



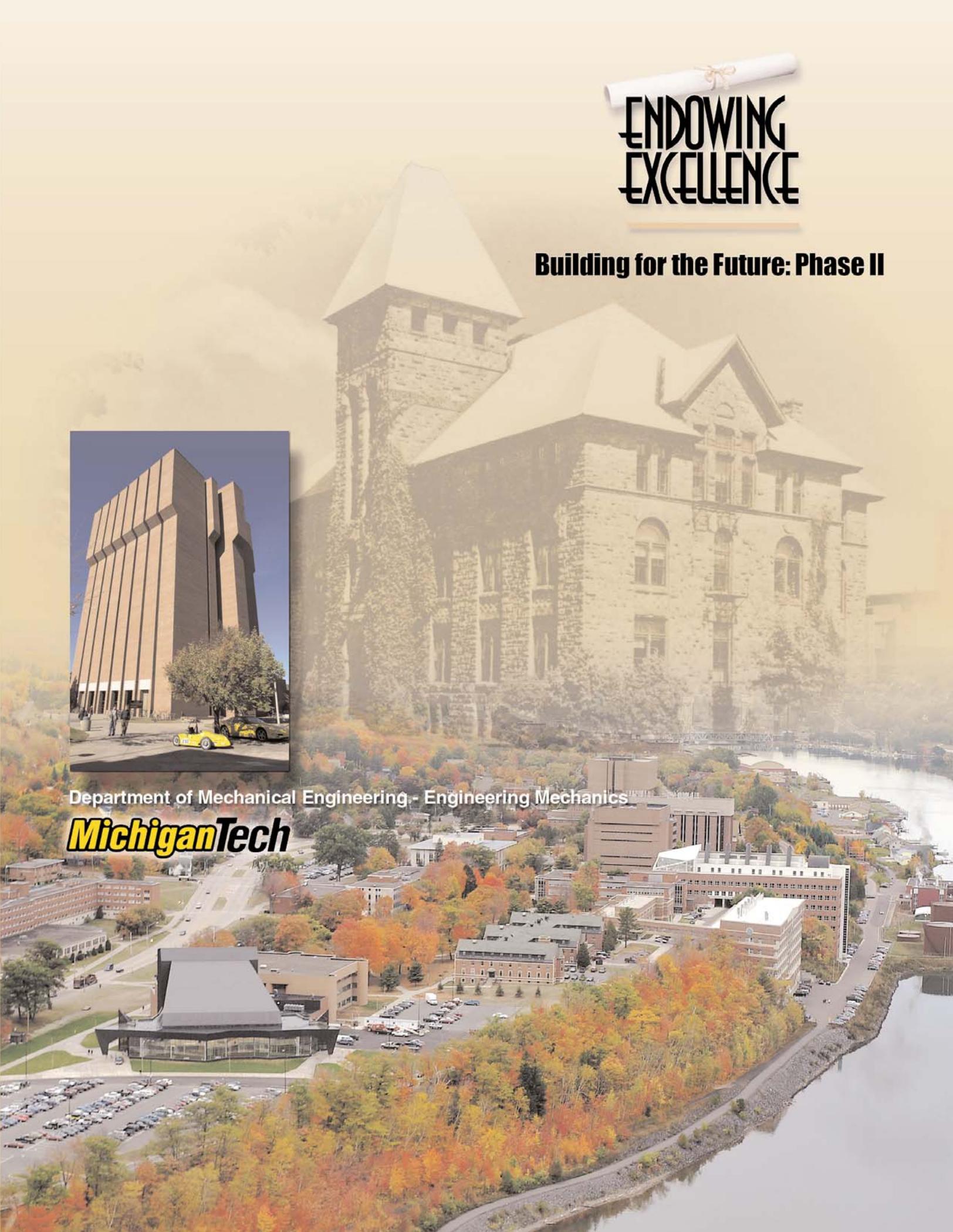
# ENDOWING EXCELLENCE

## Building for the Future: Phase II



Department of Mechanical Engineering - Engineering Mechanics

**MichiganTech**





# ENDOWING EXCELLENCE BUILDING FOR THE FUTURE: PHASE II



*William W. (Bill) Predebon, Ph.D.  
Professor & Chair  
Department of Mechanical Engineering-Engineering Mechanics  
Building for the Future Campaign: Phase II*

## Endowing Excellence in a national department of choice

Nearly every industry depends upon mechanical engineers. They are indispensable in every facet of the engineering profession as well as in finance, law, and medicine. Mechanical engineers design, test, and produce everything from automobiles, airplanes, space vehicles, power plants, computers, and robots to furnaces, household appliances, and medical equipment.

That's why it is imperative that Michigan Tech students are taught by quality faculty and exposed to first-class equipment and facilities. The Department of Mechanical Engineering-Engineering Mechanics (ME-EM) offers an outstanding educational experience and excellent facilities in a nurturing professional learning environment. Phase I of our successful fundraising campaign, *Building for the Future*, focused on improving and renovating laboratories and creating new learning environments. Mission accomplished for the moment. Thank you for your generous support and involvement.

Our redesigned curriculum and facilities provide one of the finest and most innovative mechanical engineering educations in the nation. We are proud that for more than 19 consecutive years, the ME-EM Department has ranked in the top four nationally in undergraduate mechanical engineering degrees granted. In 2001-2002, ME-EM was number three. In academia as well as industry, having the best is a two-edged sword. The better you are, the harder you have to work to retain that level of excellence and accomplish even greater goals.

Intellectual capital is clearly our most vital resource. We are competing with the top universities in the U.S. and with industry to recruit the best students and faculty. ME-EM needs a permanent and dedicated source of support to fund departmental objectives and further enhance our reputation as a national department of choice.

In the face of increased competition, unstable economic times, and fluctuating budgets, the ME-EM Department seeks endowed support to increase our long-term commitment to students, faculty, and staff. These endowment funds, to be raised during Phase II of the *Building for the Future* campaign, will be used to attract, reward and retain highly talented faculty through endowed faculty chairs, to create additional incentives and opportunities for students through endowed graduate fellowships, and to promote excellence.

We hope what you discover in these pages will motivate you to help us. Named endowments add prestige to the department and establish a legacy associated with outstanding alumni leaders and corporate partners. You honor us with your accomplishments. You can make a prominent and permanent investment in ME-EM that all our students and alumni will view with pride in the years to come.

More importantly, you'll make a big difference.

*William W. Predebon*

**On our cover:** Rising from the banks of the historic Keweenaw Waterway, in all its fall finery, Michigan Tech has a proud heritage of Endowing Excellence upon its students, bestowing nearly 11,000 Mechanical Engineering degrees since 1885. Upper right; Hubbell Hall, Michigan College of Mines (circa 1904), graduated 58 mechanical engineers that year; R. L. Smith ME-EM Building built in 1971, was designed for 600 undergraduate and 50 graduate students. In 2002-2003, some 1,000 undergrads and 150 graduate students pass through those same halls in search of our exclusive brand of engineering excellence.

# ENDOWING EXCELLENCE

# BUILDING FOR THE FUTURE: PHASE II

## Endowing Excellence creates working capital

If there's one thing better than achieving your goals, it's exceeding them.

Phase I of our *Building for the Future* campaign was a resounding success. Thanks to the generosity of our alums and friends, we raised \$3.4 million, exceeding our goal of \$2.8 million by 21 percent, and have improved the educational environment for ME-EM students, faculty and staff. Our undergraduate facilities are state of the art.

The department has grown and its impact is felt across the nation. *Among schools that offer the BSME through 2002, Michigan Tech has been in the top four universities in numbers of undergraduate degrees granted for 19 consecutive years; In 2001-2002, ME-EM was number three.*

## Our vision: Solidify and enhance our reputation as a department of choice nationally.

The challenges of attracting, rewarding and retaining great faculty and great students are greater than ever. Today, we lack the financial foundation needed to sustain our vision for future generations. But you can help us accomplish just that by endowing excellence, raising funds that will support our people.



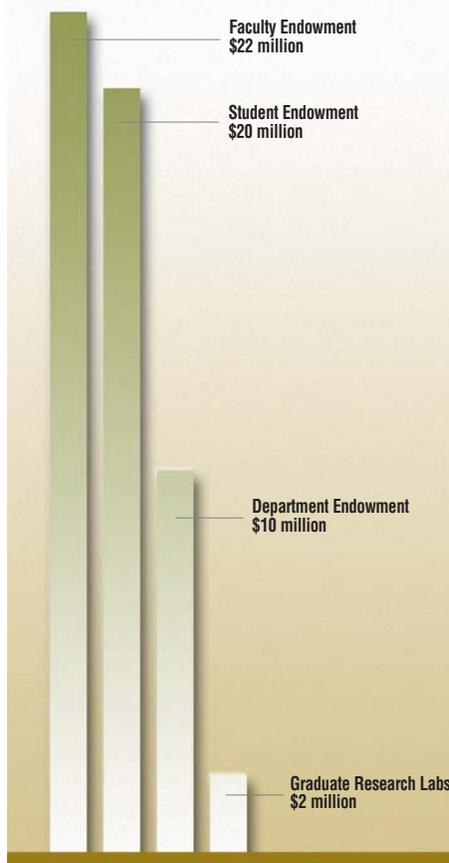
Research in Mechanical Engineering requires expensive, sophisticated equipment and instrumentation.

## We plan to invest the money wisely by expanding our graduate program.

Graduate students are vital to the day-to-day business of conducting advanced research. Without graduate programs, university research goes unfunded. Through astute investment of our own funds, the graduate program has grown steadily for the past ten years, attracting talented faculty and research grants. In 1999-2000, Michigan Tech's ME-EM Department ranked 21st in PhDs granted, and 12th in total graduate student enrollment, out of 260 ME departments in the country. *However MTU's endowment falls below our national standing, and lags far behind our peers.*

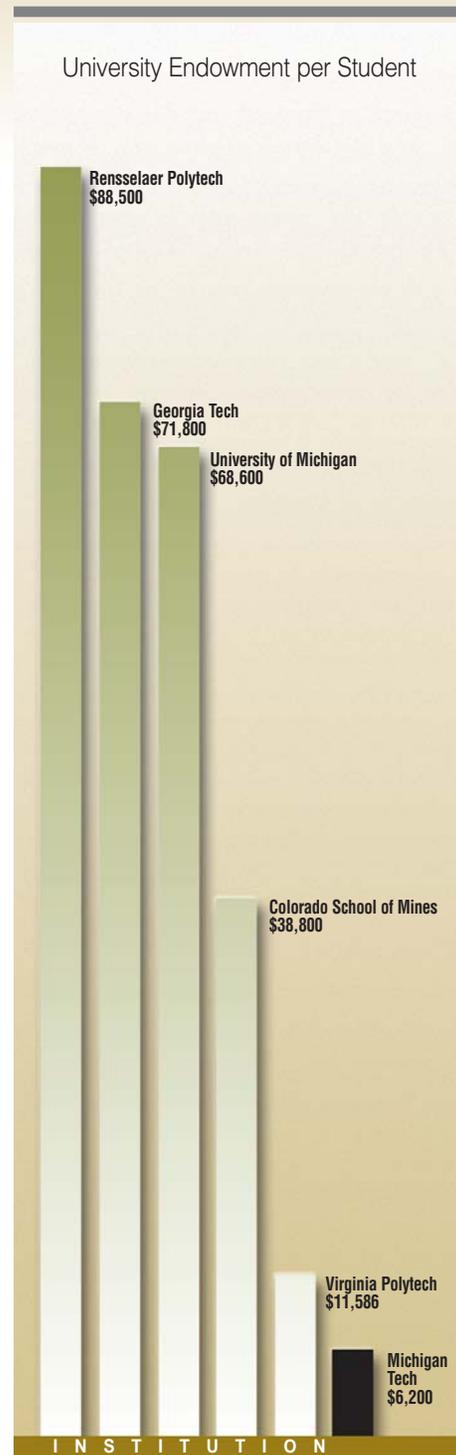
## Goals for Endowing Excellence

**Raise \$54 million over the next ten years and create an endowment that will support our ambitious academic goals.**



What a difference an endowment makes.

## University Endowments: How we stack up



### What's wrong with this picture?

*There is an urgent need to grow Michigan Tech's endowment, which currently lags far behind many of our peers and competing universities.*

**Endowing Excellence helps us attract the best and the brightest**

As a national department of choice, we must attract and retain the highest-quality students and faculty from across the United States and throughout the world. By making a permanent investment in a critical, cherished field of study, you can play a crucial role in furthering the advancement of knowledge in mechanical engineering.

**Endowments provide a stable source of income**

More than money, each endowed gift reflects a personal desire to give something back, to repay a debt of gratitude, to honor a loved one, or to make a positive impact on society.

As an investment partner in ME-EM, you will not only make a big difference, we will put your name on it.

Through the thoughtful, wise investment of private gifts to an endowed fund, support is provided for programs and activities specifically outlined for funding from the endowed account. The endowment principal is kept in perpetuity, and provides a dependable, sustained revenue stream.

In the face of increased competition, unstable economic times and fluctuating budgets, we need a rock solid source of income. Competition for the best available faculty is even more acute than for promising students, partly because MTU must also compete with private industry and the public sector for potential faculty.

As our programs become stronger and more visible, our people become more valuable to others. Such competition is strongest in fields where universities, private business and government most closely intersect—engineering, business, sciences and the health care fields.

How will ME-EM retain its scholars in the face of attractive lures from other institutions and potential employers? *By endowing excellence.* Michigan Tech is an outstanding place to live and work, but without financial incentives, an excellent lifestyle is often not enough to attract or retain outstanding faculty.

**Endowing Excellence attracts the finest faculty**

No university can achieve preeminence without a great faculty, and no plan to improve education or attract the best students will succeed without top-quality teachers. A strong, talented

faculty is the lifeblood of a university. The best teachers and researchers inevitably attract the most capable students. Outstanding teaching starts with faculty who are at the top of their profession, who can excite students to think beyond the classroom material, and who know how to integrate their research into the classroom. Competition for outstanding engineering faculty is intense. Endowed support is necessary to attract and retain quality professors.

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*We need endowed faculty support for Chair Professors, Professors, Associate Professors, Assistant Professors, Practitioner Chairs and Visiting Professorships. See insert brochure for naming opportunities and more information.*

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Return on investment (ROI) of endowment funds for endowed chairs provides stable support for graduate and undergraduate students engaged with world-renowned faculty on cutting edge research. These funds provide continuing support for state-of-the-art equipment in the unique research area of the faculty chairholder, leveraging/matching support for government/industry contracts, and travel expenses to meet with research sponsors.



*Endowments help us deliver a superior technological education to our students and insure the future of our innovative programs. Pictured: The SAE Aero Student Competition Cargo Plane Team and their two faculty advisors. The student-designed and built remote control cargo plane must carry a significant cargo load over a set distance and course in the shortest time.*

**RICHARD W. & ELIZABETH A. HENES**  
**Create First Endowed Chair Professor in Mechanical Engineering**



The Richard W. and Elizabeth A. Henes Chair Professor in Mechanical Engineering was established in January 2002. Richard, a Menominee, Michigan native, graduated from Michigan Tech in 1948 with a BS in Mechanical Engineering, and in 1951, earned a Bachelor of Law degree from the University of Michigan, Ann Arbor. Elizabeth is a native of Peshtigo, Wisconsin.

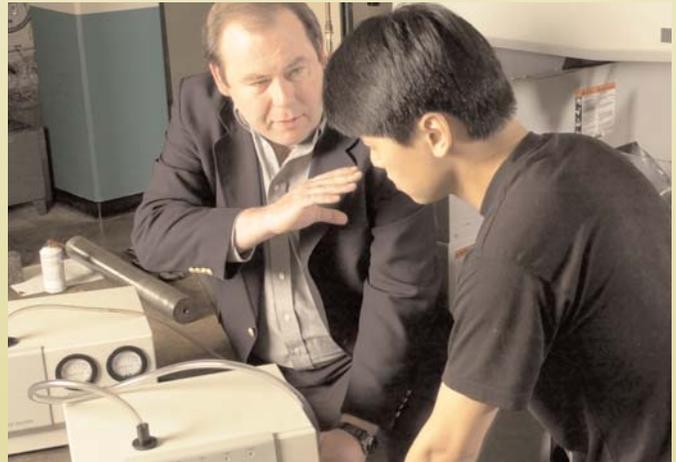
Richard Henes started Henes Stamping Inc. in 1958 in Phoenix, Arizona. He also served as president of Henes Manufacturing Company and the Henes Products Company. Residents of Arizona since the early 1950s, Richard and Elizabeth are valued long-time Michigan Tech supporters.

**John W. Sutherland appointed Henes Chair Professor**

The Department of Mechanical Engineering-Engineering Mechanics is pleased to announce the appointment of John W. Sutherland, PhD, to the Richard and Elizabeth Henes Chair Professor. Dr. Sutherland joined ME-EM in 1991. His teaching interests have included manufacturing

processes, environmentally responsible manufacturing, and statistical methods for quality and productivity improvement.

He has served as an investigator on \$10 million in research grants and has mentored nearly fifty students to the completion of their graduate degrees. He has published more than 150 papers in various journals and conference proceedings and is co-author of the widely used textbook, *Statistical Quality Design and Control*. Dr. Sutherland holds leadership positions within ASME and SME. He was the recipient of *SME's Outstanding Young Manufacturing Engineer Award* and Michigan Tech's *Distinguished Teaching Award* in 1992, *NSF Career Award* in 1995 and a *Presidential Early Career Award for Scientists and Engineers* in 1996. He was selected for an *SAE Teetor Award* in 1999 and the *MTU Research Award* in 2000. Prior to his appointment to the Richard and Elizabeth Henes Chair Professor, Dr. Sutherland served as associate department chair and director of graduate studies.



*Distinguished faculty chairholders like Dr. John Sutherland attract outstanding students, stimulate innovative, leading-edge research, and serve as mentors to young faculty.*

**Endowed Student Support recognizes and rewards excellence**

Talented and committed students are any university's lifeblood. Our goal is to make sure that opportunities to recognize and reward excellence remain available to qualified students for high academic merit, financial need, under-representation, outstanding leadership, valued team members, designers and others who do outstanding work for the department. Endowments enable the department to recruit today's most promising student leaders who will, in turn, immeasurably enrich Michigan Tech in the future, making your

endowment one of the purest, most natural forms of intellectual capital recycling there is.

*We need endowed student support for Graduate Fellowships, Graduate Student Recruitment Fund, Scholars/Honors Program and Women/Minority Scholarships and Fellowships.*

**Endowed Student Activity Funds deliver added value**

In addition to having inspired faculty teaching an innovative curriculum, your support is needed to bring added value to our programs and to the

students who complete their ME-EM education at Michigan Tech.

*We need endowments for the Senior Recognition Banquet Fund (Order of the Engineer Ceremony), Engineering Learning Center Coaches Fund and the Computing Technology Teaching Fund.*

**Endowed Student Professional Activity Awards encourage excellence**

While high academic achievement is important at any university, many students excel in additional areas, including leadership, design, teamwork,

and presentations. Knowing many of our distinguished, successful alumni achieved personal success in ME-EM through professional activities outside the classroom, we support, reward and encourage excellence in these activities.

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*We need endowments for Student Leadership Awards, Student Vehicle Competition Fund, Graduate and Undergraduate Recognition Awards, Senior Design Fund.*

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### **ME-EM Department Endowments fund the on-going pursuit of excellence**

Endowing excellence and enhancing visibility for Michigan Tech and ME-EM require expenditures to present our faculty to the world and bring the world to our campus. These discretionary funds, managed by the chair of the department, enable the on-going pursuit of excellence, secure in the knowledge that dependable funds are available to seek out and support cutting-edge research and innovative teaching in many diverse disciplines and areas of specialization.

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*Examples of activities to be supported by the Department Endowment Fund include Faculty Professional Development Fund, Equipment Fund, New Faculty Start-Up Fund, Distinguished Seminar Series and Discretionary Fund.*

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### **Graduate Research Labs**

This one-time investment expenditure would enable the ME-EM department to purchase state-of-the-art equipment and to remain competitive with other institutions. Although grants typically provide funds for unique equipment and upgrading once labs are in existence, initial set-up funds are difficult to obtain. We need to establish a graduate research lab in each of our five major research areas: Design, Dynamic Systems, Energy ThermoFluids, Manufacturing/ Industrial, and Solid Mechanics.

### **Other Funding Opportunities**

The department needs to fund a building addition that would include a much-needed high bay for vehicle, engine and machine-tool work, as well as high-tech classrooms and offices. We plan to build a lobby to welcome students and visitors, and to showcase current student projects and the achievements of our alumni, faculty,

and staff. To continue to meet the hardware and software requirements of high-end research computing, we need to upgrade the graduate computing laboratory. If you are interested in contributing to these funding opportunities, please inquire.

### **How to Make a Gift\***

Gifts may be cash, stock, securities or real estate made payable to the Michigan Tech Fund, the University's nonprofit gift-receiving agency. Gifts can be made outright or through pledges over a five-year period. We would also like to talk with you about planned giving through trusts, where you may increase your revenue, realize tax savings, and leave a legacy without affecting current income. Inquiries are welcome.

*\* See Planned Giving insert.*

### **Naming Opportunities**

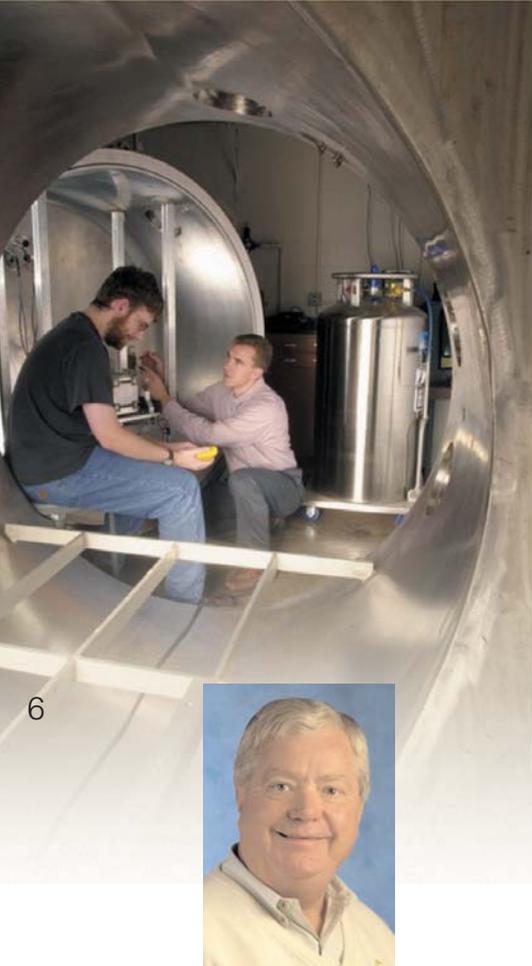
Your gifts can be permanently recognized by naming specific endowments. Individual gifts in the amount of \$10,000 or more would qualify. However, gifts of any amount are welcomed. You don't have to be rich to enrich an education. You can designate your endowment to faculty, student and department enrichment initiatives.



*National student competitions and senior design projects require sophisticated equipment and expensive resources.*



# ENDOWING EXCELLENCE PHASE II COMMITTEE



*Endowed and named professorships, fellowships and other faculty support enhance our intellectual capital and keep our quality of teaching at the highest level.*

**The Endowing Excellence Building for the Future: Phase II Committee is composed of fellow graduates who personify Michigan Tech's Department of Mechanical Engineering-Engineering Mechanics. Their education has served as the foundation for our contributions to society. Each of us share the common belief that our Michigan Tech education has been fundamental to our success. Each of us has given generously to sustain the excellence of Tech's mechanical engineering program. We are extremely proud to be alumni. We trust that you will join us in supporting this historic effort, insuring that the excellence that has made Tech famous will be available for many generations to come.**

*John F. Calder '67  
Committee Chair*



***"In the true Tech tradition, we have assigned ourselves no small tasks."***

**John F. Calder '67**  
Committee Chair  
CEO Dorsey-Alexander, Inc.  
Blue Ash, OH

***"A superb, real-world technological education has been a hallmark at Tech since Hubbell Hall."***

**Paul W. Fernstrum '65**  
President, R.W. Fernstrum & Company  
Menominee, MI

***"Talented Tech engineers will more than ever be shaping the technology that builds the 21st century."***

**Douglas J. Hamar '82**  
President & CEO  
The Hamar Group/Horner Flooring Company  
Dollar Bay, MI



***"Who benefits from Tech's excellence more than Tech graduates? The blue chip corporations and foundations our technologically-empowered engineers go to work for."***

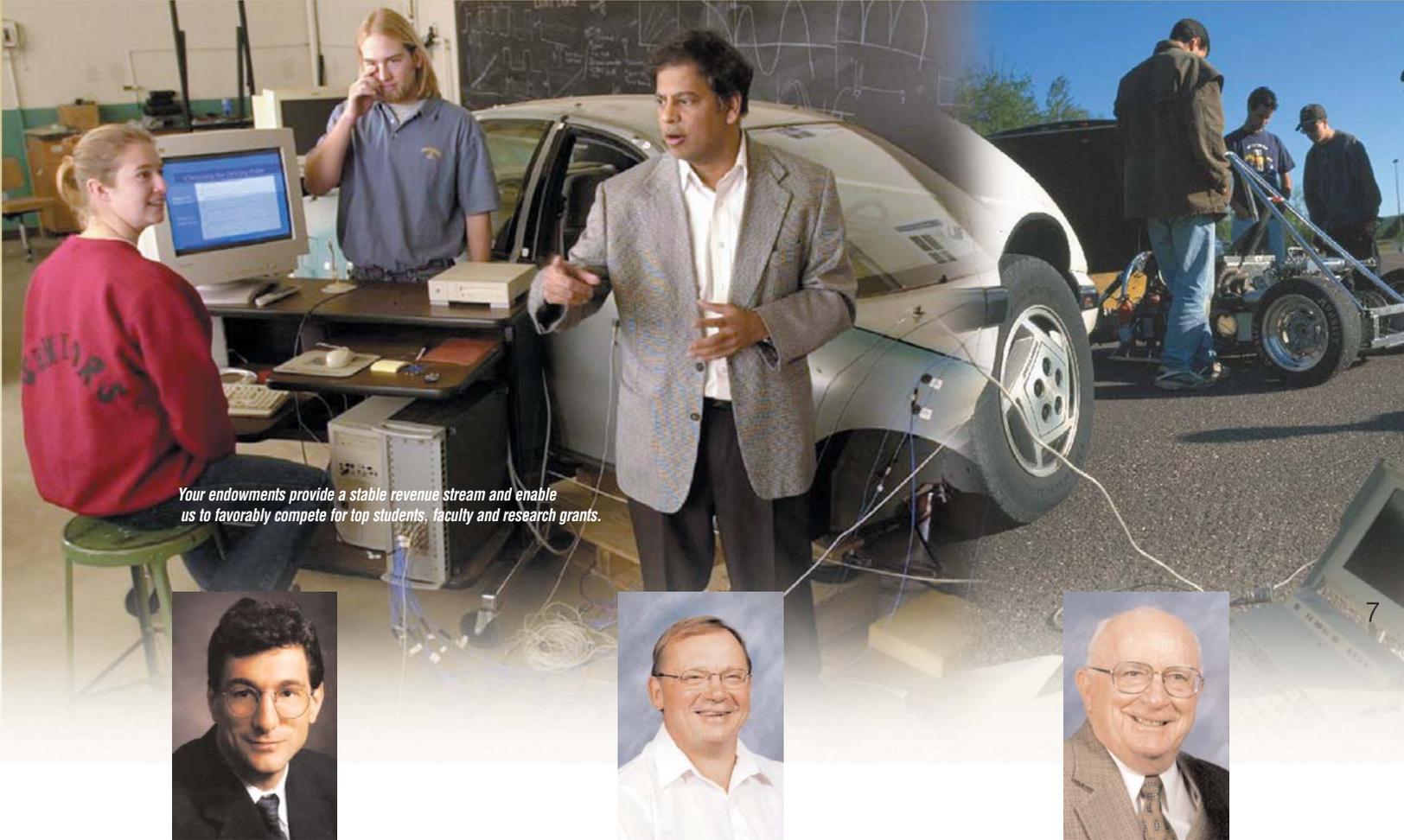
**Gerald L. Haycock '68**  
Retired, Ford Motor Company  
Novi, MI

***"Tech has adhered to the 3Rs since day one... Recruiting, Retaining and Rewarding excellence."***

**Wallace N. Kelly '61**  
Technical Consultant, Self Employed  
Charlestown, RI

***"The high performance levels and success experienced by Tech's outstanding engineers is representative of the University's visionary faculty and curriculum."***

**Tanya J. Klain '90**  
Program Engineering  
Manager-Cadillac CTS and Seville  
GM North America Engineering



*Your endowments provide a stable revenue stream and enable us to favorably compete for top students, faculty and research grants.*



*"I'm convinced I would not have achieved what I have were it not for the engineering excellence Tech taught me."*

**Martin G. Lagina '77**  
 Chartwell Properties LLC  
 Traverse City, MI



*"Tech's dynamic ME-EM department keeps growing in size, research and recognition."*

**Paul A. Masini '69**  
 Retired, Mercury Marine  
 Punta Gorda, FL



*"Six words...Tech delivers a superb technical education."*

**Robert E. Monica '50**  
 Retired, Dow Chemical Company  
 Midland, MI



*"Tech understands the importance and continuing value of hands-on engineering. We support the dedicated faculty whose best ideas shine brightest when transformed into things that can be used for everyone's benefit."*

**Daniel R. Rivard '59**  
 Retired, Ford Motor Company  
 Northville, MI



*"Growing up in the shadow of MTU provided my ambition to study Engineering. My BSME and MSME degrees and the value I place on my Tech education inspired me to endow excellence for future generations."*

**Earl E. Seppala '61, '66**  
 Retired, Dade Behring, Inc.  
 Hockessin, DE



*"What Tech professors taught me wasn't what I expected, but when I got into industry I soon realized how well prepared I was."*

**Marian I. Scott '48**  
 Retired, Allied Signal  
 Gaylord, MI

# ENDOWING EXCELLENCE PHASE II COMMITTEE



*Your endowment generosity serves as venture capital to attract, retain and reward the best and brightest students who will become exceptional, renowned engineers of the future.*



*"Tech and its graduates are internationally recognized for their academic prowess, ingenuity, expertise and contributions to the profession."*

**Ronald E. Starr, P.E., '67**  
President, Deanlee Management, Inc.  
Mississauga, ON, Canada



*"My experiences and the lifelong friends I made at Michigan Tech have positively influenced all aspects of my life. I volunteer time and commit resources to pass it on."*

**William R. Steeb '68**  
President/Owner, Heartland Food Products  
Shawnee Mission, KS



*"My degree and Tech's reputation for academic and research excellence helped me to a rewarding career. I want to pay some of it back."*

**Daniel R. Webb '56**  
Western Region Development Officer, Retired  
Webb & Associates  
Santa Ana, CA



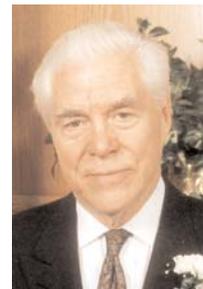
*"Tech's course offerings and facilities prepared me for my career not just adequately, but excellently. I'm determined to keep our engineering graduates the best prepared in the world."*

**Harold J. Wiens '68**  
Executive Vice President, 3M Industrial Business  
St. Paul, MN



*"Close student-professor relationships, pre-professional experience, mentoring and challenging research were responsible for my most prized career accomplishments."*

**Richard W. Henes '48**  
Honorary Committee Member  
Retired, Henes Manufacturing Co.  
Flagstaff, AZ

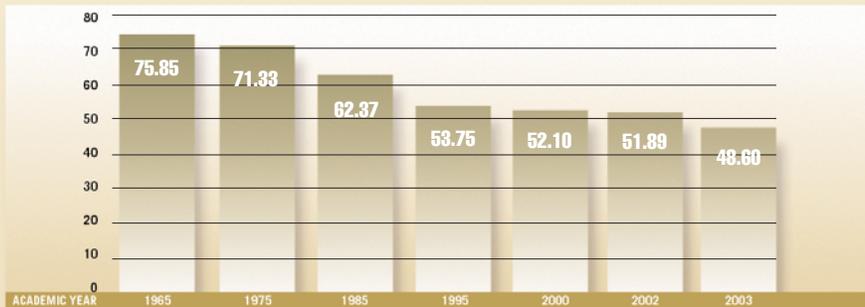


*"Tech's dynamic ME-EM department has both a history and a future of bridging the gap between science fiction and scientific fact."*

**Craig C. Lazzari '42**  
Honorary Committee Member  
President, Interfinancial Corp.  
Houston, TX

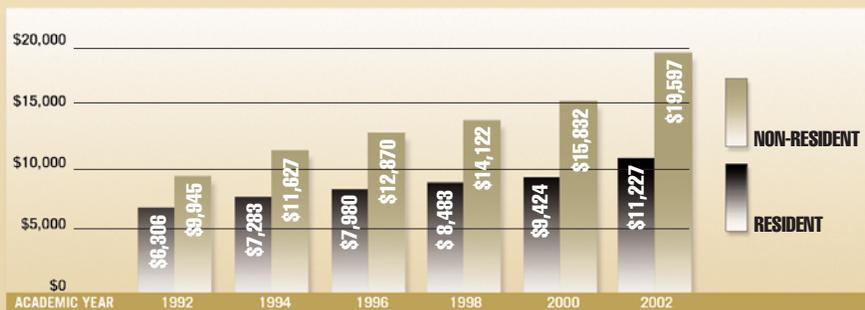
# YOU DON'T HAVE TO BE RICH TO ENRICH AN EDUCATION.

**PERCENT OF STATE FUNDING IN THE MICHIGAN TECH GENERAL FUND**



**In the late sixties, state appropriations funded 76 percent of Michigan Tech's budget. Today, they comprise less than 50 percent.**

**TUITION • FEES • ROOM AND BOARD**



**Over the past ten years, the cost of an engineering education has increased 78 percent for residents and 97 percent for non-residents in spite of tuition caps.**



**Opened in 1971, the R. L. Smith ME-EM Building was designed for 600 undergraduate students and 50 graduate students. Today, some 1,000 undergraduates and 150 grads pass through our halls.**

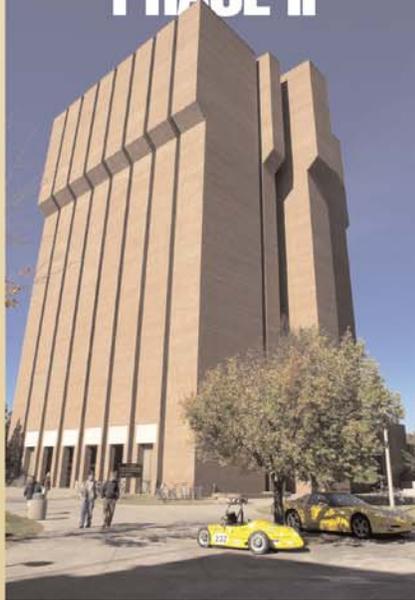
# ENDOW EXCELLENCE IN YOUR NAME.



# ENDOWING EXCELLENCE

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## BUILDING FOR THE FUTURE PHASE II



Department of Mechanical Engineering-Engineering Mechanics

***MichiganTech***

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