

# TechTopics

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Michigan Tech's Faculty-Staff Newsletter

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## MTU Gets \$3M to Study Affect of O<sub>3</sub>, CO<sub>2</sub> on Forests

Researchers at Michigan Tech have received nearly \$3 million in federal funds to continue their study of the effects of two greenhouse gases on northern forests.

The three-year, \$2.98-million grant from the U.S. Department of Energy's Office of Biological and Environmental Research supports research led by Professors **David Karnosky** and **Kurt Pregitzer** (SFWP). In cooperation with colleagues from several agencies and universities, they are exposing large, open-air plots of forestland in northern Wisconsin to elevated levels of ozone and carbon dioxide. Major funding for the project has also been provided by the USDA Forest Service.

U.S. Senator Carl Levin, who visited the research team in the Noblet building on a tour of the Copper Country, praised the research effort. "I'm just here to congratulate you, and I'm grateful you received a grant to continue your work."

Levin is interested in another proposed research program that focuses on carbon sequestration in woodlands, the theory that trees and other plants can remove the greenhouse gas carbon dioxide from the atmosphere through photosynthesis, which could help mitigate global warming.

Worldwide, the amount of carbon dioxide has been rising throughout the atmosphere for many decades, while ozone is a more regional pollutant. And while the individual effects of these gases on trees have been well studied (for example, carbon dioxide enhances growth while ozone suppresses it), how forests respond to a mix of the two gases has been unknown.

Since the DOE-funded study began in 1998, researchers have discovered significant differences in how various tree species respond to the two-gas cocktail, and even differences between trees of the same species but with a different genetic makeup. They have also observed changes ranging from the molecular level up to the entire forest ecosystem. Their findings may help scientists predict what forests will look like 50 or

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*Liberty doesn't work as well in practice as it does in speeches.*

—WILL ROGERS

## Tech Leads State in Industry Interaction

Michigan Tech leads the state in its interaction with industry and technology transfer. That was one point in testimony by President **Curt Tompkins** March 12 before the state Senate Appropriations Subcommittee on Higher Education.

Tompkins noted that MTU leads all state universities in the proportion of research funded by industry, at 14.1 percent, which also places the University 24th in the nation.

Tech leads all state universities in the proportion of licenses resulting from this research, with 3.9 licenses per \$10 million of research. A license means that the University has signed an agreement with a company to develop a discovery for the marketplace. The next closest state university is Michigan State at 1.6.

Tompkins noted that Michigan Tech places a high priority on interaction with industry through a number of undergraduate programs, including senior design projects and the Engineering Enterprise program.

In his testimony, Tompkins said that Michigan Tech faces a number of financial challenges: utility costs increasing 31 percent in a year, health-care costs rising by 23 per-

cent and mandated increases in the Michigan Public Schools Employee Retirement System of 23 percent. But, Tompkins said, "I am pleased to affirm that our tuition and fee increases will not exceed those proposed in the executive budget."

Governor Engler's budget calls for no increase or decrease in state appropriations for universities. In exchange, universities agree to keep their increases in tuition and fees to 8.5 percent or lower.

Tompkins also noted a number of other items of interest:

- Michigan Tech graduates enjoyed a 96 percent placement rate, with starting salaries in some fields averaging \$50,000.
- Six of Michigan Tech's engineering programs are among the top 10 in the country in degree production.
- Entering Michigan Tech freshmen have the second-highest entrance test scores in the state.
- Despite having the snowiest campus in the state, Michigan Tech maintains the lowest operation and maintenance costs among the 15 state universities.

## Wolves Decline, Moose Increase

*By Dean Woodbeck*

The lack of winter weather explains many of the changes in the annual wolf-moose survey at Isle Royale National Park, according to Professor **Rolf Peterson** (SFWP).

Peterson said the 2002 survey counted 17 wolves on the island, as opposed to 19 last year. The island's moose population increased from about 900 last year to 1,100 in 2002.

"The significant factor was a lack of winter," Peterson said, referring to the very light snowfall this year. "Moose were in places where we don't normally see them in the winter—on hillsides and out of the conifer swamps."

The Isle Royale wolf-moose survey is the longest running predator-prey study in the world, now in its 44th year. Peterson has conducted the study for the last 32 years. As an island in the middle of Lake Superior, Isle Royale presents a unique opportunity for such research.

Peterson said the wolves suffered a mortality rate of almost 50 percent this winter and that last year's seven pups kept the popula-

tion near steady. The Isle Royale wolves have formed three packs: the east pack with six members, the Chippewa Harbor pack with five and the middle pack with four. There are also two single wolves unattached to a pack.

Researchers confirmed a confrontation between the east pack and the Chippewa Harbor pack, with the east pack's alpha male killed. Peterson's team found that particular wolf, one of four on the island wearing a radio collar, just offshore in Lake Superior.

"The Chippewa Harbor pack has been pushing the east pack aside and enlarging their territory," Peterson said. "A mild winter is always tough on the wolves and this probably contributed to the confrontation."

"We watched about 15 encounters between wolves and moose this winter," he said. "The moose were almost always intimidating, so the wolves didn't bother to attack."

Typically the wolves prey on old moose and young calves. But with little snow cover, the moose could move more freely and avoid the wolves. "Last year, two-thirds of the kills were moose calves," Peterson said. "This year, it was about 20 percent. The wolves had to

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## Senate OKs Minor Change in Emeritus Policy

At the request of retirees, the University Senate voted March 13 to change the wording of the Emeritus/Emerita Professor Policy.

Currently, all retired faculty with emeritus status have the title "professor emeritus." The change allows them to retain the title they had upon their retirement, should they so choose. The change was instituted at the request of retired faculty.

The senate appointed **Pat Heiden** (Chemistry) as its representative to the Faculty Distinguished Service Committee. It nominated **Ted Soldan** (IT), **Cindy Selfe** (Humanities) and **Susan Amato-Henderson** (Education) to the committee; the faculty will elect a representative from among the nominees.

Senate President **Robert Keen** said that nominees are still needed to serve on the University's Conflict of Interest Committee. For more information, contact Keen at [rekeen@mtu.edu](mailto:rekeen@mtu.edu), 487-2346, or Jeanne Meyers, [jemeyers@mtu.edu](mailto:jemeyers@mtu.edu), 487-3331.

## Drop Deadline March 15

Student Affairs asks all teachers to tell their classes that the last day to drop full-term spring semester classes is March 15. All drops must be done in person at Student Records and Registration. The last day to drop track B classes (classes that begin March 15) without a grade is Tuesday, March 26. The last day to drop track B classes with a grade of W is April 11. Please encourage students to base their decisions on their performance during the first half of the course, not on a "hoped for" chance of catching on later.

The MTU policy on late drops is "After the eighth week of the semester, a student may request a late drop from the Office of Student Affairs, which will consider those requests that involve circumstances beyond the student's control." Extenuating circumstances are prolonged illness, serious accidents and death in the immediate family or of a close friend, etc. All requests must be made in writing. No late drops will be granted to avoid poor grades.

## MichiganTech

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*Tech Topics* Web site: [www.mtu.edu/level3/ttopics.html](http://www.mtu.edu/level3/ttopics.html)

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Information to be included in *Tech Topics* should be submitted to the *Tech Topics* editor in one of the following ways:

- By e-mail to [ttopics@mtu.edu](mailto:ttopics@mtu.edu)
- By campus mail, send typed copies to *Tech Topics*, University Relations.

Each week, the deadline for submitting information is **Friday at 5:00 p.m.** for publication the following Friday.

## Higher Ed and the Digital Divide, Part 2

By William Kennedy, director

Center for Teaching, Learning,  
and Faculty Development



Since 1997, the World Bank has spent more than \$30 million setting up more than 30 distance

learning centers in developing countries around the world. It has agreements with more than 200 universities around the globe to provide content for courses to be distributed by these learning centers.

Governmental distance education programs are also growing by leaps and bounds. Last year, for example, China Central Radio and Television University enrolled 1.5 million students with a mandate to add 100,000 new students each year. China Central is currently seeking to upgrade its offerings by partnering with the Open University of Hong Kong (modeled after the British Open University) which provides educational content to students via print and cd-rom. In addition, China Central's students are provided educational support by telephone, e-mail and personal consultations with tutors. In Africa, South America, Asia and Latin America, governments are scrambling to partner with existing providers or create their own virtual universities to meet the overwhelming demand for higher education.

The support for the development of domestic distance education is increasing as well. In July 2000, the U.S. Army announced that it would be spending more than \$450 million to develop a distance learning program to provide college-level course work to U.S. soldiers stationed all over the world. IBM, NCS Pearson, PricewaterhouseCoopers (the ultimate victor), Arthur Andersen, Computer Sciences Corp., EDS and Science Applications International scrambled to create partnerships with hundreds of colleges and universities in order to submit bids to manage the Army program.

Even in these beginning stages, military and college officials compared the magnitude and ultimate impact of this eArmyU initiative to Roosevelt's G.I. Bill. After just one year of operation, eArmyU offers 90 degree programs from 23 colleges and universities. The Army plans to double its enrollment in 2002 to 24,000 students and anticipates

enrollments of 80,000 by 2005. The Army pays for tuition, fees and books for enlisted personnel and provides them with a laptop, printer, Internet access and an e-mail account. Students must complete 12 credit hours of course work in two years to stay in the program and keep the computer and the printer. The program operates on several bases in the U.S. and is scheduled to be available worldwide by 2003. What's in it for the Army? Extended enlistment periods for participants and more-able personnel overall.

PricewaterhouseCoopers is also working with a consortium of colleges and universities in England with plans to deliver continuing ed and professional development courses in 2002. A Columbia University company called Fathom soon hopes to market online courses and articles worldwide. Another firm, Unext, currently markets business courses using professors from schools like the London School of Economics and Stanford University. The University of Michigan, Ann Arbor, has recently teamed up with a university in Shanghai to offer working students a master's in engineering manufacturing degree program. The University of Maryland at College Park is currently working with the government of Uzbekistan to offer U of M course work to students in that former Soviet republic. Other partnerships between big-name universities and giant corporations are already in place with more in the works.

Consider also that Congress is considering liberalizing federal student aid rules that currently require eligible institutions to enroll one traditional student for each distance education student enrolled and require students to enroll for at least 12 hours of course work per week to be eligible for federal aid. The U.S. has also recently petitioned the World Trade Organization to remove restrictions that make it difficult for for-profit distance ed providers to compete in the international education marketplace. Time and time again, Congress is moving to encourage the rapid implementation of distance education programs here and abroad.

It appears that the age of distance learning in higher education has already arrived. Next week, we'll take a closer look at the nature of some of its offerings.

## Employee Day Sunday at Mt. Ripley

### Big Savings Now Till the End of the Season

MTU employees and their families can ski for less than half price on Sunday, March 17.

Lift tickets will be \$10, a savings of \$15 over the usual price, and rentals will be \$10, compared to the regular price of \$23.

And starting March 15, lift tickets and ski package rental prices will be reduced to \$15 for everyone, including the general public.

Hill hours will be extended from noon to 9 p.m. for the public schools spring break, March 25-29, so the kids will have a place to play and get out of Mom's hair. As always, the snow will be great and the fun will be waiting at Mont Ripley.

## The Second City at MTU

*Submitted by University Cultural Enrichment*

Always original and always hilarious, the Second City National Touring Company returns to Michigan Tech on Saturday, March 16, at 8 p.m. at the Rozsa Center. Sponsored by the Student Entertainment Board, Second City has always been a popular show at Tech, and tickets go fast. Tickets are available from Rozsa Center Ticketing Services (487-3200, Monday-Friday, 11:30 a.m.-5 p.m.) or online at <http://www.tickets.mtu.edu>.

Little preparation is required for this company. Michigan Tech provides six chairs, a piano, a stage, a few lights and some sound and, of course, an audience ready to enjoy an up-beat evening of fun and laughter. The company arrives (last time they came, they called ahead wanting to know which exit to take off U.S. 41) with six comedians, a few props and some costumes. The show is a fast-paced series of skits and songs, and the audience has to be on its toes. The humor is seldom sensitive, humane or politically correct, but it's razor sharp and nothing is sacred, not even the audience. This is one of the longest-running shows on the campus circuit. The humor is geared for campus audiences; this show is NOT suitable for the younger set.

The Second City nurtured the careers of comedy greats like Dan Ackroyd, Martin Short, Bill Murray and many others, and it continues the tradition today, sending the best and brightest on the road to follow in the footsteps of their predecessors. Spot some future stars in this group, and you'll be able to say, "I knew them when."

The MTU Student Entertainment Board sponsors The Second City with funding from student activity fees.

## Jazz Combos at the Rozsa

All the spontaneity and excitement of jazz performed by outstanding small combos can be enjoyed at the Rozsa Center on Friday, March 15, at 8 p.m. in a concert sponsored by fine arts. Michigan Tech's two premiere student combos, Jaztec and Momentum Jazz, plus RealTime, a combo of local professional musicians, will make a joint appearance in "Combo Collage." **Mike Irish**, director of jazz studies, conducts Momentum and Jaztec and co-directs RealTime with Charles White.

"Each of these groups will deliver excitement, surprises, and interesting musical interplay among the members," Irish promises. "Each has its own unique sound and character." The program features both jazz standards and music written and arranged by members, including White's "Bear Chase" and pieces by Dave Dube, Kristin Duchateau, Jathan Manley and Irish.

Tickets are available at the Rozsa Center, 487-3200 and [www.tickets.mtu.edu](http://www.tickets.mtu.edu), for \$8 general, \$4 students (\$1 more at the door).

## The Russians are Coming Thursday

*Submitted by University Cultural Enrichment*

The Russians are coming! Eighty of them to be exact, to the Rozsa Center at 8 p.m. on Thursday, March 14. The Red Star Red Army Chorus and Dance Ensemble brings an evening of spectacular entertainment and a taste of the many varied cultures of Russia. Chorus, orchestra and dancers are all on stage together, and it's definitely a don't-miss event. Stunning acrobatic displays, colorful traditional dances, and magnificent choral singing alternate in a fast-paced production, featuring superbly polished, talented, and wildly enthusiastic performers. Tickets are available from Rozsa Center Ticketing Services (487-3200, Monday-Friday, 11:30 a.m.-5 p.m.) or online at [www.tickets.mtu.edu](http://www.tickets.mtu.edu).

The ensemble's lively dancers keep audiences on the edge of their seats, gasping with amazement as extraordinarily athletic men leap and tumble, and women spin like tops or glide like swans. The fancy footwork of the exuberant Cossack and Ukrainian Hopak dances never ceases to astonish as the dancers seem to explode in gravity-defying movement.

The chorus is crisply disciplined and possesses a special quality that sets it apart from choruses of the West. In the famous Meadowland song (the name may not be familiar, but the audience will recognize it as soon as it starts), they demonstrate that uniquely Russian sound as the chorus begins in a whisper as if heard from far away, gradually building to a volume big enough to lift

## Geologist to Speak on Deadly African Lakes

In 1986, Lake Nyos, in the African country of Cameroon, released a cloud of carbon dioxide that killed 1,700 people and devastated domestic herds and wildlife for many square miles.

Michele Tuttle, a scientist with the U.S. Geological Survey, will discuss the tragedy on March 15 at 4 p.m. in Dow 642. Her presentation is free and open to the public; a reception will follow in the eighth floor atrium of the Dow Building.

Scientists discovered that the crater lake, perched inside a dormant volcano, had become laden with carbon dioxide gas. This gas had suddenly bubbled out of the lake and asphyxiated nearly every living being in the surrounding valley community.

Tuttle will explore the mysteries surrounding Lake Nyos immediately following the disaster. She will describe the unique conditions observed at this dangerous lake and present the clues that identified the culprit responsible for so many lives being lost.

Tuttle, who holds a PhD in Geochemistry/Geology, has conducted domestic and international research with the U.S. Geological Survey since 1981. Since

off the roof, as if multitudes of people are coming over the brow of a hill, passing the audience and gradually moving off into the distance, the sound fading to a barely audible hum. The chorus features several impressive soloists, particularly the basses, who possess those deeply rich voices for which the Russians are justifiably famous. The Red Star Red Army Chorus and Dance Ensemble was originally created for the entertainment of the Soviet Army's strategic missile troops, and they are considered one of the top performing groups of the Russian armed forces. In recent years, they have also appeared in the concert halls of Moscow and at arts festivals throughout Russia and the former Soviet Union. They've also toured most of the European countries, as well as Southeast Asia and Australia. The ensemble's return to North America marks their tenth anniversary since the sell-out debut tour in 1992.

The ensemble visited Michigan Tech in March 1998 and returns in response to popular demand. They gave a splendid performance at that time in spite of a stage that was too small. At one point the front row of the audience gasped when it looked as though a couple of the dancers were about to spin off the stage and into their laps. It'll be a treat to see them on the Rozsa stage.

The visit of the Red Star Red Army Chorus and Dance Ensemble is made possible by the Committee for Campus Enrichment and the James and Margaret Black Endowment. For further information, contact the Great Events Series Office (487-2844).

1986, she has been a member of the interdisciplinary U.S.-Lake Nyos response team. The team's research results have helped both U.S. and international agencies develop mitigation strategies and hazard awareness programs.

The talk is part of the distinguished lecture program sponsored by Phillips Petroleum and the Association of Women Geologists. This program promotes awareness of career opportunities for women in the geological sciences. Tuttle will also meet informally with students at 2 p.m. on March 15 in the sixth floor atrium of the Dow to discuss career development and other topics.

## Board of Control Meets Friday

The Board of Control will meet on Friday, March 15, at 9 a.m. in Memorial Union Ballroom B. The agenda items include a strategic planning report by Provost **Kent Wray** and a new distance-learning classroom.

Board meetings are open to the public, and all members of the MTU community are welcome.

## Forestry Symposium March 22

This year's annual forestry symposium, "The Future of Land Use in the Keweenaw Peninsula," will be held in the Noblet Building on Friday, March 22. The event begins at 8:30 a.m. in G002 and will conclude around 4 p.m.

Everyone is welcome to drop in at any time during the day to learn about aspects of land use in the Keweenaw. Speakers will include State Representative Richard Brown, Bruce Peterson of the Natural Resources Conservation Service, Associate Professor **Blair Orr** (SFWP), Tina Hall of the Nature Conservancy, Peter Couto of International Paper and Katie Avlord, a local expert on conservation easements.

The symposium is hosted by Xi Sigma Pi National Forestry Honor Fraternity.

## Eco-Lit Group Meets Fri.

Everyone is invited to the Eco-Lit Reading Group meeting on Friday, March 15, at 5 p.m. in the Peterson Memorial Library on the third floor of Walker.

The group is reading Edward Abbey's "Desert Solitaire." For more information, contact Fred Young at [fjyoung@mtu.edu](mailto:fjyoung@mtu.edu) or 337-4563.

## Undergrad Research \$ Available

Funds are available to support undergraduate research students.

Students may apply for awards ranging from \$1,200 to \$2,400 to support research during summer 2002. Applicants must be MTU undergraduates and U.S. citizens. Minority and female applicants are encouraged to apply. The application deadline is March 25.

The program encourages students to gain research experience through work with a faculty member, plus discover applications for course work and build their resume.

Student applications are available at <http://www.admin.mtu.edu/research/URP>, the Educational Opportunity Department in the Alumni House, or by e-mailing Shalini Suryanarayana at [shalini@mtu.edu](mailto:shalini@mtu.edu).

The grants are sponsored by the Vice President for Research and administered through Educational Opportunity. For more information, contact Suryanarayana.

## C<sup>2</sup>E<sup>2</sup> Proposals Sought

The Century II Campaign Endowed Equipment (C<sup>2</sup>E<sup>2</sup>) Fund Committee is soliciting proposals for the spring semester. C<sup>2</sup>E<sup>2</sup> guidelines are available on the Web at <http://www.admin.mtu.edu/rgs/research/c2e2/>

Click at General Philosophy and the prerequisites for submission for the PDF file. Faculty wishing to submit a proposal for consideration this semester should do so by 5 p.m., April 19. Send nine copies to the Vice President for Research office.

If you have any questions, contact Joanne Polzien at 487-3043, [jpolzien@mtu.edu](mailto:jpolzien@mtu.edu).

## Guthrie Theater Comes to the Rozsa

*Submitted by University Cultural Enrichment*

The Guthrie Theater brings a full-scale remount of its 1999 main stage production of Eugene O'Neill's classic "coming of age" comedy, "Ah, Wilderness!" for two performances on Friday and Saturday, March 22-23 at 8 p.m. For an audience in the 21st century, the play is great entertainment and a nostalgic hearkening back to a kinder, gentler America. Tickets are available from Rozsa Center Ticketing Services (487-3200, Monday-Friday, 11:30 a.m.-5 p.m) or online at <http://www.tickets.mtu.edu>.

Ah, Wilderness! is about the Miller family and their teenage son, Richard, what happens to him, and how his family helps him grow from his experiences. O'Neill referred to the play as "a sort of wishing out loud, the way I wish my boyhood had been." Set in a small Connecticut town on July Fourth, 1906, the play recalls a time when family life was considered the only life in America. The Millers appear to be a picture-perfect American middle-class family. Sixteen-year-old Richard manages to infuriate his family as he strives for independence and takes deliberate steps toward adulthood.

The holiday begins when Richard's mother is shocked and dismayed to discover that her son has been reading Wilde, Shaw, Ibsen and other scandalous writers. Things go from bad to worse when the father of Richard's girl-

friend arrives with a collection of love poetry Richard has copied for his daughter. He accuses him of immorality and insists that his daughter wants no more to do with him.

O'Neill is regarded as America's leading dramatist and was the first American to win the Nobel Prize for literature. Ah, Wilderness! is his only true comedy and the first of his later plays to incorporate autobiographical material.

The play is directed by Douglas C. Wager, former artistic director of Arena Stage in Washington, DC. The set is designed by Ming Cho Lee, one of the foremost designers in America today.

Founded in 1963 by the great Irish director Sir Tyrone Guthrie, the Guthrie has gained international distinction. His particular vision was to provide the region with quality theater and set a national standard for excellence in theatrical production and performance.

This Rozsa Center residency is made possible by major support from the National Endowment for the Arts through the Heartland Arts Fund, a collaboration of Arts Midwest, the Mid-America Arts Alliance, and their member state arts agencies and support from private contributors. Funding also comes from the James and Margaret Black Endowment and the Committee for Campus Enrichment. For further information, contact the Great Events Series Office (487-2844).

## Guthrie Actor to Lead Public Speaking Workshop

Do you feel nervous or insecure when you have to address a group of people in public? Do you wonder what to do with your hands or whether the people at the back of the room can hear you? Here's help in the form of a free workshop geared toward anyone whose career demands good public speaking skills. The leader is Nathaniel Fuller, a veteran of 15 seasons with the Guthrie Theater. Scheduled for 7 p.m. in the Memorial Union Alumni Lounge on Thursday, March 21, the workshop is free and open to the public.

Every public face that you present is a character you've created. Whether in everyday situations in the classroom, the office or anywhere you may have to address a group of people, you are essentially on stage. You are playing a part; you are performing. Actors, of course, are trained to be on stage and are essentially full-time, professional public speakers. In this class you will learn skills you'll be able to apply immediately and feel better about your public presentations.

Call the MTU Great Events Series Office at 487-2844 for further information and to register for the class.

The Guthrie Theater company will be in town for a three-day residency that includes two performances of Eugene O'Neill's play "Ah Wilderness!" on March 22 and 23 and a series of workshops presented by members of the company on campus and in area high schools. Fuller plays Nat Miller, one of the lead roles in "Ah, Wilderness!"

## Workshop March 20: Understanding Your Child's Temperament

As you know, each child is different. There are three different types of temperament: easy going, slow to warm, and feisty. Understanding your child's temperament will enhance your ability to assist your child in the many transitions that they will make as they go to preschool and school. It will also help you to determine the most effective parenting strategies to use with each of your children.

MTU's Employee Assistance Program will host a "Lunch and Learn" Seminar on Wednesday, March 20, where parents and professionals can learn about their child's temperament, as well as their own.

The seminar will be held at noon in Memorial Union 105A. For more information or to schedule an appointment with the EAP, call 482-2299.

## Staff Luncheons Start This Spring

President **Curt Tompkins** and his wife, Kathy Tompkins, will be hosting luncheons at the University Residence for staff in March and April.

The luncheons provide an opportunity for staff to visit informally with Tompkins, similar to the breakfasts/luncheons that are held in the fall for faculty. Attendance is welcome but not mandatory. Staff should watch for their invitations in campus mail.

Here is the schedule: Information Technology, Monday, March 18; Experimental Computation, Math Sciences, Mechanical Engineering, Mining and Materials Processing Engineering and Physics, Monday, April 8; Civil and Environmental Engineering, Engineering Fundamentals and Geological Engineering and Sciences, Tuesday, April 9; Biological Sciences, College of Engineering, Computer Science, Institute of Materials Processing, Materials Science and Engineering and University Senate, Wednesday, April 10; and Air Force ROTC, Army ROTC, Biomedical Engineering, Business and Economics, Chemical Engineering, Chemistry, Department of Education, Social Sciences, the Center for Teaching, Learning, and Faculty Development and Vice Provost for Instruction; Monday, April 29.

## Student Workers Needed This Summer in the Halls

Residential Services Facilities is accepting applications for full-time summer custodial positions in all three residence halls. Employment begins May 13 and ends August 23.

Applicants must be enrolled in high school or college (must be 16 years old on or before May 31, 2002). Positions are 40 hours per week at \$5.40 per hour; some weekend work may be required.

Applications are available in any residence hall office. The application deadline is April 2.

For more information, contact Joan at [jhembrof@mtu.edu](mailto:jhembrof@mtu.edu), 487-2740.

## Reception Friday for John Sutherland

The Department of Mechanical Engineering-Engineering Mechanics invites the campus to a reception celebrating the appointment of Professor **John W. Sutherland** to the Richard and Elizabeth Henes Chair Professor in Mechanical Engineering, on Friday, March 15, in the Memorial Union Alumni Lounge from 4 to 6 p.m.

Come and join in the festivities!

## Facilities Says Please Check Your Research Equipment

*Submitted by Facilities Management*

Recently, a Facilities Management building attendant noticed water flowing to a drain and wondered where it was coming from. The drain was near an electron microscope which was not being used at the moment, and it appeared that the valve controlling the cooling water was closed. Upon further examination, however, the attendant determined that the closed valve was for something else and that the microscope's cooling circuit was still active and using about half a gallon of water per minute.

**Bill Mitchell**, the supervisor of building operations for Facilities Management, noted that this doesn't sound like a lot of water, but since the microscope has been not used for three years, approximately 788,000 gallons have gone down the drain both literally and money-wise. The cost to Michigan Tech is \$6,800. Facilities Management appeals to all researchers and lab supervisors to double check all equipment and make sure power and water is shut off when not needed.

## Michigan Space Grants Awarded

A number of Michigan Tech undergraduates, graduate students, faculty and staff have received Michigan Space Grants.

The Undergraduate Fellowship recipients, departments, project titles, advisors and grants are **Cassandra Aplin**, Physics, CONCAM Shade Project, **Robert Nemiroff**, \$2,500; **Christina Bergstrom**, Chemistry, Mössbauer Spectra of Nanoparticles, **Leslie Leifer**, \$2,500; **Alexandria Guth**, Geological Engineering and Sciences, A Study of Nyamuragira's SO<sub>2</sub>, **Gregg Bluth**, \$2,500; **Daniel Lund**, ME-EM, Vacuum Chamber Integration of a Performance Test Bed for Plasma Thruster Research, **Brad King**, \$2,500; **Daniel Nezhich**, Chemistry, Mössbauer Absorption in a Compound Exhibiting Fe<sub>2</sub>+/Fe<sub>3</sub>+ Resonance, **Leslie Leifer**, \$2,500; **Kimberly Schneck**, Geological Engineering and Sciences, Great Lakes Remote Sensing: An Evaluation of Satellite-Based Primary Productivity Models, **Judith Budd**, \$2,500.

Michigan Tech submitted 12 undergraduate proposals out of the 27 received by the Michigan Space Grant Consortium and received six of the 19 fellowships awarded.

The Graduate Fellowship recipients are **Jason Carter**, Biomedical Engineering, Human Neural Organization During Acute Simulated Microgravity, **William Cooke**, \$5,000; **Meaghan G. Caster**, Geological Engineering and Sciences, Remediation of Chlorinated Solvents Using Ozone Air Sparging, **John Gierke**, \$5,000; **Matthew B. Chye**, Chemical Engineering, High-Efficiency Oxygen Separation and Recovery from Air Using Regenerable Oxygen-Binding Proteins, **Tony Rogers**, \$5,000; **Alex Kieckhafer**, ME-EM, Investigation of Propellant Backflow in Hall Thrusters, **Brad King**, \$5,000; **Guy Pelligrini**, Biological Engineering, Arterial Baroreflex Responsiveness During Acute Simulated Microgravity, **William Cooke**, \$5,000; **Heidi Sherman**, Geological Engineering and Sciences, Analysis of Uranium in the Jacobsville Sandstone Aquifer, **John Gierke**, \$5,000; and **Oscar E. Sorenson**, Geological Engineering and Sciences, Lahar Hazards at Tungurahua Volcano, Ecuador, **William Rose**, \$5,000.

Michigan Tech submitted eight of the 18 graduate proposals received and was awarded seven of the 13 fellowships granted.

Michigan Tech faculty and staff submitted four out of 15 Seed Grant proposals received by the consortium and was awarded four out of the 10 grants distributed. The Seed Grant recipients are **Eric Blough**, Biological Engineering, Efficacy of Increased Heat Shock Protein Expression as a Countermeasure to Protect Against the Effects of Hypogravity on Muscle Tendon Structure and Functionality, \$2,500; **Xin-Lin Gao**, ME-EM, Modeling of Functionally Graded Materials Using Strain Gradient Theories, \$5,000; **L. Brad King**, ME-EM, A Study of Magnetic Field Interaction in Closely Spaced Hall Thrusters, \$5,000; **Eugenijus Urnezis**, Chemistry, Organometallic Polymers: From Ligand Design to Possible Applications, \$5,000.

**John Lehman**, Educational Opportunity, was awarded grants in both the Public Outreach and in the Pre-college Program categories. Three faculty, **Gregg Bluth**, **Jacqueline Huntoon** and **Jason Keith**, were awarded MSGC Higher Education Program grants.

To date, MTU will receive a total of \$94,725 from the Michigan Space Grant Consortium for the 2002 funding year. The consortium also awards grants to Eastern Michigan University, Grand Valley State University, Hope College, Michigan State University, Oakland University, Saginaw Valley State University, Wayne State University and Western Michigan University.

### More grant funding available

A second call for Undergraduate Research proposals has gone out; the deadline is March 25.

Contact Chris S. Anderson at [ythcander@mtu.edu](mailto:ythcander@mtu.edu) for additional information about the award or the new RFP.

### In Print

Professor **Elizabeth Flynn** (Humanities) has published a chapter, "Elbow's Radical and Postmodern Politics," in "Writing with Elbow," edited by Pat Belanoff, Marcia Dickson, Sheryl I. Fontaine, and Charles Moran.

## Forestry grant *Continued from page 1*

100 years from now.

"Concentrations of both carbon dioxide and ozone are increasing because of energy production, and are expected to continue increasing for at least several decades," said Jeffrey Amthor, the director of DOE's Program for Ecosystem Research. "This experiment is reducing uncertainty about changes in the productivity and ecology of hardwood forests in the Great Lakes region caused by these changes in atmospheric chemistry. . . . This work is contributing directly to the Department of Energy's mission on environmental change research. . . .

"In essence, it is a window into the future."

The project, known by the acronym Aspen FACE, involves more than 50 scientists in eight different countries and may have global implications.

"This is perhaps the most comprehensive study anywhere of the potential consequences of atmospheric change," said Dave Shriner, assistant director of the USDA Forest Service's North Central Station, located near the Aspen FACE site. "The knowledge gained through this experiment could have a major impact on future policy decisions relating to climate change, as well as for ozone pollution."

Glenn Mroz, dean of the School of Forestry and Wood Products, praised the researchers' efforts. "They have shown com-

PELLING and irrefutable evidence of the impact of greenhouse gases on aspen and birch forests," he said. "We are extremely proud of their efforts."

Other researchers involved in the project are Don Zak of the University of Michigan at Ann Arbor, Rick Lindroth of the University of Wisconsin at Madison, J. G. Isebrands and Mark Kubiske of the US Forest Service, Kevin Percy of the Canadian Forest Service, George Hendrey of Brookhaven National Laboratory and Mike Miller of Argonne National Laboratory.

## Wolves *Continued from page 1*

work hard to find a moose to kill."

Peterson also said that all three packs had breeding activity, so he expects three litters of pups to be born in late April.

While the moose have fared relatively well this winter, Peterson says they could begin to have problems this spring and summer.

"The trend of warmer temperatures and a warm, dry spring, could mean an increase in tick infestation of moose," he said. High winds in December also caused a large blow-down of the balsam firs on the western half of the island. The moose prefer these for food.

"We lost 16 percent of the fir trees on the western half this winter," he said. "In the last 13 years, about three-quarters of these trees have disappeared. Younger trees can't grow because the moose are eating them. While I expect the moose to increase over the summer, there are some big uncertainties ahead."

The wolf-moose study is supported by Isle Royale National Park, the National Science Foundation, the Earthwatch Institute and a number of individual donors.

## March 29 Club Indigo: American In Paris

By Joe Kirkish

Ooh la la, the first Club Indigo food/film event of its tenth season at the Calumet Theatre begins Friday, March 29, with a classic musical and a banquet of French cuisine.

The movie is "An American In Paris" starring Gene Kelly, Leslie Caron and a lot of other MGM greats. Listed as one of the finest movie musicals ever made (until "Moulin Rouge," that is), it features Kelly's dancing and choreography in more than one famous scene.

The buffet will be supplied by Chef Chris from the Northern Lights restaurant. Reservations will be needed for the meal, but not for the movie.

The buffet begins at 6 p.m. (\$9.50) while the movie starts at 7:15 p.m. (\$3.50).

Mu Beta Psi sponsors Club Indigo on campus. It has been made possible also by the Sand Hills Lighthouse, Ahmeek, and The Best Western Franklin Square Inn, Houghton.

## March

### National Women's Month

- 14 Thursday**  
**8 p.m.**—Red Star Red Army Chorus and Dance Ensemble—Rozsa Center
- 15 Friday**  
**9 a.m.**—Board of Control meets—Memorial Union Ballroom  
**4 p.m.**—Michelle Tuttle on deadly African lakes—Dow 642  
**4-6 p.m.**—Reception for John Sutherland—Memorial Union Alumni Lounge  
**8 p.m.**—Jazz combo concert—Rozsa Center
- 16 Saturday**  
**8 p.m.**—Second City—Rozsa Center
- 20 Wednesday**  
**noon**—EAP Lunch and Learn, Understanding Your Child's Temperament—Memorial Union 105A
- 21 Thursday**  
**7 p.m.**—Public speaking workshop, Nathaniel Fuller—Memorial Union Alumni Lounge
- 22 Friday**  
**8:30 a.m.-4 p.m.**—Forestry Symposium, "Land Use in the Keweenaw"—Noblet G002  
**8 p.m.**—"Ah, Wilderness!"—Rozsa Center
- 23 Saturday**  
**10 a.m.**—Men's tennis, Mercyhurst at MTU—Gates Tennis Center  
**8 p.m.**—"Ah, Wilderness!"—Rozsa Center
- 24 Sunday**  
**10 a.m.**—Men's tennis, Findlay at MTU—Gates Tennis Center
- 29 Friday**  
**6/7:15 p.m.**—Club Indigo: Buffet/"American in Paris"—Calumet Theatre

## Rafert Honored at Institute Banquet

Graduate School Dean **Bruce Rafert** received the Founders' Award last month from the Isle Royale Institute.

The award recognizes outstanding support of the institute's goals and mission. This year, it was given to the institute's two founders, Rafert and Doug Barnard, former superintendent of Isle Royale National Park.

The awards were presented at the third annual thank-you banquet. "This award reflects the efforts and vision of these two people that lead to the creation of the Isle Royale Institute," said its managing director, **Mark Gleason**.

## New Staff

**Joshua Myles** has joined the geological engineering and sciences department staff as a system administrator. He is completing a BS in Mechanical Engineering from MTU and lives in Houghton.

## MTU POSITION AVAILABLE

Job descriptions will be available at 1:00 p.m. on Friday, or by e-mail at <JOBS@MTU.EDU>.

The following positions will be posted Friday, March 15, 2002, at 1 p.m. through noon, Friday, March 22, 2002, in the Human Resources Office.

Departmental Coordinator—Department of Physics  
System Administrator—Auxiliary Technologies

University employees are reminded to apply in writing prior to noon, Friday, March 22, 2002, 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.