

WPI

FALL 2006

transformations

A JOURNAL OF PEOPLE AND CHANGE

Education Innovation

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Starting Point

Teach your children well...

In a previous life, I was a reporter for a daily paper in Connecticut. On one particular evening in the newsroom, I was arguing with my colleagues over some numbers—percentages—that were to appear in a graphic in the next day's paper. We couldn't agree on the correct numbers, or even how to compute them. And all I could think was: We're smart, educated, reasonable adults. Why can't we figure out a simple math problem?

Until recently, I'd chuckle when I thought about that evening. I liked to think that the pressure of our looming deadline had temporarily frozen our brains, rendering us absolutely useless in math. But over the past few months as I worked on this issue of *Transformations*, which focuses on innovative approaches to education—and, more specifically, innovative approaches to math, science, and engineering education in the 21st century—the humor of that moment faded. It began to seem indicative of a larger issue.

According to the National Assessment of Educational Progress, only 17 percent of high school seniors are considered proficient in math. This statistic is just one of the findings in the much-anticipated report from the U.S. Secretary of Education's Commission on the Future of Higher Education.

As we go to press, the commission—19 individuals from academia, business, and government—is finalizing its report, which will recommend a national strategy to strengthen postsecondary education. In a preliminary draft, the commission states that U.S. college graduates are, on the whole, less educated than their counterparts overseas. If the United States is to remain globally competitive, the report says, universities must enhance and improve student learning, an effort that shouldn't be limited to the upper echelons of academia, but shared by everyone—two- and four-year public and private universities, community colleges, and the K-12 system. As I read the draft, I noted two recommendations:

"America's colleges and universities [should] embrace a culture of continuous innovation and quality improvement... particularly in the area of science and mathematical literacy."

"The United States must ensure the capacity of its universities to achieve global leadership in key strategic areas such as science, engineering, medicine, and other knowledge-intensive professions."

For me, these points suggest that the country needs more schools like WPI, for the university is already well positioned to fully educate the next generation. Our approach to learning, where education is truly put into action, is what has led our alumni to become, yes, scientists and engineers, but also leaders, managers, entrepreneurs, problem solvers, critical thinkers.

The pages that follow offer a sampling of the relevant and vital work being done by those in our community. We sit down with President Dennis Berkey, who talks about the university's progress and the direction we're headed. And to put this article into context, we look back at 35 years of the WPI Plan. We also feature the inspirational stories of various alumni whose work directly impacts the quality of science and engineering education, and the quality of future engineers themselves.

There's more—an intelligent tutoring system designed by a CS professor helps youngsters learn math. And a project team makes a difference in the lives of blind children.

Thanks for reading.

Charna Westervelt, Editor

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LETTERS

Teaching with Transformations

I was visiting my son, Jason Tolderlund '92, recently and came across a copy of the *Transformations* spring 2006 issue. This fall I will be teaching a class in marine pollution at the U.S. Coast Guard Academy and found the articles on water to be very relevant to several of my planned topics. I plan to use copies of the issue as supplementary reading material for my students.

Douglas Tolderlund
Old Lyme, Conn.

A good approach

To everyone involved with its creation and production, congrats on a terrific issue of *Transformations*. It gives a great insight into WPI's approach to teaching, the relevance of its research, and its great prospects for the future.

I suggest mailing it out to thousands of people in relevant audiences, far and wide. It is much more effective in communicating what WPI is about than radio or television advertising.

Erwin Danneels
WPI Associate Professor, Management

A call to get involved

I'm writing to encourage graduates to help our public schools (K-12) improve their math and science performance. WPI graduates have a great deal to offer public schools and it can be very rewarding to give something back to your community. Volunteering for a school committee, judging a science fair, or becoming a math and/or science tutor does not require a lot of time and you may make a difference in the life of a student. I've enjoyed being a volunteer for a local nonprofit organization (www.LLSTA.org) that visits 5th and 6th graders to discuss what engineers and scientist do at work.

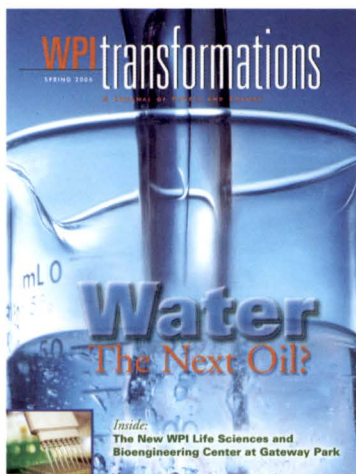
Bill Rutherford '73
Lititz, Pa.

A clean photo

As an '02 graduate of WPI and a daily visitor to the wafer fab clean-room at Allegro MicroSystems in Worcester, I couldn't help but chuckle at the two clean-room pictures in the spring issue. If particle contamination is the concern trying to be

prevented by a clean-room, and it usually is, those hoods need to be tucked in. They're not going to do much in the way of preventing skin and hair particles from falling down, onto hands, and onto product, when worn like that.

Brian J. Conway '02
Hudson, Mass.



The photographs do not depict actual operations in the lab but, rather, students modeling the protective outfits for our camera. It appears that our models and photographer have a thing or two to learn about proper clean-room attire. *Transformations* thanks Mr. Conway for pointing out our photographic faux pas. Our readers may feel confident that when it really counts, our lab hoods are tucked in. —Ed.

A model alumnus

I just read the article on Philip Giantris '65 ["Reaching Out to Water Stressed Countries," spring 2006 *Transformations*]. The article was forwarded to me by one of my colleagues who knew that I had worked with Philip in Albania for two years. I want to commend the author, Joanne Silver, for doing an outstanding job of capturing the life and spirit of Giantris. I hope that articles like this will serve as an inspiration and encouragement to other WPI alumni. We need more people like Giantris who will use their talents and training, combined with the perseverance it takes to make it through a demanding engineering curriculum, to make great contributions to the world. This was my first exposure to *Transformations*; I must say that I was impressed by the high quality and vibrancy of the articles, and by the great things that are being done by those who have passed through WPI.

Charles M. Pike Jr.
Wakefield, Mass.

Correction: Yatao Liu, a chemical engineering graduate student, won first place in the life sciences and bioengineering category at WPI's first Graduate Research Achievement Day in March. *Transformations* regrets the misspelling of his name in the spring issue of the magazine.

A message from

Provost Carol Simpson

As I reflect on my first full year as provost, I am struck by the extraordinary level of commitment from WPI's faculty and staff, not only to significant advances in research and scholarship, but to the continual enhancement of our signature programs. For decades, WPI has led the way in developing interdisciplinary and global educational programs, and will continue to do so. This type of undergraduate experience is crucial for the next generation of leaders, thinkers, managers, and entrepreneurs.

For examples of WPI's commitment to interdisciplinary education, I need look no further than the increasingly diverse nature of our unique Interactive Qualifying Projects. I also look to the creation of the highly successful Interactive Media and Game Development program, which sent forth its first graduate this year and is attracting a large number of new and enthusiastic students. And I look to the new Environmental Engineering degree program, which draws on faculty from the departments of Civil and Environmental Engineering, Chemical Engineering, Mechanical Engineering, and Physics, and allows students to begin solving environmental problems rather than focus on the degree requirements of a specific disciplinary major.

I am excited to report that we have increased our undergraduate offerings to include System Dynamics and Aerospace Engineering; new graduate programs include System Engineering, Information Technology, and Operations Design and Leadership. Additionally, this year, for the first time, WPI will offer students the option of earning the bachelor of arts degree, an enhancement to our program approved by the faculty last spring. Preparations are also under way for new cross-disciplinary programs in bioinformatics and robotics engineering, both of which are areas of high demand from industry.

WPI's interdisciplinary emphasis is mirrored in our research activities, since, so often, solutions to important societal problems require that teams of experts from several disciplines work together. This approach is the future of research at WPI. Its success was seen this year in our record-breaking \$16.5 million in externally funded research grants, many of which involve interdisciplinary teams. (Such is the case in the Center for Untethered Health Care, where faculty from three departments—Electrical and Computer Engineering, Mechanical Engineering, and Chemistry and Biochemistry—cooperate to solve critical problems in the remote monitoring of patients.)

External recognition for the quality of WPI's faculty research and scholarship comes in many forms:

- Jennifer Wilcox, assistant professor of chemical engineering, was lauded as one of only a dozen "New Faces in Engineering of 2006" by the Engineers Week Foundation, having been nominated for this honor by the National Science Foundation.

- Wilcox also obtained a highly prestigious and competitive NSF CAREER award, as did Donald Brown, assistant professor of ECE, and Neil Heffernan, assistant professor of computer science (see article on Heffernan, page 18).

These three professors brought the total number of CAREER awards to WPI faculty to an astounding 19 since 1995.

- Diran Apelian, Howmet Professor of Mechanical Engineering, received two of the highest honors bestowed by the Minerals, Metals and Materials Society: fellowship in the society and the 2006 Bruce Chalmers award for outstanding contributions to the science and technology of solidification science.
- Michael Sokal, professor emeritus of history, was honored with the 2006 Society for the History of Psychology's Lifetime Achievement award for his contributions to the field.
- Greta Tryggvason, ME professor, was awarded the 2005 Computational Mechanics Award by the Japan Society of Mechanical Engineers.
- David Lucht, director emeritus of WPI's Center for Firesafety Studies, was honored by the inauguration of the "David A. Lucht Lamp of Knowledge Award" from the Society of Fire Protection Engineers for significant contributions to the advancement of higher education.
- Erwin Danneels, associate professor of management, received the 2006 Thomas P. Husted award for the best paper published in the *Journal of Product Innovation Management*.
- Bogdan Vernescu, mathematics professor, has been named a Member of Honor of the Romanian Academy Institute of Mathematics.
- Roberto Pietroforte, CEE associate professor, will be granted the rank of Cavaliere Ufficiale in the Order of Merit of the Republic of Italy, for distinguished work and exceptional service to his native country.

This small selection of the many high honors and awards that WPI's professors have received this year underscores the quality of our faculty and of our programs. I look forward to sharing more of their successes with you in future editions of *Transformations*.





New VP of Development and Alumni Relations

In April, WPI welcomed **Dexter Bailey** to the community as vice president of development and alumni relations, overseeing all fund-raising and outreach activities with the university's alumni.



Bailey most recently directed external relations for intercollegiate athletics at the University of California, Berkeley, where he helped raise \$150 million in gifts and pledges for intercollegiate athletics—the most successful fund-raising performance at the university.

Before joining Berkeley, he served as assistant dean for development and external relations at the University of Washington's School of Law and as assistant dean for development and alumni affairs for Ohio University's College of Education. Prior to that, he was press secretary for the Ohio House of Representatives. He earned a BS in Journalism from Ohio University and an MBA from the University of Toledo.



Bartlett Center

Now home to admissions and financial aid, Bartlett Center opened its doors this spring and a ceremonial dedication was held in June. Located on the east end of the campus quadrangle, the center is named for entrepreneur James L. Bartlett Jr. '39 and his wife, Shirley V. Bartlett, whose donation made the building possible.

Designed by CBT/Childs Bertman Tseckares Inc. in Boston, Bartlett Center is the first building on campus to be registered with the U.S. Green Building Council; it was designed as a "green building" by using sustainable design principles under the Leadership in Energy and Environmental Design (LEED) program, such as using local and renewable building materials, recycling 90 percent of construction materials, reducing energy costs, and, overall, ensuring a better work environment.

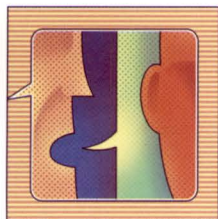
"The Bartletts have made yet another impactful and generous contribution to WPI that is having such a transforming effect on this campus," President Dennis Berkey said at the dedication. "I'm pleased that the building is consistent with the values and heritage of WPI."

James Bartlett thanked the WPI trustees for their foresight and commitment to a project that began three years ago. "We're tremendously pleased that the Bartlett name is on the entrance, but we're mindful that there are many other people who were involved to make this happen," he said.

Shirley Bartlett spoke of the continuing influence the building will have on students now and in the future. Commenting on why she and her husband wanted to make a difference at WPI, she said, "We like to do things that are needed."



Surrounded by family and friends, Jim and Shirley Bartlett ceremoniously open the building named in their honor.



More**Buzz**

Collaboration to Regenerate Limbs

WPI and CellThera Inc., a Worcester-based biotechnology start-up firm, have signed an agreement to conduct joint research aimed at developing techniques for restoring tissue—including digits and limbs—damaged or lost due to traumatic injury.

As part of the agreement, Tanja Dominko, CellThera's president and chief scientific officer, and senior scientist Raymond Page will hold research faculty appointments at WPI. The research will be conducted in laboratories on campus and, beginning next spring, in the new WPI Life Sciences and Bioengineering Center at Gateway Park. Faculty members with expertise in tissue engineering, wound healing, stem cells, and related fields are also expected to be involved in the project.



WPI's Bioengineering Institute director W. Grant McGimpsey notes that this collaboration exemplifies the type of industry-university partnerships that BEI and Gateway Park are seeking. "Through these vehicles," he says, "WPI brings together scientists engaged in cutting-edge research in the life sciences and companies and organizations that can translate new discoveries into products and technologies that can improve the effectiveness of health care and the quality of our lives."

CellThera is a collaborator on a multi-institution research program funded by a one-year, \$3.9 million award from the Defense Advanced Research Projects Agency (DARPA), the research and development arm of the U.S. Department of Defense.

Inspiring a lifetime of learning *in math, science, and engineering*



The WPI K-12 Outreach Program is challenging students to grow academically and is making a difference in educating the next generation of technological humanists.

www.wpi.edu/Admin/K12

NSF Awards WPI Researchers \$1.8 million

A research team led by Dalin Tang, professor of mathematical sciences and biomedical engineering, has received a five-year, \$1.8 million award from the National Science Foundation to conduct a comprehensive study of the growth, progression, and rupture of human atherosclerotic plaque, a medical condition that is closely related to most cardiovascular diseases, including stroke and heart attack. Cardiovascular disease is the leading cause of death in the developed world.

With the NSF funding, the team will use a combination of computational modeling, MRI (magnetic resonance imaging) scans of volunteer patients, and histological studies of diseased arteries to develop—for the first time—a detailed picture of the physical and biological conditions inside arteries that promote the initial formation of a plaque, and then favor its continued growth. The work will also reveal, in unprecedented detail, the factors that cause plaques to rupture, leading directly to heart attacks and stroke.

WPI mathematicians Joseph D. Petrucci and Homer F. Walker are also a part of this research team, as are professors and researchers from the University of Washington, the University of California, Irvine, Shinshu University in Nagano, Japan, and Beijing Normal University in the People's Republic of China.



Rocket Man

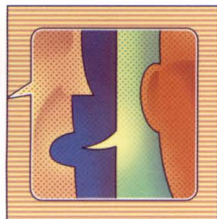
A new monument to honor Robert Goddard, the first in his native Worcester, was unveiled on a rainy afternoon in May. The monument comprises eight panels that, through text and photos, tell the story of Goddard's life and accomplishments. Goddard, known as the "father of modern rocketry," graduated from WPI in 1908. WPI contributed to the monument's development and donated an informational kiosk to the project.

Robert Hutchings Goddard
October 5, 1882 - August 10, 1945

Meet the Class of 2010

- 780 students—the largest class to date
- 3.7 average GPA; average class rank in the top 11 percent
- 1290 average SAT score (on a scale of 1600); 1888 average SAT score (on a scale of 2400)
- 31 states and 35 countries represented
- 25 percent women
- Top majors include: mechanical engineering, electrical and computer engineering, chemical engineering, biology





More**Buzz**

Our Cup Runneth Over



For the second time in three years, WPI captured the coveted Worcester College Cup for the 2005-06 sports season. The cup is presented annually by the Worcester *Telegram & Gazette* to the area school with the highest overall winning percentage in all sports.



Davis to Influence Foreign Policy

Paul Davis, professor of mathematical sciences and former dean of WPI's interdisciplinary and global studies program, has been named a Jefferson Science Fellow by the U.S. State Department.

Davis, along with five other professors from around the country, will lend his expertise to various U.S. department bureaus over the next year, helping shape and influence U.S. foreign policy by serving as an advisor. After his one-year assignment, Davis will remain a State Department consultant for five years.

The Jefferson Science Fellows program was established in 2003 to give science and technology a more prominent role in U.S. foreign policy.

WPI Venture Forum
Dinner with Entrepreneurs
CEI@WPI ALL-OUT Business Plan Challenge
Robert H. Grant Invention Awards
Strage Innovation Awards
Networking Events
Spotlight on Entrepreneurs
Elevator Pitch Clinics
CEO East Collegiate Entrepreneurship Conference
42 Workshops and 4 Interactive Seminars
Invention to Venture
Weekly Radio Program
Vantage Newsletter
Resources, vast networks, and much more



An entrepreneurial mindset

WPI takes entrepreneurship education seriously.

Just how much more seriously is up to you.

Our students are saying great things about WPI's new entrepreneurship programs. But, they want more. To innovate the future of business. You can help them attain the entrepreneurial mindset they need by working with the Collaborative for Entrepreneurship & Innovation in its Entrepreneurial Mindset Initiative.

For information call 508-831-5761 or visit www.wpi.edu/+CEI



Commencement 2006



Andrew Bangs '06 became the university's first graduate in the innovative Interactive Media and Game Development program when he received his WPI diploma this spring. Bangs joined his 937 peers at the university's 138th Commencement, on May 20. This year, WPI conferred 641 bachelor's degrees, 267 master's degrees, and 30 PhD degrees.

Honorary degrees were given to Marian Heard, former president and CEO of the United Way of Massachusetts Bay; Tjama Tjivikua, founder and rector of the Polytechnic Institute of Namibia, the first technological university in the southwest African nation; and keynote speaker and WPI trustee Curtis R. Carlson '67, president and CEO of SRI International in Menlo Park, Calif. An innovator and technology leader, Carlson holds fundamental patents in the fields of image quality, image coding, and computer vision. Most recently, the Society for Information Display awarded him the 2006 Otto Schade Prize in Display Performance and Image Quality.

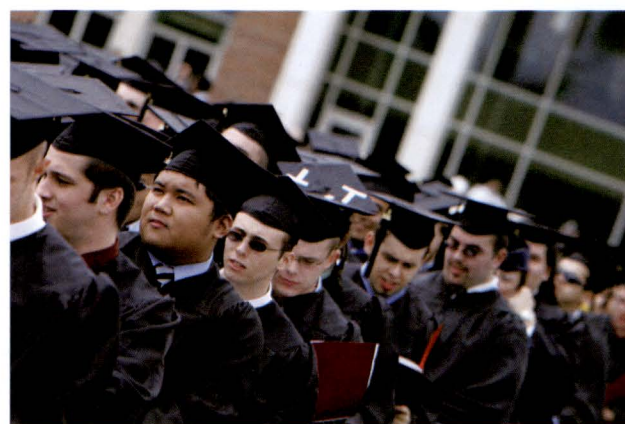
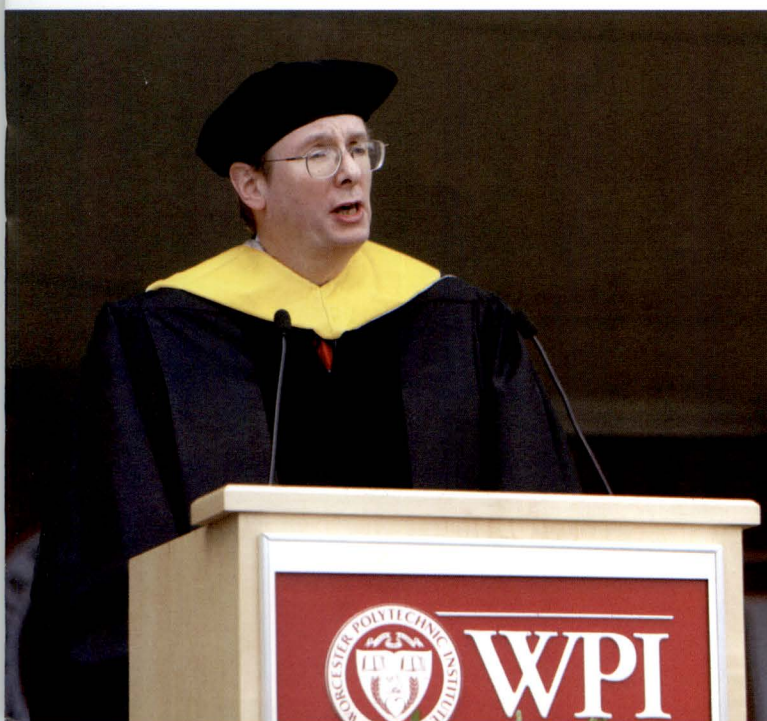
Carlson spoke to the graduates about the world of abundance. "Unlike land and other physical resources, knowledge, ideas,

and creativity are unlimited. They build on each other to create opportunity after new opportunity," he said. "Innovation is now the primary driver of growth, prosperity, and quality of life."

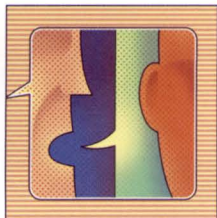
Carlson reminded the graduates that the world is only abundant to those who have the appropriate knowledge and skills. "Fortunately, you are among a rare group that has the required skills," he said. "The WPI Plan is now the model for higher education in our global world. For you, an exciting adventure is just beginning."

President Dennis Berkey also told the graduates that they are well prepared for innovation, leadership, and achievement.

"I take much satisfaction from the thought that you have been well educated by this deeply dedicated faculty—in courses on the campus, in projects at home and around the world, in theatrical and musical projects and performances, and in one-on-one interactions of many kinds," Berkey said. "Lifelong learning is therefore more than a slogan at WPI. It is a habit of mind that arises from the experience of a truly excellent education."



Among the Commencement photos: honorary marshal Jeanine Plummer leads the procession over Earle Bridge; Tjama Tjivikua is presented with an honorary degree; Curtis Carlson delivers the keynote address.



New Deanships Reaffirm Commitment to Education

This summer, Provost and Senior Vice President Carol Simpson announced two senior administrative appointments that reflect the important role of undergraduate education at WPI.

John Orr, electrical and computer engineering professor and former department head, was named dean of undergraduate studies, and Richard Vaz '79, ECE associate professor and associate dean of Interdisciplinary and Global Studies (IGSD), was named dean of IGSD.

"These appointments reaffirm that undergraduate education is at the heart of our mission," Simpson says.

The dean of undergraduate studies position was recreated after an 11-year hiatus. (Bill Grogan '46, professor emeritus of electrical engineering, served as the first such dean from 1970 until his retirement in 1990. Frank Lutz succeeded Grogan until his resignation in 1995.)

The IGSD deanship became open this year after Paul Davis stepped down from the position to begin a sabbatical leave with the U.S. State Department (see story, page 8). "We are renewing our belief that the traditional values and emphasis of WPI's undergraduate education remain as vital as ever," Simpson says.

Both Orr and Vaz bring many years of experience to their respective new roles. Orr joined the WPI faculty in 1977 as an assistant professor of electrical engineering, after earning his PhD in electrical engineering from the University of Illinois, Urbana. He became associate professor in 1981, and full professor in 1986. He also served as ECE department head from 1988 to 2003. In his new role, Orr will be involved in a variety of initiatives, including new developments to enrich the freshman- and sophomore-year experiences.

Vaz arrived on campus in 1975 as an undergraduate; he earned his bachelor's and master's degrees at WPI, as well as his PhD. In 1983, he became an instructor and rose to the rank of associate professor of ECE, a title he has held since 1994. For the past eight years, he has also served as associate dean of IGSD. As dean, Vaz will continue to enhance and support WPI's interdisciplinary and global education.

This summer, *Transformations* spoke with the two colleagues about their vision for undergraduate education in a changing world.



John Orr

John Orr jokes that, after being named dean of undergraduate studies this spring, one of his first agenda items was to purchase some new suits.

Of course, when asked about the approach he will take to his new role at the university, his tone is much more serious. He talks

about filling current needs, as well as addressing the longer-term vision. "How do we look to the future, recognizing that a university doesn't make major changes overnight?" he says. "On the other hand, WPI is much more amenable to change than other schools."

This summer, Orr parlayed his nearly 30 years of experience at WPI into a role that will help shape the future of the university's undergraduate programs.

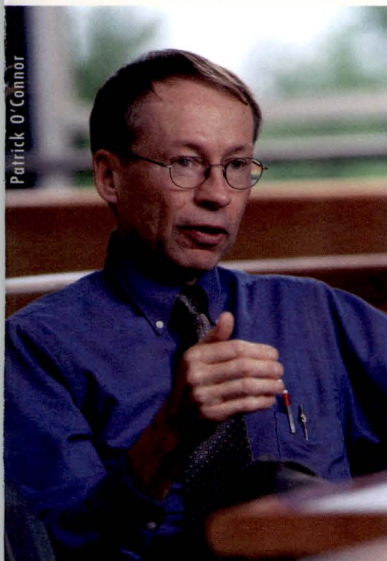
"For many years, WPI has been much broader than just engineering, and it will continue to broaden," he says. "Our job is [educating students] who will be leaders, managers, innovators."

In the lab, Orr has worked with a team of faculty to develop technology that tracks and locates personnel indoors, such as firefighters inside a burning building. On campus, his experience as a professor has given him perspective on the fundamentals of a solid undergraduate education. During the undergraduate years, he explains, students gain a better understanding of themselves and the world around them; they gain the knowledge on which they will base a career, and, in essence, they grow up. "There is so much maturation that happens during these four years, inside and outside the classroom," he says. "It's a sacred responsibility for a residential university to work with students in this regard."

In his new role he will collaborate with colleague Rick Vaz, the newly appointed dean of IGSD, on a variety of projects, such as exploring avenues to enhance the freshman- and sophomore-year experiences—a concern raised last year from the commissions that studied various aspects of the campus. "Rick and I will be working hand-in-hand and I'm really looking forward to that," Orr says. "WPI is one of the leaders—if not *the* leader—in projects in undergraduate education, but there's still room to integrate it more into the rest of the curriculum."

Though moving to the administration side of academia, Orr will continue to advise projects; he says he looks forward to maintaining his involvement with the Silicon Valley project center. "The reason we're all in education is the students and that sense of mutual fulfillment when students accomplish something," he says. "I don't expect to get too far away from that."

—Charna Westervelt



Patrick O'Connor

Richard Vaz

"I've parachuted into a large and extremely well run operation," Rick Vaz says of his new post. "I don't plan to come in and make sweeping changes. I'm going to take the time to learn how things are done, and keep a gentle hand on the rudder, especially for the first year."

With his decades of rich experience at WPI and his expertise in issues such as higher education reform and the internationalization of engineering education, it is no surprise that Vaz appreciates the smooth-running IGSD, as well as its signature role at the university.

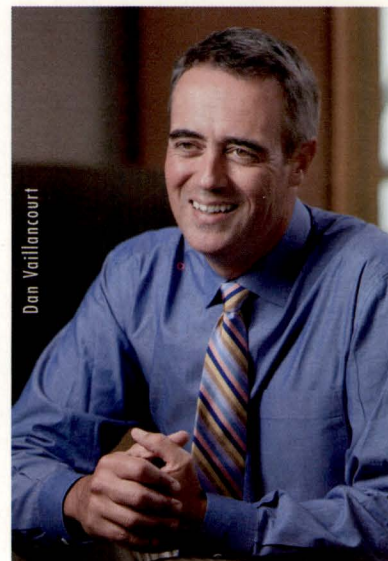
Indeed, IGSD's Global Perspective Program has won the university considerable recognition. The program was cited by the Association of American Colleges and Universities in 2000, when it named WPI one of 16 Greater Expectations Leadership Institutions. In 2002, the university was recognized by NAFSA: Association of International Educators for "doing exemplary work to internationalize the campus." And in 2003, TIAA-CREF recognized WPI with the Theodore M. Hesburgh Award, which honors academic programs that enhance undergraduate teaching and learning.

As dean, Vaz will keep his finger on the pulse of students' WPI experiences by carrying on with his long-standing role as advisor to scores of undergrads. "I also hope to continue going overseas to work with students at the project centers," says the professor who has maintained a frenetic schedule working on projects in Ireland, Namibia, and Thailand, among other locations. "But for this first year as dean, I plan to stay closer to home."

While he's around, Vaz will roll up his sleeves to collaborate with his longtime colleague John Orr on undergraduate curriculum development. On this front, Vaz feels particularly fired up about early undergraduate education. "I believe that much of what we do in the IQP and global program is exactly what our first-year students need: training in critical thinking and problem solving, and in writing and research skills," he says. "I'll be very interested in exploring with John and others how we can integrate elements of the IGSD's educational strategies more fully into the curriculum."

Stepping back for a longer view, Vaz says, "I am thrilled to be part of this historic moment at WPI."

—Eileen McCluskey



Dan Vaillancourt



Entrepreneurship

By Eileen McCluskey

Music to Their Ears

Wherever he goes, Richard Resnick builds businesses. In his latest venture, the serial entrepreneur hopes to make beautiful music—or, more specifically, cell phone ringtones—with the 13- to 18-year-old set.

Richard Resnick '98(MS) is president and CEO of Harmony Line—the parent company of H-Lounge.com, a new Web site where teenagers can chat, play games, and compose and upload their own ringtones.

“It’s hard for most middle-aged people to ‘get’ the attraction of ringtones,” Resnick says with an easy laugh. “But what kids want, we discovered through many focus groups, is portable music on the smallest, most personal devices possible, to impress their friends.” Focus groups also revealed that kids enjoy composing their own ringtones, then earning money and gaining prestige by selling their creations.

Harmony Line got its start in 2004 to sell Hyperscore, software designed by famous musician, composer, and Harmony Line chairman Tod Machover. Created for children with no musical education, Hyperscore allows anyone to compose complex scores by drawing colorful lines and using intuitive harmonization tools.

Not so intuitive, Resnick found, was the issue of turning cool software into cold cash. “The software works really well, but how do you make money with it? That was, and is, our challenge,” he says. Harmony Line tried and discarded strategies such as selling Hyperscore directly to schools and parents. Both approaches yielded disappointing revenues.

Then came the “Eureka!” moment. Rather than develop a company around a piece of software, Resnick and partners decided to build around consumer trends. “We found two major trends related to Hyperscore,” he notes. “The enormous ringtone market, and online social networks.” The cell phone ringtone market—composed of \$1 and \$2 downloadable purchases—is burgeoning from a \$4 billion worldwide market in 2004 to an estimated \$6 billion behemoth in 2007.

Heeding their target market’s feedback, Harmony Line launched H-Lounge.com in December 2005. Like Resnick’s other enterprises—life sciences-related Mosaic Bioinformatics and Biological Energy Corp.—cutting-edge technology forms the heart of Harmony Line and H-Lounge.com. But unlike the other start-ups, H-Lounge focuses almost exclusively on fun. Modeled after such hits as Neopets.com, H-Lounge lets 13- to 18-year-olds chat and play games. Kids can also pursue their dreams of becoming rich ringtone composers by downloading Hyperscore, then creating and uploading their com-



Patrick O'Connor

positions, all for free. Money starts changing hands when the users buy and sell ringtones. Anyone can sell their ringtones via a revenue-sharing deal that earns the seller 30 cents on the dollar. H-Lounge mails checks to the musician through another Internet denizen, PayPal.

Most kids don’t have credit cards, but H-Lounge found a way around that barrier: through charges on the parents’ mobile phone bills. Not surprisingly, “the legal end of this business is the most expensive part,” reports Resnick. Parental consent and child labor laws presented two pricey issues.

To garner advice from other entrepreneurs as he climbs his self-described “steep learning curve,” Resnick recently returned to WPI as a Venture Forum case presenter. “When you present your ideas in front of 50 smart people, you get great feedback,” he says. “It forces you to think about whether what you’re saying makes sense.”

So far, H-Lounge does. “We expect revenues to hit seven figures in the next 12 to 18 months,” Resnick says. H-Lounge so far boasts 10,000 active users who have uploaded 20,000 original ringtones.

Any wealthy kid composers? Not yet. Says Resnick, “some kids have made \$100. I figure we’ll make the front page of the *New York Times* when one of them earns \$1,000.”

Sunny Side Up

There's no question that Sanjayan "Sunny" Manivannan '07 is a math major. Ask for his cell phone number and he's quick to point out that the digits almost equal Pi. (3.14...)

Sunny Manivannan—one part math major, one part mechanical engineering major—is the latest WPI student to be named a Goldwater Scholar by the Barry M. Goldwater Scholarship and Excellence in Education Foundation. Since 2002, eight WPI undergraduates have received the prestigious scholarship, which recognizes outstanding students and encourages them to pursue careers in math, science, and engineering.

"[The scholarship] motivates me to do better," says the 20-year-old. "I like doing the best I can."

Born in Chennai (formerly known as Madras), India, Manivannan and his family moved to Framingham, Mass., when he was 12. "My parents came here in part for my brother and me. There's a lot more opportunities for students here."

Indeed, Manivannan has taken full advantage of such extracurriculars. He played tennis in high school—and continues to play noncompetitively—and he is currently president of WPI's Student Government Association. "I like helping the community that I live in," he says.

As SGA president, he sat alongside WPI trustees and senior administrators last spring, when he took part in the semiannual Board of Trustees meeting.

"It was surreal that I could talk to all these people who change the world," he says.

Several weeks later, Manivannan spent time with WPI trustee Carleton F. Kilmer '64, retired senior partner at Accenture, who encouraged the young man to go to business school. While Manivannan has been considering a PhD in computational fluid dynamics, the idea of business school piqued his interest. "The more I study and the more I expose myself to different things," he confesses, "the less decisive I am about my future."

This summer, as an intern at GE Aviation's stress analysis division in Lynn, Mass., Manivannan helped design and modify different engine lines. Last summer, he worked in the facility's heat transfer division. "They get you right in there and show you the ropes," he says. "You're actually doing the work that they're doing."

As a senior this year, Manivannan will finish a project in which he and Charles Gammal '08 are looking at the feasibility of a multidisciplinary engineering major that combines mechanical and electrical engineering. "We hope to see it in the course catalog sometime in the next decade," he says. "Hopefully, we'll make a difference at WPI." —CW



Explorations

By Rachel Faugno

Patrick O'Connor

Playing Blind

Child's play is serious business. That's why three WPI students are working to ensure that all kids can benefit from games that unintentionally exclude the visually impaired.

By playing with others, children develop many of the skills they will need to succeed in the adult world—skills such as observing, reasoning, planning, persevering, interacting, and communicating. Many games also promote physical health and improve motor skills. But visually impaired children are often excluded from games enjoyed by their sighted peers, limiting their involvement in beneficial play activities.

WPI seniors Erika Hall, Ryan Lizewski, and Elizabeth McCoskrie addressed this problem through a project focused on developing toys for blind children. The students spent eight weeks in Copenhagen last spring, working in cooperation with Denmark's Visual Impairment Knowledge Center.

"This project was profound for me," McCoskrie reflects. "As engineers, we like to quantify, to work with numbers. The social sciences are so different. You can't take a black-and-white approach."

The students' objective was to develop ways of promoting play between blind and sighted children, using toys

designed specifically for the blind. "Studies have shown that visually impaired children tend to play more with adults or caregivers than with peers," notes Hall. "This can lead to social isolation, which in turn may engender other developmental difficulties."

The team's goal was to address these problems by understanding how toys facilitate social interaction between blind and sighted children, explains project advisor Ruth L. Smith, professor of religious studies. "They determined that one of the most effective ways to achieve this is through the development of toys designed specifically for blind children," she says. "Although a number of play products have been adapted for the visually impaired, those adaptations do not necessarily promote the social interaction we were looking for."

A truly successful game, Lizewski points out, is one that creates a level playing field and is interesting for all players. But an assignment that seemed relatively straightforward at

first became more complex as the students dug deeper. "We spent a lot of late nights brainstorming ideas for games that would be equally appealing and accessible to blind and sighted children," Lizewski says.

The WPI students were aided in their research by the Perkins School for the Blind in Watertown, Mass., which provided access to its resources and facilities before the students went abroad. They toured Perkins's specialized toy and game workshop as a preliminary step in their background research.

Once in Copenhagen, the students received further support from the project's sponsors, who helped set up focus groups with parents of blind children and facilitated access to local schools.

"Denmark has given significant attention to distinctions in early childhood, with the goal of societal inclusion," Smith explains. "Blind children are incorporated into local classrooms, with the help of an aide. Educators and specialists who work with the visually impaired often have to develop their own play materials."

She says that one of the biggest challenges for the students was to imagine the existential situation of blindness. "There are qualitative differences between visually impaired and sighted people's experiences of the world," she notes.

To better understand those differences, the students visited "*Dialogue in the Dark*," an exhibit presented by a science museum in Copenhagen. "We were in a completely dark room for 50 minutes," Lizewski recalls. "We each had to depend on a cane and other people to get around. It was incredibly challenging, but it helped us understand what blind people go through every day."

Despite the commonalities of blindness, the students also recognized that there are as many differences among blind

children as among sighted children. "Temperament and personality were important factors, and some children integrated and played more easily than others," McCoskrie recalls.

"We all learned not to be absolute," Hall adds. "We couldn't assume that because a child was blind, he or she would respond in the same way as another blind child."

Instead of focusing on the limitations presented by visual impairment, the students chose to emphasize elements of play that all children enjoy. "Kids like games that give every player the chance to win or lose," Lizewski says. "So, one of our creations was a game of 'Go Fish' that uses fabric pouches instead of playing cards. The pouches contain marbles, buttons, and other items that players have to identify and match by using their hands. It's the same game whether you're blind or sighted."

Another invention was a magnetic game board fitted with wooden spacers. Because visually impaired children use tactile scanning methods to envision the arrangement of a game board, they can knock over and move pieces unintentionally. "Velcro, magnets, or a peg-and-groove system help stabilize the game," Hall explains.

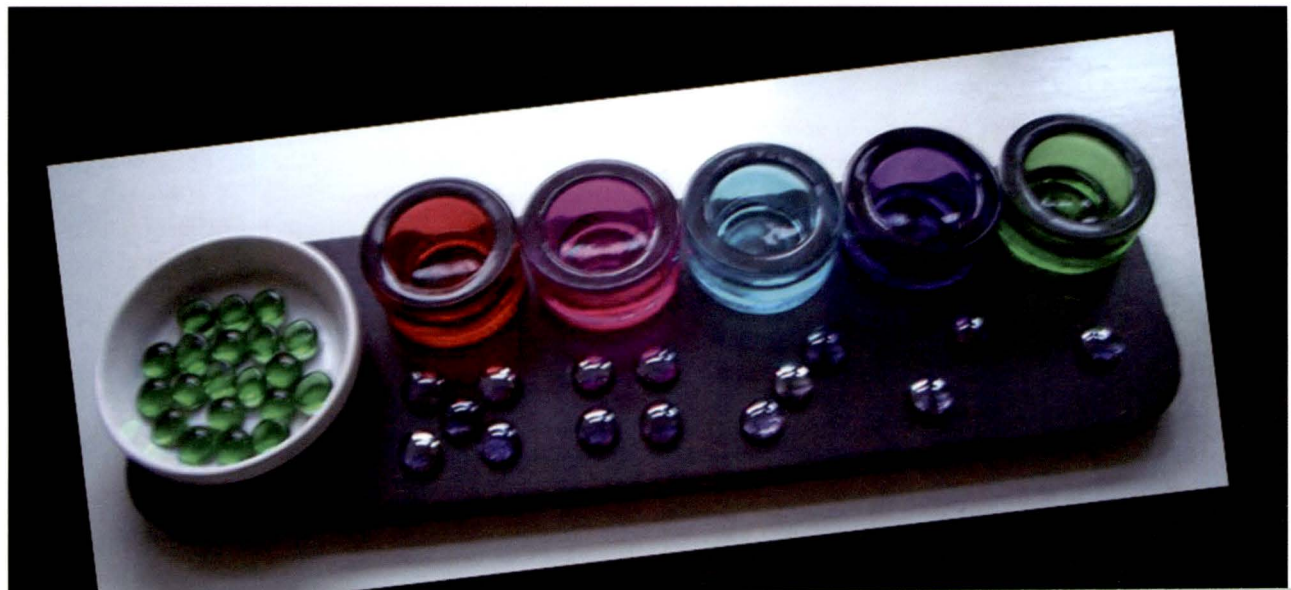
The students also created an audio CD to replace dice or spinners that prompt moves around a game board. "Kids tend to like noise, and a game that produces music and other sounds is attractive to many of them," McCoskrie points out.

Their research culminated in producing a guidebook that will be translated into Danish and posted on the Visual Impairment Knowledge Center's Web site. It also will be made available to the Perkins School.

"We really thought about how our work affects the community," Lizewski says. "That's something I'll take with me wherever I go."

"As engineers, we like to quantify, to work with numbers. The social sciences are so different. You can't take a black-and-white approach."

Opposite page: Erika Hall, Elizabeth McCoskrie, and Ryan Lizewski are still kids at heart. Below: Glass stones are glued to the board of this game, allowing for differentiation between containers. The game, played with a tactile die, uses strategies identified through this student project.





The **Big** Picture

By Joan Killough-Miller

Life Death Matters

Anne St. Martin, armed with a double major in chemistry and international affairs, is poised to change the world. Conquering a growing health crisis is first on her agenda.

It's the kind of statistic that stops you in your tracks: Every day, 37,000 people die from treatable infectious diseases.

That's not what Anne St. Martin came to WPI to learn. A native of Ontario, Canada, she came to study chemistry and prepare for a career in the pharmaceutical industry. She saw intellectual property (IP) as a legal specialty that would reward her with a comfortable lifestyle—one that would allow her to indulge her passion for horseback riding. Time with horses was something she'd always had to work

for, starting with her first stable jobs at age 12. With a good career in IP, St. Martin thought she might be able to afford a farm of her own one day.

But she graduated last May a changed person. Her revised goal is to work for change in IP legislation, to ensure that essential medications will be available to needy people in developing nations. It was her global education—which included projects and course work in seven different countries—that altered her worldview and opened her eyes to a growing health care crisis.

"I think that deep down, people really do care—
it's just that we're sheltered here. If more people could see for themselves
what the rest of the world is really like,
then I think they would try to work for change."

"I was always keen on traveling," says the alumna. "I knew that I would definitely take advantage of the Global Perspective Program."

In fact, she may have set some kind of record for passport stamps on a WPI diploma. She did her Humanities Sufficiency in German language and culture at the Technische Universität Darmstadt, and her chemistry MQP at École Nationale Supérieure des Industries Chimiques in Nancy, France. In between, she spent a summer in Russia, participating in a Chemistry Research Experience for Undergraduates at Moscow State University. But it was her projects in Africa and Asia that affected her most profoundly.

In Windhoek, Namibia, St. Martin's IQP team worked out an equitable water pricing system for residents of informal settlements in that impoverished, arid region. "Seeing those settlements and working with the people there changed my whole perspective," she says. "After going to Namibia, I thought, 'I have all these opportunities. I should do something besides going to work for a pharmaceutical company.'"

Back at WPI, she began researching global health care issues and factors that make treatment unaffordable and unavailable in the developing world. Her research led

her to Colombo, Sri Lanka, where she interned with Health Action International Asia-Pacific (HAIAP) for her MQP in international studies. She also assisted with an international conference in Dhaka, Bangladesh, cosponsored by HAIAP, called *"The Future of Health Services: Who Will Live and Who Will Die."*

Her MQP report brings together disturbing statistics on poverty and lack of health care in developing nations with information on recent IP legislation governing the pharmaceutical industry. She focused on the World Trade Organization's

agreement on Trade Related Aspects of Intellectual Property Rights (commonly called TRIPS). There is growing concern among health care advocates that the agreement, which was designed to protect patent rights of corporations, is making essential medications unaffordable and inaccessible in the developing world.

"Anne shows how some simple reforms of TRIPS would ensure that the intellectual property rights of pharmaceutical companies are still protected, at the same time allowing developing nations to produce generic versions of essential medicines that, daily, could save the lives of thousands of their poorest citizens," says Bland Addison, associate professor of humanities and arts, and St. Martin's project advisor.

The well-traveled alumna's dream is to set up a non-profit network of experts who would serve as a resource on IP issues to developing countries. "What I would like to do eventually is work within the UN, specifically for WIPO (World Intellectual Property Organization), where I could give voice to the concerns of the developing countries," she says. To help accomplish that goal, this fall she begins the joint JD/Master of IP program at Franklin Pierce Law Center, in Concord, N.H.

St. Martin remains thankful for all the educational opportunities she's had, and for the support of WPI's faculty and the Interdisciplinary and Global Studies Division. "Show me another university where you can complete a double major in four years and study for two months on five different continents," she challenges. "It was such an incredible experience."

"At school, I realized that life is bigger than horses," she says. "I still love them. They keep me sane and make me happy." She has attained a rare balance that she will carry into her future life, which she expects will include a home, a family, and even horseback riding.

"I don't think it's wrong or bad to live the way we do, or to have the careers we have," she contends. "I think that deep down, people really do care—it's just that we're sheltered here. If more people could see for themselves what the rest of the world is really like, then I think they would try to work for change. That's why WPI projects are so important."



Patrick O'Connor



Assessing the Odds

Meet Ms. Lindquist.

As middle-school algebra teachers go, she is remarkably calm, patient, and even-tempered. Wrong answers never phase her. "Let's break this down," she says when presented with a first attempt that misses the mark. Step-by-step, she walks the student through the problem until the answer seems clear. Then, with that small hurdle cleared, it's on to the next problem and the next learning milestone.

It's a winning approach, one Ms. Lindquist has used with thousands of students across the country. Who is this remarkable teacher? "She" is a computer program, a complex, patented collection of code developed by Neil Heffernan, assistant professor of computer science at WPI, while he pursued his PhD at Carnegie Mellon University. Ms. Lindquist (named for the real-life teacher—now Heffernan's wife—who served as the model for the program) was Heffernan's first voyage into the field of intelligent tutoring systems, an area that has been his focus—some might say his obsession—ever since.

For the past three years, with funding from the U.S. Department of Education, the Office of Naval Research, the National Science Foundation, and other agencies, Heffernan and a small army of graduate students and undergraduates have been developing a computerized tutoring system that helps 8th-grade students learn the math skills they need to pass the MCAS (Massachusetts Comprehensive Assessment System), the state's mastery test.

The MCAS system represents a significant advance over Ms. Lindquist. Like the earlier program, it helps students master math concepts by breaking them into steps and responding appropriately to correct and incorrect answers. But it also monitors and provides feedback on how individual students and entire classes perform on specific test items and on the 98 math skills required to complete those items. Because the system combines assistance with assessment, Heffernan calls it ASSISTments.

ASSISTments draws heavily on Heffernan's expertise in artificial intelligence and is built on a solid foundation of cognitive psychology. Before he built Ms. Lindquist, Heffernan did "think-aloud" studies with students, a technique pioneered by his Carnegie Mellon professors. He'd give the kids algebra problems and ask them to think aloud as they tried to solve them. If they stopped talking for five seconds, he'd prompt them to start again. It was a way of peering inside the black box of the brain to see how thinking really works.

Heffernan built computer models that simulated the techniques different students used to solve math problems. In time, the models were able to predict the performance of individual students.

"If you can do that," he says, "then you want to build a tutor that can say, 'It looks like you are solving the problem *this* way; let me tutor you *that* way.' Because a tutor can track an individual student's progress, you can do mastery learning—having students practice one skill until they've mastered it."

Heffernan put Ms. Lindquist on the Web and made it available for free to any school that wanted to use it. As kids used the tutor, data flowed in about how they used it, and how well they learned. The feedback enabled him to continually fine-tune the program and study its effectiveness. He calls this "data-driven education," something he says is all too rare.

"We do a hell of a lot more work to verify that a drug is safe than we do for any educational intervention," he says, noting that the U.S. Department of Education (most notably through the No Child Left Behind mandate) is pushing hard to get schools to focus more on data. "They want to transform education into an empirically based science."



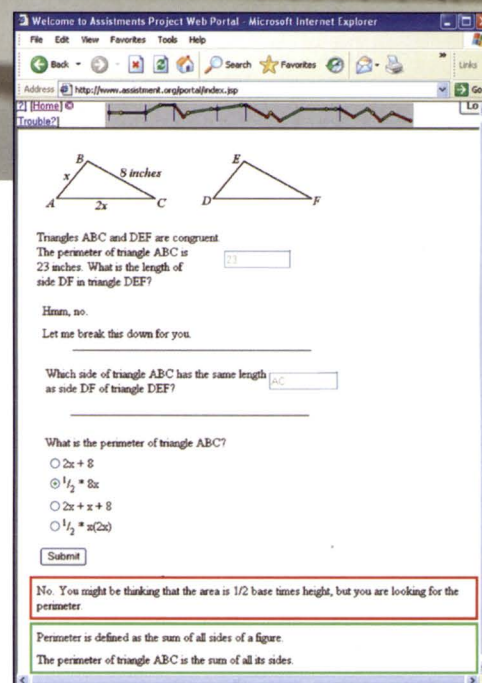
From the start, Heffernan says he wanted ASSISTments to revolve around the notion of feedback: to help students learn, to help teachers better understand the learning needs of individual students, and to help principals gain a more complete and immediate picture of their classrooms. ASSISTments records the results of each student session and provides reports that teachers can use to adjust their classroom teaching.

Heffernan says he is excited by the wealth of opportunities ASSISTments provides for educational research. In fact, the software has provided fodder for several undergraduate projects and a wide range of research by graduate students. One WPI student, for example, noticed that some middle school students seemed to “game” the system, just clicking through the hints or guessing randomly. He developed software that can detect the behavior and prod students to get them back on track. He also developed a graphic that appears atop every student’s screen to help teachers quickly identify and aid those who seem to be struggling.

“I want to make mathematics education research drastically better,” Heffernan says with the passion of someone who has, himself, been on the educational front lines. Indeed, he ran a tutoring program for 6th graders in Holyoke, Mass., while an undergraduate at Amherst; he also taught 8th grade math and science in Baltimore through Teach for America, and taught for a year in Sudbury, Mass., before joining WPI.

After three years of development, testing, and refinement, ASSISTments may be ready for its next big trial. Currently only available to Worcester public school students, Heffernan would like to roll out the program statewide. He points to studies that show that tutoring—even by an intelligent tutoring system—produces “insanely better” results than classroom teaching alone. “So our schools could do a lot better.”

With the assistance—and assessment—of ASSISTments, they almost certainly will.



Students in Paul King's Forest Grove Middle School math class were some of the first to use ASSISTments. Their feedback—as well as feedback from two other Worcester schools—helped Heffernan develop the types of questions that are the heart of the intelligent tutoring system.

Dennis Berkey began his tenure as WPI's fifteenth president on July 1, 2004. We caught up with him shortly after Commencement 2006 to get his assessment of his first two years in office, and his views about what lies ahead for WPI.

Imagine and Achieve

A Discussion with President Dennis Berkey

How has your experience as WPI's president been thus far, and what do you see as your administration's chief accomplishments during its first two years?

I have thoroughly enjoyed this initial phase of my presidency. Much is written about how complex and difficult the job of a university president has become. What is often overlooked is the joy of daily interaction with excellent students, faculty, and staff. This is an outstanding community of talented, loyal, and highly productive individuals with whom Cathy and I are very pleased to be associated.

Of course, a new president is always greeted with a host of expectations and challenges, both foreseen and unexpected. The trustees had made clear their interest in securing strong leadership to take WPI to the next level, so to speak. Early conversations with faculty and staff revealed a number of widely shared ambitions and concerns that we began addressing right away in the seven presidential commissions. The Worcester community was eager to have WPI more actively engaged in civic affairs, and I was appointed to a number of boards and invited to address many groups and organizations.

Much of my time has been spent reorganizing and strengthening the senior administration, making several strong internal promotions, retaining other key leaders, and recruiting excellent professionals to important positions. We now have in place an outstanding team of talented professionals who have strengthened WPI's financial operations and performance, dramatically increased applications for undergraduate admissions, and begun improving communications with WPI's many constituencies, including our alumni.

We have also made significant progress in strengthening WPI's academic programs. Our new WPI Life Sciences and Bioengineering Center at Gateway Park, scheduled to open in April, will provide marvelous facilities for research and graduate education in these fields. And WPI's Bioengineering

Institute is actively engaging entrepreneurs and companies with our research projects and faculty.

Two of the presidential commissions have made excellent progress mapping reforms that will greatly strengthen general education at WPI. Additionally, the WPI Little Theatre, which opened last November, provides a permanent and exclusive venue for our wonderful dramatic productions.

You have spoken about your interest in further developing the life sciences at WPI. Why is this important, and how will this be done?

Life science is the new economy for Massachusetts, and WPI—through our core strengths in engineering and science—can make great contributions to the economic development of our region and to improvements in the quality of life. We are thus investing in this area by building the new WPI Life Sciences and Bioengineering Center at Gateway Park, by adding relevant faculty, by deepening our collaborations with the University of Massachusetts Medical School in research and graduate education, and by strengthening our capabilities for technology transfer and commercialization.

Does this new emphasis on life sciences imply a shift from WPI's traditional role in engineering education?

Not at all. Part of a president's responsibility is to look for new opportunities to apply an institution's strengths and develop its potential. As I wrote in the previous issue of this magazine, the core of engineering and science at WPI remains strong, as will the administration's support for it. Mechanical engineering continues to be our most popular major for undergraduates, including programs in aerospace engineering, robotics, and systems engineering. Our Metals Processing Institute is known worldwide for its innovations



Dan Vaillancourt

Administrative Group members, from left, front row, Linda Looft, Assistant VP, Government and Community Relations; Carol Simpson, Senior VP and Provost; Dennis Berkey, President and CEO; Dexter Bailey, VP, Development and Alumni Relations; second row, Jeff Solomon, VP, Finance, and CFO; Chris Hardwick, VP, Marketing and Communications; John Miller, Associate VP, Physical Plant; Tracy Hassett, Associate VP, Human Resources; Tom Lynch, VP, Information Technology; Stephanie Pasha, Director of Operations; third row, Kristin Tichenor, Associate VP, Enrollment Management; Steve Hebert, University VP; Stephen Flavin, Associate Provost and Dean, Corporate and Professional Education; Janet Richardson, VP, Student Affairs and Campus Life; D'Anne Hurd, General Counsel and VP, Business Development at Gateway Park.

in powder metallurgy and its leadership and support for the entire metals processing industry. Faculty in chemical engineering, electrical and computer engineering, and civil and environmental engineering are doing important, fundamental, novel work—exploring alternative energy sources, developing new imaging and diagnostic technologies, advancing highway design and traffic safety, the list goes on. I am very pleased to see not only the strength of the research and academic programs in such disciplines, but also the degree of interdisciplinary collaboration on campus and with other institutions.

The university has some strong forward momentum right now—from Gateway Park and Bartlett Center to faculty involvement in the commissions' work to study critical issues at WPI. From your perspective, where is the university headed?

WPI's historical commitment to *lehr und kunst* and the structure of the WPI Plan will continue to guide the institution's evolution, adapted to today's and tomorrow's challenges. Young people preparing for careers in our increasingly technological world will benefit greatly from knowledge of science and technology, excellent communication and critical thinking skills, an appreciation for other cultures and for the values of the arts and humanities, and the ability to work

cooperatively with individuals of differing talents and personalities. These are precisely the attributes instilled by the WPI Plan and our global studies program. Thus, our approach to reforming the undergraduate program will be one of evolution, not revolution.

We will, however, broaden the range of undergraduate majors to include programs within traditional fields, such as robotics; interdisciplinary programs within science and engineering, such as environmental engineering or bioinformatics; and programs outside of, but related to, the core of science and engineering, such as communications, scientific and technological writing, health science, architectural engineering, and entrepreneurship. This broadening will make WPI more attractive to a larger number of students, realizing that the number of American high school graduates interested in majoring in science and engineering is decreasing. Simply put, this form of education is superbly appropriate for smart young people preparing to make a difference in the world.

We are honing the first-year experience, which was one of the recommendations that resulted from the work of the presidential commissions. We are looking to reduce the use of traditional lectures, add broader, more integrative work to emphasize communication and critical thinking, increase the use of instructional technology, promote early involvement with projects, and broaden student involvement in the arts and humanities.

If you understand and appreciate the power of science and technology, and if you want to make a difference in the world, then there is no better place for your education than WPI.



We will continue to increase our activities in research and graduate education, producing the scientific and technological innovations on which our economy and our health care system are so critically dependent. These interdisciplinary programs will reflect the nature of the problems to be solved.

The campus will become increasingly attractive with the addition of modern, apartment-style residence halls, expanded recreation and fitness facilities, and renovated and expanded library and academic facilities. One or more new academic buildings will no doubt appear, as a number of our programs, including Fire Protection Engineering and the MBA in the Management of Technology, continue to grow.

The overall vision for WPI will continue to emerge through ongoing discussions with the faculty, staff, students, alumni, and trustees. But I see two overarching aspects that will guide us. One is the increasing importance of innovation as a central characteristic of our work together. The WPI Plan and the global studies program enable students to use their powers of imagination and creativity to recognize and solve important problems. But scientific knowledge and technological competence alone are no longer sufficient to keep our nation's industries, or its graduates, competitive in the global marketplace. The critical differentiator will be the ability to imagine and achieve the novel approaches, methods, techniques, technologies, and products that go beyond the predictable and that meet real and future economic or social needs. The WPI experience is well positioned to foster this essential aspect of innovation.

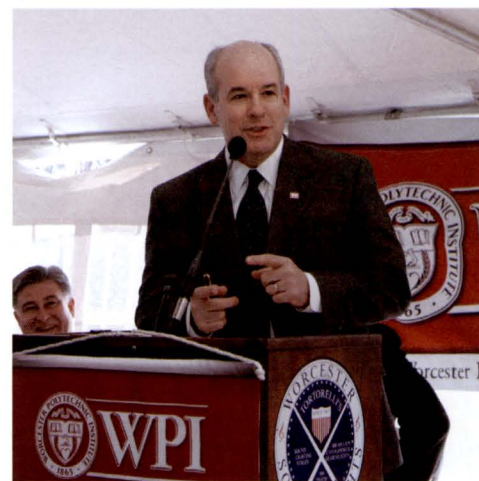
The other imperative is to embrace entrepreneurship more fully as an explicit part of our mission. Already, a large percentage of WPI graduates go on to develop products and

technologies, found companies, and assume leadership positions. We should ensure access for students and alumni to the resources and knowledge they will need, such as is currently provided by the WPI Venture Forum and the courses in entrepreneurship. WPI has a long and distinguished history of fostering and leading economic development, so an appreciation for entrepreneurship is not something new for WPI. We must ensure that it is a recognized and valued characteristic, shaped appropriately for present conditions and opportunities.

In your Commencement remarks, you urged students, specifically graduate students and doctoral degree recipients, to use their focused degrees as an opportunity to think broadly, rather than to limit themselves by the scope of their specialization. Is this concern another reason why you see WPI's need to broaden its programs and mission?

Yes, you grasp it perfectly. The danger of specialization, especially for PhD candidates, is that the individual may see himself or herself as qualified to make meaningful contributions only within his or her narrow area of specialization, when just the opposite is true. For example, the revolution in biology over the past 30 years has attracted individuals with degrees from many fields outside the life sciences, including the physical sciences, mathematics, and computer science. Similarly, WPI's academic programs, although they center on science and technology, provide excellent preparation for students to succeed inside and outside science and engineering.

Scientific knowledge and technological competence alone are no longer sufficient to keep our nation's industries, or its graduates, competitive in the global marketplace. The critical differentiator will be the ability to imagine and achieve the novel approaches, methods, techniques, technologies, and products that go beyond the predictable and that meet real and future economic or social needs.



WPI is actively engaged in raising diversity awareness on campus. We are reaching out to students who might not previously have considered applying to WPI. How will the university continue this momentum and why are these efforts important?

We have started at the top by significantly diversifying the senior leadership team. That sets the tone and signals the depth of our commitment. We continue to make the recruitment of a diverse faculty, staff, and student body a high priority; we are making steady progress, although we have a long way to go.

The importance of having such diversity lies in the essence of what a university is—an institution dedicated to excellence in all aspects of human development. If we fail to welcome and support outstanding individuals, both women and men of all races and ethnicities, then we fail to take full advantage of the best talent available. We also fail to provide convincing role models for individuals undecided on whether WPI is a community welcoming and supportive of all worthy individuals.

You have mentioned strengthening relations with alumni as an important goal, and you have made some administrative changes in the area of alumni relations. What is your commitment and plan in this area?

Alumni comprise the university's largest and most important constituency. They represent, and have experienced, much of WPI's history, and many of our alumni have been actively engaged and deeply committed to advancing the university as trustees, donors, volunteers, and key supporters in many ways.

To serve our alumni more effectively, we have elevated the position of director of alumni relations to assistant vice president status and integrated the Office of Annual Giving under this new position. We are offering several new benefits to alumni, including new regional clubs, more frequent communications, and increased career development services. I hope that we can use our strong distance education capabilities to bring interesting programming from the campus to alumni worldwide. In my travels and in our events on campus I have greatly enjoyed meeting our alumni. I find them highly enthusiastic and supportive of WPI, and I look forward to meeting many more of them in the years ahead.

Why is WPI important, and what motivates you to meet the daunting challenge of leadership?

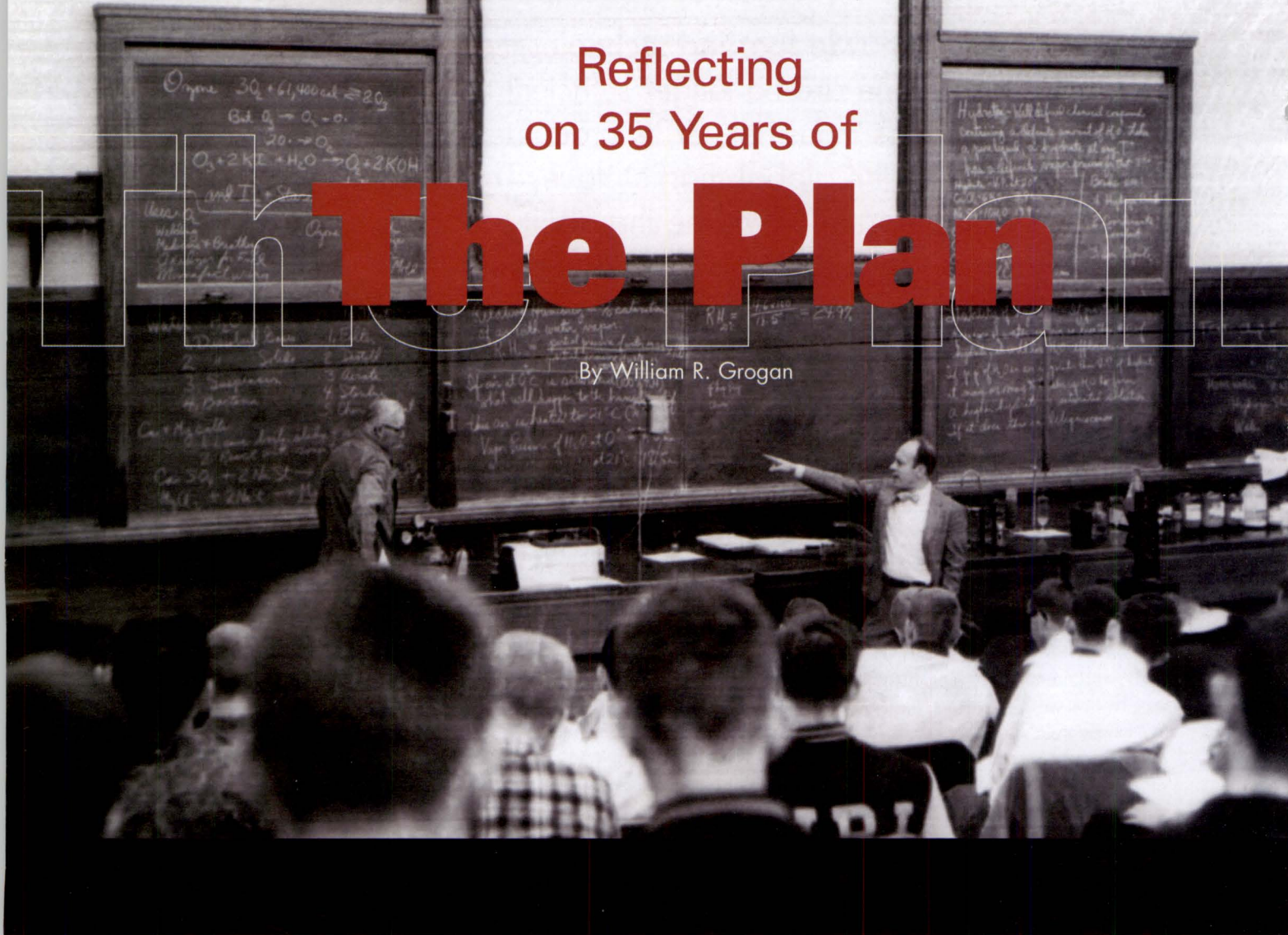
If you understand and appreciate the power of science and technology, and if you want to make a difference in the world, then there is no better place for your education than WPI. If you want to be part of this educational process as a faculty member, and if you want to do research that leads to truly important innovation in a highly collaborative environment, then WPI is an excellent place to make your career. If you are a citizen of Worcester, you know how important WPI is to the continuing economic development and quality of life in this marvelous city. All of us associated with WPI appreciate, and are motivated by, these qualities, and we relish the opportunity of working in such an important, collegial, and rewarding academic community. ■



Reflecting on 35 Years of

The Plan

By William R. Grogan



In 1967, 10 years after Russia launched Sputnik into space, a storm was brewing at WPI. At a faculty meeting, the late Bill Shipman, chemical engineering professor, suggested a movement for the university to study its very nature and institutional purpose. And so began a remarkable series of meetings, debates, and heated interactions in which the WPI community, led by a group of visionaries, created a revolutionary new curriculum, the WPI Plan.

Certainly, everyone didn't agree with the tenets of the Plan; but no one can argue that it has provided a foundation from which the university continues to evaluate and improve its curriculum. On the 35th anniversary of implementing the Plan, *Transformations* asked Bill Grogan '46, professor emeritus of electrical engineering and dean emeritus of undergraduate studies, to reflect on the past four decades.



On the afternoon of May 10, 1970, after many amendments and fiery predictions, the faculty, in a great leap of faith, voted 92–48 to adopt the WPI Plan as the university's irrevocable path to the future. I was appointed dean of undergraduate studies by President George Hazzard, with his three-word job directive: "Implement the Plan."

Historically, changes in education arrive piecemeal. WPI, however, designed an entirely new system of education to meet established objectives. These objectives emphasized developing students' creativity and responsibility through a highly flexible curriculum. A competency examination and qualifying projects—including the Interactive Qualifying Project (IQP) to relate science and technology with human values and social need—were established for academic accountability and were required for graduation.

Projects, especially the IQP, were to be performed, when possible, at appropriate off-campus sites. There was a new grading system with only two grades (no F grades or GPAs). And, to accommodate the anticipated thousands of project registrations, we implemented a unique undergraduate calendar with seven-week terms. After 10 brave but traumatic years, the competency exam was replaced by course distribution requirements. The grading system reverted to using letters, but still without an F grade. Remarkably, little else of a critical nature was changed.

Other institutions expected—perhaps even nervously hoped—that WPI would lose its standing with the Accreditation Board of Engineering and Technology (ABET). We not only maintained full accreditation, but we lived to see some of our ideas imbedded in ABET's criteria.



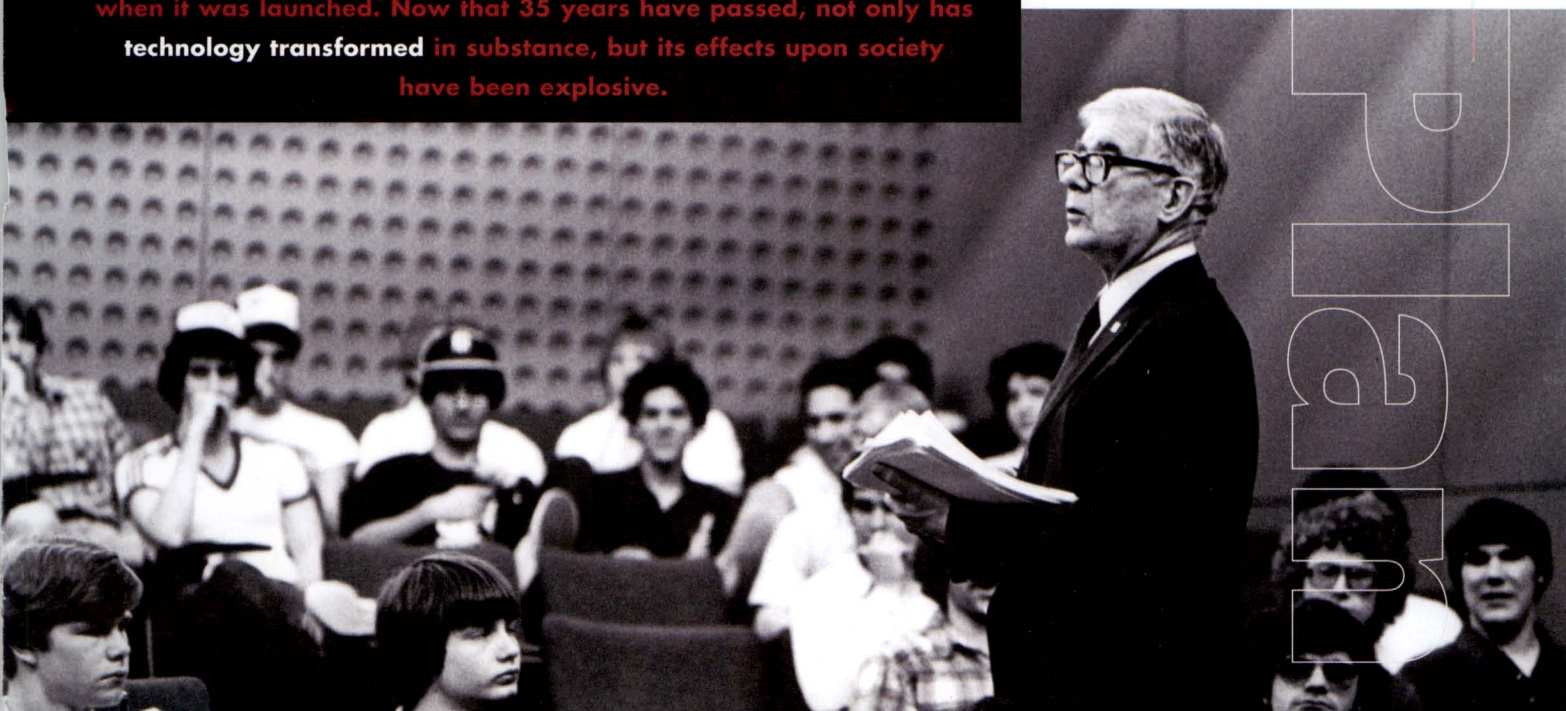
The disciplinary Major Qualifying Project grew steadily in quality and sophistication. Today, a number of MQPs are even of master's degree quality. Many students report that their off-campus project is the most influential experience of their WPI careers. In fact, WPI leads the nation in the number of students we

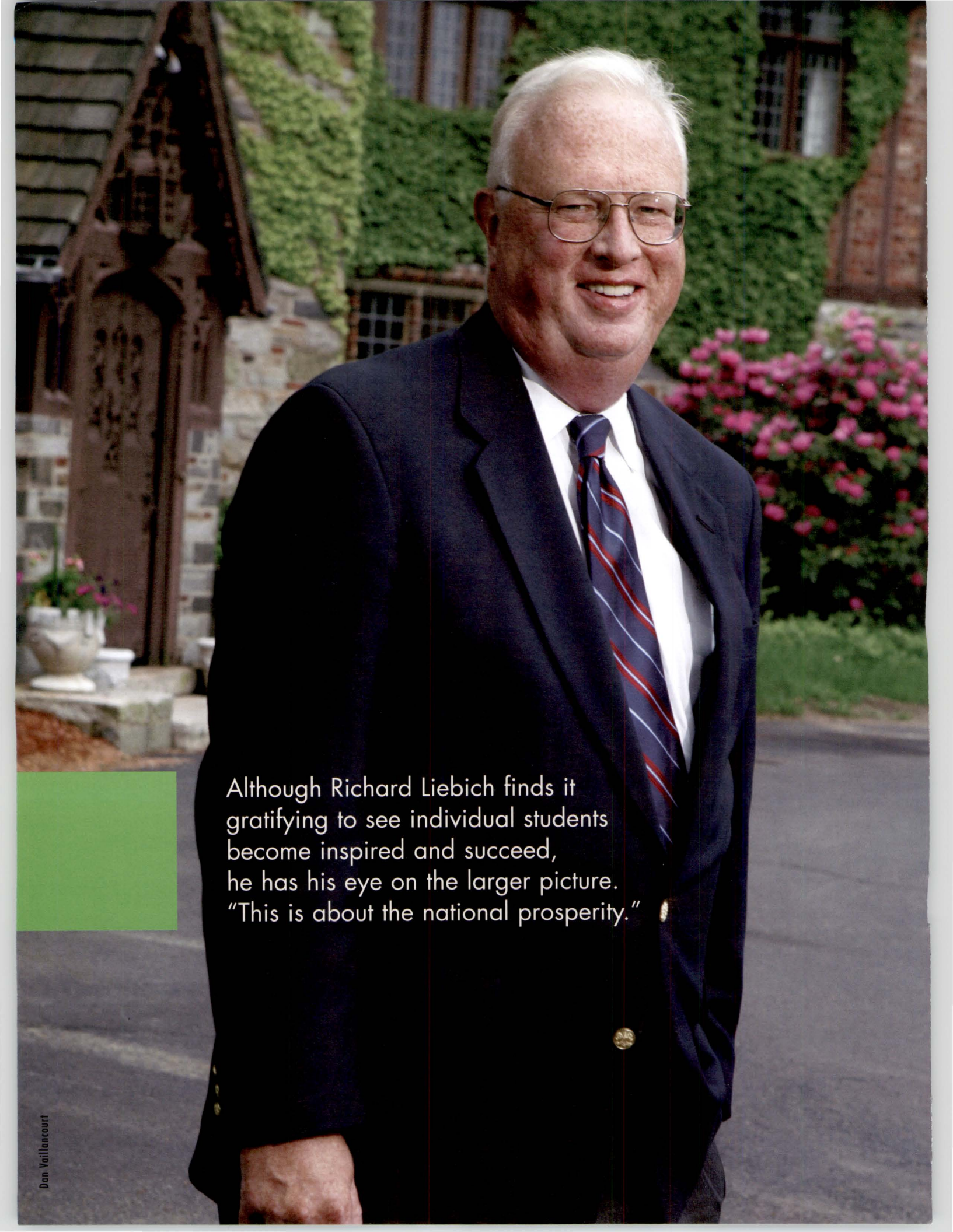
send abroad. Today, students earn credit at project centers on five continents, where they blend technical and social research to solve critical problems. On campus, courses in all the departments have grown in number, quality, breadth, and depth.

It has often been said that the WPI Plan was 25 years ahead of its time when it was launched. Now that 35 years have passed, not only has technology transformed in substance, but its effects upon society have been explosive. While we see the United States leading in biomedical developments and many diverse technologies, we also see a populous India developing its software genius, and the boundless energetic manpower of China and the East transforming engineering and manufacturing enterprises. For WPI's graduates, the future will hold great opportunities for those with skills in science and technology, but also for those who have the energy and self-confidence to develop collateral abilities in areas such as international organization, management of natural resources, communications, finance, cultural adaptability, and entrepreneurial self-confidence.

We at WPI have gained an enviable position through the structure of our educational program. Our challenge now lies in developing the resources and collective self-confidence to again move ahead with a new vision for the future. ■

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Although Richard Liebich finds it gratifying to see individual students become inspired and succeed, he has his eye on the larger picture. "This is about the national prosperity."

Leading the Way

By Joan Killough-Miller

Concerned that high school students weren't getting proper pre-engineering exposure, Richard Liebich '66 leveraged his philanthropic means to turn a local program into a premier national effort to educate future engineers.

Ask Richard Liebich how to get kids to love science and engineering. "Get them talking about what they hate," he says. "Start with an open-ended sentence, like 'I hate it when...'. They're bound to come up with something that really bothers them."

For one teenager in snowy upstate New York, her pet gripe—an unreliable remote car starter—led her to invent a cell phone-activated starter that works beyond the range of traditional remotes, and even calls back to notify the owner that the car is running.

And that's where the learning begins, says Liebich, who heads Project Lead the Way (PLTW), a national pre-engineering program offered in 1,700 high schools in 46 states and the District of Columbia. A successful businessman and philanthropist with an MBA from Michigan State University, Liebich serves as CEO and chairman of the board for PLTW. He divides his workweek between his business, Transport National Development, an industrial cutting tool manufacturer in Orchard Park, N.Y., and his charitable concerns. He also serves as CEO of three other companies: North American Carbide, Cerbide Inc., and Advanced Material Technology Inc.

PLTW is a not-for-profit organization with roots in the Charitable Leadership Foundation (CLF), an innovative organization founded by Liebich's father. CLF promotes a performance-centered strategy of "high engagement philanthropy" to effect change in the areas of education, housing, and health care for people in need. As CEO of a related organization, the Charitable Venture Foundation, Liebich fosters responsible entrepreneurship to address social and educational issues.

Liebich's involvement with PLTW began in the mid 90s with his own son, Adam, now 26. In middle school, Adam was enchanted with engineering, but his school's approach—and its equipment—were hopelessly out of date. Liebich's wife, Beth, tells this story: "Adam came home from school one day saying, 'You aren't going to believe what we did today. It was so cool! We were doing engineering, and we had egg cartons, and string and a board...'. And Richard exclaimed in dismay, 'You've got to be kidding!' He found out the school was still using early Apple computers from the 1970s, and sadly outdated software."

Liebich went into action, and leveraged CLF's resources to expand a promising high school technology program in use at 12 New York State schools into the national network it has become. (WPI is the program's Massachusetts affiliate; see story, next page.)

"You see a lot of kids who tune out the system, because they don't learn the way the system wants to teach them," he says. "When they get into PLTW, they blossom, because it's a new way of learning. Then, they're willing to go back and suffer through a traditional math class—because now they understand why they've got to learn it and how they will use it."

Although Liebich finds it gratifying to see individual students become inspired and succeed, he has his eye on the larger picture. "This is about the national prosperity," he says. "In my business, my customers are engineers, and they're all complaining about the engineering shortage. You put that together with the school piece, and you see we've got a real problem here. Our education system is in trouble. Manufacturing is in trouble. We, as a nation are in trouble."

continued on page 29

"I consider PLTW to be the premier, full-curriculum program for top-level high school students. It gives students the opportunity to experience real engineering, over multiple years."

—Martha Cyr



Priming the Pipeline

PLTW calls for a "dynamic partnership" between the K-12 schools, industry, and higher education. In 2005, WPI joined in that partnership as the PLTW affiliate for Massachusetts. WPI also serves PLTW's New England region as part of a coalition with the University of New Haven and New Hampshire Technical Institute. The start-up was funded by a generous donation to WPI from Edna and Doug Noiles '44, who wanted to make a difference in K-12 education.

Martha Cyr '87(MS), '97(PhD), director of WPI's K-12 outreach, serves as the state PLTW affiliate director, assisted by PLTW program manager Bonniejean Boettcher. They provide resources to Massachusetts schools offering PLTW programs, and are responsible for evaluating schools that seek PLTW certification.

Currently, over 20 schools in the state participate in PLTW, although Cyr anticipates that number could triple or even quadruple over time. "Once schools see how their students respond to PLTW, they are converted," she says. "They like the way the kids get engaged in it. It's extremely rewarding."

PLTW's strengths include the highly developed curriculum, which is extensively tested before release, and the high standards expected of participating schools. (Schools must sign a contract with a four-year commitment.) "I consider PLTW to be the premier, full-curriculum program for top-level high school students," Cyr says. "It gives students the opportunity to experience real engineering, over multiple years."

The Office of K-12 Outreach works with more than 40 WPI programs, of which PLTW is just one, offering a wide variety of opportunities in the areas of technological literacy and in science and mathematics learning and teaching. WPI is a fertile environment for PLTW programs, Cyr says, because the campus offers easy access to specialized laboratories and relevant research. PLTW fits in with the outreach office's mission of offering

students the opportunity to understand what engineering is, while they're still in elementary and secondary school.

"This exposure lets students consider engineering as a career," Cyr says. "They really need to get this exposure prior to college, because unlike most other disciplines, engineering is a field where you need to have made a career decision before you enter college, in order to hit the ground running."

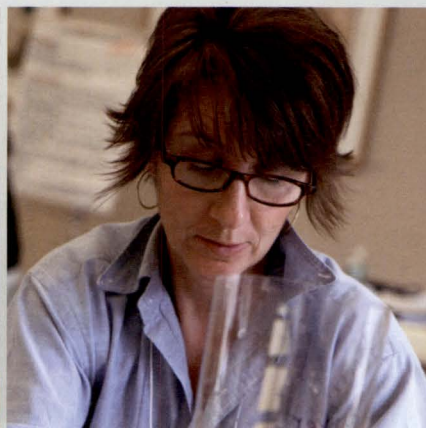
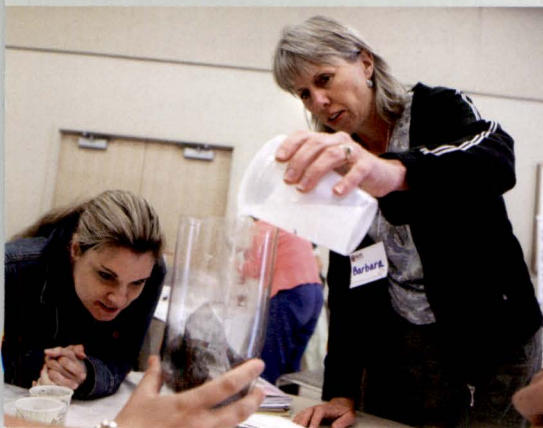
Indeed, graduates of pre-engineering programs such as PLTW have a much higher retention rate in college-level engineering programs, often because students know what they are getting into, and they are better prepared for the rigors of the discipline.

Intensive teacher training is a cornerstone of PLTW's success, and WPI plays an important role by offering Summer Training Institute (STI) courses for teachers and guidance counselors. This "summer boot camp" runs five days a week for about eight hours a day. It covers a year's worth of curriculum in 10 days. The classes are co-taught by experienced K-12 teachers and higher education personnel. This summer, professors Holly Ault '74, '83 (MS), '88 (PhD) and Leffi Malloy joined Cyr in conducting the sessions, which included Introduction to Engineering Design, Digital Electronics, Civil Engineering and Architecture, and Aerospace Engineering.

The university perspective is important, says Cyr, because it helps inform teachers about what lies ahead for their engineering students in terms of postsecondary education and the preparation required for their chosen career tracks. At the same time, it gives high school teachers an opportunity to become familiar with WPI. An STI participant told Cyr last summer, "Now that I've been to WPI and seen the quality of its programs and the type of project work that its students do, I'm going to recommend that all my PLTW students apply here."

—JKM

As part of WPI's outreach, regional high school teachers spent two weeks taking classes and participating in other training activities on campus this summer. These educators returned to their respective schools this fall with new ideas—such as creating water filtration systems—that will enhance their science curricula.



The teaching method is based on studies showing that the majority of people learn best through direct experience, rather than lecture or theoretical methods.



PLTW brings together industry, colleges and universities, and K–12 schools to provide high-caliber educational opportunities in the area of science, engineering, and technology. The curriculum, which is provided to schools on CD at no charge, is updated regularly. Teachers receive intensive training and ongoing support from the organization. The high school program involves four years of high-tech, hands-on courses that are modeled after university-level engineering courses, plus a capstone design project. Students complete their education with mathematics, science, and other courses from their schools' own curriculum. PLTW is self-funded, with revenues coming from software leases and some equipment purchases.

The PLTW teaching method is based on studies showing that the majority of people learn best through direct experience, rather than lecture or theoretical methods. For example, Liebich points out, few people could learn how to assemble a wristwatch, given only a parts list and a lengthy instruction manual. "But if I handed you the watch, all in pieces, and I helped you put it back together, you would retain much more," he says. "The mind sets up hooks that you can hang information on. If you have no hooks, the information just falls into a useless pile that the brain sweeps out on a regular basis. Your brain only retains things you have a use for."

PLTW recently launched a middle school program called Gateway to Technology, and elementary school offerings are in the works. The program got some popular exposure when a PLTW teacher and students in Florida appeared on the "Extreme Makeover" television show, designing a 21st century bedroom for a youngster, and presenting him with a \$60,000 scholarship to the University of South Florida, where the boy would like to learn to design robotic eyes for his blind father.

In June, Liebich returned to WPI for Reunion 2006 to accept the Alumni Association's first-ever WPI Humanitarian Leadership Award (read his full award citation at www.wpi.edu/Admin/Alumni/News/Awards/HLA/). In his acceptance speech, he downplayed his own achievements, saying: "In truth, this award belongs to the many people who recognize that your schools need to be transformed, rather than reformed."

He speaks proudly of the strong enthusiasm that runs throughout the PLTW organization. "The support staff are some of our most enthusiastic supporters," he says. "They're out there, pumping away in their local schools. It's fun being out there, trying to change the world. You don't get very many opportunities to do that." ■

To find out about PLTW in your state, and learn how you and your employer can get involved, go to www.PLTW.org.



Andy Duback

Educated ... *for Life*

By Joanne Silver

When they were students at WPI, both Domenico Grasso '77 and Emily Dodd '03 never imagined the career paths they eventually would follow. Grasso thought he would be working as an engineer—and, for a decade after receiving his master's degree, he served as an environmental engineer for the U.S. Army. Dodd had no doubt that she would be a bilingual emergency room doctor in a large city on the East Coast. Today, both are educators in love with their jobs, thrilled at the opportunity to combine science and humanity. Grasso is dean of the College of Engineering and Mathematical Sciences at the University of Vermont, where he is also a professor. Dodd teaches chemistry at the Manhattan Center for Science and Mathematics in East Harlem. Now 50 and 25, respectively, the two WPI graduates



from two generations share not only a profession, but also a fresh outlook on the future of math and science education.

On a June morning, Domenico Grasso is busy in his Burlington, Vt., office. He has recently returned from Australia, where he was setting up a collaborative program with the University of Tasmania. Closer to home, he is preparing to address the graduating class of a local high school. He wants to speak about having an effect in the world—a sentiment that gains new life coming from a man who aims to overturn traditional notions of engineering's place in society.

It all comes down to thinking. For too long, Grasso believes, engineers have been encouraged to think in a certain way. In effect, they have been trained to be what he calls “the agents of work. They are the drones. Engineers have taken that up as a good thing.”

He continues, "I couldn't live in this world of servitude. What I wanted was to make a difference in the world. I had to think outside the box."

Grasso certainly has excelled in the old-fashioned version of his field—obtaining degrees in civil engineering from WPI and Purdue University, and a PhD in environmental engineering from the University of Michigan. His research has focused on the ultimate fate of contaminants in the environment, and in developing techniques to reduce the risks they pose to human health and natural resources. He has received the honor of "Pioneer in Disinfection" from the Water Environment Federation and has been invited to join boards and research teams in America and abroad.

Still, he is fascinated by multiple perspectives in learning. At Smith College—where, until last year, he was the founding director of the first engineering program at a women's college in the United States—Grasso set out to strengthen the bridge between engineering and the human spirit. In an article describing this mission, he wrote, "After all, what is engineering? ... A common misperception is that engineering is another one of the sciences. It is not. Engineering decisions rarely hinge entirely on science. Rather, engineers must also consider many other factors, such as economics, safety, accessibility, manufacturability, reliability, and sustainability.... Engineers must learn to manage and integrate a wide variety of information and knowledge to make sound decisions."

To help teach his more holistic approach, Grasso is thinking of making a subscription to *The Atlantic* magazine as mandatory as a laptop for students in the UVM program. Citing the writings of Harvard University biologist E. O. Wilson, he says, "One of the things we're basing the undergraduate curriculum on is the 'unity of knowledge.'" Grasso uses such terms as "full intellectual engagement" to describe the mind-set that will succeed in the years to come.

"We are facing a juggernaut of engineering graduates from overseas," he asserts. "The technical stuff can be outsourced. They can do as good a job. We could be the big thinkers, the problem definers."

Perhaps being the child of Italian immigrants gave Grasso the perspective to see things from an unusual vantage point. "I had to think outside the box because my parents couldn't speak English," he maintains. Grasso didn't speak the language until kindergarten, and at 16, he served as his mother's agent in his parents' divorce. Now that he is in a position to help shape young people, Grasso has instituted innovations—such as appointing a "director of student success"—to support those who have embarked on the rigors of an engineering

curriculum. He wants courses in the 21st century to be learner-centered, hands-on, and related to one another.

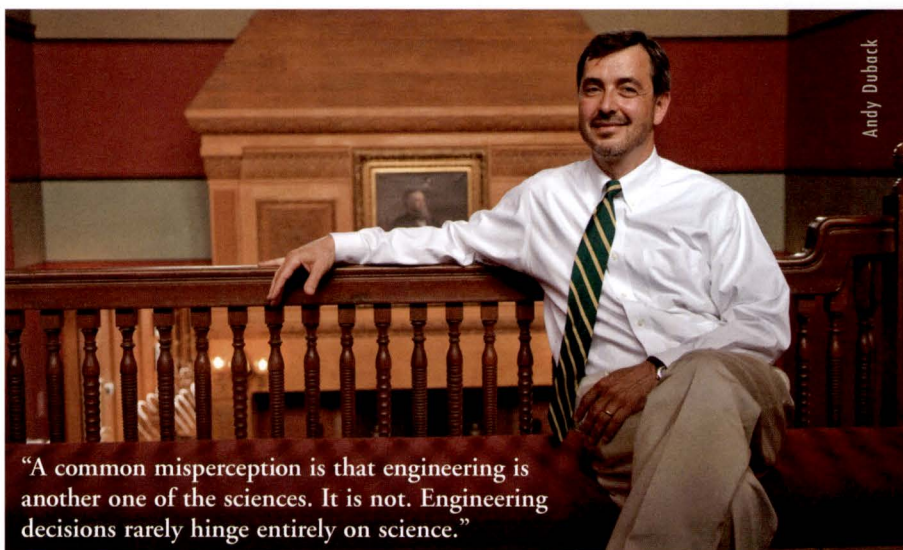
Grasso, the father of four children ages 8 to 15, understands that changing the college offerings is only part of the solution. In addition to redefining the nature of engineering studies, he also hopes to attract a different pool of students. He recalls the case of a young woman at Smith—an aspiring fashion designer from California who had signed up for his course "Designing the Future," on the assumption that it would bolster her background. Grasso is proud to point out that the woman stayed in the course, became an engineering major, and went on to study policy at the graduate level.

In reflecting on his own education, he remembers the way in which engineers would denigrate the liberal arts as "too fluffy." At Michigan—a school Grasso describes as having a strong liberal arts tradition—he discovered that those in the liberal arts were just as intelligent as engineers. There, he also met his wife, who was a Latin scholar as well as an engineer. A talk by one of her Latin professors reinforced Grasso's evolving philosophy. Quoting classical texts, the Michigan professor described the diverse ways in which writings are interpreted, depending on the period and context.

"Every day and age is seeking some kind of truth," Grasso explains. "It is different in different times. Unfortunately, engineers don't ask those questions." If they did, he argues, they might not simply design a particular car; they would ask whether the car is the best way to get around. Or whether it is ethical for engineers to plan New Orleans' new levees to a standard they feel is inadequate.

"Engineers need to ask the right questions," he insists, "not just do what people tell them."

Domenico Grasso enjoys the quiet of UVM's Billings Student Center.



"A common misperception is that engineering is another one of the sciences. It is not. Engineering decisions rarely hinge entirely on science."

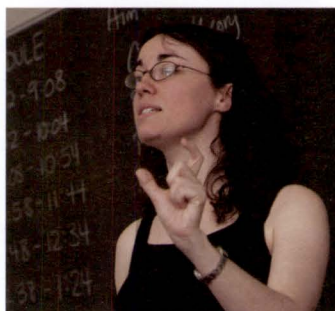


Patrick O'Connor

From one generation to the next: Emily Dodd inspires a love of science in her 10th-grade chemistry class.

Science was always part of Emily Dodd's life, even when she was too young to call it by that name. As the daughter of two WPI graduates (Charles Dodd '74 and Anne McPartland Dodd '75), she was surrounded by projects and activities—games with numbers, experiments growing radish seeds in different materials—that let her try something out and discover the results. In her hometown of Mont Vernon, N.H., she relished the quiet that came along with the rural setting because it allowed her to reflect and observe.

At a young age, she decided she would become an emergency room physician, to give practical use to her sense of wonder. But one night in a civil engineering



lab, while working on her MQP on water treatment, a fateful online search led Dodd to stray from her plan. On Monster.com she saw a posting for a New York City teaching fellow—and she hasn't looked back. It's been three years since she graduated with high distinction as a biochemistry major and traded the New Hampshire countryside for the rhythms of Manhattan. "People ask me, 'New York City and teaching—what are you doing?'" Dodd says. "I tell them, 'Looking for an adventure.'"

"I was looking for something exciting, something I could really sink my teeth into," she explains. "Science was something I always enjoyed. I wanted to be able to pass that on to another generation."



"I would encourage WPI grads from all walks of life to bridge the gap between science and society: donate materials to a school, tutor students, invite students to visit you at work, visit a class to talk about how science and math got you where you are today—or take the plunge and learn about becoming a teacher."

That new generation is mostly 10th-graders at the Manhattan Center for Science and Mathematics. They travel from all over the five boroughs, sometimes riding subways and buses for an hour and a half to get to the building at 116th Street and the FDR Drive, overlooking the Harlem River. Many are immigrants from Mexico, Ecuador, the Dominican Republic, Guyana. All are expected to take a certain sequence of courses, to attend class, to graduate on time, to go to college. According to Dodd, over 80 percent do, in fact, enroll at a two- or four-year college or pursue a military career.

Before they reach Dodd's sophomore chemistry classes, her students have passed one year of biology, but, she says, "My basic M.O. is: If I haven't taught it to them, they don't know it." Because chemistry is con-

ducted only in English, and some kids have come out of a bilingual biology program, Dodd has to address language as well as science in her classes. If she tutors them a handful at a time, "the students get more attention, and I get to feel I'm making more of a difference," she says. Often she will pair a weaker student with a stronger one who shares the language background, and both will benefit from the encounter.

Dodd is upbeat. In a conversation shortly before summer vacation, she says, "I have been writing recommendations for students to pursue summer programs in math and science. I would encourage many of them to pursue [careers in] math, science, and engineering. They have the skills."

She elaborates on her instructional strategies: "You have to make science fun, make scientists seem like normal people with real lives—people you might want to be."

"I try to tie lessons to the real world—this is why people put salt on an icy road or why they put salt in water for pasta." She recognizes that her students' home lives might be different from the one she knew and attempts whenever possible to find connections to their experiences.

Obstacles present themselves all too often—from a citywide transit strike to the shooting death of one student a few blocks from school. He had been having a hard time academically, but had been present in Dodd's double-period class that afternoon. "I said, 'Hey, glad you're here,'" she recalls. "I was not prepared for that. I wasn't done with him."

The next day she told her classes, "When you leave this building, you are a part of me. You may not think of me as a mother, but you are my children. I want to see you every day."

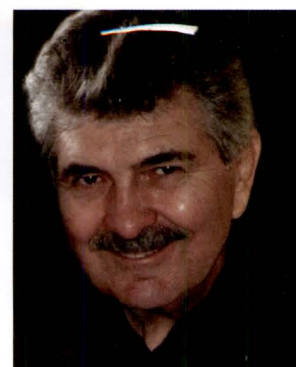
The rewards far outnumber the hardships for Dodd. This fall, one of her top students from her first year teaching will be going to WPI. But in order for such successes to be more common, she says, there must be changes in the system. "I am very focused on students of color," she says. "The educational system has been serving white students well. I'd like to see more emphasis on reaching out to non-majority populations, students of color, non-native English speakers."

She makes a plea to her fellow alumni: "I would encourage WPI grads from all walks of life to bridge the gap between science and society: donate materials to a school, tutor students, invite students to visit you at work, visit a class to talk about how science and math got you where you are today—or take the plunge and learn about becoming a teacher."

For Dodd, the decision to teach has been right all along: "I feel like I'm passing on what people have given to me: Science is fun. Science is the key to understanding the world around you." ■



AlumniConnections



This is a continuation of our dialogue with Morgan Rees '61, the 62nd President of the Alumni Association. We last spoke with Morgan earlier this year when he provided his goals for the year.

In the spring issue of *Transformations*, you detailed the key objectives for the Alumni Association: volunteerism, career services, and communications. Can you provide us with an update on these various initiatives?

Absolutely! The Association Cabinet has made progress in all these areas. Joe Ferrantino '67 heads the regional club effort. We now have two clubs in operation (Hartford/Springfield and New York City) and more starting this year (Southern New Hampshire, Boston, and Worcester). So far we've held pub nights, sporting events, and a Sunday brunch. But there are a number of other ways to become involved. For example, you can participate in class activities and GOLD (Graduates of the Last Decade) events, or become an Alumni Ambassador, representing WPI at a high school or college fair. If you are interested in volunteering, please contact the Office of Alumni Relations.

What progress has been made in the area of communications?

We completed a communications survey in the spring. The response was great—we heard from 280 alumni (a fourfold increase over our last survey, conducted in 2004). The results are now being compiled and analyzed. We'll report the results and actions we are taking in *The Bridge* and in *Transformations*. One of the surprising facts was that some alumni were not aware of *The Bridge*, the Association's monthly e-newsletter. This publication serves to keep alumni informed between issues of *Transformations*. It's easy to sign up and be informed—go to wpi.edu/+bridge. Our thanks go to many, but especially to Joyce Kline '87 for her efforts in spearheading the survey.

What can you report in the career services area?

We are expanding the scope of the program to encompass a broader range of services and assistance to alumni throughout their careers, including networking, mentoring, and job listings in *The Bridge*. This fall, we'll be adding a staff person who will focus on this area, as well as on enhancing volunteer activities. This will be a great addition to the Office of Alumni Relations. I'll report more on the specifics in *The Bridge* and in the next issue of *Transformations*. Our thanks go to Bill Krein '62 for all his good work in putting this program together.

Can you provide your perspectives on Reunion?

This was my first Reunion as president. In my judgment, it was a smashing success, thanks in large part to the volunteers from the Office of Alumni Relations and other WPI staff, and the Alumni Association. Reunion was a wonderful opportunity to connect with fellow alumni. The weekend was filled with exciting activities, as well as opportunities to renew old friendships, make new friends, and share memories. I really enjoyed the variety of offerings that Alumni College provided. The topics are fascinating. I hope more alumni will attend these events next year. Awards were presented to some very deserving people for career achievement and service to WPI. Professor emeritus Bill Grogan '46 and university vice president Steve Hebert '66 were recognized for their lifetime of service to WPI.

What's being planned for Homecoming?

The Class Boards of Directors will meet, as they do traditionally at that time, to discuss their class activities. Homecoming is a wonderful time to reconnect with former classmates, learn more about what WPI is doing from an academic standpoint, and enjoy a great football game. We're playing Union this year.



Reunion Weekend 2006

Even the rain couldn't dampen the mood during Reunion Weekend 2006, held June 9–11. Alumni from the classes of '41, '46, '51, '56, '61, '66, '71, '76, '81, and '86 celebrated their respective reunions with receptions and banquets, and by reuniting with old friends. Activities and events during the weekend included the annual Reunion Parade, campus tours, and Alumni College sessions led by WPI faculty and administrators. President Dennis Berkey accepted generous class gifts, and select alumni were celebrated with distinguished awards. *View more photos at alumni.wpi.edu.*



Class Notes

Staying Connected with Old Friends

Material for Class Notes comes from newspaper and magazine clippings, press releases, and information supplied by alumni. Due to production schedules, some notes may be out of date 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 508-831-5820, or mail it to Alumni Editor, Transformations, WPI, 100 Institute Road, Worcester, MA 01609-2280.

1930s

Jack Brand '36 contributed some reflections on life at Tech in the 30s, when jackets and ties were "de rigueur" in the classroom, tuition was a mere \$330, and an entry-level engineer was grateful for a job offer of \$120 a month upon graduation. Jack reminisced about the colorful professors such as "Coombsie," "Black Mac" McCullough, and Charles Allen, who gave explosive laboratory demonstrations on gasoline safety. He concludes, "Worcester Tech had been the right school for me. It prepared me well for a fulfilling 42-year career at Du Pont. In the 1930s, Worcester Polytechnic Institute was a leading small engineering college; 70 years later, WPI is a world-class university."

Do you have WPI memories to share?

E-mail them to the Student Alumni Society at wheniwas@wpi.edu, or send them to SAS, WPI, 100 Institute Road, Worcester, MA 01609-2280.



Peter Koliss '38 of Nashua, N.H., is retired after 43 years with Bell Laboratories. He has devoted himself to raising funds to establish Catholic churches in Ghana. A longtime member of the Knights of Columbus, he brought the state councils on board in the quest to raise \$100,000 toward five churches in five years. The first church, St. Francis, in the village of Nyinampong, will be dedicated to the memory of his wife, Evelyn, who died in 2004.

1940s

Noting the lack of Class Notes from "older" classes in the last issue of *Transformations*, **Ed Campbell '43** urges all classmates to provide input. "Let's do our part by posting WPI on interesting or informative items about ourselves and others," he writes. "I'll start. We have recently moved from our cherished home in New London, N.H., to a great retirement (I really should say "older age") lodging in Falmouth, Maine. It's taken a little effort to adjust our lifestyle, but I think I'll make it."

No news isn't good news ...when it comes to our alumni

Transformations would like to expand Class Notes coverage of the earlier classes, but we can't do it without you! Send a note and a photo, and let your classmates know what's cooking in your part of the world.

1950s

Bill Taylor '55 has a new work, *Lethal American Confusion: How Bush and the Pacifists Failed in the War on Terrorism*, which is available in electronic format at AmericanConfusion.com. A print version is

The screenshot shows the 'Class Notes' submission page on the WPI Transformations website. It includes a sidebar with navigation links like 'Starting Point', 'Letters to the Editor', 'Features', 'Campus Buzz', 'WPI', 'Experiments', 'Investigations', 'And Life', 'Bibliography', 'Alumni Connections', 'Notes from Huggins House in the Public Eye', 'Via Alumni', 'View Class Notes', 'Submit a Class Note', and 'Time Capsule'. The main content area is titled 'Submit an Item for Class Notes' and contains instructions for submitting items, a 'Picture It!' section for photo submissions, and a 'Double Duty' section for posting notes online. At the bottom, there is a form with fields for 'Your name', 'Your primary class year' (a dropdown menu), 'Other class year(s) and degrees', 'Your e-mail address', 'Would you like your e-mail address to appear with your class note?' (radio buttons for Yes/No), 'Your home address (will not be published)', 'Is this address new?' (radio buttons for Yes/No), and 'Your business address'.

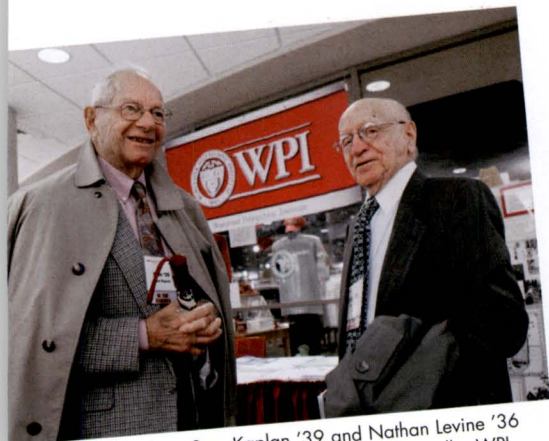
in the works. Taylor also invites readers to visit the Web site and take part in a consciousness-raising survey on the similarities between pacifists and advocates. After the survey closes on January 1, 2007, respondents will discuss the findings and explore further steps.

Paul Beswick '57's PRD2 pressure regulator won *Product Design & Development* magazine's Engineering Silver Award for the best new product of 2005. It was also a runner-up in *Design News* magazine's 2006 Golden Mousetrap Awards in the Fluid Power category. The compact, lightweight design offers high performance for applications where size and weight are critical. Beswick founded the company in Massachusetts in 1964, relocated to Greenland, N.H., in 1996, and opened a Singapore branch in 2000.



Dick Wright '57 was inducted into the Chelmsford (Mass.) High School Hall of Fame this year. He and his wife, Katherine, recently celebrated their 25th anniversary. They have three children and six grandchildren. Dick's first wife, Barbara, passed away in 1979. He is retired from a career with Raytheon, where he designed missile guidance systems.

Bill Rabinovitch '58 reported on the opening of Apple Computer's "Glass Cube" uptown store in NYC, which brought him and his video camera up close to Steve Jobs and Ron Johnson. Bill writes, "The event didn't seem primarily about Geekdom, as tens of thousands, families and all, waited



Sam Kaplan '39 and Nathan Levine '36 share memories of a much smaller WPI campus, at Reunion 2006

for hours, surrounding the area for blocks. I felt there were going to be massive cultural implications in all of this, and I think that I was right!"

1960s



Richard Brewster '60, and his wife, Susan (right), celebrated the opening of a new well in the village of Gordec, Liberia, constructed by the Mercy Ships

program and funded through donations raised by his Rotary Club. After the ribbon-cutting ceremony, and the presentation of a pineapple as a thank you gift, the feasting and dancing began. Brewster, a longtime Mercy Ships volunteer, writes that with access to basic sanitation and clean water, an estimated 80 percent of human illness could be eliminated.

"Would you believe?" writes **Thomas Heefener '61**. "Both **Christopher Coote '97** and I serve on the Borough Council of Mercersburg (pop. 1,500), located in south central Pennsylvania."

In the wake of public utilities deregulation, **Richard Vogel '61** has been working on proprietary technology to provide alternatives to conventional power generation. In the 1980s he designed and built a 10-kilowatt steam turbine micro power plant. In 1996 he received a patent for a new system that uses a heat flow process based on the design of the main engine of the Space Shuttle, in consultation with NASA. "Things have certainly been 'transformed' since my freshman year at WPI, when on Oct. 4, 1957, Russia's *Sputnik* was announced on the bulletin board," he writes. "Perhaps BSEE could mean 'Bachelor of Science-Ecological Enhancement,' or some similar wordsmith creation. It feels a bit like graduating once again."

Michael Moses '62 received the 2006 Investment Management Council Journalism Award, along with his co-author on an article in the *Journal of Investment Consulting*. The article, "Beautiful Asset: Art as Investment," was published in Vol. 7, No. 2, of the journal. Moses is a tenured associate professor of management at New York

In the Public Eye

Flashback, the latest novel by **Gary Goshgarian '64** (pen name Gary Braver) won an Honors Award from the **Massachusetts Center for the Book** and was the Number 1 medical thriller in the **Doubleday Book Club**. The **Boston Globe**

called *Flashback* "a thoughtful book with an intriguing premise and a sprawling plot, pulled together with a twist at the end" ... **Richard Salwitz '67** (aka "Magic Dick") was counted "among the world's most successful blues harmonica players" by **recordnet.com**. The former J. Geils Band member performed in Modesto, Calif., at Mark Hummel's Blues Harmonica Blowout in July ... **Dave Emery '70** placed third in the Republican primary for **governor of Maine**. In a letter to supporters, he wrote, "I'm disappointed that I won't be the one taking our ideas for improving state government before the voters in November. I've also been in politics long enough to appreciate the will of the voters [...] and I respect their choice. I will work for [Republican nominee] Chandler Woodcock and I ask you to do so, as well." ... **Dean Kamen '73** was a commencement speaker at **BU** and **RIT** this spring... **Mark Ketchum '75** was interviewed for a **PBS American Experience** program on San Francisco's Golden Gate Bridge. His firm, OPAC Consulting Engineers, led the seismic evaluations and retrofit strategy development for both the Golden Gate and the Bay Bridge suspension spans ... With gas prices soaring this spring, **Jeff Leonard '84** was widely quoted in his capacity as chief spokesperson for the National Association of Convenience Stores. Hundreds of print, broadcast, and online outlets, including **CNN** and **Fox News**, carried his comments on pricing formulas and consumer response ... Two alums, **Chirag Patel '99**, and **Gina Colangelo '03**, were featured in a cover story on analog devices in the June issue of **Test & Measurement World** ... the Worcester **Telegram & Gazette** covered the graduation of **Daniel Gilbreath '06** in May, noting that all of his siblings were WPI graduates—**Larissa '00**, twins **Emily** and **Amelia '01**, and **Tanya '04** (MS '05).

University's Stern School of Business. His research interests include art as an asset class and the pricing of infrequently traded assets.

Chester "Gerry" Sergey '65 lives in Wolcott, Conn. His days as a drummer for a popular local high school band called The Tempests were recalled in the "Bristol Bits" column of the local newspaper.

Phillip Clark '67's firm, Clark Patterson Associates, made the Rochester (N.Y.) Top 100 list. He founded the company as Clark Engineers in 1975, and it now has 200 employees and eight office locations in four states, with plans to add two more offices in the next two years.

Thomas Marmen '68 was appointed president and CEO of TimeLab Corp., an Andover, Mass.-based firm that develops and supplies timing circuits.

1970s

Ron Dlugosz '70 was elected selectman in Great Barrington, Mass.

Ralph Sbrogna '70 was named a director at Fletcher, Tilton & Whipple PC of Boston. He is a graduate of Suffolk Law School.

Maryann (Bagdis) Goebel '73 was named CIO of DHL Express for the Americas, Asia-Pacific region, and emerging markets/Latin America. She will oversee IT initiatives in those areas and chair the company's IT board.

James Edwards '74 married Kathryn Nolt, April 2, 2006. They live in Lancaster, Pa.



Michael Hartnett '74 (MSEE) was honored as a distinguished alumnus of the University of New Haven, where he earned his bachelor's and doctoral degrees. He is chairman, president, and CEO of RBC Bearings, which operates 16 plants in three countries and employs more than 1,700 people.

Bookshelf

Recent and new publications by WPI alumni, faculty, staff

Failed Grade: The Corporatization and Decline of Higher Education in America

by Albert H. Soloway '48 *American University & Colleges Press*



THE CORPORATIZATION
AND DECLINE OF HIGHER
EDUCATION IN AMERICA

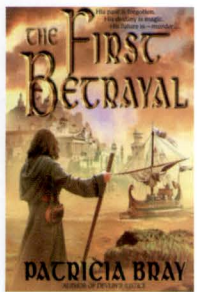


ALBERT H. SOLOWAY, Ph.D.

Soloway, a former faculty member and dean at Northeastern University and The Ohio State University, draws on his 33 years in academia, as well as the insights of his colleagues, to explore problems facing today's colleges and universities. With institutions forced to focus on the bottom line, and administrative priorities trained on fund-raising and generating revenue, what happens to a college's primary mission—the education of the next generation and the quest for new knowledge? Soloway looks at the effects of grade inflation and skyrocketing tuition, as well as the marginalization of faculty in decision making and the selection of college presidents for their fund-raising ability rather than their educational vision. "This book is written for all who care deeply about higher education," he writes in the preface. "I hope [it] will raise questions for those creating policy for higher education as well as provide suggested solutions for alleviating some existing problems."

The First Betrayal

by Patricia Bray '84 *Bantam Spectra*

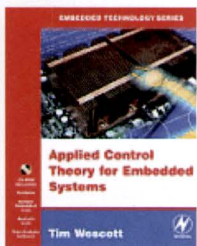


The First Betrayal is the first installment of Bray's new series, "The Chronicles of Josan." The protagonist, an orphan, exile, and priest, lives a humble life as a lighthouse keeper—until a chance encounter with Lady Ysobel Flordelis of Alcina sets off a deadly chain of events. Josan is forced to leave his island exile and embark on a dangerous journey to unlock the secrets of his past. Bray, who received the 2003 Compton Crook award for Devlin's Luck, the first book in her previous "Sword of Change" series, lives in upstate New York, where balances her writing with a full-time career as an IT project manager. She is now hard at work at on the second book in the

"Josan" series, called *The Sea Change*. For excerpts and a book signing schedule, see her Web site, www.patriciabray.com.

Applied Control Theory for Embedded Systems

by Tim Wescott '88 ('90 MS) *Elsevier*



Wescott addresses the needs of embedded systems engineers and programmers who are called on to implement control systems as part of a product design, yet do not have formal training or experience in control system theory. His practical guide offers real-world examples and practical information that can be used to design working systems. *Applied Control Theory* offers sufficient mathematical background without requiring a thorough mastery of the complicated theoretical considerations that operate behind the scenes. Chapters include "Z Transforms," "Performance," "Block Diagrams," "Analysis

and Design," "Sampling," "State-Space Control," and "Software Implications." Wescott, who owns and operates Wescott Design Services, has many years of experience in the application of control system theory to embedded designs and consults on embedded control and signal processing issues.



Norton Bonaparte '75 has been appointed the first city manager of Topeka, Kan. Under the city's new form of governance, Bonaparte will serve as CEO,

reporting to the mayor and city council for day-to-day operations of 1,400 employees and a \$174-million budget. He previously served as a city administrator in New Jersey and Maryland.

John Holmes '75 and his wife, Lynn, are both coaches for the Rams at Southwick-Tolland Regional High School in southwestern Massachusetts. He is the school's varsity baseball coach, and she coaches the varsity softball team. The couple has been coaching recreational teams for decades, while their three children were growing up, and now they even help out their 3-year-old grandson.

Kevin Kelly '75 finally earned his WPI degree in May, by doing his MQP—all that stood between him and the diploma—on radar software and systems development. He did not attend commencement exercises, but his story was picked up by local newspapers in the Stamford, Conn., area. Kevin is now a senior software engineer with Northrop Grumman Norden Systems in Norwalk.

Greg Cipriano '76 is vice president, marketing and military development, at Protonex Technology Corp., based in Southborough, Mass.



Thomas McNeice '76 was promoted to senior vice president at CDM in Cambridge, Mass., where he leads the design-build and general contracting business

operations for the northeastern United States.

Steve Rourke '76 was appointed vice president of system planning at ISO New England, based in Holyoke, Mass.



Neal Wright '76 was promoted to vice president of the newly formed Base Realignment and Closure Program Management Office at Michael Baker Jr. Inc., in

Virginia Beach, Va. He retired from the U.S. Army as lieutenant colonel in 1998, and has worked for Baker since 2000.



The Society of Fire Protection Engineers elected **Jeff Harrington '77** a fellow of the society. A dedicated member since 1976, when he helped found the student

SFPE chapter at WPI, Jeff later joined the Southeastern Chapter and served in every officer position, culminating in two years as president. He is founder of Harrington Group in Duluth, Ga.

Eric Hertz '77 was elected to the board of directors of NTELOS Holdings Corp. in Waynsboro, Va. He was previously COO of Western Wireless Corp.

David Lesneski '77 joined R. W. Beck Inc. in Boston as a senior consultant in the firm's Energy Assets Consulting Practice. He has published several technical papers on boiler systems and holds a patent for steam generator design.

Andreas von Huene '78 was part of a team of artists that sculpted a full-scale "evocation" of the six-masted schooner *Wyoming*, which was unveiled in June at the Maine Maritime Museum in Bath. The *Wyoming*, once billed as the largest sailing vessel in the world, lives on the largest outdoor sculpture in the state of Maine.



Andrew J. Davidson '79 was promoted to vice president/chief financial officer of Richard White Sons Inc. He joined the Auburndale, Mass., construction management firm in 1997 as controller.

Mary Dunn '79 is engineering director at Seagate Technology in Longmont, Colo., where she has worked for 12 years. She recently spoke at a career forum organized by the Women's Vision Foundation of Colorado.

1980

Martin Rowe, senior technical editor of *Test & Measurement World*, recorded a song for engineers who struggle with slow equipment, out-of-calibration gear, and software crashes. Hear "The Measurement Blues" online, and connect with other lab-based musicians at tmworld.com/blues.



1981

The fourth annual **Craig Abraham Memorial Golf Tournament** was held May 20, 2006. It was organized by classmate **George Awiszus**. Proceeds go to a college fund for Craig's three children and to a scholarship in his honor, which has been presented annually to an Ashland (Mass.) High School senior by Craig's widow, Louise. Information and photos of the event are posted at www.craigabraham.com.

Dennis Moulton was promoted to vice president at Ames MSC, Architects & Engineers, in Portsmouth, N.H. He was previously senior engineer.

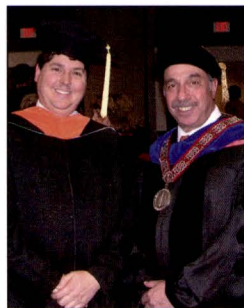
1982

Frank Hines launched Hines & Lee Inc. (www.hinesandlee.com), a consultancy that provides services in the areas of market research, strategy, and innovation. He started the business to gain greater independence, after spending the past 10 years working for a management consulting boutique in the new product development arena. His wife and business partner, Jeanne Lee Hines, will act as managing partner.

Andy Schell holds the post of affluent segment marketing executive for Bank of America Global Wealth & Investment Management in Boston. He previously worked for Ameriprise Financial as vice president of marketing planning.

1983

Joe Morgan serves as general manager of the On Demand Solutions Group at Standard Register in Dayton, Ohio, where he has been employed since 2001.



Peter Woods represented WPI at the inauguration of St. Martin University's new president, Douglas Astolfi, held March 27, 2006, in Lacey, Wash.

Navy Cmdr. **Marshall Young** was promoted to staff executive officer of the commander submarine force stationed at Norfolk, Va. He has been in the Navy since 1983 and had served as deputy commander of Recruiting Region South since 2004.



See you in court? A recent legal proceeding before the Vermont Transportation Board brought together **Joe Segale '86** (expert witness on traffic engineering issues), **Stuart Hurd '70** (representing the Town of Bennington as its manager), and **Jon Anderson '75** (attorney for the developer). Also working on the hearing was the Transportation Board's administrative officer, Glenn Gershaneck, whose son is a member of the WPI Class of 2006.

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

1984

Jean (Salek) Camp, owner of Camp Consulting LCC, received her Hawaii state contractor's license this year. She now operates two companies, one for project engineering, construction, and business management; the other for contracting services. She and her husband, David, continue to enjoy living on Kauai and participating in several youth-directed organizations.

John McNamara and his wife, Tricia, live in West Newbury, Mass., where they are co-coaches for the Pentucket Middle School basketball program.

Brian Witkowski works for Essilor International as the global engineering tooling manager. "I am responsible for design for our optical lens injection molds and also support Essilor's five production sites in the U.S., France, Thailand, and China. I have been with the company for nine years, after some time in the Army and a variety of other jobs. This year will mark my 18th wedding anniversary to my wife, Kim. We live in northeast Connecticut with our children, Rebecca, 13, and Matthew, 11."



Representatives from Pratt & Whitney (including a large number of alumni) joined with WPI administrators to celebrate the company's long-standing ties to WPI and to present a \$23,500 donation. The campus visit was organized by **Mike Gonsor '86** (not pictured), **Ryan Walsh '99**, and **Mary Schubert '05**.

1985

Thomas Arsenault was named president of the newly established sensor systems business in the Electronics & Integrated Solutions Operating Group at BAE Systems in Nashua, N.H.

Chris Cavigioli writes, "Carrie and I had a son, Daniel. He's cute and has recently learned how to make bubbles with his saliva and his lips."

Mair Sitton writes from Panama City, Panama, "I joined Mays Free Zone Colon to develop a huge motorcycle business in partnership with a firm from China, operating under their name brand, Max Motor, with tremendous success in over 15 countries in Central and South America, as well as the Caribbean." He lives with his wife, Eileen, and their four boys.

1987

Paul Lubas moved to Glastonbury, Conn., to begin a new position as senior marketing manager—Pharmaceutical for CUNO Inc., a 3M company. He is charged with creating programs to increase the sales of CUNO filtration products within the pharmaceutical market. He lives with his wife, Paula, and son, Christopher, who turned two in March.

Donald Zereski launched Yokel Inc., which operates the Yokel.com shopping search engine. He and his partner designed the site to help shoppers track down items at local stores.

1988

Brent Goldstein co-founded Goldstein-Milano LCC, a structural engineering consulting firm in Reading, Mass., in 2005. He was formerly a principal with McNamara/Salvia Inc. in Boston. The new firm is currently active in the U.S. commercial and institutional building markets. His past projects include Two International Place and Providence Place Mall.

Mark Osborne works as a program leader in pharmacovigilance informatics at Millennium Pharmaceuticals. He writes, "I enjoy spending time with my family, which includes my wife of 16 years, Carolyn, and children: Alex, 12, Katelyn, 10, and Tyler, 5."

Michael Thurston joined the Army in 2003 and was promoted to lieutenant colonel in 2005. Now on deployment in Iraq, he and his wife and children are based at Ft. Monmouth, N.J.

women's elite field (F14), but had a late withdrawal because of an injury. A highlight of Marathon Day was riding the elite bus, he writes. "There I was, riding to the start of the most historic and prestigious marathon in the world in my throw-away sweats, with some of the best runners in the world all decked out in high-end gear from their sponsors, with a state police escort blocking traffic for us the whole way. It felt like I was living someone else's life for the day. I was happy with my finishing time of 3:53:28 which bettered my pre-race goal of 4 hours."

Brian Hamilton was promoted to project executive at Consigli Construction Co. in Milford, Mass., where he has worked since 2001. His past projects include Milford Regional Medical Center, MetroWest Medical Center, and Marlboro Hospital.

Travel to Greece

Alumni and members of the WPI community are invited to join the Men's Glee Club on a concert tour of Greece, March 2–10, 2007. The tour features sightseeing in Athens and Delphi, plus a five-day cruise of the islands. Touring with the chorus and attending performances offers a unique perspective on a foreign country, and a rewarding connection to WPI students.

Registration deadline is December 2. Trip details and registration forms are available at wpi.edu/Admin/Alumni/Services/travel.html. For more information, contact John Delorey at 508-831-5051 or jfd@wpi.edu.



The WPI Men's Glee Club is the oldest student-run organization on campus, and one of the oldest men's glee clubs in America (133 years).

1989

Daniel Bruso and his wife, Sandra, are pleased to announce the birth of Audrey Ellen and Charles Daniel on April 6, 2006. They join their older sister, Claire Elizabeth, at the family's Somers, Conn., home. Everyone is doing well.

Brendan Connelly ran the Boston Marathon this year. His wife, Canadian Olympian Tina Connelly, was in the

1990



Paul Dombrowski received the Alfred E. Peloquin Award from the New England Water Environment Association for his work in wastewater engineering. He is a senior project manager with Tighe & Bond.

Christopher Hegarty (MS '92) received the 2005 Hobart Newell Award at an ECE department ceremony on May 1, 2006. He was honored for his work in GPS systems for civil aviation, which are currently used by the FAA. Hegarty is director for spectrum management within The MITRE Corp.'s Center for Advanced Aviation System Development.

Christina (Coulmou) and **Mark Macaulay '89** are proud to announce the birth of their daughter, Caroline Rose, on Sept. 6, 2005. They live in Northborough, Mass., with their two sons, Patrick, 7, and Bennett, 4.

1991

Mike Messer recently graduated from the Air Force Institute of Technology with a master's degree in operations analysis. He was extended invitations to join Tau Beta Pi and Omega Rho, the honor society of the Institute of Operations Research and Management Sciences. Mike will spend the next year in southwest Asia, while his wife and three children return home to Wichita Falls, Texas, where he will join them upon return.

Yael Schwartz (PhD) left Sepracor Inc. to co-found Orcas Therapeutics Inc., where she is now president and CEO. "The Orca is an opportunistic feeder," she says of the company's plan to optimize and improve the effectiveness and safety of drugs currently on the market. She expects Orcas to double in size in the next six months, as operations move out of her Holden, Mass., home and into office space in Westborough.

Rick Willett is president and COO of NewPage Corp. in Dayton, Ohio.

1992

Concetta DePaolo was promoted to associate professor and awarded tenure by the College of Business of Indiana State University. She and her husband, David Rader, live in Terre Haute, with their daughter, Megan.

1993

After completing his PhD, **Matt Boutell** enjoyed his return to teaching as an assistant professor of computer science and software engineering at Rose-Hulman Institute of Technology. Matt, his wife, Leah, and their four children live in Terre Haute, Ind.



Fall Back to WPI —

Homecoming: October 6-7, 2006

— wpi.edu/+alumni



Peter Cavallo recently completed his PhD in mechanical engineering at Drexel University. His work in adaptive refinement methods for computational fluid dynamics was presented at the past three Aerospace Sciences meetings, and has appeared in *AIAA Journal* and the *Journal of Aerospace Computing, Information, and Communication*. He continues as senior scientist for Combustion Research and Flow Technology (CRAFT) of Pipersville, Pa., a small DoD/NASA contractor.

Tracy Coifman and his wife, Agnes Rios, are happy to announce the birth of their daughter, Andrea Paola, on May 1, 2006. Her twin brothers, Diego and Myles—now big brothers—are approaching 2½ years. "We recently sold our house, bought a new home for our growing family, and moved, all in the same week that our daughter was born," Tracy writes.

Al Grasso was officially appointed president and CEO of The MITRE Corp., following the retirement of the previous president. His promotion was approved by the board last September.

Jeff Rembold and his wife, Cristine, announce the birth of their fifth child, Margaret Anne, on March 12, 2006. Jeff still lives in Webster, N.Y., where he works as a senior applications engineer for PTC. You can read his (occasional) technical blogs at ptc.com/community/prointraLink8/start.

1994

Michelle (Shear) and **Chris Pacitto '98** announce the birth of their daughter, Akela Sydney, on Feb. 25, 2006.

Matt Pope moved to Seattle with his employer, Grove Networks, when the company was acquired by Microsoft. He is now group manager for Grove products at Microsoft. Matt and his wife, Heather, have two children.

1995

Lisa (Caponi) de Mars and her husband, Robert, announce the birth of their second son, Ryan John, on May 6, 2006.

1996



Suzan Bullock married Alan Michaud, Nov. 5, 2005. She works for R.W. Gillespie and Associates as administrative assistant of finance.

Following a wedding trip to Ossipee, N.H., they live in Buxton, Maine.

Sarah Kazmi and her husband, Suheil Laher, have one child, Fatimah, born Dec. 9, 2004.

Sue (MacPherson) Kristoff was a guest speaker at a recent Mathletes Recognition Night held at her alma mater, Hudson (Mass.) High School. She lives in Leominster, where she operates her own engineering consulting firm.

Pam (Kelly) Sluter is training to run the Maine Marathon on Oct. 1, 2006, as part of the Leukemia and Lymphoma Society's Team in Training program. "I am committed to raising \$1,850 for the society, 75 percent of which will be used directly toward research. Anyone interested in making a donation can reach me at pjslu@lycos.com."

Kenny Volock earned a master's degree from the University of Maine in 1999 and passed his PE exam in 2005. He works for Woodard & Curran in Portland, Maine.

1997

Brian Lakin and his wife, Michelle, announce the birth of their second child, Jacob Ethan, on Feb. 5, 2006. He joins his big sister Shayna in their home in Hamden, Conn.

Scott McDermott married Jessica Hassett on April 6, 2006. They live in Imperial, Calif.

Jami Walsh passed the PE exam and is now a registered professional engineer in the state of Massachusetts.

1998

Capt. **Chad Braley** joined Phaedrux Technologies. He lives in South Portland, Maine.

Alumni who work at Microsoft reconnected with their alma mater this summer, when Mike Gennert, Computer Science Department head, and **Terry Schmidt Adams '92**, director of corporate relations, visited Microsoft's Redmond, Wash., headquarters. Adams spoke to the group about major developments at WPI over the last decade as well as those on the horizon. Gennert briefed attendees on the history and future direction of the department. They also discussed WPI's extensive K-12 outreach and diversity retention programs, and the university's evolving robotics engineering degree program with Microsoft executives.

Will Lees '85 organized the event; also participating were **Mark Ramberg '82**, **Peter Woods '84 MS'98**, **Rob Mauceri '87**, **Howie Dickerman '93 MS'94**, **Jonathan Tanner '98 MS'99**, **Ben Leclerc '01**, **Brad Snow '01**, **Kati Dimitrova MS'03**, **Rimma Nehme MS'05**, and current CS graduate students **Yuan Gao** and **Shoushen Yang**.

Penelope (Taska) Butler joined the Air Force Reserves' 7th Space Operations Squadron as a GPS operator. She left active duty in December to pursue a full-time interior design program at the Art Institute of Colorado. She and her husband, Chris, live in Colorado Springs.

Michael and Stacy (Gold) Gagne are pleased to announce the birth of their daughter, Catherine Elizabeth. Cate was born Feb. 23, 2006. The family lives in Gainesville, Va., where both parents work as project engineers at Aerojet Corp. They write that Stacy has gone back to work "to ensure that proper funds will be available in 19 years for Cate to attend WPI and carry on the Gagne tradition."

Brendan Smith will join the MBA class of 2008 at Harvard Business School, with full-time classes starting this fall.

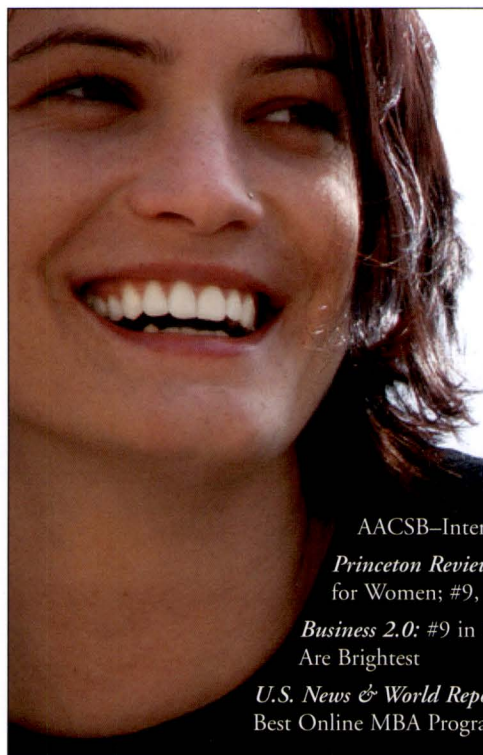
1999

Ted Goodwin is a senior software engineer for EMC Corp. He lives in Sturbridge with his wife, Lindsay, and daughter, Rita.

Melissa (Clark) and Matthew Johnson '98 are thrilled to announce the birth of their first child, Rachael Elizabeth, on March 8, 2006. They live in southern Rhode Island.

John Rush and Kate Burgess '00 opened Evolo Home Center, selling high-end luxury modular homes in Newport, Maine. They did not know each other at WPI, but met while working for Pratt & Whitney in Connecticut. Kate's father joined them in the new business, which opened in March.

Lisa (Angle) and Garren Walters '98 had their second son, Evan William, in March 2006. Evan joins big brother Justin, 2, in their Nashua, N.H. home.



Which university offers the only MBA east of the Rockies that ranked in the Top 10 in both Career Prospects and Opportunities for Women? Yours.

We know that when choosing an MBA program, nothing matters more than the doors it opens for you. The MBA at WPI launches more rewarding careers and provides greater opportunities to move into desirable career paths that will inspire and challenge you for a lifetime.

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AACSB—International Accredited

Princeton Review: #2 in U.S., Greatest Opportunities for Women; #9, Best Career Prospects

Business 2.0: #9 in U.S., Where Your Career Prospects Are Brightest

U.S. News & World Report: Top 55 National Universities; Best Online MBA Programs



WPI

For more information
508-831-5218
www.mgt.wpi.edu



Gambling on Gompei? At the Bellagio Casino in Las Vegas with one very lucky goat are, from left, **Richard Scopelliti '99**, **Stephanie McGrath '00**, **Nicole (Roy) Niccoli '00**, **Matthew Vidal '99**, **Vladislav Zilberman '99**, and **Eric Niccoli '00**.

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

2001

Fernando Ayala holds the post of global public sector consultant for Grant Thornton in Washington, D.C.

Jessica Hoepf and **John Costa '02** were married April 22, 2006. Many WPI alumni were in attendance at their wedding in New Hampshire, which helped make the day special. The couple traveled to the South Pacific for their honeymoon and spent 12 days in Tahiti, Bora Bora, Le Taha'a, and Moorea.

Congratulations to **Jennifer Headman**, who married Jeremy Van Vleet on March 11, 2006. They took time off from their PhD studies at the University of Wisconsin-Madison for a honeymoon trip to London and Paris. This spring Jennifer learned that she had been selected as a Fulbright Fellow to spend the 2006-07 academic year conducting energy research at the Technical University of Denmark in Lyngby.

Danielle (Barber) Kotmel and her husband, Josh, proudly welcomed their second daughter, Niveah Mae, to the family on May 7, 2006. Niveah joins her fabulous big sister, Lilya Jane, born in 2004.

Fang Li (MS FPE) works in the Shanghai office of the RJG Group.

It has been a busy year for the Mullers, write **Paul** and **Amanda (Kight) Muller**.

Paul, who was promoted to the rank of captain, graduated from the Air Force Institute of Technology in June with an MS degree in physics. In the same week, Amanda completed the requirements for her PhD in human factors engineering at Wright State University. The newly dubbed Captain and Doctor Muller now reside in Melbourne, Fla., where Paul works for the Air Force Technical Application Center at Patrick Air Force Base, and Amanda serves as a systems engineer for Northrop Grumman.

Todd Staples and Sherry Theriault are pleased to announce the birth of their second child, Savannah Jean, born April 19, 2006. She joins big brother Isaac in their home in Grafton, Mass. "We could not be happier," writes Todd. "She is perfect."

2002



best man and **Alexis Steinhart '05** as a

Dan Tromp and **Katherine Labbe '05** were married on Aug. 6, 2005. The wedding was attended by numerous WPI alumni, including **Stephen Worsham** as

bridesmaid. Dan and Katie have a home in Worcester. Katie will be attending Massachusetts College of Pharmacy in the fall; Dan is a software developer for ING.

2003

American Dryer Corp. recently named **David Campbell** technical regional sales manager for the northeastern United States and Canada.

On March 17, 2006, Lt. j.g. **Ryan Clarke** was designated a naval aviator and received his Wings of Gold. His next assignment is with Strike Fighter Squadron One Two Two (VFA-122), learning to fly the Boeing F/A-18E/F Super Hornet, the Navy's newest front-line strike-fighter jet.

Brett Ericson is pursuing his master's degree in biotechnology at WPI as the university's first ECI Biotech fellow.

Ronja LaBrecque and **Anthony Yergeau '06** got engaged on May 20, 2006. They are planning a September 2007 wedding in southern New Hampshire.

Married for over two years now, 1st Lt. **Scott Martin** (USMC) and his wife, the former Lindsey Corcoran, enjoyed a formal wedding ceremony in August 2005. Scott completed his MBA degree at Boston University and is currently deployed to Djibouti, Africa, in support of Operation Enduring Freedom. The Martins reside at Marine Corps Air Station Cherry Point, N.C.

Natalie (Woodworth) and **Dan Reed** were married in 2005, in a small mountaintop ceremony at Acadia National Park in Maine, with classmates **Caitlin Harvey**, **Jillian O'Toole Urban**, and **Ryan Wartman** in the wedding party. Natalie and Dan welcomed the birth of their first child, Julia Madeline Reed, on March 2, 2006. They live in Bangor, Maine.

Jennifer Schelly completed her MS in electrical engineering at Tufts University on May 22, 2006. She works for BAE Systems in Nashua, N.H.

2004

Rebecca Croteau and **Tyson Moore** were married on July 9, 2006, in Newport, R.I. The couple currently resides in Franklin, Mass.

Matt Musiak ('06 MSEE) was appointed to the position of product engineer at ITT Power Solutions, based in West Springfield, Mass., where he interned as an undergraduate.

Spotlight on Alumni Volunteers

Jake Rocznick '03, one of the youngest members of the Alumni Cabinet, heads the group's operations division. Technically, he oversees class boards of directors meetings—which occur annually during the morning of Homecoming—as well as the Alumni Leadership Council and various other committees.



But more important, Rocznick points out, is his unofficial job of increasing volunteerism among alumni. Through his work with the Alumni Cabinet and through the Greek Alumni Council, which he helped reestablish last year, Rocznick is on a mission.

"It can be hard to get alumni reconnected with WPI, which is unfortunate," he concedes. "One of our biggest challenges is bringing volunteers back. So, to start, we're compiling a list of all the ways that alumni can volunteer."

Rocznick, now a consultant with Milford, Mass.-based Project Technologies Group, majored in management information systems at WPI. Originally from Lewisburg, W.Va., he filled his undergraduate days with a number of clubs and activities, including his fraternity, Lambda Chi Alpha. "When I graduated, I immediately tried to restart the Greek Alumni Council," Rocznick explains. "The Greek community is one of the most active on campus. I knew alumni would want to continue volunteering."

Last summer, he happily accepted an invitation from Alumni Association president Morgan Rees '61 to chair the cabinet's operations division. "I got so much out of WPI," Rocznick says. "I don't feel like I have to volunteer, but I really want to. WPI is where I want to volunteer my time."

To learn more about alumni volunteer opportunities, or to get involved, contact the Office of Alumni Relations at 508-831-5600 or alumni-office@wpi.edu.

their hands, and thus, gain a greater sense of independence. Hoffman, professor and co-founder of WPI's Assistive Technology Resource Center, Scarsella, and Toddes were awarded \$25,000 in seed funding to help further develop and commercialize the technology.

The Kalenian Award was established this year by Alba Kalenian in memory of her late husband, inventor **Aram Kalenian '33**. Its purpose is to encourage innovation and entrepreneurship among WPI students, faculty, and alumni.

School of Industrial Management



Wallace West '83 writes, "After retiring from Norton Co. in 1987, I operated Cleveland Place, a bookshop, bed & breakfast, and craft shop in Alma, New

Brunswick, Canada, until 2003, when daughter Jane became owner. Now, my wife, Anna, and I run Wallyanna Farm in rural Hammondvale, New Brunswick. We are caregivers for geese, Arabian horses, and chickens."



Maggie Tomaswick ('06 MS) joined the Product Engineering Dept. at Beswick Engineering Co., where she is responsible for development and evolution of products and improvements in manufacturing, testing, assembly, fabrication, and quality assurance.

Daniel Wallance writes with a follow-up on his IQP with **Joe Havelick** and **Antti Koski '02** on Efficient E-Waste Management in Costa Rica, done for Intel. Their findings were used by a Costa Rican NGO, in cooperation with a Netherlands NGO, to drive a countrywide project, and a pilot E-waste recycling day was held in November 2005. Daniel is currently working in New York City for a hedge fund devoted to value investing, and runs his own eCommerce jewelry Web site, fashionends.com.

2005



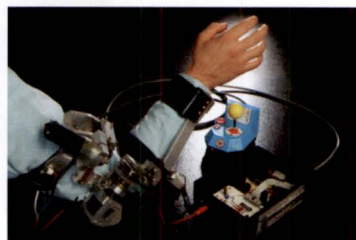
Marghrit Arous married Berj Bardizbanian in June 2005. She is a civil engineer with the Mass Highway Dept.

Marta Katarzyna Krajewska married Louis

George Asack III on June 3, 2006. They had a two-week honeymoon in Mexico and currently reside in southern Massachusetts. Marta has been working for GE since January 2005 as a design engineer.

Roya Mirhosseini is part of GE's Edison Engineering Development Program.

Steven Toddes and **Michael Scarsella**, along with mechanical engineering professor **Allen Hoffman '63**, have received WPI's first Kalenian Award for entrepreneurship. The award recognizes a motorized brace they developed, enabling those suffering from muscular dystrophy to perform simple tasks with



Survey Drawing Winners

Congratulations to **William Riccio '88**, who won an iPod in the random drawing of respondents to the Alumni Communications Survey. Second place winner was **John Cunic '68**; third place, **Anthony Cosenze '04**. Thanks to all who participated. The survey results will be reported in a future issue of *Transformations* and in *The Bridge*, WPI's alumni e-newsletter. Sign up to receive *The Bridge* and stay connected to WPI.

wpi.edu/+bridge

Obituaries

"Grandpa Ed" dies at 98



Ken Williams, Concord Monitor

Edward D. Amsden '31 (Phi Gamma Delta) died April 6, 2006. His wife, Margaret, died in 1995; he leaves three sons. He was the longtime owner of the J.W. Ladd Manufacturing Co., but Amsden is best remembered for his volunteer work in the towns of

Hill and Concord, N.H. Here are excerpts from an appreciation by Melanie Asmar, reprinted with permission from the Concord Monitor.

Ed Amsden, known to hundreds of Concord schoolchildren as "Grandpa Ed," was buried Sunday with a tiny reading lamp in his pocket. It was the kind he had shined on countless pages as he quietly listened to second-graders sound out three-syllable words in elementary school hallways, following along through the thick glasses he'd worn since he was a boy.

Born in 1908, he loved to tell stories about the "olden days." On his 95th birthday, he regaled the kids at Rumford School with tales of horse-drawn plows, once-a-week baths, and traveling circuses.

After the death of his wife, Amsden began volunteering. "This soft-spoken elderly gentleman came in and said he wanted us to find him something to do every day," said Nancy Spater, director of the Retired and Senior Volunteer program. "He was 88 years old. We never thought 10 years later, he'd be going strong."

In all, Amsden volunteered at more than 40 nonprofit organizations. He had a special place in his heart for schoolchildren, his son Hank said, especially those who struggled. In Amsden's honor, Rumford and Walker schools have established a "Grandpa Ed Reading Award" to be given to the child who makes the most reading progress each year.



Linval D. Harvey '33 of Fall River, Mass., died Feb. 15, 2006. He leaves his wife, Doris (Clarner), and a daughter. Harvey was retired from Allendale Insurance Co. as senior vice president.

Transformations recently learned of the death of **Chester B. Cotton '34** in 2003. A former stockbroker for Bear, Stearns Co. in New York City, he retired and moved to Palm Beach, Fla.

Albert B. Glenn '34 of Millbury, Mass., died May 14, 2006. A U.S. Army veteran stationed in Hawaii at the time of the Japanese attack on Pearl Harbor, he was a loyal member of the Pearl Harbor Survivors Association and was one of the oldest living survivors of the attack. Glenn was retired from the Commonwealth of Massachusetts as a conservation and natural resources officer. Predeceased by two brothers, he leaves his caregivers.

Jacob Smith '34 (Alpha Epsilon Pi) of Worcester died March 1, 2006. He leaves his wife, Jennie (Slarskey), and two children. He was a longtime plant manager for Worcester Knitting Co.



Francis L. Harrington '35 (Theta Chi) of Queensbury, N.Y., died April 8, 2006. He leaves his wife, Trudy (Brown), and three sons. He joined Cottrell Paper Co. after

graduation and retired as treasurer and general manager.

Charles S. Smith '35 (Phi Sigma Kappa, Skull) of Fort Lauderdale, Fla., died May 1, 2006. He leaves his wife, Ruth (Boettcher), and three children. Smith was the retired president of Chas. S. Smith Marine Consultants.

Alumni who wish to make contributions in memory of classmates and friends may contact the Office of Development and Alumni Relations at 508-831-5660 or acolgan@wpi.edu.



Eric W. Soderberg '35 (Phi Sigma Kappa) of Milford, Conn., died Feb. 6, 2006, leaving his wife, Jessie (Sullivan), and a daughter. He was predeceased by a son and a daughter. Soderberg was the owner of Newburg Molded Products.



Edward W. Armstrong '36 (Theta Chi) of Fitchburg, Mass., died May 2, 2006. His wife, Muriel (McBride) died in 2005. Two children survive them. Armstrong

served as a mathematics instructor at WPI in the 1940s. He retired from Simonds Saw & Steel Co. in 1981 as manager of manufacturing after 30 years of service.

Robert E. Maynard Sr. '36 (SIM '53) of Grafton, Mass., died March 24, 2006. He was the husband of Kathleen (Horgan), the father of Robert E. Maynard Jr. '63 and another son, and the grandfather of Robert E. Maynard III '87. Another son predeceased him. Maynard was retired from the Vacuum Division of Varian as purchasing manager.

Trustee Emeritus **Caleb D. "Bud"**

Hammond '37 (Phi Gamma Delta, Skull) of Maplewood, N.J., died May 29, 2006. He was the retired president of C. S. Hammond & Co., the mapmaking company founded by his grandfather in 1900, which he helped bring into the digital age. Hammond received the Robert H. Goddard Alumni Award for Outstanding Professional Achievement in 1992. He served as a trustee from 1978 to 1988. He is survived by his wife, Patricia, a son, and two daughters.

Werner P. Held '38 of Lynnwood, Wash., died Nov. 17, 2004. He is survived by his wife, Doris (Sorensen), and two children; a daughter predeceased him. A longtime high school teacher, he retired from Hellgate High School in Missoula, Mont., in 1979.



Joseph W. Staniunas '38 (Sigma Alpha Epsilon) of Lloyd Harbor, N.Y., died March 25, 2006. Predeceased by his wife, Naomi, he leaves two children. He was retired

from Pratt & Whitney, where he worked on Wasp aircraft and jet engines.

Transformations recently learned of the death of **John A. Backes '39** (formerly Baskis) on Feb. 6, 2004. A retired field officer for Textron Inc., he and his wife, Bernice (Kamendulis), lived in Mesa, Ariz.

Charles W. Cummings '39 (Theta Chi) of Cathedral City, Calif., died May 1, 2004. He leaves his wife, Shirley, and two children. He was retired from Pacific Telephone & Telegraph as a transmission manager.



Apostle T. Dervos '39 of Surf City, N.J., died March 14, 2004. Predeceased by his wife, Kathryn, he leaves three children. Dervos was retired from Bendix Corp. as a manufacturing manager.

H. Roger Erickson '40 of Holden, Mass., died Feb. 21, 2005. A retired human resources specialist, he served as personnel manager for U.S. Envelope Co. and later Worcester County Institution for Savings. He leaves his wife, Anna, and a son.

Transformations recently learned of the death of **Warren C. Hotchkiss '40** (Phi Gamma Delta, Skull) of Conyers, Ga., in 1994. He was sales engineer and manager for several Connecticut companies. He and his wife, Gretel, had two sons.

Robert E. Dean '41 of Framingham, Mass., died Aug. 14, 2005, leaving his wife, Mildred (Weisman), and three children. He was the president of Dean Machinery.



James E. McGinnis '41 (Phi Kappa Theta) of Sun City, Fla., died Jan. 19, 2006. He is survived by his wife, Ruth (Farady), and six children. He worked for

New England Telephone in Boston, and AT&T in New York.



Anthony J. Yakutis '43 of Lexington, Mass., died March 2, 2006. He was retired from MIT's Lincoln Laboratory. Survivors include his wife, Barbara (Sturtevant),

and four children.



John W. Hagstrom '44 (Phi Sigma Kappa) of Centerville, Mass., died March 10, 2006. Predeceased by his first wife, Elaine, in 1991, he married the former Jane

Kimball in 1992, giving him a second family. In addition to his wife, he is survived by two daughters. Hagstrom was retired from General Motors Co. as a plant supervisor.

Allan R. Mandelin '44 of San Diego, Calif., died Feb. 16, 2006. He earned a master's degree in mathematics at Southern Methodist University and worked with early data processing computers at Chance Vought Aircraft in the 1950s. He later joined IBM and worked on NASA projects, developing programs for Shuttle and Space Station missions. His wife, Dorothy, survives him.



Edwin G. Baldwin '45 (Alpha Tau Omega) of Burlington, N.C., died Feb. 3, 2006. He leaves his wife, Betsy (Shumway), and two children. He earned a

master's degree in electrical engineering at WPI in 1948 and joined Bell Telephone Laboratories. He retired from AT&T in 1984 as director of patent and technologies licensing.

Edmund F. Jurga '46 (Phi Kappa Theta) of Syosset, N.Y., died March 25, 2006. His wife, Mary (Ryan) died in 1994. A daughter survives him. Jurga was a retired industrial engineer for General Electric Co.

John C. Waddell '46 of Traverse City, Mich., died June 25, 2005. He was the retired president of J.C. Waddell Sales Corp. Survivors include his wife, Jean, and three children.

Thomas M. Zajac '46 (Alpha Tau Omega) of West Hartford, Conn., died May 12, 2006. He leaves his wife, Eleanor (Emerson), and two children. Zajac was retired from Hamilton Standard Division of United Aircraft (now United Technologies) as chief of materials engineering and structural integrity. He continued as a consultant in the aerospace industry.

Daniel G. Lewis Jr. '47 (Sigma Phi Epsilon, Skull) of Bethesda, Md., died Jan. 28, 2006. He leaves his wife, Barbara, and nine children. He was retired as director of technical services for American Public Power Associates.

V. Lawrence Petersen '47 (Alpha Tau Omega) died June 11, 2004, at his home in Morro Bay, Calif. His wife, Barbara, and four children survive him. Petersen worked for Goodyear Tire & Rubber Co. for 38 years, retiring as vice president of material management.

Richard F. Smith '49 of Baldwinville, Mass., died June 15, 2004. Survivors include his wife, Roberta, and two children. A former consulting engineer, he also worked for New England Nuclear.

Louis G. DelSignore '51 (Phi Kappa Theta) of Dover, N.H., died April 19, 2006, leaving his wife, Jeanne, and eight children. An engineer for the U.S. Army, he worked at Pease Air Force Base and Westover Air Force Base.



Alan S. Foss '52 (Sigma Alpha Epsilon), professor emeritus of chemical engineering at the University of California, Berkeley, died Feb. 22, 2006. He received his master's degree and doctorate from the University of Delaware. He also served as a senior staff scientist at Lawrence Berkeley National Laboratory. Survivors include his wife, Anna Mathe, and four children.



Robert F. Niro '54 of (Phi Kappa Theta) Medway, Mass., died April 12, 2006. He is survived by his wife, Jacqueline (Abretti), and two children. He was retired from Digital Equipment Corp. with 25 years of service.

David P. Nygard '54 (Sigma Alpha Epsilon) died Feb. 23, 2006, at his home in Bourne, Mass. A longtime computer specialist for Pratt & Whitney Aircraft, Morgan Construction Co., and Price Waterhouse, he continued as a self-employed consultant after retirement. His wife, Nancy (Ohrn), and three children survive him.

Edward L. Gallini '57 (Phi Kappa Theta) of Marion, Mass., died April 30, 2006. He leaves his wife, Mary (Denechaud), and three children. He earned an MBA from Western New England College and was retired from Johnson & Johnson as a design engineer.

Arthur R. Larocque '57 (Phi Gamma Delta) of Houston died March 24, 2006. He was retired from a career in the oil industry that included Shell Oil Co., Gulf Oil Co., NuCoastal, and Coastal Refining & Marketing, where he served as vice president. He is survived by his wife, Wallis, and three children.

Joseph F. Coveney '59 (MSChE) (Theta Chi) of Sarasota, Fla., died May 6, 2006. He leaves his wife, Ginny (Kimball), and five children. He was retired from Praxair.

Lawrence W. Cochrane Jr. '60 of Port Charlotte, Fla., died May 7, 2006. A retired school teacher for Pentucket Regional Junior High, he held a master's degree in education from Salem State College. He also studied at the New England Conservatory of Music and the Eastman School of Music. Survivors include his wife, Marilyn, and two children.



John D. Driscoll '60 (Phi Sigma Kappa) of Newark, Del., died March 27, 2006. He leaves his wife, Lorraine, and three children.

Driscoll was a nuclear engineer who worked for PSE&G and United Engineers.

Richard H. York '62 (Tau Kappa Epsilon) of Moraga, Calif., died Dec. 15, 2005. He leaves his wife, Linda, and two children. York earned a master's degree in geotechnical engineering at the University of California and worked for Harlan Tait Associates for 28 years.

James V. Silvestri II '63 (Sigma Alpha Epsilon) of Easton, Conn., died March 11, 2006, 16 years after surviving a heart transplant. He was a longtime high school teacher and baseball coach. Survivors include his wife, Margaret (Pitt), and three children.

Scott Sargent '65 (SIM) of Kennebunk, Maine, died Jan. 13, 2006, at age 73. He leaves his wife, Helen, and three children. He was retired from Morgan Construction Co. as a director and vice president of finance.

Byron L. "Barney" Dennison '67 (PhD) of Westford, Mass., and Blacksburg, Va., died March 13, 2006. A former chair of the Electrical Engineering Department at the University of Massachusetts Lowell, he also taught at Virginia Tech, Southeastern Massachusetts University (now University of Massachusetts Dartmouth), and Merrimack College. He is survived by two children, his former wife, Betty Davis, and his close friend Barbara Thurston.

Paul O. Granquist '67 (SIM) died April 12, 2006, at his home in Holden, Mass. He leaves his wife, Anna (Losapio) and two children. Granquist was the retired CEO and owner of the Thomas Smith Co. He received the 1991 Albert J. Schwieger Award for Professional Achievement from WPI's School of Industrial Management.

Former police chief, Faculty Wives Club president mourned

Alfred T. Whitney, 83, longtime head of Campus Police, died May 12, 2006. Whitney began his career with the Massachusetts State Police, where he became a narcotics investigations expert. After 23 years of service, he retired with the rank of lieutenant, and joined the WPI police force in 1969. He retired in January 1990. ♦ "Chief Whitney was instrumental in professionalizing the WPI Police Department," says Director of Public Safety and Chief of Police Cheryl Martunas. "He was innovative and progressive and brought the WPI Police to the forefront as one of the finest campus police agencies in central Massachusetts." Under his direction, the former security guard/watchperson regime was transformed into an academy-trained, professionally equipped, uniformed police force. He also oversaw the development of a standard operating procedure manual and the installation of an intrusion alarm system. ♦ A longtime resident of Maynard, Mass., Whitney later moved to Osterville. He is survived by his wife, Beverly, three sons, and seven grandchildren.

Gwen (Lundin) Hall, 76, wife of Robert J. Hall, former director of continuing education and professor emeritus of management and mechanical engineering, died June 8, 2006. She was well known to the WPI community as president of the Faculty Wives Club. She was also an active volunteer in her hometown, Paxton, Mass. Besides her husband of 56 years, she is survived by four children and nine grandchildren.

Rene B. LaPierre '67 (Phi Sigma Kappa) of Guilford, Conn., died April 30, 2006. He leaves his wife, Patricia, and two children. He was retired from Mobil Research Corp., where he spent most of his career as a research and development manager and senior technologist. He later served as vice president of research and engineering at Precision Combustion. LaPierre held numerous patents and published widely in the field of petrochemical manufacture.

James R. Crabb '68 (Lambda Chi Alpha) of Stratford, Conn., died April 19, 2006. He was a town yard supervisor in the Office of Operations for the town of Stamford. He leaves his wife, Marie (Thomes), and a son.

Michael D. McCormick '70 (Phi Gamma Delta) of Lincoln, Mass., died March 16, 2006. He leaves his wife, Colleen, and two daughters. He was a sales and marketing executive in the semiconductor industry.

Robert P. Apkarian '75 of Chamblee, Ga., was killed in an accident, Feb. 28, 2006. An internationally recognized microscopist, he founded and directed the Integrated Microscopy and Microanalytical Facility at Emory University, where he pioneered new technologies in the field. For his work on behalf of scientists in the Republic of Armenia, Apkarian was appointed an honorary member of the National Academy of Scientists. He is survived by his wife, Juliette.

Wayne E. Stratton '75 (Sigma Pi) of Gaithersburg, Md., died Feb. 10, 2006. He was an electrical engineer with the U.S. Consumer Products Safety Commission Laboratory.

Brian P. Plummer '76 of Rio Rancho, N.M., died unexpectedly March 15, 2005. He leaves his wife, Evelyn, and four children. He worked in quality control at Intel Corp. for 26 years.

Thomas A. Brillhart '85 (SIM) of Whitinsville, Mass., died April 9, 2006. He leaves his wife, Jean, and two children. He worked at Kidde-Fenwal Inc. for 25 years. *Transformations* recently learned of the death of **Erden Jin '90** (MSEE) of Middleton, Mass., in 2001.

Benjamin Alesbrook '03 of Worcester, Mass., died March 17, 2006, following a car accident in Hingham. Survivors include his wife, Heather (Metterville), his parents, grandparents, and a brother. Alesbrook was a mechanical design engineer at Integrated Process Technologies.

Roger J. Schafer III '05 (Alpha Phi Omega) drowned July 29, 2006, while swimming with friends in the Ammonoosuc River in Crawford's Purchase, N.H. He recently completed the requirements for a BS degree in computer science and was a software engineer for FM Global in Providence, R.I. He is survived by his parents, two sisters, and two brothers.

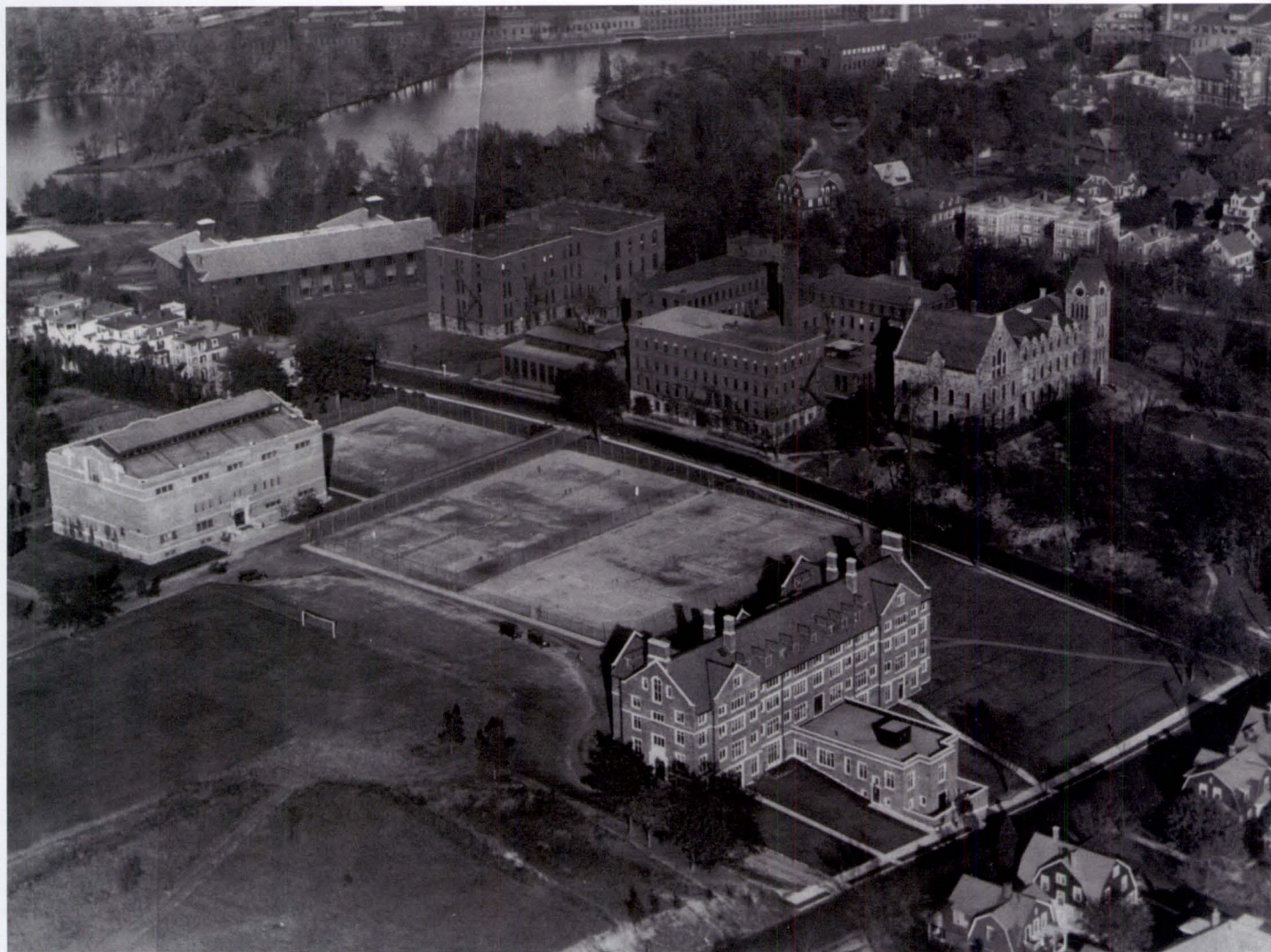
Michael A. Plumer '06 died March 18, 2006, from injuries sustained in a motor vehicle accident in Kensington, N.H., prior to completing his senior year at WPI. He leaves his parents and a sister. A chemical engineering major, he pursued a passionate interest in environmental protection through his WPI projects. An article based on his MQP research on coal-fired power plants will be published later this year.

Correction: The obituary of **John R. Taylor '50** in the Spring 2006 issue omitted one of his children. Taylor leaves two sons, Greg and Paul, and two daughters, Nancy and Lisa. Our apologies to them, and to his widow, Marion.



Time Capsule

An Early View



A select few may remember WPI as it appears here, circa 1933, in the oldest aerial photograph that exists of the campus. In the background are, from left, Boynton Hall and Washburn shops (representing *lehr und kunst*, theory and practice), Stratton Hall, the Foundry (now the Project Center), Salisbury Labs, and Atwater Kent Labs. Beyond them, in the distance, are Salisbury Pond and Washburn & Moen Co., established by WPI founder Ichabod Washburn. Notable is the large amount of open space on the east side of campus. Within a decade, the grass and tennis courts along West Street would be replaced by Alden Memorial, Beech Tree Circle, and Higgins Labs, and Earle Bridge would link the east and west campuses. Look closely for the cars near the tennis courts, a foreshadowing of the parking lot that would grow to circle the Quadrangle. The cars sit on the approximate location of WPI's newest building, Bartlett Center, which opened in May.

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The following programs are available online:

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Information Session

Thursday, September 28, 6 p.m. • WPI Campus Center

Register to attend at www.grad.wpi.edu or call 508-831-5301



Members of the Class of 1917 pose in front of Boynton Hall. Just several months after these men graduated, the WPI alumni magazine reported, "As *The Journal* goes to press, an even 50 of the men once members of 1917 are already listed in war service, with the prospect that several others will soon follow."

Photo courtesy WPI Archives, Gordon Library

