

# Tech Topics

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Michigan Tech's Faculty-Staff Newsletter

Published weekly by University Relations

## Senate Clears Its Desk

The University Senate went a long way toward cleaning its plate April 26, passing four proposals in quick succession.

At the recommendation of the Curricular Policy Committee, the senate approved thirty-four new minors in sixteen departments, as well as an interdisciplinary minor in remote sensing. It also gave the go-ahead to a separate BS in Biomedical Engineering. Currently, students may earn a BS in Engineering with a concentration in biomedical engineering. The new degree would be administered by the Center for Biomedical Engineering.

Both proposals are subject to Board of Control approval.

The senate approved Proposal 7-00, Tenure, Promotion, and Reappointment Procedures. It amended the proposal to say that deans can seek clarification and advice on tenure, promotion, and reappointment only from the candidate, the personnel committee, the inter-school committee, and external referees.

The proposal now goes to a vote of the academic faculty and is subject to Board of Control approval.

The senate passed Proposal 13-00, which calls for expanding a program to give TIAA-

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## MTU Auction May 6

Michigan Tech will hold its surplus property auction on Saturday, May 6, at Dee Stadium, located in Houghton on Lake Avenue.

Items for sale include computers, printers, scanners, a fax machine, shop machinery, lathes, a bandsaw, a shaper, office furnishings, tables, chairs, kitchen supplies and equipment, 14' step ladders, used and new tires, a 1977 Ford F250 4x4 with Western plow and 47,000 miles, 1989 Chevy 20 window van with 65,000 miles, vacuums, floor scrubbers, Champion spark cleaner and tester, hydraulic 1-1/2-ton bumper jack, three double-wide trailers, and more.

As you can see, there is something for everybody. Details of the viewing time and actual start of the sale and terms of the sale will be in the May 5 *Tech Topics*.

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*The game of life is not so much in holding a good hand as playing a poor hand well.*

—H. T. LESLIE

## Provost Candidate Wray Visits Campus

Michigan Tech should never lose sight of the importance of undergraduate education, W. Kent Wray told a small crowd April 25.

"Undergraduates are our bread and butter," said Wray, a candidate for the position of provost and senior vice president for academic affairs. "And graduate study has to be said in the same breath as undergraduate education." A master's degree is considered an entry-level qualification for some professions, he said.

Wray, the dean of engineering at Ohio University, said that Michigan Tech's research funding suggests that the University could handle significantly more graduate students. "I don't know the optimum number of grad students for Michigan Tech, but if you are going to parallel your growth in research, you need about 100 to 150 more than you have now," he said, particularly doctoral students.

The growth in research and the graduate program may coincide with the retirement of a number of senior teaching faculty, and the University will have to cope with that shift, "and not just by putting more TAs in the classroom," Wray noted.

Regarding the Carnegie classifications, "we are compelled to be in Doctoral/Research I," he said, or risk being ranked with lesser institutions. "We're not in Doctoral/Research I yet, so we need to focus on that. At the same time, Michigan Tech doesn't need to produce 100 PhDs a year."

Wray said his management style was

based on advice, guidance, and consensus. "I seek input from the people with a vested interest," he said. "When I make a decision, I do it on the basis of the information available, and if more information becomes available," the decision can change.

Even when he makes a mistake, Wray said, he explains the rationale for his actions. "That's been successful," he said. "People say, 'We understand; just don't do it again.'"

"Something I don't do is make decisions on the basis of committees," he added. Committees may make recommendations, but "since I suffer the consequences, I make the decisions," Wray said.

As provost, he would expect to link with the University Senate for its advice and counsel. In addition, senators could convey information from the provost back to their constituents. "You need this kind of exchange for a healthy relationship," Wray said.

Communication is the second-greatest challenge facing MTU, he said, edged out only by the budgeting process.

When asked whether he favored fourteen- or fifteen-week semesters, Wray demurred. "I don't know the culture here or the academic requirements," he said. "If we can't do it in fourteen weeks, we need fifteen. If I had to pick, I'd say fourteen, but we should wait and see how fifteen works."

Wray said he backed general education requirements, noting that classes he'd taken in music and history had

*Continued on page 6*

## AFSCME to Help Mont Ripley Ski Hill

*Submitted by the News Bureau*

The AFSCME Union Local 1166 has reached an agreement with Michigan Tech to help resolve financial issues at the Mont Ripley Ski Hill. AFSCME will no longer be representing workers at the ski hill. However, based on the agreement, AFSCME will secure other positions at the University that better serve the interests of the union.

"This is a win-win situation for Michigan Tech and AFSCME," said **Howard Greenley**, director of auxiliary services. "Changes like this are never easy. I sincerely appreciate AFSCME's leadership and vision in helping us resolve the financial challenges that face Mont Ripley. With the community's investment in snowmaking equipment and the union's help, Mont Ripley has a much brighter future . . . and that's in the best interest of both Michigan Tech and the community."

AFSCME President **Ken Moyle** said, "It is our union's hope that this agreement will make Mont Ripley a financially viable operation that will benefit everyone concerned." Michigan Tech will be implementing a snowmaking system at the Mont Ripley Ski Hill next winter.

## Wanna See the Michigan Tech's New Commerical?

Then go visit the MTU Home Page and click on "TV Campaign Launched." You can check out the print ads that have been running in various publications by clicking on the photo on the left side of the page.

## Update on Tech Express

Starting May 31, the Tech Express Card will no longer function a debit card with National City Bank. If your Tech Express card is linked to a National City account, you will be receiving a notice and a new debit card directly from National City before the end of May.

The Tech Express program will not be contracting with any financial institution next academic year. Though you won't be able to use it off campus as a debit card, the card will still have the smart chip that can be used on campus (with vending machines, at the Campus Store, etc.).

If you have any questions, contact Jarrod Karau, Tech Express manager, at 487-3308 or jllkarau@mtu.edu

## In Print

Director of Marketing Communications **Dennis Walikainen** (University Relations) was quoted in an article by Mark Clayton, "Peeking Parents," in the March 14 edition of the *Christian Science Monitor*, regarding listservs for the parents of college students, such as MTU's ParentNet.

Assistant Professor **Jaroslav Drelich** (MME) has edited a book, *Apparent and Microscopic Contact Angles*, that chronicles the proceedings of the International Symposium held in conjunction with the American Chemical Society meeting in Boston, August 24–27, 1998. Drelich also authored the paper "Instability of the Three-Phase Contact Region and Its Effect on Contact Angle Relaxation" included in the book.

Associate Professor **Dieter Adolphs** (Humanities) authored the article "Cultural Studies and Critique of Power: Eine Herausforderung für die Deutschstudien in Nordamerika," in *Jahrbuch Deutsch als Fremdsprache: Intercultural German Studies*, Vol. 25 (1999).

Associate Professor **Glenda Gill**

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## Constructivism, One More Time

Center for Teaching, Learning, and Faculty Development *By William Kennedy, director*



Teaching at  
**Tech**

Judging from the number of responses to the recent columns dealing with constructivism, it appears that these ideas have struck a chord with several faculty members at MTU. To clarify some of the issues raised, we'll take one more snapshot at this educational approach.

Constructivism, very briefly, is the notion that each of our students comes to the University with their own individually crafted mental reality; not a *tabula rasa*. Constructivists argue that lasting and profound learning occur when students find their existing ideas confronted by alternate mental models that engage and challenge the conceptions that they presently hold and value. Constructivist educators suggest that one key to student engagement and deep and durable learning is based upon the educator's ability to fathom the knowledge, beliefs, and skills that our students commonly bring with them. Instruction that does not engage their existing conceptions has no lasting effect on the student and winds up in the "failure to engage" scrap heap, quickly purged as unnecessary baggage after the exam.

Constructivists argue that if the instruction engages and challenges their existing world views, students then mature in their abilities to gate-keep new understandings by comparing the benefits that the new mental models provide against the old. One of the profound implications of this approach is that students not only learn new ideas, but also develop an intellectual value system for weighing the utility of new ideas, enabling productive life-long individual discovery to flourish.

Constructivist educators facilitate learning by creating and presenting problems designed to challenge the various mental models entertained by their students. Constructivists encourage students to develop

and manipulate raw data, primary sources, and all forms of experiential learning (labs, experiments, etc.) rather than attempting to fill students in on what the experts think. These educators seldom lecture but regularly ask students open-ended questions and engage them in dialogue and encourage them to pursue individual hypotheses and conceptions in constructing their own new mental models.

Constructivism challenges the tacit assumption that underlies most university instruction: that learning is, at least initially, about submission to and committing to memory the instructors' profound ideas and pithy insights as they are pressed onto their empty minds. In the constructivist view, the teacher moves from being knowledge source to catalyst, from provider to provoker, from satisfier to stimulator. As one professor asked, "Doesn't it drive the students nuts? Don't they feel like we should have the answers?" The answer is yes to all of the above. But so what? Should we worry more about driving them nuts or about lulling most of them to sleep?

Perhaps most interesting were the comments I received from a Tech professor who employs these ideas routinely in orchestrating field experiences for her students. She noted that getting students to actually engage in these processes is often easier with middle school students than with first-year college students. She noted that most of the twelve-year-olds she has worked with are more willing to suspend present conceptions and let their creative imaginations loose on a new data set that challenges their intuitions than are college students, who quickly become impatient with not being given the right answer that will be on the test. Discovery or drudgery? We tend to defend our present methods because a few seem to truly succeed; or endure. Can we maximize our efforts by following a different route? That remains to be seen.

## Virtual Reality Seminar May 5

Roberta L. Klatzky, professor and head of the Department of Psychology at Carnegie Mellon University, will give a seminar, "Applied Systems Based on Virtual Perceptual Displays," on Friday, May 5, at 11:00 a.m. in the Memorial Union Red Metal Room. All interested persons are invited.

Klatzky is a member of the Center for the Neural Basis of Cognition and a professor of the Human-Computer Interaction Institute, School of Computer Science. This visit is sponsored by the Center for Biomedical Engineering, the Department of Education, and Educational Opportunity. For more information, contact David Nelson at danelson@mtu.edu or call 487-2772.

## Staff Recognition Award Reminder

Regular staff who have worked five consecutive years or a multiple thereof at the University as of June 30 will be honored at the Staff Recognition Luncheon, set for June 7.

Honorees will receive their choice of Tech Bucks or days off. All eligible staff should have received a letter from Staff Council notifying them of their award. The deadline for returning letters is Friday, April 28.

If you have any questions, contact Patty Kyllonen (487-2280, pkkyllon@mtu.edu) or Gina Goudge (487-1713, gmngoudge@mtu.edu).

# MichiganTech

Bill Curnow, executive director, University Relations  
Marcia Goodrich, *Tech Topics* editor

To get Tech Topics via e-mail, send a message to MAJORDOMO@MTU.EDU saying SUBSCRIBE TECH-TOPICS-L

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- 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.

## Cinco de Mayo Celebrations Coming

Cinco de Mayo (Fifth of May) will be celebrated at Michigan Tech this year with a series of events ranging from mariachi music to an alternative interpretation of the Columbus story.

Cinco de Mayo is celebrated by Mexicans and Mexican Americans and commemorates the victory of a Mexican army over a French army at a Battle of Puebla on May 5, 1862. The Mexican army, led by General Ignacio Zaragoza, won the battle even though the French force was better armed and three times as large. Despite the Mexican victory at Puebla, the French later gained control of Mexico City and established a French-supported government there. In 1866 and 1867, however, France withdrew its troops from Mexico because of resistance by many Mexicans and pressure from the United States. The French-backed government soon fell.

On Monday, May 1, from 8:30 to 10:30 a.m., guest speaker William Cruz will give a talk, "Differences in Communication Styles between Latinos and Anglos," in Fisher 135. He will discuss the differences in both verbal and nonverbal communications styles and how these differences can lead to misunderstandings. Bobby Gonzalez is the featured speaker at Tech Tea Time on Wednesday, May 3 (see related story).

If you love parties, candy, and fun, come to the brown-bag lunch on pinatas and pinata-making on Thursday, May 4, from noon to 1:30 p.m. in Memorial Union 105. **Veronica Puente**, a graduate student from Mexico, will lead the workshop.

Cinco de Mayo celebrations are capped on Friday, May 5, with a performance by Mariachi Cora, a leading mariachi band from the Detroit area. Everyone is invited to drop by the Memorial Union Commons between 11:30 a.m. and 1:30 p.m. to enjoy Mariachi Cora's premier appearance at Michigan Tech.

Cinco de Mayo events are sponsored by Educational Opportunity's Outreach and Multiethnic Programs and by Nosostros, the Hispanic Student Association. For more information, contact Madeline Mercado Voelker at 487-2920.

## "A Dangerous Experiment" Lecture on 1st Amendment

Leonard Niehoff, an attorney with the Butzel Long legal firm in Detroit, will present the public lecture "The Dangerous Experiment," an overview of First Amendment issues, on Tuesday, May 2, at 7:30 p.m. in M&M U115.

Everyone is invited. Niehoff's lecture is sponsored by the Office of Student Affairs and the Office of the President.

## New Genes Protect Trees from Insects, Disease

Submitted by the News Bureau

Researchers at Michigan Tech are transferring altered genes into fungi that facilitate the flow of nutrients through tree roots to help trees protect themselves against disease and insects.

Using "doctored" genes to impart desired characteristics into fungi that live symbiotically with tree roots can ultimately help trees grow faster and live healthier lives, according to the project leader, Professor **Gopi Podila**, a molecular biologist in the Department of Biological Sciences.

"Ectomycorrhizal [on top of the root] fungi provide a major network in the soil for making nutrients available to tree root systems," explains Podila. "By breaking down minerals locked up by acidic soils caused by the decomposition of needles, leaves, and other forest litter, fungi facilitate the passage of those nutrients from the soil to the tree. The fungus, in turn, draws food from the tree, enhancing its own survival. Another benefit of this symbiotic relationship is that the fungus can grow wider and deeper into the soil—and this greatly increases the outreach of the tree in its search for essential minerals."

Podila says that normally, when you try to put a fungus on a plant, the two try to kill one another, but fortunately this mutually beneficial relationship has evolved in nature over the course of millions of years. "One of the things we want to determine," he says, "is how they communicate with one another, how do they each let the other know that they are friendly."

He says the process is a long one.

"It's almost like a courtship. The fungus gradually approaches the tree root system and this can take as long as three or four months. And even then, the fungus is 'turned on' only to specific host signals. The fungus prepares itself to form the association with the host plant by expressing specific symbiosis-related genes. These genes are turned on by the right plant signals, and this process is controlled by DNA sequences called 'promoters.' These promoters are responding to

plant signals and determine the symbiosis-related expression of genes. If we can combine a specific gene with the right promoter, we can introduce a variety of genes into the fungus, where they will express their specific qualities to enhance the life of the tree."

The fungus provides a protective "coating" around the tree's roots, protecting it from drought and attack by various microbial pathogens.

"Reforestation techniques use herbicides to prevent grass and weeds from covering up the reforested area and forming competition for tree seedlings," he says. "Insect pests, such as the white grub, which normally feed on grass roots, must then turn to tree roots for food. White grubs are voracious eaters that can completely chew away the roots of a young tree, leaving it unable to draw nutrients from the soil. We can prevent this from happening by altering the mycorrhizal fungus so it will produce insecticidal proteins that are unpalatable to the grubs, causing them to avoid the tree roots. The protein produced by the altered gene is biodegradable and completely harmless to humans." If these genes are put under the control of symbiosis-related gene promoters, then their expression will be limited to mycorrhizal roots and thus will not cause any unintended expression of these genes.

Podila says it is also possible to improve the ectomycorrhizal fungi to reduce the uptake of soluble metals by tree roots. He says this will be very useful in alleviating conditions caused by acid pollution and aluminum toxicity.

"The use of genetically improved mycorrhizal fungi is a novel and feasible approach for increasing forest biomass," says Podila. "This system, when fully developed, also has the potential to be adapted to handle a variety of problems associated with plant health, and could lead to further research that will use mycorrhizal fungi to help the plant host in many beneficial physiological and ecological ways."

## Summer Youth Programs on Tap

This summer, Youth Programs expects more than 1,400 precollege students to attend their programs in Summer Youth, Women and Minorities in Engineering, the Michigan State Board of Education Summer Institutes, the American Indian Workshop, and the Honors Orchestra Program, as well as specialty programs in collaboration with the humanities, computer science, and chemistry departments.

New explorations have been added to the Summer Youth Program, including Space Science Rocketry: Advanced; Computer Science Backstage Pass; and English as a Second Language: Advanced. The Women and Minorities in Engineering programs will give high school students real experience with a variety of engineering fields, industry role models, and collaborative projects. The Michigan State Board of Education Summer Institutes give Michigan high school students a chance to visit the area, become familiar with the University facilities, and explore science, arts, and technology-related topics. Honors Orchestra participants will play alongside professional musicians during the opera *Falstaff*.

For more information, check out our Web site, <http://youthprograms.mtu.edu> or contact Cheryl Gherna, (487-2219 or [cagherna@mtu.edu](mailto:cagherna@mtu.edu)).

## Jazz Bands Present Spring Showcase

Submitted by the Department of Fine Arts

Michigan Tech's jazz bands will celebrate spring with their annual Jazz Showcase at 8:00 p.m. on Friday and Saturday, April 28 and 29, in the University Theatre. The Research and Development Big Band, Jazz Lab Band, and Jaztec, all directed by **Mike Irish**, will feature blues, classic swing, funk, ballads, jazz standards, and hot Latin arrangements. Jaztec will premiere selections from its new CD, *Watch Your Step*.

Graduating seniors who will be giving their final performances at Michigan Tech include **Chris Pazstor** (trumpet), **Greg Shaffer** (trombone), **Rob Redburn** (trumpet, piano, arranger), **Phil Wells** (trombone), **Guy LaRouche** (trombone, arranger), **Mike Campbell** (bass trombone), **Adam Rozumalski** (tenor sax), and **Tim Havens** (bass). Many of these outstanding musicians will be featured as soloists.

Irish will announce the release date for Jaztec's new CD during the concerts. *Watch Your Step*, which is Jaztec's second CD, features original compositions by pianist Redburn and Irish. The award-winning group sold out its first CD release, *Tech Jazz*, recorded in 1995.

Tickets for the Jazz Showcase concerts are available from MTU box offices (487-3200) for \$8 general, \$4 students (\$1 more at the door), or on the Web at <http://www.tickets.mtu.edu>.

## Computer Classes

The following computer training workshops will be offered at dL Education Center in May. To register before May 1, contact the center at 482-9219 and e-mail [rwchrist@mtu.edu](mailto:rwchrist@mtu.edu) with the classes you have signed up for and the account that should be charged.

Starting May 1, contact the CPDQI office (487-2416 or [rwchrist@mtu.edu](mailto:rwchrist@mtu.edu)). When you reserve a space, please include the account number to be interaccount billed for the session. You will be notified via e-mail with your confirmation.

Cost of half-day sessions is \$60. Full-day sessions are \$120.

- Access level 1, Fri., May 5, 9 a.m.-noon
- Access level 2, Fri., May 12, 9 a.m.-noon
- Access level 3, Fri., May 19, 9 a.m.-noon
- Excel level 1, Thurs., May 18, 9 a.m.-noon
- Excel level 2, Thurs., May 18, 1-4 p.m.
- Publisher, Thurs., May 25, 1-4 p.m.
- Windows level 1, Thurs., May 4, 9 a.m.-noon
- Windows level 2, Thurs., May 4, 1-4 p.m.
- Word level 1, Thurs., May 11, 9 a.m.-noon
- Word level 2, Thurs., May 11, 1-4 p.m.
- Word level 3, Thurs., May 25, 9 a.m.-noon

## Keweenaw Symphony Orchestra, Concert Choir to Perform Bach, Faure

Submitted by the Department of Fine Arts

The Keweenaw Symphony Orchestra will present Magnificat in D by J. S. Bach, Requiem by Gabriel Fauré, and Adagio for Strings by Samuel Barber in its final concert of the season on Saturday, May 6, at 8:00 p.m. and Sunday, May 7, at 3:00 p.m. Professor and Chair **Milton Olsson** (Fine Arts) will conduct the KSO, Concert Choir, and six soloists at St. Ignatius Loyola Church in Houghton.

Shorter works by Johannes Brahms and César Franck will round out the program. This concert is funded in part through a generous annual gift from Copper Range Abstract and Title Company of Houghton. The KSO also receives support from a grant from the Michigan Council for Arts and Cultural Affairs.

Guest soloists will include **Inetta Harris**, soprano, Lorna March, mezzo, Anthony Beacco, tenor, and bass Wayne Hanmer. Featured in the Bach Magnificat will be trumpet soloist Janet Griffith, a member of the music faculty at the University of Wyoming. Organist Eric Hepp will perform Chorale Prelude in A by Franck, and also play the organ in other works on the program.

## Grammy-Award-Winning Artist Leads Gospel Workshop

The Department of Fine Arts will present a workshop on gospel music featuring Richard Smallwood, Grammy-award-winning recording artist, and **Inetta Harris**, director of MTU's Echoes From Heaven Gospel Choir, on Saturday, April 29, from 10:00 a.m. to 3:00 p.m. in the University Theatre.

The workshop will feature a wide variety of gospel music suitable for church and community choirs. Smallwood and Harris will demonstrate techniques of arranging and presenting gospel music, including accompaniments by piano and other instruments. Working with members of Echoes From Heaven Gospel Choir, they will illustrate how to rehearse gospel music with both experienced and inexperienced choir members. The workshop is supported in part by a grant from Educational Opportunity through the King-Chavez-Parks Initiative.

"This workshop will give everyone a once-in-a-lifetime opportunity, not just to learn more about gospel music, but to see and hear a gospel music artist of Richard

Fauré's Requiem is among the most beloved works in the choral/orchestral repertoire. "This work is loved for its sheer beauty, in a context of understated emotional expression," Olsson notes. "The listener is rewarded with a reassuring sense of peace and well-being." Fauré's Requiem is also known for its unusual orchestration, with no violins except for a violin solo in two of the movements. It is scored for viola, cello, bass, French horn, trumpet, bassoon, harp, and organ.

Bach's Magnificat in D, full of joy and celebration, features five-part choruses and a grand orchestration with three trumpets, pairs of oboes and flutes, strings, continuo, and timpani, yielding music which is exhilarating to performers and audience alike. Olsson promises, "Splendid trumpets, outstanding soloists, the richness of the organ, and the precision of the chorus and orchestra will combine to bring this concert season to a magnificent close."

Tickets are available from the Performing Arts Ticket Center (487-3200), Memorial Union and SDC box offices, the Calumet Theatre, and <http://www.tickets.mtu.edu> for \$12 general, \$4 students (\$1 more at the door).

Smallwood's caliber up close," Harris says. "Everyone who loves music will find this a very rewarding experience, and all singers, particularly those who sing in church choirs, should come away with many new ideas they can use."

Harris has been director of Echoes From Heaven Gospel Choir and music instructor at Michigan Tech since 1995. A California native, she is a frequent soloist in both classical and gospel concerts. Smallwood is an internationally recognized gospel recording artist frequently nominated for both Grammy and Dove awards. A number of his compositions have become familiar gospel standards, recorded by other artists and included in collections for choirs. He is an active performer, touring world-wide. He comes to Houghton as part of the tenth anniversary celebration for Echoes From Heaven, and will perform in Echoes' spring concert on Sunday, April 30, at 4:00 p.m. in St. Ignatius Loyola Church.

Tickets for the Gospel Music Workshop will be available at the door for \$35.

## Keweenaw Pride Sponsoring Pride Week Events

Keweenaw Pride, a local organization that supports gay, lesbian, bisexual, and transgender persons, is sponsoring a series of events, including three movies, during Pride Week, May 1-5. All events are free and open to the public.

The film *Trick* will be shown on Monday, May 1, at 7:00 p.m. in EERC 100. A panel discussion, *Queers and Answers*, will be held Tuesday, May 2, at 7:00 p.m. in West McNair Lounge. Keweenaw Pride meets on Wednesday May 3, at 6:30 p.m. in EERC 103. The movie *Better Than Chocolate* is set for Wednesday, May 3, 7:00 p.m. in EERC 103. The final event will be the movie *Boys Don't Cry*, which will be shown on Thursday May 4, at 8:00 p.m. in EERC 100.

## In Print *Continued from Page 2*

(Humanities) has published a book, *No Surrender, No Retreat! African American Pioneer Performers of Twentieth-Century American Theater* (2000).

Two mystery novels by Professor Emeritus **Harley Sachs**, *Conspiracy!* and *The Mystery Club Solves a Murder*, were broadcast by Oregon Public Broadcasting last month. The third edition of his professional writing monograph, "Freelance Nonfiction Articles," previously published by the Society for Technical Communication, is now available in an updated version at <http://ElectricUmbrella.com>.

The most recent issue of the *Journal of Great Lakes Research*, 1999, Vol. 25, No. 4, includes a special section, "Copper Mining, Copper Cycling and Mercury in the Lake Superior Ecosystem," edited by Professor **W. Charles Kerfoot** (Biological Sciences) and Jerome O. Nriagu (University of Michigan). Authors and the articles published in the section include Tina M. Beals, Jonathan J. Kolak, David T. Long (Michigan State University), Kerfoot, and Steven J. Eisenreich (Rutgers University), "Nearshore Versus Offshore Copper Loading in Lake Superior Sediments: Implications for Transport and Cycling"; former student **Diane M. Van Luven**, Associate Professor **Jacqueline E. Huntoon** (Geological Engineering and Sciences), and Associate Professor **Ann L. Maclean** (SFWP), "Determination of the Influence of Wind on the Keweenaw Current in the Lake Superior Basin as Identified by Advanced Very High Resolution Radiometer (AVHRR) Imagery"; Research Assistant Professor **Judith Budd** (Geological Engineering and Sciences), Kerfoot, Research Assistant Professor **Andrew Pilant** (Physics), and graduate **Lisa M. Jipping** (Biological Sciences), "The Keweenaw Current and Ice Rafting: Use of Satellite Imagery to Investigate Copper-Rich Particle Dispersal"; Kerfoot, postdoc **Sandra Harting** (Biological Sciences), Ronald Rossmann (USEPA, Grosse Ile), and John J. Robbins (NOAA Great Lakes Environmental Research Laboratory, Ann Arbor), "Anthropogenic Copper Inventories and Mercury Profiles from Lake Superior: Evidence for Mining Impacts"; Kerfoot and Robbins, "Nearshore Regions of Lake Superior: Multi-Element Signatures of Mining Discharges and a Test of Pb-210 Deposition under Conditions of Variable Sediment Mass Flux"; graduate student **Jaebong Jeong**, Assistant Professor **Noel R. Urban** (Civil and Environmental Engineering), and Assistant Professor **Sarah Green** (Chemistry), "Release of Copper from Mine Tailings on the Keweenaw Peninsula"; former student **Cynthia C. Cusack** and Associate Professor **James R. Mihelcic** (Civil and Environmental Engineering), "Sediment Toxicity from Copper in the Torch Lake (Michigan) Great Lakes Area of Concern";

## The Legacy of Columbus at Tech Tea Time

*Submitted by University Cultural Enrichment*

"When a dominant society tells its story, it's called history. When native peoples and other marginalized sectors of society give their side of the story, it's called revisionism," says Bobby Gonzalez, a Taino/Puerto Rican historian whose visit to Michigan Tech is part of the weeklong Cinco de Mayo celebration sponsored by Educational Opportunity/Latino-Hispanic Outreach. Gonzalez will be the speaker at Tech Tea Time on Wednesday, May 3, at 4:00 p.m. in the Memorial Union Alumni Lounge. The program is free and is open to all.

Gonzalez's topic, "The Legacy of Columbus: 500 Years of Racism and Resistance," is an overview of American history from a native perspective. It is a very different story from the one that appears in American history textbooks. For a number of years, doubt has been cast on that accepted view of America's history, and research has found much that has been proven wrong or unverifiable. Historians debate as to whether trade and exploration were the real purpose of Columbus's voyages to the "New World," or whether his intent was to conquer and exploit. What were the reasons for the decimation of almost entire populations of natives by infection with diseases they had no resistance to, such as smallpox and viral

hepatitis? Was their lack of immunity exploited by the visitors to their land who gave them blankets infected with the diseases? Were the men of the US cavalry heroes or villains in the wars on the Great Plains and in the Southwest?

In what he terms "the American Holocaust," Gonzalez traces the physical, cultural, and spiritual tragedies of native peoples in the Americas. Starting with Columbus and ending with the current problems in Chiapas, Mexico, and the threatened mass suicide by the Uwa Indians in Colombia who are in jeopardy of losing their land to oil exploration, he tells a tale that is only just beginning to appear in the history books and only very occasionally on *Headline News*.

Gonzalez lectures extensively throughout the US. He is the author of the book *The Puerto Rican Indian Wars II*, and he writes a monthly column for the *Latino Village Press*. He is also an accomplished storyteller and poet.

This Tech Tea Time is presented by Educational Opportunity and Hispanic-Latino Outreach, which are sponsoring Gonzalez' visit to Michigan Tech, in conjunction with the University Cultural Enrichment Department. For further information about other Cinco de Mayo activities call 487-2920.

## Biotech Symposium Features Four Speakers

Four guest speakers will be featured at the annual symposium of the Michigan Tech Chapter of Xi Sigma Pi, the National Forestry Honor Society, "Implications of Genetic Engineering for Intensive Forest Management." The symposium is set for Friday, April 28, from 2:00 to 5:00 p.m. in Memorial Union Ballrooms B2 and B3.

Speakers and their topics are Assistant Professor **Shekhar Joshi** (SFWP) "Forest Biotechnology: Are We Playing God?"; Dave Canavera (Westvaco Corporation), "Industrial Perspective on Forest Biotechnology"; Professor **David Karnosky** (SFWP), "Do Exotics, Clones, Hybrids, and Genetically Modified Organisms (GMOs) Have a Place in Sustainable Forestry?"; and Associate Professor **Carol MacLennan** (Social Sciences), "Sustainable Forestry or Frankentrees? The Politics of Biotech Trees."

All are welcome to attend. Refreshments will be provided.

## MTU Hosting Regional SME Meeting

Michigan Tech will host the Eighty-second Annual Meeting of the U.P. Section of the Society of Mining Engineers (SME) on Friday, May 5. MTU students, faculty, staff, and the general public are invited to attend.

The meeting includes nine technical presentations on three topics: mineral processing and management, mining and reclamation, and exploration and planning. Susan Courter of Michels Materials in Brownsville, Wisconsin, will give the keynote address, "Successful Community Relations and Education Programs."

Preregistration is \$20 for SME members, \$35 for nonmembers (\$5 more to register at the door). Student registration is free. Late registration begins at 9:30 a.m. in Memorial Union Ballroom A the morning of the conference. Cost of the banquet is \$18, \$10 for students.

To receive a registration form, contact the Division of Conferences & Institutes at 487-2263.

and former student **Ross D. Lytle** (Biological Sciences), "In Situ Copper Toxicity Tests: Applying Likelihood Ratio Tests to *Daphnia pulex* Incubations in Keweenaw Peninsula Waters."

Professor **Rolf Peterson** (SFWP) and Michigan Tech are mentioned in an article on page 35 of the April 7 edition of *Science Magazine*, "Bringing Science to the National Parks." The article cites Peterson's work on Isle Royale as "top-notch" research that has been done in the national parks. He is quoted in the article.

## Senate Passes Proposals *Continued from page 1*

CREF participants additional contributions to help pay their health-insurance premiums when they retire.

The University recently gave TIAA-CREF employees earning less than \$50,000 annually additional money for their TIAA-CREF account, based on their years to retirement and their salary. The goal was to create the equivalent of an annuity to pay for health-care premiums over a twenty-year period.

Proposal 13-00 would cost about \$400,000, senate president **Bruce Seely** said, adding that it would likely come out of salary increases. "We don't know if it would come out of the salary pool," Senator **Ralph Hodek** (Civil and Environmental Engineering) said.

"It has to come out of the general fund somewhere, and it's not in the budget now,"

## Wray *Continued from page 1*

deepened his understanding and allowed him to communicate well with non-engineers.

Wray did not apply for the provost's position immediately. The search firm of Isaacson Miller contacted him repeatedly before he submitted a resume. "I didn't want to be provost because of the paperwork and the personnel problems," he said. "But a provost has a direct impact on academic programs, and in this position I'd influence research.

"So here I am," he said. "This is a top-notch institution with the potential for moving upward. . . . I think this is a place where

## New Staff

**John Lindley** has joined the Athletic Department as assistant football coach. He was previously a recruiter for Kforce.com and has a BS in Mathematics from MTU and an MA from Jersey City State College.

**Monica Erickson** has joined the Recreation Department staff as a secretary II. She was previously a receptionist at Portage Medical Clinics. She and her husband, John Erickson, live in Hancock.

## POSITIONS AVAILABLE AT MTU

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

The following position will be posted Friday, April 28, 2000, at 1:00 p.m. through noon, Friday, May 5, 2000, in the Human Resources Office.

Office Assistant—Chemistry (UAW internal posting)

University employees are reminded to apply in writing prior to noon, Friday, May 5, 2000, 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.

Interim Provost **Stephen Bowen** said. "Is the senate willing to accept a trade-off?" Seely asked. "What are we willing to give up?"

Senator **Erik Nordberg** (Library) said that when the senate asked for \$50,000 to help fund sabbaticals, it wasn't told the money would come out of salaries. (The University has not included such sabbatical-leave funding in the budget.)

"I'm reflecting the political reality," Seely said, noting that the administration was unlikely to pay for such a proposal without a show from the senate that it would be willing to accept cuts elsewhere.

Senator **Chris Green** (KRC) suggested that funding for the proposal be considered as an "addition under discussion" to the budget for the upcoming fiscal year, and the proposal passed.

Bowen presented the latest budget scenarios for the next fiscal year, which show MTU \$349,000 in the black if state appropriations go up 10.4 percent, as recommended by the state senate; or \$979,000 in the red, if appropriations rise 7.8 percent, as they did last year. University officials are cautiously optimistic that the senate's proposed appropriation will prevail, Bowen said. Among the increased expenditures this year is \$2.7 million for a 4.5 percent average salary increase and \$294,000 to operate the Rozsa Center for the Performing Arts and the forestry addition. Among budget items under consideration are \$200,000 for Internet2 to come from Research Excellence Funds, \$125,000 in Internet1 funding, also with REF dollars, and \$115,000 for the SBE SS&E budget as part of the School's accreditation effort.

The senate saw a proposed Referendum on Presidential Performance. If OK'd by the senate and then approved by its constituency, it calls for the Board of Control to "take direct action in response to the Administrative Evaluation Commission Report." The senate is expected to act upon the proposal at a special meeting on May 3.

## April

### Fair Housing Month

28

#### Friday

**2:00-5:00 p.m.**—Forum, Implications of Genetic Engineering for Intensive Forest Management—Memorial Union Ballroom B2-3

**2:30 p.m.**—Open forum with provost candidate Gregory Campbell—Chem Sci 211

**6:00/7:15 p.m.**—Club Indigo: German buffet/*Olympia*—Calumet Theatre

**7:30/8:30 p.m.**—John Koivula reception/slide presentation, "Recent Observations of Inclusions in Gemstones"—Dow 642

**8:00 p.m.**—Jazz Bands Spring Showcase—University Theatre

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#### Saturday

**10:00 a.m.**—Gospel music workshop with Richard Smallwood, Echoes from Heaven Gospel Choir—University Theatre

**8:00 p.m.**—Jazz Bands Spring Showcase—University Theatre

30

#### Sunday

**4:00 p.m.**—Echoes from Heaven Gospel Choir Tenth Anniversary Concert—St. Ignatius Loyola Church

## May

1

#### Monday

**8:30 a.m.**—William Cruz, "Differences in Communication Styles between Anglos and Latinos"—Fisher 135

**7:00 p.m.**—Movie: *Trick*—EERC 100

2

#### Tuesday

**7:00 p.m.**—Keweenaw Pride panel discussion, "Queers and Answers"—West McNair Lounge

3

#### Wednesday

**4:00 p.m.**—Tech Tea: Bobby Gonzalez, "The Legacy of Columbus: 500 Years of Racism and Resistance"—Memorial Union Alumni Lounge

**7:30 p.m.**—Leonard Niehoff, "The Dangerous Experiment"—M&M U115

**7:00 p.m.**—Movie: *Better than Chocolate*—EERC 103

4

#### Thursday

**noon**—Veronica Puenta, brown bag lunch on pinatas—Memorial Union Red Metal Room

5

#### Friday

**11:00 a.m.**—Roberta Klatzky, "Applied Systems Based on Virtual Perceptual Displays"—Memorial Union Red Metal Room

**11:30 a.m.-1:30 p.m.**—Mariachi Cora—Memorial Union Commons

6

#### Saturday

MTU auction—Dee Stadium

**8:00 p.m.**—KSO, Concert Choir Concert—St. Ignatius Loyola Church, Houghton

7

#### Sunday

**3:00 p.m.**—KSO, Concert Choir Concert—St. Ignatius Loyola Church, Houghton