

December 12, 1997

There are several  
good protections  
against temptations,  
but the surest is  
cowardice.

—Mark Twain

Vol. XXX, No.14

## Senate debates proposed computer engineering program

What price education? Or, more precisely, what price computer engineering education?

The University Senate Finance Committee developed a scenario, presented to the senate December 10 by Committee Chair **Bruce Barna** (chemical engineering) that seemed to effectively price a proposed computer engineering program out of the market, at least for Michigan Tech. The committee predicted that the program would lose up to \$2.5 million per year and would never come close to the break-even point. In another scenario, developed independently by Barna, the program would lose \$385,464 its first year and go deeper in the hole annually, until in its sixth year it would have cost the University a total of \$4.4 million.

However, the committee's analysis, while thorough, contains some serious flaws, according to Provost **Fred Dobney**. And the presentation prompted discussion on whether the expense alone of any program could be used to measure its value to the University, since a cornerstone of Michigan Tech's mission is to provide a quality technological education.

The committee's numbers were determined by subtracting expenses, such as faculty salaries, from revenues, primarily tuition from computer engineering majors. It developed several different scenarios based on different assumptions. The more expenses figured in, such as new facility space and support staff, the more expensive the computer engineering program became. And, with state revenues included, another scenario had the program breaking even after six years. Barna stressed that the committee's analysis was based on unverified assumptions, such as projected student enrollment, and that changing the assumptions would change the results.

"The question is, can we take on a new program without additional discretionary funding?" he said. Without influxes of new money, new programs are bound to take funds away from existing programs, he said. "It's a zero-sum game."

"I think that what the Finance Committee has done is an excellent first effort," Dobney said. "It's a model of how things ought to work."

However, he said, some of the committee's assumptions are not accurate in light of how the University really works. For instance, a computer engineering program would not increase administration and staff costs, which the committee had included as expenses. Existing administration and staff might have to work harder, but, at least in the beginning, no new non-faculty personnel would be hired. And he characterized the committee's faculty hiring projections as a "champagne request on a beer budget."

The committee's Case 1 scenario projected hiring about thirty-six new faculty incrementally over the first six years of the program. The Department of Electrical Engineering had asked for twenty-one new faculty to be hired over the first six years of the proposed computer engineering program. Dobney's suggestion was even leaner; two new faculty could be hired, with additional faculty hired as justified by enrollments.

Senator **Martha Sloan** (electrical engineering) noted that new computer-engineering faculty would be needed because the field has come of age since most of the current electrical engineering faculty came to MTU. "We're not competent to teach on the cutting edge," she said, adding that, by the time the program had its first seniors, the department should have five computer engineering faculty.

Dobney also noted that some of the program's expenses could be met through MTU's program development funds, which amount to about \$500,000 annually. But that money would not be automatically funnelled to any area, and the most any program would get in a given year would be about \$250,000.

Senator **Les Leifer** (chemistry) said MTU should consult with other universities before starting up a computer engineering program, and charged that new programs had cost employees higher raises and better benefits. "This university has operated far too long on delusions," he said.

Others questioned whether the committee's cost-benefit analysis captured the whole picture—few if any undergraduate degree programs actually support themselves, which is why MTU relies on state

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## United Way pledges still coming in

**Sue Yrjana** (facilities), **Nancy Johnson** (SBE), and **Dawn Doyle** (Residential Services) have the distinction of being the first solicitors to complete their United Way area campaign in early November. The SBE had one additional gift this year and doubled the amount that was given last year.

More than 50 percent of the campus faculty and staff have returned their pledges. "It is so heart-warming to see this type of campus response to the less fortunate in our community," said **Cheryl DePuydt**, campus chair.

On the down side, she mentioned that several MTU employees had said they weren't going to contribute this year because of the 1 percent pay raise. "I could see cutting back, but at a time when some companies in our area are downsizing and laying off workers, I feel very fortunate to have a good job with great benefits, so I give out of gratitude with a spirit of sharing. However, everyone is entitled to their own personal giving philosophy," DePuydt said.

Solicitors and employees have until December 19 to get their pledges or contributions in to DePuydt (physical education). Payroll deductions will begin in January for the 1998 campaign.

## NCA team to visit next month

The nine-member NCA Evaluation Team will be on campus January 12–14 to meet with members of the MTU community. Two open forums are scheduled. The student forum is set for Monday, January 12, at 4:00–5:00 p.m., and the faculty/staff forum will be held Tuesday, January 13, at 1:30–2:30 p.m. Both will be in the Memorial Union Alumni Lounge.

The team's report on Michigan Tech will be used to determine whether the University will be accredited.

## Dean evaluation committees formed

Two committees have been formed to evaluate **Tim Collins**, dean of the School of Technology, and **Gene Klippel**, dean of the School of Business and Economics.

The members of Collins' evaluation committee, who were elected by the School's faculty, include technology faculty members **Tom Kelley** of the forest technology program; **Larry Sutter**, civil engineering technology; **John Lukowski**, electrical engineering technology; and **Warren Weingarten**, electrical engineering technology. Also serving are Professor **Allan Hambley** (electrical engineering) and undergraduate **Scott Lakosky**, who is enrolled in the forest technology program.

Members of the SBE Dean Evaluation Committee, elected by the School's faculty, are SBE faculty **Gary Campbell**, **James Frendewey**, **James Gale**, **Karol Pelc**, and **Christa Walck**; graduate student **Tom Flicker** and undergraduate **Sean Havera** (SBE). Representing outside staff will be Administrative Aide **Katie Murtomaki** (civil and environmental engineering), with Associate Professor **Pushpalatha Murthy** (MME) representing outside faculty.

The evaluation process is similar for both Schools. The deans complete a self evaluation that includes a report on their School and its goals. The faculty and staff are surveyed and their comments tabulated by the committee in a report. The committee distributes its report and a vote is taken on the whether the dean should be reappointed.

The results of the evaluation process are given to the provost, who determines whether the deans will be reappointed.

## TECH TOPICS

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Our URL is <http://www.sas.it.mtu.edu/urel/ttopics/index.html>

## HELP WANTED!

### Lake Superior researchers desperately seeking grad students

WANTED: Eight to twelve science/engineering grad students for huge new research project. Must like travel, meeting new people, and hard work. Start in March (Or June. Or September.) and get paid while you earn your advanced degree! Don't wait! Call today!

There's an old joke among research faculty that first you worry about what you'll do if you don't get your grant, and then you worry about what to do when you get it. MTU researchers did get their grant to study Lake Superior's Keweenaw Current, and now they find themselves desperately in need of graduate students.

"We've started a nationwide search," Research Assistant Professor **Judy Wells Budd** (geological engineering and sciences) said. "This would be a great career opportunity for a new scientist interested in studying the Great Lakes."

The Keweenaw Interdisciplinary Transport Experiment, better known as KITES, spans several disciplines, including geochemistry, aquatic ecology, fisheries biology, physical limnology, and remote sensing. The \$4.1-million project (MTU's share is \$2.4 million) also includes researchers from the Large Lakes Observatory at the University of Minnesota—Duluth and the Universities of Georgia, Wisconsin, Maryland, and Washington.

"One of the most exciting things is that it's

truly interdisciplinary," Budd said. "There's a nice mix of engineers and scientists involved in the project. That's great experience for students, because in the real world you will be working with people outside your discipline."

The researchers are hoping to fill eight to twelve graduate research assistantships by next fall. Doctoral students are preferred; the annual pay is \$12,000 plus full tuition for the twelve-month appointments. The project is funded for five years.

"Unfortunately, studies of Lake Superior have been few and far between," Budd said. "KITES will enhance our understanding of the lake. It's a very good opportunity to study this most pristine international resource."

For more information on KITES and graduate study opportunities, go to <http://chmac2.chem.mtu.edu/KITES/>

For an application to Michigan Tech's Graduate School, visit [www.admin.mtu.edu/urel/catalogs/grad/admission.html](http://www.admin.mtu.edu/urel/catalogs/grad/admission.html)



## Departments announce holiday hours

### Research Services and Intellectual Property

Research Services and Intellectual Property will be closed December 24–January 2. Remember that any proposals due during this time period must be approved by December 23.

### Counseling Services

Counseling Services will be closed December 22–January 2.

### Human Resources

Human Resources and Payroll Services will be open from 10:00 a.m. to 2:00 p.m., including the lunch hour, on Monday and Tuesday, December 29–30. Paychecks dated January 2, 1998, will be available for pick up by the departments at the payroll window on December 30 at 8:00 a.m.

### Mail Services

Mail Services will be open regular hours with the exception of Monday and Tuesday, December 29–30, when hours will be 8:00 a.m. –noon and 12:30–2:30 p.m.

If your department receives mail delivery and pickup and will be open during the two-week holiday period, contact the Mail Room via e-mail ([bulkmail@mtu.edu](mailto:bulkmail@mtu.edu)) or by telephone (487-2348). Otherwise, no delivery/pickup will be made. In addition, the delivery/pickup schedule will vary during this time.

### Bulk Mail Center

The Bulk Mail Center will be closed during the two-week holiday period, December 22–January 2.

## Student Services collecting toys for Cheer Club

The Registrar's Office, Enrollment Management, and Degree Services are collecting toys for needy children this Christmas.

Here's how it works. Simply bring your new or like-new toy or a new clothing item to the Registrar's area. Leave your gift—unwrapped—in their brightly wrapped container. They will deliver your present to the Daily Mining Gazette offices for wrapping and distribution by the Salvation Army. The last day to drop off your gift is Friday, December 19, at 5:00 p.m.

"Won't you help make a Happy Christmas for someone less fortunate?" organizers said. "We would like to have our container overflowing with gifts from Michigan Tech."

## Credit union collecting food, toys for Salvation Army

The Michigan Tech Credit Union is welcoming donations of nonperishable food and toys to be distributed by the Salvation Army. Your donations will benefit needy children and their families in our area. "Participation by our members has been very generous in the past, and we're hoping to surpass last year's donations," credit union officers said. "Thank you for remembering that Christmas is sharing."

## Self-defense classes offered

The Husky Tae Kwon Do Club will offer its Self Defense Course on Wednesdays, 7:00–8:30 p.m., January 7–February 18 (no class during Winter Carnival).

The cost is \$20 for all six sessions, which will be held in the ROTC building. Everyone is welcome. For more information, call Jon Henkel at 487-3057.



More than twenty-five years ago, **Cindy Thurston** did what she calls "the stupidest thing I've ever done." She turned down a full-bore scholarship to the General Motors Institute. Instead, back in 1971, at the age of 19, she got married and started a family, and for a long time, that was that. Then she found out about Michigan Tech's BS program in Engineering-Mechanical Design being offered through General Motors, where she was working under contract, and she signed up.

## BACHELOR'S DEGREES FROM A DISTANCE— Getting a second chance

Thurston, of downstate DeWitt, is among the first eight graduates of MTU's distance-learning BSE program, which began in the 1980s with an inquiry to MTU from General Motors.

"I think it says a lot about GM's commitment to their people," said Presidential Professor **John Johnson** (ME-EM), who helped launch the program in 1990, when he chaired the ME-EM department. "There are certain job categories that aren't available without a bachelor's degree."

"And it's been extremely rewarding to see these eight people achieve their goal. It takes a huge commitment," he added.

The program is about as flexible as it can be within the confines of the academic year. Classes are videotaped at Michigan Tech and sent down to GM. Students can watch them at their convenience. "We would pass the tapes between each other. I could turn off the prof and empty the dryer, turn off the prof and pick up the kids, turn off the prof and help them with their homework," Thurston said. "It really worked well for me—I was there for my family."

It helps to have your family behind you, too. "My husband was very supportive," she said. And amazingly, her children, two sons and a daughter, never complained when they had to sacrifice TV time while she watched her classes.

The whole family came to her graduation. "When I walked across the stage, my daughter yelled, 'Way to go, Mom!'" she remembered. "One of the guys on the podium said, 'You have quite a fan club.'"

Her son **Greg** is now a senior at MTU and is expected to graduate in February 1999; mother and son have been comparing grade point averages assiduously. The distance-ed students have been unusually successful in the GPA

department, Johnson notes, with five of the eight graduates receiving honors. "They have all done very well," he said. "To me, it's an indicator that they were very disciplined. This program drives your whole schedule—you have to plan your life around it. It's a real challenge."

"I'm kinda ditsy because I am so happy," she said afterward. "I had wanted to do this years ago, before I had my kids."

"I really appreciate Michigan Tech."

It has, however, been worth it. "It has really helped me in my work," said Thurston, who worked for GM Powertrain Engine Design at Lansing until October and is now a senior parts designer at GM Powertrain Engine Design in Pontiac, working on a new engine project. "It's made me pose some interesting questions when vendors are here. I still have a lot to learn, but that's true of any engineering job."

When she has presented her diploma to the GM powers that be, Thurston will be reclassified as an engineer. "That's a promotion that opens a door to all kinds of jobs in technical and management," she said. "One of my fellow workers was told he needed to go back to school, and he said he was thinking about a business degree. They told him no, no, no, get a technical degree. We can teach you management, but we can't teach you technical stuff."

"Really, a technical degree with a business degree is the way of the future," she said.

Other members of the first graduating distance-ed BSE class are **Michael Coutts** of Manchester, **Gary Granroth** of Milford, **Patrick Henderson** of Haslett, **Joanne Leddy** of Clarkston, **Keith McCullen** of Shelby Township, **David Paine** of Highland, and **Cheryl Vinson** of Farmington Hills.

A total of 41 other students are enrolled in the program. For more information on MTU's distance education programs, contact Extended University Programs, 487-3170.

## Plastic wood to replace old piers?

They're saturated with creosote, pesticides, and preservatives, but the wooden piers where America's ships dock still fall prey to marine borers, water-logging, and other perils of salt-water submersion. Plus, the hazardous chemicals used to protect the wood also pollute the environment and kill ocean life. Now, MTU researchers are collaborating on a multi-million dollar U.S. Navy project aimed at replacing the old piers with thermoplastic wood.

Made of ground-up plastic, sawdust, and carbon fibers, the thermoplastic wood will take the place of creosote- or pesticide-treated lumber and will be used to replace decaying wood in most of the Navy's waterfront facilities. As much as 8,000 tons of old timbers could be removed each year. MTU's share of the research project will be headed by two co-principal investigators, **Douglas Gardner**, interim director of the Institute of Wood Research, and Professor **Gary McGinnis** (IWR). Their work will focus on recycling the creosote-treated wood removed in the project.

"The Navy is interested in using it in some new types of composite materials that could be used in piers and wharfs," Gardner said. Plastic and carbon or glass fibers could be incorporated in the reclaimed wood and it could be recycled. "There's a possibility that some of the wood could be reused, depending on its quality when it comes out of the water," he said. "Another possibility is energy—they could chip it and burn it as fuel."

The Office of Naval Research awarded the three-year, \$7.5 million grant to a team of researchers from Washington State University, Amoco Performance Products, and the Naval Engineering Service Center, as well as MTU.

### NCA/SELF-STUDY UPDATE

## Web page to link with all department self-studies

The Web page for the University's Self-Study Report for NCA is being finalized, and one page will serve as a link to any departmental self-study located on departmental Web pages. To allow easy access to your departmental self-study, please send your Web page address to Christa Walck at [cwalck@mtu.edu](mailto:cwalck@mtu.edu) and a link will be created for you.

## Ethics in Engineering workshop December 16

Peter Schmidt, assistant vice president/bank manager of D&N Bank, will speak on ethical dilemmas and leadership in industry on Tuesday, December 16, at 7:00–9:00 p.m. in M&M U115.

Schmidt's presentation is part of the Ethics in Engineering series and all members of the MTU community are invited. For more information, contact Jon Henkel, 487-3057.

## Rock-bottom prices at the Mineral Museum!

The Gift Shop at the A. E. Seaman Mineral Museum will hold its third annual Christmas Sale on Saturday, December 13, from 10:00 a.m. to 4:00 p.m. The sale features the largest selection of international mineral specimens for sale in the area—many reduced up to 50 percent. Many items will be priced under \$5, including their famous "dollar rocks" and grab bags. For the first time, the gift shop will also be selling gift certificates.

For that unique gift for someone that's hard to buy for, come to the Seaman Mineral Museum, located on the fifth floor of the EERC.

For more information, call the museum at 487-2572 or e-mail Bob Barron at [rjbarron@mtu.edu](mailto:rjbarron@mtu.edu)

## New staff

**Denise Wirtanen** has joined the Information Technology staff as a senior clerk. She was previously office manager at Krans Oil Company in Lake Linden and has a BS in Business Administration from MTU. Wirtanen lives in Boston Location with her children, Tiffani, Laani, Belinda, and Danielle.

**David Usitalo** has joined the staff of McNair Hall Residence Facilities as a custodian. He was previously employed as a laborer and truck driver with Moyle Construction. He is married to Cindy Usitalo, has two children, Amber and David, and lives in Painesdale.

**Matthew Behrens** has joined the staff of the School of Business and Economics as a system administrator. He graduated recently from MTU with a BS in Electrical Engineering, concentrating on computers and communications, and lives in Houghton.

## On the road

Associate Professor **Young Huang** (ME-EM) gave an invited talk, "A Generalized Self-Consistent Method for the Stress and Fracture Analysis of Trabecular Bones," at Columbia University in November. He also presented "Fracture in General Strain Gradient Plasticity," at Harvard University, and "Mode I and Mode II Plane-Stress Near-Tip Fields for Cracks in Materials with Strain Gradient Effects" at Hong Kong University of Science and Technology. In addition, Huang gave a plenary lecture, "Strain Gradient Plasticity and Its Role in Fracture Mechanics," coauthored with K. C. Hwang and T. F. Guo (Tsinghua University), at the Third International Conference on Fracture and Strength of Solids held recently in Hong Kong, and gave the following invited lectures: "Fracture Analysis of Cellular Materials: A Strain Gradient Model," coauthored with graduate student **J. Y. Chen** (ME-EM) and M. Ortiz (California Institute of Technology); "Intersonic Crack Growth in Fiber-Reinforced Composites," coauthored with graduate student **W. Wang** (ME-EM), A. J. Rosakis (California Institute of Technology), and C. Liu (Los Alamos National Laboratories); "The Effect of Interface Damage on the Microbuckling of Unidirectional Fiber-Reinforced

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## Tech Tea: the case of the vanishing moose

*Submitted by University Cultural Enrichment*

What is seven feet tall, weighs about as much as four refrigerators, thrives in the boreal forest, and has osteoporosis? Answer: an Isle Royale moose.

**Mary Hindelang**, the guest at Tech Tea Time on Wednesday, December 17, will chronicle a fascinating investigation of the vanishing moose, a phenomenon that appears to be caused by decreasing bone mineral density rendering the animals more fragile and vulnerable to wolf predation. Hindelang, an adjunct assistant professor in the School of Forestry and Wood Products, will present an overview of the Isle Royale ecosystem with slides and artifacts collected on the island. Tech Tea Time is at 4:00 p.m. in the Memorial Union Alumni Lounge. Moose cookies and punch will be served.

For the past six years, working with Professor **Rolf Peterson**, Hindelang has been studying skeletal pathologies in moose as part of the long-term moose/wolf ecological studies in Isle Royale National Park. "Much of the work involved was really exciting and enjoyable," says Hindelang, who, in addition to investigating the Isle Royale moose, also traveled to places such as the Atlantic Provinces, Canadian Rockies, and Alaska in search of answers. "This was the research project of my dreams—a combination of island biogeography, winter ecology, and physiological evolutionary

biology with charismatic megafauna in a wilderness setting."

In recent years, there have been dramatic changes on the island, with the wolf population increasing, the moose population crashing, and the vegetation indicating the effects of the changes. The multidisciplinary study involved aspects of wildlife ecology, archaeology, biomechanical engineering, and remote sensing/digital image processing techniques. Researchers examined nearly 3,000 moose carcasses, mostly wolf-kills, recovered with aerial searches in winter and in summer by extensive off-trail coverage of the island over the four decades of the Isle Royale study.

Hindelang conducted QCT (Quantitative Computed Tomography) and DEXA (Dual Energy X-Ray and Absorptiometry) scans on some moose bones that revealed severe skeletal problems in many animals. "About 32 percent of the moose skulls recovered on Isle Royale have circular osteoporotic lesions, and many leg bones had low bone mineral density," she reports. Her search of comparative collections from Newfoundland to Alaska revealed no similar lesions in other populations.

Tech Tea Time is coordinated by the University Cultural Enrichment Department and is free and open to the public. Call 487-2844 for further information.

## Lawson, Byykkonen to perform violin, piano, flute recital

*Submitted by the Department of Fine Arts*

The Department of Fine Arts will present two of our area's finest musicians, **Eric Lawson** on violin and **Susan Byykkonen** on piano and flute, in a recital in Walker Theatre on Sunday, December 14, at 3:00 p.m.

The program will feature Cesar Franck's Sonata in A Major for Violin and Piano and Telemann's Sonata in D for Flute and Violin. Shorter pieces will include movements from sonatas by Mozart, Molique, and Leclair, plus two new pieces written by Lawson.

Audience members who attended the first Lawson-Byykkonen recital last April know to expect both beautiful music and lively, informal talks about the pieces being played. A Michigan native, Lawson received degrees from Michigan State University, Louisiana State, and University of Minnesota. In addition to serving as concertmaster of the Keweenaw Symphony Orchestra, he teaches private and group lessons for students of the Copper Country Suzuki Association.

Byykkonen grew up in Eagle River, studying both piano and flute with Joan Luehrs of Hancock. She graduated with high honors from Cedarville College, in Ohio, then returned to Calumet where she is an independent teacher of piano and flute. During the past three years, she has played both piano and harpsichord as accompanist for the Michigan Tech Concert Choir. She was harpsichordist in the recent performances of Handel's *Messiah*.

Tickets for the recital are available at the Memorial Union Box Office (487-3200), SDC Central Ticket Office (487-2073), Calumet Theatre (337-2610), and at the door for \$7 adults, \$5 senior citizens, and \$3 students.

## Hoagland to speak on Ahmeek, Central houses December 16

Assistant Professor **Kim Hoagland** (social sciences) will give a talk on the process used to document and record historic structures on Tuesday, December 16, at 4:00 p.m. in the MTU Archives, located in the J. R. Van Pelt Library. Hoagland's Documentation of Historic Structures class has surveyed company housing in several Keweenaw communities, and her students will present findings from their surveys of homes in Central and Ahmeek locations.

The presentation is part of the Archival Speakers Series on research utilizing the Archives' collections. The presentation is free and open to the public. Refreshments will be provided by the Friends of the Van Pelt Library.

For further information contact the MTU Archives at 487-2505 or at copper@mtu.edu



*Graphic courtesy of MTU Archives and Copper Country Historical Collections*

funding. And MTU has a mission to provide quality undergraduate education in engineering.

Senator **Pat Joyce** (SBE) noted that there were other ways of looking at the issue besides the committee's approach. "What's the cost of *not* doing something?" he said.

"What we're saying is that any program that doesn't bring in outside money loses money," said Senator **Wayne Pennington** (geological engineering and sciences). "Sometimes we have to lose money to move in the direction we know we should."

And, after hearing the committee's analysis, Senator **Tom Snyder** (biological sciences) said, "One thing that's clear is that our tuition is too low."

The senate took no action on the electrical engineering department's proposal to start a computer engineering program and is expected to discuss the issue at future meetings.

### **In other business, the senate**

- approved a proposal that would allow departments to offer minors. Under the proposal, the minor recognizes that students have "actively and consciously engaged the intellectual issues central to the discipline of the minor." Among its requirements, a minor would require at least 24 credit hours and a GPA of at least 2.00 in the minor courses.
- discussed a proposed policy on student academic grievances that provides procedures for a student to follow if they have a grievance with a faculty member, such as a grading dispute. The procedure includes a review by the faculty member's supervisor. The senate voted to add language informing students that faculty had the option of appealing the supervisor's decision.

## **Proposals in progress**

Researchers, their proposals, and their potential sponsors are

- **Mark Osborne** (KRC), "VCI Analysis of Hughes Trailers in Sand Using NRMM," Hughes; and "Tire Testing Program for February '98," Chrysler
- **Terry McNinch** (civil and environmental engineering), "MDOT Videotape Production," MDOT
- **John Forsman** (IWR), "Lumber and Plywood Testing," Chemical Specialties, Inc.; "Toughness Testing on Sugar and Red Maple Samples," Northern Hardwoods
- **Peter Laks** and **Dana Richter** (IWR), "Laboratory Antisapstain Evaluation on Additive Antifungal Effects of Dursban TC," DowElanco
- **Peter Laks** and **John Forsman** (IWR), "Preparation of Cotton Linter Stock Composite Boards," DowElanco
- **John Crittenden**, **James Mihelcic**, **David Hand** (civil and environmental engineering), and **Don Lueking** (biological sciences), "Elimination of Odorous Chemicals by Biofiltration," Water Research Foundation
- **Scott Gruenberg** (KRC), "Uniaxial Compression and Shear Testing," Whirlpool
- **Judith Perlinger** (civil and environmental engineering), "Addition of Hydrogen Sulfide onto the Naturally Occurring Quinone Juglone," ACS Petroleum Research Fund

## **POSITIONS AVAILABLE AT MTU**

Job descriptions are available from Human Resources starting at 1:00 p.m. on Friday. You can e-mail us at JOBS@MTU.EDU and we will e-mail you the job description you request.

The following positions will be posted Friday, December 12, 1997, at 1:00 p.m. through noon, Friday, December 19, 1997, in the Human Resources Office.

Training Coordinator—Quality Service Education (Temporary with possibility of becoming regular, part-time)

Systems Administrator—Center for Experimental Computation (One-year fixed term, with possibility of becoming regular, full-time)

Office Assistant (N5)—Human Resources (Regular, full-time, internal UAW posting)

University employees are reminded to apply in writing prior to noon, Friday, December 19, 1997, to be considered as internal candidates for bargaining unit positions only. Applicants from the recall pool will be given first consideration for non-bargaining-unit positions only. Vacancy announcements are normally posted every Friday at 1:00 p.m. in the Human Resources Office. Complete job descriptions are available in the Human Resources Office or by calling 487-2280. More information regarding employment opportunities is available by calling the Job Line at 487-2895. Michigan Technological University is an equal opportunity educational institution/equal opportunity employer.

## **On the road** *Continued from page 4*

Composites," coauthored with Liu, M. G. Stout (Los Alamos National Laboratories), and Hwang; and chaired a session, "Fracture Mechanics III," at the same conference.

Associate Professor **Glenda Gill** (humanities) led a panel discussion, "The Politics of African American Theatrical Productions, 1875–1996," at the annual convention of the American Society for Theatre Research, held November 13–16 in San Antonio, Texas. She also gave a slide lecture on the nontraditional roles of actor Morgan Freeman.

Associate Professor **Craig Friedrich** (ME-EM) gave an invited plenary talk, "Laser and Competing Process Technologies for Microfabrication," at the 16th International Congress on Applications of Lasers & Electro-Optics, held in San Diego November 17–20. Friedrich and Dean of Engineering **Robert Warrington** co-presented a plenary talk, "Surface Characterization of Non-Lithographic Micromachining," at the NSF/AFOSR/ASME Workshop on Tribology in MEMS at Ohio State University held November 9–11. Friedrich also chaired a panel discussion on Tribology Issues and Opportunities in MEMS.

Assistant Professor **Mary Durfee** (social sciences) gave two invited talks in October: "The Great Lakes: (Re)Defining National Interests through an International Regime" at the Center for Global Change at Rutgers-Newark; and "Constituting Complexity" at the Center for International Politics at the University of Pennsylvania.

Professor **Vladimir Tonchev** (mathematical sciences) presented two talks: "Codes and Graphs," at AT&T Research Labs, in Florham Park, New Jersey, on November 13; and "Enumeration of Affine Designs," at the University of Delaware on November 14.

- **Edem Ibragimov** (mathematical sciences), "Elongation of the Focal Depth of the Addressing Beam in 3-D Two-Photon Mass Storage," Research Development Lab
- **Michael Renn** and **Robert Pastel** (physics), "Microfluid Transport and Chemical Analysis by Laser Guidance," DARPA
- **Robert Nemiroff** (physics), "Cycle 7 Continuation of the Search for Gravitational Lensing in GROs," NASA
- **Oner Arici** (ME-EM), "Study the Impact and Design Optimization of the Instrument Panel and Passenger Thermal Loading on the Interior Comfort of the Vehicle," Ford Motor Company

## **December**

- 12 Friday**  
**noon**—Coaches Corner/BlueLine Club luncheon—Franklin Square  
**7:35 p.m.**—Hockey, Denver at MTU—Student Ice Arena  
**13 Saturday**  
**7:05 p.m.**—Hockey, Denver at MTU—Student Ice Arena  
**14 Sunday**  
**3:00 p.m.**—Eric Lawson and Susan Bykkonen recital—Walker Theatre

- 16 Tuesday**  
**7:00 p.m.**—Peter Schmidt, Ethics in Engineering—M&M U115  
**17 Wednesday**  
**4:00 p.m.**—Tech Tea: "The Case of the Vanishing Moose"—MUB Alumni Lounge  
**29 Monday**  
**6:00 p.m.**—Women's basketball, Minnesota-Duluth at MTU—SDC  
**8:00 p.m.**—Men's basketball, Minnesota-Duluth at MTU—SDC



## Campus Campaign 1997 Honor Roll

The University and the Michigan Tech Fund extend a big thank you to everyone who helped make this year's Campus Campaign a huge success. The names of the 377 faculty and staff who contributed a total of \$94,972 through October 31 are listed below.

If you contributed since this date, or plan to contribute in the near future, your gift will be included in the Campaign totals, and you will be listed in the Michigan Tech Fund's Annual Report.

Michael Abbott	Susan DesRochers	Amy Hughes	Gary Marcotte	David Poplawski	William Sproule
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Russell Alger	Stacey Donnelly	Michael Hyslop	Colleen Martin	Kurt Pregitzer	David Strong
Bernard Alkire	Vernon Dorweiler	Christopher Ipson	Patrick Martin	Richard Prince	Kelly Strong
Carl Anderson	Patrice Dowd	Charles Issacson	Susan Martin	Marcia Pruner	Larry Sutter
Christine Anderson	Stanley Dyl II	Anil Jambekar	Ronald Mauno	Kimberly Puuri	Philip Sweany
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Beverly Baartmans	Harold Evenson	John Johnson	Jay Meldrum	Terry Reynolds	Diane Talford
Susan Bagley	Lawrence Evers	Nancy Johnson	Donald Mikkola	Richard Richards	Peter Tampas
C. Robert Baillod	Mary Ewert	Phyllis Johnson	Danny Miller	Dana Richter	Anna Taylor
James Baker	Anthony Farrell	Shirley Johnson	Michele Miller	James Riehl	Jerry Taylor
Bradley Baltensperger	Robert Filer	B. Patrick Joyce	Erin Minné	George Robinson	Kelly Thomas
Bonnie Baril	David Fischer	William Joyce	Lori Monette	Thomas Rodeheffer	Paul Thomas
Dennis Baril	Edward Fisher	Martin Jurgensen	Terry Monson	William Rose Jr.	Ronald Tidd
Jacquelyne Beaver	Rebecca Fitzgerald	Mary Jurgensen	Judith Monticello	Marsha Rosenberg	Richard Tieder
Donna Beels	George Fox	Janet Kaarto	Dennis Moore	Shalini Rudak	Curtis Tompkins
Dorthey Behrend	Ed Frayer	David Karnosky	Pauline Moore	David Rudd	Chung-Jui Tsai
Carolyn Belanger	David Fredrickson	Theodore Kearly	Kenneth Moyle	Karl Rundman	Madhukar Vable
Jane Berner	Judy Fynewever	Marie Kellan	Lisa Moyle	Nils Ruonavaara	Shannon Vairo
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Stephen Bowen	Sharon Haapala	James LaHaie	Robert Nutini	Alan Segal	Warren Weingarten
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Bernard Carr	Nancy Heikkila	Gilbert Lewis	Mark Osborne	Jeanine Sewell	W. Scott White
Steven Carr	Denise Heikinen	John Ligon	Linda Ott	William Shapton	Indrajith Wijayaratne
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Vincent Chiang	Lynda Heinonen	James Loshaw	Arnold Parks	David Sikarski	Rodney Winquist
Rebecca Christianson	Lloyd Heldt	John Lowther	Barry Pegg	Glen Simula	Kathleen Wollan
Nels Christopherson	Brenda Helminen	Kevin Luke	Valerie Pegg	Martha Sloan	Richard Yeo
Donald Close	Jonathan Henkel	Edward Lumsdaire	Rolf Peterson	Darrell Smith	Charles Young
Timothy Collins	Sandra Henkel	Pattie Luokkanen	Susan Peterson	Gary Smith	Lois Young
Jim Cross	Neil Hermanson	Evona Lutzke	James Pickens	Rita Smith	Susan Yrjana
William Curnow	Amy Hietapelto	James Lutzke	Jill Pietila	Alice Soldan	Louis Zenner
Larry Curtin	Alison Hoagland	Cynthia MacDonald	Janet Pikkarainen	Theodore Soldan	Paula Zenner
John Daavettilla	Christine Holland	Valeria Machowski	Anton Pintar	Jon Soper	Randall Zimmerman
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We're working together to make Michigan Tech even greater!