowed into these institutions for many years because of their gender, and even when they weren’t officially denied, they often couldn’t take the advanced courses needed to get in. My mother grew up in St. Louis, Mo., and went to an all-girls Catholic school. Hardcore math and science just weren’t offered. She was stuck learning cooking and home economics. Women weren’t even encouraged to go to college at all. My mother-in-law—who is a bit younger, grew up in Maine, and went to college in upstate New York—tells me she wanted to be a math major in college, but women were not allowed to take calculus. She had to settle for accounting since it didn’t require the advanced math courses she was excluded from.

The article makes it sound like it was entirely women’s fault that they weren’t entering science and engineering fields.

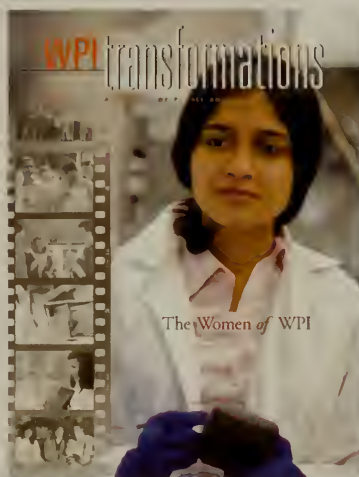
Kerry Lee Anderson ‘03
Brighton, Mass.

Capturing a Snapshot of WPI History

I read your excellent article “The Women of WPI” with great interest. Women have come a long way at WPI and you have captured the flavor of their presence. There were just a few other notable events in the life of women at WPI that I thought I’d mention. There were two women faculty in 1967, both teaching in the Chemistry Department—Barbara Murphy and I. (I was on loan from Clark University, where I was teaching physiology). I taught molecular biology here and Barbara was a chemistry tenure-track professor.

During his tenure here, President Edward Alton Parrish asked a number of us to form a Committee on the Status of Women, which we did. The Committee consisted of elected women members from all facets of women’s life here on campus, with rotating terms of office. We met frequently at Higgins House, where I hosted a number of breakfast meetings. Recognizing that there needed to be a dedicated person to address women’s issues, many of us were on the search committee that brought to campus Stephanie Blaisdell, the predecessor of Michelle Nicholson, director of women’s programs.

Helen G. Vassallo ‘82 (MBA)
WPI Professor of Management and Secretary of the Faculty



Correction: Kasia Koscielska ’08 was the recipient of the Meridith D. Wesby Young Leader Award, given by the Women’s Initiative of United Way of Central Massachusetts. *Transformations* regrets the misinformation in the Spring 2008 issue of the magazine.

1:3

What We Can Do

As a nation, we recently witnessed the historic inauguration of Barack Obama as the 44th President of the United States. Millions of Americans gathered on the National Mall to observe the peaceful transition of power that reflects the great strength of our democracy, while many times more watched on televisions across this country and around the globe. As one of those viewers, I found myself feeling at once deeply American and truly a citizen of the world.

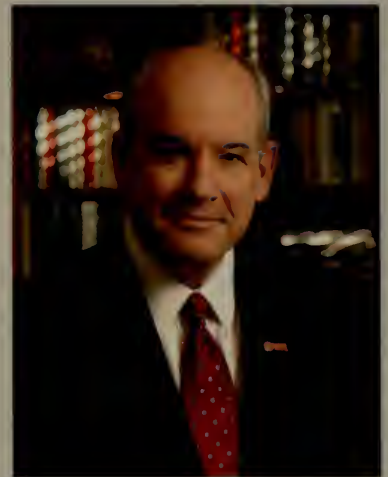
I also found the presence of so many young people especially compelling. Indeed, throughout the long presidential campaign, the passionate support of young people for each of the major candidates brought a marvelous energy and creativity to the process. As the cameras panned across their faces, my thoughts could not help but return to the inauguration of John F. Kennedy during my own coming of age. His words that day issued an important call to service that have remained in the hearts and minds of so many Americans because they speak to our best instincts—our spirit of generosity, passion for discovery, and commitment to hard work.

When I think about WPI, I am reminded that *asking* what you can do is only the first step. *Doing* what you can do makes all the difference, and I believe few institutions prepare their students to take effective action as well as WPI. The Institute's distinctive project-enriched curriculum, the WPI Plan, focuses on the integration and application of knowledge, precisely the skills required for imagining new possibilities, working collaboratively with others, and getting a job done.

Throughout this issue of *Transformations*, you will find inspiring stories of WPI students, faculty, staff, and alumni who have asked what they can do—and then taken on the challenge of doing it. On any given day, whether in the most modern cities or the most remote villages, these remarkable individuals are doing important work to improve the health of our planet and the lives of their fellow man. Among them are alumni who are making great advances in the standard of care for patients suffering from colorectal cancer, developing a revolutionary process to recycle plastic and rubber trash into reusable materials, working on water and sanitation issues in developing countries, and helping to fight homelessness right here in Worcester.

When I think about WPI, I am reminded that *asking* what you can do is only the first step. *Doing* what you can do makes all the difference, and I believe few institutions prepare their students to take effective action as well as WPI.

During these troubling economic times, we on the WPI campus are also asking ourselves what we can do to help this marvelous institution weather the storm and emerge stronger than ever. This we must do while protecting the core values that we all associate with WPI. These values include the WPI Plan, our innovative project-enriched curriculum; a tradition of excellence in undergraduate teaching; and research activities that are both intellectually challenging and truly important.



To this end, we have implemented several cost-saving initiatives that will require all of us to work together—to do what we can do. We have instituted a hiring “frost” on staff positions, with only the most essential open positions being filled. We are continuing with faculty searches, although we anticipate that several of these will be held over for next year due to the complicated nature of landing truly outstanding candidates. We have eliminated non-essential expenditures in areas such as travel and meeting costs, and we will continue to reevaluate our financial health.

Without meaning to minimize the challenges we will be facing, I believe that the good work we have done to strengthen the Institute in recent years, and the savings we can generate yet this year by the measures being proposed, will position us well to begin moving to a new equilibrium, a sustainable financial model, that can see us through the difficult years ahead and ensure continued success in the long run.

So, yes, these are challenging times for our nation and for this university, but I am heartened each day by the knowledge that the people of WPI are on the case. This is our moment to do what we can do.

Faculty News: Appointments and Awards



Longtime faculty member John Orr was named WPI provost and senior vice president last spring, following an intense yearlong, nationwide search. As provost and senior vice president, Orr is responsible for all of the university's academic and research programs; he serves as the senior member of the president's staff.

Orr received BS and PhD degrees in electrical engineering at the University of Illinois at Urbana-Champaign and earned an MS degree in electrical engineering at Stanford University. He began his career at WPI in 1977 as an assistant professor of electrical engineering and served as head of the Electrical and Computer Engineering Department from 1988 to 2003; in 2006 he was named dean of undergraduate studies and a year later became provost ad interim.



Art Heinricher has been appointed dean of undergraduate studies, responsible for the quality and effectiveness of all aspects of the WPI undergraduate experience.

Heinricher came to WPI in 1992 as a faculty member in the Mathematical Sciences Department, where he is currently a professor. He was appointed associate dean for the first year experience in 2007, and was instrumental in the development and implementation of WPI's Great Problems Seminars, which serve as an introduction to university-level research and project work focused on themes of current global importance, including food, energy, infectious diseases, and materials science and sustainability. He holds a BS in applied mathematics from the University of Missouri-St. Louis and a PhD in mathematics from Carnegie Mellon University.



Jeanine Plummer, associate professor of civil and environmental engineering and director of the university's Environmental Engineering Program, has been named Professor of the Year for Massachusetts by the Council for the Advancement and Support of Education.

Plummer, who joined the WPI faculty in 1999, received a BS in civil and environmental engineering from Cornell University; she earned both an MS in environmental engineering and a PhD in civil and environmental engineering at the University of Massachusetts Amherst.

Last year, Robert Norton, Milton Prince Higgins II Distinguished Professor of Mechanical Engineering, won this prestigious award and in 2002, Judith Miller, then professor of biology and biotechnology at WPI, received the same distinction.



Kristin Wobbe, head of the Department of Chemistry and Biochemistry, became WPI's first Metzger Professor of Chemistry in October. The endowed professorship was established in 2007 through a \$1.5 million gift from John C. Metzger Jr. '46, and his wife, Jean. Metzger, who spent his entire career at E. I. du Pont de Nemours & Co., died in December 2006.

Wobbe joined the WPI faculty in 1995; she holds a BA in chemistry from St. Olof College and a PhD in biochemistry from Harvard University. She was named the Leonard P. Kinnicutt Assistant Professor of Chemistry in 1999. In 2001 she received the Romeo L. Moruzzi Young Faculty Award for Innovation in Undergraduate Education, and was also promoted to associate professor of chemistry. In 2007 Wobbe co-developed and co-taught Feed the World, one of the inaugural Great Problems Seminars.

WPI Is Ninth in Nation for Getting Rich

A recent ranking compiled by Forbes.com recognizing the "Top Colleges for Getting Rich" rated WPI ninth in the nation, based on the salaries of both recent graduates and those with 10 to 20 years of experience. The median salary among WPI graduates with up to five years of experience was \$61,000, among those with 10 to 20 years of experience, the median was \$114,000. The median top salary among WPI graduates was \$180,000. Colleges rounding out the Top 10 are Dartmouth, Princeton, Stanford, Yale, MIT, Harvard, University of Pennsylvania, Notre Dame, and the Polytechnic University of New York, Brooklyn.

Commencement

WPI's 140th Commencement brought together students, faculty, staff, alumni, and visitors from near and far on the campus Quadrangle, where 1,089 bachelor's, master's, and PhD degrees were awarded in May.

Honorary degrees were conferred upon Jeffrey Immelt, chairman and CEO of General Electric Co. and keynote speaker at Commencement; Woodie Flowers, Pappalardo Professor of

Mechanical Engineering, emeritus, at Massachusetts Institute of Technology; Richard Lyman, president emeritus of Stanford University, J. E. Wallace Sterling Professor of Humanities, emeritus, and FSI Senior Fellow in Stanford's History Department; and Elizabeth "Jing" Lyman, social entrepreneur and founder and co-chair of the National Coalition for Women's Enterprise.



Additionally, the Chairman's Exemplary Prize—established in 2007 through the personal philanthropy of Donald Peterson '71, chair of the WPI Board of Trustees—was presented to two outstanding WPI faculty members. David Adams, professor of biology and biotechnology, and Alexander Emanuel, professor of electrical and computer engineering, each received a prize of \$10,000.

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Honoring a Man, a Plan



Dean Emeritus William Grogan '46 was honored in November at the annual dinner of the WPI Presidential Founders, the society made up of men and women whose lifetime giving to the university equals or exceeds John Boynton's founding gift of \$100,000. Grogan was recognized for his lifetime of service to his alma mater and for his own generosity,

the latest in a long list of major honors WPI has bestowed on one of its most revered graduates.

Generations of WPI students, faculty, and alumni know Grogan as a peer, colleague, professor, dean of undergraduate studies, and, most notably, one of the founders of the WPI Plan. He was part of the six-member faculty committee appointed in 1967 by President Harry Storke to review the WPI academic program, subsequently resulting in the formation of the WPI Plan, the university's groundbreaking curriculum that combines theoretical study with project-based problem solving. Over 40 years later, the Plan remains a much-admired and respected model of educational innovation, in large part due to Grogan's devotion, passion, support, and constant vigilance.

A Clean Win for WPI Students

A student project that established a sustainable laundry facility in a village near Cape Town, South Africa, has won first place in the WPI President's IQP Awards competition. Researched, designed, and installed by Lauren Alex '09, Jessy Cusack '09, Augustina Mills '09, and Alejandro Sosa-Boyd '08, the laundry system is being hailed as a great labor-saving tool for the women of Monwabisi Park.

"The students' plan will serve as a blueprint for all the other areas where we intend to build more community centers—each one with a 'WPI laundry system' attached," says project sponsor Dianne Womersley, of the Shaster Foundation.

"The WPI students made a significant impact and an invaluable contribution to a poverty-stricken community."

The project was completed during C-term 2008, when the students traveled to WPI's Cape Town Project Center—one of over 25 such centers around the globe where WPI students work on projects to solve some of the world's most pressing problems.



HOMECOMING 2008

WPI alumni felt right at home during Homecoming, Oct. 3–4. Weekend activities included athletic games, the family carnival and parade of floats, and myriad opportunities to reconnect with familiar friends (and mascots) and learn what's new at WPI today.



Hogs in Heaven

WPI Dining Services has begun recycling its leftover food scraps from Morgan Hall. Local farms will receive the leftovers (totaling 400 pounds a day!) to feed their pigs. See page 16 to read about additional sustainable initiatives around campus.



One Student's Odyssey

Alexia Bililies '09 first came to WPI as a fifth grader to participate in an Odyssey of the Mind competition. Now Bililies is about to begin her own odyssey, helping people around the world survive disasters.

Bililies is unusually prepared for the challenges of the path she's chosen. She grew up traveling the world with her parents, who ran Alternative Leisure Co., a nonprofit service organization for disabled children and adults. And she learned the depth of her own compassion through her volunteer work and professional activities.

While pursuing a double major in international studies and Hispanic studies at WPI, Bililies has been a group leader for Alternative Leisure, an assistant to a social worker and a Spanish interpreter at Lutheran Social Services Adoption in Worcester, and a grant writer at Friendly House in Worcester. She was also a health care disparities research and policy development intern for the Massachusetts Public Health Association, a special events and outreach intern at the Massachusetts Breast Cancer Coalition, and a psychology intern at the Bureau of Prisons Federal Medical Center in Ayer, Mass.

Bililies also undertook projects aimed at preparing her for international humanitarian work. For her IQP, she went to Namibia to work with the Namibian Business Coalition on HIV/AIDS to develop innovative prevention strategies that could be implemented by the private business sector. She developed her own MQP in Santiago, Dominican Republic, working with Caritas, a Catholic nonprofit that empowers women to establish rural pharmacies to provide affordable drugs to the poor.

Bililies, who graduated three terms early, is now preparing for the next phase of her journey. She has been accepted into a master's program in disaster management at the University of Copenhagen, Denmark, and will attend with the support of a Rotary Ambassadorial Scholarship. She hopes to one day work with the Red Cross or United Nations, organizing disaster relief services to help those in need. Bililies is certain her WPI education and its emphasis on project-based problem solving will help her get there.

"I'm a big advocate for practicing what you're learning," she says, "and I think that's what has kept me motivated these four years."



Patrick O'Connor

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Fueling the Entrepreneurial Spirit

It was in the middle of the *other* U.S. energy crisis when **Chad Joshi '80**, a mechanical engineering student at the time, became interested in alternative energy.

"It was all about being energy independent," says Joshi, who recalled the energy embargo in the 1970s when gas prices skyrocketed and long lines at gas stations were the norm. But when the embargo ended in 1979 and oil started flowing again, the prices dropped and the interest in energy conservation waned. It was just the beginning for Joshi, though, whose major project looked at the cost-effectiveness of residential solar heating.

Today, Joshi remains driven by the desire to turn alternative energy initiatives into real working applications. The entrepreneur and businessman is co-owner of the Boylston, Mass.-based Owl Power Co., Inc., a venture whose co-generation system turns used vegetable oil into electric power.

"The key innovation is in how we process the vegetable oil," says Joshi, who also holds a PhD from MIT.

For years, innovators have experimented with vegetable



oil as a potential energy source, mostly for powering cars. But the challenge with powering motor vehicles, Joshi says, is that they require the use of diesel fuel as well as vegetable oil. Owl Power's Vegawatt power system can run purely on recycled vegetable oil. "We clean up the oil on site and use an internal combustion engine to generate electricity," he says.

This waste-to-electricity system can produce about one-third of a restaurant's power, saving up to \$10,000 a year in electricity costs for a 100-seat restaurant. At about \$20,000 per unit, or \$500 a month to lease, the rate of return makes this system a compelling energy option.

With two patents pending and a local customer site in

beta testing, the company is tweaking the product to meet the strict state and local regulatory issues around combustion engines. Once that hurdle is cleared, the product is poised for tremendous growth, says Joshi, and he is heavily pitching the product to national food chains, such as McDonald's.

Joshi, who provides corporate development and strategy consulting services to Owl Power and is responsible for business planning and raising capital for the company launch, says he's driven by the challenge of bringing an idea to market. He was bitten by the entrepreneurial bug as an engineer at American Superconductor Corp. in the late 1980s. "I liked the idea of being involved in things in the early stage," he says. "Building a company from scratch, taking what was being developed in the lab and turning it into a useful application—it was very intriguing to me."

In 1996 Joshi left American Superconductor to form his own company, Energen Inc., a precision control device maker based in Lowell, Mass. The company's first product, based on technology to come out of the U.S. Naval Research Laboratory, took Magnetostrictive—a material that changes its shape when it connects with a magnet—and turned it into a precision motion application now used in the image stabilization feature of a movie camera. The product was licensed to Panavision in 2007, opening the door for yet another venture. "I decided to go back and look at what the energy industry was producing," he says.

At the annual Clean Energy Conference in Boston, Joshi connected with people working on clean energy initiatives. "I started getting involved in helping these younger engineers build a company around their technology," he says. That's where he met Owl Power co-founder James Peret, a former development engineer at Boston-based Insight Product Development.

But Joshi attributes his desire to handle the business side of technological innovation to his years at WPI. It was there, he says, he worked on projects that showcased his technical skills. "The flexibility allowed me to go and explore what I was interested in—a solar heating system application. So I talked to [Professor] Jack Boyd and said, 'Here's what I'd like to do.' He allowed me to put together a team and explore what was involved in designing a solar energy system."

As he immerses himself in bringing a new alternative energy plan to fruition, Joshi says the country, like his career, has come full circle. But he doesn't believe there will be any waning in environmental concerns this time around. In the 1970s, the cost of oil drove people to turn to alternative energy sources. But today, he says, it's a change in attitudes toward fossil fuels and concerns about the environment that will sustain the alternative energy movement.



Fruitful Measures to End Drought

Thirty years of drought have turned the once-fruitful land of Adghagh into a place where the arid earth cracks. Until five years ago, a spring-fed river flowed through this Moroccan village in the Middle Atlas Mountains, continually replenishing a man-made reservoir. The lake irrigated plentiful crops and attracted wealthy tourists. Now, the springs have dried as the water table has plummeted. The river's waterless ditch reveals bones and rocks, and few foreigners venture near the reservoir's scooped-out remains.



The Adghagh villagers have farmed their land for generations. As the water table has dropped, these villagers, like other Moroccans, have drilled ever-deeper wells. But only a few Adghagh residents can now afford this solution, which becomes costlier, the deeper they drill and pump. Families must pull children out of school to walk up to three miles each way for drinking water. As for crops,

most families rely on scant rainfall. They can still grow staples, including wheat and barley. But residents' main cash crop—apples—requires a lot of water.

Last August, WPI juniors Andrea Bisson, Paige Bourne, and Daniel Hassett spent seven weeks working with the residents of this close-knit Berber village, to learn about their needs and determine solutions to their water crisis. "This is the perfect project to look at sustainability issues in remote communities," says Tahar El-Korchi, civil and environmental engineering professor and interim department head, and director of the Morocco Project Center.

It was also an excellent opportunity for students to learn about a new culture. "Over the past 20 years," says Bland Addison, associate professor of history and project advisor, "I've become increasingly concerned about how Muslims are portrayed in the United States as the enemy. This project was a great way to educate U.S. students about Islam and Muslims."

Early in their visit, the WPI students met with Adghagh residents. With Peace Corps volunteer Josh Cabell as their

liaison and translator, they conducted a survey with the heads of the village's 71 families about local irrigation methods and residents' hopes for the project's outcomes.

In another on-site exercise, the students mapped the location of all water sources in Adghagh by walking the village with a hand-held GPS device. Hassett led the mapping effort, using skills he learned in the Marine Corps ROTC. The students pinpointed each canal of Adghagh's irrigation infrastructure.

They mapped the town's water tower, which only better-off families can afford to use—its pump requires pricey diesel fuel, and all comers must pay for the fuel to run the pump. Adghagh's wells—only one of which is public—can also be found on the map.

Solar hopes

When they had finished their studies and discussions, the WPI team offered their insights.

"We made recommendations that we think the villagers will be most likely to implement," says Bisson. For example, to bring water immediately to Adghagh, the students suggested raising the funds needed to drill a deep well, equipped with a solar-powered, submersible displacement pump, for all residents to use.

Solar-powered pumps have worked elsewhere in Morocco; a displacement pump would be ideal, with its proposed depth of at least 525 feet. The submersible pump, located deep within the well, would weather the extreme cold of Adghagh's winters.

"We believe that using sustainable energy makes it more likely that an NGO will be willing to fund the project," explains Bourne, who evaluated different types of pumps.

Over the longer term, sustainable practices would allow villagers to make available water supplies last longer. A rain-water harvesting system would be practical for household use. Residents could inexpensively install corrugated plastic sheets on their roofs. A pipe running along the bottom of the sheet diverts the potable water into a large enclosed barrel, equipped with a spigot, on the ground. With one 55-gallon drum, most households could store enough rainwater from each storm to supply drinking water for a week.

Village-wide adoption of line-source drip irrigation would save on the inefficient pipes currently in use. In this



form of drip irrigation, pre-spaced emitters built into the main water lines distribute water across an entire row of plants. The least expensive of the drip irrigation systems, line-source is also easy to install.

To grow the local economy, the students recommended replacing thirsty apple trees with those that are commercially proven and less water-needy—such as almond, sweet cherry, and English walnut. "We know these trees flourish in this region," says Bisson, a biology major, who led this part of the research.

Addison feels hopeful that many of the students' recommendations will be implemented. "Josh [Cabell] will work with a better-off family to experiment with drip irrigation and cultivating almond trees to help overcome residents' concerns," he says. Meanwhile, Cabell and Aicha Brahimi, the Peace Corps' director of environmental programs, are seeking potential grantors and government loan sources for the well.

While the students studied, wrote, and edited their report for the village, the people of Adghagh were busy winning the youths' hearts. "On our first visit," Hassett says, "we were invited into a resident's home for mint tea and Moroccan pancakes. We felt so welcomed."

"When the students first came to Adghagh, they seemed a little nervous," says El-Korchi. "But over time, their fears dissipated. The transformation is really profound. It's a great accomplishment to see our students at ease in this North African, Arab country."

Throughout the duration of this project, Al Akhawayn University (AU) provided housing and other resources to the WPI students. John Shaup and Eric Rouse, associate professors at AU's School of Humanities and Arts, worked closely with the students throughout their stay. Peace Corps members Josh Cabell and Aicha Brahimi, and AU student Houssein Abdelkader assisted the WPI team.

Addressing Safety, Head On

Before the late 1980s, when seat belts and airbags became common safety features in cars, head-on collisions tended to result in serious trauma to the head, neck, chest, and abdomen. In fact, a study by the National Highway Traffic Safety Administration (NHTSA) found that airbags alone have cut fatalities from frontal crashes by more than 30 percent, principally by markedly reducing upper body injuries.

That's the good news. The bad news is that drivers and front-seat passengers who survive head-on collisions often suffer serious injuries to the lower extremities—particularly the knees, hips, and thighs. While rarely fatal, these injuries often result in costly, lifelong disabilities (one study put the annual price tag at \$4 billion, along with 60,000 life-years lost to injury—a measure of lost productivity).

The solution, most experts agree, is to redesign car interiors so they afford the lower body the same protection that seat belts and air bags now provide the upper body. But to do that, designers will need a new generation of tools that help them understand the kinds of insults that knees, hips, and thighs endure in a crash, and to cost-effectively test how well new designs can combat them.

With more than \$1 million in support from NHTSA, a WPI research team led by Malcolm Ray, professor of civil and environmental engineering and a widely sought-after authority on highway safety, has spent the last four years developing those tools. The result is a detailed three-dimensional finite element model of the bones, muscles, ligaments, tendons, and skin that make up the lower body.

In essence, the model is a mathematical representation of the body—its structure, its mechanics, and its strengths and weaknesses—that can be placed in the driver's seat of a virtual car. When the digital car is put through a simulated crash test, the virtual human will react just as a real person would. Impacts with the car interior will create the same forces as real impacts, producing the same fractures and other injuries.

To create the model, Ray and his team—which includes Chiara Silvestri '08 (PhD), research instructor in civil and environmental engineering—worked from the inside out. They first built digital bones, a surprisingly difficult task. “The material properties in bones change with direction,” Ray says. “Different bones will break in different ways for that reason.”

In addition, bones are not uniform: most have a hard shell that encloses a spongy interior. To the finished bones, the team added muscles. “Mechanically, muscles are like springs and dampers,” Ray says. “They are one-degree-of-freedom elements that work only in tension.” Next came tendons (which link muscles to bones) and ligaments (which connect bones to one another). There was little in the literature about how these tissues perform under stress.

To fill this knowledge gap, the team placed bone-ligament units in a drop tower and subjected them to forces consistent with those experienced in automobile crashes. They found that ligaments behave like ropes, Ray says. “If you add weight to a rope slowly, it can hold more than if you drop the weight on quickly. Similarly, ligaments and tendons tend to get more brittle the faster you put tension on them.”

As the model took form, Ray and his team sought to validate it by comparing its predictions with data from actual NHTSA crash tests that used cadavers. The model predicted some aspects of the test results almost perfectly, but certain results simply didn't add up.

“As we looked into it, we found that the tests had not been thoroughly documented and that some of the documentation didn't agree with what we could see in the test photos,” Ray says.



Like detectives, Ray and Silvestri pored over the evidence and reconstructed the tests in detail, then adjusted the parameters they fed into the model accordingly. “We found that very small changes—perhaps just a few degrees in how the leg was positioned—could make a big difference in the outcome,” Silvestri says. After the adjustments, the model’s predictions and the actual test results came into close—though not perfect—alignment.

The difference, it turned out, was only skin-deep. While the model accounted for the weight of the virtual human’s skin and fat tissue, the mass of the flesh had been lumped at the joints, rather than being spread out more naturally.

“The flesh and the bones are not rigidly coupled,” Ray says. “So on impact, some of the force will go into the bone and some will be absorbed by the flesh. In our model, that wasn’t happening.” When an accurate representation of the flesh was added to the model, the discrepancy disappeared.

“As an engineer,” Ray says, “you are taught—and you believe with every fiber of your being—that physics is correct. So when physics and your results don’t agree, you try to find out what it is in the evidence or the physics that you don’t understand. Of course, that’s what makes a model better.”

As the model development enters its final stages, Ray and his team are looking forward to seeing their work put into practice in the design of future cars, which, thanks to their diligence, will be able, finally, to protect occupants from top to bottom. The model will likely find other applications, such as helping prevent lower-extremity injuries in skiers or football players.

The team is also finding time to reflect on other lessons they’ve learned. “I am an old-fashioned structural engineer,” Ray says. “I deal with wood, concrete, steel. This project has been a lot of fun because I’ve found that while the geometry of the human body is very complicated and much different from most engineered structures, creating this model has been, at its core, a structures problem. Mechanics, it seems, is still just mechanics.”



Over the past four years, Malcolm Ray has led a team that has built a finite element model of the lower body that designers can use to create safer car interiors. The model includes realistic simulations of the structure and function of bones, muscles, tendons, ligaments—even flesh, which is represented by the yellow and brown areas in the illustration above of the model’s workings.



As a community, perhaps the most important work we can do together is to ensure a sustainable future for those who come after us. From recycling dining hall scraps into animal feed, to forward-thinking policy on the construction and operation of campus facilities, to a new environmental studies major designed to educate the leaders of tomorrow, WPI is deeply and widely engaged in the global effort to clean up, and green up, the Earth.



The Greening of WPI

By Joan Killough-Miller
and Charna Westervelt

When Trustee Judy Nitsch '75 joined a group of WPI volunteers at a Kensington, Conn., nursery last spring, she knew their work would sow the seeds—literally—for sustainability. In August 2008, the 10,000 seedlings they hand-planted in modular pallets were installed atop East Hall—crowning WPI's newest residence hall with a living green roof. In addition to providing thermal insulation and particulate filtration for storm water, Worcester's first-ever green roof allows students and faculty to gather research data on storm water quality and flow. "Our civil and environmental engineering students will be comparing and contrasting the storm water runoff so WPI can quantify the advantage of a green roof," says Nitsch, who has been a driving force and benefactor for green design and sustainable construction on WPI's campus.

East Hall, a showcase of recycled materials and energy-saving features, is on track to become WPI's second LEED-certified building. (LEED, Leadership in Energy and Environmental Design, is a national rating system by the U.S. Green Building Council for developing high-performance, sustainable buildings.) The first was Bartlett Center, home to admissions



Patrick O'Connor

and financial aid, which opened in 2006. In February 2007, the WPI Board of Trustees voted to adopt a policy calling for all future campus buildings to be environmentally friendly and to be LEED certifiable. “WPI recognizes the importance of making permanent changes in how organizations do business—with respect to energy, the environment, and the economy,” says Fred DiMauro, assistant vice president for facilities. “Energy efficiency, the careful selection of a building site, responsible use of natural resources, and reduction in generating waste are just some factors that need to become standard procedures in the design, construction, and operation of all buildings.”

At 5,000 square feet, the green roof stands as a visible symbol of WPI’s commitment to environmental responsibility. A much smaller, but very important, patch of green bloomed on WPI’s homepage on St. Patrick’s Day 2008; it is a logo that links to the Sustainability at WPI website (wpi.edu/sustainability). The site was unveiled to mark the kickoff of a campus-wide effort, led by the President’s Task Force on Sustainability, to strengthen the “sustainability sensibility” on campus, and inspire research and action throughout the world. Its mission embraces academic and operational initiatives in the areas of climate protection, materials management, facilities operations, local and global communities, and academics. The results can be observed in every corner of the campus and by all segments of the community. “We’re looking critically at the way we live and work,” says Liz Tomaszewski, WPI facilities systems manager and sustainability coordinator, “and encouraging changes that will have a positive impact on our campus, on the city of Worcester, and throughout the world.”

Already, WPI has installed solar panels to light Alumni Field walkways, instituted paperless billing, and designated choice parking spaces for carpoolers and hybrid drivers. Zipcar, a self-service, all-hybrid car rental system, is available on campus to faculty, staff, and students, as an alternative to car ownership. WPI Dining Services has begun recycling leftover food from Morgan Hall—an impressive 400 pounds daily—for use at local hog farms, and the university is currently undergoing a carbon audit of the campus.

With recycling bins taking up residence in dorms and offices, Recyclemania challenged students to tackle garbage as a competitive sport from January through March, when residence halls went head-to-head to recycle the most material. Spurring these efforts are student organizations such as GAEA (Global Awareness of Environmental Activity) and the Green Team. Their energy brought the National Teach-In on Climate Change to campus in February, and sent a video letter to congress. “Colleges are breeding grounds for alternative research, especially WPI,” says Green Team member Scott Guzman ’09, who represents students on the President’s Task Force on Sustainability. They are even changing the hue of April’s traditional Quad Fest, which coincides with Earth Day. “This year it will be brought to you by the color green,” Guzman says.



As a student in WPI’s Power the World class, one of the Great Problems Seminars, Kyle Bartosik ’12 joined his peers during project presentation day. His team project, “Hydrogen Powered Vehicle: The Case for Hydrogen Internal Combustion,” was one of 50 that explored aspects of sustainable energy and development.



“We’re looking critically at the way we live and work, and encouraging changes that will have a positive impact on our campus, on the city of Worcester, and throughout the world.”

—Liz Tomaszewski

Perhaps the least tangible—but most promising—greening is taking place in WPI’s classrooms, project sites, and laboratories, with student- and faculty research and new academic initiatives. Last year the Massachusetts legislature designated WPI as the site of the state’s Hydrogen and Fuel Cell Institute and authorized \$10 million to spearhead research.

In April 2008 the university launched an interdisciplinary bachelor of arts degree in Environmental Studies. “The new BA program in environmental studies complements our environmental engineering degree, with an emphasis much more on the human and public policy sides of the ledger,” says WPI Provost John Orr. “It emphasizes the political and public policy aspects of human-induced changes to the environment, strongly drawing from areas of social science and providing education in sociological as well as scientific analysis. Of course, this program is conducted within the context of WPI’s long-term strengths on the technological side.”

Regardless of major, WPI’s project-based curriculum requires students to do some hands-on work on the complex challenges of the 21st century. First year students can begin their education with the Great Problems Seminars, which are organized around global topics, such as “Power the World” and “Making Our World,” to investigate sustainable energy and development. At project centers around the globe, WPI teams have been addressing these issues for decades. This year, an analysis of greenhouse gas emissions at cafeterias in Lyngby-Taarbæk, Denmark, was a nominee for the 2008 President’s IQP Award. Closer to home, project teams have also developed tools to track and reduce greenhouse gases and monitor electric usage in campus dorms and academic buildings. In the larger local community, they assisted the town of Southbridge, Mass., with its municipal sustainability planning, and WPI students were critically involved in the city’s first major wind turbine installation at Worcester’s Holy Name Central Catholic Junior Senior High School.

“This is an exciting time to be involved in the sustainability effort in the WPI community,” Tomaszewski says. “The momentum is really building for WPI as a model of the sustainable campus and the leader of sustainability in our community.” ■

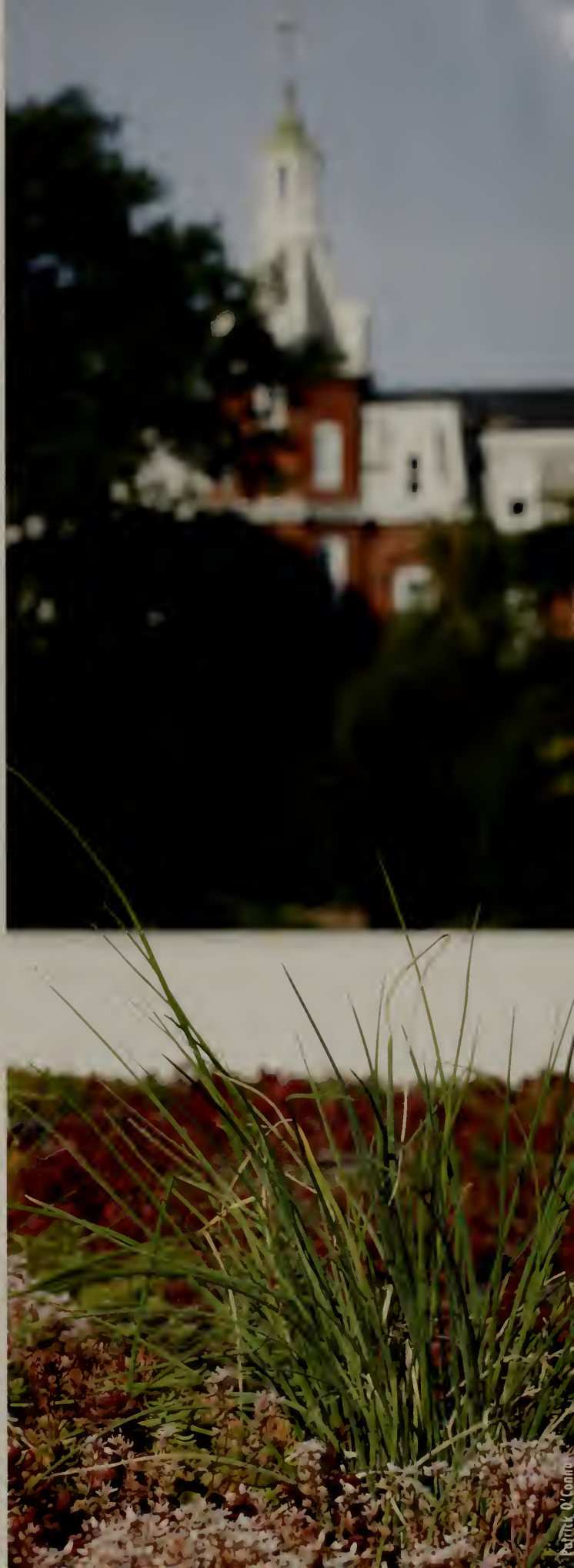
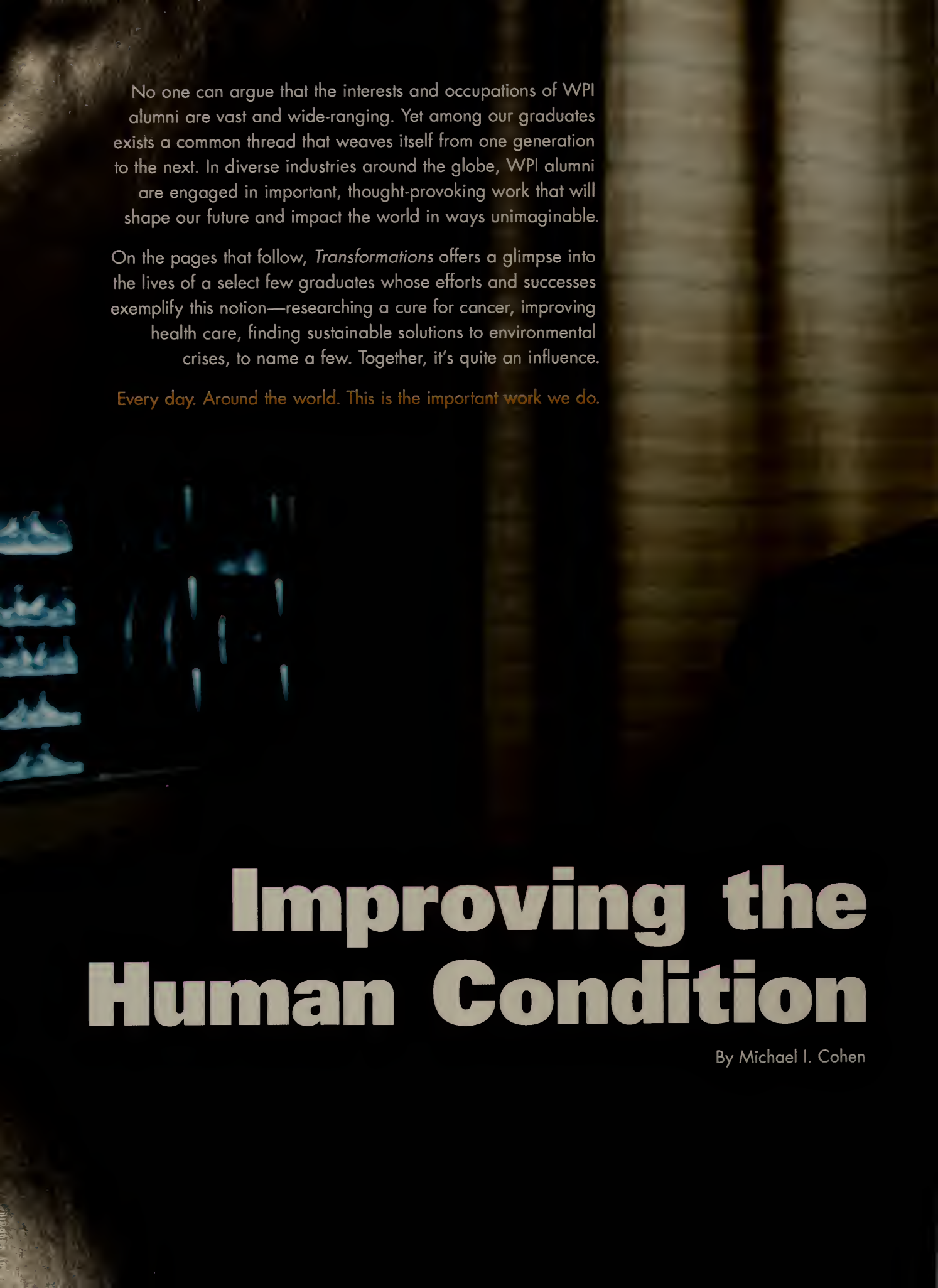


Photo © Comm



No one can argue that the interests and occupations of WPI alumni are vast and wide-ranging. Yet among our graduates exists a common thread that weaves itself from one generation to the next. In diverse industries around the globe, WPI alumni are engaged in important, thought-provoking work that will shape our future and impact the world in ways unimaginable.

On the pages that follow, *Transformations* offers a glimpse into the lives of a select few graduates whose efforts and successes exemplify this notion—researching a cure for cancer, improving health care, finding sustainable solutions to environmental crises, to name a few. Together, it's quite an influence.

Every day. Around the world. This is the important work we do.

Improving the Human Condition

By Michael I. Cohen



Bruce Minsky '77
Tuesday, 3:40 p.m.
Chicago

Biology continues to astound, as discoveries at the cellular and molecular levels illuminate the elegant complexity of living things. Across many fields, WPI alumni are advancing this science and translating new knowledge into therapies and technologies that help diagnose, treat, and even cure disease.

Each year colorectal cancer strikes 150,000 people in the United States. Until very recently, the standard of care for those patients was surgery to remove the tumor, followed by chemotherapy and radiation to kill any lingering cancer cells.

That approach has saved many lives, but also has left many people with permanent colostomies and the impact on their lifestyle that entails. In 2004, however, the standard of care changed, because of research led by Bruce Minsky '77.

“Our first principle in medicine is to do no harm. So when something is working, people are rightly apprehensive about introducing a new therapy,” Minsky says. “But over the course of many years treating patients and studying new therapies, we believed that we could do better.”

After earning his BS in biology at WPI, Minsky went on to the University of Massachusetts Medical School. He then trained in Boston at New England Deaconess Hospital and the Joint Center for Radiation Therapy, an affiliate of Harvard Medical School, where he specialized in radiation oncology and gastrointestinal cancers.

In 1986 he moved to New York to take a position at the Memorial Sloan-Kettering Cancer Center, where he'd stay for 20 years, treating patients and directing clinical trials. “The type of chemotherapy and radiation we used 20 years ago was much less sophisticated than it is today,” Minsky says. “Part of my work at Sloan-Kettering was to run clinical trials to evaluate new therapies and new combinations of therapies.”

In the course of that research, Minsky developed a hypothesis—would patients with colorectal cancers, particularly rectal cancers, do better by reversing the standard of care? Instead of surgery first, what if patients were treated with radiation and chemotherapy before the surgeon removed the tumor?

“This took a considerable amount of convincing and required a change in thinking among surgeons, because they believed reversing the treatment would make the surgery more difficult,” Minsky says. “In fact, it turned out to be the opposite.”

Surgeons weren't the only ones wary of changing the standard of care. Patients facing life-and-death decisions would almost always opt for the proven therapy, even if the side effects were severe. “We had trouble randomizing patients into clinical trials for the new therapy, which is understandable,” Minsky says.

In time, however, with evidence mounting from Minsky's research, a large-scale randomized clinical trial was launched in Germany, testing the standard of care against the new approach. The results were conclusive. The combination of radiation and chemotherapy before surgery significantly reduced tumor sizes,

Susan Moser Roberts '92
Tuesday, 3:30 p.m.
Amherst, Mass.

"Our approach is the integration of life sciences and engineering at the cellular and molecular levels. We want to understand how cells function so we can engineer them, from the inside out, to produce a desired output."

so when the surgeons went in, they had to remove less tissue, thereby preserving a functional organ in many more patients. "The new standard reduced the number of colostomies by half," Minsky says. "That has a dramatic impact on the quality of life for those patients."

In 2004, Minsky's approach became the recognized standard of care, worldwide, for treating colorectal cancer. That same year, Minsky received an honorary doctorate from Friedrich-Alexander University in Erlangen, Germany, in recognition of his contributions to the field, documented in his over 300 published medical journal articles about the treatment of gastrointestinal cancers. "I didn't know when I started this line of research that it would ultimately result in these advances," Minsky says. "It was really just about asking a simple question—can we do better?"

It's a question that continues to drive Minsky's passion in health care today, only now on an even larger scale. Last January, he was appointed chief quality officer for the University of Chicago Medical Center. (He was also named associate dean for clinical quality in the Biological Sciences Division and professor of radiation and cellular oncology.)

In his new role, Minsky is charged with nothing less than improving every aspect of patient care at the hospital and its associated medical offices and clinics. "I'm very excited about this new challenge," he says. "I hope to have a positive impact on an even wider range of medicine and patients."

As the founding director of the Institute for Cellular Engineering at the University of Massachusetts Amherst, Susan Moser Roberts '92 is both a scientist and a teacher.

In her lab, she's engineering plant cells to produce life-saving drugs. At the university, she's launched a new program to train graduate students in the rapidly expanding field of cellular engineering. Her goal is simple: to improve people's health and quality of life. "Our approach is the integration of life sciences and engineering at the cellular and molecular levels," Roberts says. "We want to understand how cells function so we can engineer them, from the inside out, to produce a desired output."

Roberts focuses much of her own research on the drug paclitaxel, commonly known by the brand name Taxol, which is one of the most potent anti-cancer drugs in use today. Taxol kills cancer cells and shrinks tumors by blocking the malignant cells' ability to reproduce. The drug is also being explored as a possible treatment for Alzheimer's disease and is used in coating heart stents.

While the demand for Taxol is very high, the supply is limited. In fact, when Taxol was first discovered in the bark of the Pacific Yew tree in the 1960s, the species was at risk of being clear-cut into extinction because it takes three 100-year-old yews, on average, to make enough Taxol to treat just one cancer patient. Since then, Taxol has been synthesized from yew cell cultures grown in laboratories, but that process

still does not yield enough material to satisfy all the research and clinical needs. Roberts hopes to overcome that problem by engineering yew cells to produce more Taxol. "We work with cell cultures generated from yew tree embryos," she says. "The cells we utilize in our processes are undifferentiated and can be considered stem cells of the plant world."

Roberts has developed new methods for growing yew cells in culture and for identifying the cells that are overachievers, producing much more Taxol than other cells. Roberts has also identified several genes that appear to regulate the cellular machinery that produces Taxol. "If we can understand how the biosynthetic pathway in the cell works, we can engineer it effectively so that cells produce higher levels of Taxol," Roberts says. "We've honed in on two steps in the Taxol biosynthetic pathway that we think are particularly important and are working on developing engineered cells through targeting those steps."

Roberts is also developing a new technology that helps mammalian cells live and grow in culture and in the body by encapsulating them in materials that improve oxygen delivery to those cells. The novel process, for example, may help keep insulin-producing islet cells viable for extended time periods, which would enable implantation into patients with diabetes, potentially reducing the need for glucose monitoring and insulin injections for these patients. "Diabetes has touched my family, so it's always been an interest of mine," she says. "But what really drives me is to work on projects that are relevant to improving human health for all."

At WPI, Roberts majored in chemical engineering with a minor in biomedical engineering. She went on to earn a PhD in chemical engineering at Cornell and then joined the faculty at UMass Amherst, where she is now an associate professor of chemical engineering.

While at UMass, Roberts saw the need for an enhanced educational experience for graduate students interested in the interface of engineering and life sciences. She also wanted to encourage her colleagues to do more interdisciplinary, project-based research initiatives—the model that she'd thrived on at WPI.

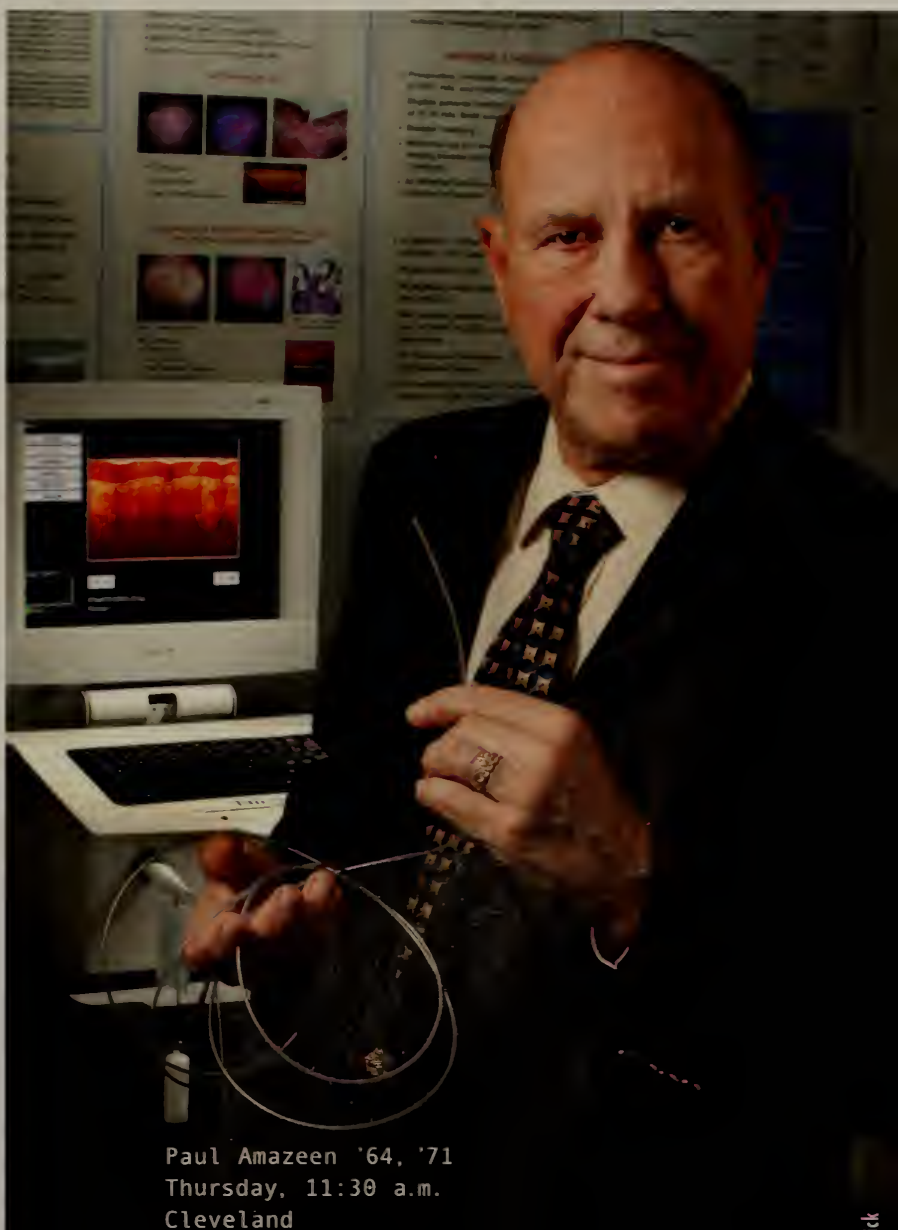
In 2005 Roberts launched the Institute for Cellular Engineering, which has grown to include faculty from 10 academic departments and research programs at UMass, working together on cellular engineering projects with applications in clean energy, pharmaceuticals, and the environment. In September 2007, the institute received a \$3 million grant from the National Science Foundation to establish a graduate education program in cellular engineering.

"The institute has been an incredible spark for initiating new collaborations among faculty," Roberts says. "And to see the graduate students working in the labs, doing great things, is so rewarding. It's really all coming together."

When researchers from the famed Institute of Applied Physics at the Russian Academy of Sciences came to the United States in the mid 1990s to commercialize their new medical imaging technology, they turned to Paul Amazeen '64 (MS), '71 (PhD) for help.

This was no surprise. By that time, Amazeen was a well-known leader, innovator, and entrepreneur in the medical device and imaging fields. For more than two decades he'd led research and development efforts and built new business models around several medical technologies at companies both large and small.

Trained as an electrical engineer, Amazeen's graduate work at WPI was the basis for a product developed to



Paul Amazeen '64, '71
Thursday, 11:30 a.m.
Cleveland

analyze cardiac arrhythmias and identify patients at high risk for a heart attack. He helped engineer Raytheon's early program in nuclear medicine. He crafted the business plan and launched General Electric's first three ultrasound imaging systems. So when the Russian technology came to the Cleveland Clinic for evaluation, Amazeen was asked to review it and advise on its technical capabilities and its potential commercial viability. He ended up founding a company to bring the new technology to market.

"I tested their prototype and I could see pretty quickly that this was for real," Amazeen says. "It was an important new technology and I wanted to help develop it into a product that could fill a clinical need."

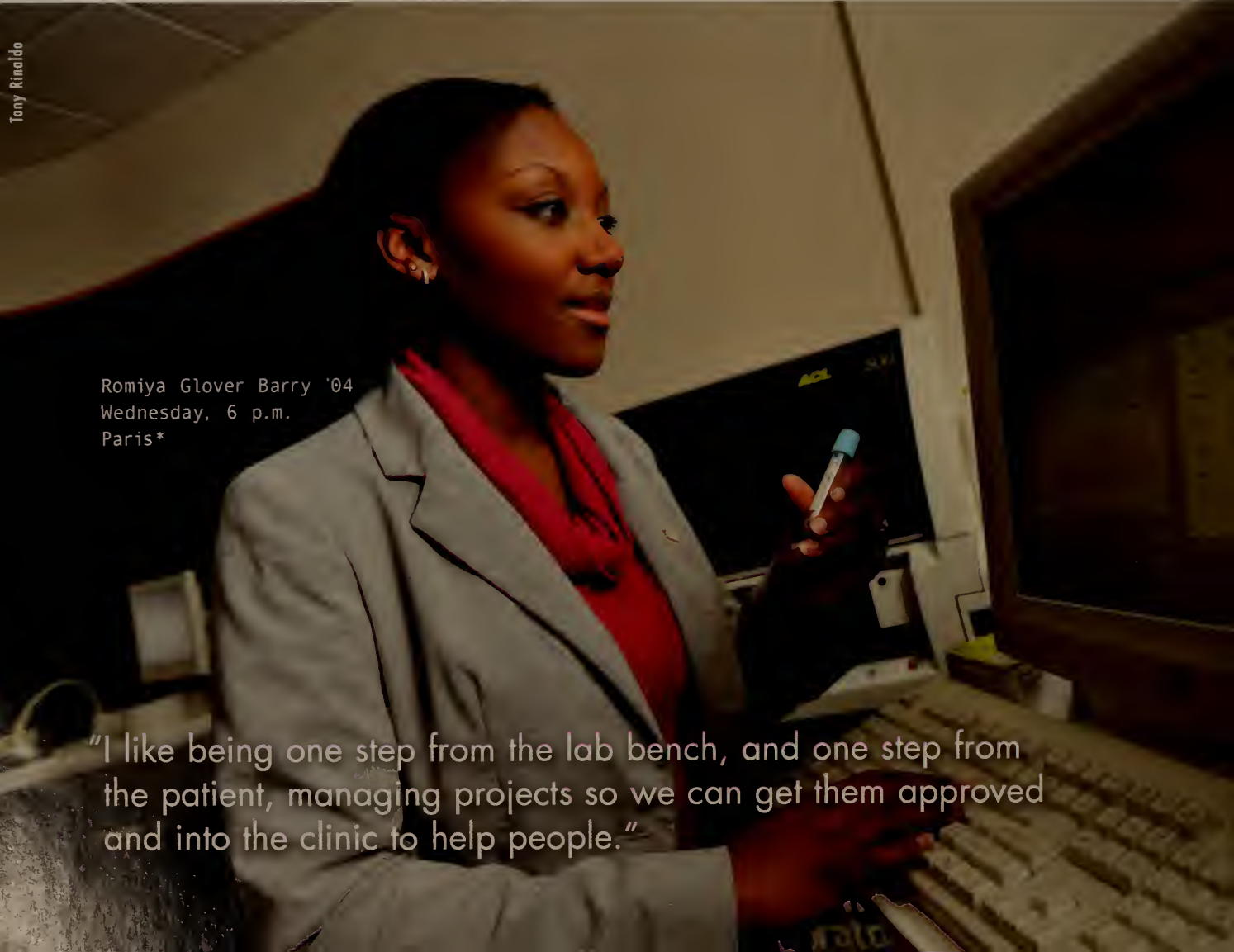
Amazeen partnered with Felix I. Feldchtein, PhD, one of the Russian scientists who'd invented the new imaging technology, and became the founding president of the company now called Imalux. The company's lead product is called Niris—a system that uses optical coherence tomography (OCT), which, simply put, bounces light off tissues to create detailed images of very small elements of those tissues.

The Niris system works in real time, scanning tissue and instantly displaying images on a bedside monitor, allowing a

physician to see the telltale signs of cancer, or guiding a surgeon's scalpel to make sure the parts of diseased tissues are removed, while leaving healthy tissue in place. "This is not just a better version of an existing technology or product," Amazeen says. "OCT is something completely new. We see things that no other imaging technology in clinical use today can see."

At first glance the Niris system is reminiscent of an ultrasound machine that uses sound waves, emitted from a probe at the end of a flexible cord, to image parts of the body. Niris also has a probe at the end of a cord, but instead of sound waves it emits a pulsating beam of near-infrared light from a tiny diode. As the light is scattered and reflected back off the tissue, it is collected by the probe and processed by the system's software to generate detailed images of very small sections of tissue.

The scale and resolution of the images produced by OCT is much finer than ultrasound. Using Niris, physicians can see the microscopic abnormalities that indicate cancerous or pre-cancerous tissues. And while ultrasound is typically used externally, with the probe moved over a person's skin, the Niris system is used internally. Its probe is small enough



Romya Glover Barry '04
Wednesday, 6 p.m.
Paris*

"I like being one step from the lab bench, and one step from the patient, managing projects so we can get them approved and into the clinic to help people."

to be sent through an endoscope's tube, to look at internal structures like the bladder, esophagus, or cervix.

"We see tissue structures that can't be seen with the naked eye," Amazeen says. "Without this new imaging modality, the only way to test for these abnormalities is to biopsy the tissue and look at it under a microscope. That can take days, even weeks, all the while with the patient worried that he or she may have cancer. With our system, in about half a second, the image is on the screen. It's an optical biopsy."

The Niris system is now being used in clinical trials at the Cleveland Clinic, Johns Hopkins Hospital, Massachusetts General Hospital, and other leading research centers. "Our clinical data is looking extremely good. We're able to find the boundaries of cancer, guide the surgery, then evaluate after recovery," Amazeen says. "We're about a year away from a full-scale launch, with significant publications showing the effectiveness of this system."

It is a cruel irony in the battle against HIV/AIDS that state-of-the-art therapies known to be effective are often not available, or are difficult to administer, in the areas of the world hit hardest by the disease.

After earning her BS in biotechnology, Romiya Glover Barry '04 joined a team working to overcome an important element of that treatment gap. She accepted a position in the research and development laboratory at PointCare Technologies, the Marlborough, Mass., company where she interned during her senior year at WPI.

PointCare developed a portable blood analysis system designed for use in rural clinics treating AIDS patients. Barry's job was to help optimize and expand the functionality of that system. "The challenge is to have a self-contained product that will work under conditions you'll find in remote areas, and that will provide results right away, while the patient is still in the clinic," Barry says.

To treat people infected with HIV, the virus that leads to AIDS, physicians must closely monitor the number of CD4 immune-system cells in the bloodstream. Based on that cell count, the clinician can safely start and manage the cocktail of drugs that suppress the virus and delay the onset of AIDS.

For most people in developed countries, waiting a few days for lab results before starting treatment is not a big issue. "In remote areas of Africa, Asia, and other parts of the developing world, it's a problem," Barry says. "Patients will often walk for many hours to get to a clinic. So to tell people that they have to come back in a day or in a week for their test results before treatment can start is not realistic."

To remedy that problem, PointCare's technology can measure CD4 cells in a blood sample in minutes, giving the clinic staff results while the patient is still present. It's an automated system, with everything needed for the analysis built into one console that sits on a tabletop. "It's a very different approach to medical technology. It's not about frills, or putting in all the bells and whistles. You have to design it so that it is affordable and has what it needs to be effective in these remote areas," Barry says. "The system can even be powered by a solar panel, or a car battery, if necessary."

At PointCare, Barry worked as a chemist to improve the reagents and processes used in the diagnostic system. She helped develop additional capabilities for the system—new blood tests beyond the CD4 assay that would give medical teams a more complete picture of a patient's condition. Barry also traveled to AIDS clinics in Trinidad and Barbados to set up the PointCare system and train the local staff. "It was a great experience to get into the field, and to work with the patients and the physicians to get this technology into action," she says.

During her time at PointCare, Barry continued her education and in 2007 she earned an MS in clinical investigation at the MGH Institute of Health Professions in Boston. She's now applying that training, and her experience, to her current position as an in-vitro diagnostics clinical monitor specialist at Instrumentation Laboratory in Lexington, Mass. "I work with physicians in the United States and in Europe to identify clinical needs," she says, "then try to bring new products to market to meet those needs in the area of blood clotting disorders."

On any given week Barry may be working at a hospital site monitoring a clinical trial of a new diagnostic test, and then analyzing the data from that trial. Or, she may be back at the lab in Lexington working with the scientific team to refine their product development or to prepare for a submission to the FDA for approval of a new device. Other days, she'll brainstorm with the company's marketing team on how best to inform and educate the clinicians and technicians who will use the new products Instrumentation Laboratory is about to launch. "I like being one step from the lab bench, and one step from the patient," Barry says, "managing projects so we can get them approved and into the clinic to help people." ■

*Ramiya Glaver Barry was photographed at Instrumentation Laboratory in Lexington, Mass. She was interviewed via phone from Paris, while traveling far work.

All Systems Green:

A photograph of a man with short, light-colored hair, smiling broadly. He is wearing a dark blue, long-sleeved button-down shirt and blue jeans. He stands with his hands on his hips. Behind him is a large white wind turbine against a clear blue sky with a few wispy clouds. The lighting suggests it's either early morning or late afternoon, with a warm glow on the man's face and the turbine.

Andrew Stern '92
Wednesday, 10 a.m.
Hull, Mass

By Eileen McCluskey

Wind, Waste, Water, and WPI Alumni

Thousands of wind turbines send power from the broad prairies of North and South Dakota to the high-rises of New York City, providing enough electricity to keep the Big Apple humming. Meanwhile, waste becomes a thing of the past when the by-products of farms, lumber mills, and construction sites are no longer dumped into landfills but instead burn cleanly, producing heat, air-conditioning, and pure, distilled water and ice. Such scenarios could become reality in the next few years, thanks to the vision and perseverance of two WPI alumni.

Andrew Stern '92 wears a lot of hats, but all of his titles and organizational affiliations boil down to one goal: to implement alternative energy projects that demonstrate successful solar, wind, and water power, and other sustainable solutions to solve the energy crisis.

In 2006 he founded New England Windpower, a private, for-profit environmental consulting firm, and co-founded the nonprofit Action for Clean Energy. As well, he's an associate with Maxis Capital, a Boston-based private technology buyout group, where he serves as the firm's clean energy expert. With all three organizations, Stern is involved in bringing wind power to various communities.

At New England Windpower, he's working with Cape Cod Community College on a wind turbine bid for the school. At Maxis, Stern is consulting with 18 Native American tribes in North and South Dakota who are examining the fiscal feasibility of a 2,000-unit wind farm in the two states. The electricity generated by this whirling collection would be enough to power a major metropolis, such as Manhattan, which consumes nearly 12 million MW/h annually. Stern hopes to see the tribes' project begin within two years. "The opportunities for wind power are vast in the Dakotas," he says.

Meanwhile, as director of Action for Clean Energy, Stern leads education and outreach efforts to help communities replace nonrenewable energy sources with sustainable, clean supplies like wind. For one such project, he works closely with town officials from Hull, Mass., to scope out a hydrokinetic tidal turbine power project. Hydrokinetic turbines, a relatively new entry to the sustainable energy field, are known to leave a very small environmental footprint. The water turbines produce electricity using coastal tides and currents, an energy source that can be relied on 24/7/365. "And water is about a thousand times denser than wind," Stern notes.

With broad support among town residents and leaders, it is likely that within two years, four hydrokinetic turbines will be placed in Hull Gut, a deep-water channel off the coast. Together, these four units would produce one to two

megawatts for the town, further shaving its reliance on conventional electricity.

Although he's based in eastern Massachusetts, Stern's projects have global impact. Through Action for Clean Energy, Stern brings officials to Hull from as near as Massachusetts and as far as South Africa. He inspires and instructs visitors about the wind turbines and discusses other alternative energy and fuel projects with his guests.

"Leaders from Vermont, Jamaica, Haiti, and other places are trying to wrap their minds around how they can use clean technologies to solve their pressing energy problems," he says.

As a result of discussions with Stern, Haiti is considering a carbon-friendly biofuel project. The flat island nation could be an ideal location for growing *Jatropha*, a nonfood crop that generates an easily crushed nut for a dense, oil-based energy source. The million-acre project under consideration would employ thousands of residents. Refuse from the harvests could also be used by locals for heating and cooking.

With Haiti's interest piqued, Stern turned to WPI professor of chemical engineering Robert Thompson, who in late 2008 brought in Stephanie Kavrakis '09 to study the yields from several *Jatropha* oils, as part of her MQP. Kavrakis will also assess the impacts that a biofuel industry could have in Haiti "given the available land, the typical oil yields per acre per year, and the biodiesel yields of the conversion process," Thompson says.

Power to the people

The people of Hull have known Stern since 1997, when he became a driving force in an ongoing community movement to bring wind power onto the municipal utility grid (hullwind.org). Stern consulted with the town on the conception, development, and construction of the peninsular town's ambitious project to purchase two wind turbines.

Over the next 10 years, Hull Wind 1 and 2 became spinning realities on windy hills, providing over 10 percent of the town's annual electricity needs. The proud town has

earned numerous state and national awards for its greening efforts, including the 2007 Wind Power Pioneer Award from the U.S. Department of Energy for “advancing the use of wind power in a coastal community.”

Hull Wind 1 (rated power of 660 kilowatts) cost the town close to \$700,000. In its first year, it produced 1,597 megawatt hours (approximately three percent of the annual 51,000 MW/h that Hull Municipal purchases). After paying for the town’s street lighting, sales of this energy reportedly exceeded \$150,000. Hull Wind 2 (rated at 1.8 MW) cost \$3 million and came on the grid in 2006. During that year, it produced 4,088 MW/h, about eight percent of the town’s requirement.

Heartened by these successes, Hull began laying plans to install four wind turbines offshore to boost the town’s wind production to 15 MW, or enough to supply all of the town’s electricity annually. As of late 2008, Stern reports, town officials were examining the new turbines’ financial feasibility.

“Projects like the Hull wind and tidal turbines help demonstrate that clean energy can be done,” he says. “But it’s not the whole picture. We also need government incentives and policies that reward alternative energy industries. When the government gives clear signals that clean energy is a priority, we’ll see real and lasting progress toward a future we can all live in.”

Bernie Podberesky '58 works enthusiastically to solve a major problem—or two or three. His interests lie in transforming biomass and other waste streams into clean power.

“We see our technology as an ideal way to eliminate some difficult issues in a number of applications worldwide,” says Podberesky, president of AgriPower Inc. He has held this position since 2004, but he has been involved with the company’s predecessors since 1998.

AgriPower’s biomass-to-energy technology produces clean combined heat and power, and its latest units are rated at 300 kW per hour. The company’s closely guarded technology eliminates two common problems associated with using biomass for fuel. The entire air-to-air electric power generation system is contained in an easily transportable, modular mini-turbine, making it easy and inexpensive to transport the units to places where they are needed. And AgriPower’s patented design—in which the biomass fuel combustion products are separated from the gas turbine cycle—greatly reduces costly and time-consuming problems with turbine maintenance and operation.



The AgriPower unit, a transportable machine, converts unwanted biomass into clean energy.

These waste-to-energy workhorses use virtually free or inexpensive biomass and other materials for fuel. Everything from coffee bean shells, corn cobs, and nuisance plants, to furniture, wood chips, and sawdust, to construction debris—even that containing paint and creosote—can be tossed into an AgriPower hopper (once cut into chips) and burned, producing clean energy. For items such as finished woods, utility poles, or railroad ties, toxins can be scrubbed and set safely aside with an add-on scrubber. If distilled water or ice are required, a co-generation converter addresses this need.

“When we started the enterprise, we immediately saw the market for replacing diesel generators,” says Podberesky, pointing to the fact that most of the world’s island nations, and many other remote rural areas, rely on diesel fuel as their main source of electricity. “There are several hundred thousand diesel-run machines operating globally, and although we wouldn’t be appropriate for all of those applications, that is still a very large pool of potential customers. Our units are so portable, versatile, easy to operate, and low-maintenance, they could really help out in many of those areas.

“We’ve also identified applications where companies face waste streams with costly tipping fees,” Podberesky continues, referring to the price of dumping refuse at landfills. “In these situations, burning waste is quite advantageous, especially when you can also generate your own power, and sell electricity back to the grid. So what started as a niche market has expanded.”

Small- to medium-sized lumber mills in remote areas could also use the units. “The hot air stream could dry the lumber, replacing natural gas kiln drying,” says Podberesky. “The rest of the energy could supplant some of the mill’s electricity needs.”

Podberesky is proud of AgriPower’s technology assessment regimen. Rigorously testing units for four years, the earlier, 80-kilowatt-hour unit was proven at a lumber mill, where wood chips and sawdust were burned as fuel. AgriPower also tested gas flows and heat transfer dynamics in its design and manufacturing facility near Sacramento, Calif.

“We see our technology as an ideal way to eliminate some difficult issues in a number of applications worldwide.”

—Bernie Podberesky

After accounting for the energy used in running itself, each of the company's new 300-kW-hour units produce 270 kW per hour. With fuel prices at upward of three dollars per gallon, the unit pays for itself in less than 18 months.

"These fuel savings," Podberesky says, "don't include the considerable value of the co-generation and thermal energy the unit produces, nor the carbon credits it could generate annually from using biomass as a fuel."

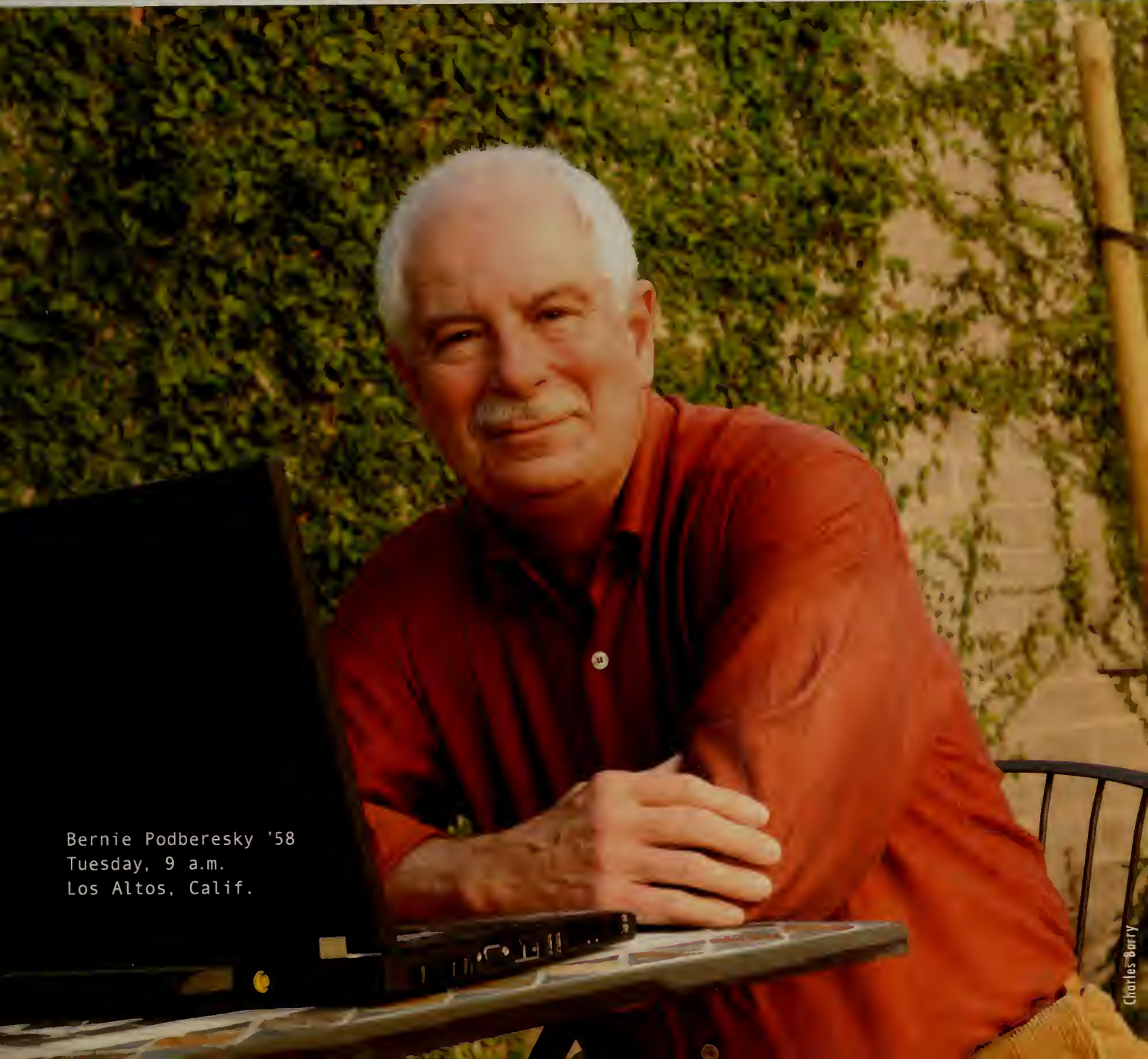
Fueling the Spirit

Whether he's troubleshooting with the research, design, and manufacturing team, or meeting with investment bankers or potential customers—state and federal agencies, waste man-

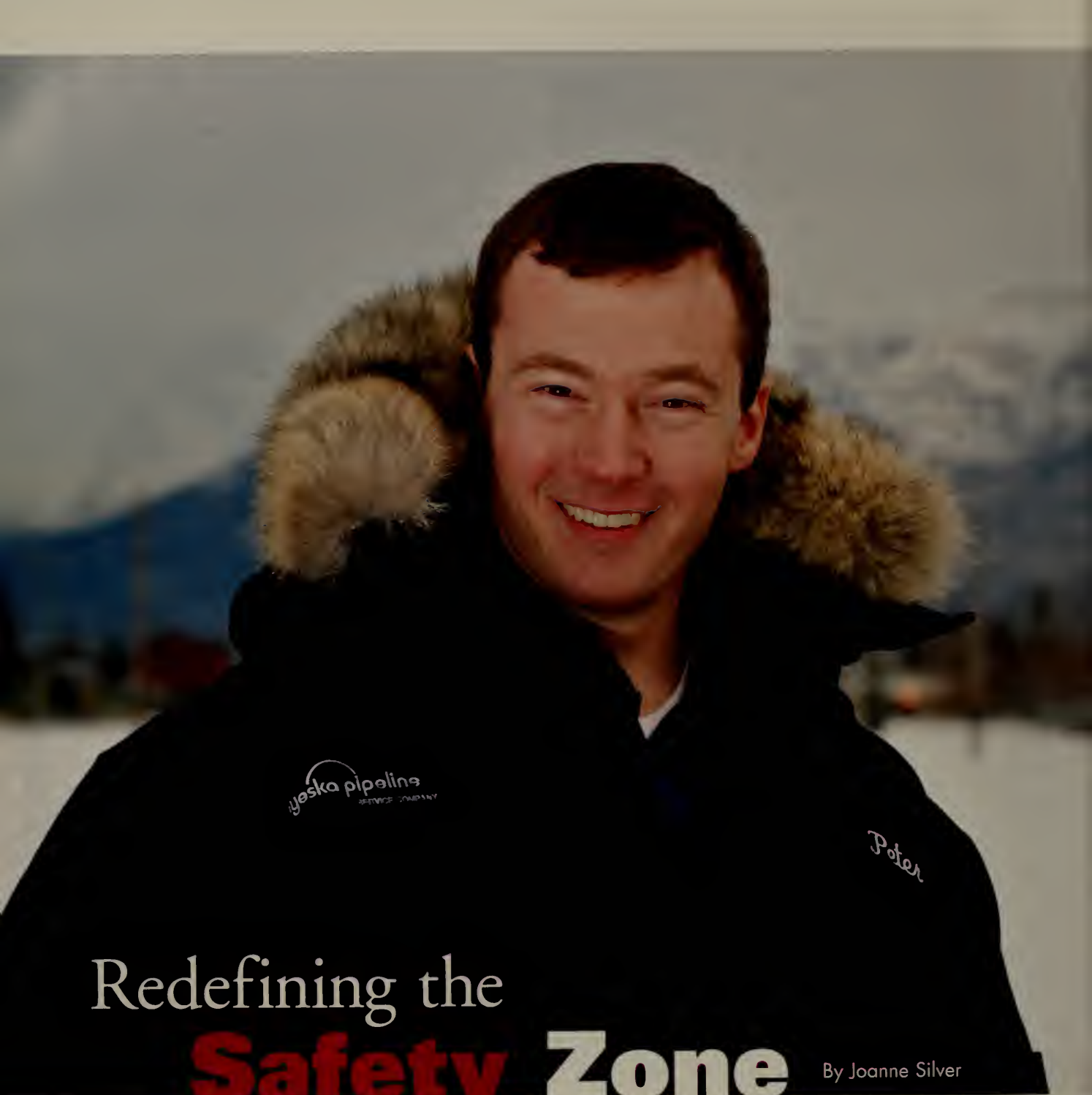
agement companies, consumer paper goods manufacturers, energy mills, and others—Podberesky is running hard.

"We see a high degree of interest," he says, "but with the current financial crisis, deals are scarce. We're actively seeking additional financing sources to help us move into commercial production."

Like many visionaries, Podberesky would like to see more than just his own project succeed. "If we could get the AgriPower units to all of the villages and towns in Africa that desperately need them," he says, "the residents could grow their own fuel and power their villages. This kind of change could really build local economies across the world, and do it cleanly." ■



Bernie Podberesky '58
Tuesday, 9 a.m.
Los Altos, Calif.



Redefining the **Safety Zone**

By Joanne Silver

WPI graduates have a history of finding creative ways to use their educations to benefit the world. Among the most challenging—and rewarding—directions alumni have taken involve safety. **Peter Bellino '08**, **Tom McAloon '76**, and **Ross Tsantoulis '07** have ventured far past what most would consider a comfort zone. Whether protecting the Alaska pipeline against fire, establishing sanitary water conditions in developing countries, or helping rebuild Afghanistan, they have found satisfaction in making this planet a less dangerous place to live.

“The pipeline is a city among itself. Being part of this great engineering marvel is like working with a celebrity. It is such a great feat of civil engineering and mechanical engineering.”

Peter Bellino '08
Saturday, 10 a.m.
Anchorage

Peter Bellino's desk may be in an office in downtown Anchorage, but his responsibilities stretch on for miles—800 miles, in fact. From Prudhoe Bay, on Alaska's North Slope, to Valdez, the northernmost ice-free port in North America, the four-foot-wide Alaska pipeline zigzags its way through America's largest state, carrying oil destined for far-flung consumers. Twelve pump stations interrupt its route, places where fire is always a danger. Bellino's job is to make sure that disaster doesn't strike. As one of only two fire systems engineers for Alyeska—the service company for the Trans Alaska Pipeline System—he works to maintain safety in one of the engineering wonders of the modern world.

“The pipeline is a city among itself,” Bellino says, speaking by phone one snowy Saturday in November, six months after arriving in Alaska. “Being part of this great engineering marvel is like working with a celebrity. It is such a great feat of civil engineering and mechanical engineering.”

As a 2008 WPI graduate with a BS degree in civil engineering, Bellino knows exactly how impressive the pipeline is. As a fire protection engineer who will complete his master's next year, he also realizes the extent of the hazards. Shortly after the pipeline opened in 1977, the project suffered its worst tragedy—a fatal explosion and fire at Pump Station 8 near Fairbanks. During his time with Alyeska, Bellino has had to investigate an incident in Valdez, in which a 15-foot fireball erupted and the flame detectors didn't go off. The

solution: to relocate and increase the number of detectors. Bellino also oversees testing of a variety of detection systems—from gas and smoke to thermal, which he prefers in a state prone to wildfires. He studies the advantages of different fire-inerting agents. He manages the paperwork to comply with the guidelines of 40 regulatory agencies.

Since childhood, Bellino has had a fascination with fire. “I hate to admit this,” he recalls, “but I always liked fire. I love campfires.” In the third grade, when his parents were building a new house in Deerfield, Mass., he would make campfires using scrap wood left at the job site. “I would place the wood in different configurations to start the fire and watch how the flames and smoke would swirl around the pieces of wood,” he says. “It was very fascinating to a young mind.”

Years later, his very first week at WPI, he discovered his ultimate career path. At new student orientation, fire protection engineering professor David Lucht showed a video called “Fire Power” about what happens to a house when it catches fire. “I set my heart on that,” Bellino says, adding that since the department did not offer an undergraduate degree, he decided to pursue his love of building as a civil engineering major. He did his IQP on response times of fire departments in Plymouth County, and had a summer job with RJA, where he was exposed to the consulting side of the fire protection industry. Through WPI's Advanced Distance Learning Network, he has deepened his knowledge with graduate courses in fire protection.

Bellino is grateful for the preparation he has received. At any moment, one of the Alyeska technicians—who go up and down the pipeline checking for potential problems—could report a malfunctioning fire panel. Or an actual fire could break out, as it did in Valdez. In the process of reducing the number of pump stations from 12 to five over the next couple of years, Alyeska will require evolving strategies to ensure safe and smooth operations. After more than half a year on the job, as fall was quickly turning to winter, Bellino was still excited—about climbing mountains, cross-country skiing, and meeting challenges extending from one end of the state to another.



Tom McAloon '76
Monday, 5:10 p.m.
Dili, East Timor

“Just because you have a good technical idea that works in the U.S., it is not usually relevant in a third-world or post-conflict setting.”

For most Americans, finding Timor Leste (East Timor) on a map would be a fairly arduous task. Tom McAloon has taken on a far tougher challenge: In November 2008, he began working in the Southeast Asian island nation on a rural water supply project sponsored by the U.S. Agency for International Development (USAID). The one-time Portuguese colony in the Indonesian archipelago—which became the first new sovereign state of the 21st century—has water conditions that are among the worst in Asia. Only half the population has access to a water supply. Basic sanitation extends to barely a third of the people.

Remarkably, McAloon is unfazed by such dismal statistics. Even more amazingly, he regards his current assignment as a chance not to pity, but to learn about others and to collaborate. “We who are lucky enough to be from prosperous and functioning countries need to work together with people in the developing world and listen to them,” he says. “We do not have all the answers for them and neither do they. But together, with luck and perseverance, we can move forward.”

A 1976 WPI graduate with a BS in civil engineering, McAloon points to the idealistic environmental movement of the '60s and '70s as an influence. But now, having spent years in places from Azerbaijan and Kosovo to Maldives, he acknowledges, “My views have tempered quite a bit, and a strong dose of realism is called for when working in developing countries.” Even though he did not pursue international affairs until well after college, “I credit WPI with piquing my interest in the balance between straight engineering and human behavior,” he notes. “The WPI Plan was a big draw for me—an attempt to cultivate the Renaissance Man and Woman. I’m not surprised that I ended up doing something that really requires the ability to look beyond the technical to try to understand (and respect) why people do what they

do—even when it results in terrible things like child mortality, illness, and short lives.”

After almost two decades in New Hampshire, applying his engineering training to water-related ventures, McAloon faced a very different set of obstacles when he took an overseas position in 1994 with the International Rescue Committee in the Republic of Georgia. Instead of overseeing watershed protection or sewer extensions in a peaceful, organized region, he had to confront the chaos that follows war. He managed a staff of two Nepalese engineers and a team of Georgian engineers to contract out installation of basic water supply, sewer, roofing, windows, doors, and electrical wiring in urban buildings that housed 100 to 1,000 people.

Subsequent positions in a number of trouble spots—including Afghanistan, Kosovo, and Iraq—made McAloon painfully aware of the complex causes of water and sanitation problems. “It is almost always not as simple as building a new bit of infrastructure,” he explains. “Just because you have a good technical idea that works in the U.S., it is not usually relevant in a third-world or post-conflict setting.” In Timor Leste, as in many of the places he and his wife have lived, he cannot assume elements that Americans take for granted, such as a well-functioning judicial system that can enforce contracts, good communications, roads, or “a generally accepted belief that a person has to pay for certain things like water and electricity.” Several years ago, McAloon returned to Georgia on a project for the national electric distribution system, implementing a metering program for the substations, to determine when major thefts of power were occurring.

“I feel blessed that I have had the opportunity to live and work in different parts of the world,” he says. “Most important, I’ve received far more wisdom and learning than I’ve been able to give.”

Somewhere within the forts of his childhood backyard and the Lego city that sprang up in his bedroom, Ross Tsantoulis discovered a route to his future. Now, almost two years since he received his BS in civil engineering from WPI, he is building structures that not only satisfy his imagination, but also promise to improve conditions in a country wracked by war. Based in Kabul, Afghanistan, since March 2008, Tsantoulis works for Tetra Tech as a project engineer creating infrastructure to stabilize rural development in a USAID-sponsored program. On any given day, he could be tackling half a dozen assignments—from roads and bridges to dormitories and solutions for water storage. He does architectural design, drafting, management, whatever is required to bring these efforts to fruition.

Numerous hardships confront Tsantoulis and his colleagues, but he minimizes these and celebrates the strengths of the people he meets. “I am fortunate to work with brilliant Afghan engineers, who continue to teach me to appreciate the differences between construction practices in the United States and those of Afghanistan,” he says. “Here, we are limited by the small number of resources available, such as clean water and electricity. It’s common that a five-story building is built with no consideration of seismic loads, and is constructed with small batches of concrete mixed by hand on the ground.”

Because of the remote locations of projects, poor roads, and threats of insurgency, Tsantoulis usually remains in Kabul, interacting with the Afghan engineers who travel to the sites. When he was employed by Tetra Tech’s Manchester, N.H., office—not far from his family’s home in Hooksett—Tsantoulis was able to go onsite to assess conditions and “get my hands dirty and not just sit back and look at the design from my computer screen.” In his current situation, he finds himself especially grateful for the knowledge of stone masonry cement and concrete he gained in his materials class with civil and environmental engineering professor Tahar El-Korchi. CEE associate professor Leonard Albano’s design of steel structures class was a great challenge at the time, but has served Tsantoulis well.

These days, much of his learning takes place during encounters with Afghan individuals. Rashad, 15, flies kites in the afternoons at a popular hill in town, but then works well past midnight on studies that he believes can take him to a university in America. He

would like to return as an engineer to help rebuild his country. There’s also Omar, an engineer who has lived through the Russians, the Mujahideen, and the Taliban, is deaf in one ear, and yet radiates joy. “It is people like Omar, the humble, selfless, hardworking, devoted people that bring hope to stabilizing Afghanistan.” For his part, Tsantoulis is studying the Dari language, so that he can establish deeper relationships with local shopkeepers and others he is getting to know. Already, he has realized that there is more to building than bricks and mortar. ■



Photo: Tsantoulis '08
Saturday, 6:34 a.m.
Kabul, Afghanistan

The Voices of Worcester's Underrepresented

By Joan Killough-Miller

The Important Work We Do hits close to home—in WPI's backyard, even. **Barbara Haller '83** and **Patrick Spencer '05** are just two of the many alumni whose work makes the Worcester community a better place to live, work, and play.

Barbara Haller doesn't fit anyone's stereotype of a career politician. A plainspoken, plainly dressed grandmother, she is a former college dropout, VISTA volunteer, '60s activist, and blues bar owner. Her resumé also includes 25 years as an engineer with National Grid. For four terms Haller has represented District 4 on the Worcester City Council. It is considered the city's most distressed district, with the highest rate of poverty and crime.

"Many people get into politics because they want to be politicians," she says. They may be knowledgeable about fund-raising and voter data, and they're used to rubbing elbows with the movers and shakers, but they lack experience with inner-city issues. Without that background, "you don't know what an SRO is. [Single room occupancy, i.e., low-rent rooming house. —Ed] You don't know how prostitution operates on your street. You don't know how kids have to walk the streets surrounded by drug trafficking and other crime," she says. "I may not have had the political competencies at first, but I had grassroots experience."

The daughter of a mechanical engineer and a homemaker, Haller rejected the conformity of suburbia and sought a bigger world. She initially studied sociology, wanting to make a difference, but left college to do community organizing in inner-city Chicago. She embraced the 1960s counter-culture, and has vivid memories of the riots that followed the assassination of Martin Luther King Jr. and the demonstrations that rocked the 1968 Democratic convention. For a time, she lived in Arkansas and helped run a farm school collective there to help youths at risk of serving prison time.

"It never occurred to me to become an engineer until I was an adult raising two children with a husband who was unemployed," she says. "My father was an engineer. My brother was an engineer. If I had been male, I would have been an engineer a lot sooner."

She still remembers her father's reaction to her plans. "It will destroy your marriage," he declared. "It will make

you too independent. You won't need a husband anymore."

"It was an 'Aha!' moment for me," she says. Her parents had encouraged her to get an education, but only so she would have something to fall back on, in case her marriage failed. They never expected her to stake out a "real" career.

After studying at the former Worcester Junior College, she transferred to WPI to earn a bachelor's degree in electrical engineering. It wasn't easy being female at WPI in the early 1980s, and as an older student with children, she felt even more out of place. "I was on the verge of a nervous breakdown the whole time I was at WPI," she says. It took discipline to stay ahead of the curve in her classes. The personal and academic challenges built confidence, which she carried into her career with National Grid. She retired as supervisor of metering in 2005.

As a homeowner in Worcester's troubled Main South area, she joined with neighbors to organize crime watch groups and to pressure the city government and police to take action. When absentee landlords turned their backs on drug houses and let abandoned properties turn into dumping grounds, she led protests to embarrass them into taking responsibility for screening tenants and maintaining properties.

For a time, Haller was part-owner of Gilrein's, a Main Street nightclub around the corner from her home. As a small business owner, she was invited to serve on the City Manager's Advisory Committee on local redevelopment. She became active to prevent seeing the '60s and '70s repeated, when "urban renewal" projects turned out to mean "urban removal" of poor residents.

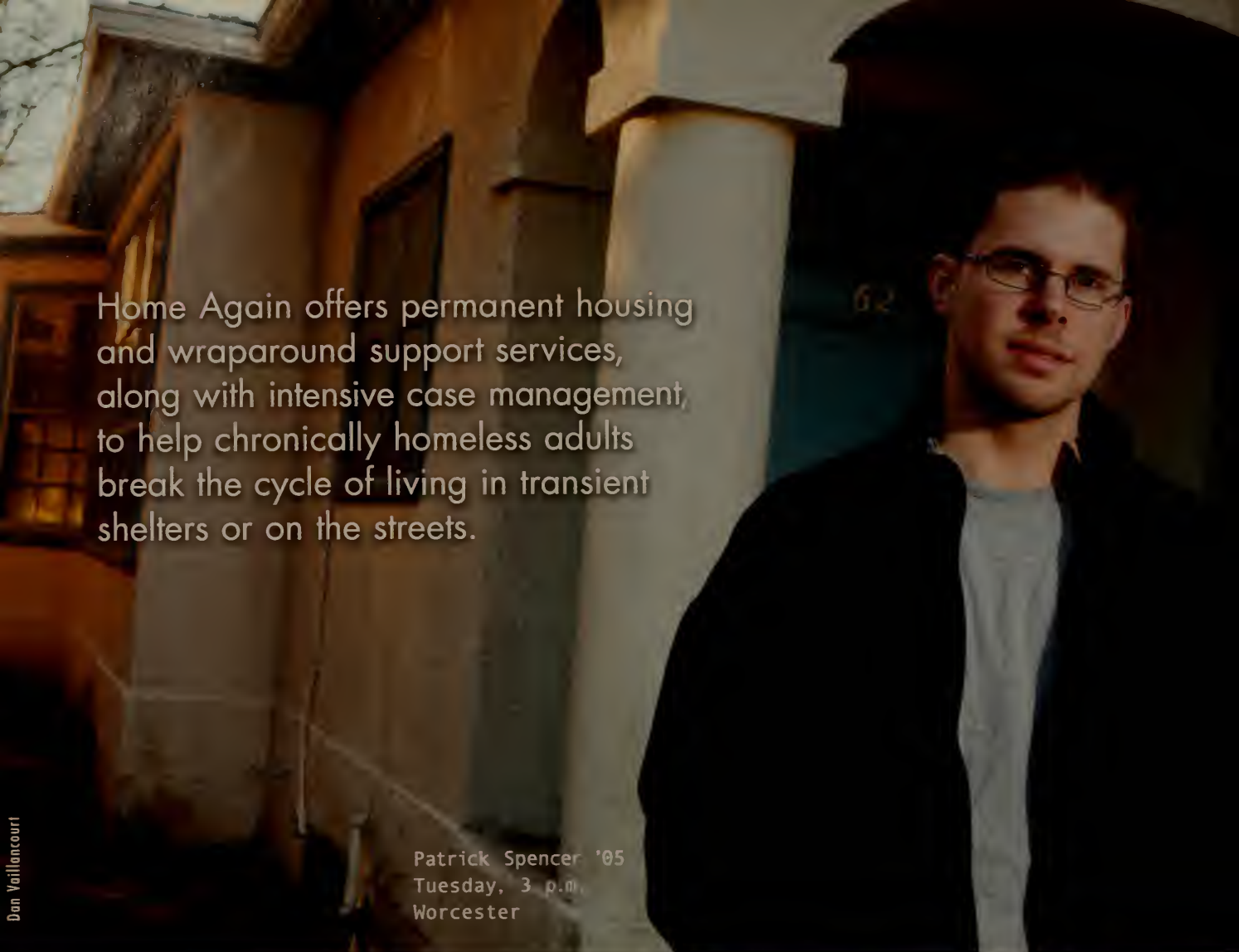
Her conversion from neighborhood activist to politician came in 2001, when the District 4 incumbent had a mild stroke and chose not to continue her campaign. Haller agreed to run in her place, and won. Last November she officially launched her campaign for a fifth term.

"District 4 magnifies the issues of inner-city living," she says. "While all the other districts have pockets of poverty and crime and grime, District 4 is the epitome of all that." The

“What do we need to make our neighborhoods strong?
Those are the issues I am passionate about.”



Barbara Haller '83
Friday, 10 a.m.
Worcester (District 4)



Home Again offers permanent housing and wraparound support services, along with intensive case management, to help chronically homeless adults break the cycle of living in transient shelters or on the streets.

Patrick Spencer '05
Tuesday, 3 p.m.
Worcester

current economic crisis looks worse from where she sits: “When you’re living on the edge already, and the economy falls out from under you—then you’re over the edge.”

Over time, she’s seen the challenges grow. The demographics of her constituency show more minorities, immigrants, and non-English speakers. There are larger households with more children, more single-parent families, and more children being moved from school to school. Her district has fewer registered voters and the lowest voter turnout of all districts.

“Moving forward together” is her slogan. She likes to remind her colleagues on the council, “If we don’t deal with the problems of the inner city, your neighborhoods are going to suffer as a result. Leave any part of the city behind, and you diminish the whole.”

Her district borders the WPI campus, and includes the university’s off-campus housing, as well as Elm Park, Becker College, Clark, and Holy Cross. Although, in her work, she tends to stress the neediness, she says it’s important to celebrate the assets. Highland Street and Main Street are among

the liveliest parts of the city, with diverse ethnic markets, restaurants, and mom-and-pop stores.

“Do we continue to define our inner cities as being where people in poverty live?” she asks. “We want to change that and define them as vibrant. This embraces diversity of all kinds—not just racial, ethnic, and religious, but also economic. Many of us—including the ‘new urbanites’—want to participate in the cultural, recreational, and culinary assets of the city.”

During her first campaign, she was caught off guard by a reporter’s question about her platform. “Quality of life,” she stammered. “You know...things like trash, abandoned cars, and noise.”

“You’re running on trash?” the reporter replied, skeptically.

She laughs about it now, but she hasn’t wavered on speaking out on issues that others would like to ignore. “I see one of Worcester’s greatest strengths as its livability. Who’s advocating for that? What do we need to make our neighborhoods strong? Those are the issues I am passionate about, and I have tried to be a voice for our neighborhoods.”

“What are the causes of homelessness? Why have previous solutions failed? How can we address this in a different way?”

Patrick Spencer was only 16 when tragedy thrust him into the public eye. “The phone calls started the day after my father died,” recalls the son of Lt. Thomas E. Spencer, one of six firefighters killed in the 1999 Worcester Cold Storage warehouse fire. Media coverage spread rapidly, like an out-of-control fire, spiraling upward until even the president of the United States was involved. Patrick Spencer moved mechanically through the routines of waking, dressing, and eating, unable to grasp his loss, knowing he was not ready to grieve.

“I needed to *do* something,” he says. The engineer in him kicked in, and he took on the task of screening and logging phone calls for the family, meticulously charting who required a callback and the details of what they wanted. Tackling a problem with a systematic approach was just what he needed; it’s what got him through those early days.

Spencer has every reason to hold a grudge—the 1999 fire was ignited by an overturned candle during an altercation between two homeless people who had taken shelter in the abandoned building. Yet his reaction has been anything but vengeful. While many people go out of their way to avoid contact with the homeless, this civil engineering graduate is championing a new approach to help them break the cycle of chronic homelessness. Earlier this year, he helped convert an old stucco mansion in Worcester to house 14 homeless individuals.

Spencer is an upbeat, energetic young man at the start of his career. He has worked in construction engineering, is considering pursuing a master’s degree through WPI’s Fire Protection Engineering program, and, in the family tradition, has served on the Paxton Fire Department. He also serves on the advisory council of Home Again, a Central Massachusetts nonprofit with a simple motto: Only a home ends homelessness. He has led a team of local contractors and volunteers in renovations of Home Again’s first program site at 62 Elm Street, Worcester. As a construction engineer, he was able to find low-cost work-arounds for electrical overloads and creative solutions to 100-year-old plumbing problems. As an ordinary citizen, Worcester born and bred, he offers an important perspective to the board. He’s helped to quell the fear of neighbors who objected to program sites. He’s met with officers of the exclusive nearby Worcester Club to gain their support. He notes that he showed up at the club, which has a strict dress code, directly from a construction site, dressed in work boots and jeans. His mission succeeded, but he was asked to use the back door on his way out.

Home Again offers permanent housing and wraparound support services, along with intensive case management, to help chronically homeless adults break the cycle of living in transient shelters or on the streets. It’s a model that makes

sense to him. At WPI he learned how engineers work backward to analyze a building failure or a fire, then move forward with strategies for prevention. They want to know what systems failed, and what changes need to be made. He asks similar questions about the tragedy that took his father’s life. “How did we get to the point where two people had to squat in an abandoned building on a December night, with no heat or light except a candle? What are the causes of homelessness? Why have previous solutions failed? How can we address this in a different way?”

He’s seen how large emergency shelters can become a revolving door. “It gets them out of the cold, but it doesn’t address their real needs,” he explains. Those needs—which often include assistance for addiction and mental health issues—can’t be addressed in an impersonal, chaotic environment.

Most of us can’t imagine a life on the streets, and Spencer admits feeling uncomfortable when he first started visiting shelters. He can even understand the backlash against the two homeless people who caused the 1999 warehouse fire. In the divisive aftermath, it was often repeated that six fallen heroes had sacrificed their lives in an effort to save a couple of homeless people.

“When six people die like that,” says Spencer, “I think human nature says, ‘Somebody is to blame for this.’” Many have questioned why the two did not report the fire or make their whereabouts known.

“I’m not sure I’d be hanging around waiting for the police to come either,” Spencer responds. “What were they supposed to say? ‘Hey, I broke into the building and set it on fire. I just wanted to tell you there’s nobody inside.’”

“Honestly, could they have anticipated that six firefighters would die? Hindsight is 20-20,” he says. “Don’t get me wrong—it took years for me to develop the right perspective. It still upsets me sometimes—on Christmas, Father’s Day, and my father’s birthday, especially.”

Spencer likens his involvement with Home Again to the zeal of families of cancer victims who run marathons and work for the cure. He seems to have grasped a message that was missed by many: that the real enemy is homelessness, not the homeless.

The Lt. Tommy Spencer House, named in memory of Patrick’s father, opened in November 2008. The House will scale up slowly over the next year to include 14 carefully selected residents, who pay 30 percent of any income they receive as rent, and a live-in manager. Spencer will continue monitoring, with an eye to expanding the best practices to future program sites. The goal, he notes, is to keep things “rigid, steady, stable—like you learn in civil engineering.” ■

Crimson and Gray Goes Green

It's time to rethink how WPI communicates with you. Consider: During the 2008 fiscal year, the Alumni Relations Office printed 92,861 invitations, postcards, brochures, envelopes, and other Reunion and Homecoming materials.

And Alumni Relations is just one small part of the paper consumption picture at WPI, and an even smaller part nationally. According to the Environmental Protection Agency, the United States uses approximately 85 million tons of paper and paperboard each year—the average American family uses the equivalent of a 100-foot-tall Douglas fir tree in paper and wood products annually.

WPI is working to address these issues through its sustainability initiative, a campus-wide effort aimed at encouraging students, staff, and faculty to engage in research and action promoting sustainability on campus and in communities



Sustainability

around the world (see story, page 16). The Alumni Relations Office is joining the effort, developing a paperless communications strategy. As a result, you'll be receiving fewer postcard invitations and more email invitations and notices in the coming months. By September 2009, we hope to send all of your event invitations and special notices from the Alumni Relations Office primarily by email, saving trees and money on printing and mailing.

In order to be successful, we will need your current email. If you haven't registered for AlumniConnect, visit alumniconnect.wpi.edu and follow the instructions for "first-time log in." To obtain your constituent ID number, contact the Alumni Relations Office at alumni-office@wpi.edu or 508-831-5600. (You'll be prompted to create a username and password on your first login.)

If you've already registered for AlumniConnect, please make sure we have your current email address. Alumni who provide their email addresses for the first time will be registered to win one of two prize packs of WPI merchandise.

**WPI Reunion 2009
JUNE 4-7**

Mark your calendars now! All alumni are welcome to attend Reunion 2009.

Anniversary classes celebrating at Reunion 2009: 1934, 1939, 1944, 1949, 1954, 1959, 1964, 1969, 1974, 1979, 1989, and 1999

Don't let another year go by without reconnecting!

WPI Alumni Association
ANNUAL MEETING
MAY 2
8:30 a.m. - 1 p.m.

Come and share ideas on the future of your Alumni Association. Speakers will include Alumni Association Leadership and members of the WPI community, including Provost John Orr.

The schedule of activities for Reunion 2009 includes...

Thursday, June 4

- > Annual Alumni Golf Tournament

Friday, June 5

- > Alumni College Keynote Session
- > Campus Fair
- > New England Clambake
- > Casino Night
- > 50-Year Associates Dinner

Saturday, June 6

- > A Conversation with President Dennis Berkey
- > Reunion Parade
- > Alumni Recognition Ceremony
- > Class Receptions and Banquets

Sunday, June 7

- > Jazz Brunch
- > Worcester Tornadoes Baseball Game
- > Class of 1959 Remembrance Event



CHECK YOUR MAIL SOON FOR COMPLETE REUNION 2009 REGISTRATION INFORMATION.

Questions? Please call the WPI Alumni Relations Office at **508-831-5600** or log on to alumni.wpi.edu/reunion.

The Important Work You Do

"We will build the roads and bridges, the electric grids and digital lines that feed our commerce and bind us together. We will restore science to its rightful place, and wield technology's wonders to raise health care's quality and lower its cost. We will harness the sun and the winds and the soil to fuel our cars and run our factories. And we will transform our schools and colleges and universities to meet the demands of a new age. All this we can do. All this we will do."

President Barack Obama, in his inaugural address, may well have been addressing the WPI community—from the students and alumni whose career aspirations have no limit, to the faculty and staff who encourage and teach our students to find passion in all that they do, to the parents who support their sons and daughters in all of their endeavors. Everyone's contributions are important.

So, here's the question: Do *you* feel that what you are doing today is important? If the answer is yes, have you let those who support you know the significance of their work? Would they agree? Are you documenting your major contributions to your client, family, organization, or community? In unpredictable times, particularly, it's a good idea.

If the answer is no, and you are not feeling valued, ask yourself, "What would my manager/spouse/colleague say if asked to specifically describe my contributions, lest they be fired for lack of a response?"

We know that the economy is difficult this year. Work—including the work we do as retirees—is the critical part of so many of our lives. Understanding where and how the value of your work contributes to life is, perhaps, what's most important.

WPI graduates: That work began the moment you stepped onto campus, and it has flourished ever since. But if you should find yourself in doubt, don't hesitate to contact us in the Career Development Center. We'll help you see your strengths and get back on track!

Contact Connie at cdcalumni@wpi.edu

New Development and Alumni Relations Staff



Jo-Ann Alessandrini joined WPI in September as associate vice president for development and campaign director. She is working with Vice President Dexter Bailey, key volunteer leaders, and development staff members on the planning and implementation of a comprehensive campaign to support WPI's teaching and research mission, as well as the university's future philanthropic endeavors.

Alessandrini most recently served as assistant dean for development at the University of South Florida (USF) College of Business in Tampa. Before joining the business school, she led the university's fund-raising efforts as interim CEO of the USF Foundation and as vice president of university advancement in preparing for a third comprehensive campaign anticipated to achieve a goal of more than half a billion dollars.



Samuel Stewart became WPI's executive director of development operations and research in November. He directs and supervises programs and staff in advancement services, development research, and donor stewardship. He oversees aspects of gift processing, reporting and analysis, the biographical records system, prospect research, and stewardship.

Before coming to WPI, Stewart spent 14 years at the University of Massachusetts Medical School, where he most recently served as controller for the development office of the UMass Memorial Foundation. He was also chief financial officer of UMass Medical School, responsible for accounting systems and financial reporting.



Jake Messier became the executive director of the Alumni Relations Office in November. Working with WPI's key alumni volunteer leaders and a dedicated staff, Messier directs the university's alumni relations programming focused on strengthening the bonds among faculty, students, and staff with alumni worldwide.

Messier's varied career has spanned CBS news, print and new media advertising, high-profile public relations, and marketing for several technology firms. He also served nine years in the U.S. Marine Corps in public affairs.



Michelle Vigneux joined the WPI Annual Fund in December as director. She is working with the Annual Fund Board, student leaders, and staff to lead and grow WPI's Annual Fund program.

Vigneux brings to WPI extensive alumni and annual fund experience. Before joining WPI, she was director of annual giving at Lasell College in Newton, Mass., where she established Graduates of the Last Decade, athletics, and parents programs and oversaw all annual giving activities, including a phonathon program. During her tenure, Lasell broke the \$600,000 mark in annual giving for the first time in the college's history and saw a 10 percent increase in parent giving and a 5 percent increase in faculty and staff giving.

Class Notes

Staying Connected with Old Friends Material for Class Notes comes from newspaper and magazine clippings, press releases, and information supplied by alumni. Due to production schedules, some notes may be out of date of publication, but may be updated in future issues. Please allow up to 6 months for your news to appear in print. Submit your Class Note at wpi.edu/+Transformations or alumni-editor@wpi.edu. You may fax it to 508-831-5820, or mail it to Alumni Editor, Transformations, WPI, 100 Institute Road, Worcester, MA 01609-2280.

1930s



Peter Koliss '38 (left) is retired from Bell Telephone and now keeps busy raising funds to restore churches in Ghana. Contributions to his

efforts can be made by check, payable to Fr. John Albert Opoku-Acquah (pictured), and mailed to Peter Koliss, 47 Dogwood Drive, Apt. 202, Nashua, NH 03062.

Koliss is also pictured below (far right) with fellow Reunion 2008 celebrants **Ralph Smith '43**, **Len Kuniholm '38**, and **Morton Fine '37**.



1940s

Frank Bodurtha '42 was a guest speaker at the Ossipee (N.H.) Historical Society on the 70th anniversary of the "Long Island Express" hurricane that struck New England in 1938. He holds a doctorate in meteorology from MIT and in retirement has done much research and writing about hurricanes. He lives in New London, Conn., and has a summer home in Center Ossipee, N.H.

1950s

Don Post '53 was featured in the "One on One" interview in *Worcester Magazine* in July 2008. He is owner of The Farmer's Daughter garden center and Hillcrest Farm in Auburn.



Milton Meckler '54 received a Distinguished 50-Year Member Award from ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) at the society's

annual meeting in June 2008. A fellow and a lifetime member of the organization, Meckler is a former board member and currently serves on several technical and scientific committees. He is president and CEO of Design Build Systems.

Edouard "Muff" Bouvier '55 moved from Connecticut to Maryland last fall. His email address remains the same: Muff1955@alum.wpi.edu. "It's another great service offered by WPI," he notes. "Once you get an 'alum.wpi.edu' email address, whenever you move you only need to let WPI know of your new ISP and the rest is seamless." He reports that he had lunch in D.C. with **Pete Horstmann**, and dinner with **Tom Mahar** and his wife, Kathy. "Contact me by phone at 240-293-6764 or by email if you're going to be in the area or if you have any news to report."

Ted Coghlin '56 was featured in the *Catholic Free Press* as a paradigm of giving to the larger community through stewardship.

Bill Rabinovitch '58 is composing an Iraq Symphony for full orchestra, along with animated visual accompaniment. He continues work on his film, "Pollack Squared," which now incorporates a sequence he filmed using a set from the movie "Be Kind Rewind," at the invitation of director Michel Gondry.

Ralph Sellars '58 delivered a presentation entitled "An Ardent Account of the Sanborn-ton Snowroller Restoration" to the Sanborn-ton (N.H.) Historical Society, detailing the four-year effort to restore this donated antique machinery to working order. He is retired from a career in safety and fire protection engineering, and lives on his family's farm in Tilton.

Lee Courtemanche '59 was honored by the Technical Association of the Pulp and Paper Industry (TAPPI). He received the organi-

zation's 2008 Paul W. Magnabosco Outstanding Local Section Member Award at PaperCon 08, TAPPI's national conference held in Dallas, Texas, in May.

1960s

Jim Dunn '61, president of Energy Technologies Inc., was elected to the corporate advisory board of Solomon Technologies Inc.



Classmates of **Jesse Erlich '62** gathered at the Mount Washington Hotel in New Hampshire for the wedding of his son, Adam. From left, **Mike Gordon**, **Dick DiBuono**, **Myron Waldman**, **Jesse Erlich**, **Ted Cocca '61**, **Barry Cherkas**, and **Casey Cotter**.

David Norton '62 traveled to the Middle East to present his "Balanced Scorecard" concept to area business and industry leaders. He is the founder and president of Renaissance Solutions and founder of the Nolan Norton Institute.

Bob Magnant '63's first novel, *The Last Transition*, is an adventure in cyber-security and global relations. It is available on his website, homepage.mac.com/magnant, along with his photography and other writings.

Nirmal Thakkar '63 is chairman of Tipco Industries Ltd., based in Mumbai, India. The firm, founded by his father in 1945, currently employs three of Nirmal's sons.

Bob White '64 and his wife, Ginny, are pleased to announce their retirements—Bob from teaching at Northern Maine Community College, and Ginny from her post as performing arts director at the Caribou (Maine) Performing Arts Center. "We are

both looking forward to more time in Nova Scotia, much more time with kids and grandkids, keeping up with hobbies and volunteer activities, and enjoying life in general," he writes.



Chet Sergey '65, a long-time EMT and EMS instructor, was honored by the American Red Cross at the Waterbury Area Chapter's "Images of Heroes" gala event. Connecticut Governor Jodi Rell was on hand to offer congratulations. Chet has chaired regional emergency services committees and worked to improve training, expand facilities, and recruit students into the field.

Bill Elliott '66 has retired after more than 35 years with the admissions department at Carnegie Mellon University. He got his start working in WPI's admissions office after graduation. At CMU, he developed computer models for class size and financial aid awards, and oversaw the university's shift from a regional school to a global university.

John Lauterbach '66 was an organizer of Ohio State University's Sugar Alley Symposium, held in conjunction with the American Chemical Society's 2008 national meeting in New Orleans. Lauterbach, who did his doctoral work in the Sugar Alley laboratories of Ohio State's chemistry department, presented a paper, "Carbohydrate Chemistry in the Tobacco Industry." He is owner and principal, Chemistry & Toxicology, at Lauterbach & Associates (lauterbachandassociates.com).

Dave Heebner '67 was elected executive vice president and group executive of General Dynamics Land Systems' Marine Systems Group. He previously served as president of Land Systems.

Harry Taylor '67 is a management consultant with Manchester Consulting Group. His article, "A New Approach to Blind Riveting," appeared in *Appliance* magazine.

WPI Trustee **Michael DiPierro '68** was named president of the Fallon Clinic Foundation board of trustees.

1970s

Domenic "Road Hog" Forcella '70 writes that classmate **Greg Barnhart** stopped by on his way to Harley Davidson's 105th anniversary party in August. Dom took a six-month sabbatical from his administrative position at Central Connecticut State University and is currently working on sustainability. "I watch the blues scene in Connecticut and travel to

In the Public Eye

Columnists **Al Papanou '57 (The Foxboro Reporter)** and **Solon Economou '58 (Cape Cod Today)** exhorted voters to "Vote Early, Vote Often" and "Vote NO on Question YES!" in their pre-election humor features ... UFO expert **Bruce Maccabee '64** appeared on **Dateline NBC** in a segment called "10 Close Encounters Caught on Tape" ... Interim Superintendent **Deirdre Loughlin '68 (MNS)** made history as the first woman to lead Worcester's School

District. A successor has been selected and will take up the post in July ... **Dean Kamen '73** put his vapor compression distiller to the test on **The Colbert Report**, showing a skeptical Stephen Colbert how the device could produce pure drinking water from puddles, oceans, or even (as Colbert joked) "a 50-gallon drum of urine." A profile of Kamen as "Lord Dumping" appeared in the December issue of **Esquire** ... the **U.S. Senate Subcommittee on Finance** heard testimony from **Alden Bianchi '74** last fall, as part of a hearing on health care reform. Bianchi, an attorney specializing in employee benefits and executive compensation, presented an overview and comparative analysis of single-payer and market-based health insurance mechanisms ... Certified Fire Investigator **Dave Demers '74** discussed his role in high-profile investigations, including the MGM Las Vegas hotel fire, and The Station nightclub fire, in the **Telegram & Gazette's** "On the Job" profile ... **Mike Kirscher '82** was prominently featured in a recent book, **Exposed: The Toxic Chemistry of Everyday Products and What's at Stake for American Power**, as well as numerous articles on the environmental toll of America's electronics manufacturing industry. He is president and co-founder of Design Chain Associates ... **Carol Taubl '84**, her husband, John, and their seven children appeared on **America's Got Talent**, earning them comparisons to the singing von Trapp family ... **Marc Zimmer '88** (PhD), a Connecticut College professor, responded to numerous reporters' inquiries after the 2008 Nobel Prize for Chemistry went to a team of scientists studying bioluminescence, his specialty. Zimmer explained the importance of their discovery in an op-ed piece in the **Los Angeles Times**, and was quoted in many major publications, including **Science** and **Wired** ... Starbucks's senior vice president **Michelle Gass '90** was profiled in **The Wall Street Journal** ... **John Baird '04** gave the introductory speech for Congressman Ron Paul during a 2008 presidential primary campaign visit to the University of Pittsburg. **Pitt News** covered Baird's role in arranging the event.

Memphis a couple of times a year," he writes. He can be reached at twblus@aol.com.

Jack Keenan '70 is the new CEO of Pacific Gas and Electric Co. He was previously senior vice president of generation and chief nuclear officer.

Toh-Ming Lu '71 (MS) was elected a fellow of the American Association for the Advancement of Science. He is the R. P. Baker Professor of Physics at RPI.

Kudos to Cutler Associates president **Fred-eric Mulligan '71**, who received the Meritorious Service Award from the Design-Build Institute of America (DBIA).

Herbert Nock '71 joined Ocean Power Technologies as vice president, business development and marketing.

Donald Peterson '71, chair of the WPI Board of Trustees, was elected a co-chair of the Committee for Economic Development's business-led policy group.

Justice **Paul Fritzsche '72** was re-nominated to the Maine Supreme Court, where he has served for 21 years.

Howard Levine '72 joined Synova USA Inc. as eastern region sales manager. He lives in Stamford, Conn.



ALDEN
SOCIETY

Have Fun With Your Legacy

WPI can show you how to create a special legacy gift and have financial freedom to support your grandchildren for many years to come.

A Charitable Lead Trust provides an annual gift for WPI, tax relief for you and your estate, and a special trust for your heirs for as many years as you wish. This could fund a WPI campaign gift, contribute to (or pay for) your grandchildren's college education, and give you an up-front tax deduction.

For more information, call 888-974-4438 (toll-free) or email planned-giving@wpi.edu.

John Modzelewski '72 is office manager for the Hernando, Miss., office of Smith Seckman Reid Inc.

Philip Piqueira '72 is chief engineer, standards integration, at GE Industrial Systems.

Ray Roberge '72 is corporate vice president and CTP of Praxair Inc.

Rev. **Bill Ault '73** and **Holly Keyes Ault '74** took the First Church of Templeton (Mass.) Youth Group to Orlando, Maine, where they spent a week volunteering for HOME Inc., helping with repairs and construction.

Thomas "Fergie" Ferguson '73 writes, "I retired in 2006, after 25 years at Eli Lilly and Company. I'm now doing a little consulting, starting a vineyard, and enjoying my family and grandchildren."

Roger Lavallee '73 recently joined Merrill Lynch in Hartford, Conn., as a financial advisor. He previously worked for Aetna Financial Services, ING, and Phoenix Investment Partners.

Alden Bianchi '74 was listed in the 2008 edition of *Chambers USA: America's Leading Lawyers for Business*. He was ranked in Tier 1 of the Employee Benefits and Executive Compensation category for Massachusetts.

Jim Bowen '74 recently retired from Pratt & Whitney after 27 years.

Timothy Murray '74 was elected chairman and CEO of OFS, a designer and manufacturer of optical fiber products.

Michael Dolan '75 was appointed senior vice president of ExxonMobil Corp. in April 2008.

Jerry Forstater '75 is founder of Professional Systems Engineering in Lansdale, Pa. A frequent speaker on security issues, he recently traveled to Israel on a Homeland Security and Counter-Terrorism Observation Mission.

David Fowler '75 was appointed senior vice president, marketing and product development, at VidSys in Vienna, Va.

James Lane '75 is CEO of Novelty Hill Software Inc., an embedded firmware company in the Redmond, Wash., area. He also serves as software architect at the Technical Committee formed as a part of the settlement reached in the Microsoft anti-trust case.

David Eves '76 was named director of technical operations at DuBois & King in Randolph, Vt.

X Café LCC, the company of **Paul Kalenian '76**, was a finalist in the New England Innovations Award competition sponsored by the Smaller Business Association of New England (SBANE).

Fran McConville '76 continues as a senior consultant for Impact Technologies in Lincoln, Mass. A section of his book, *The Pilot Plant Real Book*, was excerpted in *Chemical Engineering Progress*.

After a career in hardware design and applications engineering, **Art Stryer '76** writes from Milpitas, Calif., where he is taking some IT classes at Stanford and Foothill College. "I developed some great electronics (U.S. patent on PhaseLocked Loops, 1983, Sole Inventor)," he writes, "but it's time for a change. I'd like to develop websites and ultimately have my own online business site(s)." Art invites classmates to contact him at artmikki@sbcglobal.net.

Steven Fine '77 was promoted to senior scientist at Laticrete International.

Jeff Harrington '77 contributed a chapter called "Applications of Gaseous Agents to Special Hazards Fire Protection" to the 20th edition of the *NFPA Fire Protection Handbook*. He was also a keynote speaker at SUPDET, the Suppression and Detection Research and Applications Technical Working Conference in Orlando, Fla.

Joseph Kilar '77 is CEO of Emaar, The Economic City, the development company for King Abdullah Economic City in Saudi Arabia.



Dean Giacopassi '78 completed a religious pilgrimage, walking the French way of the Camino de Santiago from St. Jean Pied de Port in France to Santiago de Compostela in Spain. "Five weeks was barely enough time," he writes. "Altogether it was quite an experience, touching me physically, mentally, emotionally, and spiritually."

Houghton Lewis '78 was appointed vice president and treasurer of Lorillard Tobacco Co.

Pete Gould '79 was recently promoted to vice president of engineering and chief engineer at Raytheon Space and Airborne Systems. He was previously deputy VP of engineering. Pete lives with his wife, Mary, and younger daughter, Mel, in Redondo Beach, Calif.

1980

Mark Lefebvre is marketing director for the Rational Systems business within IBM Software Group. He writes, "Vivian (Martin) and I have been happily married for nearly 25 years, and we have two great children, Joey (14) and Selena (12), adopted from Korea. We still reside in Hampton, N.H. I would love to hear from my WPI friends."

Mario Marcaccio is a senior vice president at CDM. He joined as a project engineer after graduation and transitioned to the legal team in 1987, serving as lead counsel for company acquisitions, claims, and contracts.

1981

Ernie Cormier writes, "Jan and I have just moved back to the U.S. from England, where we lived for two years while I was working at Virgin Media as chief commercial officer and managing director, group strategy and corporate development. I'd love to hear from any long-lost (or not!) friends from those great days at WPI!"

Edward Gonsalves holds the post of senior vice president, product development, at Wavetrend Technologies Ltd.

Lee Laviolette joined Arthur D. Little as managing partner, operating strategy and transformation, in the firm's global energy practice.

1982

Steven Brown lives in Lyndeborough, N.H., where he has been active on the board of selectmen. He and his wife, Maria, have a daughter.



Andres Molina joined Vanderweil Engineers in Boston as manager of substation engineering within the Transmission & Distribution Specialty Group.

John Willoughby is director of marketing at Carbon Design Systems.

1983

Karen Casella was promoted to vice president of engineering at Shop.com, where she has been employed since 2005. Her responsibilities include search engine development, site operations, database administration, and information technology.

Bookshelf

Recent and new publications by WPI alumni, faculty, staff

Skin Deep

by Gary Braver (Gary Goshgarian '64) Forge Books



A psychopath is preying on the most beautiful women in Boston—and homicide detective Steve Markarian secretly suspects that he might be the killer. Haunted by personal failures, and longing for his ex-wife, he suddenly discovers that she could be the next victim. Following on the success of his previous thrillers, Goshgarian now delves into the darker side of plastic surgery and the quest for physical perfection. "A nerve-jangling thriller that combines the horror of *The Silence of the Lambs* with the medical terror of Robin Cook," says bestselling author James Rollins.

From Concept to Consumer: How to Turn Ideas into Money

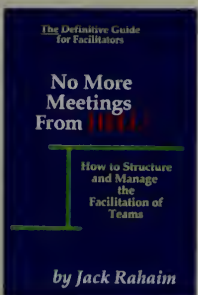
by Phil Baker '65 Financial Times Press



Phil Baker's resumé includes more than 30 patents and flagship products for Apple, Seiko, Polaroid, and others. Now he has written a practical guide through the product development process showing what it takes to deliver one winning product after another, from planning and manufacturing, to market release and distribution. He is a co-founder of Think Outside and the creator of the Stowaway portable keyboard.

No More Meetings from Hell: How to Structure and Manage the Facilitation of Teams

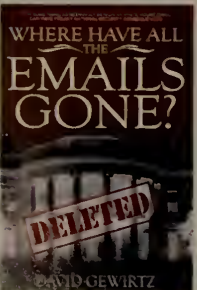
by Jack Rahaim '66 CreateSpace



After 20 years of facilitating groups in a variety of industries, management consultant Jack Rahaim knows how easily business meetings can degenerate into touchy-feely, content-free discussions that "go on for hours with the apparent objective of seeing who can dominate the conversation, suck most of the air out of the room, and look good to the boss doing it." His book defines the role of the facilitation and offers tools for engaging participants, structuring actions, and avoiding common problems. Rahaim holds an MBA from the University of New Haven. His clients include major hospitals, universities, nonprofits, and high-tech businesses in the United States and Japan.

Where Have All the Emails Gone?

by David Gewirtz '82 ZATZ Publishing



Email operations at the White House need fixing, says David Gewirtz, a former computer science professor and author of more than 600 articles on electronic communications. "It's not about politics. It's about national security." His concerns include unsecured communications and improper data management in the executive office. He offers historical perspective dating back to the Reagan administration, potential nightmare scenarios, and recommendations on everything from archiving to hand-held devices. Gewirtz is publisher and editor-in-chief of ZATZ Publishing, an independent publisher of digital magazines.



Mark Hasso (PhD), a former BSCES president, received the organization's Citizen Engineer Award at its 2008 annual meeting in June. He was also honored by Wentworth Institute of Technology with the President's Distinguished Service Award and the Alumni Association Distinguished Service Award. He currently serves as a professor and coordinator of Wentworth's Construction Management program.

Joe Morgan was appointed executive vice president and COO of Standard Register in Dayton, Ohio.

1984

Joseph Parisi is the new public works chief for Rockport, Mass.



Ron Rappel is principal embedded firmware engineer with Vicor Corp. He lives and works in Andover, Mass.

Josh Reed writes, "After 20+ years in the photo retail and imaging business, I have left Ritz Camera and The Camera Shop Inc. to join the management team of Lowe's Home Improvement Centers. It's a welcome change, and I am using many of the skills developed at WPI."

Christopher Scholl, director of health, safety, and environmental affairs for Saint-Gobain High Performance Materials in Worcester, was elected to serve on the Associated Industries of Massachusetts board of directors.

Zhi Tan (MS CS, PhD '87) was appointed CEO of Focus Media in Shanghai.

1985

Chris Cavigioli was recruited by Intel Corp. as a strategic planner in the Ultra Mobility Group, developing the Atom™ processors for mobile Internet devices (MIDs). "Our son is now 2 years old and keeping us very busy and happily entertained," he writes.



Edward Cheung sends regards from the Hubble control room, where he monitors

servicing missions. See edcheung.com for his interview in the 2008 NASA video "Extending Hubble Vision."

Bookshelf

Paul Chodak was named president and COO of Southwestern Electric Power Co., based in Shreveport, La.

Jay Cormier joined Sierra Monolithics in Redondo Beach, Calif., as VP of Optical Networking Products.

Jeffrey Horowitz was named 2007 Lincoln Financial Group Planner of the Year by Lincoln Financial Advisors in San Francisco.

1986

Bob Soares, Mike Gonsor, Rochelle (Boule) Heline, and Stefan Heline enjoyed a few days of sun and fun with their families, on a camping trip to North Truro in August. They posed while waiting for the bus to the P-Town carnival parade.



Carol (Fik) Davis (MS) is an occupational medicine physician at Brookhaven (N.Y.) National Laboratory, working on wellness issues, travel medicine, ergonomics, and fitness-for-duty exams. "I am married to an attorney and we have a son, 5, and a 1-year-old daughter. They keep us busy and very happy, but we're not up to traveling much just yet. I do miss New England and would love to hear from classmates."

Craig Gosselin joined Solutions Group in Warren, N.J.

Merc (Mirkazemi) Ward is back in Southern California, working for Spin Master Toys as director of girls' products. "My son Kyle attended a summer program at WPI and now wants to be a robotics engineer," she writes. "I would be so proud to have him attend WPI. My daughter Arianna attended summer camp in Maine where I used to be a camp counselor. Lastly, through the WPI alumni website, I was able to reconnect with my little sister from PSS, Vonnie."

1987

Jeffrey Bloom is co-author of a text on the fundamentals of image-, video-, and audio processing. The second edition was recently published under the title *Digital Watermarking and Steganography*.

Cut Your Energy Bills Now: 150 Smart Ways to Save Money and Make Your Home More Comfortable and Green

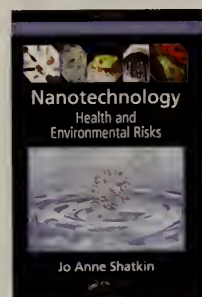
by Bruce Harley '85 Taunton Press



For those thinking about converting to solar power—or simply weather stripping some leaky windows—Harley's book provides detailed instructions for do-it-yourself projects, as well as guidance on hiring contractors for complex jobs. Drawing on wisdom from his 18 years in helping others improve the energy efficiency of their homes, he aims to guide homeowners and renters toward steps that will realize maximum value. He currently serves as technical director of Conservations Services Group and is the author of *Insulate and Weatherize* (2002).

Nanotechnology: Health and Environmental Risks

by Jo Anne Shatkin '85 CRC Press



In her contribution to the "Perspectives in Nanotechnology" series, Jo Anne Shatkin outlines current health and environmental issues of nanotechnology and introduces risk analysis as a means of making responsible decisions about product development. Current and proposed practices are explored, as well as international efforts to establish policies for a sustainable future. Shatkin held a book signing at the WPI bookstore on Nov. 6. She is managing director of CLF Ventures, a nonprofit affiliate of the Conservation Law Foundation.

John Grow married Yasuko Mitsuoka on Nov. 2, 2007. They live in Sandy, Utah.

Lynn (Burlingame) O'Marra was promoted to tax principal at LGC&D in Providence, R.I.



Suzanne (Lewis) Pisano is an associate at Tighe & Bond. She was elected to the board of directors of the American Council of Engineering Companies (ACEC) of Massachusetts.

1988

Ronald Horton of Gettysburg, Pa., is a project manager for Arro.

Dave Picarillo was promoted to senior vice president at Topco Associates, where he heads up TopSource, the company's not-for-resale program for the food industry.

Rob Provost founded Grand Slam Fly-fishing Destinations, specializing in hosted fly fishing trips to destinations around the world. Visit grandslamflyfishing.com or call him at 808-224-2035 to learn more or to book your next trip.

William Riccio was named director of public services for Newport, R.I., to head a newly created department spun off from the town's public works department.

ECI Biotech, headed by **Mitch Sanders**, was awarded a phase II NIH grant to commercialize ExpressDetect®, a bioburden diagnostic that enables doctors to detect and treat wound infections without waiting several days for culture results.

Angela (Iatrou) Simon (Perini Corp.) and **Caleb Warner** (Raytheon) returned to campus in March 2008 for a Roundtable Discussion with Engineers, as part of Women's History Month.

1989

Dan Bruso specializes in intellectual property law, commercial transactions, and litigation at Cantor Colburn LLP in Hartford, Conn. He and his wife live in Somers with their three children, Claire, Audrey, and Charlie. "In my spare time, I enjoy technical scuba diving. I concentrate on shipwreck exploration in the 150- to 250-foot range, using a Prism Topaz rebreather," he writes.

Steven Delfino's toy store, The Construction Site, has closed shop in Waltham, Mass. Steve and his co-founder hope to launch an online operation and to open another physical store in the future.

Jeff Goldmeier is fuel flexibility leader for GE's F-class heavy-duty gas turbines. His article, "Heavy-duty gas turbines' fuel pick'n'mix" was published in the May 2008 issue of *Power Engineering International*.

Margaret Lynch is a success coach and author of motivational books and audio products. Her Internet radio talk show airs weekly on the Internet-based Voice America Network (voiceamerica.com).

Lt. Col. **Andre Mercier** has been a Marine Corps navigator for 18 years, with tours of duty that included Afghanistan and Bosnia. He is currently working in Crystal City, Va., on a multi-service project to build the Joint Strike Fighter for the Marines, Navy, and Air Force.

1990



Navy Cmdr. **William Bullard** is commander of the USS *Constitution*, a popular tourist destination in Boston Harbor. His previous deployments include Operation Desert

Storm and Operation Continue Hope in Somalia, as well as deployments in Bahrain, Yemen, and Iraq.

Bob Morales joined Orbital Sciences Corporation in June 2008 as senior principal lead for RF & electrical engineering. He is involved in management, design, integration, test, field deployment, and operation of satellite ground stations and spacecraft.

1991

Gerry Burns was appointed president and CEO of Data2Logistics (data2logistics.com), with headquarters in Fort Myers, Fla., and offices in Salt Lake City and the Netherlands. Data2Logistics provides freight bill audit, processing, payment, and logistics information management services to Fortune 1000 companies across the globe.

Sue (Chilvers) Jones is senior group manager of business engineering at JPMorgan-Chase in Wilmington, Del. She and her

husband, Keith, are thrilled to announce the birth of their first child, a son, Parker Hudson, on Jan. 11, 2008.

Roy Nash was selected for rear admiral (lower half) by the U.S. Coast Guard. He was previously responsible for fire protection requirements on U.S. flagged merchant ships and presently works for the 13th Coast Guard district command staff in Seattle.

Loan Ngô received her MS in manufacturing operations from Kettering University in June. She and her husband, Dana Jones, are proud to announce the birth of a healthy boy, Brandon, born July 24, 2008.

Pamela Peterson was elected a shareholder of the Devine Millimet law firm. She is a cum laude graduate of Vermont Law School.

Manish Singh (MS) is president and CEO of ImmunoCellular Therapeutics Ltd.

1992

Dave Andrade recently received his MS in education from Walden University. His specialty was integrating technology into the curriculum, which he puts into practice as a physics teacher at Central High School in Bridgeport, Conn., incorporating resources from NASA and nearby Sikorsky Aircraft. Dave also works with the JHPC Paramedic Program and Stratford EMS. His wife, Cori, a fellow EMT, is studying to become a high school biology teacher.

Magued Barsoum is chief technical officer of Fortress Technologies in Westford, Mass.

Jim Lavallee joined Onaro Inc. of Boston as director of customer service.

Patrick Tompkins and **Lyle Coghlin** are founders of CTA Construction Co., a Boston-area construction management firm.

1994

Cory Belden married Laura Marshall on Oct. 7, 2007. They live in San Pablo, Calif.

Alan DiFonzo (MMS) received the Outstanding Teacher of the Year award from the Senator Louis P. Bertonazzi Foundation. He teaches at Milford (Mass.) High School.

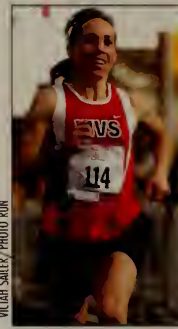
Stephen Foskett was awarded a Microsoft Most Valuable Professional award for File System Storage. He is director of the data consulting practice at Contoural Inc. in Mountain View, Calif.

Becca (Mason) Yang and her husband, Roger, became the proud parents of Zoey Yi-Tian, born Feb. 23, 2008 in Los Angeles.

1995

Michael Briggs completed his PhD in physics this spring at the University of New Hampshire. His 700-page dissertation was a fundamental analysis of means of producing and storing energy, focusing on nuclear fusion.

1996



Caroline (Kondoleon) Bjune qualified for the 2008 Women's Olympic Marathon Trials. She placed 35th, with a time of 2:42:02. Her No. 4 finish in the Philadelphia Marathon (2:45:31) qualified her for the trials. She was *New England Runner's* 2007

Female Open Runner of the Year. She lives in Andover, Mass., with her husband, Lars.

Scott Duffey is captain of the Rockland, Mass., fire department. He also works part time as an engineer.

Victor Hart, and his wife, Michele, are pleased to announce the birth of their second son, Henry Michael, born Aug. 18, 2007. He joins big brother, Owen.

Amy (Plack) and Gregg Marr '95 joyfully welcomed their second child, Caitlin Emily, on Sept. 22, 2007. First daughter Ainsley is enjoying big sisterhood immensely. Amy has been employed as an information architect at Cramer in Norwood, Mass., since 2007.

Erica Curran Mason had an exhibition at Gordon Library, featuring ink drawings of patterns derived from plant cellular structures. Her artwork has won several awards, including the "Works on Paper" award from the Northeast Prize Show at the Cambridge Art Association. She lives in Lincoln, Mass.

Eric Maynard (MSME) is a senior consultant at Jenike & Johanson in Tyngsborough, Mass.

1997

Marc Burke married Margaret Foley on Sept. 8, 2007. They live in Milton, Mass. Marc is a product marketing specialist at BOC Edwards.

Katherine (Drainville) and Benjamin Higgins announce the birth of their first son, Alexander Benjamin, on June 18, 2008.

THE DOLAN CHALLENGE

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TODAY

Trustee **Mike Dolan '75** is challenging WPI alumni from the **last 20 years** (1989–2008) to support WPI's innovative approach to science and engineering education. **He will match (50 cents on the dollar) gifts to the Annual Fund of at least \$100, now through June 30, 2009.**

When you give to the WPI Annual Fund, you demonstrate your belief in your alma mater and its noble mission—to educate the next generation of leaders in science and engineering and to create positive change in the world through the purposeful application of engineering, science, and technology.

Your participation in the Annual Fund helps make WPI a world-class experience for students and faculty.

Take advantage of the Dolan Challenge today: wpi.imodules.com/dolan

1998



Slade Brockett was promoted to lieutenant commander in the U.S. Navy. He spent two

weeks on the USS *Ronald Reagan* this spring. A reservist, he works as a project engineer for BP in his civilian life. He and his wife, Mary, have three children.

Greg Cuetara and his wife, Bethany, married in 2004 and welcomed their son, Benjamin Lee, into the world on Nov. 3, 2007. Greg works for Industry and Energy Associates in Portland, Maine. He recently passed the Civil, Structural, and Structural II PE exams.

Stephen Davis owns the Arena Café bar and grill in Woonsocket, R.I. "It's a small neighborhood bar with great food and fun bartenders. We always have something going on," he writes.

Molly (McCabe) and **Brian Gagnon '97** welcomed Samuel Francis on July 7, 2008.

Leanne (Stackpole) and **Craig Hansen** are proud to announce the birth of their son, Avery Robert, on Oct. 27, 2008.

Jeannine (Block) and **James Lovering** had a daughter, Bethany Grace, on Jan. 20, 2008. Mom, Dad, and big sister Amelia are enjoying the new addition.

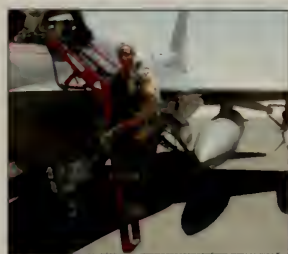
1999

Tara Jo Devarakonda married Mark Gibbs last year. They live in El Paso, Texas, where Tara is working toward a teaching certificate.

Mohan Jayaraman became a U.S. citizen in May, along with more than 500 others, in one of the largest naturalization ceremonies ever held in the state of New Hampshire. He and his wife and two children live in Nashua.

Wayne Lilyestrom is a postdoctoral fellow at Colorado State University. His research, funded by the American Cancer Society, could improve the potency and specificity of future chemotherapies. He was a guest speaker at the Relay for Life in Carbondale.

Laura (Paré) and **Chris Milici** of Wrentham, Mass., are excited to announce the birth of their daughter, Molly Grace, (grandchild of **Mark Paré '75**) on Jan. 26, 2008. Mom, Dad, and little Miss Molly are doing great!



Capt. Matt Poisson was selected for the USAF Test Pilot School at Edwards AFB. After the yearlong

program, he hopes to get involved in the F-35 Joint Strike Fighter program. He and his wife, Jenny, have two children—Alexis, 2, and Christopher, who turned 1 in June 2008.

Brendan Smith received his MBA from Harvard Business School in June. He is a strategy consultant with the Boston Consulting Group in the firm's downtown Boston office.

3 Under Forty

Three WPI alumni made *Consulting-Specifying Engineer's* 40 Under Forty list this year: **Jeffrey Tubbs '90**, associate principal, Arup; **Doug Nadeau '94**, co-founder and principal, New England Engineering; and **Andrew Purtell '05**, application engineer, Kidde-Fenwal.

Jeffrey Solari was promoted to manager of product development at Incom Inc. in Charlton, Mass.

2000

Glenn Barnett is principal consultant for Molecular Inc. in Watertown, Mass. He married Dianna Shepard last year.

Kristin Connarn switched law firms to help start up the biotech/chemistry patent practice at McDermott Will & Emery in Boston.



Tina (Casamassina) Dannaker (MS '01) joined Harrington Group (founded by **Jeff Harrington '77**) as a senior fire protection engineer in the firm's Charlotte office.

Ben Nawrath married Kim McCabe on Oct. 6, 2007, near their home in New York.

Brandon Ngo received his MBA from the Ross School of Business at the University of Michigan, Ann Arbor, in April 2008. He now works for Lehman Brothers in New York City as an associate.

Check out wpi.edu/News/Perspectives/rockpaperscissors.html to see **Sean Sears**, national champion of the 2008 Rock Paper Scissors League competition in Las Vegas, sponsored by Bud Light.





Megan Parsons '01 and **Andrew Cook '00** were married Oct. 13, 2007, among many WPI alumni. The couple lives in Amesbury, Mass.

Jocelyn Songer (MS BE) was awarded a postdoctoral fellowship from the National Space Biomedical Research Institute to explore inner-ear function in outer space. Her research involves using sound to assess balance problems encountered by astronauts on long-duration space flights.

Steve Vallee holds the post of research engineer III at Powerspan in New Durham, N.H.



Jay Viamari (MS) earned certification as a LEED (Leadership in Energy and Environmental Design) accredited professional. He was recently promoted to associate at Tighe &

Bond in Westfield, Mass.

2001

Kevin Beverage married Kate Wrigley on Sept. 22, 2008. They are both working on graduate degrees at WPI.

John Hammond serves as help desk manager for Wesleyan University. He was profiled by the *Wesleyan Connection* recently.

Mike Mahan of Leominster, Mass., received his MBA from Carroll Graduate School of Management at Boston College. Before becoming a full-time student, he was a consultant at Accenture.

Army Reserve Maj. **Richard McGowan** has been deployed in support of Operation Iraqi Freedom. He is a civil affairs specialist previously serving in Warwick, R.I.



Michael Quigley was promoted to principal at WB Engineers/Consultants in Boston.

Tracy (Patturelli) and Antonio Troncoso welcomed their first child, Mia Lynn, on May 22, 2008. The family is currently residing in Chelmsford, Mass.

Vikki Tsefrikas was profiled in a *Science* magazine supplement focusing on career options. The article was called "Industrial Postdocs: The Road Less Traveled." After completing a PhD in organic chemistry at BU, she embarked on a two-year program at Astra Zeneca.

Edward Vandedrinck writes, "I was finally married, on Aug. 15, 2008, to Agnieszka Sulich, in Warsaw, Poland."

Jen Waite married Jamie Blair on Oct. 11, 2008, at Cathedral of the Pines in Rindge, N.H. They live in their new house on Wilbur Street in Worcester.

2002

Anthony Berry, Air National Guard Airman 1st Class, graduated from basic military training at Lackland Air Force Base in San Antonio, Texas.

Marc Bullio joined Tishman Construction Corporation of Massachusetts as a project engineer.

Craig Daniels graduated from Northeastern University with an MSEE in 2008. A lead systems engineer for GE Transportation, he lives in Weymouth, Mass., with his fiancée, Lindsay.

Timothy Fisher married Amber Bifolck on June 7, 2008. He is a student at UC Hastings College of Law.

Matt Killebrew is a senior project manager in the Denver office of Hughes Associates.

2003

Mark Arsenault married Carina Wohl on Sept. 2, 2007. They live in Philadelphia.

John Berube is a web developer at Little Green Cube in Chicago. He married Shanna Cross in October 2007.

David Campbell and Kathryn Lambert were married Sept. 15, 2007. He works for AFC Cable Systems, and she is employed by McLaughlin Research Corp. They live in Bristol, R.I.

Samuel Gutmann married Jennifer Oppenheimer on Nov. 24, 2007.

Keith Hammerschlag works at Technic Inc. He and his wife, Nicole, live in Pawtucket, R.I.



Jaclyn Maiorano works for Tighe & Bond in Westfield, Mass. She recently earned certification as a LEED (Leadership in Energy and Environmental Design) accredited professional.



Geoffrey San Antonio was awarded his PhD in electrical and systems engineering from Washington University in May 2008. His doctoral thesis was on Waveform Design

for Multiple-Input Multiple-Output Radar Systems. Currently he is a research engineer at the Naval Research Laboratory in Washington, D.C. He is the son of Pamela and **Richard San Antonio '71**.

Marcela Skorik joined Mead & Hunt Inc.'s Minneapolis water resources team.

Benjamin Thompson married Stephanie Seniecle in September 2007. He is an application developer at Aetna.

Brian Thompson (MS FPE) presented an educational seminar called "Performance-Based Smoke Control Design" at the 2008 World Safety Conference & Exposition. He is a principal at Aegis Engineering.

Devin Wolfe married Sarah Pilato on Jan. 27, 2007. The couple resides in Rochester N.Y., where Devin is currently pursuing his PhD in biochemistry at the University of Rochester.

2004

Tim Baird holds the post of project engineer III at NyPro. He is still active with FIRST as a mentor for the Gael Force robotics team at Clinton High School.

Love TV? Check out **Bob Degon's** new television commentary site, cliqueclack.com/tv.

Christopher Lacasse works for Raytheon. He and his wife, Jennifer, live in Taunton, Mass.

Kerry Malone and Michael Grant became engaged in April 2008, while vacationing in Florida. An April 2009 wedding is planned, with **Erin Daly** and **Merry Furhman** as bridesmaids, and **Rob Malone '02** as a groomsman. The couple recently purchased a home in Northbridge, Mass.

Tim McGreal's "AlarmArm" was featured in the Chicago *South Town Star*. He appears in a marketing video for his invention at alarmarm.com.

Melinda Palma spent two years with the Peace Corps teaching chemistry and math in Ghana, where she received a national award for volunteer teaching by a foreigner. In February 2008 she lunched with George Bush, Condoleezza Rice, and other dignitaries who were visiting Africa to discuss malaria prevention.

Tiffany Tam and **John Bubriski '06** were married on July 19, 2008, in Stockbridge, Mass.

2005

Sgt. **Jason Cox** received a U.S. Navy and Marine Corps Achievement Medal for his work on countering improvised explosive devices (IEDs). While serving on active combat duty in Iraq, he designed a device that validated the use of infrared spectroscopy to detect the triggering systems of these roadside bombs. His data enabled the Marine Corps to purchase life-saving technology of a similar design. Cox's honor was reported by the *Boston Globe*, *Worcester Telegram & Gazette* and *Worcester Business Journal* and by WPI on its homepage (go to wpi.edu/News/Releases/20089/jasoncox.html).

WPI Yalies A cluster of recent chemistry/biochem alumni have gone on to graduate school at Yale: **Eugene Douglass '07**, **Lori Ferris '07**, **Jill Goldstein '08**, and **Oana Luca '08**.

Correction: Our Spring 2008 photos of **Jared Birmingham '02** and **Nick Williams '02** bungee jumping from Moccasin Tower showed Nick on the platform with a jump company employee (who was misidentified as Jared) standing behind him. Here's a look at Jared's jump. ▶



On July 12, 2008, **Josh Raines** married Keala Blanton on Bailey Island in Maine. Keala is on her way to being a Spanish

teacher, and Josh is working at an engineering firm in Newburyport, Mass. They live in Old Orchard Beach, Maine.

2006

Eric Couture (MSME) is a mechanical engineer at Insight Technology. He married Erika Messinger in 2007.

Paul Ragaglia married Jamie Ferreira on Dec. 7, 2007. He works for Pratt & Whitney in Grand Prairie, Texas.

2007

Gary Comtois (BSME) works for AstraMed in West Warwick, R.I. He married Diana Truesdale on July 28, 2007.

Amanda McCullough and **Andrew Bisol** became engaged on July 21, 2008. Andrew is working as a structural engineer in Blue Bell, Pa., and Amanda is in her second year of veterinary school at the University of Pennsylvania.

Michael McKinstry joined Beswick Engineering's application engineering department.

Suzanne Peyser's 2008 civil engineering master's thesis, "Feasibility of Green Building at WPI," received an honorable mention from the Association for the Advancement of Sustainability in Higher Education for its Student Research on Campus Sustainability Awards program.

Cale Putnam is active with Paraclete Academy's Society of Paraclete Engineers robotics program.



2008



Daemian Foster joined the Worcester office of Tighe & Bond as an engineer.



Chuck Gammal won the Eta Kappa Nu Alton B. Zerby and Carl T. Koener Outstanding Electrical or Computer Engineering Student Award for the 2007-08 academic year.

He will receive the award during the annual banquet of the ECE Department Heads Association at the HKN annual meeting in March 2009.

Navy Ensign **Jacob Russell** married Jennifer Lindsay on May 18, 2008. They live in San Diego.

Sanouri Ursprung published "The Latency to the Onset of Nicotine Withdrawal: A Test of the Sensitization-Homeostasis Theory" in *Addictive Behaviors*, based on her IQP research.



Virginia Ward was awarded a Fulbright Scholarship to teach English in Taiwan during the 2008-09 academic year. She also hopes to study the Chinese language and

enhance mutual understanding between the United States and Taiwan. She is the first WPI student to be named a Fulbright Scholar.

Obituaries

WPI has learned of the death of **Willard A. Gallotte '24** in 2005. He and his wife, Glenola, had two children. He worked for Puget Sound Power & Light Co.

Chester A. Deane '27 of Pisqua, Ohio, died Oct. 1, 2006. Predeceased by his wife, Priscilla (Averell), he leaves five children. He was retired from Westinghouse Electric Co.

WPI has learned of the death of **Roscoe H. Bowers '30** (Lambda Chi Alpha) in 2003. He worked for Weyerhaeuser Corp. He and his wife, Ruth, had one son, who predeceased him.

John W. Conley '30 (Sigma Alpha Epsilon) died Aug. 30, 2007. He was predeceased by his wife, Helen. He lived in San Diego and was retired from J. Walter Thompson Co.

WPI has learned of the death of **Leland H. Fisler '30** in 2003. He was retired from Sargent & Co. Predeceased by his wife, Frances (Hawkes), he leaves two children.

WPI has learned of the death of **Wilson H. Rice '30** (Phi Sigma Kappa) in 2004. A retired manufacturing engineer for Hamilton Sunstrand, he leaves his wife, Marie, and two children.

William E. Ashe '32 (Phi Kappa Theta), a longtime Worcester resident, died Jan. 23, 2008. Predeceased by his wife, Anna (Knox), he leaves a son. He was retired from the former Rice Barton Corp. as a mechanical engineer.



Earle E. Green '32 (Lambda Chi Alpha) of Inverness, Fla., died April 11, 2008. He was retired from Liberty Mutual Insurance Co. as an underwriter and executive officer. Predeceased by his wife, Elsie, he leaves a son, a stepson, and two daughters.

Rocco N. LaPenta '32 of Southington, Conn., died April 27, 2008. He leaves his wife, Josephine, and three children. He was retired from a career in the construction industry.

WPI recently learned of the death of **Joseph H. Fogg '33** (Phi Gamma Delta, Skull) in 1999. He lived in Jacksonville, Fla., and was retired from the Department of the Navy. His wife, Shirley, survives him.

Kenneth E. Gleason Sr. '33 (Phi Sigma Kappa) died Nov. 6, 2007, at his home in Newton, Mass. He leaves his wife, Mary Louise (Hall), and three children. Gleason

spent most of his career at Gillette Co., where he rose to superintendent of quality control.



John C. Powers '33 of Bolton, Mass., died Nov. 27, 2007. He is survived by his wife, Lillian (Cate), and a daughter. A structural engineer, he designed numerous

Worcester landmarks, including several Catholic churches and the Worcester Center Galleria before his retirement from O. E. Nault Architects.



Eugene J. Teir '33 (Theta Chi) of Gardner, Mass., died Nov. 24, 2006. Predeceased by his wife, Laura, he leaves a daughter. Teir was retired as Gardner's city engineer.

Robert M. Cape '35 of Minneapolis, Minn., died May 24, 2007. He worked for TAMS de Brasil as a civil engineer. He was predeceased by his wife, Mildred, and is survived by three children.

William A. Dempsey '35 (MS EE '36) of Warwick, R.I., died Nov. 29, 2007. He leaves his wife, Eleanor (Fleming), and three daughters. He helped develop RADAR technology during his naval service and later worked as an electrical engineer for Narragansett Electric Co.



J. Russell Hemenway '35 of Worcester died Dec. 10, 2007. His wife, Ann (Gagan) died in 2001. Five children survive him. Hemenway worked for Leland-Gifford Co. for 33 years and later retired from Jamesbury Corp.

Joseph A. Sukaskas '35 (Skull) of Westbury, N.Y., died Aug. 21, 2007. A longtime electrical engineer for the civil and defense industries, he leaves his wife, Bep, and a son.

Robert B. Taylor '35 (Theta Chi) died Dec. 2, 2007. He was the retired president of R. B. Taylor Corp. Survivors include three sons.



Scott K. Goodwin '36 (Theta Chi) of Hartford, Conn., died Nov. 14, 2007. Predeceased by his wife, Barbara (Mason), he leaves two daughters. Goodwin retired from

Industrial Risk Insurers as executive engineer. WPI has learned of the death of **John H. Wyman '36** in 2004. He was retired from the Maine Department of Transportation. His wife, Dee, and four children survive him.



William Price '37 of Phoenix, Ariz., died Feb. 3, 2008. A lifelong entrepreneur and inventor, he held numerous patents on systems used in the manufacturing, packaging, construction, and power industries, as well a variety of consumer devices. He also worked in banking, management, and real estate, ending his career as chairman and founder of Price Investment Fund.

Richard H. Court Sr. '38 (Sigma Alpha Epsilon) of Portsmouth, N.H., died Sept. 26, 2007. He was retired from a career as a sales director for several New England resorts, including the Morey Inn and Country Club, and Wentworth by the Sea. He and his wife, Jenny, performed as a vocal duo throughout the region and on national television and radio. He also leaves two children. His son, Richard Court Jr. '67, has donated a scholarship in his memory.



Louis M. Saltsman '38 (Alpha Epsilon Pi) of Los Angeles died June 30, 2007. He leaves his wife, Florence, and three sons. He was the retired president of California Stay Co.

Warren L. Hardy '39 (Theta Chi) of Prescott, Ariz., died Nov. 11, 2007. Predeceased by his wife, Elizabeth (O'Brien), and a son, he is survived by six children. He was the retired owner of Hardy Home Engineering.

WPI has also received notice of the following deaths:

Allan W. Cahoon '15 in 1997
 Warren L. Ellis '15 in 1988
 Elmer B. Haines '15 in 1982
 Rupert C. Pomeroy '17 in 1982
 Emerson B. Donnell '22 in 1986
 Sidney H. Avery '24 in 1976
 Dana L. Forbes '25 in 1983
 Harold B. Mallett '27 in 1996
 Edgar W. Flinton '28 in 2000
 Martin B. Graham '35 in 1999
 Wendell D. Jewell '35 in 1998
 Ellery C. Merriam '35 in 1995
 Paul E. Siegmund '59 (SIM) in 1993
 George J. Waterfield '65 (SIM) in 1992
 Fred A. King '68 (MNS) in 1990
 Jon C. Freeman '83 (MSEE) in 1996



Gleason W. Jewett '39 (Sigma Phi Epsilon) of Kingsland, Texas, died Jan. 27, 2008. Predeceased by his wife, Margaret (Whitman), he leaves three children. He was retired from Peterson Manufacturing Co.

Leonard B. Landall '39 (Sigma Alpha Epsilon) of Peabody, Mass., died Sept. 27, 2008. Predeceased by his wife, Ruth (Yule), he leaves three children. He was retired from L. B. Landall & Associates.

Keith E. McKeeman '39 (Phi Sigma Kappa) of Tucson, Ariz., died Jan. 8, 2008, leaving his wife, Evelyn, and two sons. He was retired from J. C. Penney Co. as chief industrial engineer.

Robert B. Mirick '39 of Minneapolis died March 28, 2008. He was retired from Sanitary Farm Dairies. He is survived by his wife, Donna, and two sons.



Raymond B. Shlora '40 (Phi Kappa Theta, Skull) of Rye, N.Y., died May 30, 2008. He was the retired president and CEO of H. H. Brown Shoe Co. He leaves his wife, Clare (Heffernan), and four children.

Harry E. Stirling '40 (Theta Chi) died April 25, 2007. Predeceased by his wife, Malema, he leaves two children. He served as a commander in the U.S. Navy Bureau of Ships.

Michael Wales '40 (MS CHE'42) of Kula Maui, Hawaii, died Dec. 30, 2007. He was a researcher for Shell Oil. Survivors include his wife, Ginette, and three children.



Gordon T. Gurney '41 (Alpha Tau Omega) of Holden, Mass., died July 20, 2008. He leaves his wife, Claire, and three daughters. Gurney served as chief engineer and director of engineering at Rockwell Sprinkler and later held similar positions at Crompton and Knowles, Alden Labs, and Feecon Corp.

A talented bass singer who took up music late in life, he performed as a soloist at many churches, sang in local ensembles, and performed at WPI. He also served as treasurer for Tech Old Timers.

William C. Wikstrand '41 (Phi Sigma Theta) of Yarmouth Port, Mass., died March 1, 2008. He leaves his wife, Jean (Milne), and two daughters. He was a researcher for American Cyanamid Co.



Gordon J. Chaffee '42 (Sigma Alpha Epsilon) of Chehalis, Wash., died Jan. 1, 2008. His wife, Dorothy (Dick), died in 2001. Five children survive him. Chaffee

was retired from Weyerhaeuser Co. as senior project engineer.

Merrill W. "Bud" Higgins '42 (Phi Gamma Delta) of Worcester died June 15, 2008. He was the husband of Barbara (Shepard), and the father of Jonathan Higgins '81. He also leaves three other children. Higgins worked for Worcester Pressed Steel, Riley Stoker Corp., and Coes Knife before starting International Ceramic Engineering Co. with two of his sons.



Richard H. Kimball Jr. '42 (Alpha Tau Omega) of Sharon, Mass., died Nov. 22, 2007. He is survived by his wife, Barbara (Watkins). Kimball held bachelor's degrees from

WPI in mechanical engineering and electrical engineering. He worked for Stone & Webster Inc. (now The Shaw Group).



Raymond F. MacKay '42 (MS EE'43) of Scotia Village, N.C., died Dec. 13, 2007. Survivors include his wife, Patricia (Brett) and three sons. MacKay was an instructor at WPI

for several years. He joined the Navy in 1944, earned the rank of lieutenant commander, and remained in the naval reserves until 1964. He wrote numerous patents for the Navy and later retired from Leeds & Northrup (now a subsidiary of SPX Corp.) as group patent manager.



Robert W. Mitchell '42 (Alpha Tau Omega) of Concord, N.H., died July 9, 2008. Predeceased by his wife, Marjorie (Lindhal), he leaves three daughters. He was retired

from the former Sperry Rand Corp.

Adolph A. "Gus" Salminen '42 of Carroll Township, Pa., died March 16, 2008, leaving his wife, Kathleen, and three sons. He was predeceased by a daughter. Salminen began his career with American Steel & Wire, later part of U.S. Steel, and retired in 1983 as a senior systems analyst.

Norman A. Wilson '42 (Alpha Tau Omega) of Concord, Mass., died Jan. 31, 2008. He leaves his wife, Jane (Wilson), and two children from his first marriage, as well as Jane's three children. A 1961 graduate of WPI's School of Industrial Management, he joined Morgan Construction Co. as a research engineer and retired in 1984 as director of research.

Donald C. Alexander '43 (Sigma Alpha Epsilon) of Clark Fork, Idaho, died Dec. 12, 2007. He was retired from DeAngeli Industries. Predeceased by his wife, Margaret, he leaves six children.

Edwin C. Campbell '43 (Phi Sigma Kappa) of Falmouth, Maine, died Nov. 7, 2007. He was preceded in death by his first wife, Dorothy (Stevens), and his second wife, Jean (Warren). Two children survive him. He was retired from Factory Insurance Association, later known as Industrial Risk Insurers.

Friend H. Kierstead Jr. '43 of Cuyahoga Falls, Ohio, died Nov. 24, 2008. His wife, Isabelle (Bird), died in 2001. Two daughters and a son survive him. Kierstead was retired from Loral Defense Systems.



Clifton B. Kinne '43 (Sigma Xi) of Needham, Mass., died Dec. 6, 2007. The former operator of Kinne Electronics Repair, he also worked for Computer Control Co.,

Raytheon, and Honeywell. He is survived by his wife, Dorothy (Leeper), his daughter, Deborah Kinne Lyons '81, and four other children.



Edward H. "Pete" Peterson '43 (Phi Gamma Delta, Skull), of Summit, N.J., died Oct. 17, 2007. He was the retired president of Magnus Chemical Co.

He is survived by five children.



Donald H. Russell '43 (Lambda Chi Epsilon) of Naples, Fla., died March 25, 2008. He was predeceased by his first wife, Ruth, and his second wife, Marjory. Four children and three stepchildren survive him.

Russell was retired from Tippetts Abbutt McCarthy Strat as a power engineer.

Richard B. Shaw '43, a former Worcester resident, died July 14, 2007. He was retired from Riley Stoker Corp. as a mechanical engineer. Predeceased by a brother, he leaves cousins and a niece.



Peter C. Dooley Jr. '44 (Sigma Phi Alpha) of Lewiston, N.Y., died Oct. 24, 2007. He leaves his wife, Clothilde (Smith), and two sons. He worked for Precision Prototype

Machining Co.

WPI has learned of the death of **Joseph J. Kairis '44**, in 2005. A retired physics teacher, he lived in Tallahassee, Fla., with his wife, Ruth.

Ralph H. Keller '44 of Santa Ana, Calif., died Feb. 12, 2007. He was the retired president of California Non-Metallics. He is survived by his wife, Jean, and two children.



William E. Powers Jr. '44 of Clinton, Mass., died April 17, 2008. He earned a master's degree in aeronautical engineering at RPI and worked for United Aircraft Research Labs and AVCO Corp. His wife, Mary (Connors), survives him, along with three children.



Frederick M. Chakour '45 (MS CM '47) of Sun City West, Ariz., died June 7, 2008. Predeceased by his wife, Maria, he is survived by five children. Chakour retired from the

U.S. Department of Defense after 37 years in research and development operations.

WPI has learned of the death of **James Taylor III '45** in 2000. He worked for E. I. du Pont de Nemours & Co. and lived in Aiken, S.C., with his wife, Amy.

Theodore E. Gazda '46 of Costa Mesa, Calif., died May 26, 2006. He leaves his wife, Anne, and three children. He worked for Fluor Corp.



Walter O. Muller '46 (Lambda Chi Alpha), of Naples, Fla., and Troy, Mich., died March 3, 2008. He was retired from General Motors as a regional manager. He leaves his wife, Joan (Douglas), and two daughters.

Rowland M. Newcomb '46 of Hatboro, Pa., died Nov. 14, 2007. Since 1949 he owned and operated R. M. Newcomb Co. Inc., manufacturer of foreign auto parts, hydraulic valves, "Brush-O-Matic" saws, and other custom industrial machinery. Predeceased by his wife, Doris, he leaves five children.

John G. Yorke '46 of Beaver Falls, Pa., died Sept. 15, 2007. He leaves his wife, Greta, and two sons. He was predeceased by another son. Yorke operated Yorke Insurance Agency, which he co-founded with his father in 1947.



William E. Boyd '47 (Phi Sigma Kappa) of Rochester Hills, Mich., died May 21, 2008. Predeceased by his wife, Mary, and a daughter, he is survived by three children. Boyd retired from the Fisher Body Division of General Motors Corp. and later worked as a resistance welding consultant.

James M. Walker '47 of Brookside, N.J., died March 1, 2006. He was retired from Hoechst Corp. as a project engineer. He leaves his wife, Jean, and two sons.

Alfred C. Hellig '48 (Phi Gamma Delta, Skull) of Port Orange, Fla., died Dec. 5, 2007. He leaves his wife, Margaret, and two children. He was the retired head of the sales department at Worcester Valve Co.



Maclean Kirkwood Jr. '48 (Sigma Alpha Epsilon) of South Orleans, Mass., died Nov. 6, 2007. Predeceased by his first wife, Marguerite (Overn), and a son, he leaves his

wife, Justine (Sanford), three sons, and three stepchildren. Kirkwood worked for AT&T for 34 years, establishing and maintaining interstate telephone networks. He later served as vice president and director of the Operations Dept. of ITT/United States Transmission Systems.

A. Joseph Ragonesi '48 (Phi Kappa Theta) of Trumbull, Conn., died June 18, 2008. He leaves his wife, Jacqueline (McGill), and three children. A longtime insurance broker, he also taught licensing courses.

Roger C. Staples '48 of Santa Barbara, Calif., died Jan. 15, 2008. He leaves his wife, Anita, and four children. He was retired from Raytheon Co. as a publications specialist.

Walter J. Charow '49 (Theta Chi) of Burlington, Vt., died Dec. 7, 2007. He was retired as engineering manager of the U.S. Air Force Electronic Systems Division. A 1989 recipient of WPI's Herbert F. Taylor Alumni Award for Distinguished Service, his fund-raising efforts brought about record class gifts for WPI. Survivors include three children.

WPI has learned of the death of **Peter A. Kahn '49** (Alpha Epsilon Pi) in 1999. A former self-employed consultant, he retired to Marco Island, Fla. He and his wife, Sylvia, had two children.



Robert E. Lazzerin Jr. '49 (Alpha Tau Omega) of Bloomfield Hills, Mich., died Feb. 18, 2008. He leaves his wife, Leslie, and a daughter. He was retired from Chrysler Corp. as a marketing manager.

Hans E. Picard '49 (Alpha Epsilon Pi) of New Bedford, Mass., died Feb. 15, 2008. He worked at Aerovox Corp. as an electrical engineer and taught high school and college courses. Survivors include his wife, Shirley (Gerstein), and three children.



William G. Sloane '49 (Theta Chi) of Woodstock, N.Y., died June 23, 2006. He leaves his wife, Shirley (Mayne), and four children. He held managerial positions with several manufacturing firms and was founder and president of the executive search firm Sloane, Sloane & Mayne.



Joseph T. Starr '49 (previously Gwiazda) of West Boylston, Mass., died Dec. 4, 2007. He leaves his wife, Genevieve (Pogorzelski), and four daughters. A longtime chemical engineer, he worked for Vellumoid.



Edward L. Ahlstrom '50 (Alpha Tau Omega) of Reading, Mass., died March 30, 2008. He was a retired staff engineer for the Avco Division of Textron Defense Systems. He and his late wife, Hilda, had three children.

Robert N. Cochran '51 of Gardner, Mass., died Dec. 11, 2007. He was retired from Collier-Keyworth Co. as chief engineer. His wife, Grace (Bickelhaupt), and three children survive him.

John A. "Jack" Dillon Jr. '51 (Phi Sigma Kappa) of Palm Desert, Calif., died March 31, 2008. He is survived by his companion of 26 years, Peggy Anderson, and his three children. He was predeceased by a son. Dillon was retired from Purex Corp. as vice president of engineering.



Donald Kolodne '51 (Alpha Epsilon Pi, Skull), of Bethesda, Md., died Aug. 6, 2007. He was predeceased by his wife, Emily, and a brother, Walter J. Kolodne '51.

He was retired from DeLeuw Cather Corp., where he served as director of preconstruction services.

William F. Mufatti Sr. '51 (Phi Kappa Theta) of Pittsfield, Mass., died March 16, 2008. An intellectual property attorney, he served as senior counsel for General Electric Plastics and later joined the law firm of Cain, Hibbard, Myers & Cook. Survivors include his wife, June (Aromando), and two children.

Frank L. Flood Jr. '52 (Phi Sigma Kappa, Skull) of Brecksville, Ohio, died April 8, 2008, leaving his wife, Barbara (Clark), and two daughters. Two sons predeceased him. Flood worked for Dravco Corp. and later retired from Perini Corp. as manager of estimating.

W. Dieter Hauser '52 of Bradford, Pa., died March 31, 2007. He leaves his wife, Jeanne, and a son. He was retired from KOA Speer Electronics as senior vice president of engineering.



Chester S. Kolaczky '52 (Sigma Alpha Epsilon) of Huntington, N.Y., died July 2, 2008, leaving his wife, Marion, and two children. He was retired from Underwriters Laboratories as engineering staff group leader.



Robert E. Sullivan '52 (Phi Gamma Delta) of East Longmeadow, Mass., died March 9, 2008. He leaves his wife, Doris (Chickosky), and two sons. Sullivan was retired from Hamilton Standard Division of United Technologies Corp., where he served as quality control manager.

Robert G. Williams '52 of San Pedro, Calif., died Oct. 20, 2007, leaving his wife, Arlene, and four children. He was retired from Hughes Aircraft Co.

Sidney R. Harvey '53 (Lambda Chi Alpha) of Belle Meade, N.J., died Feb. 16, 2008. He leaves his wife, Irene, and five children. A longtime chemical engineer, he worked for American Cyanamid and GAF Corp.

William M. Walsh '53 (Alpha Tau Omega) of Pinehurst, N.C., died Jan. 24, 2008. He was retired from Tyrol and Wethey Corp. as a construction supervisor. He leaves his wife, Joanne (Gross), and two children.

Lee W. Catineau '54 (Phi Kappa Theta) of Southborough, Mass., died July 8, 2007. He leaves his wife, Rose, and two children. He was vice president, investment, for Smith Barney Shearson.

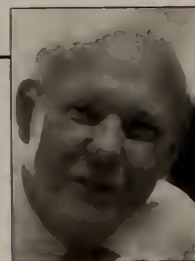
George A. Gingras '54 of Trumbull, Conn., died Feb. 9, 2007, leaving his wife, Dorothy (Pelland). He was retired from Remington Arms.

Faculty Remembrance

H. Peter D. Lanyon, professor emeritus of electrical and computer engineering, died Aug. 7, 2008, as a result of injuries sustained in an automobile accident. He served on the WPI faculty from 1967 until his retirement in 1999. A native of Halesowen, England, Lanyon received BA and MA degrees in physics from Christ's College, University of Cambridge, in England, and a PhD in physics from the University of Leicester, also in England. He is survived by his wife of 29 years, Iris (Velez), five children, and eight grandchildren.

Lyle E. Wimmergren, professor emeritus of management at WPI, died April 15, 2008, after a brief illness. He retired in 1994, having taught at WPI for 25 years. He earned a BS from Northwestern University in 1953 and an MBA with distinction from the Wharton School of Business at the University of Pennsylvania in 1957. Wimmergren spent a sabbatical year in 1993 working at the National Center for American Indian Enterprise Development in Mesa, Ariz. For the past 12 years, he and his wife, Marilyn (Snyder), had worked as Volunteer National Rangers through the Volunteers in Parks Program of the National Parks Service. He enjoyed teaching Southwest history and culture to park visitors, most recently at Tumacacori National Historic Park in Tumacacori, Ariz.

Full obituaries may be read at wpi.edu/News/Memoriam.



Raymond H. Naudin '54 (Lambda Chi Alpha) of Taveres, Fla., and his wife, Elizabeth, died May 28, 2008. They are survived by three children. He was retired from the former Langston Corp. as director of international sales.

Walter B. "Tip" Power III '55 (Sigma Phi Epsilon) of Salem, Mass., died April 18, 2008. He was the father of Sherman Power '84 and Walter Power IV '85. He also leaves his wife, Sandra (Sherman), a daughter, and another son. Power earned an MBA at Northeastern University and founded Power Sales Group, which serviced utilities throughout New England.

Sheldon C. Harriman '57 of Camarillo, Calif., died Feb. 27, 2006. He leaves his wife, Beverly. After teaching in the Worcester school system, he joined System Development Corp. (later part of Unisys), where he served as a project leader.

Robert M. Griffin '58 (Phi Kappa Theta) of Swampscott, Mass., died May 14, 2008. He was retired from Sylvania Light Division as engineering manager for tungsten halogen lamp development. He leaves his wife, Alice, and three children.

Harry W. Simpson '58 (Sigma Alpha Epsilon) of West Springfield, Mass., died April 19, 2008. Survivors include his wife, Jocelyn, and four children. He was retired from Hamilton Standard Co. as a mechanical engineer.



Richard L. Bratt '59 (MSM '79) (Sigma Phi Epsilon) of Holden, Mass., died Nov. 20, 2007. A longtime product engineer for Norton Co., he was also the owner of Bratt Corp. and manufacturer of the "Bratt's Bat" invented by his father. He leaves his wife, Jean (Seavey), and three daughters.



Donald R. Ferrari '59 (Phi Kappa Theta, Skull) of Webster, Mass., died May 9, 2008. He leaves his wife, Lorraine (Marimonti), and three children. He was recently retired from Holy Name High School in Worcester as a chemistry teacher and head coach for football and basketball. He was inducted into the WPI Hall of Fame in 1989.

John W. Gray '59 (SIM) of Worcester died April 4, 2007, at the age of 98. He was retired from a 28-year career with Bay State Abrasives. Predeceased by his wife, Gladys (Gaboury), he leaves two daughters.

Robert W. Milik Jr. '59 (Phi Kappa Theta) of Nanticoke, Pa., died Oct. 11, 2007. He worked for Sperry Gyroscope as a systems engineer. His wife, Marie, survives him.

Leo J. Thomas '59 of Baldwinsville, N.Y., died Dec. 16, 2006. He was retired from Terry Corp., a division of Ingersoll Rand, as supervisor of manufacturing services. His wife, Ann, and three children survive him.

Vincent J. Akelaitis '60 (SIM) of Naples, Fla., died June 17, 2006. He was 89. He worked for the former Simplatrol Dana Industrial Co.

Irwin "Jake" Jacobs '60 (Alpha Epsilon Pi) died Dec. 10, 2008, at his home in Naples, Fla. He leaves his wife, Joanne (Haddad), and three children. He worked for Digital Equipment Corp. for many years and retired from DataViews Corp. in 1997 as president.

David I. Westling '60 (SIM), 78, of Joshua Tree, Calif., died Sept. 1, 2006. He leaves his wife, Ethel, and four children. He worked for National Standard Co.

Francis Dusza '63 (SIM) of Holland, Mass., died Dec. 1, 2007. He was 82. Dusza worked at Russell Harrington Cutlery for 61 years. He retired as manager of manufacturing processes and continued as a consultant. He leaves his wife, Rachel (Jalbert), and a daughter.

Steven C. Grossman '64 (Alpha Epsilon Pi) of Brookline, Mass., died March 19, 2008. A self-employed technical consultant, he is survived by two daughters.

Oke William Bjornlund '65 (SIM), 90, of Rochester, N.H., died June 9, 2008. His wife, Shirley (Hanson) died in 2002. Two sons survive him. He worked in the machine tool division of Norton Co. and Warner Swasey, and later worked at O. S. Walker and Walker Magnetics.

Albert L. Giannotti Jr. '65 (Phi Kappa Theta) of Fishers, Ind., died Nov. 21, 2008. He leaves his wife, Denise (Gorgal), and two children. He was predeceased by a daughter. His career included 12 years with TCI (Tele-Communication Inc.) and seven years with Network Engineering Inc., as general manager. He was also owner of "Uncle Albert's Outlet," a chain of three retail fashion stores in Syracuse, N.Y.

Lt. Col. **John M. Porter** (Ret.) '65, a former Army advisor on chemical and nuclear weapons, died Jan. 1, 2008, in Annapolis, Md. His military career included serving as advisor to the Vietnamese infantry, managing chemical and nuclear weapons in Europe, and designing curricula for the Army Chemical School. Survivors include two brothers and a sister.

Ronald C. Snell '66 of Marlborough, Mass., died Nov. 12, 2007. He leaves his wife, Judith (McKinley), and two children. Snell worked for Polaroid Corp. and retired in 1995 as senior principal electrical engineer.

Michael B. Barr '67 of Piscataway, N.J., (Alpha Epsilon Pi) died Nov. 27, 2007. He was an operations manager with C & K Scrap Metal. Survivors include his wife, Pamela, and two sons.

Kenneth R. Prefontaine '67 (Sigma Alpha Epsilon) of Westfield, Mass., died Dec. 28, 2007. He worked for Combustion Engineering, where he designed and inspected pollution control systems for power plants. Survivors include his wife, Frankie, a son, and his ex-wife, Evelyn.

WPI has learned of the death of **Edgar Rothschild '67** (SIM) in 2005. He and his wife, Sandra (Kahane), had two children. He was president of Abbott Equipment Corp.

Robert P. Kusy '69 (Alpha Tau Omega) of Chapel Hill, N.C., died Feb. 6, 2008. He was a retired professor at the University of North Carolina, where he held a joint appointment in the Orthodontics Department of the School of Dentistry and the Biomedical Engineering Program of the School of Medicine. Kusy was the author of hundreds of papers and presentations. He also held four patents. He leaves his wife, Gisela, and two children.

John K. Redmon '70 (MSEE), 86, of Fayetteville, N.C., died Oct. 6, 2006. He was an associate professor at New Jersey Institute of Technology and also worked in the utilities industry.

Walter I. Beinar '71 (SIM) of Auburn, Mass., died Dec. 22, 2007, at age 93. He is survived by his wife, Elizabeth (Hoyle), and four children. He was retired from Tupco.

Steven H. Face '71 of Colorado Springs, Colo., died June 3, 2006. He was an engineer with Northrop Grumman and previously worked for Kaman Sciences Corp. He leaves his fiancée, Martha Iverson, and three brothers.

WPI has learned of the death of **John J. Eagan '73** (SIM) in 2004. He worked for EG&G Rotron Custom Division. Widowed by his first wife, Alice, he was the husband of Madeline Eagan and had two children and two stepchildren.

Karl S. Williams '73 of Craftsbury, Vt., died April 10, 2007. He leaves his wife, Cheryl (Miner), and two children. He was the plant manager for Sterling College.

Louis J. Piscitelle '74 (MS ME '78) of Wellesley, Mass., died April 7, 2008. A former chief mathematician at the Army's Natick Laboratories, he also taught at Northeastern University Graduate School of Engineering. He leaves his wife, Suzanne (Offredi), and two daughters.

Charles E. Pybas Jr. '74 (SIM) of Sturbridge, Mass., died Dec. 26, 2007. He was 75. His wife, Jean (Dowd), and three children survive him. He was retired from Warren Pumps as a mechanical and marine engineer.

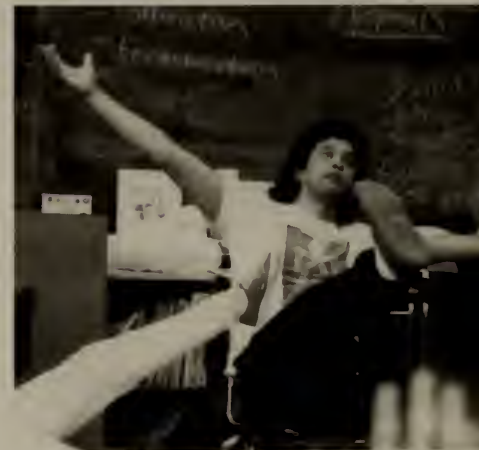
WPI has learned of the death of **Robert R. Rosander '74** (MSM) of Manhattan, Kansas, in 2002. He was president and CEO of Nanoscale Materials Inc. He is survived by his wife, Jan, and a son.

Daniel C. O'Keefe '75 (PhD EE) of West Haven, Conn., died July 11, 2007, at the age of 63. He was a professor of electrical and computer engineering at the University of New Haven. He joined the faculty in 1969 and was posthumously appointed professor emeritus.

WPI has learned of the death of **Constance Huff '76** of Atlanta, Ga., in 2005. She is survived by two children.



Benjamin M. Jacobs Jr. '76 died Aug. 3, 2008, after suffering a stroke in January. He was an actor and storyteller who created special programs for schools, museums, and



cultural organizations, focusing on racial harmony and urban cultural issues. Since 2002 he was executive director of the Council on the Arts and Humanities for Staten Island (COAHSI). He leaves his wife, Diane Matyas, and two children.

Bruce P. Wilmer '76 of Wethersfield, Conn., was killed in an automobile accident in Seville, Spain, on Feb. 15, 2007. His father also died in the accident. Survivors include Bruce's mother, Ann Wilmer, and his five siblings. Wilmer earned an MBA from the University of Connecticut School of Business and worked for the Connecticut Department of Mental Retardation. He also was a business partner in The Inn at Bay Fortune, Prince Edward Island, Canada, which his family owned and operated.

Hans W. Reinberg '77 (SIM) of Sterling, Mass., died March 13, 2008. He was 81. A longtime employee of Riley Stoker Co., he leaves his wife, Lisa, and two children.

WPI has learned of the death of **Alden E. Rice '77** (SIM) in 2003, at age 79. A longtime employee of Bay State Abrasives, he was the husband of Dorenda (Stewart) and the father of three children.

WPI has learned of the death of **Gerald L. Audette '78** (SIM) in 2004, at age 61. He and his wife, Carolyn lived in Auburn, Mass., and had three children. He was retired from Morgan Construction Co. as a senior planner.

Robert L. Dufault '79 (MSN) of Hudson, N.H., died Sept. 15, 2007. He was 63. He leaves his wife, Susan (Holt), and two children. Dufault was a chemistry teacher at Salem High School for 32 years.

William D. Jones '80 (MM) of Springfield, Mass., died Feb. 2, 2008, at age 63. A longtime math teacher in the Springfield public schools, he retired in 2007 as student database specialist. He leaves three children.

Stephen Kuizinas '80 of North Oxford, Mass., died June 11, 2008, after a long struggle with multiple sclerosis. Survivors include his parents and four siblings. After graduating from WPI he worked for Parker Manufacturing and Flight Corp.

John H. Milson '81 (MS CS) of Randolph, Mass., died Dec. 6, 2007, at age 80. He leaves his wife, Theresa (O'Donnell), and two children. Milson was a quality assurance engineer who worked for Interactive Data Systems and Prime Computer.

Karen Ann Crall-Fallon '84 of Ashburnham, Mass., died June 10, 2008, after a sudden illness. She leaves her husband, Donald, and a son. After earning an MBA from Suffolk University, she worked as a research chemist for Sannacor Industries and the Shipley Co.

John H. Scannell '85 (SIM) of Rutland, Mass., died June 1, 2006, at age 74. He leaves his wife, Mary, and a daughter. He was a general manager for Nypro.

Richard A. Rosenthal '87 (MBA), a longtime resident of Lexington, Mass., died Oct. 7, 2007. He was 71. He leaves his wife, Carol (Kadish), two children, and two stepchildren. He was retired from Polaroid Corp. after a 30-year career.

Robert C. DelSignore Jr. '88 (MS EE) of Shrewsbury, Mass., died Jan. 5, 2007. He was 57. He leaves his wife, Judith (Zeider), and two children. He was an electronics engineer for WPI's Bioengineering Institute and previously worked for Giant Loop Network, Digital Equipment Corp., and Lucent Technologies.

Robert B. Smith Jr. '95 of Atlanta died Aug. 28, 2007. He was vice president of land development for Lennar Homes. He is survived by his wife, Darlene.

Willis R. Whiting Jr. '98 (SIM) of Woodstock, Conn., died May 14, 2008, at age 60. He was a plant engineer for Morgan Construction Co. He leaves his wife, Ellen (McCaffrey), and three children.

Postscript...

Ralph K. Mongeon '55 (SIM '76), who died in 2007, was posthumously elected a fellow of ASME. A longtime manager at Riley Stoker Corp., he was instrumental in obtaining research and development contracts.

The **Robert P. Apkarian** Integrated Electron Microscopy Core at Emory University was dedicated last year. Apkarian (**Class of 1975**), founder and director of Emory's first microscopy facility, was killed in a motorcycle accident in 2006. A forest has been planted in his honor on the slopes of Mt. Aragats in Armenia; it will surround the cosmic ray facility of the Yerevan Physics Institute.

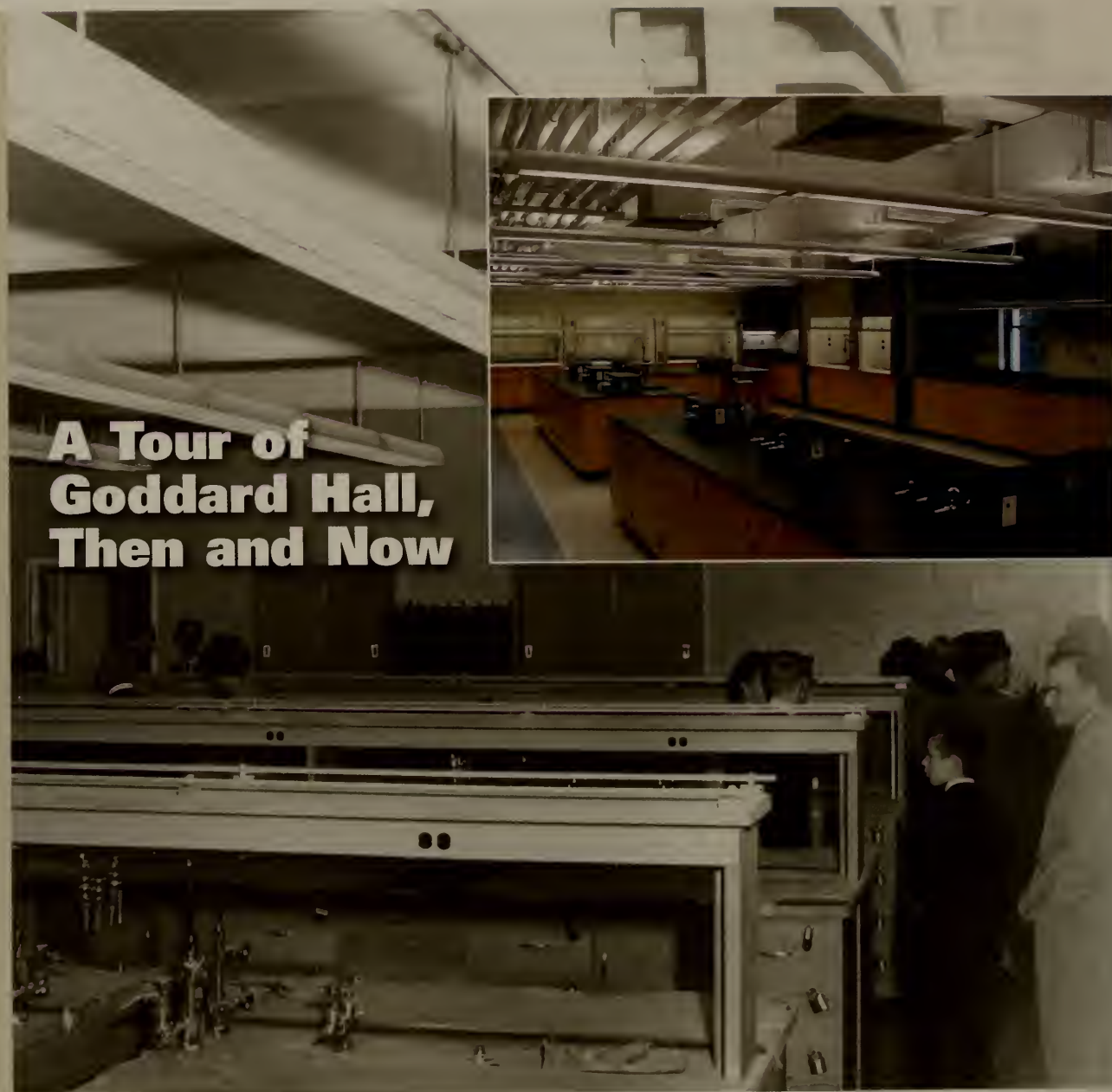
Kevin F. Keene '00 (Theta Chi) of Saugus, Mass., died unexpectedly on July 31, 2008. He was the husband of Jessica (Moya), who survives him. He was an aerospace engineer at Goodrich Corp.

Former crew captain **Jennifer McLaughlin '06** (Phi Sigma Sigma) of Marlborough, Mass., died peacefully in her sleep on Nov. 1, 2006, while traveling on business. Survivors include her parents, three siblings, and her fiancé, Ryan Wartman '03. A biomedical engineer at Hologic Inc., she previously worked for Innovative Spinal Technologies. The family welcomes contributions toward a new crew shell named in her honor. Checks payable to WPI may be sent to the Office of Development and Alumni Relations.

Robert S. Weiler '06 of Wilmington Del., died March 6, 2006. He was 54.

Dear Tommy (Trafford Publishing) commemorates the life **Thomas J. O'Neil '94**, who was killed in a work-related accident during his senior year. The book compiles letters, dreams, and poetry by his sister, Christie O'Neil Harrison, who used her journal to maintain a relationship with her younger brother.

The **Ryan Patrick Jones** Heart of a Hero Foundation is the legacy of the **2005** alumnus who was killed by a roadside bomb in Baghdad in 2007. Jones left a letter requesting that in the event of his death, the proceeds from his life insurance policy be used to create scholarships for students at his high school. His parents, Kevin and Elaine Jones, accepted the Boston Celtics Heroes Among Us award on Ryan's behalf at the April 20, 2008, Celtics game.



A Tour of Goddard Hall, Then and Now

A major renovation of Goddard Hall is nearly complete. When all is said and done, the new Undergraduate Life Sciences Laboratory Center at WPI will comprise 21,300 square feet of laboratories and will feature vibrant, open, and technology-rich spaces that provide a host of new curricular opportunities. The Center will become WPI's main facility for undergraduate teaching and research in biology and biotechnology, biomedical engineering, chemistry and biochemistry, and chemical engineering. The renovation and integration of these labs was made possible by a \$6 million gift last year from the George I. Alden Trust.

Originally built in 1965, Goddard Hall is named for one of WPI's most distinguished alumni, Robert H. Goddard, class of 1908. Known as the father of modern rocketry, Goddard was celebrated on campus last year to honor the 100th anniversary of his graduation from WPI.

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