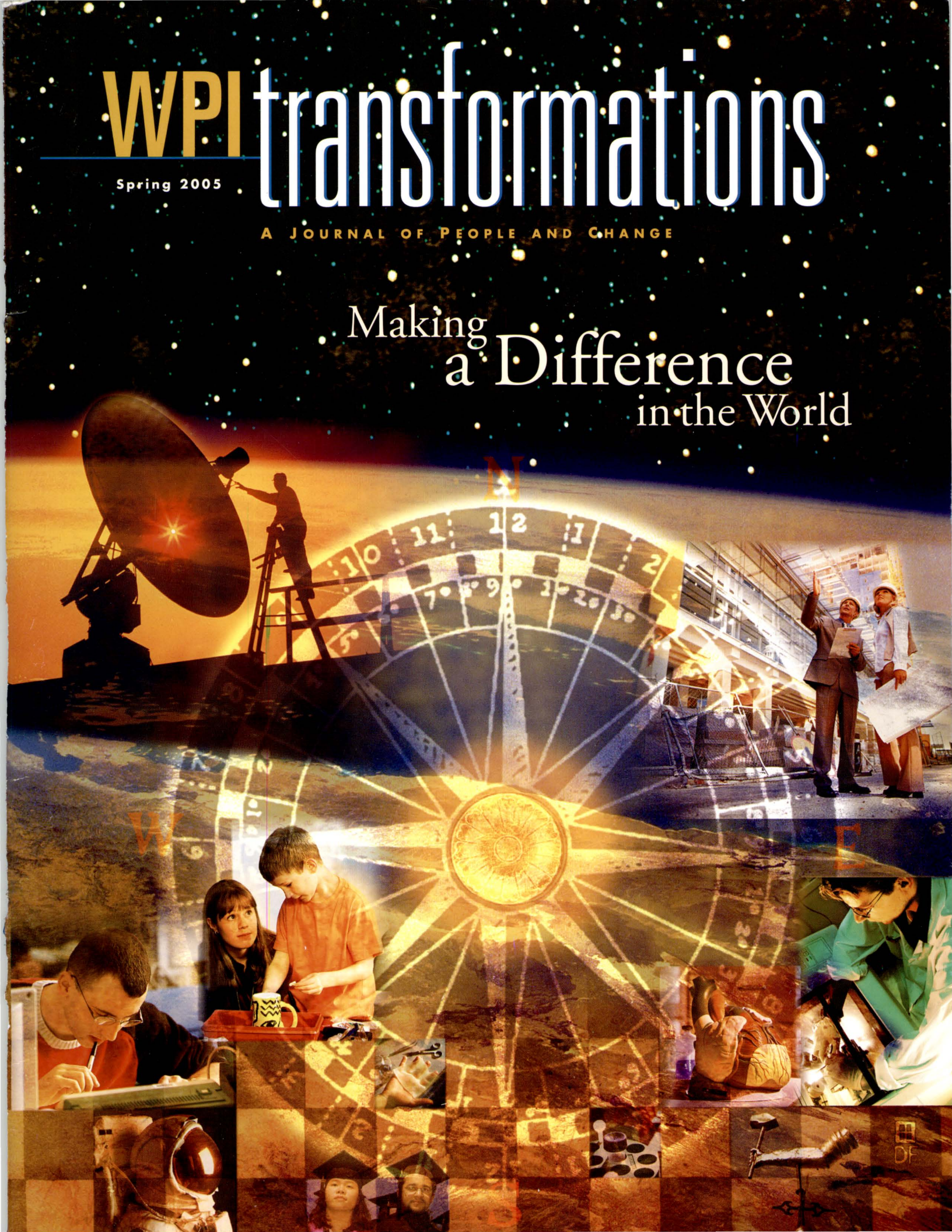
# WPI transformations

Spring 2005

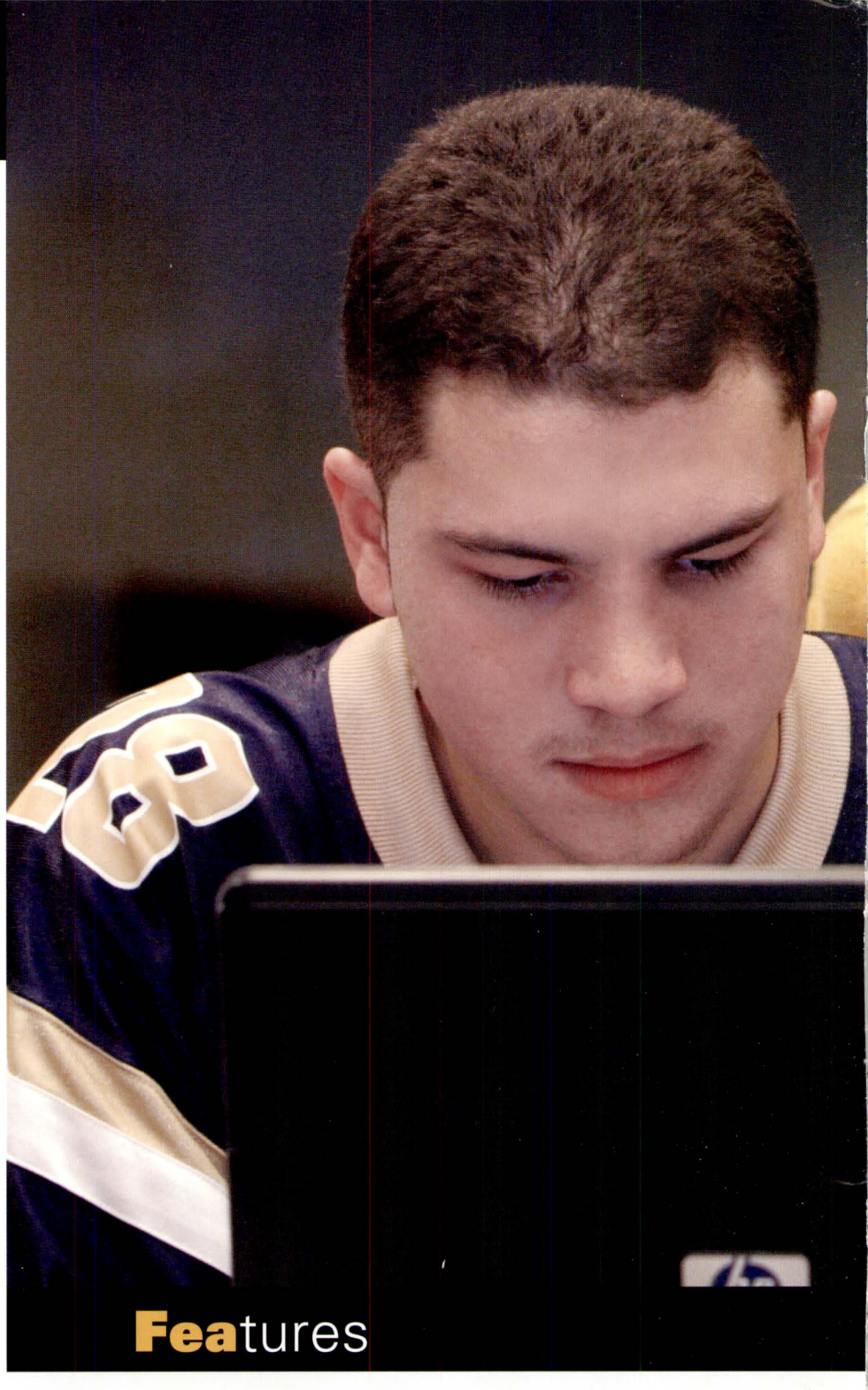
A Journal of People and Change

## Making a Difference in the World



# Departments





# Features



## About the cover

The photo illustration was created by Diane Fenster, an internationally exhibited digital photographer and photo illustrator who began using the computer as an artistic tool in 1989. Her work has been called an important voice in the development of a true digital aesthetic. She was the first artist to be inducted into the Photoshop Hall of Fame, sponsored by the National Association of Photoshop Professionals and Adobe Systems Inc.

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VOLUME 104, NUMBER 1
SPRING 2005

## Zoom in...

Students engage with technology at the Step into Strive Jr. program (see page 16).

*Photo by Dan Vaillancourt*

# Starting Point

VOLUME 104, NUMBER 1, SPRING 2005

WPI transformations

A Journal of People and Change

**"A school is not a factory. Its raison d'être is to provide opportunity for experience."**

—J. L. Carr, British novelist, *The Harpole Report*

**Profiles of graduates** are, in my opinion, one of the most interesting features in any alumni magazine; professional passions can tell you much about people. From a university's perspective, these profiles fulfill a vital purpose: alumni are its best ambassadors. They elevate the name of the institution through the work they do; they are the "sales force" that trumpets the benefits of its education, thereby ensuring its future.

Before I arrived on campus last summer to become the editor of *Transformations*, I confess I made certain assumptions about WPI and its alumni. Because of the size of the school and its relatively small alumni base, I thought there would be a fairly limited number of interesting alumni to profile. Too, because I was hooked into WPI's history as a polytechnic institute, I assumed that most, if not all, alumni would be engineers, scientists, or techno-savvy geeks.

It wasn't long before I learned that a smaller university doesn't necessarily translate into a smaller world for our alumni. I discovered just the opposite is true: where our alumni find themselves in the world is, well, *the world*. But, more interesting than where our alumni find themselves in their professional lives is finding out what they are doing. Quite simply, a WPI education offers the right mix of learning and experience, of study and opportunity, in preparing graduates to make their mark in the world in ways that truly make a difference in the lives of millions.

This issue of the magazine highlights a few of these individuals. Richard Hansen '76, a leader in the field of solar electrification, has lit up homes and helped small businesses run equipment in the Dominican Republic, Honduras, and other developing countries (page 22). John Gusha '80 has brought together local dentists and nonprofit agencies to provide routine dental care for children from Worcester's low-income families (page 19). Robert Diamond '56, who holds an engineering patent on Caller ID, has developed technologies that enable us to keep a virtual eye on our vacation homes, our kids, and even our aging parents (page 30). And Michelle (Petkers) Gass '90, a senior vice president at Starbucks, developed the successful Frappuccino line of beverages and has contributed significantly to the coffee giant's success (page 26).

But it's not just our alumni who are making a difference in the world. WPI's strong outreach to minorities in Worcester's middle schools piques their interest early on in engineering's diverse disciplines (page 16). The university's vigorous international recruitment and enrollment has brought stellar students to campus, including Zimbabwe native Batsirai Mutetwa '07, who plans to use her biochemistry degree as a stepping-stone on the path to becoming a pediatrician (page 8).

There's much more in this issue, including Professor Ed Ma's exciting work in developing technology that could become the heart of a hydrogen refueling network for cars within the next decade (page 10) and a behind-the-scenes look at how WPI's Interdisciplinary and Global Studies Division ensures the safety and security of hundreds of students who study in our project centers (page 12).

I hope you enjoy reading about the difference WPI makes in the world. As always, I welcome your comments on this issue.

Amy E. Dean
*Editor*



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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: 508-831-6037; Fax: 508-831-5604.

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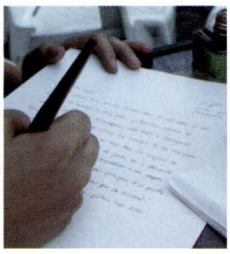
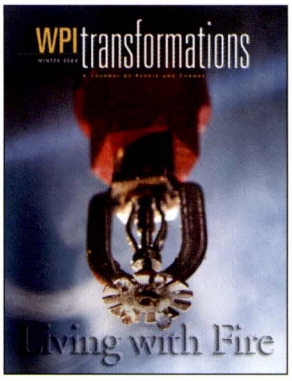
WPI The University of Science and Technology. And Life.



# Letters

## Touched by fire




The Winter 2004 edition of *Transformations* is a gem for the ages! The articles have done a wonderful job touching on the great variety of careers in fire protection today. Through my current position at NFPA, I work with many of the more than 75,000 NFPA members from around the world and nearly 7,000 volunteers serving on NFPA technical committees that help write codes and standards that touch virtually every corner of today's society. Almost all of these individuals are directly involved with safety design, loss prevention, fire mitigation, and other important duties consistent with WPI's fire protection engineering degree program.

After a quarter century of service, WPI's program has established itself as a cornerstone in the professional integrity of the fire protection community. WPI has become a household name among fire protection professionals, and I'm looking forward to the next quarter century of service and support from this important source of higher education.

I'm proud to be a WPI alumnus, and doubly proud to be part of the FPE program, knowing that, like WPI, I'm making a difference by helping the world become a safer and better place.

**Casey C. Grant** '89 (M.S., FPE)
Assistant Chief Engineer,
National Fire Protection Association
Quincy, Mass.

I read with delight the Winter 2004 issue of *Transformations*, particularly the feature articles concerning fire protection and WPI's engineering efforts in fire prevention.

My father, Earl G. Page Jr. '42, who passed away two years ago, devoted much of his professional career to fire prevention. During the time I was at WPI and shortly thereafter, my father was president and chairman of the board of Grinnell Fire Protection Company. He worked closely with officials at WPI to bolster and support the fledgling program on fire protection. As I recall, the company even funded some scholarships. My father was devoted to the cause of fire protection and particularly to WPI, having received a distinguished alumni award [in 1983]. I know he would have been delighted to read the rich and engrossing history of the program that developed over the years.

I followed a slightly different track after graduating from WPI, going on to receive my juris doctor. After practicing for many years with a statewide Florida firm and chairing the firm, I began my own litigation boutique practice of 15 lawyers in West Palm Beach and Stuart. It is always wonderful to stay in touch with WPI and read of the interesting programs available to students.

**Stephen C. Page** '74 (HTE)
Stuart, Fla.

I loved the Winter 2004 issue! As a WPI grad in fire protection engineering and knowing several of the FPEs interviewed, I'm perhaps biased—but I really enjoyed it. Helping point out things that FPEs do illustrates some of the more attractive features of our profession. The satisfaction that comes with the fact that we make a difference and save lives and property isn't bad, either.

**Bernie Till** '00 (M.S., FPE)
Orangeburg, S.C.

## Family gratitude

I was delighted to come upon the story about my father, Jacob J. Hagopian '39, in the Winter 2004 issue ["Time Capsule"].

In 1958, our family moved from Los Angeles to San Jose, Calif., which was still a small town in the Santa Clara Valley. Dad had taken a job with IBM's research laboratory, newly built in the midst of vast apricot orchards. He was their 33rd employee.

Dad was enthusiastic about the future of the computer and often talked to us of its vast potential. Over the years, he loved to tell the story of how a last-resort experiment with a spinning vinyl record and one of our mother's nylon stockings helped him

*(Letters, continued on page 33)*

## Write to us

We welcome your letters. Please include your full name, year of graduation, and current address. The editor reserves the right to determine the suitability of letters for publication and to edit them for accuracy and length. We regret that not all letters can be published.

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Patrick O'Connor

## WPI Welcomes Carol Simpson as Provost, Senior Vice President

Carol Simpson, a leading academic administrator, faculty member, and researcher in the field of geology—and, most recently, associate provost for research at Boston University—has been named provost and senior vice president. She is the first woman to hold the position of provost at WPI and succeeds John F. Carney III, who retired last year.

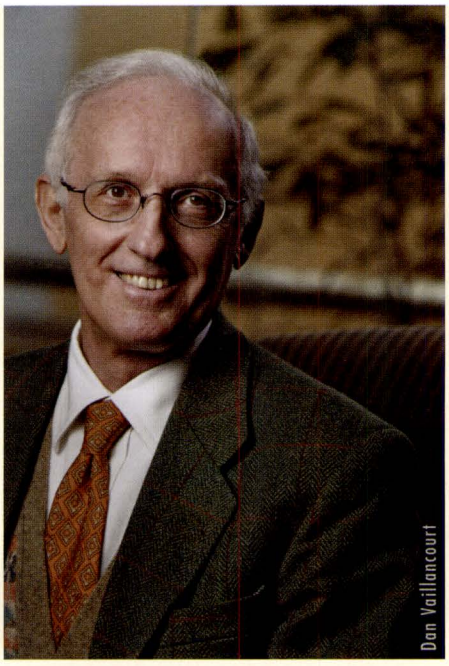
"Carol Simpson emerged from a strong pool of candidates due to her broad international background, her experience in building interdisciplinary academic programs, and her deep understanding of faculty research and funding opportunities," said President Dennis Berkey during the announcement of her appointment. "She is a strong advocate for diversity and women's issues in K-12 and higher education. She is superbly qualified for this position."

As provost Simpson is responsible for the university's academic and research programs; as senior vice president she serves as the senior member of the president's staff. Her primary charge includes reviewing the undergraduate curriculum to ensure excellence in general education as well as within fields of study; strengthening selected academic and research areas, especially in the life sciences; recruiting and retaining outstanding faculty; and broadly supporting the university's continuing increase in quality and stature.

Simpson's research interests lie in the areas of structural geology and tectonics, especially in applying material science principles to deformation, kinematics, and vorticity analysis of rocks. She has authored more than 50 refereed publications and over 80 conference papers, and has worked in mountain ranges on four continents, most recently in central South America and central Scandinavia.

## World-Renowned Mathematician Joins Faculty

Umberto Mosco, one of Europe's highly regarded mathematicians, joined WPI in January as the new Harold J. Gay Professor in the Mathematical Sciences Department. Mosco has been at the forefront of mathematical research in nonlinear analysis for the past 40 years, focusing on partial differential equations, convex analysis, optimal control, and variational calculus. He is a member of the Accademia Nazionale delle Scienze detta dei XL and has been honored with some of Europe's most prestigious honors, including the Alexander von Humboldt Foundation Research Award and the Antonio Feltrinelli Award for Mathematics, Mechanics, and Applications from the Accademia Nazionale dei Lincei. In 2004, he was invited to deliver the Marconi Lecture at the Royal Swedish Academy.


Dan Vaillancourt

## Fuller Chemistry Complex: New Labs for a New Curriculum

WPI's first-year chemistry laboratory experience has been completely transformed to enable students to learn chemistry through a real-world, project-enriched curriculum that will teach students how to analytically approach problem solving and scientific discovery. The curriculum change was made possible by a $3 million renovation to the suite of freshman chemistry laboratories in Goddard Hall and a full upgrade in equipment and instrumentation.

The changes were officially unveiled in February to honor the gifts and grants that accounted for nearly half of the cost of the renovation, including a $1 million gift from the George F. and Sybil H. Fuller Foundation; the laboratories are known as the Fuller Chemistry Complex. Other contributors include the Pfizer Foundation, Pfizer Global Research and Development, the WPI Class of 1954, numerous alumni and friends, and WPI Trustee John L. LaMattina, president of Pfizer Global R & D, and his wife, Mary.

Dan Vaillancourt

## Kurzweil to Deliver 2005 Commencement Address

Inventor, author, and futurist Raymond Kurzweil will deliver the address at WPI's 137th commencement exercises on Saturday, May 21. His talk is titled "When Humans Transcend Biology." He will also receive an honorary doctor of science degree.

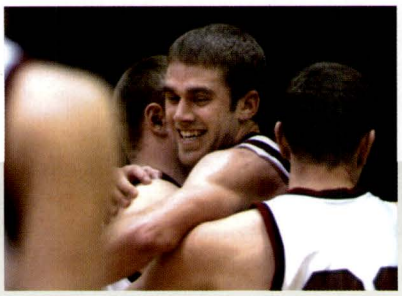
Kurzweil, who was inducted in 2002 into the National Inventors Hall of Fame, was the principal developer of a number of firsts—the first print-to-speech reading machine for the blind, the first CCD flatbed scanner, the first text-to-speech synthesizer capable of recreating the grand piano and other orchestral instruments, and the first commercially marketed large-vocabulary speed recognition system. He has received numerous awards, including the Lemelson-MIT Prize, the 1999 National Medal of Technology, the 1994 Dickson Prize, Engineer of the Year from *Design News*, Inventor of the Year from MIT, and the WPI Presidential Medal.

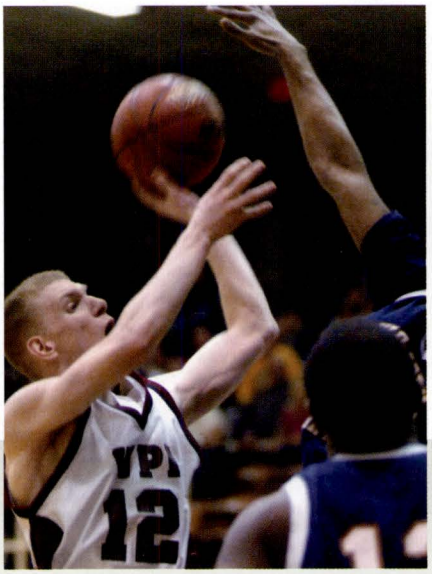
He is the author of *The Age of Intelligent Machines* (named Best Computer Science Book of 1990), *The Age of Spiritual Machines: When Computers Exceed Human Intelligence* (published in nine languages and a former No. 1-ranked bestselling book on Amazon.com), and *The Singularity Is Near: When Humans Transcend Biology* (Viking, Sept. 2005). According to an Amazon.com preview, Kurzweil's latest book portrays a human-machine civilization where our experiences shift from real reality to virtual reality and where our intelligence becomes nonbiological and trillions of times more powerful than unaided human intelligence. His Web site, KurzweilAI.net, is the leading resource on artificial intelligence.

# Best Season Yet for Men's Basketball

The 2004–05 season was marked by several historic milestones for the men's basketball team: the team was ranked 24th nationally in February; its 24 wins broke the previous record of 20 wins in a single season (set in 1984–85 and tied in 2003–04); and it clinched the New England Women's and Men's Athletic Conference regular season title, earning the No. 1 seed in the NEWMAC postseason tournament, which it won by edging out Wheaton, 64-60, before an enthusiastic crowd in Harrington Auditorium.

The tournament victory gave WPI a first-round bye in the NCAAs; it was the first time in 20 years that a men's team from WPI reached the national championship.





But on Friday, March 11, the team saw its hoop dreams dashed as it lost, 99-80, to York College in the Sweet Sixteen of the NCAA Division III tournament.

Before WPI defeated Western Connecticut, 79-77, in the NCAA Division III second-round game at Harrington Auditorium on March 5, Worcester *Telegram & Gazette* correspondent Craig Holt wrote an insightful article about the team's success, portions of which are excerpted below.

From left, Ryan Flynn '06, Ryan Cain '07, and Coach Chris Bartley. Game photos by Steve Lanava, courtesy of Worcester *Telegram & Gazette*.

**More than likely,** none of the current juniors on the WPI men's basketball team had taken a jumper, or even walked a few steps, the last time the Engineers reached the NCAA Tournament [in 1985].

This year's club, which has eight juniors on its roster, can take solace in the fact that its dedicated juniors stuck with the program and produced 43 victories over the last two years. According to fourth-year WPI coach Chris Bartley, that means playing pressuring, man-to-man defense, and pushing the ball up court at all times. Bartley also likes his team to share the ball in its half-court offense, and run an effective motion offense.

The juniors on the roster, who represent Bartley's first recruiting class, include guards Kevin Reidy, Brett Dickson, Mike Prestileo, Brian Steele, and Ryan Flynn, and forwards Jason Krol, Travis Weber, and Steve Furber.

"The juniors are the guys who've really turned the program around," Bartley said. "They were the ones who took the leap of faith and trusted in the vision that I had for the program. They've been great role models as we've brought younger players into the program. The juniors have shown the younger players the good work ethic and the team attitude that it takes to be successful at this level."

Steele, Prestileo, Dickson, and Flynn have been diligent in their efforts to help revive WPI basketball. That includes playing hoops year-round, honing their skills in summer leagues, and staying in game condition.

"When we came in as freshmen, we were all smaller and weaker," Prestileo said. "Our first year, the program was freshman-dominated with guys brought in by Coach Bartley. He told us from the beginning that it was going to be a process for us, and things weren't going to get better right away. But he also told us that if we put in the time and the extra work, things would definitely get better. The last two years, we've seen the fruits of our labor."

The basic college basketball experience, along with increased knowledge of one another and each player's role, has helped the juniors evolve, Flynn said. "Everyone does his role very well on this team. We don't have all the talent in the world compared to most teams, but we play very well together, and we have a great group of guys. Everybody is on the same page, everybody works hard."

"Playing together and working out together have helped us get better as a team," Dickson said. "When we started out as freshmen, we all were trying to find out where we fit. I think we started jelling at the beginning of our sophomore year. Since then, we've established our roles and have come together rather nicely."

*—Courtesy of Craig Holt*

## 2005 University Ambassadors

The University Ambassador Awards, which recognize excellence in representing WPI to the outside world, were introduced last year to highlight the important role faculty, staff, and students have in building the reputation of the university. This year's winners are, from left, Tiffany Carl '05, a management engineering major; Fabio Carrera, IGSD Global Program manager and director of the Venice and Boston project centers; and Ken Stafford and the WPI/Mass. Academy FIRST Robotics Team.

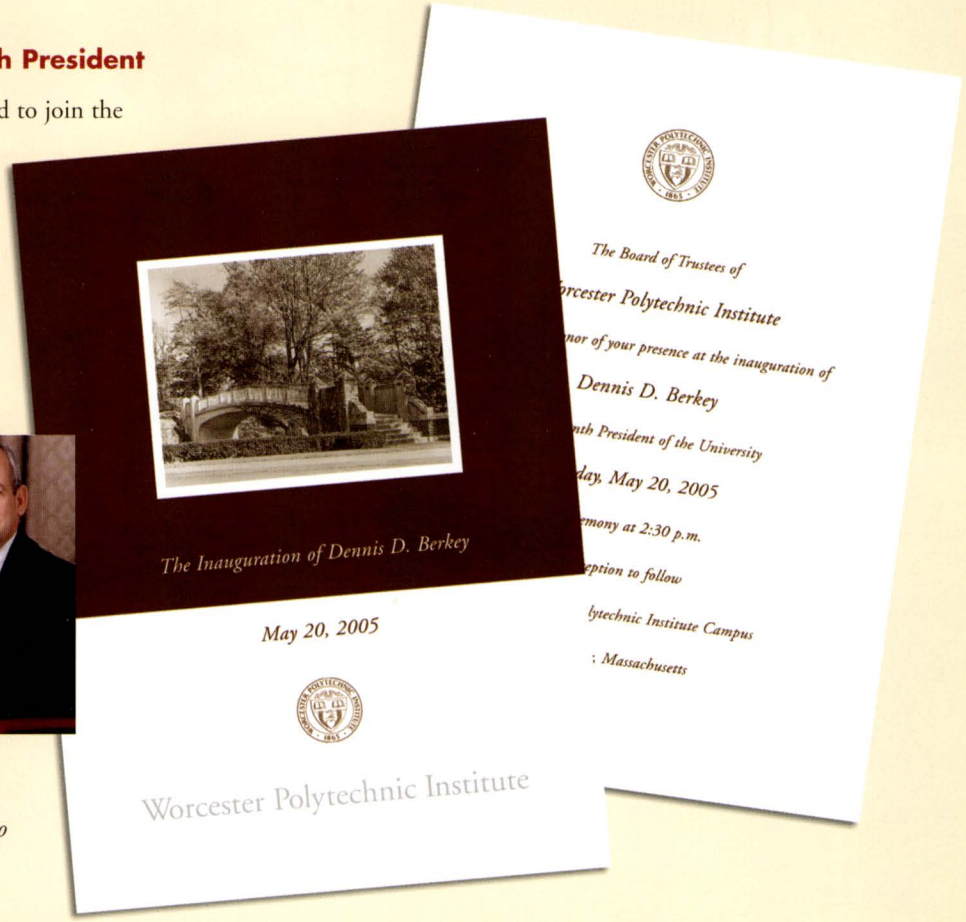
## New Electronic Front Door

WPI's home page (www.wpi.edu) has a new look and design—the product of several months of research and creative and technical work by the university's communications, marketing, and Web development staffs. Its centerpiece is a large window featuring a revolving set of photos which, in combination with brief messages, conveys the essence of the WPI experience to visitors, particularly prospective undergraduates and their parents. For alumni, the new design provides a more direct route to the Alumni home page.


## The Inauguration of WPI's 15th President

You and your family are cordially invited to join the WPI community for the inauguration of President Dennis D. Berkey on Friday, May 20, at 2:30 p.m., on the Quadrangle (rain location: Harrington Auditorium). The historic ceremony, steeped in tradition, will feature an address by the president to alumni, students, parents, faculty, staff, representatives of other colleges, universities, and learned societies, government officials, and members of the business, not-for-profit, and civic communities. The ceremony will be followed by a reception in the Campus Center.

*For more information and to register, go to www.wpi.edu/+inauguration.*



Inside

# Inside WPI

By Joan Killough-Miller

**While international enrollments at many colleges and universities are still lagging in the wake of 9-11, WPI is recruiting and enrolling more international students than before the terrorist attacks. Inquiries from prospective undergraduates overseas increased by 600 between 2002 and 2004 and the number of international students accepted and confirmed was up by 94 percent in the same period.**

**Biochemistry major Batsirai "Batz" Tafadzwa Mutetwa '07, a native of Zimbabwe, chose WPI for the personal attention it gives to students and its innovative educational system. Batz was educated in several countries before coming to WPI. She has since added another to her list, having completed her Humanities Sufficiency in London. Next year, she'll travel to the Bangkok Project Center to work on her science, technology, and**

Dan Vaillancourt

**society project. She's a resident advisor for Sanford Riley Hall, a member of the International Student Council and the Black Student Union, and a first responder for WPI's Emergency Medical Services. She swims, is on the varsity track team, and, in her spare time, is involved in a variety of student groups. Although she's traveled a long way to be at WPI, she says, "I couldn't see myself anywhere else."**

### Where are you from?

For me, such a simple question can become a long conversation. I was born in Zimbabwe and lived there until I was 11. My mother is a diplomat, so the family moved around a lot. I went to high school in Switzerland, but before that my family lived in Belgium for three years.

To some people, "Where are you from?" means "Where were you born?" In Zimbabwe, it's defined by what area of the country your parents come from, no matter where you were born. In America, people often want to know where you lived last before you came here, or where you grew up the longest, or where you had the most cultural influences. It depends on how you define "from."

### Your English is almost flawless.

My first language is Shona, which we speak in Zimbabwe. Once, when I was doing physics homework with some classmates, my dad called. While I was talking with him, I broke into Shona. I saw my friends' faces drop; they were like, *What was that?* I learned English in first grade. I can converse in French, which I learned when my family was in Belgium. There, I also learned Dutch and German, which I haven't used in quite a while. I also understand Italian and Spanish.

### Why did you choose WPI?

It was quite a debate in my family. My parents were educated in Zimbabwe, then went to school in England for their degrees. My mom wanted me to study in England; my dad said, "How about somewhere else—maybe the States." At a college fair in Switzerland, I met Ed Connor [WPI's associate director of admissions and coordinator of international admissions]. We talked and then followed up with phone calls and e-mails. I applied to seven schools; WPI was the only one that gave me personal attention. I always got a response from a real person, not just a general message to the masses. I can definitely say that is one of the reasons I came here.

I also liked the projects. The theme of my London Sufficiency was Shakespearean and Dickensian London. I haven't been to Asia yet, but I'll be doing project work there next year.

### What would you like to do after you graduate?

I want to be a pediatrician. I love medicine: it's challenging, like a puzzle, and I love puzzles. People tell you their symptoms, and then you have to systemically go through those clues to figure out what's going on. My dad's a doctor. When I was a child in Zimbabwe, I'd visit his practice and see that people absolutely loved him. They always came back to thank him or just to say hello. You can really make a difference in people's lives. After I earn my bachelor's degree in biochemistry, my goal is to study at a medical school in the United States. But before I start my medical practice, I'd like to work for the United Nations or a humanitarian organization.

### Was it hard for you to feel at home at WPI?

My mom brought me to campus my freshman year for orientation at the International House. She saw me adjusting well and decided to leave a day early for an upcoming business trip. I told her, "Sure. It's okay. You can go." When she arrived back home, she was told, "Batz just called, and she was cryyyyying...." I'd gotten lost on the way to an orientation event, and the only route I knew was the way back to my dorm room in Institute Hall. The moment I got there, I called home. I said, "Mom, why did you leave me? I don't know what I'm doing here. I'm only 17—take me back!" But it didn't take long after that to feel settled here and start making friends. I never thought about transferring because I couldn't see myself anywhere else. WPI has become so much a part of the person I'm becoming.

### What advice would you give to other international students, to help them adjust to campus?

You have to find people who know you, who you're comfortable with, and who you can talk to. That's what makes it home for me. WPI's my home away from wherever home is. I've made really strong connections with the people here; every day I'm amazed at the kinds of people I meet. You never know: the person who sits next to you in class who you never talk to could be someone who has an interest outside of their major that's out of this world.

# Investigations

By Michael Dorsey

Don Vaillancourt

One of the largest academic palladium membrane groups in the world: clockwise from front, Federico Guazzone, Research Assistant Professor Ivan Mardilovich, Research Assistant Professor Erik Engwall, Engin Ayturk, Alpna Saini, Professor Ed Ma, Rajkumar Bhandari

## Fueling the Future Economy

A vision of tomorrow's hydrogen economy could boil down to this: a vehicle, powered by an environmentally friendly fuel cell, pulls up to the pumps at the local "gas" station to refill its tank with pure, inexpensive hydrogen.

**For more than a decade,** Yi (Ed) Hua Ma has been working to overcome one of the most important obstacles standing in the way of the widespread use of fuel cells: the high cost of producing hydrogen pure enough to power the cells without poisoning their catalysts. The U.S. Department of Energy has set a target price for hydrogen of $1.50 per kilogram to make small-scale applications, such as fuel cell-powered cars, economical; it costs about $5 to produce that much pure hydrogen right now.

Ma, the director of WPI's Center for Inorganic Membrane Studies and the Frances B. Manning Professor of Chemical Engineering, and his team (which currently includes two research assistant professors, Erik Engwall and Ivan Mardilovich, and four Ph.D. students), have developed technology that could become the heart of a hydrogen refueling network for cars within a decade or so.

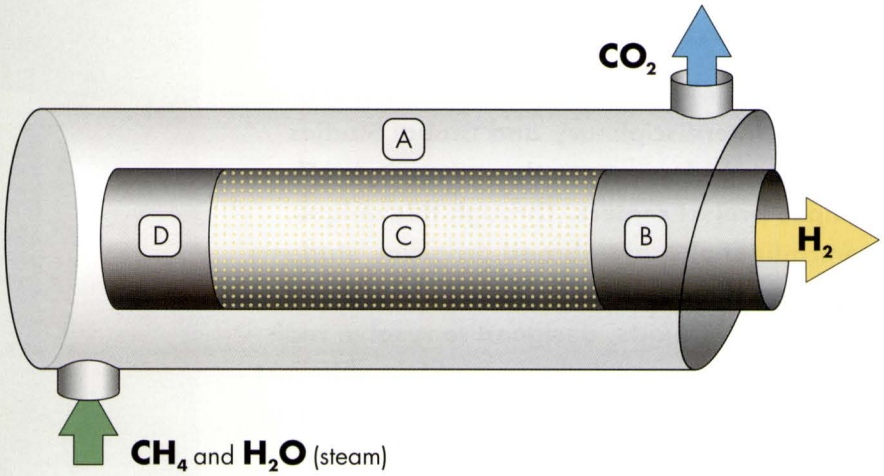
Since 2001, the research has benefited from more than $2 million in funding from Shell International Exploration & Production Inc. and Shell Hydrogen. Shell has invested more than $100 million in hydrogen research since 1999 and wants to be the first company to develop a successful hydrogen refueling system.

Ma's approach to hydrogen production uses an ultrathin membrane made of palladium. The membrane is integrated with a reactor that employs steam reforming and catalysts to extract hydrogen from natural gas. The palladium membrane allows only the hydrogen to pass through; high-pressure carbon dioxide, the other primary product of the reaction, can be stored for sequestration or used in enhanced oil recovery.

The technology offers several advantages over existing hydrogen production systems. For one, the reactor can operate at significantly lower temperatures than conventional reactors (e.g., 500° C versus 700 to 900° C), which means it can be made from less-expensive materials. It also combines, in a single device, the processes of generating and separating the

"We believe that we have developed one of the best processes available for building palladium membranes on porous metal supports. But we also know there are other competitors out there, so we have to keep making progress to maintain our edge."

—Ed Ma




hydrogen, which will dramatically cut both operating costs and the size of the reactor, helping pave the way for distributed applications.

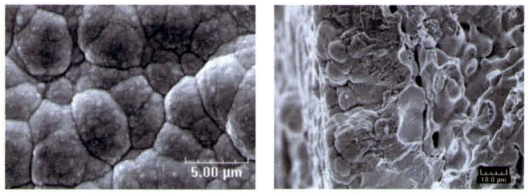
"Making hydrogen is a well-developed process that involves several steps," says Ma, "including high-temperature reforming, low- and high-temperature shifts, and preferential oxidation and separation. Our breakthrough was finding a way to lump all of these processes into a single-unit operation."

One of the most important milestones during the course of the research was a patented process for building the palladium membranes, which can be as thin as 10 microns. Ma and his team first began working with palladium membranes in the early 1990s with large multiyear research grants from two semi-nonprofit agencies in Taiwan. "During that time, I made a decision that could have turned out good or bad," Ma says. "Fortunately, it turned out to be very good."

The decision was to build the membrane on a porous metal support, rather than the more common ceramic support. Ma knew it would be easier to build a membrane supported by metal into a metal reactor, but he also knew that the components of a stainless-steel substrate could contaminate the palladium at high temperatures, thereby significantly decreasing its effectiveness. His team solved the problem by developing a method of "growing" a protective oxide layer on top of the steel, then forming the palladium membrane on top of that.

This process earned Ma, who is a fellow of the American Institute of Chemical Engineers, and his team a patent in November 2001. It was also around that time that Shell, which had been carefully studying the progress of various academic research teams working on novel hydrogen production techniques, learned about the patented membrane technology and decided to make it the centerpiece of its plans for the hydrogen economy.

"We believe that we have developed one of the best processes available for building palladium membranes on porous metal supports," says Ma. "But we also know there are other competitors out there, so we have to keep making progress to maintain our edge. With the support we're receiving from Shell, we hope to keep doing just that."




The diagram illustrates the WPI reactor that will convert methane into pure hydrogen for use in fuel cells. Methane and water, as steam, enter the reaction chamber (A) at one end. From these starting products, steam reforming and catalysts produce hydrogen and carbon dioxide. The central stainless steel tube, which is closed at one end (D), is coated with an ultrathin palladium membrane (C) that lets only hydrogen through; the hydrogen exits at the tube's open end (B). The photomicrographs show the palladium membrane applied to the stainless-steel support, with an oxide layer in between the palladium and the metal to prevent the membrane from being contaminated by metal components.



# Sending Young Adults into the World

## Safety, Security, and Risk Management Issues of WPI's Global Programs

**Natalie Mello is director of Global Operations in WPI's Interdisciplinary and Global Studies Division, which oversees the university's off-campus project centers. Through this unique, nontraditional study-abroad program, students are given the opportunity to complete professional-level projects, designed to resolve real-world problems, while immersed in a different culture. Mello oversees the administration and management of project centers in the United States, Europe, the Far East, Latin America, Africa, and the South Pacific. Her job involves student recruitment, risk management, health and safety issues, participant orientation, and faculty advisor training. This winter, *Transformations* sat down with Mello to learn more about the training and oversight of the university's global program that assures the safety and security of its students.**

Dan Vaillancourt

**1.** WPI's Global Perspective Program has grown since the first project center was established in Washington, D.C., in 1974; today, there are more than 20 student project centers on five continents. Last year, 61 percent of WPI's graduating class of 614 students completed a project off campus. How do you oversee the safety and security of such a large number of students in so many different locations?

I work closely with WPI faculty and staff. The university's risk managers assist in identifying risks inherent in sending students and advisors off campus, controlling those risks whenever possible, and instituting strategies for managing all other risks. I work in tandem with Student Life staff—including the dean of students, the director of the counseling center, and the director of disability services—in creating nonacademic training workshops for project center advisors so they can handle such matters as team dynamics, homesickness, alcohol abuse, gender issues, cultural sensitivities, and general health and safety concerns. I also work with faculty in their roles as advisors and center directors.

These collaborative efforts are supplemented by our site-specific handbooks for students and their families and mandatory student orientation sessions. In sum, good training and site-specific information enables us to reasonably oversee, year-round, the safety and security of a great number of students at different locations.

**2.** Project center students need to be sensitive to health and safety issues unique to the country they are visiting. How do you indoctrinate students on such issues?

Our *Going Global @ WPI* handbooks, which cover all centers, are continually updated. Previously, students were handed loose papers, asked to read, sign, and return them, and told, "Oh, by the way, tell your parents about this, too." Our handbooks, now given to students *and* their families, are comprehensive resource manuals that cover required paperwork and turnover deadlines, information from the

To learn more about what WPI students have accomplished through their global projects, visit www.wpi.edu/+global/Interactions.

U.S. State Department and the Centers for Disease Control, emergency contact information, the university's off-campus policies, and logistical information about where students will be living.

All global program students must attend orientation sessions; those who are traveling abroad attend a general session where paperwork is distributed and everyone watches the film *Safety and Study Abroad*. Site-specific orientations are convened for each group. The handbook is distributed and reviewed, and there are Q&A sessions. A third orientation is for out-of-country destinations and covers the use of cell phones provided by WPI.

**3.** How does the program accommodate the needs of students with disabilities or those who have diabetes, food allergies, and other health-related issues?

Photos of students by Patrick O'Connor

**Above,** Zurich, D-Term 2001: Elizabeth Levandowsky '02, Ondrej Cistecky '02, and Taeyun Choi '02; **right,** Bangkok, C-Term 1999: Leon Vehaba '00, Alexander Lutzky '00, and Irving Liimatta '00

Upon acceptance in the program, students detail physical, sensory, psychiatric, or learning impairments on a self-disclosure form. WPI's director of disability services then contacts those students to discuss on-site accommodations. Sometimes it's a matter of not rooming a nonsmoker with a smoker; other times, accommodations are more complicated. For example, a wheelchair-bound student would not be able to participate in Venice due to a physical environment that's beyond our control, but we would work with that student to find a viable alternative project placement.

All students are required to reveal health-related conditions that may affect them while off campus. This information ensures that appropriate resources will be on site in an emergency. Students are advised to bring required prescriptions in an amount that will last for the duration of their stay and to keep them in original containers that show pharmacy documentation—loose pills in a plastic bag will not make it through customs. There are locations where vaccinations are recommended by the Centers for Disease Control; students receive that information over the summer to give them ample time to contact their family physician.

Regardless of where the students travel, they are always alerted to the risks of contracting HIV and AIDS. A sure way to get the students' attention on this critical issue is when I tell them, "If it's wet and it isn't yours, don't touch it!" I also remind them that it doesn't matter whether you're in Worcester or Windhoek [Namibia], tattoos and piercings increase the chance of contracting those diseases.

**4.** How are faculty center advisors indoctrinated on health and safety issues?

Each May we hold a retreat for faculty who will be project center advisors the following academic year. This carefully planned day, developed in collaboration with campus experts, uses case studies from our experiences. Included in the interactive session are such issues as cultural adjustment, low self-esteem, gender discrimination, sexual assault, high-risk activities, policy violations, alcohol abuse, eating disorders, academic dishonesty, off-campus adjudication, confidentiality, time management, and dealing with dysfunctional teams. Our campus experts guide the advisors through these issues, alert them to outcomes if they are handled improperly, and describe specifically how each issue needs to be addressed to ensure the best outcome.

Our faculty training program is a fairly unique model. In 2003, TIAA-CREF's Hesburgh Award committee recognized WPI as one of four "certificate of excellence" schools for its exceptional faculty development programs designed to enhance undergraduate teaching and learning.

**5.** What effect did the 9-11 terrorist attacks have on the program?

Because WPI was proactive in its risk management practices prior to 9-11, we had a system in place for contacting every student and then

contacting their families to let them know their child was okay. On that day, we had a few students in Europe and a large group at the Goddard Space Flight Center, outside of D.C.

However, as a result of that event, we immediately developed a secure Web site—containing all contact information for students and families, accessible only to those responsible for the students' health and safety—to supplement paper copies. I now carry a pocket PC with that information so a telephone failure won't prevent us from having 24-7 accessibility.

We also implemented a cell phone policy; now participants at foreign sites carry cell phones provided by the university. We know they work, we know the telephone numbers before anyone leaves campus, and we know the bill is paid so service won't be shut off. The cell phones enable us to contact participants in the event of an emergency and keep us in touch with students as they travel before or after the program so we know when flights are canceled or if any mishaps have occurred while students are traveling on their own.

Overall, WPI's Global Perspective Program did not suffer as a result of that awful day; our programs continued without cancellation. The following month, we had a record number of applications (444, compared to 412 the previous year); we sent more students away in 2002–03 than in any other year. Our program's philosophy is based on the need for international understanding, an end that is most effectively attained through living and learning in another culture. Terrorist acts will not cause us to deviate from our fundamental belief in the value of the off-campus experience that WPI provides to its students.

The effect of the tsunami was different. Our project center is in Bangkok, which wasn't physically impacted by this disaster. We did, however, tell students that they were not to travel to the tsunami-affected areas. Even though the Thai government encouraged tourists to return to Phuket and other resorts in the area, we felt there were too many unknowns about the long-term effects—for example, water-borne diseases—that would put our students at risk.


**Above,** London, D-Term 2001: William Espinola '02, Stephen Caldwell '02, Erin Jabs '02, and Jahdiel Fyfield '02; **right,** Venice, E-Term 1998: Tanya Corrado '99, James Behmke '00, and Gabriel Flores '99

### **6.** What happens when a natural disaster, such as the tsunami, or a terrorist attack, like the Madrid train bombings, takes place?

No matter what the crisis is, the first order of business is to contact all students at an affected location. While both the Madrid train bombings and the tsunami occurred before the start of programs in those project centers, some students had traveled to the sites early. Within a few hours, we were able to ascertain the safety and well-being of the students in Spain and Thailand and contact their families.

Next, we evaluated what effect, if any, those events would have on our programs. For Madrid, we relied on information from our contacts at the Overseas Security Advisory Council (part of the State Department) and other reliable sources. We also took into account confusion over who was responsible for the bombings (which occurred on a Thursday) and whether the act was connected to the election, which was scheduled for Monday, and we delayed the start of that program for a few days.

### **7.** How do you respond to parents concerned about the safety of their children?

To parents who are very concerned because their child is in an area of the world where a natural disaster or a terrorist attack has just occurred, I offer reassurance and remind them of the crisis management system we have in place. To return to 9-11 for a moment, we had a student at Goddard [near Washington, D.C.] whose mother was in Manhattan. They were frantic to hear from each other, but were unable to connect directly by phone. I relayed messages between them until they were able to make a connection.

However, we are less sympathetic with a parent who expects us to coddle their child by acquiring passports for them, by making exceptions to a policy, or by granting them permission to accompany their child off campus. (Our experience has shown that if students can't manage to get their own passports, they are probably not ready for the unique circumstances they'll face on their own in a foreign culture.)

"Our program's philosophy is based on the need for international understanding, an end that is most effectively attained through living and learning in another culture."

In our handbooks, we include a "parent-to-parent" letter that offers advice from WPI employees whose children have participated in the program. Included are words of wisdom on health and safety issues, as well as tips, such as, "Let them know what you are concerned about and talk these issues out. Make sure they understand what your expectations of them are and that you trust them to make good decisions." Since we began including the letters, we've had fewer phone calls from worried parents.

**8.** WPI's Global Perspective Program was selected as one of 10 noteworthy institutional programs by NAFSA: Association of International Educators in its 2003 report, *Profiles of Success at Colleges and Universities.* How noteworthy is WPI's program, in relation to programs at other colleges and universities?

Our aggressive risk management practices are nationally regarded as the model in study-abroad programs. In addition to NAFSA's recognition and the Hesburgh Award, WPI was one of seven colleges and universities in the United States and Mexico to be honored in the third annual Andrew Heiskell Awards program for Innovation in International Education. [The Institute of International Education created these awards to promote international education programs that are making a real difference in the lives of the students and communities they serve.] Our Global Perspective Program received an Honorable Mention award in the Study Abroad category for providing an innovative program and service, and making study abroad more accessible to a broader student population.

I've been asked to lead workshops and conference sessions on the subject of risk management at professional meetings. In addition, I've been consulted on issues relating to risk management, health, and safety by colleagues at various institutions—Connecticut College, Boston University, Loyola Marymount, UC–Santa Barbara, the University of Rhode Island, and Wellesley College, to name a few—as well as at companies with study-abroad programs. I've also contributed to a chapter titled "Maximizing Safety and Security and Minimizing Risk in Education Abroad Programs," in the most recent edition of NAFSA's *Guide to Education Abroad for Advisers and Administrators,* considered "the bible" for study-abroad professionals.

**9.** How do WPI's project centers influence the lives and future careers of students?

I can only speak anecdotally about the influence of our off-campus project experience, as we've not yet collected data. But I know students who adopted a minor in international studies as a result of their experience; others changed majors; a few decided engineering was not the right career choice. Some have decided to seek employment overseas; others pursued careers with companies that have overseas opportunities. Many, many students say their experience was life-changing. At a minimum, it increases their curiosity about other cultures and whets their appetite for more travel. Every student who participates in the program gains a greater understanding of the world and, perhaps more important, a greater understanding of themselves.

**10.** What aspect of your job has given you the greatest sense of accomplishment?

Before they leave for the program, most of the students are awkward presenters and writers and lack confidence in their ability to tackle and solve the problem presented by the project. Then, 15 weeks later, you see a remarkable transformation: the students are comfortable standing in front of people and presenting the work they've done; you can sense their confidence and their pride.

Most students return eager to talk about their off-campus experiences. I've harnessed that energy by getting students involved in Global Ambassadors, where they share their enthusiasm for the program with current and prospective WPI students, visiting dignitaries, alumni groups, and anyone else who wants to know about the program from the students' perspective.

While professional recognition from my colleagues at other schools is gratifying, it's being involved in a program that does so much for our students that keeps me enthusiastic and gives me a deep sense of personal satisfaction.

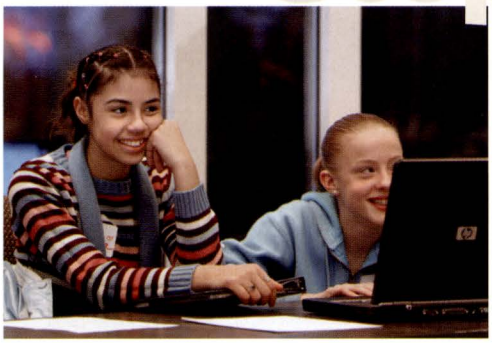
Through innovative summer camp programs, WPI's Office of Minority Affairs encourages children to take the first step toward a future career in engineering

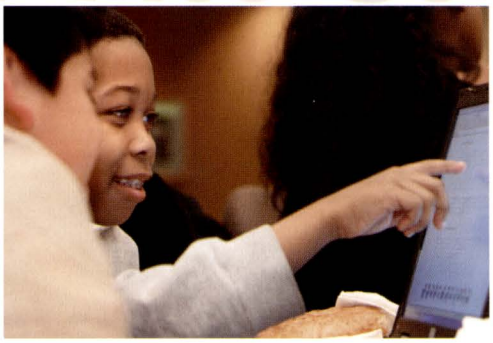
# Striving for Future Success

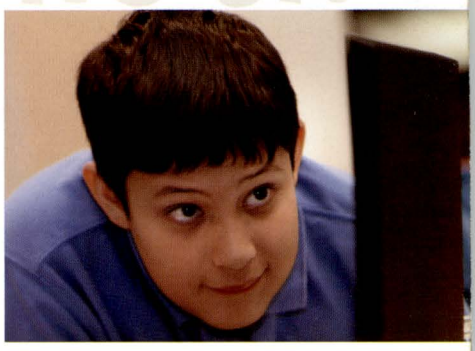
**By Eileen McCluskey** Photography by Patrick O'Connor and Dan Vaillancourt

Calvin Hill, director of WPI's Office of Minority Affairs, and Gina Melendez '06, research assistant, at WPI's new OASIS cultural center (Offering Acceptance, Support, and Inclusion to Students).

# Step into Strive Jr.







**On a January evening,** in the Campus Center Odeum, 20 middle school students and their parents focus intensely on an assignment. Individually, they puzzle over an illustration showing four boxes; each box contains nine dots. Gina Melendez '06, research assistant in WPI's Office of Minority Affairs, instructs everyone to make a design by connecting the dots. Brows furrow as the group hunkers down.

"Time's up," Melendez calls out a short time later. She asks for volunteers to show the group their creations. Three kids and one adult head for a flip chart to draw triangles, rectangles, and squares within the confines of each box.

"Here's another design idea," Melendez offers, as she draws sweeping lines that burst through the frames of the boxes and dive back in. "Did anyone besides me connect their dots by going outside the box?"

No one had. Why?

"Solid lines mean stay inside," one child suggests.

"Not with engineering," Melendez answers. "In engineering, there's no such thing as the box." Seeing puzzled expressions, she explains, "We start with *all* our ideas, not just the obvious or the ones that seem correct. There's no right answer, only possible solutions."

## Engineering a youthful interest

Welcome to Step into Strive Jr., an eight-workshop series designed by the Office of Minority Affairs to generate excitement and pump up enrollment in WPI's summer day camp, Strive Jr. The weeklong program brings African-American, Latino, and Native American students from Worcester public middle schools to campus to experience engineering's diverse disciplines by designing flying cars, spaceships, or new cosmetics.

Strive Jr. morphs into Strive, a summer residential camp for high school students that takes them deeper into the sciences by letting them hit the labs to test water quality, build robots that respond to sound, and explore how to make artificial skin.

"Our summer programs increase the likelihood that Worcester's minorities will set their sights on—and begin preparing for—an engineering, math, or science career," says Calvin Hill, director of the Office of Minority Affairs. "With the Strive programs, we aim to nurture engineering's most underrepresented minorities, spending more and more time with them as they grow older, so they'll one day matriculate at WPI."

## Building a future

At each "Step into" workshop, a WPI faculty member introduces an engineering discipline with a hands-on exercise. In January, Gretar Tryggvason, head of WPI's Mechanical Engineering Department, spoke while images of rockets, computers, and airplanes flashed across a large screen. "Mechanical engineers are everywhere," he told participants. "They work in software companies, car manufacturers, utilities, and the government. When the flying car becomes a reality, mechanical engineers are going to be there."

For Hill and Melendez, the think-out-of-the-box exercise is a metaphor for the socio-economic box from which they want the children to escape. "For a variety of historical and cultural reasons," says Hill, "participation in math, science, and engineering in the United States, especially by the populations targeted by our programs, has not reflected the diversity of the nation's population [see box, next page]. There is a lack of minority role models in the science and engineering fields and low cultural and familial expectations for attending college."

Melendez and Hill expect to keep the "Step into" enthusiasm marching through April, when an engineering design competition will give students and parents, working in teams of three or four, the opportunity to design a desk, build a prototype, and make a presentation at an awards dinner. A panel of WPI faculty will select the winning design.

Back at the January workshop, Hill and Melendez seem to have achieved their goal: parents and kids are thinking ahead to


the summer. One parent, Noemi Mendez, asks about the cost of the program. When she hears $125, she whispers to the person sitting next to her that she's seen a similar program advertised for $400. "This is a good deal," she adds, then smiles at her 11-year-old son, Gabriel Navarro. "I'll definitely send him to this program." Another parent, Elaine Watson, says that her 11-year-old son, John, "will most definitely come here this summer. It's wonderful that WPI is doing this. It shows the kids that there are other things out there and gives them the opportunity to start learning new things while they're still so young."

This is exactly what Melendez wants to hear. "I want to help the kids see that they can plan for college," she says. "And I want the parents to come away from the workshops thinking, 'Hey, our kids can be engineers.'" ■

## Diversity means overcoming not-so-great expectations

**The good news:** The American Council on Education reports that African-American, American Indian, Asian-American, and Hispanic enrollments in American colleges increased by 51.7 percent from 1991 to 2001, to more than 4.3 million students.

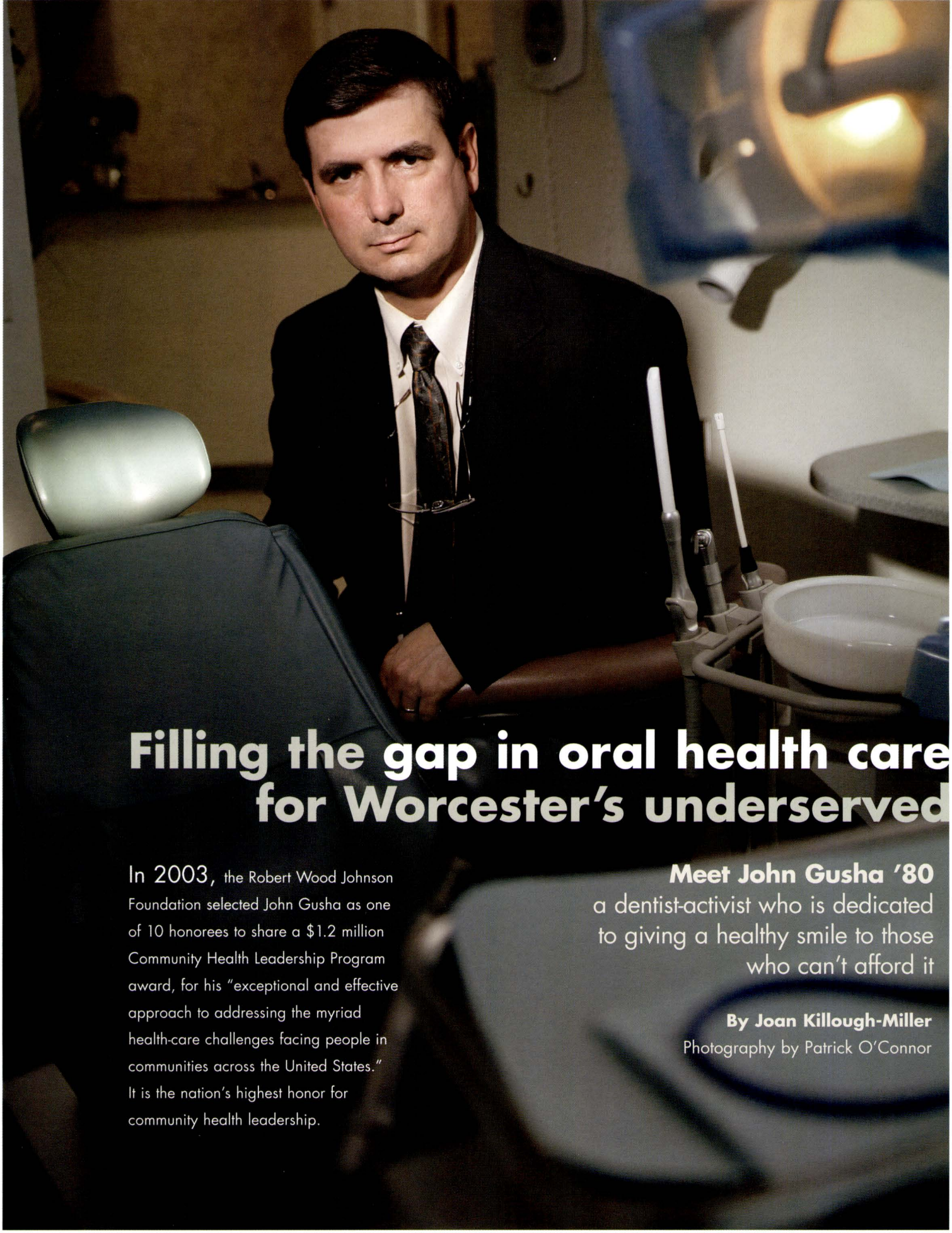
**The bad news:** According to the 2003 Census Bureau report, African-Americans represent 11 percent of the nation's workforce yet hold a mere 4 percent of science and engineering jobs requiring a bachelor's degree or higher; Hispanics constitute 13 percent of workers, but hold only 3 percent of these jobs.

WPI is part of a national collaboration of colleges and universities seeking to increase enrollment, retention, and graduation of the nation's underrepresented minority students in science, technology, engineering, and mathematics. It is one of five members of the Northeast Alliance for Minority Participation in Undergraduate Education in Science, Mathematics, and Engineering—a group that includes Northeastern University, the University of Massachusetts Amherst, the University of Rhode Island, and the University of Connecticut. The Northeast Alliance is one of 32 similar alliances involving 450 institutions of higher learning; each is funded by the Louis Stokes Alliance for Minority Participation (LSAMP), a project of the National Science Foundation created by congressional mandate in 1991.

"It's good for the country to make diversity a priority," says Minority Affairs Director Calvin Hill. "Diversity of thought and people is an essential need in our ever-changing global workforce."

Indeed, in 2002 the Congressional Commission on the Advancement of Women and Minorities in Science, Engineering, and Technological Development stated: "Unless the science, engineering, and technology labor market becomes more representative of the workforce as a whole, the nation may well face severe shortages in workers [in these fields], such as are already seen in many computer-related occupations."

So far, the LSAMP network has begun the long journey toward equal participation. In 2003, over 23,000 underrepresented minorities earned their science, math, engineering, or technology degrees, up from 22,000 in 2002. In 1991, when the project started, the figure was only 7,000. "As a nation, we need 50,000 a year to make significant progress," notes A. James Hicks, LSAMP director. "We're heading in the right direction."

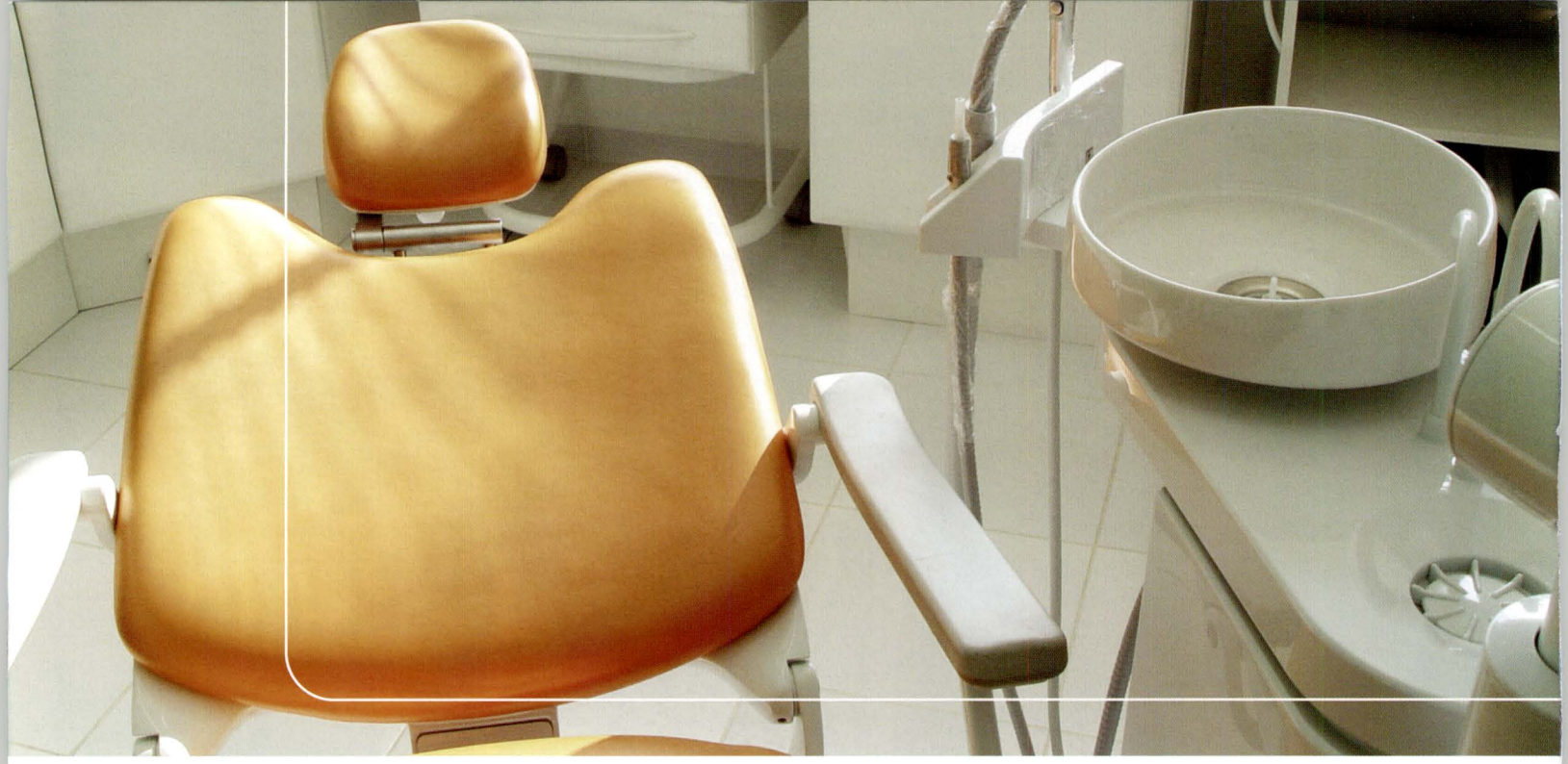


# Filling the gap in oral health care for Worcester's underserved

**Meet John Gusha '80**
a dentist-activist who is dedicated to giving a healthy smile to those who can't afford it

**By Joan Killough-Miller**
Photography by Patrick O'Connor

In 2003, the Robert Wood Johnson Foundation selected John Gusha as one of 10 honorees to share a $1.2 million Community Health Leadership Program award, for his "exceptional and effective approach to addressing the myriad health-care challenges facing people in communities across the United States." It is the nation's highest honor for community health leadership.



"A State of Decay." That's what the Massachusetts Society for the Prevention of Cruelty to Children called its 2004 report on the commonwealth's oral health-care system, which leaves the majority of Medicaid-eligible children—about 380,000—without dental treatment.

"Worse than a third-world country" is how Holden dentist John Gusha '80 describes the epidemic of dental neglect that festers in his own backyard. Worcester's unfluoridated water, along with sugary snacks, creates special concerns for the city's children, he says, adding that two out of three students seen in public school screenings suffer from untreated decay, with an average of three to four cavities each. This contrasts sharply with the private-pay patients he sees at his Holden office. "In Suburbia USA, where I practice, I see very little decay in children's teeth, due to fluoride. Those kids are being raised so that by the time they're 30, probably 90 percent won't have a filling in their mouths. That discrepancy has got to be addressed."

## From plaque to politics

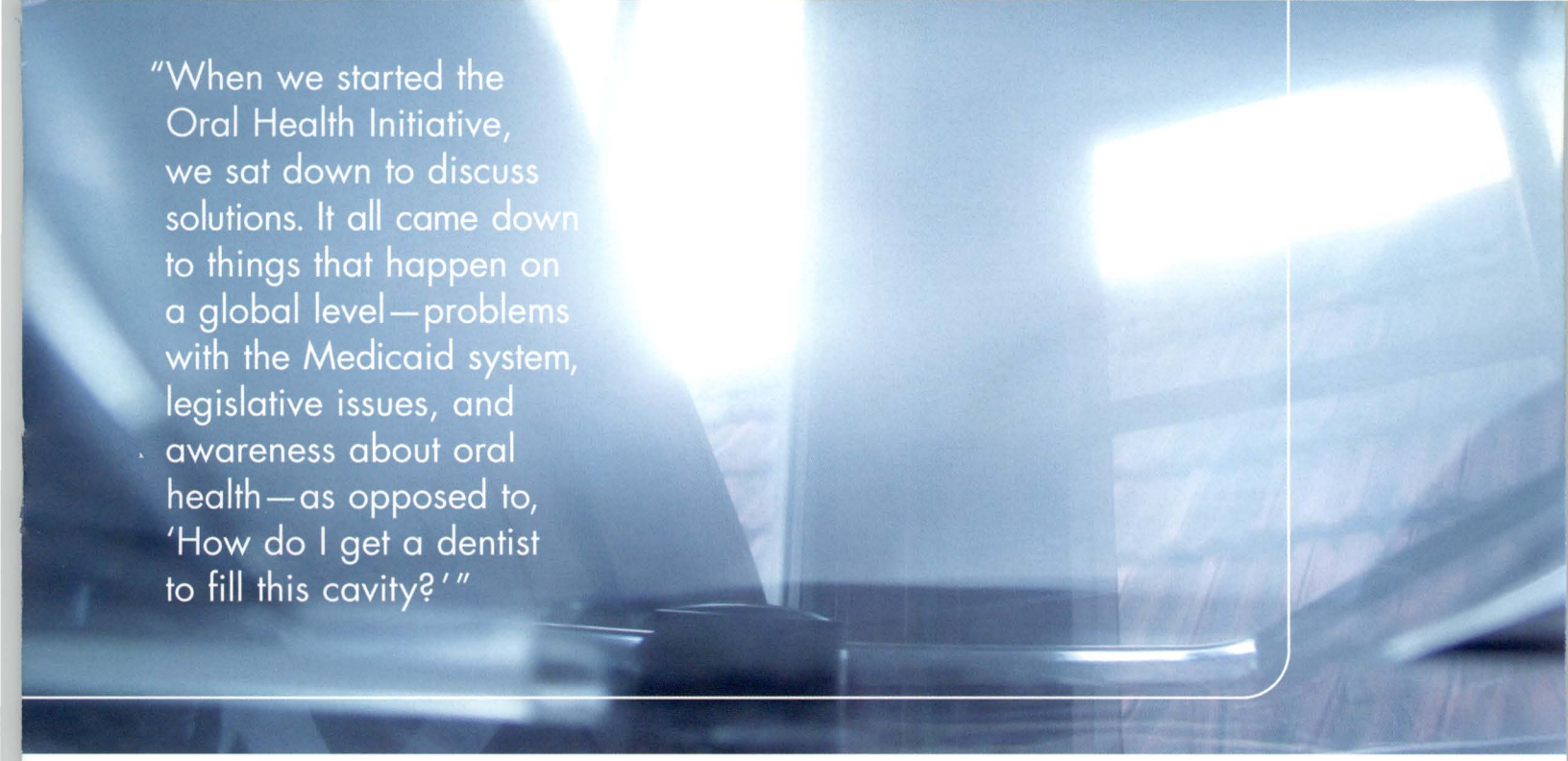
Five years ago, Gusha brought together local dentists and nonprofit agencies to form the Central Massachusetts Oral Health Initiative. Through CMOHI, he has received $3.6 million in grants (his major sponsor is the Health Foundation of Central Massachusetts) to fund ongoing programs, including fluoride varnish treatments and dental screening programs in 21 area schools. In addition, CMOHI has invested about $400,000 in a public awareness campaign on the fluoride issue.

"When we started the initiative, we sat down to discuss solutions," he says. "It all came down to things that happen on a global level—problems with the Medicaid system, legislative issues, and awareness about oral health—as opposed to, 'How do I get a dentist to fill this cavity?' Dentists are willing to do their part." [The American Dental Association estimates private dentists provide an average of $36,000 in free or discounted care given each year.] But, Gusha points out, "It's easier to volunteer abroad than it is to serve the needs that exist here in Central Massachusetts." Friends who have served in third-world countries tell him, "John, I can do brain surgery over there, but they won't let me fill a tooth here without CORI [background] checks and an impossible amount of credentialing, even though I'm already licensed as a private-practice dentist!"

To remedy a critical shortage of dentists available to patients on MassHealth—the state's Medicaid program for children from low-income families and foster children—Gusha is working for reforms. "In Worcester County, there are only a handful of private dentists who accept MassHealth—and no one wants to be added to the list," he says. "The problem is, if I take one Medicaid patient, by law I have to accept every Medicaid patient who requests treatment. I would be inundated with phone calls." With reimbursement rates lower than the actual cost of care, he says, "I couldn't stay in business."

"Caseload cap" regulations in other states allow dentists to limit the number of Medicaid patients they accept. Gusha has been working for years with Massachusetts state senator Harriette Chandler to implement a two-year pilot program to test the impact in Worcester County. With 300 private-practice dentists in Central Massachusetts, Gusha says, "If everyone took a little bit, it would help the problem immensely."

The state's maddeningly inefficient processing of claims also needs reform. "Dentists would rather work for free than struggle with the MassHealth system," Gusha says. "Dentists aren't going to sign up for a program that keeps denying claims




and has them writing letters all the time just to collect a $15 or $20 payment. It's just not worth it." That's why he's also pushing for a private, third-party administrator (TPA) to process claims, a solution that has helped in other states.

### Drilling home his message

Gusha's first efforts—a free clinic in a church, where volunteers used flashlights to peer into patients' mouths—has evolved to advocating for structural change on a statewide level. As a faculty member at the University of Massachusetts Medical School in Worcester, he is among a group of dentists and physicians who are developing a dental residency program that will help integrate oral health into the medical curriculum and provide a much needed dental presence in Worcester's hospitals.

He devotes one day a week—time taken away from his private practice—to meet with state legislators, write grants, and work to convince the public that fluoride is as essential as childhood vaccinations and that dental care is not a luxury, but a "mainstay" of overall health.

Momentum for change is growing, and recognition from the Robert Wood Johnson Foundation (see page 19) has helped Gusha gain the ear of Rep. James McGovern (D-MA) and senators Edward Kennedy (D-MA) and John Kerry (D-MA). "The phone calls get answered quicker now," he jokes. Although Gusha is often put in the media spotlight, he points to the many heroes—dentists, educators, and politicians—who have rolled up their sleeves for this battle. "I could certainly work full time on this problem," he says. "We could use a dozen people working on it. All you can do is hope to make a difference."

In the meantime, the majority of low-income children go without routine care that would prevent serious problems down the line—even though federal law requires Medicaid dental coverage for children from birth to age 21. "To let this generation grow up with as much decay as is in their mouths is criminal neglect," says Gusha. In fact, the advocacy organization Health Care for All has filed a class action suit against the commonwealth for failure to provide adequate dental services to Medicaid-eligible children.

For adults, the safety net is even thinner. Two years ago, Medicaid eliminated all dental care for people over 21. Adults with acute problems might resort to the emergency room, only to be given a prescription for an antibiotic or painkiller and referred to one of Worcester's two community health centers. "There they'll find a waiting room full of people, and two dentists dedicated to treating emergencies all day long," says Gusha. "It's first come, first served, with waiting lists of up to a year for comprehensive care." He has seen an abscessed tooth progress to a brain stem abscess and systemic infection. "It ended up costing $200,000 in hospital care that could have been prevented by treating a cavity three years before," he says.

Making a difference—statewide, or in the life of an individual—is what keeps Gusha going. He recalls one teenager who came to a Worcester clinic for treatment from a rural town at the western reaches of the county. "I'm looking at his chart, which has red marks indicating decay, everywhere," Gusha says, "and I'm trying to figure out where to start. From behind the chair I say, 'OK, Billy, what can we do for you today?' and he turns to me and says, 'Doc, I can't get a date!' He gives me a big grin; I see that his teeth are broken down right across the gum line. I worked on him for three hours and was able to build up all his front teeth. Though he needed to come back for root canals and other work, we were able to give him a smile that day." ■

**Richard Hansen '76, a leader in the field of solar electrification, was recognized as a Technology Pioneer by the World Economic Forum in 2003—one of two selected in the field of energy—for his development and application of innovative and transformational technologies in rural energy delivery.**

Dan Vaillancourt

A vision of renewable energy for developing countries bridges the energy divide

# Power to the People

**By Wendy Wolfson**

Richard Hansen '76 keeps pictures of Felipe Martinez and his wife, Altagracia, on display in his office. The Martinez family, who live in Puerto Plata, Dominican Republic, were his first solar electrification customers—among almost two billion people worldwide living in rural areas too remote to be connected to a traditional electricity grid. Before Hansen installed their solar panel, the family used flashlight batteries to power their radio and kerosene lamps to light their home.

For developing countries with abundant sunlight and without extensive coverage from an electric grid, solar panels make cost-effective sense: electric power generated from the panels costs less than their current energy sources and provides clean, renewable energy. With an output of 50 to 100 watts, stand-alone solar units can power lights and small appliances in homes and small businesses.

Hansen's office, located in a converted mill building in Chelmsford, Mass., is a scrapbook of the 20 years his Global Transition Group has invested in introducing clean solar power to rural towns in the Dominican Republic, Honduras, and other developing countries. The winding roads he and colleagues have traveled in 4x4 Toyota pick-ups filled with photovoltaic (PV) panels have made rural energy delivery for several thousand customers a reality and created a model of success for the renewable energy business.

## Searching for a better life

The oil embargo of 1973 hit the nation while Hansen was studying mechanical engineering at WPI and piqued his interest in renewable energy. Fresh out of college, he landed a job in the nuclear program at Westinghouse; his first assignment was designing a refueling method for a floating nuclear reactor. He wasn't comfortable with the nuclear industry, "mainly due," he says, "to the issue of spent fuel storage." While being groomed for management (he earned an MBA from Boston University), his interest in the energy sector grew, particularly through designing machinery to solve environmental and safety issues.

But corporate life wasn't for him. Instead, he returned to a frequent vacation spot, the Dominican Republic, in 1984 with a photovoltaic module and began researching electricity use patterns.

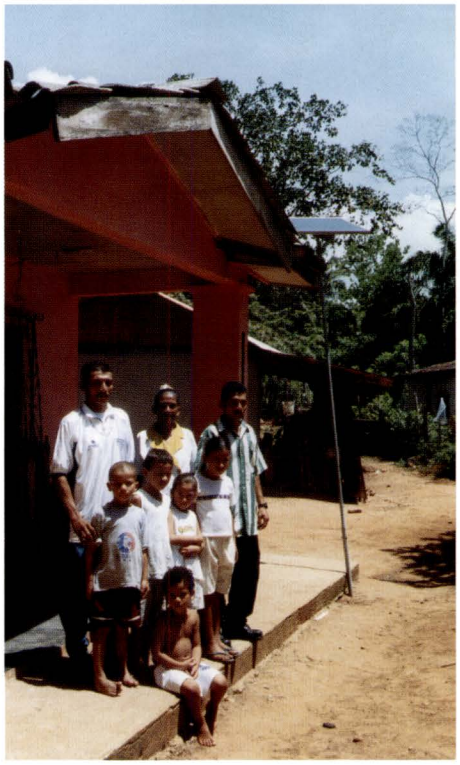
"At the time, about two million people out of a population of seven million had no power at all," he says. "With a photovoltaic panel, you can run fluorescents and low-power lights, radios, and TVs." Analysis of energy costs showed that about 50 percent of the people were spending $6 a month or more on kerosene, dry cells, and car batteries. "Their monthly incomes were $100 to $200," he says, "so the question then became, what can people pay?"

Hansen spent a decade introducing photovoltaics in the Dominican Republic and Honduras, financing the first system himself as a demonstration. Through Enersol

"When you have electricity, you can run sawmills, process crops, make things with sewing machines, and turn it into economic development."

—Robert Pratt, director of the Renewable Energy Trust of the Massachusetts Technology Collaborative

Associates—the nonprofit he started in 1984 to introduce solar technology to remote rural areas in Latin America by assisting local organizations and training solar technicians—he set up a revolving micro-credit fund. "Only a certain percentage of people could afford a module on a cash basis at harvest time," says Hansen. "A system cost between $500 and $1,000." Micro-credit was used to establish affordable payment plans and help local solar entrepreneurs reach more customers.



Enersol secured funding from U.S. foundations, Sandia National Labs, and USAID to implement programs in the Dominican Republic and Honduras, then linked up with the Rural Electrical Cooperative Association's international program to provide technical assistance on their efforts in Belize, Guatemala, and Bolivia. Having introduced PV technology, Enersol Associates now supports community projects that use solar units for potable water-pumping to improve health and to run laptops in schools to enhance rural education.

"Richard was never able to get a government to step in and be a partner with him, but he's incredibly persistent," says Robert Pratt, director of the Renewable Energy Trust of the Massachusetts Technology Collaborative, who has had a long relationship with Hansen through the development of power projects in Guatemala and El Salvador. "He made it work with a lot of blood, sweat, and tears, and initially depended on philanthropic organizations for cash flow." For the past 20 years, Hansen has raised millions of dollars to assist in bringing renewable energy to developing countries in areas local governments have been unable to reach.

## Electricity brings enlightenment

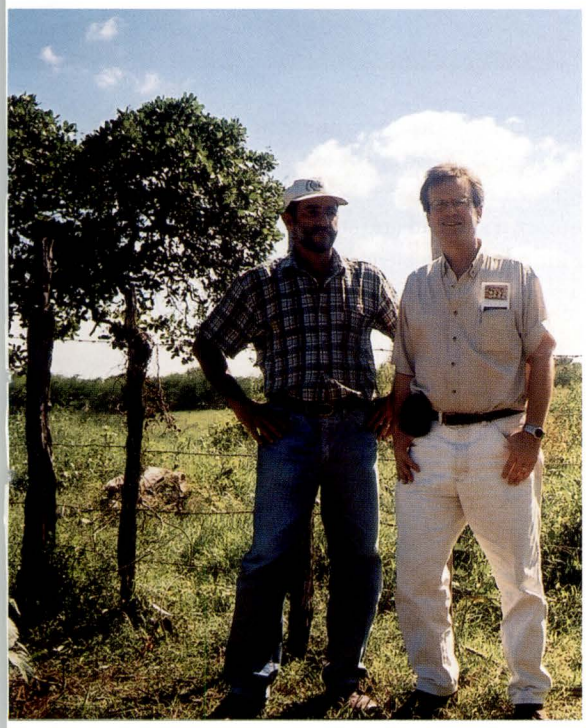
Hansen returned to the United States in 1992 with a wife and a family. A year later, he started Soluz [the name is a combination of sun and light in Spanish], a business and technology development company that combines distributed photovoltaic technology with an unsubsidized rental, or fee-for-service, offering. He raised $3 million in capital to establish two pilot subsidiary operations—Soluz Dominicana (1995) and Soluz Honduras (1998)—to purchase solar systems and lease them to rural customers. By 2002, the two operations had rolled out a total of 3,000 rental systems, managed by 30 local employees, resulting in more than 200,000 monthly rental payments.

Including cash and micro-credit sales, Soluz has served over 6,000 customers; however, developing methods to reach challenging rural locations is still a work in progress. Economic difficulties in the countries where Soluz does business, including hurricanes, currency fluctuations, and arbitrary government grid extension policies, have made Hansen rethink his business model. Soluz is currently pitching solar rental as a flexible way to pre-electrify in conjunction with government plans to extend the grid.

In 1996, Hansen started Global Transition Consulting (GTC), a joint venture of Soluz and Enersol to allow other institutions access to their nonprofit and for-profit experiences. His primary focus is now on consulting. "Our highest value is in know-how and assisting global transition to sustainable energy," he says, adding that the consulting company advises international organizations on rural energy projects and has recently been working under USAID funding in the Philippines and the World Bank Group in Bolivia. GTC also funnels royalties (a percentage of consulting revenues) back to Enersol to support community education and health projects. Hansen's Global Transition Group now consists of Enersol, Soluz, and GTC—with about 40 dedicated staff in several locations.

Hansen's achievements, says Pratt, have not been just in providing electricity, but in providing opportunity. "When you have electricity, you can run sawmills, process crops, make things with sewing machines, and turn it into economic development," he says. "You can link better standards of living to additional jobs. Richard Hansen believes in his mission. He is absolutely dedicated to making the world better." ■

**Page 23,** a pastor and his family in Trinidad beside their newly installed PV system that powers lights, radio, PA system (loudspeaker), and even an electric guitar used during church services. **Page 24,** customers of Soluz Honduras outside their PV-enhanced home. **Above,** Richard Hansen (at right) en route with two young helpers to an early installation in Puerto Plata in 1985. **Below, left,** Hansen with longtime friend and solar dealer Teofilo Cepeda, whose business startup following training by Enersol in 1988 has led to sales of over 1,000 systems in the Dominican Republic. **Below, right,** staff members at the Soluz Dominicana service center in Cotui.



When Michelle Gass '90 left a marketing position with Procter & Gamble for Starbucks Coffee Company, her career—and the rapidly expanding company—got a rejuvenating jolt.

# Life in the

**In the 1990s,** Starbucks Coffee Company was rapidly scooping up the coffee market, having grown to a half-billion-dollar business with 700 stores nationwide. But it was still in its formative stages, says Michelle (Petkers) Gass '90, who joined the company in 1996 as the Frappuccino marketing manager. The blend of rich Starbucks coffee and cold milk grew from what she describes as "a very small part of our business" to a line of 10 flavors in three versions. "Today the Frappuccino is a significant part of our business, with new seasonal flavors introduced every year, such as last summer's Java Chip."

Since Gass joined Starbucks, the coffeemaker's stock price has made an orbital leap of 451 percent—from $8.25 per share on Sept. 30, 1996, to $45.46 per share on Sept. 30, 2004. Today, with more than 7,500 retail locations in North America, Latin America, Europe, the Middle East, and the Pacific Rim, annual sales for the world's leading retailer, roaster, and brand of specialty coffee are at $5 billion.

## A double shot at success

"I was introduced to the world of the consumer and loved it," Gass says of her undergraduate internship and postgraduate position in Cincinnati-based Procter & Gamble's health-care products research and development group. Along with her knowledge of chemical engineering, Gass discovered a knack for understanding the consumer and driving innovations from that perspective. "One of the great models P&G provides is that the technical and the consumer perspectives coexist."

When her husband, Scott, had the opportunity to move to the West Coast, Gass considered, "Why not? I feel ready for an entrepreneurial adventure." At Seattle-based Starbucks, her passion for discerning consumer needs and attitudes transformed the coffee giant's newly introduced ice-blended coffee and mocha drink line into a mini-empire; at the same time, she attended the University of Washington's evening executive MBA program, earning her degree in 1999. "That's just one indication of how inspiring it is for me at Starbucks," she says, crediting the company's entrepreneurial culture. "We're known for how well we treat our partners," she adds, referencing the term Starbucks uses for its employees. All partners are granted stock options—Starbucks was one of the first companies to offer this to its part-timers before becoming publicly traded; part-time partners also receive comprehensive health coverage. As a result of these and other benefits, Starbucks now ranks No. 11 of 100 best companies to work for in America (according to *Fortune*'s Top 100 and the Great Place to Work Institute).

# Espresso Lane

**By Eileen McCluskey**

Photography by Patrick O'Connor

As Starbucks has grown, so have Gass's responsibilities. In 2001 she was promoted to vice president of the beverage category, which represents 70 percent of the company's product portfolio. In May 2004 she was elevated to senior vice president, category management, where she oversees a 150-person department and drives the company's beverage, food, coffee, and merchandise product line globally. "This includes leading talented partners on both the product marketing and R&D sides of the business," she explains. "In essence, this team is the innovation engine for Starbucks retail stores."

## Engineering her career

Gass is quick to credit her undergraduate education for her business success, citing the WPI approach to education, with its blend of academic skills and projects. "The project piece was a critical component that showed me how to be successful in the corporate world," she says. "And the notion of collaboration is so fundamental to how we operate at Starbucks." Her professors, she adds, "were inspiring about academics, leadership, and life."

Gass did her science, technology, and society project in Washington, D.C., assessing the progress on key Superfund program projects with Rick Sisson, director and professor of manufacturing engineering, materials science and engineering, and mechanical engineering. "Michelle was one of the best students I ever had," Sisson says, noting that Gass and her project partners worked 12-hour days in Washington and that her presentation wowed higher-ups at the Environmental Protection Agency. "She drove the whole thing. Michelle's the reason that project was so incredible."

"The formal presentation I gave for that project [which won the President's IQP Award that year] was my first," says Gass. "Through it, I found I really enjoyed public speaking and the excitement of sharing a vision. Now I give presentations and speeches every day—in board rooms, in meetings with Wall Street analysts, and to thousands of partners." [Gass will receive

WPI's Ichabod Washburn Young Alumni Award for Professional Achievement at Reunion Weekend 2005.]

## The next cuppa

Gass sees tremendous opportunities for Starbucks in coffee's continuing popularity. "Coffee is a staple in people's lives," she says. "In the United States alone, 50 percent of the population consumes coffee every day. We see this figure as an opportunity to build more stores and bring in more customers, and we have significant plans to do that. We see very strong growth in the coming five years. Within the company, we still think of Starbucks as being quite young."

Too, the company's international trade policies are considered progressive: in 2003, 97 percent of its coffee purchases were at outright prices, versus commodities market prices. "We pay $1.20 per pound, a significant premium over commodity prices of $.55 and $.70 per pound," says Gass. "The prices we pay our farmers help them maintain sustainable businesses, and we have a sustainable supply of high-quality coffee."

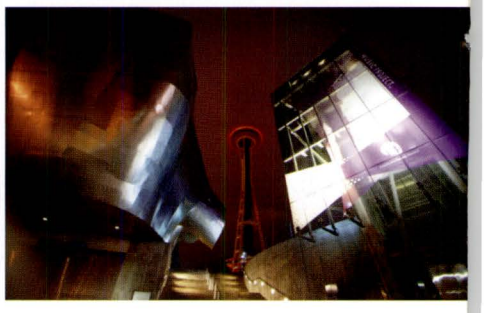
As for how other coffeeshops fare against such an enormous competitor, industry watchers say Starbucks doesn't stifle the little guys. "We've seen huge growth in the independent coffeeshop market, even with Starbucks' growth," says Matt Milletto, consulting director of the Eugene, Ore.–based Bellissimo Coffee InfoGroup Inc., which provides consulting services to independent coffeehouses. According to the latest estimates by the Specialty Coffee Association of America, more than half of the 18,000-plus coffeeshops across the nation are independents.

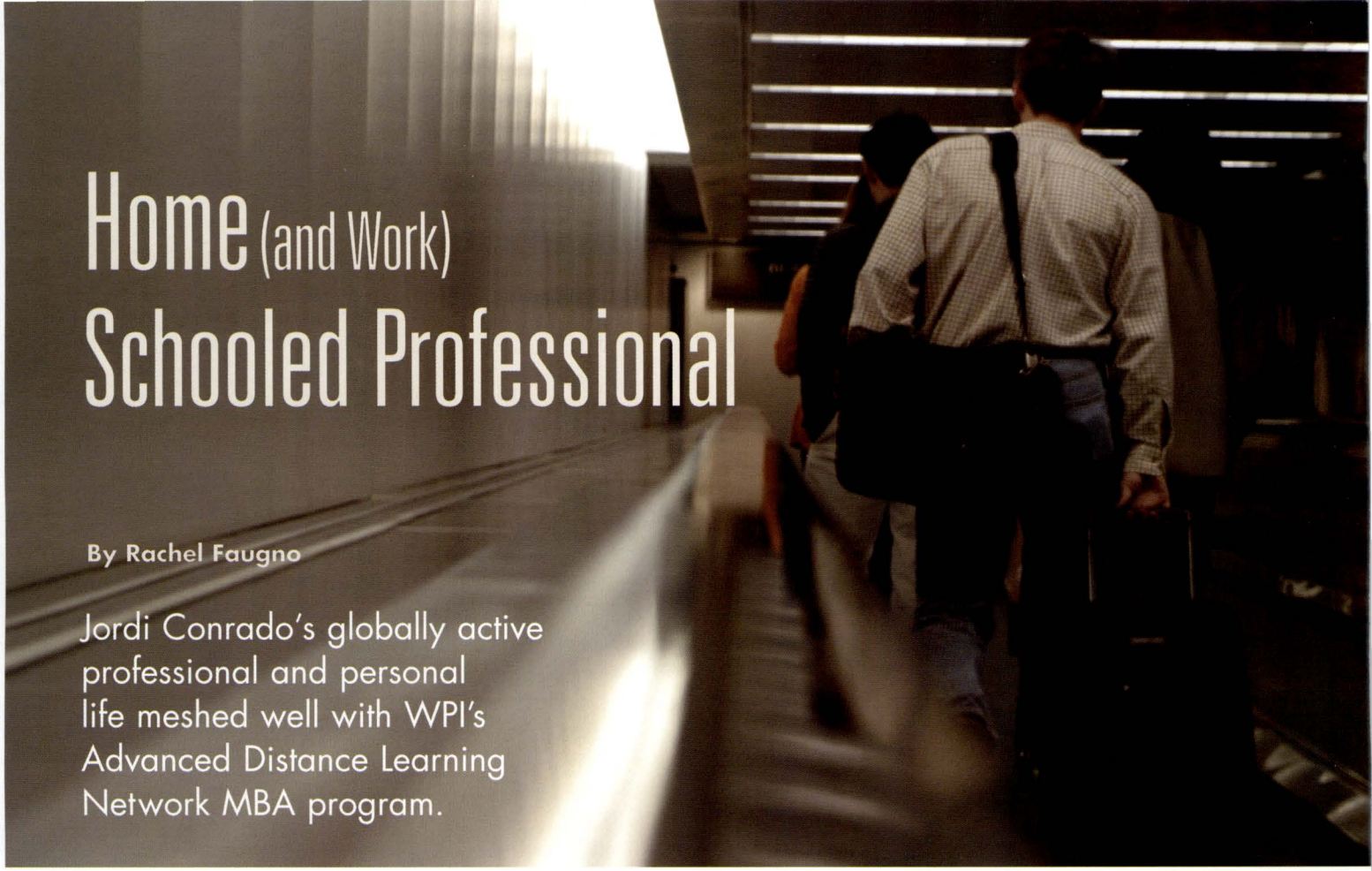
"We make the idea of great coffee better known generally," says Gass. "And we educate the public about the quality and experience of a phenomenal cup of coffee."

## A pot of gold

"I feel very proud to be associated with Starbucks," says Gass. "If I didn't feel absolutely impassioned about my work, I wouldn't be here."

The energy and passion she demonstrates for her employer is surpassed only by her celebration of family. "Scott and our two children are the light of my life," Gass says. She attends all of 5-year-old Megan's school plays and dance recitals and enjoys plenty of playtime with toddler Will. "Starbucks is very supportive of my family life. We're all thriving—my family, the company, it all fits together so well. I really feel this job has been my destiny." ■



# Home (and Work) Schooled Professional

By Rachel Faugno

Jordi Conrado's globally active professional and personal life meshed well with WPI's Advanced Distance Learning Network MBA program.

**Jordi Conrado '04 typifies today's** highly mobile professional. Over the past five years he has changed jobs three times, moved twice, and traveled throughout the United States and Europe. What may not be typical, however, is that he completed a top-drawer MBA program at the same time, thanks to WPI's Advanced Distance Learning Network (ADLN).

"I was looking for a flexible MBA program compatible with my travels," says Conrado, who enrolled in 1999 while living in Concord, Mass., and working for a company based in San Jose, Calif. He returned to his native Barcelona in 2001; two years later, he began working in London and spending weekends in Spain. Through it all, he progressed in his courses as smoothly and seamlessly as did students on campus. "One of the best things about the program is that in-class students and ADLN students follow the same program and maintain the same pace," he says. "This forces ADLN students to keep up and facilitates a free exchange among in-class and ADLN students."

ADLN offers degree and certificate programs with the same courses, content, and instructors as WPI's on-campus programs, but with one important difference: students never have to be on campus. They can earn an MBA in the management of technology, an M.S. in fire protection engineering, or an M.S. in civil and environmental engineering; or they can enroll in a number of graduate certificate programs. According to Pamela Shelley, ADLN assistant director, most of the 300 or so students are working professionals and part-time students. "Many people mix and match, taking some classes on campus and others online," she says. "This flexibility is extremely important for busy professionals."

The quality of the program is just as important. "There is complete parity between our campus courses and our distance courses," says Shelley. "For example, students in our distance courses often work in teams on group projects. They share material and negotiate issues just as they do on the job. Many students say that in the workplace they're constantly interacting on projects with people in other locations. That's how the global economy is today."

Distance learning has come a long way since the ADLN MBA program began in 1979. "Ours is the second-oldest distance MBA program in the country," says Norm Wilkinson, director of graduate management programs. "In the early days we used site-based video conferencing. We would videotape the course and ship it to other sites; the professor would travel to the site a few times a semester. Then the program evolved into an individual videotape format where we'd send tapes to students enrolled in the course. We went completely online in 2000."

Conrado's experience gave him the flexibility to earn an advanced degree and the tools for functioning in today's more globally based work environment. "I have colleagues in Australia and places around Europe," he says, adding that ADLN's virtual student team concept of sharing material and negotiating issues has made his virtual work team easy to manage. "Earning my degree through ADLN prepared me to succeed in today's global workplace." ■

Serial entrepreneur Robert Diamond '56 combines an engineering education with marketing savvy to create technologically innovative consumer gems.

# Your World, at Your Fingertips

**By Wendy Wolfson** Photography by Patrick O'Connor

**Bob Diamond is in your home.** First, he gave you Caller ID. Now he lets you watch over your aging parents or rambunctious kids while you're at work, keep a virtual eye on your vacation home in Aspen, and even turn up the heat in your home before you leave the office.

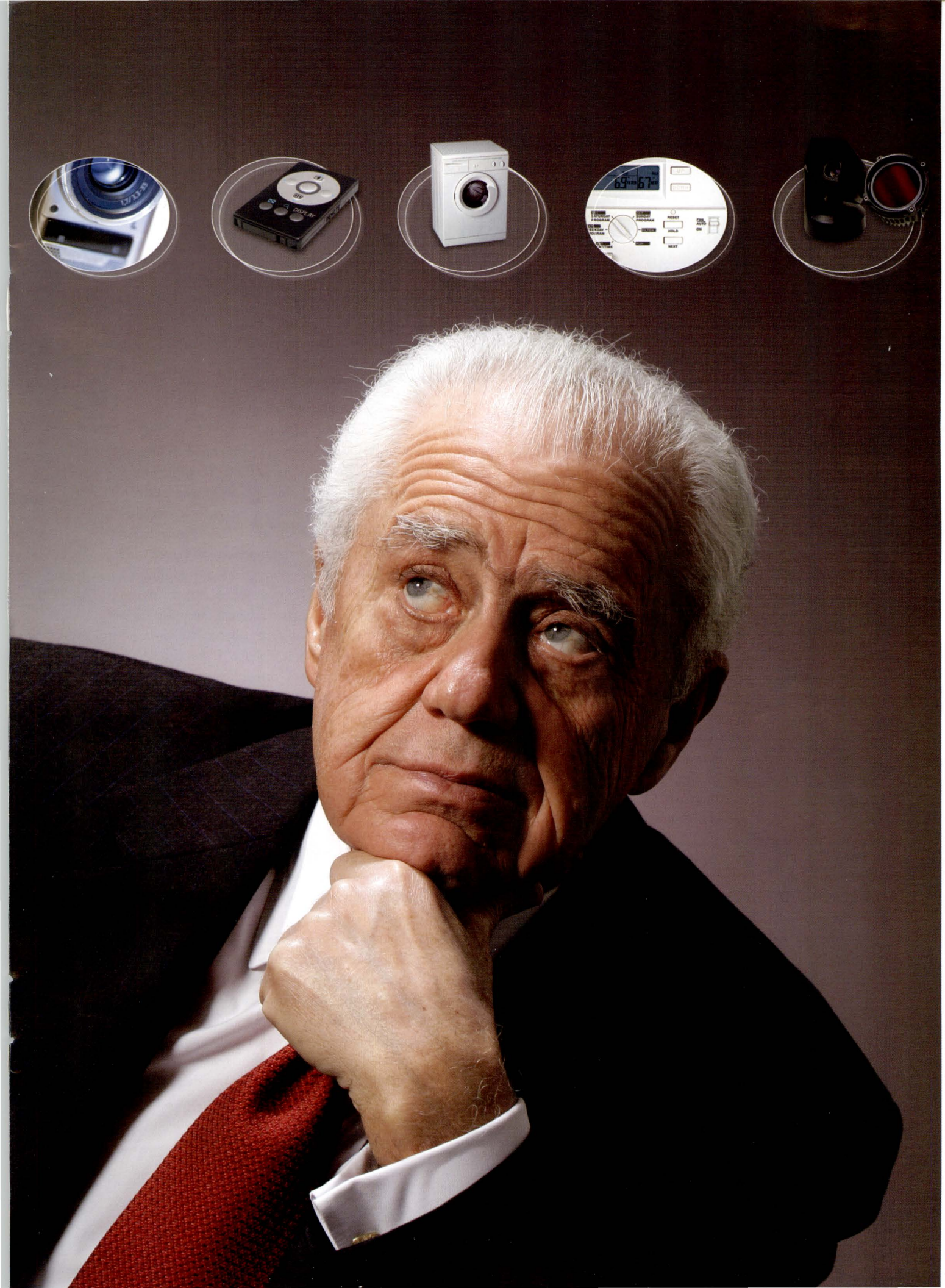
His Manhattan-based company, Xanboo—the world's leading provider of Internet-enabled devices—has been showered with numerous honors: the 2001 and 2002 Consumer Electronics Show's prestigious Innovations Design and Engineering Showcase Award, the 2001 New York Technology Fast 50 Shooting Star award, *Home Automation* magazine's Top 50 Editor's Picks for 2001, the Most Promising Company award at the Energy Venture Fair, and *Electronic House* magazine's New Product Editor's Pick, to name a few.

Matthew Growney, a venture capitalist at Motorola, and a Xanboo investor, says Diamond can sense a market opportunity and match it to a consumer-proven technology. "He's a serial entrepreneur who builds the value chain from the consumer's point of view," says Growney. "It's a very smart approach: instead of building the technology, Bob has been very pragmatic at building value."

Take, for example, his solution for monitoring the elderly. "There was a study done at Miami University, in Ohio, on a big problem: elders living at home, with the focus on caregivers, who are very often their grown children," says Diamond. "Their burden is overwhelming." Xanboo's system—which Diamond describes as "an extension of the baby monitor concept that works by tracking habits"—gives caregivers an extra set of eyes via a remotely accessible, always-on "smart home" monitoring system. The in-home wireless sensors (for door contact, water, temperature, and motion), controls (for power, lighting, and thermostat control), and cameras provide alerts on such things as wandering (sensed as "abnormal traffic") to an overflowing bathtub or an appliance that has been left on unattended.

Justin Moor, program manager in the Area Office of Aging of Northwestern Ohio Inc., researched similar products on the market but couldn't find anything as comprehensive as Xanboo's. "Sensors and video cameras in homes enable caregivers to check on their parents," he says. "Even if they are not monitoring the system 24-7, they can have messages sent to them via phone or e-mail."

In a career marked by numerous achievements and new ventures, Robert Diamond '56 has evolved from his pre-computer days as an engineering student to a technological wizard.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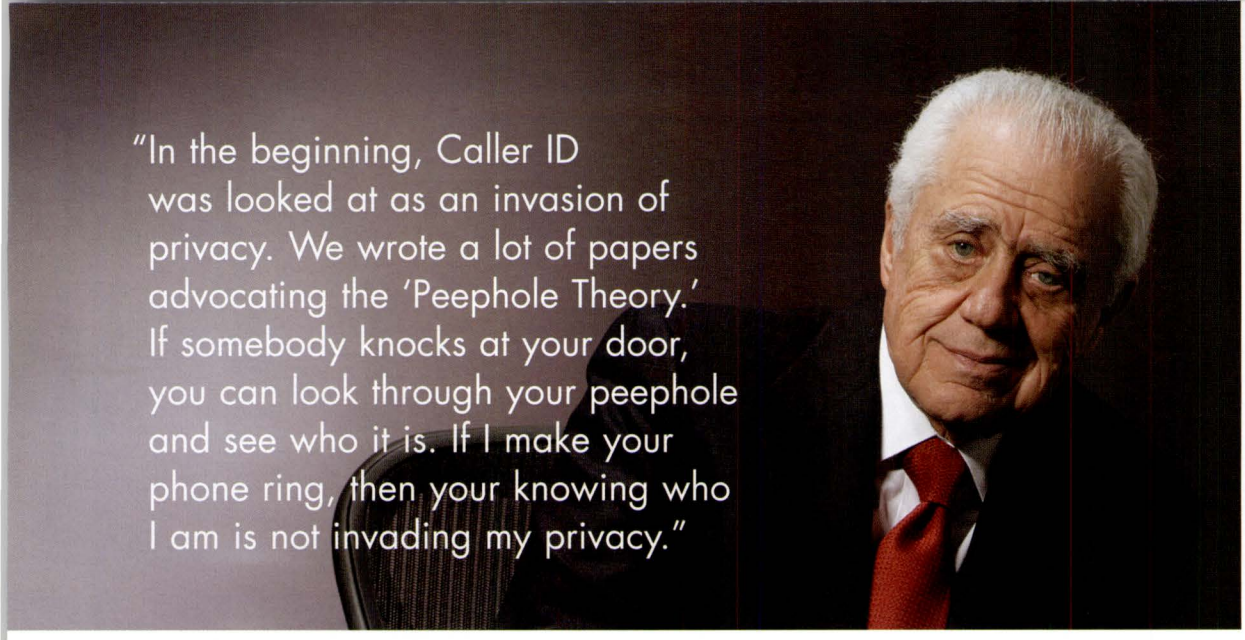



## From schlepper to soaring success

Diamond's career path was forged early in his life by a chance remark made by his older brother.

"I grew up in Worcester, a poor kid in a factory town," says Diamond, who started earning money at the age of eight by shining shoes and seemed headed for a career as a laborer. His brother, on the other hand, was in college and viewed as the family genius. One day Diamond came home tired from his job as a baker's apprentice. His brother told him, "You'd better get used to it; you're a schlepper," using the Yiddish word for laborer.

Stung by the remark, Diamond enrolled at Worcester Junior College, where upon graduation he was urged to apply to Harvard and MIT, but he felt WPI was the best choice. He studied for his electrical engineering degree like a fiend, he says, while working part time in a bakery, in a factory, and in construction. He graduated second in his class.

He landed a job at Philco as a senior engineer, then worked in sales, marketing, business development, and sales management at FXR, a microwave equipment manufacturer. When a company executive left to work for North American Philips, Diamond followed, and became director of marketing for its broadcast TV division.

## Entrepreneurship comes calling

Through his sales and marketing contacts, Diamond says he became "the enabler, finding the application, fitting the technology to it." He started Robert Diamond Inc., an engineering consulting and manufacturer's representative firm. As middleman, he brought the Hughes CMOS chip technology to Timex for watches and to Milton Bradley for portable game technology, and the Fairchild LED technology to Monroe to make an early four-function calculator. "By this time, I wasn't designing anything anymore," Diamond says. "I was doing more business."

In the early 1980s his firm focused on telecommunications. With one of his clients, he won a contract to manufacture the 5000 Series cordless telephone for AT&T, which provided the technology. Diamond's client provided the factory in Singapore.

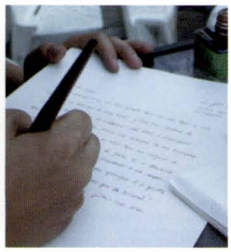
The connection with AT&T and Bell Labs took Diamond in a new direction. With his Singapore partner and an investment of $50,000 each, they launched a Caller ID business, CIDCO Inc., in Morgan Hill, Calif. They developed a Caller ID unit (Diamond holds an engineering patent) and received their first production order from Bell Atlantic. CIDCO provided the fulfillment services and operated a 400-person call center where customers could order the service through a toll-free number.

"In the beginning, Caller ID was looked at as an invasion of privacy," he recalls. "We launched a whole campaign saying that you have a right to know who the caller is. We wrote a lot of papers advocating the 'Peephole Theory.' If somebody knocks at your door, you can look through your peephole and see who it is. If I make your phone ring, then your knowing who I am is not invading my privacy. If I call you, I'm not allowed to be anonymous." CIDCO landed contracts in the United States with Nynex, Ameritech, SBC, and all the regional Bell companies, and internationally with Japanese phone company NTT and Hong Kong Telecom.

## The birth of Xanboo

Diamond then took CIDCO's business model—working with a large service provider to develop services to offer to its customer base—and created Xanboo [simply "a unique name," explains Diamond]. Founded on the concept of allowing users to control, command, and view their home or business remotely over the Internet, Xanboo designs Internet-based services and applications for both the consumer and business markets. Its business partners include Motorola, which markets the Home Monitoring and Control System. Xanboo is currently working with Living Independently on a motion-sensor-based system for the elderly that uses less intrusive monitoring than the system used in Ohio.

"My belief is that you just need to get out there into the mainstream," says Diamond. "Things will find you, and you will find things. Part of success is having vision; much of it is jumping on opportunities." ■



# Letters

*(Continued from page 3)*

perfect the method of coating magnetic disks.

I understand WPI's George C. Gordon Library will host an exhibit of our father's work in 2006. Were he alive today, I know he would be pleased to have his work on display at his alma mater. On his behalf, I and my brother and sisters extend our warmest thanks to curator Rodney Obien for this honor.

**Eva Hagopian Long**
Eugene, Ore.

## A letter from Ecuador

I'd like to follow up on my profile that appeared in the Summer 2004 issue of *Transformations* ["...and life"]. I have spent the past five months enjoying the Amazonian jungle, visiting a rainforest-dwelling community, meeting highly respected shamans, learning about medicinal plants, soaking in the hot springs of Papallacta, admiring the work of Otavalo artisans, and being tossed like a fish by the powerful waves of the Pacific. I've also been treated to full tuition, living expenses, medical insurance, language training, and airfare to Ecuador—Rotary International has been phenomenally generous in giving me an Ambassadorial Scholarship, which has covered the adventures listed above ... and will cover five more months of paradise. By the time my scholarship ends, I will have lived in Ecuador from August 2004 to May 2005.

During the spring semester, I hope to collect oral histories from four impoverished Andean communities. I also plan to collaborate with professors from WPI and the Universidad San Francisco de Quito to assess potential student projects involving clean drinking water and irrigation systems. Harnessing wind power may provide the energy necessary to pump water from a river running between two Andean peaks. This would drastically improve the villagers' quality of life as well as childhood nutrition. Grants from the United States government via the Inter-American Foundation may cover funding and building materials, and I would love to hear from alumni and students with experience and/or interest in this area.

**Karen Kosinski** '02 (BT)
Lumbisí, Ecuador

***Editor's note:*** For more information about fellowships and scholarships, go to www.wpi.edu/+FS. Learn more about WPI's Global Project Centers at www.wpi.edu/+IGSD.

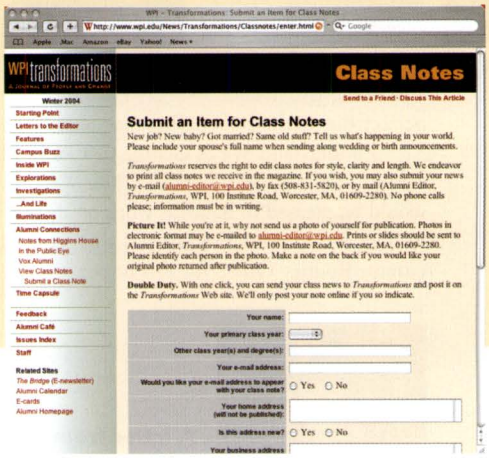
## Correction

The "Hot Gear" pictures in the Winter 2004 issue of *Transformations* ("Investigations") were taken by Jason Kramarczyk '04 and Melissa Barter '04, David Hartman '04, Jonathan Martin '04, Marc Moseley '04, and Aaron Vanney '04.

# 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 schedule, some notes may be out of date at 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 www.wpi.edu/+Transformations or alumni-editor@wpi.edu. You may fax it to 508-831-5604, or mail it to Alumni Editor, Transformations, WPI, 100 Institute Road, Worcester, MA 01609-2280.




## 1930s

**Jack Brand '36** and his wife, Dot, attended the first-ever operation-wide Manhattan Project Reunion & Symposium, held in June 2004 in Elmira, N.Y. Jack's address, at the National Warplane Museum, included reflections on his contributing work at the University of Chicago, and his role as superintendent of instruments at Clinton Laboratories in Oak Ridge, Tenn. Jack and Dot celebrated their 65th wedding anniversary in July 2004. They live in Hockessin, Del.

Trustee Emeritus **Al Demont** had cause to celebrate after receiving a duplicate of his 1973 Herbert F. Taylor Alumni Award for Distinguished Service. The original plaque was destroyed by a 1999 fire in his Schenectady, N.Y., home. Although he was displaced for months while the house was repaired, Al kept up his with his duties as class correspondent. (This photo of Al and his wife, Phyllis, was taken at the Mohawk Golf Club, where Al is a senior member.)

## 1940s

**Howard Freeman '40** celebrated the 50th anniversary of Jamesbury Corp. last summer. A retrospective in the *Telegram & Gazette* lauded him as a forward-thinking entrepreneur and a hands-on leader. Now in retirement, he still spends time on site, sharing history with the new owners from Metso Corp.

**Ralph Smith '43** writes from Kennebunk, Maine, where he stays active in town affairs. "Among other things, the selectmen have just appointed me to another three-year term on the Site Plan Review Board, which meets once a month to review and approve all plans for commercial and industrial development for conformance with the zoning ordinances before they can go forward. Reviewing all this data and drawings keeps my engineering skills honed."

"Still skiing," writes **Burton Wright '43,** who reports that he races once or twice a year and always places first or second in the 70+ age category.

## 1950s

**Richard Amidon '50** is back in the New Hampshire House of Representatives, serving as chief of staff for House Speaker Doug Scamman, who was elected in 2004. Amidon was Scamman's chief of staff during his previous term as speaker, 1986-90. From 1997 to 1999, Amidon held the post of director of legislative services.

**John Burke '52** writes from Deer Park, N.Y., where he is retired from teaching electronics courses in the BOCES vocational program. His wife, Florence, passed away in March 2004. He has six grandchildren.

**Howard Dworkin '55** is a nuclear medicine physician at William Beaumont Hospital and an adjunct professor of radiology at the University of Michigan. A past president of the Society for Nuclear Medicine, he has worked to advance continuing education and certification in his specialty.

**Ted Coghlin '56** was honored with the 2004 Isaiah Thomas Award, given by the *Telegram & Gazette*'s Visions 2000 program, in recognition of "a lifetime of unselfish service to the Worcester community." The newspaper recounted his many contributions to local causes and noted that Ted has continued the legacy of helping that was established by his father and grandfather. Coghlin was presented with a replica of Thomas's famous printing press at the Feb. 14, 2005, awards ceremony in Mechanics Hall.

**Jasper Freese '58** lives in Greeley, Colo., where he is a professional engineer and land surveyor. He returned to New England last summer to celebrate his 50th reunion at Norwalk High School in Connecticut.

**Stanley Sokoloff '59** received the 2004 Outstanding Alumni Achievement Award from Suffolk Law School.

## 1960s

**James Forand '62** is CEO of Electroplating Technologies Ltd. in Philadelphia. The company received its 12th patent in November 2004, for a new continuous-strip process that removes surface bubbles from the electrolytic bath and replaces depleted solution with fresh reagents.

**David Smith '62** is retired from a civil engineering career that included 15 years in Indonesia, as well as stints in Papua New Guinea and Australia. He returned to his birthplace, Manchester, Conn., where he is active in the historical society.

**Andrew Terwilleger '62** writes, "After 28 years with the merged city/county government in Lexington, Ky., I retired as traffic engineering manager. Besides continuing with church work and some engineering consulting, I plan to be more active with Kiwanis, Habitat for Humanity, and other volunteer groups."

**William Savola '63** joined the physics faculty of Springfield (Mass.) Technical Community College as an assistant professor.

**Howard Sachs '65** is chair of environmental programs at Penn State in Harrisburg, Pa.

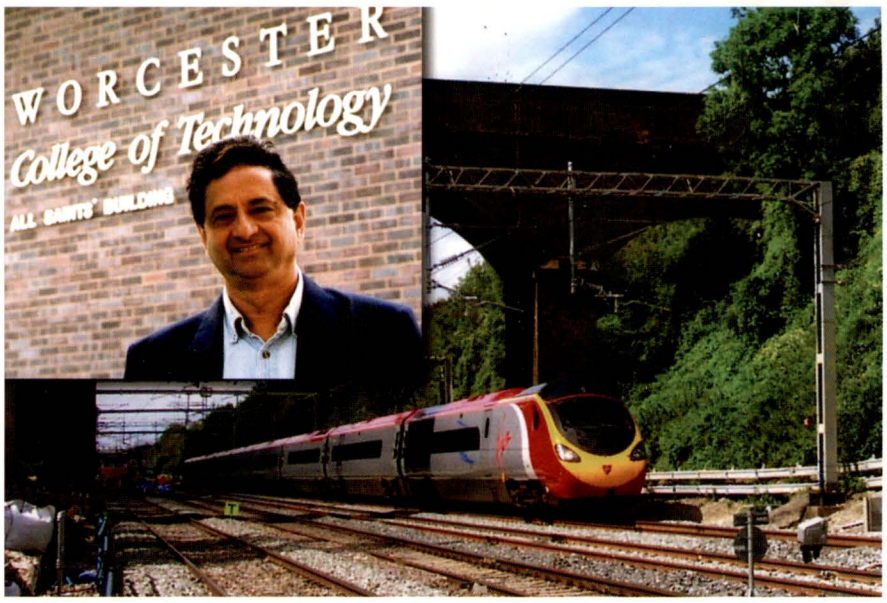
**David Johnson '69** retired from Lucent Technologies in 2000 and now teaches business classes at a local community college. "Living in the Beaufort–Hilton Head area of South Carolina provides great opportunities for golf and water sports," he writes.

**Ed Mierzejewski '69** is director of the Center for Urban Transportation Research at the University of South Florida. He was recently elected to the International Board of Directors of the Institute of Transportation Engineers. "Still happily married (34 years) to Aline," he writes, "and actively involved in marriage preparation ministry."

## 1970s

**James Abraham '71** joined Stifel, Nicolaus & Co. as a vice president in the Chicago office, after 12 years with UBS Financial Services.

**Herbert Hedberg '73** is senior vice president of operations at Cetek Co. The work of his division makes it possible to increase the efficiency of discovering new pharmaceutical compounds by applying automation, informatics, and production paradigms to the process. He has continued his association with WPI by offering internships within his division, and he is exploring opportunities for further collaboration. In October 2004 he attended the World-Changing Technologies seminar held at Higgins House.




**Where in the World?** There is no railroad bridge from New England to Worcester, England, but **Vinay Mudholkar '70** (M.S.CE) built a career that took him from WPI to the U.K., where he recently worked on the London–Glasgow line. He's spent the last 30 years crisscrossing the globe, modernizing railway structures built at the turn of the 19th century, and paving the way for high-speed rail travel in the 21st. Vinay got on board with the Boston & Maine Railroad in the 1970s as a structural engineer, and has arrived as Amtrak's director of construction.

**Send us a picture and tell us where you've shown your WPI letters lately.**

**Ken Lexier '73** and his wife, Sue Ellen, live in the wilds of Maine, where Ken has been practicing law at a small firm in Skowhegan for 13 years. They have two sons—-Stephen, 26, and Christopher, 28, who was recently married in Rhode Island. "We are hoping to be grandparents," they write. "We would love to hear from classmates at klexier@mainelegal.net."

**Rand Refrigeri '73** is the new chief fire protection engineer for Richard D. Kimball, an Andover, Mass., engineering firm providing HVAC, electrical, plumbing, and FPE services.

**Davis Balestracci '74** relocated to Portland, Maine, after 20 years in Minnesota and Phoenix. An independent consultant in statistical quality improvement (see www.dbharmony.com), he has chaired the Statistics Division of the American Society for Quality and now writes a monthly column for *Quality Digest.* Combining his "day job" with a growing interest in the psychology of organization and change management, he has been involved in government efforts to improve health care systems in the United Kingdom. "I am single again," he writes, "and looking forward to four seasons. The past two years of 115-degree summers in Phoenix nearly did me in!"

**David Korzec '74** recently became a project manager for the University of California Medical Center's Office of Design and Construction. He will be managing major capital infrastructure improvements to Medical Center campuses throughout San Francisco.

**John Mathews '74** earned a master's in public administration last year at the Center for Public Policy and Administration at UMass Amherst, while working full time managing design and construction of the university's new $97 million combined heating and power plant. He has published articles on sustainable energy policy and market economics. His Web site is LowCarbonEnergy.org.

**Leo Letendre '75** received the Ransom J. Arthur award, which is U.S. Masters Swimming's highest honor for service. In his 20 years with the organization he has served on the board of directors and the Rules Committee, and has organized local programs in the St. Louis area. Letendre recently relocated

# In the Public Eye

... **Bill Rabinovitch '58** appeared on **ABC's 20/20** to address the artistic controversy over Christo's "Gates" exhibit in Central Park, with "Give Me a Break" commentator John Stossel posing the question "Is it Art? Or Not?" ... **Fred Molinari '63** was interviewed in **Test and Measurement World** on the success of his company, Data Translation ... The Smithsonian's **Air & Space Magazine** featured an update on **Jim Dunn '67**'s fuel cell airplane ... The Worcester **Telegram & Gazette** reported on the rebirth of Kennedy Die Castings as Thermalcast LLC, where former owner and president **Paul Kennedy '67** remains as an employee. The company was founded in 1948 by his father, the late **Francis Kennedy '30** ... The **J. Geils Band** was nominated for the **Rock and Roll Hall of Fame**. **The Boston Globe** portrayed **Jay Geils '70** living quietly in Groton, Mass., and performing with Blues Time and the New Guitar Summit. Geils, who attended WPI with former band members Magic Dick and Danny Klein, told the *Globe*, "Engineering just didn't work out for us."... In the wake of the Indian Ocean tsunami, **Chartsiri Sophonpanich '80,** president of the Bangkok Bank and Thai Bankers' Association president, was quoted in **The Star** and a number of area newspapers, offering extensions on debt payments to customers affected by the disaster ... **Don Montgomery '83,** director of service marketing for Unisys Corp., was the subject of a cover story and executive interview in **DM Review** magazine ... **Barry Fougere '86,** CEO of Colubris Networks, was profiled in **Mass High Tech**'s "Movers & Innovators" column ... **Mitch Sanders '88,** president of ECI Biotech, was honored with the Boston **Museum of Science** TechCitizenship Award, which recognizes the philanthropic efforts of area companies that give back to the community ...A photo of Air Force pilot **Stacey (Cotton) Bonasso '90** was part of an exhibit called "Leaders in Peace & War" at the Attleboro, Mass., **Women at Work Museum**, in the section devoted to aviation and the armed forces ... **The Boston Globe** featured **Maria Cotoia '93** to illustrate an article on increased consumer demand for auto safety features. She and her two children, Anthony, 4, and David, 22 months, were pictured strapped into their 2005 Honda Odyssey ... The **Fall River** (Mass.) **Herald News** ran a story about **Sundar Victor '93,** who was visiting his mother in India when the tsunami struck, sparing their hometown, but devastating other areas. Victor is now back in Massachusetts, where he works as a computer specialist with Verizon ... **Eric Tapley '01,** owner of 3000K Inc. in Worcester was quoted in a **Telegram & Gazette** article on the difficulty of finding qualified full-service Web designers ... Dragonfly Game Design, founded by 2004 graduates **Michael Gesner** and **Michael Melson,** was a finalist in **The Big C Independent Game Competition**, which is also known as the BAWLS competition. Their entry, Q'Bicles, is scheduled for release this year, and a demo of the game will be available at www.qbicles.com.

to the Kalamazoo, Mich., area. After graduating from WPI, he was named an NCAA postgraduate scholar.

**Joe Williams '77** remains at Ford Motor Co. as a program management supervisor for the new 2006 Fusion. He remarried last year and writes, "I am having fun getting to know my new family, and traveling to car shows all over the country showing my two matching classic Mustangs. Life is good, and I hope you all are doing well!"

**Gary Wnek '77** was appointed co-director of The Institute for the Integration of Management and Engineering (TIIME) at Case Western Reserve University. He is the founder of two companies, and the former chairman of the chemical engineering program at Virginia Commonwealth University.

**Steve Pace '78** is senior vice president and principal of Commercial Property Services in Santa Clara, Calif. He was profiled as a "winner" in the real estate world by the *Silicon Valley/San Jose Business Journal.* As CPS's top producer for 2003, Steve leased 18.5 million square feet and sold another 10.5 million, with $1.5 billion in transactional value.

**James Shuris '78** (M.S., CE/MB) is the new town engineer for Concord, Mass.

**Charles Berger '79** is town engineer for Watertown, Mass.

**Dean Bogues '79** joined Valence Technology in Austin, Texas, as vice president of sales and marketing.

## 1981

**Stephen Fontes** is a senior software engineer in IBM's WebSphere Application Server Development Group.

## 1982

**Kevin Brownlie** works for Hologic Inc. in Bedford, Mass. He and his wife, Kristyne, live in Waltham.

**Matt Flynn** was named vice president and CEO of St. Joseph Healthcare in Bangor, Maine.

**Remick French** joined Oracle Corp.'s Applications Group. He and his wife, Marianne, have two children, John, 12, and Meredith, 9.

**Benjamin Hutchins** is a columnist for the *Katahdin Times* in Millinocket, Maine. After spending a weekend in Worcester last summer for a newspaper seminar given by the *Telegram & Gazette,* he wrote about classmate **Derek Bacon** and his Web memorial, "Parade of Shoes" (www.eyrie.net/derek). The site has links to a number of other pages dedicated to Bacon, who died in 1996.

**John Kemp** and **Mary Houten-Kemp '81** live in Irvine, Calif., with their two children, Meghan and Michael. Mary is a commercial real estate appraiser for Continental Realty Advisors. John is president of HydroAir, a division of ITT Industries that manufactures and sells jet and pump systems for whirlpools and spas throughout the world.

**Mike Kirschner** is president of Design Chain Assoc.

## 1983

**Mark Boivin** was appointed president and CEO of DanChem Technologies in Danville, Va. He moved there in 2003 with his wife, **Fern (Amuan)** and their three teenagers, Brittany, Tony, and Joey.

## 1984

**John Bibinski** and his wife, Kathryn, are proud to announce the birth of Melissa Joanne on Aug. 19, 2004. She joins her sisters, Christina and Diana. The family is enjoying their sixth year in Marlborough, Mass.

After years of working on major projects, **Jean Salek Camp** has opened her own consulting business, specializing in project engineering and construction management. She and her husband, David, celebrate 20 years of marriage this year and continue to enjoy living in paradise on Kauai, Hawaii.

**Daniel Farrar,** a former GE division president, became a partner in the Cleveland-based buyout group of Morgenthaler, a middle-market private-equity and venture capital firm.

**Amine Khechfe** lives in Silicon Valley with his wife and two young boys. He co-founded PSI Systems Inc. with a former grad school professor from Stanford. "Our newest division, Endicia, is growing rapidly, which is fun," he writes.

**Marie McClintock** is helping minister to homeless children in an orphanage on the outskirts of Khartoum, the capital of Sudan. She has spent many years working on construction projects in impoverished areas of Africa and translating bibles into minor Arabic dialects.

**Michael Ortolano** is vice president of Absolute Machinery Corp. in Worcester.

Maj. **Paul Thurston** retired from the Air Force with 20 years of service. He and his family live in Greenwich, Conn., where he is pursing a new career as a business consultant.

## 1985

After 21 years at the EcoTarium (formerly New England Science Center), **Jesse Anderson** has accepted the position of director of audio-visual services for Holy Cross college in Worcester.

**Chris Cavigioli** got married last summer to Carrie, "a wonderful woman who hails from Singapore," he writes. They met in Beijing at a Bible study group. Chris is director of product marketing for NemeriX, a fabless semiconductor company based in Switzerland and Cambridge, U.K. (Chris is based in Silicon Valley.) NemeriX makes low-power GPS chipsets and recently developed a new chipset for wireless devices that works deep indoors.

## 1986

**Mike Maguire** celebrated 11 years at SAP America, where he is vice president, business development, for the Supply Chain Solutions Division. He is very busy with his two daughters, Kelly, 8, and Allyson, 5, and is active in the Mansfield, Mass., special education program.

## 1988

**Lisa Alpers** married Robert Manning on April 27, 2004, in Portland, Maine. They live in Chesterfield, Ohio.

**Scott Sarazen** left his post as senior vice president, life sciences, for MassDevelopment, to join Straumann Holding AG, a Swiss medical device maker. Last year Sarazen was named one of *Boston Business Journal*'s Top 40 under 40.

**Charlie Wilder** joined Monadnock Developmental Services as IT manager. He also teaches computer science at Keene State College.

## 1989

**Jeffrey Goldmeer** and his wife, Sandra, are proud to announce the birth of their third child, Amitai Hillel. Brothers Ezra and Ethan are very excited about the latest addition to the family.

**Fran Hoey** was promoted to senior vice president at Tighe & Bond. He has been with the firm since 1992 and was instrumental in its entry into the GIS market. Fran and his wife, Beth, live in Holyoke, Mass., with their children, Conor, Frank and Lindsay.

**Chuck Johnson** (M.S. EE) was promoted to vice president, development engineering, at Candela Corp, where he has worked for more than 17 years.

**Michael Masuck** married Kim Childress on Oct. 10, 2004, in Laguna Beach, Calif. He works for Foundry Networks and lives in Irvine.

## 1990

Navy Lt. Cmdr. **Albert Mousseau** received his third Navy and Marine Corps Commendation Medal for his leadership in the development of the Advanced Anti-Radiation Guided Missile and the Quick Bolt Advanced Technology Demonstration missile test. He is assigned to Air Test and Evaluation Squadron 31, based in China Lake, Calif.

**Brian Weissman** has a new job as senior software QA engineer at Cymer Inc. in San Diego, developing automated tests for control systems. "The family survived the move," he writes, "and we are now residing in Escondido."

Maj. **Rory Welch** recently returned from a four-month deployment to Baghdad, where he served as a strategist on the Multi-National Force–Iraq headquarters staff. He is currently assigned to the Plans Division at Headquarters, Air Force Space Command, in Colorado Springs.

## New & Novel

Who: **Stephen Phillips '62**
What: Royal Heath United
Where: Norwood, Mass.
Why: Dedicated to bringing you the freshest, most nutritious all-natural health products, including royal jelly, bee propolis, and bee pollen, harvested locally and produced without heat or dehydration.
Web: RoyalHealthUnited.com

Who: **Matthew Patron '88**
What: Chips Electronic Café
Where: Chelmsford, Mass.
Why: The latest electronic technologies and know-how, mixed with great food and drinks, in a comfortable relaxed environment.
Web: chipsecafe.com

Who: **Nilufer Soucek '98**
What: Two Doves Wedding Consulting
Where: Denver, Colo.
Why: "I've always loved the beauty and romance of weddings. I don't think there is anything more wonderful than helping two people plan the beginning of their life together."
Web: two-doves.com

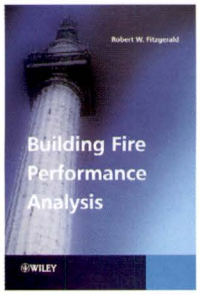
Who: **Garrett Banuk '01**
What: The Qwerty (high-tech gaming center)
Where: Weymouth, Mass.
Why: "Friends don't let friends game alone."
Web: theqwerty.com

# Bookshelf

## Recent and new publications by WPI alumni, faculty, and staff

### Building Fire Performance Analysis

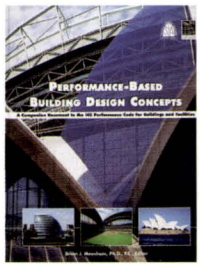
by Robert W. Fitzgerald '53, *John Wiley & Sons, Ltd.*




Robert Fitzgerald, professor of civil and environmental engineering in WPI's Center for Firesafety Studies, bases this comprehensive analysis of building fire performance on contemporary fire knowledge and experience, focusing on the functions of fire and fire defenses to understand how a building will behave during a fire. The 515-page book is geared to fire safety practitioners making day-to-day risk-informed decisions, including building code officials, fire service officers, fire safety engineers, the fire equipment industry, insurance inspectors and underwriters, architects, and facility risk managers.

### Performance-Based Building Design Concepts

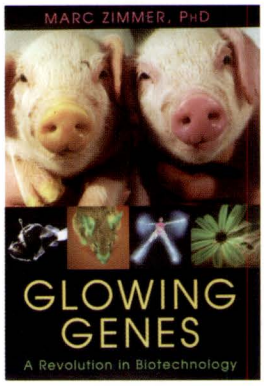
by Brian J. Meacham '84 (editor), *International Code Council*




The 2001 publication of the International Code Council's (ICC) Performance Code for Buildings and Facilities ushered in a new era of building regulations in the United States. Meacham's publication is designed as a companion to the 2001 book, geared to building design and performance professionals who want to learn more about performance, how to apply performance concepts appropriately, and what to look for in the review of designs that have been developed using the ICC PC. He is a principal risk and fire consultant with Arup, in its Westborough, Mass., office, and is also an adjunct FPE professor. David Lucht, former director of WPI's Fire Protection Engineering program, penned the introduction.

### Glowing Genes: A Revolution in Biotechnology

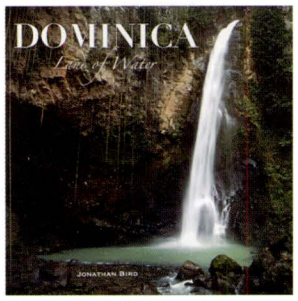
by Marc Zimmer '88 (Ph.D.), *Prometheus Books*




The genes that produce bioluminescence in jellyfish, coral, and other organisms, are shedding new light on a wide variety of scientific problems, from cancer to bioterrorism. Connecticut College professor Marc Zimmer has written the first popular science book on the emerging field of bioluminescence. He describes these genes as "the microscopes of the new millennium," because they hold the potential for advances in medicine, manufacturing, and agriculture. The book's spectacular color plates show a sampling of the transgenic organisms that have been produced.

### Dominica: Land of Water

by Jonathan Bird '90, *Jonathan Bird Photography*




"It has been said that if Christopher Columbus could explore the Caribbean again today, Dominica is the only island he would still recognize," writes photographer Jonathan Bird. His newest book depicts the island of Dominica (not to be confused with the Dominican Republic), revealing a tropical paradise unspoiled by sugar cane plantations or by casinos, malls and resorts. The 96-page soft cover book includes 90 images, from towering mountain waterfalls to a volcanically heated boiling lake, printed on art-grade glossy paper.

***To have your recently published book featured in this column, please send a copy (prepublication proofs are acceptable) to Editor, Transformations, WPI, 100 Institute Road, Worcester, Mass. 01609.***

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**Jeffrey Yoder** moved to North Carolina last fall with his wife, Nanette, and daughter, Hannah (now almost 4). Jeff and Nanette started new faculty positions at North Carolina State University, where they will continue their research programs (visit www4.ncsu.edu/~jayoder) and be involved in the teaching and training of graduate and veterinary students. The family welcomed a new baby girl, Ella Berit, on Jan. 25, 2005. "We are all well and enjoying the cooler weather (as compared to Florida) in North Carolina," he writes.

## 1991

**Amber (Chorna) Herrick** and her husband, Andy, welcomed their son, Kenai Charles, into the world on June 29, 2004. "He is a very happy baby, and I am enjoying staying home with him and his big sister, Denali, who is almost 3," she writes.

**Manish Kumar** joined MDB Capital Group in Santa Monica, Calif., as vice president—equity research, technology.

## 1992

**Julie Bailly-Krapes** writes from Denver, Colo., "In the past two years I've gone from working for J.D. Edwards, to PeopleSoft, and now Oracle, due to mergers. I write the documentation and curricula for our manufacturing software. My husband, Brian, and I have identical twins, Aaron Michael and Brandon Richard, born March 29, 2004."

**David Colombo** opened a new engineering firm, Power Engineers, LCC, in Shrewsbury, Mass., providing power and lighting design services for utility companies, municipalities, colleges, and industrial facilities throughout New England. He holds a master of engineering degree from RPI.

**Valerie (Kschinka) Mason** was promoted to operational excellence leader for US Surgical in North Haven, Conn., where she oversees all Six Sigma projects and mentors project leaders. She is also responsible for improvement through Lean Manufacturing principles. Valerie and her husband, Michael, live in Oxford, Conn., where they enjoy life with their three sons, Michael, 5, Nicholas, 4, and Christopher, 2.

**Anthony Putorti** earned a doctorate in mechanical engineering at the University of Michigan in Ann Arbor. A fire protection engineer with Roson-Lapina, he lives in Exton, Pa., with his wife, Patti.

**David Sheppard** (M.S. FPE) is a senior fire research engineer for the federal Bureau of Alcohol, Tobacco, Firearms and Explosives. He lives in Maryland with his wife and three children.

## 1993

**Jennifer Almy** is director of quality assurance at Broncus Technologies, a startup medical device company working to provide a better quality of life for emphysema patients. "I hope to be back in New England in another year or so," she writes. "I'm always home for Christmas and love to catch up with my old college friends!"

**Chris Supple** is manager of office services for the 115-attorney law firm of Pierce Atwood, with offices in Maine, New Hampshire, and Massachusetts. He and his family live in Cape Elizabeth, Main.e

**Joseph Wenc** left St. Paul Travelers Insurance after 7+ years and is now with Zurich North America Insurance as an assistant vice president and actuary. Wife **Kate (Ranum) Wenc** is staying home with their children, Stefan, 5, and Isaac, 3. They live in the Twin Cities suburb of Eden Prairie, Minn.

## 1994


Stacy and **Leonard Belliveau** welcomed future WPI graduate Maya Raelen, born Sept. 18, 2004. Leonard works out of the Marlborough, Mass., office of Hughes Assoc. Inc., a fire protection engineering and code consulting firm headquartered in Baltimore.

**Todd McCabe** was promoted to project executive at Consigli Construction Co.

**Yvonne (Bergstrom) Proulx** and her husband, Jeff, along with their daughter, Catherine, announce the birth of Rachel Ann on Nov. 10, 2004. They live in Grafton, Mass.

**Christine Rauh-Adelmann** was relocated to Maui, Hawaii, as the supervisory scientist of R&D for Trex Enterprises. Husband **John Adelmann** is a project manager for Goodfellow Brothers. "We have four beautiful children: Dermot, 6, Julia, 5, Lilly, 3, and Jake, 1 1/2, who love the ocean and visiting Boston. If anyone's ever in Maui, look us up!" she writes.

**Gayle (Sanders) Reh** and her husband, Brian, are thrilled to announce the birth of their son, Nolan James, on May 27, 2004. Gayle works for Garlock Sealing Technologies as a process engineer. They live in Fairport, N.Y.

## 1995

**Rachel Stratford** sends this summary of the last decade: "After graduating from WPI, I joined the Peace Corps and spent two years in Malawi, East Africa. My projects there included upgrading a village by bringing in water service and roadways. I then traveled around southeastern Africa before returning to work for Barletta Engineering, a Boston contracting firm. In May 2004 I married my husband, Luis."

## 1996

"Lemons or lemonade?" writes **Doug Borden,** who was laid off by a D.C.–area government contractor last year. He turned this into a positive experience by using the time to finish his master's in quality assurance. It also brought the opportunity to teach at the national Graduate School and to provide consulting services to two companies. Doug received a new job offer just after completing his degree and is now a program manager with STG International, where he manages contracted support services to the U.S. Coast Guard offices, provided by the team of STG and Anteon. The team has members in 54 locations, including Alaska, Hawaii, Guam, and Puerto Rico.

**David Boulanger** married Alicia Gamache in 2003. They welcomed their first children, Lauren Elizabeth and Emma Lynn, on Oct. 15, 2004.

**Carolyn Day** married Daniel Highlands on Oct. 16, 2004. She is a student at the Boston Architectural Center.

**Joseph Maraia** is a patent attorney with Hamilton, Brook, Smith & Reynolds. He lives in Acton, Mass., with his wife, Joan.

**Enith Morillo** has remarried and moved to Syria, where she is studying Arabic at the University of Damascus and home schooling her two teenage sons. She has written of her struggles and challenges in collections of poems and short stories, which she hopes to publish. She recently shared some reflections on the meaning of success and the life lessons she learned at WPI and in the years since 1998, when she graduated with a master's degree in electrical engineering from WPI, five months pregnant. Her journey brought many transitions, including career changes, a divorce, and a research assistantship in Australia.

Success, she says, is the contentment within. "I reconnected with WPI in 2003 by volunteering for the GEMS and Strive programs. My professional dream was, and still is, to become a WPI professor. I believe the life lessons I learned at WPI empower me day to day. I honestly admit that I may have forgotten the intricacies of echo cancellation, but I know that the ability to figure them out when needed was instilled in me, along with the aptitude to reach out and keep soaring."

## 1997

**James DeCelles** (M.S. CE) is the new assistant chief engineer for the Pawtucket (R.I.) Water Supply Board.

**Andrew Quirk** is now a partner in Kratzert, Jones & Assoc., the full-service engineering firm where he interned for three summers while at WPI. He is working on a master's degree in transportation and urban engineering at the University of Connecticut.

**Glen Sergeant** married Sarah Takacs on July 3, 2004. He is a manager at M Cubed Technologies in Monroe, Conn.

**Matt Tricomi** married his wife, Denise, in New Zealand, in March 2004. They live in Golden, Colo., where Matt is an enterprise architect for Northrop Grumman.

## 1998

Navy Lt. **Slade Brockett** completed a two-year assignment on the staff of Commander, U.S. Naval Forces Europe. He and his family moved from London to Bremerton, Wash., where he is once again assigned to a submarine—the USS *Ohio.*

**Stephen Davis** was promoted to project manager at Earth Tech Inc., a Tyco company. He is currently managing construction of an $8.6 million manufacturing facility for

AFC Cable Systems, another Tyco company.

**Brian Favela** works for ATI Research. He and his wife, Alicia, live in Stow, Mass.

**Kimberly James** recently lost her husband, Abdelhadi Tanji. He passed away on Feb. 15, 2005.

**Daniel Kilcoyne** married Tara Luhta last year.

**John Lambie** is engaged to Wendy Anthony, a second-year law student at South Texas College of Law. They plan to marry on July 3, 2005, in Houston. John is a project manager at ThoughtFarm Soft Technologies.

**Anne Pareti** received her juris doctor degree from the University of Connecticut School of Law last year. She is an associate in the Intellectual Property Group of Burns & Levinson, LLP, and a registered patent agent.

## 1999

**Jason Dubois** and his wife, Katharine, are proud to announce the birth of their second child, Adam James, on Aug. 6, 2004. Adam joins big brother Cole, 3. Jason is a product engineer at Smith & Wesson in Springfield, Mass.

**Marlon Mitchell** works for Arch Wireless in Westborough, Mass. He married Kathleen Collins last year.

**Cara Rucci** is pursuing a medical degree at Saba University School of Medicine, located on Saba, a small Dutch island in the Antilles. She married Christopher Yergen, a fellow student, last year.

## 2000

**Irving Liimatta** is expecting his first child in May 2005, and his MBA in April 2006. He is a grad student at the University of Michigan and will be working for Intel Corp. Irving and his wife, Trisha, live in Ann Arbor.

## 2001

**Bentley Kern** and **Jacqueline Lanfranchi '02** were married Oct. 9, 2004, in Sturbridge, Mass. They live in Clinton.

**Keith Romano** works for Danaher Tool Group in Springfield, Mass. He married Karen Pincince last year.

**Michael Weber** and his wife, Lindsey (Fuller), own their own business, Minuteman Press, in Enfield, Conn. They married in 2003 and now live in Manchester.

## 2002

**Mona Ellum** (M.S.) joined the Middletown, Conn., office of Wright-Pierce as a project engineer.

**Christopher Hill** married Michelle Travison on May 29, 2004.

**Estelle Houde** successfully defended her master's thesis in biochemistry in December 2004 and will be officially graduating from the University of New Hampshire next fall.

**Tim McGreal** (M.S. FPE), president of SafetyWise LCC, has patented the Alarm Arm, a smoke detector and mounting systems that will be available for shipping in May 2005. He has a number of other FPE products that he plans to develop once this product is on its feet.

## 2003

**Benjamin Alesbrook** works for Integrated Process Technologies in Marlborough, Mass. He lives in Auburn, with his wife, Heather.

**Joseph Bufanda** joined the faculty of Ipswich (Mass.) High School last fall.

Ensign **Ryan Clarke,** USN, completed Primary Flight Training at NAS Whiting Field in Milton, Fla., and is now undergoing Advanced Flight Training, Tactical Jets, at NAS Meridian in Mississippi. The program takes 12 to 18 months, after which Ryan will received the coveted Navy Wings of Gold.

**Edward Jolley** (M.S.EV) is in his third year of law school at New England School of Law. He married Cynthia DeVries last year, and plans to join her in her Hudson, Mass., law practice after graduation.

**Arthur Scholz** is working on the Gamma-ray Large Area Space Telescope for the Stanford Linear Accelerator Center.

## 2004

**Christina Byrne** joined The Di Salvo Ericson Group, Structural Engineers Inc., in Ridgefield, Conn.

**Lisa Hunter** (M.S.) opened a hair salon, Snip-its Haircuts for Kids, located at The Shoppes at Blackstone Valley, Millbury, Mass., last year.

**Christopher Lacasse** works for Raytheon in Portsmouth, R.I. He is engaged to Jennifer Harvey, a student at Springfield Technical Community College.

**Ian Munger** was appointed to the police department in Wells, Maine, in January.

**Joseph Reinsch** enlisted in the Navy's Delayed Entry Program. He reported for basic training at the Navy's Recruit Training Center in Great Lakes, Ill.

### School of Industrial Engineering

**Harold Long '77** was promoted to chief technology officer of INS (International Network Services) in Santa Clara, Calif., where he has worked since 1993.

## Alumni to be honored at Reunion 2005

**Robert H. Goddard Award for Outstanding Professional Achievement:** Marshall Levine '55, Philip Baker '65, Todd Akin '70, Michael Dolan '75, Judith Nitsch '75, Eric Hahn '80, Chartsiri Sophonpanich '80

**Herbert F. Taylor Award for Distinguished Service to WPI:** Howard Freeman '40, Robert Cahill '65, Philip Ryan '65, Patricia Graham Flaherty '75

**John Boynton Young Alumni Award for Service to WPI:** Michael Donahue '90

**Ichabod Washburn Young Alumni Award for Professional Achievement:** Thomas Arseneault '85, Stephen Hooley '85, Stacey Cotton Bonasso '90, Michelle Petkers Gass '90; and Kevin Buckler '89, Peter Quinn '89, and Edward LaFortune '90

**William R. Grogan Award for Support of the Mission of WPI:** Bernard Brown *(posthumously)*

# Obituaries

## 1920s

**Diran Deranian '29** died Aug. 14, 2004. He leaves his wife, Marion (Tuysuzian). A longtime resident of Holden, Mass., Deranian served as a mechanical engineer at Heald Machine Co. for more than 30 years. He belonged to Tech Old Timers and often led the 50-Year Associates contingent at WPI Reunion parades.

## 1930s

**Paul E. Nelson '32** ΛΧΑ died Aug. 18, 2004. The retired owner of Hillside Acres Farms in Vermont, he was predeceased by his wife, Marion.

**Herbert W. Daniels Jr. '33** of Watertown, Mass., died July 26, 2004. He leaves his wife, Dorothy (Coffey). Daniels was a longtime mechanical engineer at the Boston Navy Shipyard. He belonged to Theta Upsilon Omega (now ΣΦΕ).

**Carl G. Silverberg '33** of Sturbridge, Mass., died Sept. 10, 2004, leaving his wife, Mabel (Nordman). During his career at American Optical Co., he patented new technology for color television, lasers, and eyeglass manufacture.

**William E. Burpee '34** ΘΧ of Reading, Mass., and Naples, Fla., died July 16, 2004. Husband of the late Thelma (McClintock) Burpee, he retired from Raytheon Co. as chief engineer.

**E. Lovell Smith Jr. '34** ΛΧΑ of Hobe Sound, Fla., died Nov. 14, 2003, leaving his wife, Janet. He was retired from Hamilton Sunstrand Corp.

**Osmond L. Kinney '35** ΦΓΔ, a former resident of Waynesboro, Pa., died July 8, 2004. He was predeceased by his wife, Gayl (McConnell). Kinney worked for Potomac Edison Systems for 40 years.

**Paul S. Krantz Sr. '35** of Worcester died July 1, 2004, leaving his wife, Cecile (Gemme). He worked for Wyman-Gordon Co. for many years and later retired from Kropp Forge Co.

**Verner R. Olson '35** ΛΧΑ, a 41-year veteran of DuPont Co., died Oct. 11, 2004, in Toledo, Ohio. His wife, Martha, died in 1998.

**Harold F. Pomeroy '36** died Nov. 11, 2004, in Glastonbury, Conn. A longtime resident of Pittsfield, he worked for Northeast Utilities for 42 years. His wife, Mary Delores (Murray), survives him.

**Emeritus Professor B. Allen Benjamin '37** ΑΤΩ of Wayland, Mass., died Jan. 12, 2003. He leaves his wife, Eleanore (Conant). Benjamin joined the Civil Engineering faculty in 1963 as WPI's first professor of city planning and retired in 1980.

**John H. Chapman '37** ΦΣΚ of DeLand, Fla., died June 16, 2004, leaving his wife, Marjorie. He was retired from American Optical Co. as assistant plant manager.

**Vincent F. Johnson '37** of Naples, Fla., died Sept. 1, 2004. A former insurance executive for Marsh & McLennan, he leaves his wife, Mary.

**Francis B. Swenson '38** ΘΧ, former owner of Swenson's Men's Shop in Walpole, Mass., died Sept. 5, 2005. His wife, Gladys (Walker), survives him.

**Ralph E. "Putt" Dudley '39,** a former principal and mathematics teacher at Douglas Memorial High School, died Sept. 21, 2004. After earning a master of natural science degree at WPI in 1960, Dudley became head of the Math and Science Department at Quinsigamond Community College. His wife, Lois (Wentzell), died in 1998.

## 1940s

**Clayton H. Allen '40** ΛΧΑ of Chebeague Island, Maine, died Aug. 25, 2004. His wife, Doris, survives him. A former consultant for Bolt, Beranek & Newman Inc., he developed and patented several noise control devices through The Clayton H. Allen Corp.

**Joseph M. Halloran '40** died Oct. 16, 2004, at his home in North Haven, Conn., leaving his wife, Elizabeth (Walsh). He was a manufacturer's representative and owner of Halloran Equipment Co.

**Benedict K. Kaveckas '40** of Merrimack, N.H., died Aug. 7, 2004. He was a retired mechanical engineer whose career included Western Electric and Wang Laboratories. His wife, Doris (Granda), predeceased him.

**J. Philip Berggren '41** ΦΣΚ of Ivoryton, Conn., died June 29, 2004, leaving his wife, Lorraine. A former company officer at Aetna Life & Casualty, he retired as director of technical services.

**Richard J. Vaughn '42** died Aug. 24, 2004, at his Mashpee, Mass., home. A longtime supervisor at Pratt & Whitney, he is survived by his wife, Katherine (Gibbons).

**Harold W. Brandes '43** ΘΧ, a longtime Holden resident, died June 21, 2004. He leaves his wife, Margaruite (Johnson). He earned a certificate from the School of Industrial Engineering in 1956 and worked for Reed Rolled Thread Die Co. for 40 years.

**Carl E. Hartbower '43** ΛΧΑ died Oct. 7, 2004, at his home in Fair Oaks, Calif. He leaves his wife, Luella. After retiring from the U.S. Department of Transportation, he did private consulting and teaching for 10 years.

**William M. Walker '43** SAE of Walpole, Mass., died Nov. 4, 2004. Husband of the late Helen (LaVigne), he retired from Timken US Corp. as district sales manager.

**Walter W. "Jake" Brown Jr. '44** ΦΚΘ of Beverly, Mass., died Feb. 16, 2004. He was district chief of the Worcester Fire Department for 41 years. He leaves his wife, Mildred.

**William A. Hermonat Jr. '44** ΑΤΩ of Rochester, N.H., died June 18, 2003. His wife, Judith, survives him. Hermonat was a self-employed consultant in chemistry and accounting.

**Robert W. Brower '46** of Burnsville, Minn., died June 23, 2004. A former purchasing manager for Toro Co., he leaves his wife, Amy.

**Vincent M. LaSorsa '46** of South Huntington, N.Y., died May 7, 2004, leaving his wife, Jane. He was a retired program manager for Norden.

**Thomas E. Lempges '46** ΦΚΘ of Fulton, N.Y., died Aug. 5, 2004. He was retired from Niagara Mohawk as vice president, nuclear generation. His wife, Caryl (Norton), died in 1984.

**Richard H. Merritt '46** ΘX, a longtime engineer for Norton Co. and Bay State Abrasives, died Sept. 1, 2004, in Worcester. He leaves his wife, Beverly (Anderson).

**Malcolm A. Morrison '46** ΑΤΩ of Annandale, Va., died April 21, 2004. He was a supervisor in the U.S. Patent and Trademark Office. His wife, Marion, survives him.

**Alva L. Rogers '46** Jr. ΛΧΑ of Chatham, Mass., died Sept. 6, 2004. He was retired from Honeywell International Inc. His wife, Deborah, survives him.

**Guy H. Nichols '47** ΘX died Oct. 1, 2004, in Cincinnati, leaving his wife, Christine (Ryan). He was an aeronautical engineer who worked on the Polaris missile program at General Electric and later served as a sales representative for Magna Engineering.

**Russell W. Wood '48** ΣΦΕ of Malta, N.Y., died Aug. 22, 2004, leaving his wife of 20 years, Diane (Gruby). His first wife, Margaret (Graves), died in 1983. Wood was an engineer in General Electric's nuclear submarine program.

**George V. Lehto '49** ΑΤΩ of Silver Spring, Md., died July 30, 2004. He was retired from Penn Central Corp. His wife, Pearl, survives him.

Former basketball captain **Stephen J. Ucich '49** ΦΚΘ of Wethersfield, Conn., died Oct. 24, 2004. He leaves his wife, Pauline. Ucich taught mathematics and computer science at Hartford Public High School.

## 1950s

**Mustafa Tevfik Sonmez '51** of Auburn, Calif., died July 16, 2004, leaving his wife, Christie. A native of Turkey, he returned there and worked for Tumpane Co., serving as chief engineer and Air Force liaison in the construction of military installations. He later taught electrical engineering at the University of Petroleum and Minerals in Dhahran, Saudi Arabia.

**Lysle P. Parlett '52** ΑΤΩ died Oct. 23, 2004, at his home in Hayes, Va. His wife, Ann (Wood), predeceased him. Parlett worked for NASA in the Full-Scale Wind Tunnel at Langley Research Center.

**Samuel W. Rinn III '52** ΑΤΩ died July 24, 2004, in Tucson, Ariz. He was retired from Swindell Dressler Construction as an electrical engineer. He is survived by four daughters.

**William G. Mears '53** ΛΧΑ of Kennett Square, Pa., died June 24, 2004, leaving his wife, Erica. An automotive engineer at Mobil Research and Development for 37 years, he later retired as president of Dynamic Engineering Inc.

**Edwin R. Prantis '54** ΘX, of Milton, Mass., died Sept. 22, 2002, leaving his wife, Yedviga Ann. He was retired from Ebasco Services as principal engineer.

## Campus Mourns Faculty, Staff

**Robert (Bobby) Taylor,** lead technician in WPI's Mechanical Engineering Department, died Dec. 23, 2004. Taylor worked at WPI for 37 years and was well known for his involvement with the university's SAE Race Team, Autocross Club, and Wireless Association. He also belonged to Skull. He leaves his wife of 33 years, Susan B. (Brown) Taylor, two daughters, his father, a sister, a nephew, and several nieces.

**Krishnaswamiengar Keshavan,** former professor of civil and environmental engineering at WPI, died Dec. 25, 2004, after a long illness. Keshavan joined the WPI faculty in 1967 and taught here for 31 years, retiring in 1998 at the age of 69. During that time, he served two five-year terms (between 1976 and 1986) as head of the Civil Engineering Department. He received his bachelor of science degree in civil engineering from the National Institute of Engineering in Mysore, India. He went on to earn a master's degree in civil engineering from the State University of Iowa in 1960 and a doctorate in civil engineering from Cornell University in 1963. Before coming to WPI, Keshavan taught for four years as a professor of civil engineering at the University of Maine in Orono. He also worked as a consultant with UNESCO (the United Nations Educational, Scientific and Cultural Organization) during the 1970s and spent a year as director of environmental engineering at the University of the Philippines, 1975–76. As part of his work with UNESCO, he traveled the world extensively. He is survived by his wife, Sita, three children (Rango '80, Leela '88, and Maya '88), and six grandchildren.

**Roger N. Perry Jr. '45** ΘX, former director of public relations at WPI, died Jan. 9, 2005, after a short illness. Perry served as an engineer in the Merchant Marine during World War II, returning to WPI to earn his mechanical engineering degree in 1947. After graduation, he joined Norton Co., where he made a career change from engineering to public relations. In 1964, he became WPI's first full-time PR director, a post he held until his retirement in 1988. He was the first editor of *Quest,* which reported on major gifts to WPI, and served part time as its senior writer for many years. His own gift to "support the preservation and dissemination of WPI's history and heritage" was covered in *Quest* in 1993. Perry founded the Worcester County Public Relations Association, which named its highest honor for him. He was a longtime alumnus advisor to Theta Chi fraternity at WPI, a member of Skull, and a member and officer of Tech Old Timers. Perry leave his wife, Pauline, four children (including Tina Buckley '78 and Dick Perry '79), and seven grandchildren.

**Jean E. (Smith) Pritchard,** wife of former director of athletics and head football coach Bob Pritchard, died Jan. 15, 2005. She was 91. Her husband died in 1978, shortly after he retired from WPI. She is survived by their daughter, Diane Pritchard, and several nieces and nephews. Jean and Diane returned to campus for many years to attend the Hall of Fame banquet and to present the Pritchard Award at the Homecoming football game. The award, named in honor of her late husband, is given to the most outstanding back and lineman. (Defensive back Bryan Douglass '06 received the award following the Homecoming game with Union last October.)

**Roger J. Dufresne '55** (SIM) of Atlanta, Ga., died Sept. 7, 2004. He was 82. A former divisional vice president for Norton Co., he leaves his wife, Malvina "Molly" (Rice).

**F. John Jolda '56** of East Douglas, Mass., died Nov. 12, 2004. He leaves his wife, Frances (Gonsorcik). An electrical engineer, he worked at George J. Meyer Manufacturing Co. and later taught at Central New England College and the Salter School.

**John J. Kelly '57** ΣAE died Oct. 19, 2004, in Baton Rouge, La., leaving his wife, Jean. He worked for Earle Enterprises and later was self employed as a consulting engineer.

**George A. Rodes '57** ΣΦE of Marion, S.C., died Aug. 17, 2004. He leaves his wife, Sylvia (Bryant). He was a retired civil engineer for the Federal Highway Administration.

**Robert D. Tent '57** died March 13, 2004. His wife, Emily, survives. A resident of Agana, Guam, he worked in the Undersea Service Division of Fluor Ocean Service.

**Charles A. Tyson '57** ΛXA of Mountain View, Calif., died Oct. 24, 2004. His wife, Noriko, survives him. Tyson was a senior staff scientist and fellow of SRI International.

# 1960s

**Theodore H. Langley '61** died Aug. 15, 2004, at home in Falmouth, Maine. He was a design engineer for Stone & Webster, now part of The Shaw Group.

**John C. Woodbury '62** of Worcester died Aug. 8, 2004, of progressive supranuclear palsy. He was a retired vice president and manager of marketing and advertising for Woodbury & Co. Inc. He leaves his wife, Virginia (Quick).

*Transformations* recently learned of the death of **Edward N. Santos '64** ΘX in 2000. An employee of General Electric, he leaves his wife, Marion, of Raleigh, N.C.

**David W. Swenson '69** of North Andover, Mass., died Oct. 21, 2003. He was a development engineer for Lucent Technologies Network Systems.

# 1970s

**Clement P. Clark '70** (SIM) of Holden, Mass., died June 14, 2004. He was 88. A longtime industrial engineer for Norton Co., he leaves his wife, Marjorie (Clough).

**William C. Leslie '71** of Mount Lebanon, Pa., died suddenly on Aug. 7, 2004. He leaves his wife, Julie (Pasichuke). A former Navy submariner, his career in nuclear construction services included Westinghouse and AREVA.

**James R. Hosey Sr. '74** (SIM) of West Yarmouth, Mass., died July 29, 2004. A retired manager for the Heald division of Cincinnati Milacron Co., he leaves his wife, Margaret (Staples).

**William E. Booth '75** of Dover, Mass., was killed in a riding accident Aug. 29, 2004. A patent attorney and principal in the Boston law firm Fish & Richardson, he was an accomplished equestrian and scuba diver. His wife, Christy, survives him.

**Pauline I. Kalagher '78** (MNS) died June 24, 2004, in Worcester. A longtime teacher at Milford (Mass.) High School, she held three master's degrees and a Ph.D. in education.

# 1980s

**Peter J. Virbasius '80** (PLE) of Pocasset, Mass., died July 23, 2004. A longtime industrial engineer for Wyman-Gordon Co., he leaves his wife, Madeline.

**Daniel K. Helle '81** (SIM) of Rutland Mass., died July 9, 2004, at age 65. He was retired from Norton Co. His wife, Beverly (Boulanger), survives him.

**Louis F. "Chip" Coffin III '82** ΦΣK of Mountain View, Calif., died Dec. 30, 2004, following a long and courageous struggle with cancer. A design engineer for Digital Equipment Corp. and later Microsoft, he held dozens of patents and left his mark on many well-known consumer products, including the next generation of Xbox video game consoles. His wife, Susan (Deane) survives him.

**Gary A. Glowacki '82** ATΩ of Nantucket, Mass., died unexpectedly Sept. 20, 2004, in his sleep. A former project engineer for NASA's Space Shuttle program, he returned to Nantucket in 1987 to run his family's business, Outdoor Power Equipment Inc. Survivors include his fiancée, Susan McCarthy, and his parents.

**Dennis P. Lynch '82** (SIM) of West Brookfield, Mass., died Sept. 20, 2004, leaving his wife, Jean (Pratt). He was 56. A former metallurgist, he later served as a programmer for various manufacturing companies.

**Jonathan J. Crofton '87** died Sept. 20, 2004, at his home in Westborough, Mass. He is survived by his wife, Diane (Riley). Crofton was a management recruiter for Oxford Global Resourcing Co.

**Ephraim A. Scheier '89** (M.S. FPE) of Katy, Texas, died July 25, 2004. He leaves his wife, Lorna (Lamont). A fire protection engineer with BP America, he was active in the Safety and Health Division of the AIChe.

# 2000s

**Nathaniel G. Keith '01** ΦΣK of Milford, N.H., died Feb. 28, 2005, in a skiing accident. He leaves his fiancée, Jennifer Burzycki '02, his parents, his stepparents, a brother and a sister. Keith was a staff engineer at Haley & Aldrich, Inc.

## Alumni Deaths Confirmed

Recent improvements in database sharing have enabled WPI to confirm the deaths of following alumni. Classmates are welcome to contact the Alumni Editor for more information, if available.

'21 Francis Towle (1983)
'27 Eustace I. Merrill (1980)
'31 William U. Matson (2001)
'33 Charles H. Newsome (1984)
'34 William A. Michalek (1976)
'35 Alvaro A. Silva (1979)
'35 Louis D. Soloway (1973)
'35 Max. H. Voight (2000)
'37 Samuel S. Naistat (1991)
'39 Charles S. Stevens (1993)
'39 Raymond B. Piper (1988)
'40 John D. Morrison (1988)
'41 John F. McElroy (2001)
'45 Leonard F. Moore (2001)
'45 G. Walter Webb (1997)
'46 Allan W. McCoy (1988)
'46 Sidney S. Sperling (1992)
'50 James F. O'Connor (1998)
'53 Hugh R. McLaughlin (1978)
'53 Paul C. Murray (1984)
'57 Thordur Grondol (1996)
'58 Richard E. Lorenz (1996)
'59 Robert A. Steen (2000)

# Time Capsule

## Before the United States entered World War II, Sarcey San-Tsai Chen '24 valiantly opposed Japanese aggression in China.

**The news filtered in slowly** to WPI's Alumni Association office, starting with a dispatch received in July 1940: Sarcey San-Tsai Chen '24, vice president of American Engineering Corp. in Shanghai, had been kidnapped and possibly killed. The association asked Margaret Fuller Gardner for her assistance; prior to her marriage, she had lived in Worcester, and Chen and other Chinese students had been frequent visitors to the Fuller home.

"Unfortunately, it is true that Sarcey Chen was assassinated by the Japanese," wrote Chih Meng, director of the China Institute in America, in a 1944 letter to Gardner. "The information is rather meager. It happened about 1940." Mrs. Chu Shih-ming, wife of a Chinese diplomat, could add little more: "What you wrote about Sarcey Chen is all true. I am very sorry that I cannot give you further information regarding him while the war is still going on."

### A class standout

Chen was born August 4, 1902, in Soochow, China. He attended Tsing Hua College in Peking before entering WPI and earning a degree in electrical engineering. According to the 1923 *Aftermath* (the student yearbook), "S.T." had a reputation for putting "punch" into his studies and activities. He played with "cleverness and skill" as soccer team captain, headed up the tennis team (his "mean racket" netted a singles championship), was vice president of the debating society and the Cosmopolitan Club, and was a member of Tau Beta Pi and Sigma Xi. "When he says, 'I don't know yet,'" wrote the editors of the yearbook, "you may rest assured that it will not be long before he finds out, and what is more, finds out right. In the future, we expect to hear more of this live wire."

### A country in chaos

In a letter dated October 28, 1946, Haw King Chen, nephew of Chen, wrote:

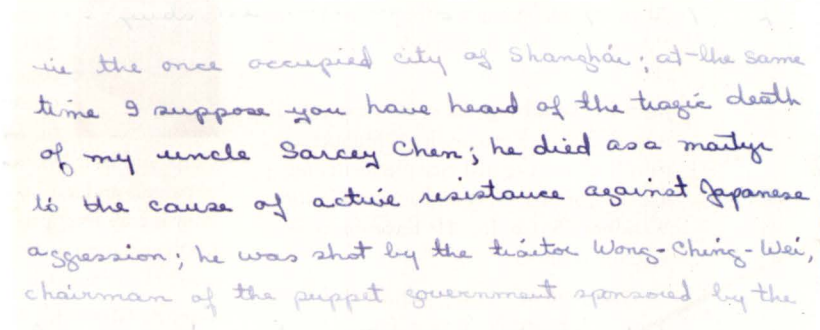
*I suppose you have heard of the tragic death of my uncle, Sarcey Chen; he died as a martyr to the cause of active resistance to Japanese aggression. He was shot by the traitor Wang Ching-wei, chairman of the puppet government sponsored by the Japanese invaders. This occurred about six years ago. At that time things really looked very dark for China. The change came when America entered the war…*

Japanese designs on China began in 1931. Faced with a growing population and depleted raw materials, troops seized Manchuria, a region rich with potential for industrial development and war industries. The Japanese pushed to the south of the Great Wall, into northern China, and to the coastal provinces. On July 7, 1937, Chinese and Japanese troops clashed outside Beijing near the Marco Polo Bridge in a skirmish that marked the beginning of China's War of Resistance.

While Japan steadily gained territory, China itself was in turmoil. Chiang Kai-shek, head of the Nationalist Party (the Kuomintang, or KMT), chose to focus on "internal unity before external danger" and embarked on anti-communist extermination campaigns to deplete the nation's growing Communist Party (CCP). But the Red Army grew, especially after 1935 when Mao Tse-Tung was elected CCP chairman.

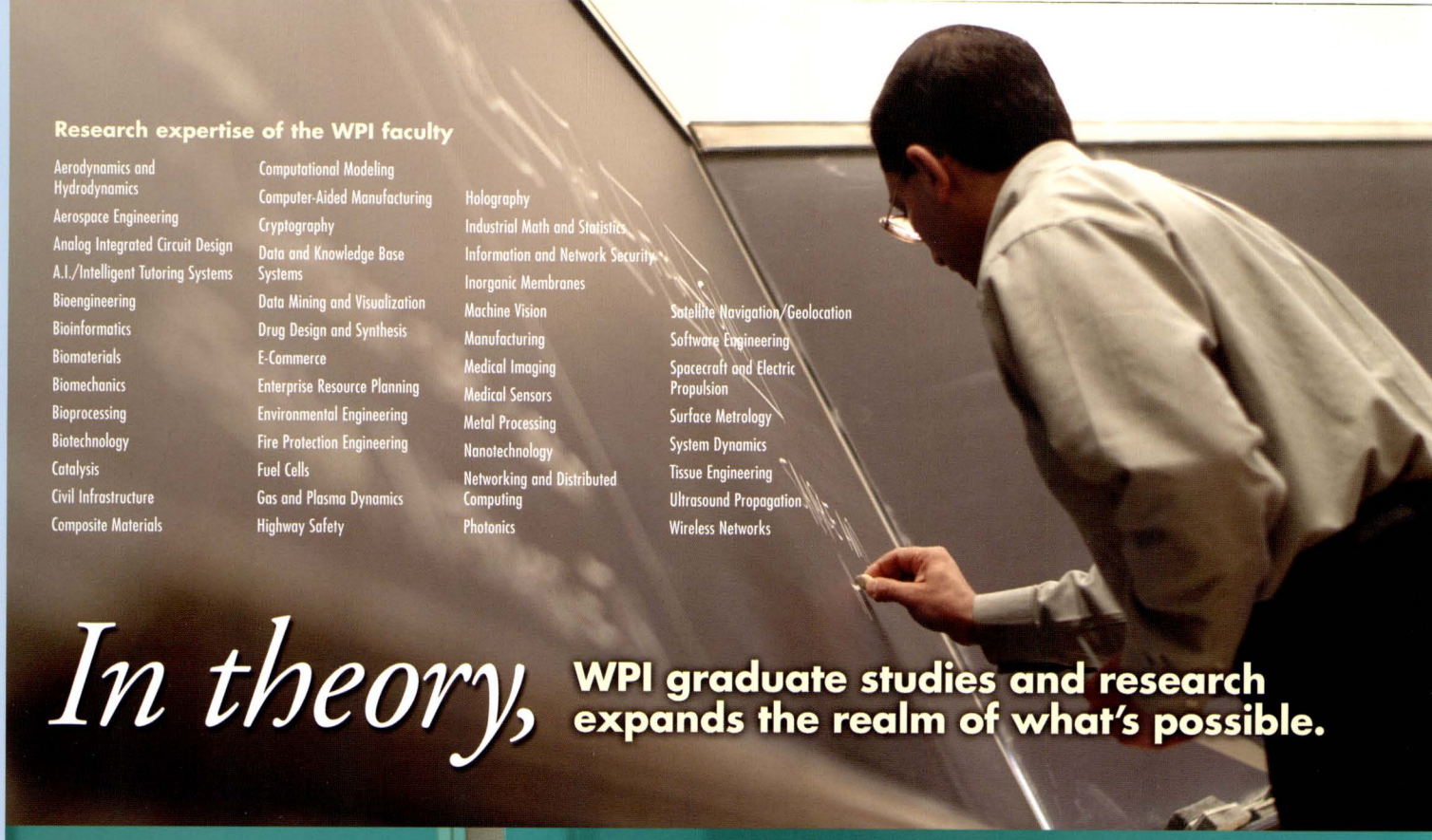
Wang Ching-wei, Chen's alleged assassin, was a Chinese revolutionary and political leader. He became chairman of the KMT but attempted two coups against Chiang Kai-shek. In 1938, he traveled to Shanghai under the guise of advocating peace with Japanese invaders. Two years later, he was appointed premier of the Japanese puppet government in Nanjing.

Noncombatant Chinese people were the first victims of Japanese massacres. Eradication of these "bandits"—a Japanese term for resistance groups who opposed them—was facilitated through widespread executions. While little is known about the events leading up to Chen's abduction and his subsequent assassination, he is honored today as a patriot who died for his country.


ie the once occupied city of Shanghai; at the same time I suppose you have heard of the tragic death of my uncle Sarcey Chen; he died as a martyr to the cause of active resistance against Japanese aggression; he was shot by the traitor Wong-Ching-Wei, chairman of the puppet government sponsored by the

### Chen's legacy

In May 1924, the *WPI Journal* published an article titled "The Measure of a Man," which focused on undergraduates who had been chosen by their peers as class leaders. Sarcey San-Tsai Chen '24 was one of 36 selected. Each leader was asked: What do you think would make the Institute more satisfactory to undergraduates and more attractive to prospective students? Chen recommended WPI "revise certain parts of the curriculum which lay too much stress on technical details, thus narrowing down the student's viewpoint on life."



**Research expertise of the WPI faculty**

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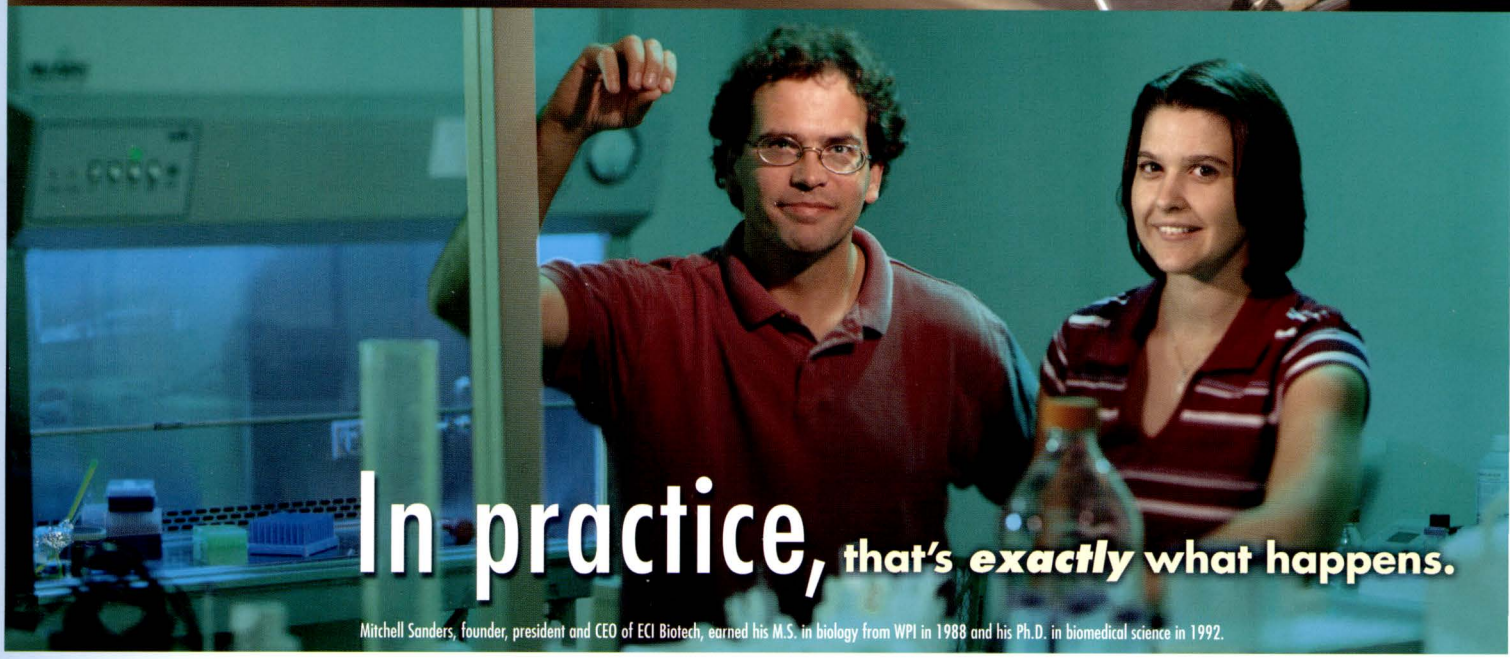
Analog Integrated Circuit Design
A.I./Intelligent Tutoring Systems
Bioengineering
Bioinformatics
Biomaterials
Biomechanics
Bioprocessing
Biotechnology
Catalysis
Civil Infrastructure
Composite Materials
Computational Modeling
Computer-Aided Manufacturing
Cryptography
Data and Knowledge Base Systems
Data Mining and Visualization
Drug Design and Synthesis
E-Commerce
Enterprise Resource Planning
Environmental Engineering
Fire Protection Engineering
Fuel Cells
Gas and Plasma Dynamics
Highway Safety
Holography
Industrial Math and Statistics
Information and Network Security
Inorganic Membranes
Machine Vision
Manufacturing
Medical Imaging
Medical Sensors
Metal Processing
Nanotechnology
Networking and Distributed Computing
Photonics
Satellite Navigation/Geolocation
Software Engineering
Spacecraft and Electric Propulsion
Surface Metrology
System Dynamics
Tissue Engineering
Ultrasound Propagation
Wireless Networks

# *In theory,* WPI graduate studies and research expands the realm of what's possible.



# In practice, that's ***exactly*** what happens.

Mitchell Sanders, founder, president and CEO of ECI Biotech, earned his M.S. in biology from WPI in 1988 and his Ph.D. in biomedical science in 1992.

**Departments and Programs**

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Biomedical Sciences
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Chemistry and Biochemistry
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