

## Les and Diane Reynolds '50

PROFILES IN GIVING

Home: Old Lyme, Conn. Planned Gift: Charitable Remainder Unitrust

#### - On Jamily Traditions -

0

When Diane was 10, her mother became paralyzed from multiple sclerosis. During her mother's 10-year illness, the community rallied around the family as a thank you for her many years of community service. This experience helped shape the life that Diane and Les made with their daughters, Pam, left, and Kay. Together, Diane and Les have continued the tradition of both their families of helping others—sharing their home with 12 foster children, helping start a shelter for battered women, founding a jail chaplaincy and an affordable housing corporation for young families, and leading a family counseling service.

#### — On Planned Giving at WPI —

"Years ago we changed our wills to leave 20 percent of our estates to several nonprofits—including WPI," Les Reynolds says. "In 1997, we noted that we had stocks 'locked up' in our portfolio, having high capital gains and small dividends, whose value equaled the percentage we planned to give through our estates. We decided to make our gifts right then through a charitable remainder unitrust. We receive seven percent of the trust's value each year of our lives, and we have benefited from a charitable deduction up front. We unlocked highly appreciated assets, and gave ourselves a significant raise. Best of all, during our lifetimes, we assured the continuation of our family tradition of helping others."

If you would like to join Diane and Les Reynolds and 210 others who are enjoying the many benefits of planned giving at WPI, please contact Liz Siladi, Director of Planned Giving, at 1-888-WPI GIFT.

#### DURNAL $\mathbf{P}$ CONTENTS

#### Putting the Pieces Together By Edward A. Parrish

Accompanying essays by Allison Chisolm, Elizabeth Walker and Michael W. Dorsey Photographs by Patrick O'Connor

Page 2

From the Information Revolution, to the global economy, to upheaval in the workplace, the world is changing in dramatic ways. At the same time, technological higher education is undergoing an unprecedented transformation. The shifting landscape is raising the visibility of WPI's pioneering curriculum-a program well suited to the world of today and tomorrow-and creating an opportunity for the University to once again lead the way in defining a better way of preparing technological professionals.

To capitalize on that opportunity, WPI last year began a communitywide strategic planning process that will help it build a new vision for the future and a plan for turning that vision into reality. In the first phase of that process, a cross section of the community made a critical appraisal of today's WPI and suggested ways to build a better University. From those proposals, the Strategic Planning Steering Committee formulated eight draft goals. To understand what WPI might be like in the future, we look here at eight current programs that exemplify those goals:



Create a Campus in Harmony With Our Programs Building WPI A Living Room Provide Global Opportunites for Potentially All Students Pick Up a Passport to the Future Develop Creative Pathways to Graduate Degrees Integrate Education and Research Continue To Innovate in Undergraduate Programs **Recognize and Adapt to Continuing Change** Make Creative Use of Information Technology **Improve Community Relations and Diversity** 

Firesafety Center Blazes the Trail Walking FIDOE on Mars Building Bridges to Understanding Thriving on Change in Waltham Hispanic Culture in the Movie Lab REACHing the Neighborhood

DEPARTMENTS -

The Year in Review: 1996-97, By Michael W. Dorsey. Page 12 University Relations Highlights, By John L. Heyl. Page 16 Financial Summary and Highlights, By Stephen 7. Hebert '66. Inside Back Cover

Front Cover: Photos by Patrick O'Connor, design by Michael J. Sherman. Story on page 2. Back Cover: Winter came early to Boynton Hill this year as frigid fall winds chilled the air and a November storm left behind a glistening white blanket on the hillsides and rooftops. Photo by Brian Crowley.

Staff of the WPI Journal: Editor, Michael W. Dorsey • Art Director/Designer, Michael J. Sherman • Contributing Writers, Bonnie Gelbwasser, Joan Killough-Miller and Ruth Trask • Alumni Publications Committee: Robert C. Labonté '54, chairman, Kimberly A. (Lemoi) Bowers '90, James S. Demetry '58, William J. Firla Jr. '60, Joel P. Greene '69, William R. Grogan '46, Roger N. Perry Jr. '45, Harlan B. Williams '50 • The WPI Journal (ISSN 0148-6128) is published quarterly for the WPI Alumni Association by the Office of University Relations. Periodicals postage paid at Worcester, Mass., and additional mailing offices. Printed by The Lane Press, Burlington, Vt. Printed in the U.S.A.

Diverse views presented in this magazine do not necessarily reflect the opinions of the editors or official WPI policies. We welcome letters to the editor. Address correspondence to the Editor, WPI Journal, WPI, 100 Institute Road, Worcester, MA 01609-2280 • Phone: (508) 831-5609, Fax: (508) 831-6004 • Electronic Mail, wpi-journal@wpi.edu • World Wide Web: www.wpi.edu/+Journal/ • Postmaster: If undeliverable, please send Form 3579 to the address above. Do not return publication. Entire contents © 1997, Worcester Polytechnic Institute.

# Putting the Pier

Over the past year, the WPI community has been developing a new strategic plan

hat will WPI be like in the early 21st century? This is a question that's been on the minds of many members of the University com-

munity over the past few years. It's not a matter of idle curiosity. There is a sense that the world is changing in dramatic ways, that the changes are creating extraordinary opportunities for WPI, and that the time to act on those opportunities has arrived. In short, as a community we have come to the consensus that the time may be ripe for another major stride in our journey.

#### What changes have led us to this conclusion?

- The explosion of information technology and the ever accelerating pace of technological change have transformed the nature of work. Today, all professionals, no matter what kinds of jobs they do, must be familiar with technology and be prepared to use it effectively. WPI's flexible approach to technological education offers an ideal way for young men and women to blend studies in technology with preparation in a broad range of technical and nontechnical fields.
- The Information Revolution has catalyzed the rise of a true global economy and made a global perspective a much sought after quality in today's professionals.
   WPI stands apart from other technological universities in offering its students the opportunity to gain global experience by doing meaningful projects for sponsoring organizations at sites all over the world.
- The end of the Cold War and the concurrent downsizing and reorganization of major corporations has put an end to the "one job for life" paradigm that characterized the business world for generations. To prepare for this new world of work, students must learn how to learn and how to adapt to change qualities that are fostered by WPI's student-driven, project-oriented style of education.

 The skills, needs and motivations of college students have changed, arguing strongly for the replacement of traditional approaches to education with new forms of active, student-directed learning. With its nearly three decades of experience with the WPI Plan, the University has a head start on adapting its educational delivery methods to the needs of today's students.

The world of technological higher education is changing as well, and in an equally dramatic fashion:

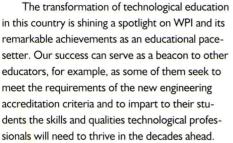
- A number of national studies and task forces, echoing calls by industry, government and academic leaders, have recommended new approaches to technological higher education that incorporate many of the features of WPI's curriculum.
- The Accreditation Board for Engineering and Technology has approved a sweeping new set of outcomes-oriented accreditation criteria by which all engineering programs in the United States will soon be measured. To a substantial degree, the criteria are consonant with the philosophy of WPI's curriculum. For this reason, the University was one of two schools nationwide chosen by ABET to be accredited under the new criteria in a 1996 pilot program.
- WPI's approach to technological education, having been honed and tested over many years, is being viewed as a model by the educators, industry leaders and government agencies who are working to revitalize engineering education in the United States.

#### By Edward A. Parrish

Accompanying essays by Allison Chisolm, Elizabeth Walker and Michael W. Dorsey

Photographs by Patrick O'Connor

## CES TOGETHEL and assembling a common vision of the University's future.



But WPI can do even more. We can blaze a new trail and once again define the leading edge of technological higher education. Like planets moving into a rare and transitory alignment, the changes in the world around us and the evolution of technological higher education are converging to create an extraordinary opportunity for the University to develop a new model for the preparation of technological professionals, one attuned to the needs of the 21st century.

How can we best capitalize on these opportunities? What kinds of changes must we make? What should we no longer do? In what new directions should we move? What must we do to prepare for the voyage that lies ahead? To answer those questions, WPI began a communitywide process of strategic planning during the 1996-97 academic year.

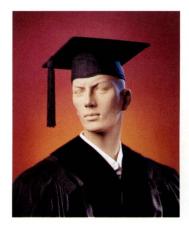
The work began in the summer of 1996 with a conference of the University's senior administrators, the secretary of the faculty and the chair of the faculty Committee on Governance, at which a process for planning was established. The process moved forward during a fall meeting of the Board of Trustees, which began the task of assessing the state of WPI and considering a vision for its future. About 60 members of the University community met later that fall to discuss ways to bolster the Interactive Qualifying Project and the Global Perspective Program, the two most distinctive elements of WPI's educational program.

In the fall of 1996, I appointed the Strategic Planning Steering Committee (SPSC), made up of members of the faculty, administration and student body, to guide the process of developing a formal strategic plan. The committee created 13 task forces composed of faculty members, staff members, students and alumni to conduct detailed studies of the following specific areas of WPI's operations: admissions, educational technology, financial resources and incentives, global opportunities, graduate programs, information infrastructure, learning environment and campus culture, new programs, outcomes assessment and feedback, pre-college outreach, project-based education and cooperative learning, scholarship, and support services.

Having collated and considered the detailed reports written by the task forces, and having gathered ideas and opinions from members of the greater WPI community at a number of open meetings, the SPSC released a report and made a presentation of the following draft set of recommended goals (the presentation was endorsed by the faculty and shared with the trustees in the spring of 1997):

- create a campus in harmony with our programs
- provide global opportunities for potentially all students
- · integrate education and research
- develop creative pathways to graduate degrees
- continue to innovate in undergraduate programs
- recognize and adapt to continuing change
- make creative use of information technology
- improve community relationships and diversity The work of the SPSC laid a solid foundation

for the recommendations that will ultimately emerge from the strategic planning effort. This fall, the committee handed the baton to the Planning and Implementation Committee (PIC), a new body, again made up of faculty members, students and administrators. Before the end of the 1997-98 fiscal year, this new committee will take the strategic planning process to completion and craft a new vision for WPI's future. That vision will become the foundation for a major capital campaign—to be formally launched next fall—that will raise the funds WPI must invest in its people,



programs, plant and community if that vision is to become a reality.

The committee will benefit from the work of two other new task forces that are assessing WPI's needs in the areas of information infrastructure and administrative services. In addition, WPI's Budget Development Advisory Committee, along with the faculty Committee on Administrative and Financial Policy, is working with a number of WPI departments to develop a new, more forward-looking approach to budgeting. All of this work should provide the PIC with a wealth of information and ideas to help WPI develop new ways of doing business in the future.

## Eight Pieces of the Puzzle

The first phase of the strategic planning effort yielded eight draft goals—a rough cut at strategies for the decades ahead. The spirit of those goals can be found in eight current programs that provide a glimpse at the WPI of the 21st century. On the pages that follow, you'll read about those programs and the people who are building WPI's future today.

The members of the PIC have been meeting weekly to build on the work of the SPSC and to draft not only a plan for WPI's future but a mechanism for putting it into action. Too often, strategic plans—no matter how bold or how carefully crafted—sit on shelves and are forgotten in the crush of everyday responsibilities. Without an accompanying mechanism for implementing them and without the continual revisiting and revising of their elements, strategic plans have no value.

While the final results of WPI's strategic planning effort may diverge from the spirit of the SPSC's goals, they represent a working consensus on possible ways to build the WPI of the future. Read on to see what that future may look like.

#### Create a Campus in Harmony With Our Programs

Janet Begin Richardson at the site of the proposed campus center. She says the building will promote the learning and maturing that goes on outside the classroom. n the late 1800s, silver-tray tea lounges, smoky gramophone rooms and whitelinen dining distinguished the elegant union buildings where British university students gathered to debate, read, and play billiards. These private wood-paneled unions provided the blueprint for the more egalitarian campus centers that today serve as "living rooms" on U.S. college campuses.

Since 1871, WPI has grown from two buildings and an initial graduating class of 16 male seniors to 31 major buildings and a student body of 3,500 men and women. But the campus still lacks a living room.

That's about to change. In October 1997, the WPI Board of Trustees approved a \$17 million WPI campus center project. The 68,000-squarefoot campus center building, to be sited behind Alumni Gymnasium, is being designed by Boston architects Shepley Bulfinch Richardson and Abbott. Fund raising for the project will be part of a major capital campaign to be publicly launched in the latter half of 1998, and the trustees have called for ground to be broken by October 1999.

The idea of a WPI campus center has been germinating for many years. The dream moved closer to reality four years ago when then-WPI president Jon Strauss appointed a broad-based planning committee, chaired by Janet Begin Richardson, assistant vice president for student affairs and dean of student life, to determine what a campus center would add to WPI and to define the right mix of facilities, amenities and services needed to create such a center.

The committee solicited the opinions of more than 40 campus focus groups, pored through information from earlier center initiatives, surveyed the literature on college centers worldwide, and visited campus centers throughout the region. Richardson says they began by asking, "What's missing at WPI?" The most common response, she

## <u>Building WPI a Living Room</u>-



reports, was "a place in the center of the campus for the community to gather."

The focus groups also told the committee that WPI lacked adequate dining facilities, space for group study, small conference and meeting rooms, multipurpose rooms, and offices for student organizations. The proposed WPI center will have all that, along with a bookstore, a postal facility, expanded food and dining services, a game room, lounges and a campus information desk.

Richardson says the new center should make WPI more attractive to prospective students. Campus centers, she notes, can provide an immediate "snapshot" of campus life to potential students and influence applicants' decisions to enroll when academic and scholarship considerations appear equal among the colleges they're considering.

The center will also fill a void in the social and academic life of the campus, she says, providing WPI students, faculty and staff a place to gather and explore common social, intellectual and cultural interests in an informal setting. And, it will be a common ground where WPI's diversity of populations (students, faculty, staff, alumni and visitors) and its diversity of functions (offering academic programs, housing and feeding students, offering opportunities for social and recreational involvement) will come together.

"But even more than a gathering place, the center will be an important adjunct to the University's academic programs," Richardson says. "It will serve as a social 'laboratory' for promoting and nurturing the all-important learning and maturing that happens outside the classroom and lab—experiences that can be critical to the personal and social growth that is so essential to the full realization of a WPI education."

Even without a gramophone, the new WPI Campus Center promises to be a "living room" worth the wait.

-ELIZABETH WALKER

ake off from WPI" was the message printed on balsa airplanes distributed at WPI's Global Opportunities Fair in September 1997. To get the students launched, next fall the University will help every eligible freshman get a U.S. passport. All students will have to do is fill out the application—and smile. WPI will pick up the cost of the application and photos.

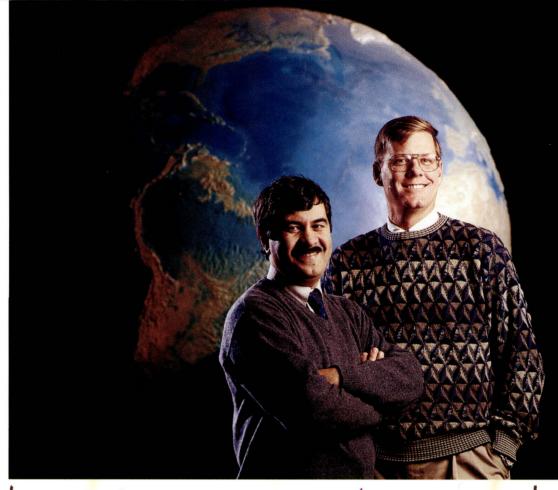
WPI contributes the largest share of the U.S. engineers who have gained international experience during their years of undergraduate education. Some 30 percent of all undergraduates complete a project at an off-campus residential site, and about a third of all faculty have served as overseas project advisors.

Those numbers may soon be rising. After a global projects fair this fall, about half of all undergraduates indicated an interest in studying abroad.

"We want to attract students who understand that having a global perspective and experiencing cultural diversity is important," says Bob Voss, executive director of admissions and financial aid. "WPI believes that; we want students who believe it, too." The free passport program merely reinforces the University's commitment to global education, he says. WPI is also purchasing passports for all eligible students accepted to global project and exchange programs this year.

Having a passport can "open the door to the greatest experience in a student's life," says Hossein Hakim, associate professor of electrical and computer engineering and director of the Global Studies Program. "What we offer is not the typical international experience," he says. "The nearly 200 WPI students who will travel overseas this year will act as consultants to organizations that have asked us to help them solve a problem. This is experiential learning applied to international education."

Once on the ground in one of the 17 countries where WPI runs project programs, students work in teams on projects for nonprofit agencies, government organizations



## - Pick Up a Passport to the Future -

or corporations. They share apartments or live in student housing, cooking local food to keep expenses down. They spend seven weeks defining and responding to the issues presented to them, finishing up with a presentation to their sponsors and a detailed project report. Most projects satisfy the requirements for the Interactive Qualifying Project (IQP), which asks students to examine the impact of technology on society.

Recent projects include a market research study for an ecotourist site in a Costa Rican rain forest, a study of the feasibility of using solar energy in a Danish high school, and the development of a graphical database of outdoor art in Venice. The effects of this international experience is long-lasting. Students return with a changed outlook on their lives and, often, their potential careers.

"Although every day is somewhat of a struggle, and I have none of the comforts of home," wrote Luke Poppish '98 from Coimbatore, India, in the spring of 1997, "the fact is, I wouldn't trade this journey for the world. I will look at things in a different light when I return to Worcester."

"Students who go overseas are seen as risk takers, more adaptive, able to deal with ambiguities, and as experienced team players," says Hakim. "They prove they can write lengthy reports and make oral presentations to people they've never met." Their international experiences set them apart from other job candidates, he says, since they're more prepared to live and work in a global society.

As more and more students and faculty return to Worcester energized from their exposure to new ways of thinking and living, WPI will retain its undisputed leadership position in global technological education. More important, the campus atmosphere will become one of greater understanding of the variety of cultures and perspectives in the world beyond Worcester.

-ALLISON CHISOLM

#### Provide Global Opportunities for Potentially All Students

Hossein Hakim, left, and Bob Voss hope that giving incoming students free passports will make clear WPI's commitment to leading the way in global technological education.



## - Firesafety Center Blazes the Trail --

#### Develop Creative Pathways to Graduate Degrees

David Lucht says the tools of modern distance learning are helping his department meet a strong demand for graduate education in fire protection engineering. dvanced distance education delivery systems have blurred geographical boundaries among college campuses and increased competition in the traditional markets they serve. Today's high-tech systems for bringing learning to students rather than students to campus have also removed real and perceived barriers to attracting adult learners who live or work at a distance from a college campus.

This technology-driven liberation from the narrow lines on the map and the mile markers along the highway means that schools can expand their geographic base, extend their reach into untapped markets, and develop innovative ways for students to earn graduate degrees, certificates and other professional credentials.

Among the trailblazers in this bold new world is WPI's Center for Firesafety Studies, the first academic program in fire protection engineering to offer for-credit fire protection engineering courses to practicing engineers via distance learning technology.

The increasing sophistication of communications and information technology-including e-mail, twoway interactive video, videotapes, the Internet and the World Wide Web —has enabled the center to deliver courses to students in nearly 50 communities in the United States and Canada through WPI's Advanced Distance Learning Network (ADLN). David Lucht, director of the center, tells of a student who made a career move to England midway through his academic program in fire protection engineering. Through ADLN, he was able to continue his studies.

The market is strong for continuing and graduate education programs. In fact, more than 40 percent of the U.S. adult population has participated in adult education activities over the past few years. That comes as no surprise to Lucht, who has seen enrollment in the fire protection program more than triple over the past 15 years. The job market is strong for fire protection engineers, he says. The center's graduates are sought by engineering consulting firms, public utilities, hospitals, hotels, government agencies, insurance companies and many other industries.

Fire protection engineering is a multidisciplinary field that attracts working professionals with academic backgrounds in a host of disciplines, including chemical, civil, electrical, industrial and mechanical engineering. "We offer students several options, including a graduate certificate or a master's degree program. The latter usually takes five or six years to finish on a part-time basis," Lucht says. "Through distance learning technology, we are able to take these programs directly to the students."

Lucht says distance learning students receive the same lectures and homework assignments as do students who attend classes on campus. Courses delivered to on- and off-campus students originate in WPI's state-of-the-art television classrooms. They are either offered through two-way interactive video or whisked to students on videotape via express mail, depending on the facilities available to the student. Distance learners communicate with professors via telephone, fax and e-mail.

Lucht says the distance learning program is of special value to practicing fire protection engineers who want to keep current with the field. "The technology of fire protection is changing so quickly that practicing engineers need to keep pace," he says. "There's no better place to do that than WPI."

Lucht says the growth in the popularity of his department's programs is due as much to word-ofmouth as it is to the center's formal marketing efforts. "Our students talk to their colleagues about our programs," he says. "In addition, more and more people are finding us on the Web. There's a strong market out there; we're taking it one step at a time."

-ELIZABETH WALKER

#### Integrate Education and Research

From left, Mars robot team members Keisuke Watanabe, John Sullivan, Ed Gaboriault, Paul Bunuan (aloft), Thomas Parent and Eben Cobb conduct a bit of field work. hen the first human steps onto Martian soil, there's likely to be a robotic compan-

ion tagging along, thanks to the collaborative design work of engineers from WPI and Hamilton Standard in Windsor Locks, Conn. Dubbed FIDOE (Fully Independent Delivery of Expendables), the autonomous, self-propelled robot will follow an astronaut on daily explorations, carrying oxygen and equipment for gathering soil and rock samples.

It's not the stuff of science fiction anymore. If NASA's current scenarios prevail, a two-year manned mission to Mars will take place in 2009. Two years earlier, an unmanned spaceship will drop off equipment to establish a power plant and habitat for the astronauts. The astronauts will be expected to put in six- to eight-hour days on the surface, so they will need to take multiple life-support packs with them on their excursions. third of Earth's gravity, people won't be able to carry hundreds of pounds of equipment, as astronauts did on the Moon," says team advisor John Sullivan Jr., associate professor of mechanical engineering. "They'll need a robot that can act like a pack mule, following close by and responding to voice commands."

Together with Eben Cobb, visiting assistant professor of mechanical engineering, Sullivan supervises a research team that includes senior mechanical engineering majors Ed Gaboriault, Thomas Parent and Keisuke Watanabe, who are designing the power train and transmission for their Major Qualifying Project, and manufacturing engineering graduate student Paul Bunuan, who is designing the communication and remote sensing systems. The team expects to have a prototype ready for Hamilton Standard early in 1998.

"I view research as education," Sullivan says. "You're usually stepping out into areas you don't know." That's especially true for the Mars

Walking FIDOE on Mars

"On Mars, which has about one-



robot project, he notes, which has required the team to integrate knowledge from several disciplines —many of which they had had little or no exposure to previously.

The prototype robot, which will measure just 3 feet wide by 3 feet long, must perform a multitude of functions. It must be rugged enough to traverse the rocky Martian landscape carrying heavy equipmentand even an injured person. It must be smart enough to track an astronaut with a radio triangulation system and detect and avoid obstacles. It must monitor the condition of the astronaut and record the feeds from video cameras and microphones built into the astronauts' helmets. And, it must carry an oxygen storage system that can be easily connected several times a day to the space suit that will be designed by Hamilton Standard.

Hamilton Standard contacted WPI about collaborating on the Mars robot project in the spring of 1997 after WPI's strong performance in the annual FIRST robot competition. FIRST (www.usfirst.org) is a national creative engineering contest featuring high school, industry and university partnerships. Each team has seven weeks to brainstorm, design, construct and test their robot. Sullivan advised the WPI and Massachusetts Academy of Mathematics and Science high school team. The team, with its robot, "Extensor," won the Proctor & Gamble Creativity Award in the Mid-Atlantic regional competition and the Number One Seed Award in the national competition at EPCOT Center in Orlando, Fla.

The integration of research and education represented by the Mars robot project continues when Sullivan and Cobb enter the classroom. Sullivan uses numerous components of the project in his engineering experimentation course. Similarly, multiple robotic components are designed and modeled in Cobb's course Introduction to Computer-Aided Design "There really are no clear boundaries between education and research," Cobb says. "It's an integrated process all the time." —ALLISON CHISOLM any elements of the WPI Plan have changed since 1970; others may well change in the future," the Strategic Planning Steering Committee noted in its April 1997 draft report. "What we seek is to reinvigorate the spirit of the Plan, not recapture all its mechanisms. Values endure; their expression may change. It is thus important to recognize that several of the principal ambitions expressed in the Plan have not been realized."

One of those ambitions, the committee noted, was to coordinate learning and doing throughout the curriculum. Thanks to a two-year, \$200,000 grant from the National Science Foundation, that ambition is beginning to be realized. The award is funding an innovative program aimed at extending the benefits of integrative, project-based learning, the hallmark of the Plan, into the first two years of a typical undergraduate career.

Students typically spend much of their first two years learning fundamental concepts in math, science and engineering. According to Judith Miller, professor of biology and biotechnology and director of WPI's Center for Educational Development, they often fail to see how the principles of one discipline relate to the concepts they're learning in other courses, or why those concepts will be important in later course and project work. "They might know how to solve an equation in calculus, but they can't see how it applies to a problem in chemistry or physics," she says.

The first two years also offer students few opportunities to engage in the kind of project work that will characterize their junior and senior years. Project work enables students to put what they learn in the classroom to practical use by solving complex problems. By working in groups on projects, they also learn about teamwork, managing complex assignments and communicating professionally—skills that will be vital in their careers.

"The NSF grant will help us address both the lack of project experience and the lack of integration in the first two years, and also help students acquire skills that will be critical to the successful completion of their required projects and, later, to their professional careers," says Arthur Heinricher, associate professor of mathematics and the author of the NSF proposal. "The vehicle for accomplishing this is what we're calling bridge projects."

Heinricher says the idea behind bridge projects is that freshmen and sophomores taking introductory classes in fundamental subjects must see how the concepts in those subjects relate to one another. Each project will build curricular and conceptual bridges between a pair of introductory courses—for example, biology and chemistry, or calculus and physics. The instructors in both

## Building Bridges to Understanding



courses will work together to develop examples, assignments and projects that require students to use aspects of both disciplines.

The bridge project program will take advantage of the concept of the peer learning assistant (PLA), an innovation developed by Miller and others with support from the Davis Educational Foundation. PLAs are students who help instructors of introductory courses work more efficiently by assisting student groups with projects and assigned tasks. "PLAs must have taken the courses before and have good academic records and good interpersonal skills," Miller says. "For their efforts, they receive a stipend, along with valuable experience in teamwork and project management.

"The NSF award will have many positive outcomes for WPI," Miller adds. "It will bring faculty members from different disciplines together to think about education. Just as important, it will help WPI continue to build its reputation as a center for curricular innovation and as a model for engineering educators across the country."

-MICHAEL DORSEY

#### Continue To Innovate in Undergraduate Programs

Art Heinricher and Judith Miller are extending the benefits of project work throughout the curriculum and helping students see the links between concepts in math and science. gile, flexible and able to adapt to a changing environment. Those characteristics can save a species from extinction. They're also the attributes career-minded professionals—as well as institutions of higher education—must have to thrive in today's highly competitive, ever changing marketplace.

WPI's Office of Continuing Education has provided market-driven professional education programs to nearly 45,000 people in the last two decades. The content of those programs has evolved to keep pace with the new knowledge and sophisticated delivery systems wrought by rapid-fire technological advances. The competition from other educational service providers has grown stronger, as well. WPI, like the working professionals who enroll in its classes, knows the importance of acquiring new knowledge, upgrading skills, and expanding its reach to remain a strong contender in an increasingly global market.

Knowledge and skills run a daily race with obsolescence in today's high-tech work environments. To get ahead, stay ahead, or retool their skills, unprecedented numbers of professionals today are seeking educational opportunities that are both relevant and accessible. WPI is reaching out to that significant market in the Northeast by offering its certificate, graduate and continuing education programs on campus and at new branch campuses in Westboro and Waltham, Mass.

One of the largest concentrations of high technology professionals in New England lives and works near Rte. 128, outside of Boston. Now, as that skilled workforce races along this busy stretch of road, a large sign on the side of a tall office building beacons them to the WPI Waltham Campus. According to Arlene Lowenstein, director of continuing education at WPI, the University chose the site of its second branch campus carefully.

"We went where the industries and the greatest number of technical professionals are concentrated," she



## -<u>Thriving on Change in Waltham</u>-

says. "We went into Waltham with high expectations."

Those expectations have been exceeded since day one, largely due to WPI's reputation for high-caliber education. "It's been gratifying to see the response from individuals and the business community to our presence in Waltham," Lowenstein says.

The 15,000-square-foot facility boasts the latest in computing equipment and technology. In its six classrooms, including two state-of-the-art computer labs, WPI faculty teach certificate programs in client/server technology, UNIX/C programming and C++ programming, along with evening courses and graduate degree programs in management, computer science and several engineering disciplines. During the work week, many professional development seminars and customized corporate training programs meet there.

The campus's core clientele is the fastest growing academic population today—the adult learners. The

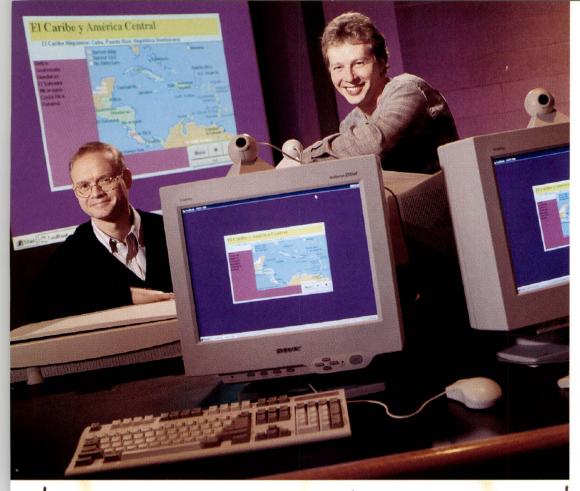
demographics of the American college population have changed dramatically in the past decade. Nearly half of all students enrolled in colleges nationwide attend school part time. Adults 25 and older account for half of all college-credit-seeking students and half of all graduate students. The adult population's return to school is tied to the rapid pace at which technology continues to change the workplace. The scale of those changes has sent a clear message to employees in every industry. Lifelong learning has become an unspoken condition of employment because knowledge is both a perishable commodity and a resource that must be continually renewed.

"Like today's working professionals, we at WPI can't stand still," Lowenstein says. "We need to be at the forefront in the educational services and training we offer, if we are to stay competitive in a changing marketplace."

-ELIZABETH WALKER

#### Recognize and Adapt to Continuing Change

Arlene Lowenstein says creating a branch campus in Waltham has enabled WPI to reach out to one of the nation's largest concentrations of high technology workers.



## ---- Hispanic Culture in the Movie Lab--

#### Make Creative Use of Information Technology

Angel Rivera, left, with the help of Mike O'Neil, used the high-tech tools in a new multimedia lab to bring Latin American culture alive for his students. he Nutty Professor" and "Grumpy Old Men," read the signs on the walls. They're not descriptions of instructors left by disgruntled students; they're movie posters that decorate WPI's newest multimedia computer lab. But the first class to make use of the Movie Lab took students far from Tinseltown.

Students who took "Topics in Latin American Culture" in the fall of 1997 met in the Movie Lab on a regular basis to access audio and video clips, review World Wide Web sites, and make presentations relying on student-created Web pages. The class also met in a traditional classroom to work on Spanish conversational skills and to discuss course material.

"The technology is an enhancement for education, not a replacement," says course instructor Angel Rivera, assistant professor of Spanish, whose foray into the technological world of the Movie Lab was an education in itself. Beginning with only basic computer skills, he received a tutorial from Mike O'Neil, instructional designer in WPI's Instructional Media Center (IMC), and then spent many hours learning to set up a Web site for his course, which includes maps, images, video clips, lecture summaries, concept and vocabulary reviews, and study questions.

In addition to serving as an aid in class discussions, Rivera says, the Web "gives students some power. They come to the lab on their own to review course material and create their own Web pages—in Spanish for their final presentation. I was tired of receiving traditional papers. When a student submits a Web page, suddenly it's not a flat paper anymore. It branches out in many directions."

Students in the class worked in teams of three or four to create two Web pages: one presenting historical, political, geographical and cultural background on a selected Latin American country, and a second exploring a topic such as economic and political problems in Puerto Rico or racial questions in the Hispanic Caribbean.

The results were impressive, Rivera says. One presentation on Puerto Rico included a link to audio clips of Puerto Rican music. Other links introduced sources in both Spanish and English, including daily newspapers. Students really "soaked up information," Rivera says. "They had to write, listen, talk and respond in Spanish. And they fielded some tough questions from their peers."

O'Neil has seen this magic work before. "The process of building interactive Web pages encourages you to come up with new ideas and perspectives, and to dig deeper into a subject than you might otherwise."

Located on the ground floor of Fuller Labs, the Movie Lab is the product of the collaboration of Lee Fontanella, head of the Humanities and Arts Department, David Cyganski, professor of electrical and computer engineering, Pennie Turgeon, director of the IMC, and Helen Shuster, director of the Gordon Library. It was made possible by a \$200,000 contribution from the Class of 1956, part of its 40th anniversary gift to WPI that also made possible a new library computer system. The Hollywood theme was selected to foster a more creative environment, O'Neil says.

Seating 28, the lab is equipped with 14 powerful multimedia PCs loaded with a large assortment of graphics, word processing, 3-D animation and Web authoring software. On top of each computer sits a small video camera that, in concert with special software, can enable students to see and talk with people around the world. "This is an exciting application for language instruction," says O'Neil.

Other innovative applications will be added as new courses in the humanities, arts, and electrical and computer engineering are taught using the lab's facilities. Notes O'Neil, the Movie Lab's potential, like the imagination of Hollywood itself, is virtually limitless.

-ALLISON CHISOLM

ood neighbors reach out to each other, share resources, and build long-term relationships. That's how strong communities are created, nurtured and sustained. WPI, a good neighbor in Worcester County for nearly 130 years, is reaching out in new directions to populations that might not find their way to campus without such encouragement. Camp REACH is one such effort.

A two-week overnight adventure in engineering, Camp REACH (Reinventing Engineering and Creating new Horizons) offers its campers no hikes, no boating, no campfires, no marshmallows, no mosquitoes. Instead, it provides a hands-on introduction to engineering for girls in Worcester County who are entering the seventh grade. Applications poured in for its first session, held last summer on campus.

The camp directors, Denise Nicoletti, associate professor of electrical and computer engineering, and Chrys Demetry, Norton assistant professor of mechanical engineering, selected 30 campers without regard to academic record. They wanted to reach girls who might not otherwise have explored engineering as a career option. They organized Camp REACH with help from WPI's Minority Affairs and Outreach Programs Office, and with funding from the National Science Foundation.

"For some reason, many girls in this age group begin to lose interest in math and science, and start to fall behind the boys," Nicoletti says. "We want to catch them before that happens. It's a detriment to the community when a large segment of the population is left out of making decisions about engineering careers."

Often, the girls whose math and science test scores fall in adolescence are the same ones who earlier showed aptitude in those disciplines. While the reasons behind the decline are still being debated, the implications are all too clear: the number of women pursuing careers in math and some sciences has increased sharply since the late 1970s, but the growth is not as strong for women going into engineering.

To pique girls' interest in engineering as both a career and a collaborative process for solving everyday problems, Nicoletti and Demetry organized the camp curriculum around several community-based engineering projects for Worcesterarea clients. Working in three teams, campers redesigned the supplies and recycling room at a day care center, designed a toy and book storage area for a hospital pediatric ward, and put together an information resource for parents of premature infants in a neonatal intensive care unit. They also participated in on- and offcampus workshops that focused on various specialties within engineering. A favorite, conducted on a Cape Cod beach, encouraged campers to "examine the building dynamics" and material properties of sand." They built sand castles.

The camp experience will resonate throughout the community and beyond, Nicoletti says. "I think Camp REACH will make a significant contribution because it involves a wide range of people—not only the campers but their parents, several high school students who serve as counselors, the teachers and the clients. All those groups see what college life is like at WPI. The campers were so excited to be in a college atmosphere—just to eat in the cafeteria and sleep in the dorms."

The end of the two-week camp signified the start of the next phase in the relationship between the girls and WPI. Nicoletti and Demetry will bring the campers back for a reunion and a follow-up on their projects. Some could come back to campus as members of WPI's Class of 2007. It's difficult to predict the choices 12year-olds will make within the hour, let alone years from now. But there is one certainty: 30 Worcester County girls had their educational interests broadened and career options expanded when WPI reached out to its young neighbors. -ELIZABETH WALKER

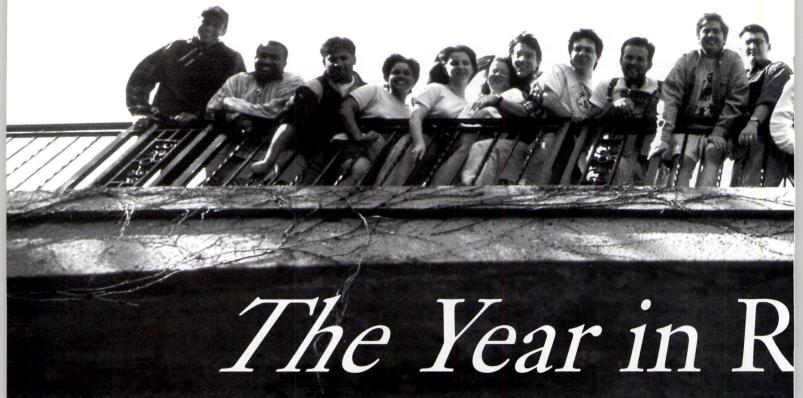
- REACHing the Neighborhood -

#### Improve Community Relations and Diversity

At Worcester's Burncoat Middle School are campers Joslyn Foley, left, and Erin Dalianis with, from left, Denise Nicoletti, Chrys Demetry and Assistant Principal Alice Bowen.

g a contract of the second sec

The progress made by the WPI community toward the development of a new strategic the only reason to look back on the academic year just concluded. WPI also became one of the first criteria. It inaugurated its 14th president. And, aided by an award-winning World Wide Web site, it recorded an



#### Accreditation Brings Rewards for WPI and Its President

Engineering accreditation figured prominently in the events of 1996-97, although two of the most significant developments occurred after the academic year officially closed. In the first, WPI's programs in chemical, civil, electrical, manufacturing and mechanical engineering were re-accredited and

the program in industrial engineering gained initial accreditation by the Accreditation Board for Engineering and Technology (ABET). In the second, WPI president Edward A. Parrish received one of the highest honors bestowed by ABET. The common thread in both events was a bold new set of engineering accreditation criteria developed under the leadership of Parrish and first applied to WPI and one other technological university.

**President Parrish accepts** 

the Fellow of ABET Award.

In October 1997, at its annual meeting in Washington, D.C., ABET, the organization responsible for accrediting engineering and technology programs at the nation's



Parrish was honored for his leadership of ABET's Engineering Accreditation Commission and the commission's Criteria Committee. The committee paved

the way for the creation of a new approach to accrediting engineering programs, one that departs dramatically from the methodology ABET has employed for decades. Called Engineering Criteria 2000, the new approach shares many of the qualities of the WPI Plan, the University's outcomesoriented curriculum. In a major address to the ABET annual assembly, Parrish explained why the new criteria were needed.

He noted that ABET's criteria had expanded from 1<sup>1</sup>/<sub>4</sub> pages of simple precepts in 1957 to 19<sup>1</sup>/<sub>2</sub> pages of detailed rules by 1997. Accounting for a significant portion of the growth were increasingly detailed and prescriptive discipline-specific criteria requested by various engineering professional societies and associations. The result, he said, was "a document that some view as encouraging a 'cookie-cutter' approach to engineering education....Consequently, the emphasis has been on examining what courses students passed rather than what they learned and could do, as well as a lack of encouragement for experimentation with new pedagogy or curricula."

In the early 1990s, concern about ABET's bean-counting approach to accreditation came to a head. The organization's board appointed the Accreditation Process Review Committee, which confirmed the need to overhaul the criteria. In 1994, with support from the National Science Foundation, ABET sponsored a series of workshops on accreditation. The criteria workshop, chaired by Parrish and Ira Jacobson, chairelect of ABET's Engineering Accreditation Commission (EAC), brought together 60 participants from industry, government and academia, who recommended that ABET throw out its existing criteria and build a new set of rules from the ground up.

Over the course of a year, the Criteria Committee developed new criteria, called Engineering Criteria 2000, that were unanimously approved at the 1995 annual meeting of the EAC. In November 1995, Parrish, plan (see pages 2-11) was one of the most significant events of 1996-97, but it is not two universities in the United States to be evaluated under a new set of engineering accreditation exceptional year in admissions. Here are the details behind these and a number of the year's other accomplishments.



as newly elected EAC chairman, brought the new criteria before the full ABET board, which also approved them unanimously.

Because of the major philosophical change represented by the new criteria, they are being phased in between now and 2001. In the interim, five universities are being evaluated under the new rules in a pilot test program. Because of its experience with outcomes-oriented education, WPI was asked to be one of the first two schools to experience Engineering Criteria 2000.

A team of visitors arrived at WPI in the fall of 1996 to begin a thorough review of six of the university's engineering programs. The exercise proved a learning experience for ABET and WPI. ABET learned from WPI's experience with designing and implementing outcomes-oriented programs and WPI gained insight into the strengths and weaknesses of its own methods for measuring outcomes. The result, accreditation for all six programs, was a significant accomplishment, Parrish says. "A great many members of the faculty and administration worked hard to prepare for the ABET visit and to compile the information ABET needed to evaluate our programs," he says. "I think the positive outcome is as much a tribute to their tremendous effort, as it is an affirmation of the quality of the education we offer."

#### Student Authors/Web Help Snare Record Applicant Pool

WPI had one of its most successful admissions years ever in 1996-97. More than 3,100 students applied for admission to the Class of 2001, the largest applicant pool in the University's history. When all was said and done, 688 of those students matriculated in the fall of 1997. The class, one of the largest and most academically accomplished that WPI has enrolled, included 155 women and 34 students of color. With these additions, the proportion of women and students of color in the undergraduate student body rose to 22 percent and 4.8 percent, respectively.

The Admissions Office credits some of its success to the World Wide Web. WPI was one of just a few universities in the nation to offer prospective students the opportunity to submit an application through the Web last year. WPI's Web form was unique in enabling students to save a partially complete application if they needed time to obtain information or to think. Nearly half of applications for the Class of 2001 were received electronically—800 over the Web and another 700 on computer disk.

The content and design of the University's Web site may also have played a role in the successful admissions year. The site was recognized for its completeness and utility by two publications. *NetGuide*, an online magazine about the Internet, named WPI's Web a Gold Site, a designation reserved for the top places on the Web. WPI was one of 15,000 sites so honored. WPI was one of 300 colleges included in *Your Personal Net-College 1997*, a guidebook that rated the technological sophistication of schools. WPI earned a perfect 5 out of 5 "wired" rating and an A+ rating for its Web site.

Another plus for the Admissions Office was its 1996-97 viewbook-the glossy marketing publication sent to prospective students. In an innovative move, the office asked some WPI students (above) to write the book. "If there's one thing college students are always willing to share, it's their opinions," notes Robert G. Voss, executive director of admissions and financial aid. "If there's one thing prospective students most want to hear as they move through the college admissions process, it's the opinions of students already attending the school they are interested in applying to." The book garnered high praise from students, parents and college marketers, Voss says.

### WPI Installs 14th President With Style

On Sept. 20, 1996, in a ceremony in Harrington Auditorium, Edward A. Parrish accepted the WPI charter and the mantle of leadership, formally becoming the Uni-

#### THE YEAR IN REVIEW

versity's 14th president. In addition to the formal installation event, the daylong inauguration included a luncheon for about 1,800 guests under a huge white tent, a symposium on the future of technological education held in Alden Memorial, a reception in Higgins House that showcased the performing arts at WPI, and a gala dinner back in Harrington.

Special guests included Claire Gaudiani, president of Connecticut College, who delivered an inspirational address during the installation ceremony, and symposium participants Eleanor Baum, dean of the School of Engineering at Cooper Union; Douglas Bowman, director of electronics and information technology at Lockheed Martin Corporation; Frederick E. Hutchinson, president of the University of Maine; David A. Kettler, executive director of science and technology at Bell-South Corporation; Mark M. Little, vice president for power generation at GE Power Systems; and George D. Peterson, executive director of ABET.



ATDIVIO OCONNICA

John Nelson and Ed Parrish take a moment to relax after the board chairman formally installed WPI's 14th president.

In his address, titled "Making a Difference," Parrish pointed to the "clarion calls" for change in technological higher education that have been sounded by industry, government and academia, and to the national studies that have made recommendations for improving the quality and effectiveness of technological education. "As one of a relatively small number of technological universities in this country," he said, "WPI has a special responsibility in helping to meet those challenges. It is in these challenges that I envision great opportunities for WPI over the next decade."

In fact, he noted, WPI, with its considerable experience in project-based learning and outcomes-driven education, is in an excellent position to lead the "cultural change" that will sweep the nation's universities. (The complete text of Parrish's address and a report on his inauguration can be found in the December 1996 WPI Journal).

#### New Initiatives Improve Student Services

WPI added a number of new services and programs for its students during the academic year. The first is aimed at helping undergraduates become better leaders, communicators, team members and team builders-skills that are highly valued by business and industry today. Called LEAP (Leadership Education and Practice), it is a four-year self-assessment, education, training and practice process established to prepare undergraduates for their future roles as professionals.

LEAP was the brainchild of Yvonne Harrison, director of the Career Development Center, Andrea Dorow, assistant

director for student activities, and Thomas Balistrieri, director of student development and counseling. An advisory board made up of 18 representatives from the business and Worcester communities and the WPI faculty, staff and student body helped plan the noncredit program, which was offered to 75 students during its initial year. "LEAP is a cutting-edge program unlike any other in the country," Balistrieri says. "It gives WPI students leadership opportunities few other universities can offer."

In another pilot program, 12 members of the Board of Trustees (many of whom are WPI graduates) have been paired with a like number of undergraduates, with whom they have been exchanging personal and professional experiences. The Trustee/Student Mentor Program was the idea of trustee Leonard E. Redon '73, Rochester site services manager for Eastman Kodak Co.

WPI expanded its commitment to its international students last year by creating the Office of International Students and Scholars, headed by Tom Hartvig Thomsen, associate dean of student life, who has been WPI's international student advisor for many years. The office, located in the new International House, just south of the main campus, is responsible for helping international undergraduate and graduate students make the transition from their home countries and cultures to life at WPI.

Also located in International House is WPI's new English as a Second Language (ESL) program. Directed by Billy McGowan, the program helps foreign students prepare for studies in science or engineering at American universities through a



LEAP participants Jennifer Shemowat '00, left, and Nila Almstrom '00 with Kevin Donohue, manager of human resources for Lockheed Martin, which supported the program with a gift of \$5,000.

five-week summer English program with a focus on technical terms and phrases. In addition, McGowan serves as a resource to WPI's international students and offers ESL instruction to the University's international students and teaching assistants.

"I hope International House will help our international students and scholars create a sense of community," says Thomsen. "I envision it as a center for international education that will draw on the diverse resources of the campus."



At International House are, from left, Tom Thomsen, Janice Martin, international student office assistant, and Billy McGowan.

#### THE YEAR IN REVIEW

#### Commencement Focuses on Global Opportunities

WPI's 129th Commencement exercises on May 24, 1997, were dedicated to the theme "Global Perspectives: The Key to the New Millennium." The theme reflected the need for today's technological professionals to gain global experience and an appreciation for other cultures. It was also an opportunity to showcase WPI's recognized leadership in global technological education. WPI awarded 810 degrees during the ceremony: 580 bachelor's degrees, 218 master's degrees and 12 Ph.D.s.



The speaker was **R. Nicholas Burns**, then the Department of State's principal assistant secretary for public affairs and currently U.S. ambassador to Greece. Burns noted that the

Information Age and the "International Age" are changing the world and presenting today's graduates with new challenges and opportunities. "Like it or not," he said, "our fate is to be a nation of global interests and global responsibilities."

Honorary degrees were awarded to Burns and three international business leaders: Martin G. Bromberg '51, retired chairman of Indústria e Comércio Brosol Ltda., in Brazil; Douglas R. Starrett, chairman and CEO of L.S. Starrett Co. in Athol, Mass., and Dennis H.S. Ting, chairman of Kader Holdings Co. Ltd. in Hong Kong.

#### More Highlights of the Year Past

Sixteen tenure-track faculty members joined WPI during the academic year. They include provost John F. Carney III, who is also a professor of civil and environmental engineering, and new professors in the departments of Biology and Biotechnology, Chemical Engineering, Chemistry and Biochemistry, Civil and Environmental Engineering, Computer Science, Electrical and Computer Engineering, Management, and Mechanical Engineering.

Formally recognizing a collaboration that has existed for a quarter of a century, WPI and the University of Massachusetts Medical Center established a **joint Ph.D. program in biomedical engineering.** Graduates will receive degrees from WPI and UMMC's Graduate School of Biomedical Sciences. The program offers shared courses and options to do thesis work at either institution. "The marriage between WPI and the UMass Medical Center is an important step forward that neither institution could have achieved alone," said Dr. Thomas B. Miller Jr., dean of the UMass Graduate School of Biomedical Sciences.

WPI's **Career Development Center** moved into new quarters in the lower level of the Project Center. The attractive new home for the University's career services, Cooperative Education Program and Major Selection Program includes private interview rooms, a computer resource room, and a lounge for recruiters.

Leah Vetter, the first director of the Massachusetts Academy of Mathematics and Science in Worcester, resigned in January due to health concerns. James Hamos, director of the Office of Science Education and an associate professor of cell biology at the UMass Medical Center, was named to succeed Vetter. Established in 1992 by the Massachusetts legislature and located in WPI's Gordon Library, the academy is a public high school that serves 11th and 12th grade students who have exceptional aptitude for mathematics and science.

WPI's second all-campus **Project Presentation Day** in April 1997 brought dozens of corporate executives and representatives of other organizations and agencies to campus to hear undergraduates talk about the results of Major Qualifying Projects. The more than 250 projects presented were the culmination of work in 12 academ-

ic departments. A highlight of the day was the annual Hull Memorial Lecture, delivered by **Peter Senge**, director of the Center for Organizational Learning at MIT's



Sloan School of Management and author of *The Fifth Discipline*.

A new online resource is helping WPI alumni stay in touch with their alma mater and with each other. Called the **Alumni Gateway**, the Web site (www.wpi.edu/ alumni/gateway.html) enables alumni to search for information (including e-mail addresses) about fellow graduates, post class notes for *The Wire*, review job listings from WPI's Career Development Center, create Web pages, and participate in e-mail discussion groups.



Milton P. Higgins helps WPI rededicate Boynton Hall after renovations in 1978.

#### **WPI Loses a Dear Friend**

Milton P. Higgins, grandson of the first superintendent of WPI's Washburn Shops, died in February 1997 at the age of 93. A member of the WPI Board of Trustees for 31 years (he chaired the board from 1971 to 1978), Higgins was chairman of the WPI Centennial Fund (1965-68), which made possible the construction of Goddard Hall, Gordon Library and Harrington Auditorium. He is commemorated on campus by the Milton P. Higgins Lecture Hall in the Washburn Shops and by Higgins Laboratories, WPI's recently renovated mechanical engineering building, which is named for the Higgins family.

Members of the Higgins family have been closely tied to the affairs of WPI since its founding. In addition to Milton Prince Higgins (who along with George Ira Alden, WPI's first professor of mechanical engineering, helped found Norton Company), they include his father, Aldus C. Higgins, Class of 1893, a trustee for nearly three decades and a president of the WPI Alumni Association, and his uncle, John Higgins, Class of 1896.

A 1928 graduate of Harvard, Milton P. Higgins was president of Norton Company from 1946 to 1961 and chairman until his retirement in 1974. He was a benefactor and board member of numerous Worcester institutions and organizations, including the Worcester Art Museum and Clark University. He leaves his wife, Alice (Coonley), three sons, two daughters, and 11 grandchildren.

#### UNIVERSITY RELATIONS HIGHLIGHTS

## Moving Ahead on All Fronts

BY JOHN L. HEYL, VICE PRESIDENT FOR UNIVERSITY RELATIONS

he Office of University Relations performs a multitude of services for WPI, but they boil down to three basic responsibilities: raising resources to help the University fulfill its mission of educating tomorrow's leaders; building the image and enhancing the reputation of the University; and helping alumni stay in touch with and connected to their alma mater. During the 1996-97 fiscal year, the office made progress on all of three fronts.

In resource generation, WPI had a successful year, recording some \$7 million in gifts of cash and gifts-in-kind and over \$4.2 million in new pledges from individuals, corporations, foundations, friends and others. Our annual giving program raised more than \$1.45 million in funds that can be immediately spent to help WPI meet the expenses associated with providing a highquality education to its students. More than \$1.2 million of that total came from alumni (a new record), which was part of the \$2.6 million (including corporate matching gifts) raised last year through the Alumni Fund. The Alumni Fund Board, chaired by Anne M. McPartland Dodd '75, and the annual giving staff are to be commended for making it all happen.

Other highlights of the annual giving program include the \$10,000 raised by the Class of 1997 through the Senior Class Gift Program—the first such program organized in several years—and the significant progress made in setting up the Class Agent Program. That program is aimed at increasing participation in the Alumni Fund by having alumni receive solicitations from their classmates.

The President's Advisory Council celebrated its 25th anniversary last year. The organization, made up of alumni, parents and friends who make gifts to WPI of \$1,500 or more, was founded by trustee emeritus Leonard H. White '41. Henry W. Nowick '56 completed a long and productive term as PAC chairman in 1996-97. Bringing things full circle, David H. White '75, Len's son, has become the new chairman. The PAC celebrated its anniversary by hosting a number of Presidential Forums including events in Newport Beach and Santa Clara, Calif.—focused on WPI's Global Perspective Program.

An expanded marketing program resulted in a significant increase in interest in the various deferred giving vehicles WPI makes available to potential donors. These vehicles enable individuals to realize a financial return from their gifts during their lifetime. Over the course of the fiscal year, WPI received 56 deferred gifts totaling more than \$1.7 million. Another highlight

"The year ahead promises to be an exciting one. Most important, the University will prepare to formally launch its next major capital campaign."

of the year was recorded by the Anniversary Gift Program. At Reunion in June 1997, the Class of 1957 presented President Parrish with a check for \$2.3 million, an exciting new record for class gifts. The Class of 1947 raised more than \$203,000.

WPI's efforts to raise its visibility yielded a great deal of coverage in local, regional, national and international media (including *The New York Times, USA Today*, the *Moscow Times*, the *Caribbean Business News* and New Zealand Television). One of the biggest splashes was made by three students who identified a security hole in Microsoft Corp.'s Internet Explorer Web browser (see "A Shortcut Into Computer History," Summer 1997 *Journal*). Their discovery resulted in worldwide coverage.

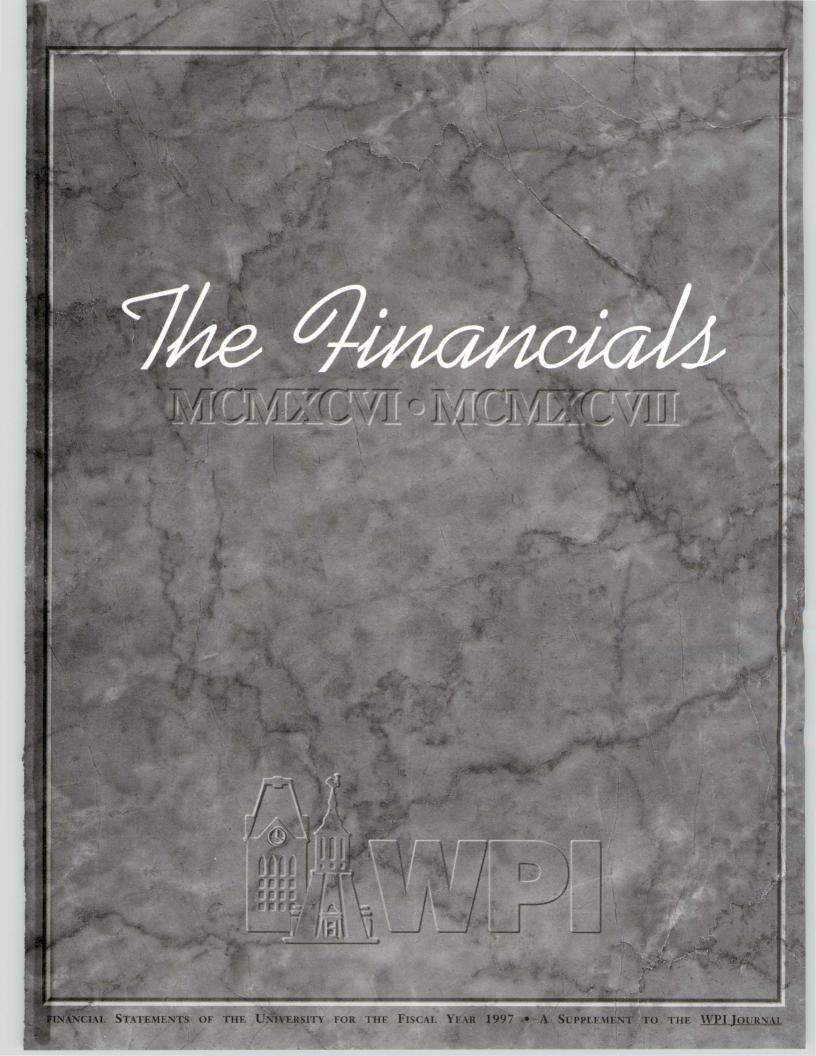
A documentary featuring WPI's stateof-the-art fire science laboratory, originally broadcast in July 1996, proved to be one of the most watched programs in the history of the Discovery Channel. Check your local television listings this winter for a Discovery Channel program featuring a student project that resulted in a high-tech safety system for the Providence & Worcester Railroad and a two-hour History Channel documentary on fire featuring our fire protection engineering program. The WPI Alumni Association, in an effort to assure that the association and WPI's Alumni Affairs Office will be prepared to serve the needs of WPI graduates well into the next century, began work on a new five-year master plan. Under the leadership of Robert E. Maynard Jr. '63, the association's Executive Committee developed a draft plan and appointed four task forces to address issues the committee believes are of particular importance to the association's future:

- \* Lifelong Learning: determining ways for WPI to provide career services to alumni and to help them continue to renew their professional skills.
- \* **Communications:** exploring ways to enhance communications to alumni through publications, class boards of directors and the online Alumni Gateway.
- \* Global Programming: re-examining the concept of regional alumni clubs and looking for opportunities for interaction between WPI and its alumni on a global scale.
- \* Organizational Structure: reassessing the structure of the Alumni Association and reviewing and updating its by-laws to reflect the new vision and initiatives evolving from the master planning process.

The year ahead promises to be an exciting one. Most important, the University will prepare to formally launch its next major capital campaign, which will provide the resourses WPI needs to implement its emerging strategic vision for the future.

During the past fiscal year, board vice chairman Ronald L. Zarrella '71, vice president and group executive for General Motors Corp., agreed to serve as chairman of the Campaign for WPI. As chairman of the WPI Board of Trustees, John M. Nelson, chairman of The TJX Companies Inc., began visiting members of the board to request their participation in the drive.

Work also continued within University Relations on putting in place the necessary volunteer and administrative infrastructure for a major fund-raising effort. If all goes as planned, the campaign will begin in the fall of 1998.





#### REPORT OF INDEPENDENT ACCOUNTANTS

The Board of Trustees Worcester Polytechnic Institute:

We have audited the accompanying statements of financial position of Worcester Polytechnic Institute ("WPI" or "the University") as of June 30, 1997 and 1996, and the related statements of activities and cash flows for the years then ended. These financial statements are the responsibility of the University's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of WPI as of June 30, 1997 and 1996, the changes in its net assets and cash flows for the years then ended in conformity with generally accepted accounting principles.

Coopers & Fybrand J.J.P.

Boston, Massachusetts September 28, 1997

#### AUDITED REPORTS

## STATEMENTS OF FINANCIAL POSITION June 30, 1997 and 1996

Assets	1997	1996
Cash and cash equivalents	\$ 14,473,586	\$ 8,897,041
Accounts receivable, net	3,665,575	3,513,567
Accrued income receivable	348,076	244,401
Contributions receivable, net	2,193,239	875,475
Inventories	12,256	11,600
Deposits with trustees	21,989,745	1,074,532
Prepaid expenses and other assets	995,349	1,237,632
Notes receivable	14,692,079	13,692,116
Intermediate and long-term investments	221,046,818	186,330,612
Land, buildings and equipment, net	63,750,281	68,111,281
Total assets	\$343,167,004	\$283,988,257
Short-term portion of long-term debt Annuities payable Funds held for others Refundable government loan funds Long-term debt, net	1,695,200 2,058,419 329,210 8,982,466 64,687,592	1,668,502 1,967,071 330,377 8,826,754 38,921,640
Commitments (Note 9)		
Total liabilities	87,517,961	59,767,728
Net assets:		
Unrestricted	147,793,560	133,828,020
		41,170,281
Temporarily restricted	57,017,940	71,170,201
Temporarily restricted Permanently restricted	57,017,940 50,837,543	
		49,222,228 224,220,529

#### **STATEMENT OF ACTIVITIES**

for the year ended June 30, 1997

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Operating revenues:				
Tuition and fees	\$ 49,183,646			\$ 49,183,646
Less: Unrestricted student aid	14,020,126			14,020,126
Endowed scholarships	1,932,388			1,932,388
Externally funded student aid	2,657,544			2,657,544
Total student aid	18,610,058			18,610,058
Net tuition and fees	30,573,588			30,573,588
Other educational operations	8,746,894			8,746,894
Contributions	4,607,189	\$ 1,905,473		6,512,662
Contract and exchange transactions	12,994,866			12,994,866
Investment income on endowment	3,589,360		\$ 21,089	3,610,449
Net realized and unrealized gains on endowment, expended	2,184,240	1,645,167	50,770	3,880,177
Other investment income	1,845,133	293,742	37,864	2,176,739
Gain on sale of real estate	497,240			497,240
Sales and services of auxiliary enterprises	8,052,947			8,052,947
Other	739,976			739,976
Total revenues	73,831,433	3,844,382	109,723	77,785,538
Net assets released from restriction	2,507,185	(2,507,185)		_
Total revenues and other support	76,338,618	1,337,197	109,723	77,785,538
Operating expenses:				
Instruction and department research	33,517,942			33,517,942
Sponsored research	7,518,009			7,518,009
External relations	2,700,718			2,700,718
Institution and academic support	10,479,718			10,479,718
Student services	4,474,395			4,474,395
Operation and maintenance of plant	12,167,421			12,167,421
Auxiliary enterprises	6,138,289			6,138,289
Total operating expenses	76,996,492			76,996,492
Change in net assets from operating activities	(657,874)	1,337,197	109,723	789,046
Nonoperating:				
Realized and unrealized gains	17,828,141	13,961,195	309,577	32,098,913
Loss on refinancing	(3,204,727)			(3,204,727)
Contributions		549,267	1,196,015	1,745,282
Change in net assets from nonoperating activities	14,623,414	14,510,462	1,505,592	30,639,468
Total change in net assets	13,965,540	15,847,659	1,615,315	31,428,514
Net assets beginning	133,828,020	41,170,281	49,222,228	224,220,529
Net assets ending	\$147,793,560	\$57,017,940	\$50,837,543	\$255,649,043

#### **STATEMENT OF ACTIVITIES**

for the year ended June 30, 1996

Less: Unrestricted student aid12,511,276Endowed scholarships1,888,006Externally funded student aid2,888,281Total student aid17,287,563Net tuition and fees29,623,081Other educational operations6,427,083Contributions5,878,535Contract and exchange transactions11,530,280Investment income on endowment4,498,177S28,433Net realized gains on endowment4,498,177S28,433Other investment income1,516,832Investment income1,516,832Gain on sale of real estate164,500Sales and services of auxiliary enterprises7,651,494Other874,081Total revenues69,701,665Instruction and department research30,269,303Sponsored research6,328,533External relations2,014,806Instruction and department research30,269,303Sponsored research2,215,2898Operating expenses:2,014,806Instruction and academic support9,938,004Student services4,152,898Operation and maintenance of plant10,728,737Auxiliary enterprises6,669,936	Fotal
Less: Unrestricted student aid12,511,276Endowed scholarships1,888,006Externally funded student aid2,888,281Total student aid17,287,563Other educational operations6,427,083Contributions5,878,535S601,906Contract and exchange transactions11,530,280Investment income on endowment4,498,177S28,433Net realized gains on endowment, expended1,537,6021,516,882150,008Gain on sale of real estate164,500Sales and services of auxiliary enterprises7,651,494Other874,081Total revenues69,701,665Instruction and department research30,269,303Sponsored research6,328,533External relations2,014,806Instruction and ademic support9,938,004Student services4,152,898Operating expenses:10,728,737Auxiliary enterprises70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating:11,973,512Realized and unrealized gains11,973,5129,022,382177,934	
Endowed scholarships1,888,006Externally funded student aid2,888,281Total student aid17,287,563Net tuition and fees29,623,081Other educational operations6,427,083Contributions5,878,535Contributions5,878,535Contract and exchange transactions11,530,280Investment income on endowment4,498,177S28,433Other investment income1,537,6021,131,05215,913Other investment income1,516,832150,00837,602Gain on sale of real estate164,500Sales and services of auxiliary enterprises7,651,494Other81,948Net assets released from restriction1,145,481Institution and department research30,269,303Sponsored research6,328,533External relations2,014,806Institution and academic support9,938,004Student services4,152,898Operating and aniantenance of plant10,728,737Auxiliary enterprises6,669,936Total operating expenses:6,669,936Total operating expenses1,944,932Auxiliary enterprises6,669,936Total operating expenses1,944,932Change in net assets from operating activities1,944,932Nonoperating: Realized and unrealized gains11,973,512Nonoperating: Realized and unrealized gains11,973,512Student service2,068,147	46,910,644
Externally funded student aid         2,888,281           Total student aid         17,287,563           Net tuition and fees         29,623,081           Other educational operations         6,427,083           Contributions         5,878,535         \$         601,906           Contributions         5,878,535         \$         601,906           Contributions         1,530,280          1           Investment income on endowment         4,498,177         \$         28,433           Net realized gains on endowment, expended         1,537,602         1,131,052         15,913           Other investment income         15,510,280         37,602         15,913           Other investment income         164,500         37,602         18,914           Other         874,081         1445,481         (1,445,481)           Total revenues         69,701,665         1,882,966         81,948           Operating expenses:         Instruction and department research         30,269,303         Sponsored research         6,328,533           Instruction and department research         30,269,303         Sponsored research         6,609,936           Instruction and academic support         9,938,004         Student services         4,152,898	12,511,276
Externally funded student aid         2,888,281           Total student aid         17,287,563           Net tuition and fees         29,623,081           Other educational operations         6,427,083           Contributions         5,878,535         \$         601,906           Contributions         5,878,535         \$         601,906           Control and exchange transactions         11,530,280            Investment income on endowment         4,498,177         \$         28,433           Net realized gains on endowment, expended         1,537,602         1,131,052         15,913           Other investment income         15,510,280         37,602         15,913           Other investment income         164,500         37,602         18,914           Other         874,081         1445,481         (1,445,481)           Total revenues         69,701,665         1,882,966         81,948           Operating expenses:         Instruction and department research         30,269,303         Sponsored research         6,322,533           Instruction and academic support         9,938,004         Student services         4,152,898         0perating expenses:           Instruction and academic support         9,938,004         10,728,737	1,888,006
Net tuition and fees $29,623,081$ Other educational operations $6,427,083$ Contributions $5,878,535$ Contract and exchange transactions $11,530,280$ Investment income on endowment $4,498,177$ S $28,433$ Net realized gains on endowment, expended $1,537,602$ 1,516,832 $150,008$ Gain on sale of real estate $164,500$ Sales and services of auxiliary enterprises $7,651,494$ Other $874,081$ Total revenues $69,701,665$ 1,445,481 $(1,445,481)$ Total revenues and other support $71,147,146$ 437,485 $81,948$ Operating expenses: $30,269,303$ Instruction and department research $30,269,303$ Sponsored research $6,328,533$ External relations $2,014,806$ Institution and academic support $9,938,004$ Student services $4,152,898$ Operating expenses: $6,669,936$ Institution and academic support $9,022,317$ Auxiliary enterprises $6,669,936$ Total operating expenses: $6,669,936$ Total operating expenses: $6,669,936$ Student services $4,192,214$ Change in net assets from operating activities $1,044,932$ Nonoperating: $81,948$ Nonoperating: $81,948$ Nonoperating: $6,659,212$ 2,668,147	2,888,281
Other educational operations         6,427,083           Contributions         5,878,835         \$ 601,906           Contract and exchange transactions         11,530,280           Investment income on endowment         4,498,177         \$ 28,433           Net realized gains on endowment, expended         1,537,602         1,131,052         15,913           Other investment income         1,516,832         150,008         37,602           Gain on sale of real estate         164,500         5ales and services of auxiliary enterprises         7,651,494           Other         874,081         1         5         7,651,494           Other         874,081         1         5         7,651,494           Other         874,081         1         5         7,602         81,948           Net assets released from restriction         1,445,481         (1,445,481)         1         1           Total revenues and other support         71,147,146         437,485         81,948           Operating expenses:         1	17,287,563
Contributions         5,878,535         \$ 601,906           Contract and exchange transactions         11,530,280         1           Investment income on endowment         4,498,177         \$ 28,433           Net realized gains on endowment, expended         1,537,602         1,131,052         15,913           Other investment income         1,516,832         150,008         37,602           Gain on sale of real estate         164,500         37,602         37,602           Sales and services of auxiliary enterprises         7,651,494         7         8         81,948           Other         874,081         (1,445,481)         1         1           Total revenues         69,701,665         1,882,966         81,948           Net assets released from restriction         1,445,481         (1,445,481)         1           Total revenues and other support         71,147,146         437,485         81,948           Operating expenses:         1         1         1         1           Instruction and department research         30,269,303         5         5         6,6328,533         2         1           Student services         4,152,898         0         1         1,0728,737         1         1         0,728,737         <	29,623,081
Contract and exchange transactions11,530,280Investment income on endowment4,498,177\$ 28,433Net realized gains on endowment, expended1,537,6021,131,05215,913Other investment income1,516,832150,008 $37,602$ Gain on sale of real estate164,500 $37,602$ $37,602$ Sales and services of auxiliary enterprises $7,651,494$ $764,194$ $764,194$ Other $874,081$ $1,445,481$ $(1,445,481)$ Total revenues $69,701,665$ $1,882,966$ $81,948$ Net assets released from restriction $1,445,481$ $(1,445,481)$ Total revenues and other support $71,147,146$ $437,485$ $81,948$ Operating expenses: $30,269,303$ $5ponsored research$ $6,328,533$ External relations $2,014,806$ $1,52,898$ $90peration and maintenance of plant10,728,737Auxiliary enterprises6,669,93610,92,214437,48581,948Nonoperating:Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147$	6,427,083
Investment income on endowment         4,498,177         \$ 28,433           Net realized gains on endowment, expended         1,537,602         1,131,052         15,913           Other investment income         1,516,832         150,008         37,602           Gain on sale of real estate         164,500         37,602         1,310,52         15,913           Other         7,651,494         7,651,494         7,651,494         7,651,494           Other         874,081         1         874,081         1         1           Total revenues         69,701,665         1,882,966         81,948         1           Net assets released from restriction         1,445,481         (1,445,481)         1         1           Total revenues and other support         71,147,146         437,485         81,948           Operating expenses:         Instruction and department research         6,328,533         5         1           Institution and academic support         9,938,004         5         1         4,152,898         1           Operating expenses:         1,07,28,737         4,152,898         1         1         1,728,737           Auxiliary enterprises         6,669,936         1         1         1,0728,737         81,948	6,480,441
Net realized gains on endowment, expended         1,537,602         1,131,052         15,913           Other investment income         1,516,832         150,008         37,602           Gain on sale of real estate         164,500         37,602         37,602           Sales and services of auxiliary enterprises         7,651,494         37,603         37,602           Other         874,081         164,500         37,602         37,602           Total revenues         69,701,665         1,882,966         81,948           Net assets released from restriction         1,445,481         (1,445,481)         164,500           Total revenues and other support         7,1147,146         437,485         81,948           Operating expenses:         1         1         145,481         14,45,481           Instruction and department research         30,269,303         5         5         81,948           Operating expenses:         1	11,530,280
Other investment income $1,516,832$ $150,008$ $37,602$ Gain on sale of real estate $164,500$ $374,021$ $374,021$ Sales and services of auxiliary enterprises $7,651,494$ $74,081$ Other $874,081$ $(1,445,481)$ $(1,445,481)$ Total revenues $69,701,665$ $1,882,966$ $81,948$ Net assets released from restriction $1,445,481$ $(1,445,481)$ Total revenues and other support $71,147,146$ $437,485$ $81,948$ Operating expenses: $30,269,303$ $5000,303$ $5000,303$ Sponsored research $6,328,533$ $2,014,806$ Instruction and department research $30,269,304$ $4152,898$ Operation and maintenance of plant $10,728,737$ $40,728,737$ Auxiliary enterprises $6,669,936$ $10,94,932$ $437,485$ $81,948$ Nonoperating: Realized and unrealized gains $11,973,512$ $9,022,382$ $177,934$ Contributions $557,574$ $659,212$ $2,668,147$	4,526,610
Gain on sale of real estate $164,500$ Sales and services of auxiliary enterprises $7,651,494$ Other $874,081$ Total revenues $69,701,665$ $1,882,966$ $81,948$ Net assets released from restriction $1,445,481$ $(1,445,481)$ Total revenues and other support $71,147,146$ $437,485$ $81,948$ Operating expenses: $30,269,303$ $80,269,303$ $81,948$ Operating expenses: $30,269,303$ $82,533$ $81,948$ Instruction and department research $6,328,533$ $437,485$ $81,948$ Operating expenses: $10,728,737$ $4152,898$ $90,936,004$ Institution and academic support $9,938,004$ $41,52,898$ $90,936,004$ Student services $4,152,898$ $00,936,004$ Operation and maintenance of plant $10,728,737$ $437,485$ $81,948$ Nonoperating expenses $1,044,932$ $437,485$ $81,948$ Nonoperating: $Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147$	2,684,567
Sales and services of auxiliary enterprises7,651,494 874,081Other70 tal revenues69,701,6651,882,96681,948Net assets released from restriction1,445,481(1,445,481)Total revenues and other support71,147,146437,48581,948Operating expenses:30,269,30381,948Operating expenses:30,269,30381,948Operating expenses:30,269,30381,948Instruction and department research30,269,30381,948Operating expenses:9,938,0049,938,004Institution and academic support9,938,0049,938,004Student services4,152,8989,938,004Operation and maintenance of plant10,728,737Auxiliary enterprises70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	1,704,442
Other874,081Total revenues69,701,6651,882,96681,948Net assets released from restriction1,445,481(1,445,481)Total revenues and other support71,147,146437,48581,948Operating expenses:30,269,30381,948Operating expenses:30,269,30381,948Instruction and department research30,269,30381,948Sponsored research6,328,5334External relations2,014,806Institution and academic support9,938,004Student services4,152,898Operation and maintenance of plant10,728,737Auxiliary enterprises70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	164,500
Total revenues69,701,6651,882,96681,948Net assets released from restriction1,445,481(1,445,481)Total revenues and other support71,147,146437,48581,948Operating expenses: Instruction and department research30,269,303 6,328,53381,948External relations2,014,806Institution and academic support9,938,004Student services4,152,898Operating expenses: auxiliary enterprises6,669,936Total operating expenses6,669,936Change in net assets from operating activities1,044,932Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	7,651,494
Net assets released from restriction1,445,481(1,445,481)Total revenues and other support71,147,146437,48581,948Operating expenses: Instruction and department research30,269,30355Sponsored research6,328,5332,014,806Institution and academic support9,938,00455Student services4,152,89806,669,936Operating expenses: Student services10,728,73756,669,936Total operating expenses70,102,214111Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	874,081
Total revenues and other support71,147,146437,48581,948Operating expenses: Instruction and department research Sponsored research External relations Institution and academic support Student services Operation and maintenance of plant Auxiliary enterprises30,269,303 6,328,533 2,014,806 9,938,004 4,152,898 6,669,93681,948Total operating expenses70,102,21481,948Change in net assets from operating activities Realized and unrealized gains1,073,512 557,5749,022,382 659,212 2,668,147	71,666,579
Operating expenses:Instruction and department research30,269,303Sponsored research6,328,533External relations2,014,806Institution and academic support9,938,004Student services4,152,898Operation and maintenance of plant10,728,737Auxiliary enterprises6,669,936Total operating expensesTotal operating expenses1,044,932437,48581,948Nonoperating:11,973,512Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	_
Instruction and department research30,269,303Sponsored research6,328,533External relations2,014,806Institution and academic support9,938,004Student services4,152,898Operation and maintenance of plant10,728,737Auxiliary enterprises6,669,936Total operating expensesTotal operating expenses70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	71,666,579
Sponsored research6,328,533External relations2,014,806Institution and academic support9,938,004Student services4,152,898Operation and maintenance of plant10,728,737Auxiliary enterprises6,669,936Total operating expensesTotal operating expenses1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	
External relations2,014,806Institution and academic support9,938,004Student services4,152,898Operation and maintenance of plant10,728,737Auxiliary enterprises6,669,936Total operating expensesTotal operating expenses70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	30,269,303
Institution and academic support9,938,004Student services4,152,898Operation and maintenance of plant10,728,737Auxiliary enterprises6,669,936Total operating expensesTotal operating expenses70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	6,328,533
Student services4,152,898Operation and maintenance of plant10,728,737Auxiliary enterprises6,669,936Total operating expenses70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	2,014,805
Operation and maintenance of plant10,728,737Auxiliary enterprises6,669,936Total operating expenses70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	9,938,004
Auxiliary enterprises6,669,936Total operating expenses70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	4,152,898
Total operating expenses70,102,214Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	10,728,737
Change in net assets from operating activities1,044,932437,48581,948Nonoperating: Realized and unrealized gains11,973,5129,022,382177,934Contributions557,574659,2122,668,147	6,669,936
Nonoperating:         11,973,512         9,022,382         177,934           Contributions         557,574         659,212         2,668,147	70,102,214
Realized and unrealized gains         11,973,512         9,022,382         177,934           Contributions         557,574         659,212         2,668,147	1,564,365
Contributions 557,574 659,212 2,668,147	
	21,173,828
Net assets released from restrictions 6,643,154 (6,643,154)	3,884,933
Change in net assets from nonoperating activities 19,174,240 3,038,440 2,846,081	25,058,761
Total change in net assets         20,219,172         3,475,925         2,928,029	26,623,126
	97,597,403
Net assets ending         \$133,828,020         \$41,170,281         \$49,222,228         \$2	24,220,529

## **STATEMENTS OF CASH FLOWS** for the years ended June 30, 1997 and 1996

Cash flows from operating activities:		
	£ 21 420 514	\$2( (22 12)
Change in net assets	\$ 31,428,514	\$26,623,126
Adjustments to reconcile change in net assets to net cash provided by operating activities:	6 550 202	5 004 001
Depreciation and amortization	6,558,383	5,894,081
Loss on refinancing	3,204,727	52 012
Provision for bad debts Contributions other than cash	(109,156)	53,913
	(683,273)	(2,278,933)
Noncash increase in annuities payable	(114,033)	(80,489)
Net realized and unrealized gain on investments Gain on sale of land	(36,332,223) (497,240)	(23,967,099)
		(2 ((0 147)
Contributions restricted for long-term investments	(1,196,015)	(2,668,147)
Investment income restricted for long-term investments	(58,953)	(81,948)
Changes in operating assets and liabilities:	(150.079)	45 217
(Increase) decrease in accounts receivable	(150,978)	45,317
(Increase) decrease in contributions receivable	(1,317,764)	685,925
Increase in notes receivable	(391,289)	(39,750)
Decrease in prepaids and other assets	123,018	42,560
Increase (decrease) in funds held for others	(1,167)	83,601
Increase in accounts payable and accrued expenses	1,212,467	387,960
Increase in annuities payable	91,348	172,166
Increase (decrease) in deferred revenue	499,223	(67,651)
Net cash provided by (used by) operating activities	2,265,589	4,804,632
Cash flows from investing activities:		
Proceeds from sales and maturities of investments	89,090,801	73,443,683
Purchases of investments	(82,634,807)	(77,409,949)
Proceeds from sales of land	497,240	164,500
Purchase of land, building and equipment	(6,240,054)	(5,325,050)
Disbursement of loans to students	(2,376,177)	(2,193,727)
Repayments of loans from students	1,771,954	1,588,941
Net cash provided by (used by) investing activities	108,957	(9,731,602)
Cash flows from financing activities:		
Receipts of refundable government loan funds	155,712	178,597
Contributions restricted for long-term investments	1,196,015	2,668,147
Investment income restricted for long-term investments	58,953	81,948
Deposits with trustees	(20,915,213)	315,253
Proceeds from issuance of debt, net of discount	61,741,874	835,869
Repayment of indebtedness	(37,928,021)	(1,224,472)
Debt issuance costs paid	(1,107,321)	
Net cash provided by financing activities	3,201,999	2,855,342
Net increase (decrease) in cash and cash equivalents	5,576,545	(2,071,628)
Cash and cash equivalents, beginning	8,897,041	10,968,669
Cash and cash equivalents, ending	\$14,473,586	\$8,897,041
Supplemental cash flow information:		
Interest paid	\$ 2,536,402	\$2,555,972

#### NOTES TO FINANCIAL STATEMENTS

#### 1. ACCOUNTING POLICIES:

**Basis of Presentation** In fiscal 1996, Worcester Polytechnic Institute ("WPI" or the "University") adopted Statement of Financial Accounting Standards (SFAS) No. 116, "Accounting for Contributions Received and Made," SFAS No. 117, "Financial Statements of Not-for-Profit Organizations," and SFAS No. 124, "Accounting for Certain Investments Held by Not-for-Profit Organizations." SFAS No. 116 requires that unconditional promises to give (pledges) be recorded as receivables and revenues within the appropriate net asset category. SFAS No. 117 establishes standards for general-purpose external financial statements of not-for-profit organizations, including a statement of financial position, a statement of activities and a statement of cash flows. SFAS No. 124 establishes standards of financial accounting and reporting for certain investments in securities and establishes disclosure requirements for most investments held by not-for-profit organizations.

The University adopted the requirements of the American Institute of Certified Public Accountants (AICPA) Audit and Accounting Guide (the Guide), "Not-for-Profit Organizations," in fiscal 1997. Adoption of the guide resulted in changes to the financial statement presentation of the following:

• Display of student financial aid as a reduction of tuition and fees revenue rather than an expenditure.

• Allocation of certain expenses (e.g., interest, depreciation and operation and maintenance) by functional category.

These financial statements, which are presented on the accrual basis of accounting, have been prepared to focus on WPI as a whole and to present balances and transactions according to the existence or absence of donor-imposed restrictions. This has been accomplished by classification of fund balances and transactions into three classes of net assets — permanently restricted, temporarily restricted or unrestricted.

WPI has defined its primary activities as operating and nonoperating. Operating activities consist primarily of activities supporting the educational mission and purpose of WPI. Nonoperating activities consist primarily of endowment gifts, unspent appreciation on endowment, and contributions for capital use.

Net assets and revenues, expenses, gains and losses were classified based on the existence or absence of donorimposed restrictions. Accordingly, net assets and changes therein are classified as follows:

**Permanently Restricted Net Assets** Net assets subject to donor-imposed stipulations that they be maintained permanently by the University. Generally, the donors of these assets permit the institution to use all or part of the income earned on related investments for general or specific purposes.

**Temporarily Restricted Net Assets** Net assets whose use is restricted by state law or subject to donor-imposed stipulations that may or will be met by actions of WPI and/or the passage of time.

Unrestricted Net Assets Net assets not subject to donor-imposed stipulations.

Revenues are reported as increases in unrestricted net assets unless use of the related assets is limited by donor-imposed restrictions. Expenses are reported as decreases in unrestricted net assets. Gains and losses on investments and other assets or liabilities are reported as increases or decrease in unrestricted net assets unless their use is restricted by explicit donor stipulation or by law. Expirations of temporary restrictions on net assets (that is, the donor-stipulated purpose has been fulfilled and/or the stipulated time period has elapsed) are reported as reclassifications between the applicable classes of net assets.

	\$57,017,940	\$41,170,281
Split-interest agreements and perpetual trusts	5,583,969	4,603,852
Endowment funds — unspent income and appreciation	46,645,637	33,158,358
	4,788,334	3,408,071
Acquisition of building and equipment	2,126,591	1,789,783
Gifts and other unexpended revenues: Instruction, research and institutional support	\$ 2,661,743	\$ 1,618,288
	1997	1996
Temporarily restricted net assets consist of the following at June 30, 1997 and 1996:		
	\$50,837,543	\$49,222,228
Student loan funds	1,510,331	1,427,336
Split-interest agreements and perpetual trusts	4,305,129	3,677,311
Endowment funds — original principal	\$ 45,022,083	\$ 44,117,581
remaining resurced net assets consist of the following at june 50, 1777 and 1770.	1997	1996
Permanently restricted net assets consist of the following at June 30, 1997 and 1996:		

Years ending June 30	1988 dollar <b>1996</b>	rs (millions) <b>1997</b>	Current dolla 1996	ars (millions) <b>1997</b>
Total Operating Revenues (Net of Student Aid)	53.7	56.7	71.7	77.8
Total Operating Expenses	52.5	56.1	70.1	77.0
Tuition and Fees Revenues (Net of Student Aid)	22.2	22.3	29.6	30.6

F6

At June 30, 1997 and 1996, substantially all of the University's unrestricted net assets were designated for specific purposes, as follows:

	1997	1996
Long-term investment (quasi-endowment funds)	\$ 117,376,813	\$ 100,190,366
Net investment in plant facilities	23,112,098	26,618,897
Loans to students	3,802,541	3,649,808
Undesignated	3,502,108	3,368,949
	\$147,793,560	\$133,828,020

**Gifts and Pledges** Contributions, including unconditional promises to give, are recognized as revenues in the period received. Conditional promises to give are not recognized until they become unconditional, that is when the conditions on which they depend are substantially met. The net assets of the Alumni Association of WPI, a separate 501(c)(3) corporation, are not reflected on the books of WPI. Net assets were approximately \$1.6M and \$1.3M at June 30, 1997 and 1996, respectively. Contributions of assets other than cash are recorded at their estimated fair value at the date received. Contributions to be received after one year are discounted at a rate of 6%. Amortization of the discount is recorded as additional contribution revenue in accordance with donor-imposed restrictions, if any, on the contributions. An allowance for uncollectible contributions receivable is provided based upon management's judgment including such factors as prior collection history, type of contribution and nature of fund-raising activity.

Conditional promises to give not reflected in the financial statements are approximately \$4,965,000 and \$3,958,000 as of June 30, 1997 and 1996, respectively, and consist primarily of bequests.

**Contributions with Restrictions Met in the Same Year** Contributions, received with donor-imposed restrictions that are met in the same year as received, are reported as revenues of the unrestricted net asset class.

**Release of Restrictions on Net Assets for Acquisition of Land, Building and Equipment** Contributions of land, building and equipment without donor stipulations concerning the use of such long-lived assets are reported as revenues of the unrestricted net asset class. Contributions of cash and other assets to be used to acquire land, building and equipment with such donor stipulations are reported as revenues of the temporarily restricted net asset class. The restrictions are considered to be released at the time of acquisition of such long-lived assets.

**Cash and Cash Equivalents** Cash and cash equivalents include cash on hand and short-term investments with maturities of 90 days or less when purchased.

Inventories Inventories, consisting principally of alumni souvenirs, are valued at the lower of cost (first-in, first-out) or market.

**Deferred Financing Costs** Deferred financing costs relate to debt issuance costs that are amortized over the life of the bonds. Total amortization expense for the years ended June 30, 1997 and 1996, was \$68,783 and \$69,852, respectively.

**Sponsored Research** Revenues associated with research and other contracts and grants at the University are recognized as related costs are incurred. Indirect cost recovery by the University is based on a predetermined rate.

**Property, Plant and Equipment** Land and land improvements, buildings and equipment are recorded at cost at the date of purchase. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts, and any resulting gain or loss is reflected in operation for the period. The cost of maintenance and repairs is charged to income as incurred, significant renewals and betterments are capitalized.

WPI depreciates capital assets based upon their useful lives. The policy applies to assets acquired with an expected useful life of three years or more and a cost greater than \$500. Depreciation is calculated using the straight-line method, half-year convention over the following estimated useful lives:

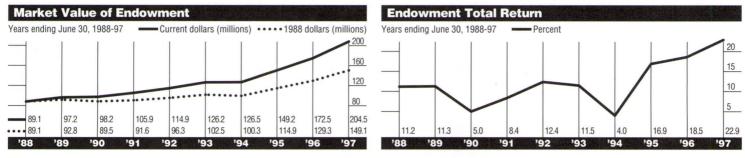
Land improvements	10 – 20 years
Buildings and improvements	20 - 60 years
Equipment	3 – 10 years

Depreciation expense for the years ended June 30, 1997 and 1996, was \$6,489,600 and \$5,824,229, respectively.

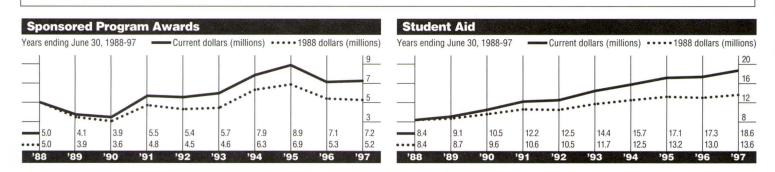
		rs (millions)		ars (millions)
Years ending June 30	1996	1997	1996	1997
<b>Operations and Plant Maintenance Expenditures</b>	8.0	8.9	10.7	12.2
Instruction and Department Research	22.7	24.4	30.3	33.5
Tuition and Fees as a Percent of Total Operating Revenues	<b>1996/</b> 41.3%	<b>1997/</b> 39.3%		

WPI JOURNAL

	<ul> <li>Impairment of Long-Lived Assets During fiscal 1997, the University adopted Financial Accounting Standa (FASB) No. 121, "Accounting for the Impairment of Long-Lived Assets to Be Disposed Of." The University ly reviews the value of its property in relation to the current and expected operating results of the related bus ments in order to assess whether there has been a permanent impairment of their carrying values.</li> <li>Split-Interest Agreements and Perpetual Trusts The University has split-interest agreements with donors primarily of charitable gift annuities, pooled income funds and irrevocable charitable remainder trusts. Assets</li> </ul>			
	primarily of charitable gift annuities, pooled income funds and irrevocable charitable remainder trusts. Assets held in trust are separately invested and are included in intermediate and long-term investments on the statement of financial position. Income distributions are made to beneficiaries in accordance with the trust agreements. Contribution revenues for charitable gift annuities and charitable remainder trusts are recognized at the dates the agreements are established, after recording liabilities for the present value of the estimated future payments to be made to the respective donors and/or beneficiaries. For pooled income funds, contribution revenue is recognized upon the establishment of the agreements as the fair value of the estimated receipts, discounted for the estimated time period to complete the agreements. Such contributions, net of the related liabilities, are classified as increases in temporarily or permanently restricted net assets based on donor-imposed stipulations. The present value of payments to beneficiaries of charitable gift annuities and charitable remainder trusts and the estimated future receipts from pooled income funds are calculated using discount rates from 6% to 10%.			
	Vested Vacation Accrual WPI accrues a liability for estimable compensated absences (vessalaried employees) as required by FASB Statement No. 43.	ested vacation for	r hourly and	
	<b>Tax-Exempt Status</b> The University is exempt from federal income tax under Section 501 Code.	(c)(3) of the Inte	ernal Revenue	
	<b>Use of Estimates in the Preparation of Financial Statements</b> The preparation of the finity with generally accepted accounting principles requires management to make estimate the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities statements and the reported amounts of revenues and expenses during the reporting period from those estimates.	es and assumption ities at the date of	ns that affect of the financial	
	Reclassification Certain 1996 amounts have been reclassified to conform to current year	presentation.		
2. AMOUNTS RECEIVABLE	Accounts receivable consist of the following at June 30, 1997 and 1996:	1997	1996	
NECEIVABLE	Sponsored research Other receivables	\$ 1,976,983 2,057,165	\$ 2,078,695 1,908,150	
	Less: allowance for doubtful accounts Total accounts receivable	4,034,148 368,573 <b>\$ 3,665,575</b>	3,986,845 473,278 \$ 3,513,567	
3. NOTES RECEIVABLE	Notes receivable consist of the following at June 30, 1997 and 1996:			
	Student loans Other	<b>1997</b> \$ 14,203,511 499,966	<b>1996</b> \$ 13,599,288 108,677	
	Less: allowance for doubtful accounts	14,703,477 11,398	13,707,965 15,849	
	Total notes receivable	\$14,692,079	\$13,692,116	
	Notes receivable are principally amounts due from students under federally sponsored subject to significant restrictions. Accordingly, it is not practicable to determine the fair va			



4. CONTRIBUTIONS	Unconditional promises at Ju	une 30, 1997 and 1990	6, are expected to b	e realized in the	following periods:	
RECEIVABLE:	I J	,	,		1997	1996
	In one year or less				\$ 1,068,670	\$ 670,595
	Between one and five years				1,184,569	604,880
	Greater than five years				340,000	
					2,593,239	1,275,475
	Less: Discount	*			222.000	91 600
	Allowance				223,000 177,000	81,690 318,310
	Allowance				\$ 2,193,239	\$ 875,475
					\$ 2,175,257	\$ 0/3,4/3
5. PROPERTY, PLANT	Property, plant and equipme	nt consists of the follo	owing at June 30, 1	997 and 1996:		
AND EQUIPMENT					1997	1996
	Land and land improvements				\$ 5,602,193	\$ 5,140,848
	Buildings				79,685,627	78,837,572
	Equipment				26,008,749	24,069,562
	Construction in progress				1,430,237	3,067,982
					112,726,806	111,115,964
	Less: accumulated depreciat	ion			48,976,525	43,004,683
					\$63,750,281	\$68,111,281
6. INVESTMENTS	Investments in equities, bond ments at fair value. Investme partnerships are estimated by During the year the Univers to the endowment at a net be follows (comparative totals a	nt in the realty trust i y the respective extern ity transferred the rea book value of approxim	s reflected at cost. I al investment man l estate and operati ately \$4.2 million.	Fair values for in agers if fair value ons of the Salisb	vestments held thro is are not readily asc ury Estates from the	ugh limited ertainable. e plant fund
			Split-Interest			
		Endowment	Agreements	Other	Total	Total
	Cash and cash equivalents	\$ 7,122,759	\$ 240,784	\$ 7,110,043	\$ 14,473,586	\$ 8,897,041
	Equities	114,836,265	5,043,165	12,000	119,891,430	88,584,767
	Bonds	15,582,785	6,206,687	100,000	21,889,472	19,812,051
	Mutual funds:					
	Equity funds	39,921,678			39,921,678	36,981,458
	Fixed income funds	24,293,494		228,278	24,521,772	23,689,709
	Realty trust*	2,682,000			2,682,000	3,000,000



3,459,831

608,505

861,198

128,000

2,056,131

13,433,983

\$13,674,767

5,026,801

207,272,557

\$214,395,316

Oil and gas, L.P.\*

Bioventures, L.P.\*

Other partnerships\*

Funds held in trust by others \*

Total intermediate and long-term investments

\*Not publicly traded

Real estate\*

Other\*

Total

3,459,831

608,505

861,198

128,000

5,026,801

2,056,131

221,046,818

\$235,520,404

340,278

\$7,450,321

7,581,344

1,075,114

2,918,115

700,000

241,880

1,746,174

186,330,612

\$195,227,653

**Endowment Income and Spending** At June 30, 1997, there was a total of 47,101,811 units, each having a market value of \$4.345. Of the total units, 19,970,833 were owned by endowment funds and 27,130,978 were owned by internally designated funds.

A summary of the market value per unit and the income per time-weighted unit for the pooled investments held as of June 30, 1997, and in each of the prior four years is as follows:

	Income Per Time Weighted Unit	Market Value Per Unit
1997	\$0.079	\$4.345
1996	0.106	3.698
1995	0.114	3.190
1994	0.094	2.968
1993	0.121	3.028
The University charges a gran ding gale with some of the	second and the second second because the	f al

The University observes a spending rule with respect to unrestricted investment income on investments of the endowment. In accordance with that spending rule, the University distributed 5.5% of the average unit market value for the previous two years to current operations.

The spending rule distributions for fiscal 1997 and 1996, respectively, were .169 and .165 per time weighted unit, which were comprised of .079 and .106 of income per time-weighted unit and .090 and .059 per unit distributed from accumulated capital gains.

Intermediate and long-term investments at June 30, 1997 and 1996, include the following split-interest agreements:

	1997	1996
Charitable gift annuities	\$ 3,047,459	\$ 2,148,149
Charitable remainder trusts	5,457,296	4,416,008
Pooled income funds	2,873,097	2,620,843
Perpetual trusts	2,056,131	1,746,174
	\$13,433,983	\$10,931,174

**Investment Return** The investment return in the statement of activities for the year ended June 30, 1997, with comparative totals for 1996, can be summarized as follows:

	1997			1996	
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total	Total
Investment income Net realized and unrealized gains	\$ 3,589,360 20,012,381	\$ 15,606,362	\$ 21,089 360,347	\$ 3,610,449 35,979,090	\$4,526,610 23,858,395
Return on endowment Other investment income	23,601,741 1,845,133	15,606,362 293,742	381,436 37,864	39,589,539 2,176,739	28,385,005 1,704,442
Total return on investments	25,446,874	15,900,104	419,300	41,766,278	30,089,447
Investment return designated for current operations	7,618,733	1,938,909	109,723	9,667,365	8,915,619
Investment return in excess of amount designated for current operation	\$17,828,141	\$13,961,195	\$309,577	\$32,098,913	\$21,173,828

#### 7. LONG-TERM DEBT:

Investment income is net of management expenses of \$1,653,855 and \$825,441 for the years ended June 30, 1997 and 1996, respectively.

Long-term debt at June 30, 1997, amounted to \$66,382,792. Schedule I (next page) summarizes the components of long-term debt. The aggregate amounts of principal due for each of the next five fiscal years are as follows:

1998	\$1,695,200
1999	1,625,936
2000	1,839,251
2001	2,497,190
2002	5,585,299

On October 1, 1988, WPI deposited with Trustees sufficient funds to defease HEFA Series B Bonds that mature July 1, 2000. The amount of Series B principal outstanding at June 30, 1997, was \$3,140,000.

On February 15, 1997, WPI deposited with Trustees sufficient funds to prepay in full HEFA Series C and Series E Bonds that mature September 1, 2000 and September 1, 2017, respectively. WPI issued Massachusetts Industrial Finance Agency Series I bonds of \$29,855,000 in connection with the refinancing. (See Schedule 1) WPI recognized a loss of approximately \$3.2 million on the refinancing. However, a net present value savings will be realized over the life of the bonds.

During fiscal 1997 WPI prepaid in full HEFA Series J1 and J2 loans. WPI issued MIFA Series II bonds of \$29,600,000, which included proceeds for the retirement of these HEFA loans.

In compliance with the University's various bond indentures, deposits with Trustees at June 30, 1997 and 1996, include investments in debt service and reserve funds of \$21,989,745 and \$1,074,532, respectively.

The bond agreements contain restrictive covenants that, among other restrictions, include the maintenance of certain financial ratios.

The University entered into an interest rate swap agreement with an investment broker in November, 1991, in order to reduce the cost of borrowing on its HEFA Series C and E bonds. The swap had a notional principal amount of \$30 million and effectively changed the interest rate exposure on the Series C and E bonds to a variable rate based on a specified bond index. The swap agreement terminated in December 1996. The University recognized income from the swap of approximately \$165,000 and \$316,000 during fiscal years 1997 and 1996, respectively, which is included in other investment income in unrestricted net assets. The Series C and E bonds were refunded in February 1997.

In April 1994, WPI entered into a second six-year swap agreement (the "Agreement") for a notional amount of \$30 million in order to further reduce its cost of borrowing. The Agreement terminates in fiscal 2000 and calls for the receipt of fixed payments by the counterparty at 4.85% of the notional amount in exchange for variable payments on an equivalent amount based on the PSA Municipal Bond Index. In March 1996 the University amended the Agreement to receive fixed payments from the counterparty through June 1999 of \$63,000 per quarter. The University is exposed to market risk from June 1999 through the termination of the Agreement. In fiscal 1997 and 1996 the University recognized income of approximately \$252,000 and \$123,000, respectively, from the Agreement, which is included in other investment income in unrestricted net assets. The fair value of the Agreement at June 30, 1997, was approximately \$275,000, which represents the present value of the future payments to be received by the University.

The University is exposed to credit risk in the event of nonperformance by the counterparty. The counterparty to the Agreement is an established investment bank and the University does not anticipate nonperformance by the counterparty.

Amount

Balance

Purpose and Definition	Maturity Date	Interest Rate %	Original Issue	Due Within One Year	June 30, 1997
Bonds Payable:				÷	
Housing and Urban Development:					
Series A - April 1, 1969 (1)	10/1/97	2.75	\$987,000	\$ 47,000	\$ 47,000
Series B - April 1, 1969 (2)	4/1/01	3.375	919,000	45,000	169,000
Series C - April 1, 1969 (3).	4/1/19	3.00	1,160,000	25,000	727,000
				117,000	943,000
Massachusetts Health and Educational Facilities Authority:					
Series A - July 1, 1977 (4)	7/1/03	4.7-5.3	4,150,000	190,000	1,300,000
Massachusetts Industrial Finance Agency:					
Series I (5)	9/1/17	5.11	29,745,814	1,060,000	29,745,814
Series II (6)	9/1/27	4.1 - 5.5	29,257,316	_	29,257,316
				1,060,000	59,003,130
Mortgage Payable: Ellsworth-Fuller Student					
Residence Center (7)	12/31/03	7.25	1,950,000	103,200	824,162
Unsecured Notes:					
Fleet Bank - 9/28/93	9/1/01	Libor+.135	4,500,000	225,000	4,312,500
Total bonds and mortgages payable (8)				\$1,695,200	\$66,382,792

#### Note 7, Schedule I Summary of Bonds, Notes and Mortgages Payable June 30, 1997

 Collateralized by land, building and equipment known as Morgan Hall (carried on the accounts at \$809,293) and pledged net revenues, from the operations of the dormitory and dining hall located therein.

(2) Collateralized by land, building and equipment known as Daniels Hall (carried on the accounts at \$580,451) and pledged net revenues from the operations of the dormitory and bookstore located therein.

(3) Collateralized by land, building and equipment known as Stoddard Residence Center (carried on the accounts at \$770,750) and pledged net revenues from the operations of the dormitory and health center located therein.

8. PENSION PLANS	<ul> <li>(4) Pledged as collateral are \$1,430,000 of internally designated endowment funds equal to 110<sup>o</sup> standing, which are held by a Trustee in the Debt Service Reserve Fund. Various academic r bonds.</li> <li>(5) The bonds are not secured by a mortgage lien on security interest in any real property a revoligation of the University. The balance at June 30, 1997, is net of a discount of \$109,186.</li> <li>(6) The bonds are not secured by a mortgage lien on security interest in any real property a revoligation of the University. The balance at June 30, 1997, is net of a discount of \$342,684.</li> <li>(7) Interest is at 7 1/4%, of which 3% is paid by WPI and the balance is paid by the U.S. Depaid (8) The total amount outstanding at June 30, 1997, approximates fair value based on estimates u with the same remaining maturities.</li> <li>WPI contributes to a defined contribution plan (TIAA-CREF) for academic and</li> </ul>	evenues are pledged for the H enues of the University and re enues of the University and re rtment of Housing and Urban sing current interest rates ava	EFA Series A present a general present a general Development. ilable for debt
	to TIAA-CREF are based on a percentage of payroll. The University's pension of \$2,342,933 for the fiscal years ended in 1997 and 1996, respectively.		
9. Commitments	During fiscal year 1997, WPI entered into additional commitments with several 1 \$4,000,000, bringing the cumulative total to \$8,000,000. These partnerships inve 1997, WPI has funded \$3,330,000, and has remaining commitments under the ag The University has guaranteed a \$1,287,000 mortgage debt of two fraternition real property owned by the fraternities. WPI is obligated under noncancelable operating leases for various facilities a agreements consist of office furniture, computer equipment, office space and stor Commitments under noncancelable operating leases provide for minimum re- years of:	st in venture capital. As or preements of \$4,670,000. es. The mortgages are co and equipment. Assets un- age facilities.	of June 30, llateralized by der these lease
	1998 1999 2000 2001 2002	\$ 404,088 347,643 284,208 284,208 19,200 <b>\$1,339,347</b>	
	Rental expense was \$335,909 and \$111,616 for the years ended June 30, 199	7 and 1996, respectively.	
10. CONTINGENCIES	WPI has pending several cases that have arisen in the normal course of operation these cases will have no material adverse effect on the University's financial positi The University's sponsored research program and indirect cost recovery are respective sponsoring federal agency as provided for in federal sponsored research that such audits will not have a materially adverse effect on WPI's financial positi	on. subject to the future audi h regulations. Manageme	ts by the
11. EXPENSES BY FUNCTIONAL CATEGORY	Following is a schedule of expenses by functional category: Instruction and department research Sponsored research External relations Institution and academic support Student services Auxiliary enterprises Depreciation, maintenance, interest and other expenses have been functional	<b>1997</b> \$39,001,424 8,256,526 2,700,718 14,275,419 4,474,395 8,288,010 <b>\$76,996,492</b> ized. Methods in allocation	<b>1996</b> \$35,097,235 6,972,257 2,014,803 13,263,912 4,152,898 8,601,109 <b>\$70,102,214</b>
	expenses include actual expenses incurred and percentage of square footage for ea External relations expenditures include \$2,631,766 and \$1,922,169 of fund-ra June 30, 1997 and 1996, respectively.	ich functional area.	-

Fall 1997

#### WPI TRUSTEES AND OFFICERS

#### As of June 30, 1997

#### **BOARD OF TRUSTEES**

John M. Nelson, *Chairman* Chairman, The TJX Companies Inc.

Peter H. Horstmann '55,

Vice Chairman Director of Human Resources Chronicle Publishing Company

Ronald L. Zarrella '71, *Vice Chairman* Vice President and Group Executive, NAO Vehicle Sales, Service and Marketing

General Motors Corporation George T. Abdow '53 Chairman of the Board Abdow Corporation

Paul A. Allaire '60 Chairman and CEO, Xerox Corporation

Paul W. Bayliss '60 Independent Consultants

Robert H. Beckett '57 Retired

Daniel I. Coifman '67 Manufacturer's Representative Able International Corporation

Thomas A. Corcoran President and COO Lockheed Martin Electronics Sector

Michael A. DiPierro '68 President, Baystone Corporation

Warner S. Fletcher Fletcher, Tilton & Whipple, P.C.

Robert A. Foisie '56

John C.S. Fray Deputy Director, Integrative Biology and Neuroscience, National Science Foundation

\* deceased

John J. Gabarro '61 Professor and Chair, Organizational Behavior

Harvard Business School Barbara Bain Gatison '74 President HebCom

James N. Heald II Retired

Wilfred J. Houde '59 President, W.J. Houde & Associates M Howard Jacobson

Senior Advisor, Bankers Trust Charles C. Johnston '57 Ventex Technologies

Paul J. Keating II '64

President, RoofBlok Ltd. Gordon B. Lankton President, Nypro Inc.

Peter H. Levine President and CEO Memorial Health Care Inc.

Claude P. Mancel '71 Vice President for Research and Development, Europe, Middle East and Africa N.V. Procter & Gamble Company

F. William Marshall Jr. President and CEO, SIS Bancorp

Myles McDonough Chairman, Flexcon Company Inc.

Alfred A. Molinari Jr. '63 President and CEO, Data Translation Inc.

Philip R. Morgan President and CEO Morgan Construction Company Judith Nitsch '75

President, Judith Nitsch Engineering Inc

David P. Norton '62 President, Renaissance Solutions Inc. Edward A. Parrish President, WPI

Windle B. Priem '59 President, North America Korn/Ferry International

Leonard E. Redon '73 Rochester Site Services Manager Eastman Kodak Company

Carol L. Reinisch Chair, Department of Environmental and Population Health Tufts University School of Veterinary Medicine

Stephen E. Rubin '74 President and CEO, Intellution Inc.

Frederick D. Rucker '81 Senior Vice President, Corporate Strategy, Bell Canada

John J. Shields '69 President and CEO King's Point Holding Inc.

H. Kerner Smith Chairman, President and CEO Stone & Webster Inc.

Claude-Alain Tardy Saint-Gobain

Donald Taylor '49 Sullivan Associates

#### EMERITI MEMBERS

Walter J. Bank '46 Retired John Lott Brown '46 President Emeritus University of South Florida Robert Cushman Chairman of the Board, Retired Norton Company

C. Marshall Dann '35 Dann, Dorfman, Herrell and Skillman Richard A. Davis '53 J&R Associates

William A. Delphos '74 President, Delphos International

Albert M. Demont '31 Retired

William P. Densmore '45 Retired

Irving James Donahue Jr. '44 Chairman, Donahue Industries Inc.

Raymond J. Forkey '40 President, Retired Coppus Engineering Corporation

Howard G. Freeman '40 Founder and Chairman, Retired Neles-Jamesbury Corporation

Anson C. Fyler '45 Management Consultant

Caleb D. Hammond '37 Chairman Emeritus, Hammond Inc.

William E. Hanson '32 Retired

Francis S. Harvey '37 President and Treasurer Harvey & Tracy Associates Inc.

Milton P. Higgins\*

John E. Hossack '46 Retired Chandler W. Jones '26 Retired

Carl W. Lewin '39 Retired C. John Lindegren Jr. '39 Chairman of the Board, Lindco Inc.

Arthur J. LoVetere '60 Chairman, Reflexite Corporation

John C. Metzger Jr. '46 Group Vice President, Retired E.I. du Pont de Nemours & Co. Inc.

Charles R. Michel '37 Retired

John F. O'Brien President and CEO, Allmerica Financial

Stanley C. Olsen President, Gulf to Lakes Corporation

Hilliard W. Paige '41 Raymond J. Perreault '38 Retired

Donald E. Ross '54 Retired, MPB Corporation

Miriam B. Rutman President, The Herald Press

George E. Saltus '53 Retired, Bell Telephone Laboratories Inc. Gordon H. Sigman Jr. '59 Retired

Dorothy M. Simon S. Merrill Skeist '40

President, Spellman High Voltage Electronics Corporation

Robert C. Stempel '55 Energy Conversion Devices Howard C. Warren '42 Retired

Robert J. Whipple Leonard H. White '41 Chairman and Treasurer R.H. White Construction Co.

Gordon C. Branche

Mohammad N. Noori

Mathematical Sciences

Mechanical Engineering

Stephen H. Tupper

Raymond R. Gilbert

Thomas H. Keil

Douglas W. Woods

Physics

Physical Education and Athletics

Social Science and Policy Studies

Military Science

**OFFICERS OF THE UNIVERSITY** 

Edward A. Parrish President

#### OFFICE OF ACADEMIC AFFAIRS

John F. Carney III Provost and Vice President for Academic Affairs

William W. Durgin Associate Provost for Academic Affairs

Lance E. Schachterle Assistant Provost for Academic Affairs

#### OFFICE OF BUSINESS AFFAIRS

Stephen J. Hebert '66 Vice President for Administration, Treasurer, Secretary of the Corporation

#### Frank P. Conti Controller and Assistant Secretary

Sylvia Cucinotta Associate Treasurer

John E. Miller Associate Vice President for Business Affairs and Director of Physical Plant

#### DIVISION OF STUDENT AFFAIRS

Bernard H. Brown Vice President for Student Affairs Janet Begin Richardson

Assistant Vice President for Student Affairs and Dean of Student Life

#### OFFICE OF UNIVERSITY RELATIONS

John L. Heyl Vice President for University Relations

#### LEGAL COUNSEL

Fletcher, Tilton & Whipple P.C.

#### Academic Department Heads

Kenneth A. Stafford Aerospace Studies

Ronald D. Cheetham Biology and Biotechnology Robert A. Peura Biomedical Engineering

Albert Sacco Jr. Chemical Engineering James P. Dittami Chemistry and Biochemistry Frederick L. Hart

Civil and Environmental Engineering

Robert E. Kinicki Computer Science Hossein Hakim

Interdisciplinary and Global Studies Division

John A. Orr Electrical and Computer Engineering David A. Lucht

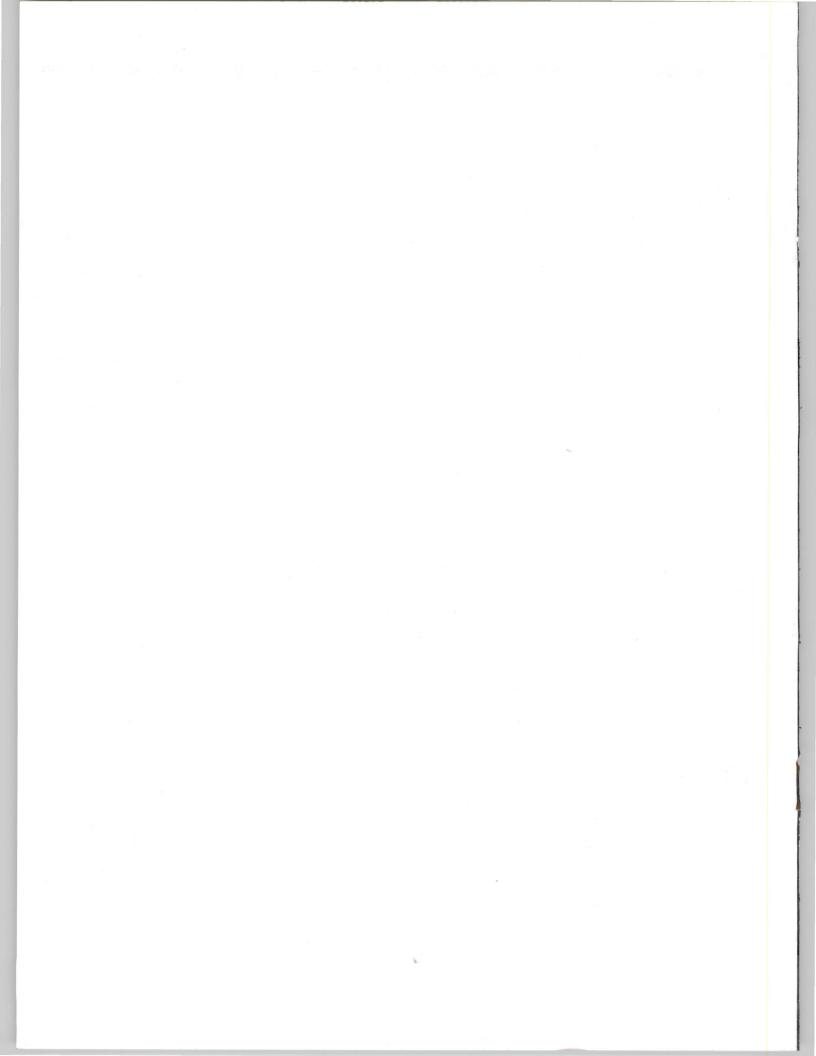
Center for Firesafety Studies

Lee Fontanella

Humanities and Arts

Management

McRae C. Banks II



#### FINANCIAL SUMMARY AND HIGHLIGHTS

BY STEPHEN J. HEBERT '66

Vice President for Administration, Treasurer and Secretary of the Corporation

n June 30, 1997, WPI marked the conclusion of a highly successful fiscal year, as the operating budget finished with a surplus of approximately \$14,000. It was a year that saw WPI with a full enrollment, with an expanding reputation, and with a caring group of faculty and staff who worked diligently to enhance the overall quality of the University's educational experience.

The total revenue for the fiscal year was \$75,064,000. When financial aid is discounted from that figure, the net revenue for the year was \$61,366,000. There was less dependence upon tuition as a source of revenue, which continues a positive pattern that has extended over the last three years (actual dependence dropped from 41.6 percent in FY 94 to 39.3 percent in FY 97). WPI's Waltham Campus, in its first year of operation, turned in a net contribution of \$218,000.

As the University entered the early stages of a comprehensive capital campaign, gift income increased slightly from the previous year as the base was set for the development of the campaign nucleus fund. The return on endowment from the spending rule of 5.5 percent produced a net change in revenue for the year of \$4,675,000.

While it's not reflected in the numbers for FY 97, there was a positive turn of events in May 1997, as 73 percent of the Class of 2001, which matriculated in August 1997, required need-based financial aid, down from 77.8 percent, which has been the case for several years. The average award was actually down from the previous year, as well. While one year does not make a trend, this change in financial aid is viewed as quite positive, for as was noted in last year's annual report, the continued growth of financial aid, which represents approximately 30 percent of tuition income, has been a major source of concern to universities such as WPI.

The investment performance for the year was outstanding and generally reflected the overall growth in equity markets throughout the world. At year end, the endowment portfolio was slightly above its targeted asset allocation of 70 percent in equities, which was reflected in the total return net of fees for the year—22.9 percent. This places WPI in the top quartile of colleges and universities as measured by the National Association of College and University Business Officers. The Investment Committee of the Board of Trustees is to be commended for its oversight and management of this portfolio, which in many ways is the flywheel that drives the University from year to year and allows it to offer innovative programming and to undertake forward-looking initiatives.

During the course of the year, WPI refinanced approximately \$30 million of debt at an average all-in rate of 5.46 percent. The University also acquired \$29.6 million of new debt late in June, again at a competitive rate of 5.5 percent. The proceeds from this new issue will be used to fund the renovations of three residence centers—Daniels Hall, the Ellsworth/Fuller Residence Complex and Morgan Hall over a three-year period. It will also provide approximately \$5.6 million for the planned construction of a campus center, \$1.9 million for parking expansion, \$2 million for computer system enhancement, \$2.5 million for the acquisition and renovation of a major property adjacent to the campus, and approximately \$7.4 million for the retirement of an additional segment of debt that was not refinanced in February. The positive ratings of WPI by Moody's and Standard & Poor's (A2 and A+, respectively) speak well of the strength of the financial base of the University.

All in all, it was a strong year for WPI, financially.

#### YEARS ENDED JUNE 30, 1997 AND 1996

l	\$57,93 18,61 8,25	0	53,338 17,288	+8.6%
l	18,61	0		
l			17,288	
l	8,25			+7.6
		8	10,131	-18.5
	7,51	8	6,329	+18.8
÷,	7,50	02	7,067	+6.2
i <b>lar</b> s)	199	7	1996	Percent Change
ues	\$177,40	6 \$1	54,734	+16.4%
dends) ains			\$5,086 20,716	
	\$38,52	20 \$	\$25,802	+49.3
	(6,81	8)	(5,739)	+18.8
ent	31,70	)2	20,063	+58.0
	5,28	37	2,609	+102.6
	\$214,39	5 \$1	77,406	+20.9
<b>'97</b>	'96	<b>'</b> 95	'94	'93
22.9%	18.5%	16.9%	6 4.0%	11.9%
20.7	16.9	18.5	3.2	13.5
34.8	26.1	26.1	1.4	13.6
	llar s) dends) rains ent '97 22.9% 20.7	7,50 (lar s) 199 ues \$177,40 dends) \$3,61 34,91 $\overline{338,52}$ ent $(6,81)$ $\overline{31,70}$ 5,28 $\overline{$214,39}$ $\overline{$214,39}$ $\overline{$214,39}$ $\overline{$2.9\%}$ 18.5% 20.7 16.9	7,502 (lar s) 1997 ues \$177,406 \$1 dends) \$3,610 34,910 $338,520$ ${$}$ ent $\frac{(6,818)}{31,702}$ $-{$}$ $\frac{5,287}{$214,395}$ ${$1}$ ${$}$ $\frac$	$7,502$ $7,067$ Har (s)19971996ues\$177,406\$154,734dends)\$3,610 (\$38,520)\$5,086 (20,716)ent $\frac{(6,818)}{31,702}$ $\frac{(5,739)}{20,063}$ ent $\frac{(6,818)}{31,702}$ $\frac{(5,739)}{20,063}$ $\frac{5,287}{$214,395}$ $\frac{2,609}{$177,406}$ '97'96'95'9422.9%18.5%20,716.918.53.2

LB G/C Bond Index7.84.712.8-1.513.2CPI Index2.92.83.12.53.0Copies of the complete audited financial reports for WPI for Fiscal

Year 1997 can be obtained by writing to:

Office of Business Affairs WPI 100 Institute Road Worcester, MA 01609-2280

