

March 6, 1998

*If poetry comes not
as naturally as leaves
to a tree it had better
not come at all.*

—John Keats,
Letter to John Taylor, 1818

Vol. XXX, No.24

Tompkins proposes 6 percent state funding hike for MTU

President **Curt Tompkins** asked the state Senate Appropriations Subcommittee on Higher Education March 2 to recommend a 6 percent increase in state funding for Michigan Tech.

Tompkins noted that, as the Upper Midwest's only public technological university, Michigan Tech has by far the most expensive array of scientific and technological programs among Michigan's public universities. And, even if the state opts to increase MTU's appropriation by 3 percent (twice Governor **John Engler's** recommended 1.5 percent), the University would still have to consider a significant tuition hike in order to maintain its quality programs.

"[With a 3 percent increase in state support], it will be necessary to increase tuition significantly to place Michigan Tech in closer proximity to the tuition levels of Michigan State and the University of Michigan, the two institutions with the most-similar programs in engineering and science," Tompkins said. "Also, pending approval by the Board of Control, it is expected that MTU will initiate an upper division/lower division undergraduate tuition schedule."

The state legislature is deliberating Engler's budget proposal for the upcoming fiscal year. After the budget is finalized, the Board of Control is expected to set tuition for the 1998-99 academic year.

Zanoni on graphoanalysis: word processing of another kind

The first time **Mary Zanoni** talked with a graphoanalyst,

*The
Handwriting
Was
On The Wall*

Two years later, she is a certified graphoanalyst herself. Zanoni (IT), manager of System Administration Services (SAS), became fascinated by handwriting analysis when she was called to court as a witness. A former colleague had sustained serious head injuries in an auto accident and was wrangling with his insurance company over the settlement.

"I was called to be a witness, to say how he had changed," Zanoni said. "He was different person, though he appeared pretty normal. His lawyer had hired a graphoanalyst to analyze his handwriting before and after the accident."

While Zanoni and the graphoanalyst waited to testify, the analyst talked about the basis of her science, how personality traits are revealed in handwriting. Intrigued, Zanoni took an eighteen-month distance-learning course and received her certification in summer 1997. Thankfully, she has no immediate plans to abandon SAS for a new career, but she is happy to shed some light on a field whose authenticity is often ranked up there with phrenology and the Psychic Friends Network.

"You basically see personality traits in handwriting—they say it's really brainwriting," she said. "If you were to lose the use of your hands and write with your foot, your writing would be similar."

Handwriting can reveal traits such as aggressiveness and loyalty, or whether you are analytical or intuitive. A graphoanalyst identifies these traits and then examines how they interrelate.

"Just because a person shows argumentativeness doesn't mean they will be arguing all the time," Zanoni explains. "If you also have pride and dignity, you'd be likely to control yourself."

How traits are expressed also depends on the individual's level of control. "Often, people without control traits express other traits more," she said.

"For instance, emotional responsiveness will enhance other traits." Thus, someone who reacts strongly to criticism might bash someone over the head for calling them a jerk. A less-responsive person might fire back an insult. Down the scale, an even-tempered person might ask, "I wonder why they called me a jerk?" And a very cold person could be completely indifferent to the accusation, other than perhaps denying it.

Graphoanalysis is used by the legal system to determine the authenticity of documents and has numerous applications in business. It is sometimes used to measure the credit-worthiness of a potential borrower, or to determine if a job applicant has the personality traits necessary to succeed on the job. This can be a touchy area, Zanoni notes, and employers cannot use graphoanalysis as their sole hiring criterion.

Handwriting analysis can also show areas of natural ability and can be a useful part of career counseling.

The International Society of Graphoanalysis, to which Zanoni belongs, forbids the use of handwriting analysis for sheer entertainment or parlor tricks. But it is intriguing, and she does occasionally analyze her friends' and relatives' handwriting. For her final exam, she did a complete graphoanalysis on her husband.

"He was my worst skeptic," she recalls. "You get two responses when you talk about handwriting analysis: 'Do me!' or 'It's all bumps on the head and crystal balls.'" Her husband was entrenched in the second group.

"Anyhow, I did my analysis, and he was flabbergasted. He said, 'Now I don't have any secrets from you.'"

Well, not really. Graphoanalysis doesn't tattle on you, and it certainly doesn't reveal that you cheated on a test or lied about where you were Saturday night. And it doesn't unmask you as either saint or sinner.

"Traits are not good or bad; it's how you use them," Zanoni said. "Aggressiveness can land you in bar brawls or earn you a sales commission. It depends on how other traits affect how you manifest it."

In any case, we have fewer secrets than we believe. "Everybody around you knows what you are like anyway," Zanoni said. "Graphoanalysis just gives a much clearer picture."

In Zanoni's case, she discovered through

Fun classes coming this spring

The Recreation Department is offering several courses to the community during spring quarter, March 9–May 16. Most classes meet once or twice a week in the evenings or on the weekend. Costs listed below are for non-students; MTU students receive a discount in several classes. For specific information, call 487-2975.

- Gymnastics— \$45-\$60: tot, beginner, intermediate, and advanced training courses for girls and women; introductory boys' gymnastics
- Akido—\$55: adult beginner, adult advanced, and combined classes; \$25-\$30: two children's classes
- Swimming—\$45: American Red Cross instruction at all seven levels of ability plus adult swim
- "Learn to Skate" lessons— \$25: mainly for kids, adults are welcome
- Aerobics—\$50: Advanced Step, Step, Step and Sculpt, Step Circuit, Basic Step, Step Muscle
- Aqua Fit—\$50: the ultimate low-impact exercise
- Beginning scuba—\$300: must be at least 12 years old, able to swim 200 yards, comfortable in the water. Equipment provided.
- Adult social dancing— \$60/couple

TECH TOPICS

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- By e-mail to ttopics@mtu.edu
- By campus mail, send typed copies to *Tech Topics*, University Relations.

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Center for Teaching, Learning, and Faculty Development



of the Carnegie Professor of the Year award winners contained in the recently released book *Inspiring Teaching* (1997, Anker). In one of the concluding essays, John Lough, from the University of Georgia in Athens, reviewed the syllabi of several Carnegie national teaching award winners in an attempt to identify some of the common elements of their instruction. His findings are rather interesting.

Lough acknowledges that, although there is great variation in specific elements in the syllabi, several common themes or features emerged. He found that the syllabi

- tended to be very detailed and precise with clearly stated course objective and requirements. Most contained day-to-day schedules including reading assignments, due dates, and the scheduled dates for exams.
- laid out rather rigid standards for student performance, with almost all of them including mandatory attendance at all class sessions, specific grading procedures, concrete expectations for class participation, and specific suggestions for how to study, prepare for class, and how to take notes in class. These behavioral expectations telegraph (1) the professor's commitment to individual student learning and success and (2) acknowledge the reality that some students simply don't know how to adapt and succeed in this particular academic environment.
- detailed extensive office hours (20–40 hours per week). Most professors allowed students to call them at home, if really necessary. Lough found that most award winners invited students to their homes for special occasions and all interacted with students outside of class through field trips, breakfasts and lunches, attending social functions, presentations, and athletic events, going to parties, making joint trips to national meetings, and staffing the office with as many students as possible.

The syllabi of inspiring teachers

By William Kennedy, director

For the last few weeks, we have been exploring the essays of two

of the Carnegie Professor of the Year award winners contained in

the recently released book *Inspiring Teaching* (1997, Anker). In one of the concluding essays, John Lough, from the University of Georgia in Athens, reviewed the syllabi of several Carnegie national teaching award winners in an attempt to identify some of the common elements of their instruction. His findings are rather interesting.

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As a part of this review, Carnegie award winners were also asked what they felt were the most crucial elements to include on the first day of class. Three major themes emerged. First, these professors take the time to clearly explain exactly what the course will cover, provide a complete explanation of what will be required of each student, and conduct a review of the syllabus explaining the rationale for each of the elements.

The second commonly held priority of the first day is getting to know the students. Procedures for doing this obviously vary with the size of the class. In classes of up to fifty students, these professors actually learn each student's name and reason(s) for enrolling in the course in the first few weeks of class.

The third common priority for the first day of class is piquing the student's interest in the course materials. These award-winning professors attempt to do this in a wide variety of ways. Many work to connect the goals of the course with the student's collective and individual goals and interests, no matter how banal or narrowly focused they may seem. Some provide specific examples of how the knowledge and skills gained in the course are likely to affect students' professional or personal lives. Some cite specific examples of how previous students have benefitted from the course. Most of these professors also attempt to focus their students' attention on the most intriguing or topically relevant considerations related to the course material.

After reading *Inspiring Teachers*, I remain convinced that there is no one right way to teach. Teaching draws on our emotional as well as our intellectual resources. The process of continuously discovering how we can make the most of our own gifts, talents, and knowledge for the benefit of our students is one element in becoming an "Inspiring Teacher."

Underlying all of the efforts of these Carnegie Professor of the Year award winners is a clear commitment to go the extra mile to see that every individual student under their guidance succeeds to the best of her/his ability. Their actions and syllabi say, "Here is where we need to go, here is what you need to do, and here is what you can expect from me."

We've got some copies of *Inspiring Teaching* available for your review. It's an easy read. If you'd like to borrow one, give us a call at the Center for Teaching, Learning, and Faculty Development at 487-2046.

Anti-stress booklets, start-up exercise video available

The Wellness Department has a new five-minute video on starting a walking/exercise program. All MTU employees are welcome to check it out.

The department's supply of stress management booklets is depleted, but more are on order. If you'd like one when they arrive, or if you would like to borrow the exercise video, contact Erin Carter, wellness coordinator, at 487-2172 or ejcarter@mtu.edu

In print

PhD candidate **Suresh Sampath** (physics) and former Associate Professor **James Cordaro** (physics) published a paper, "Optical Properties of Zinc Aluminate, Zinc Gallate and Zinc Alumino-gallate Spinel," in the *Journal of the American Ceramic Society*, Vol. 81, No. 3 (1998).

Senior Research Engineers **Mark Osborne** and **Russ Alger** (KRC) published an article, "Cold and Tired," in the magazine *testing technology international* 98.

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Troupe's Annual Comedy Show set for March 26–28

Submitted by the Department of Fine Arts

The Troupe, Michigan Tech's popular improvisational group, will fill Walker Theatre with laughter once again when the seventh annual Campus Comedy Show opens a three-night run on Thursday-Saturday, March 26–28, at 8:00 p.m. (Note: This is two weeks later than the dates printed in MTU's Great Events Calendar.)

Tickets are available from the Memorial Union Box Office (487-3200) and SDC Central Ticket Office (487-2073) for \$7 general admission, \$5 seniors, and \$3 students (\$1 more at the door).

The Troupe, a twelve-member student group directed by **Sue Stephens** (fine arts), writes its own comedy skits, improvising some of them on the

spot using suggestions from the audience. Their skits also include spoofs of familiar stories and current events. Audience members of all ages enjoy the Campus Comedy Show, a highlight of the year for anyone who appreciates what an inspired improv group can do.

Members of The Troupe perform throughout the year for local schools and service organizations, where their skits include educational programs on preventing alcohol and tobacco use, preserving the environment, and similar issues. The group frequently collaborates with the MTU Wind Symphony to present lively evenings of music and comedy.

Proposals in progress

Researchers, their proposals, and their potential sponsors are

- **Jaroslav Drelich** (MME), "Examination of Surfactant Aggregates Formed at Solid Surfaces," NSF
- **Glen Simula** (KRC), "Baseline Vibration Excitation and Response," General Dynamics Land Systems Division
- **Scott Bradley** (KRC), "Pivot Bushing Response Characterization," Hendrickson Trailer
- **Michael Gretz** (biological sciences), "Mechanisms of Plant Extracellular Matrix Self-Assembly: Structure-Function Relationships in Cell Adhesion and Motility," NSF
- **William Bulleit** (civil and environmental engineering), "Load-Sharing and System Factors for Light-Frame Wood Construction," Clemson University
- **Bruce Pletka** (MME), "Rapid Room Temperature Stress Relief in Metals: The Effects of Pulsed Magnetic Fields on Recovery in Metals and Alloys," DOE
- **James Riehl**, **Dallas Bates**, **Bahne Cornilson**, **David Mendenhall**, **Pushpalatha Murthy**, **Rudy Luck** (chemistry), **Stephen Hackney** (MME), and **George Robinson** (geological engineering and sciences), "Upgrade of an X-Ray Diffractometer," NSF
- **David Reed**, **Glenn Mroz**, and **Martin Jurgensen** (SFWP), "White Pine Mine Reclamation: Greenhouse Trials," Copper Range Company
- **Stephen Hackney** (MME), "MTU/3M Cooperative Effort in Li Battery Materials Research," Department of Energy
- **Jaroslav Drelich** (MME), "The Use of Plasticizers and Antifogging Agents for Aqueous Flotation Separation of Plastic Waste Streams," Procter & Gamble
- **Gerard Caneba** (chemical engineering) and **Douglas Gardner** (SFWP), "Influence of Copolymer Chain Architecture on the Wood Fiber/Polymer Interface," USDA-NRRC
- **Alex Mayer** (geological engineering and sciences), "Multi-Objective Decision-Making for Environmental Remediation," NSF-EPA partnership
- **Philip Sweany**, **Steve Carr** (computer science), and **François Margot** (mathematical sciences), "Code Generation for ILP Architectures with Partitioned Register Banks," NSF

Continued on page 4

Circuit packaging expert to speak March 10

David Crouthamel, of Lucent Technologies, will give a talk, "Mold Compound Evaluation for Improved IC Packages Performances," on Tuesday, March 10, from 10:00 to 11:00 a.m. in ME-EM 302.

Plastic packaging is used to strengthen and protect integrated circuits, and is essential for their long-term reliability. Crouthamel will discuss the performance limitations of low-stress plastics now used for integrated circuit encapsulation, as well as the improvements offered in newer compounds. In addition, he will outline the methodology of a typical mold compound evaluation and discuss how to use an acoustic microscope to assess the interfacial integrity within the integrated circuit package.

All interested persons are invited. For more information, please contact Mahesh Gupta, 487-3566.

Museum open for Fun Day

The Seaman Mineral Museum will be open Saturday, March 7, from noon to 5:00 p.m. for MTU Family Fun Day.

"We have many new items in our inventory," museum staffers said, including mineral Easter eggs and a new fossil case.

The museum is located on the fifth floor of the EERC.

The Wellness Department and the Western Upper Peninsula Health Department are sponsoring the Big Foot 2K and 6K Walk (considering the weather, both snowshoes and tennies are acceptable footwear) on Saturday, March 7, at McLain State Park. The 6K (3.7 miles) starts at 9:00 a.m. and the 2K (1.24 miles) starts at 9:30 a.m. The event is open to the general public.

Shuttle service is available from Suomi College's gym beginning at 7:30 a.m. and continuing on the half hour.

You may register in advance with Erin Carter, wellness coordinator, for \$13 (includes T-shirt) or on the day of the walk for \$15. All participants will have a chance to win a \$500 credit toward their choice of NordicTrack equipment, a McLain State Park cabin rental, Calumet Theatre tickets, and many other prizes. The first fifty finishers will each receive a medal.

If you would like additional information, please contact Carter at ejcarter@mtu.edu or 487-2172. Her office is in the Human Resources suite, Administration/Student Services 204.

MTU notables

The following students and staff were awarded over \$38,000 in grants from the Michigan Space Grant Consortium in February.

The recipients, their awards, and their funded proposals are Assistant Director **Shalini Rudak** (Educational Opportunity), \$5,000, "Educators' Fellowship to Explore Group Dynamics and Team Building in the Classroom"; consultant **David Dunlop** (physics), \$3,619, "Rockets for Schools"; Youth Programs Coordinator **Kerry Hicks** (Educational Opportunity), \$5,000, "Women and Minorities in Engineering Group" and \$5,000, "American Indian Biology, Geology, and Computer Workshop"; grad student **Gari Mayberry** and Research Assistant Professor **Gregg Bluth** (geological engineering and sciences), \$5,000, "The Integration and Visualization of Volcanic Hazards Data"; graduate student **Sharon Barker** and Chair **William Rose** (geological engineering and sciences), \$5,000, "Remote Sensing of Volcanic Clouds: Improving the Retrieval Algorithm for Low Latitudes"; graduate student **William Everham** and Associate Professor **Jacqueline Huntoon** (geological engineering and sciences), \$5,000, "Visualization of the Michigan Basin Graduate Fellowship"; undergraduate **Andrea Vander Woude** and Research Assistant Professor **Judith Budd** (geological engineering and sciences), \$2,500, "A Remote Sensing K-12 Tutorial of Lake Superior"; undergraduate **Jonathan French** and **Gregg Bluth** (geological engineering and sciences), \$2,500, "Characterization and Satellite Mapping of Keweenaw Peninsula's Mine Waste Products."



Mystery script

Graphoanalyst **Mary Zanoni** provided this brief analysis based on the handwriting of another Information Technology employee. Does it remind you of anyone you know? His/her name is hidden elsewhere in *Tech Topics*.

*When the Doobie Brothers wrote
hot guitar and piano riffs
up to the number one slot,
fact that the lyrics were a*

Optimism is very strong in this person. S/he is the kind of person who sees the cup as half full rather than half empty.

The writing indicates that this person has healthy self-esteem and pride in his/her work. Philosophically, s/he has analyzed and determined a code to live by. S/he is environmentally conscious, using all resources well. S/he is broad-minded and accepts diversity and variety with enthusiasm. S/he is direct in communicating with others and will not be evasive or deceptive. S/he is persistent in striving for what s/he feels is important, yet also yields when it is necessary.

Who is this person?

Zanoni *Continued from page 1*

graphoanalysis that her husband was very exploratory; he wants to investigate every option, while she is more quick to make a decision. The new knowledge gave her the patience to wait for him to sift through all the data. "With graphoanalysis, you can understand what your spouse needs to be happy," she said. And, knowing their differences, she also feels more comfortable insisting on her right to make the occasional snap decision.

"I don't always write the same way."

Whether you are scribbling a memo or penning a letter to your grandmother, the information encoded in your handwriting remains essentially the same. "A lot of people say, 'I don't always write the same way,'" Zanoni said. "That's true, but it's like your face. You can be smiling, or crying, or teed off, but it's still the same eyes and mouth. Your handwriting is a reflection of who you are."

Some reflections are better than others. Printing doesn't give as much information as cursive script. And signatures have special meaning.

"When you write your signature, you are deliberately expressing yourself to others," Zanoni said. "It's like your trademark. Many times they are beautiful and ostentatious." Other signatures are unreadable, which can telegraph that the signer really doesn't want to be known.

For most people, imitating someone else's signature is "excruciatingly difficult."

"How you write is part of your personality, and if you try to write like someone else, you are suspending your personality," Zanoni said.

A few people, however, are gifted forgers. "They are like actors, who can take on another personality and express it as if it were their own," she said.

Though she has no plans to abandon SAS, Zanoni is not writing off the possibility of practicing graphoanalysis professionally. She has been awarded a scholarship to pursue her studies and expects to receive her master certification in about a year and a half. "I just want to learn as much as I can," she said. "And I would like to teach," possibly an introductory workshop on graphoanalysis or a short course along the lines of "It's Never Too Late to Know Your Mate."

If she were to make a career out of graphoanalysis, Zanoni would like to be a questioned document examiner—someone who specializes in determining the authenticity of documents, particularly legal ones, on behalf of the court. That could come after she receives her master certification.

Her mentor, whom she met in Houghton County Circuit Court, is a master graphoanalyst. In her court deposition, she confirmed Zanoni's impressions of her injured friend: "It was real obvious from his handwriting that he had undergone some changes."

And yes, he did receive his insurance settlement.

Proposals in progress *Continued from page 3*

- **Gregg Bluth** (geological engineering and sciences), "Collaborative Research: Development of Spatially Resolved Geochemical Process Models for Modern and Ancient Environments," NSF
- **Michael Renn** and **Robert Pastel** (physics), "Laser Manipulation of Nanoparticles," Procter & Gamble
- **Dennis Johnson** (civil and environmental engineering), "Use of the WWW for Watershed Management with a Focus on Erosion and Sediment Control," USDA
- **Jacqueline Huntoon**, **Gregg Bluth** (geological engineering and sciences), **William Kennedy** (Center for Teaching, Learning, and Faculty Development), and **Fritz Erickson** (education), "Geology of Utah's National Parks and Monuments: A Field-Based Education Program," NSF Award to Facilitate Geoscience Education
- **Martin Jurgensen**, **Peter Laks**, **David Reed**, and **Jiquan Chen** (SFWP), "Ground-Contact Decay Map of the United States," USDA
- **Jaroslav Drelich** (MME), "Examination of Molecular Organic Domains at High-Energy Solid Surfaces," DOE
- **Chris Anderson** (Educational Opportunity), **Peck Cho** (ME-EM), **Pauline Moore** (library), **Richard Selfe** (humanities), and **Bonnie Gorman** (student affairs), "4-S Project Rise III, 1998-99," Office of Equity, Michigan Department of Education
- **Chris Anderson** and **Carole La Pointe** (Educational Opportunity), "1998-99 Michigan Colleges and University Partnership Program Renewal," Office of Equity, Michigan Department of Education
- **Valerie Pegg** (cultural enrichment), "Heartland Community Connections Grant, Chamber Orchestra Kremlin," "Heartland Community Connections Grant ACTER," and "Heartland Community Connections Grant, North Carolina Dance Theatre," Heartland Arts Fund
- **Mark Osborne** (KRC), "Proposed Winter Test Support for Chrysler Legal Department Week of January 19, 1998," Chrysler Legal
- **Gerard Caneba** (chemical engineering), "Process Development of the FRRPP Process," National Starch and Chemical Company
- **Komar Kawatra** (MME), "Investigation of Fly-Ash-Based Particle Binders," NSF
- **Barry Kunz** and **Warren Perger** (electrical engineering), "A Study of Fundamental Properties of Energetic Solids Mechanisms for and Control of Shock Sensitivity," Office of Naval Research
- **Peter Laks**, **Dana Richter**, and **Glenn Larkin** (IWR), "Properties of Composite Containing Rohm & Haas Products," Rohm & Haas
- **Lloyd Heldt** and **Calvin White** (MME), "Susceptibility of Coated Steel Fasteners to Environment-Induced Failure," Chrysler Corporation

Continued on page 5

Concert pianist to give recital March 15

Submitted by the Department of Fine Arts

Concert pianist Nancy Royce Martin will present a recital on Sunday, March 15, at 7:30 p.m. in Walker Theatre.

Martin will perform works of Mozart, Debussy, Bartok, and the "Wanderer" Fantasy by Schubert. Tickets for the recital, sponsored by the Department of Fine Arts, are \$7 general public, \$5 senior citizens, and \$3 students. Tickets are available from MTU's box offices (487-3200), the Calumet Theatre, and at the door.

Martin received a Bachelor of Music degree in Piano Performance from the American Conservatory in Chicago, and a master of music, cum laude, from Indiana University. She has taught on the faculties of Kent State University, the Wisconsin Conservatory of Music, and the College of St. Scholastica, where she was artist-in-residence. She has performed frequently throughout the United States and Germany as soloist and chamber music artist. Martin currently lives in Negaunee, where she has a piano studio associated with Michelsen Music and is active in the Superior String Alliance.

The March 15 recital is Martin's first appearance in the Keweenaw area. She will join concertmaster **Eric Lawson** (fine arts) in a special violin-piano recital to be presented on Sunday, March 29, at 3:00 p.m. in Walker Theatre. Proceeds from both recitals will be donated to the Superior String Alliance and the Copper Country Suzuki Association. For more information, contact the fine arts office, 487-2067.

Proposals in progress *Continued from page 4*

- **Jaroslav Drelich** (MME), "The Effect of Size and Distribution of Inorganic Mineral Particles in Coal Maceral on Its Wettability," American Chemical Society
- **Harold Evenson** (ME-EM), "Investigation of the Mechanism of Sound Transmission Loss through a B Series Double-Sided Gear Cover," Cummins Engine Company
- **Mark Osborne** (KRC), "Proposed Winter Test Support for Dunlop Tire Week of February 23," Dunlop Tire
- **Glen Simula** (KRC), "A Co-Development Program for Tracked Vehicles Leading to Operations and Support Savings," Advanced Refractory Technologies
- **Gregg Bluth, William Rose, and Colleen Riley** (geological engineering and sciences), "Two-Dimensional Characterization of Volcanic Ash: Applications to Remote Sensing Algorithms and Transport Modeling Experiments," NASA Fellowship
- **Anant Godbole and Spencer Slade** (mathematical sciences), "Some Theoretical Aspects and Generalizations of Consecutive-k-out-of-n Reliability Systems," NASA Fellowship
- **Peter Laks and Marcia Pruner** (IWR), "Extended Field Site Studies," US Borax
- **Steven Seidel** (computer science), **Craig Friedrich** (ME-EM), **John Jaszczak** (physics), and **Alex Mayer** (geological engineering and sciences), "Acquisition of Computational Facilities for the Michigan Tech Computational Science and Engineering Program," NSF
- **Komar Kawatra** (MME), "Pollution Prevention in Machining Operations by Pelletization with Fly-Ash Based Binders," NSF
- **David Hand, John Crittenden, David Perram** (civil and environmental engineering), **John Gierke** (geological engineering and sciences), and **Charles Kerfoot** (biological sciences), "Instrumentation for Environmental Impact Research," NSF
- **Bryan Suits** (physics), "14-N NQR and NMR Study of Catalysis in Zeolites," Petroleum Research Fund (ACS)
- **Ken Paxton, Domenic Popko, Jim Hwang, and James Gillis** (IMP), "Marketing and Process Development for Iron Oxide Production," JFK Mining
- **Jay Meldrum** (KRC), **Chuck Van Karsen**, and **Harold Evenson** (ME-EM), "John Deere Noise Cancellation," John Deere Co.
- **Mark Osborne** (KRC), "Dana Corp. Two-Day Winter Test Support," Dana Corp.; "Winter Test Support January 8-10, 1998," Chrysler Jeep; "Winter Test Support February and March 1998," Mitsubishi; "Mobility Research Inc., Special Winter Test Support," Mobility Research Inc.; "Hybrid Electric Vehicle Simulation Model-SBIR," ThermoAnalytics; and "Proposed Winter Test Support for General Motors Corp.," GM
- **Christ Ftaclas** (physics), "Sharpening the Vision of NGST," NASA
- **Donna Michalek** (ME-EM), "POWRE: An Exploratory Study to Define a Modular-Based Teaming Curriculum for Engineering Programs," NSF
- **Jacqueline Huntoon** (geological engineering and sciences), "Investigation of the Burial and Thermal History of Coals Deposited in the Cretaceous Foreland Basin of Utah," NSF POWRE

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, March 6, 1998, at 1:00 p.m. through noon, Friday, March 13, 1998, in the Human Resources Office.

- Custodian—Memorial Union Building (REGULAR, FULL-TIME, THIRD SHIFT, AFSCME INTERNAL POSTING)
- Senior Secretary (N5)—Educational Opportunity (REGULAR, FULL-TIME, UAW EXTERNAL POSTING)
- System Administrator—System Administration Services, Information Technology
- Off-Campus Studies Advisor—International Programs and Services (REGULAR, PART-TIME)

University employees are reminded to apply in writing prior to noon, Friday, March 13, 1998, 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.

Tal Sale

March

NATIONAL WOMEN'S MONTH

- 5 **Thursday**
noon—Basketball luncheon—Memorial Union 105
4:00 p.m.—David Salmanson on C&H uranium mining in New Mexico—Archives Reading Room
- 7 **Saturday**
10:00 a.m.—5:00 p.m.—Family Fun Day—SDC, Memorial Union
9:00/9:30 a.m.—Big Foot 6K and 2K Walks—McLain State Park
- 10 **Tuesday**
10:00 a.m.—David Crouthamel, "Mold Compound Evaluation for Improved IC Packages Performances"—ME-EM 302
noon—Basketball luncheon—Memorial Union 105
- 12 **Thursday**
4:00 p.m.—Britt-Louise Gunnarsson, "Images and Image Work: The Discursive Construction of the Bank"—Walker Theatre
6:00/7:00 p.m.—Club Indigo: Italian buffet and *The Gold of Naples*—Calumet Theatre
- 13 **Friday**
8:00 p.m.—Hypnotist Fred Winters—Fisher 135
- 14 **Saturday**
8:00 p.m.—Hypnotist Fred Winters—Fisher 135
- 15 **Sunday**
7:30 p.m.—Nancy Royce Martin, piano recital—Walker Theatre
- 17 **Tuesday**
8:00 p.m.—Peking Opera Company—Calumet Theatre
- 26 **Thursday**
8:00 p.m.—The Troupe's Comedy Show—Walker Theatre