

Club Forming for Entrepreneurs, Inventors

If you've ever dreamed of starting your own company or getting rich from one of your inventions, you're invited to join a new campus organization. The MTU Entrepreneurs and Inventors Club is an opportunity for you to network with other future business owners and learn the skills you'll need to succeed. The organizational meeting will be held on Wednesday, March 21, at 5:00 p.m. in Fisher 101. Refreshments will be served.

Faculty, staff, and students who have an interest in invention and entrepreneurship are encouraged to participate. The club has faculty advisors from both business and engineering, and activities will include guest speakers, projects, and idea-sharing sessions.

The club is being formed in conjunction with the Center for Technological Innovation, Leadership and Entrepreneurship (CenTILE). CenTILE is an interdisciplinary center that promotes education and research activities to advance innovation, leadership, and entrepreneurship.

For more information, contact Dana M. Johnson at dana@mtu.edu or 487-2803.

Seely to Spill the Secrets of the NSF

Professor **Bruce Seely** (Social Sciences), on sabbatical as program director of science and technology studies at the National Science Foundation, returns to campus to share his thoughts on how to work productively with the NSF. He'll give his talk, "The National Science Foundation: From the Inside Out," on Friday, March 16, from noon to 12:55 p.m. at Michigan Tech.

All faculty, research personnel, and grad students are invited, and lunch will be provided. But you have to register in advance. Call the Center for Teaching, Learning, and Faculty Development, 487-2046, by Tuesday, March 13, to reserve a space.

*Books are good enough in their
own way, but they are
a mighty bloodless substitute for life.*

—ROBERT LEWIS STEVENSON

Wray Discusses Action Agenda with University Senate

Provost **Kent Wray** talked with University senators February 28 about Michigan Tech's new Action Agenda for 2010 and how funds will be allocated to bring it to life.

The Agenda was drafted by the Nine-Person Working Group (9PWG) after it received an eight-inch stack of strategic planning documents from units across campus last fall. The group sorted the units' proposals into four major categories, or strategic initiatives: Innovations in Education; Residential and Community Campus; Resources, Size, and Composition; and Emerging Technologies and Research.

This last initiative may be the most critical in positioning MTU, since Michigan Tech needs to focus on areas of national importance if it hopes to become a national university of choice. Agencies such as the National Science Foundation and the National Academies of Science and Engineering predict that key areas for research and education will be information technology, nanotechnology, materials technology, and biotechnology. However, the Agenda says, while these areas offer special opportunities, Michigan Tech will continue to support established areas of research excellence in other fields.

As the strategic initiatives suggest, the Action Agenda also allows for development in nonacademic areas.

"Each unit will have its own strategic plan and will be expected to pursue it," Wray said. "Funding requests will be handled

through the usual budgetary process." Units should attempt to identify alternative sources of funding as well. In addition, any member of the University community, including interdisciplinary teams, can submit a proposal through the same process.

Requests will be for one to three years of funding, and will be evaluated based on a variety of criteria, including how well they mesh with the Action Agenda and their cost effectiveness. Plus, they should include a way to measure their results.

As planned, the University will issue a request for proposals in May 2001 for the year beginning July 1, 2002. The deadline for submitting pre-proposals will be October 2001. Finalists will submit a longer proposal in December 2001, and the top proposals will be incorporated into the 2002-03 budget. The funded projects would be subject to an annual review.

Wray and other members of the 9PWG have been presenting forums on the Action Agenda and its budgetary process. They are inviting comments and suggestions from the senate and the entire campus community.

Senator **Mike Roggemann** (Electrical and Computer Engineering) said that, if the Action Agenda is to be followed, it might be necessary to realign units. "That will be hard," he said. "How committed is the administration to helping units make this hard decision?"

Wray said that any such decisions would be made individually, on a case-by-case basis.

Continued on page 4

MTU Students Finding Entry to Health Professions

Eight of the ten Michigan Tech students who applied to medical school last spring were accepted, continuing a ten-year trend of high acceptance rates for MTU students applying to schools in the health professions.

By comparison, 43.3 percent of all applicants to medical school nationwide were accepted in 1999-2000, said **Ron Gratz**, director of pre-health professions studies.

These better-than-average figures seem to bear out over time. Gratz conducted an informal, ten-year survey of Michigan Tech graduates showing that 78 percent who applied to health professions schools were accepted, and 100 percent of students applying for entrance into pharmacy, podiatry, physical therapy, optometry, and chiropractic schools were accepted. Of those applying to medical school over the past ten years, 71

percent were accepted.

However, not all of these students were accepted the first time, Gratz notes. It's common for students to reapply after an additional year of study. And not all students who apply inform Gratz of their status, "so I doubt that we're really at 100 percent," he noted. Nevertheless, he said, "it appears that we still outperform the national mean."

As to why the acceptance rate for MTU students seems to be above average, Gratz is adamant. "We have good students at Tech," he said.

Dean of Sciences and Arts **Max Seel** spread the credit a little wider. "This year's 80 percent is an excellent placement rate," he said. "I'm sure we have good students, but it's also a testament to Ron Gratz' outstanding work."

Proposals in Progress

Researchers, their proposals, and their potential sponsors are

- **Dae Young** (MMPE), "Rock Bolting Systems: New Analytical Design Criteria," NSF
- **Ibrahim Miskioglu** and **Burhanettin Altan** (ME-EM), "Nanoscale Properties of Interphase in Polymer Matrix Composites," NSF
- **Abdi Majlessi**, **Ghatu Subhash** (ME-EM), and **John Pilling** (MSE), "Process Modeling and Optimization of Parameters for Efficient Tube Hydroforming of Aluminum Extrusions," NSF
- **Yi Zhao**, **Ghatu Subhash**, **Ibrahim Miskioglu** (ME-EM), **Stanley Vitton** (Civil and Environmental Engineering), **Patricia Heiden** (Chemistry), "Acquisition of Impact Testing Equipment for Material and Structural Characterization," NSF
- **John Sutherland** (ME-EM), "High-Frequency Micro-Actuation to Achieve Dry Drilling," NSF
- **Bernhard Bettig** (ME-EM), "Validation and Satisfaction of Systems of Geometric Equality, Inequality, and Optimization Declarations in Variational Design," NSF
- **Juergen Bierbrauer** (Mathematical Sciences), "Codes and Applications," NSF, NSA
- **Jim Mihelcic** (Civil and Environmental Engineering), "Quantifying the Risk Associated with Individual Discharges of Toxic Chemicals in the Hudson River Watershed," Hudson River Foundation
- **David Flaspohler** (SFWP), "Assessing the Reproductive Output of Short-Eared Owls and Northern Harriers in the Clay Lake Plain of the Eastern Upper Peninsula," Michigan DNR
- **Donald Kreher** (Mathematical Sciences), "Orthogonal Arrays, t-Designs, and Their Applications," NSA
- **John Johnson** (ME-EM) and **Mark Osborne** (KRC), "Proposal to Conduct a Heavy-Duty Vehicle Chassis Dynamometer Inter-Lab Crosscheck Evaluation of Emission Measurement Performance," CRC

MichiganTech

Bill Curnow, executive director, University Relations
Marcia Goodrich, *Tech Topics* editor
Tech Topics Web site: www.mtu.edu/level3/ttpoints.html

To get *Tech Topics* via e-mail, send a message to MAJORDOMO@MTU.EDU saying SUBSCRIBE TECH-TOPICS-L
Information to be included in *Tech Topics* should be submitted to the *Tech Topics* editor in one of the following ways:

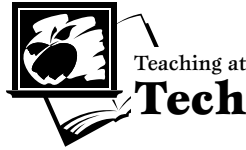
- By e-mail to ttpoints@mtu.edu
- By campus mail, send typed copies to *Tech Topics*, University Relations.

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

Just-In-Time Education

By William Kennedy, director

Center for Teaching, Learning,
and Faculty Development



educational objectives in the cognitive domain, fewer may be aware that Bloom and his colleagues also pursued an understanding of the student development process in the affective domain. Harvard professor William Perry also focused much of his work on understanding the complex processes of student ethical and intellectual development.

Bloom and his associates described a hierarchical pattern of cognitive development that begins with 1) the simple acquisition of factoids, 2) the emergence of generalized clustering of knowledge bits into rudimentary systems of understanding, 3) the ability to employ the developing clusters of knowledge to solve problems or make sense of data, 4) the gradual recognition of some of the underlying structures that tie together the body of ideas, and 5) using structural insights and abstractions to develop new insights into other intellectual pursuits. Proponents of Bloom's taxonomy argue that instructional programs should complement these development stages and should ultimately encourage the emergence of the higher order outcomes (analysis and synthesis).

In the affective domain, Bloom and his colleagues also identified a common development pattern among students. They suggested that students begin their studies with 1) passive reception, resignation, and general indifference, which gives way to 2) growing awareness of areas of personal like and dislike, with 3) instances of generalized valuing and the emergence of general trends in inter-

Although many educators are familiar with Benjamin Bloom et al's hierarchical taxonomy of

est, then 4) the distillation of principles resulting in a general-purpose system of values, and finally 5) the routine use of the generalized value system in the general processing of new information and ideas.

Perry argued that educators must also take into account another predictable pattern of ethical development that occurs in the college years. Early on, Perry observed, college students tend to be dualistic in their thinking. Beginning students come to class seeking "the answer." Knowledge is seen as a set of canned truths begging to be memorized and purged out on a test. Professors are seen as repositories that distribute these kernels of truth through lectures. Eventually, students come to realize that these authorities commonly disagree, and many students conclude that there is, therefore, no truth and everything must just be a matter of opinion. Gradually, they then come to the awareness that knowledge is contextual and situational and that disagreements and varying interpretations are to be expected. Professors come to be valued as experienced reasoners rather than repositories of absolute truth. Finally, Perry observed, students develop and begin to employ their own system of ethical principles and procedures that guide them through their lives.

If educational programs ignore these general developmental processes, one might argue, cognitive, affective, and ethical development are likely to be impeded and multidimensional student and faculty frustration are likely to result. Perhaps one of the issues we should look at as we endeavor to continuously assess the effectiveness of our undergraduate programs is how closely our curricular structures and our teaching practices make use of these developmental patterns.

SHOULD MTU TEACH GEN ED FROM A DISTANCE?

The General Education Executive Committee invites members of the MTU community to an open meeting on Monday, March 12, to discuss distance learning and general education. The meeting is set for 4:00–5:00 p.m. in Memorial Union Ballroom B1.

General Motors is suggesting several possible distance learning initiatives that could involve delivering general education courses as part of one or more degrees. Most recently, General Motors has asked MTU to deliver a core general education course this summer and is interested in expanding the program.

The General Education Executive Committee wants to determine if MTU's faculty, chairs, and departments are interested in teaching the general education curriculum through distance learning, and if so, to explore how to go about it. For more information, contact Dennis Lynch, committee chair, at 487-3249 or dalynch@mtu.edu

MTU Notables

Associate Professor **Noel Schulz** (Electrical and Computer Engineering) has been appointed to the position of IEEE Power Engineering Society (PES) Awards and Recognition chair by the PES vice president for education and industry relations.

Associate Professor **Leonard Bohmann** (Electrical and Computer Engineering) received an engraved plaque from the IEEE Power Engineering Society (PES) for his work as chair of the IEEE PES University Education Activities Subcommittee. Bohmann was also recognized for these efforts at the recent IEEE PES Power Engineering Education Committee meeting.

Scholarship Offered to Female Future Teachers

The Gamma Alpha Chapter of Alpha Delta Kappa International Sorority of Women Educators is offering its \$1,000 Lillian Vine Scholarship to an area woman who is planning a career in education.

Applicants must have graduated from high school within the Gamma Alpha Chapter area (Houghton, Baraga, and Keweenaw counties). They must have completed at least two years of college toward a bachelor's degree in education or a bachelor's degree plus a teaching certificate. Or, they must be enrolled in a graduate program to increase preparedness for an educational career.

Applicants should "show promise of outstanding contributions to the education profession."

Application forms are available from Jean Pekkala, ADK Scholarship Committee Chairperson, P.O. Box 680, Chassell MI 49916.

The deadline for submitting applications and letters of recommendation is May 21.

Computer Classes

The following classes will be held in March at dL Education Center. To register, send an e-mail to the Center for Professional Development and Quality Improvement at rwchrist@mtu.edu. Include the class(es) in which you want to enroll, your phone number, and account number to which the class(es) should be charged. The charge for three-hour (half-day) classes is \$60; and the charge for six-hour (full-day) sessions is \$120. Charges will be billed to your account the month following attendance.

- Access level 1, Fri., March 9, 9 a.m.–noon
- Access level 2, Fri., March 16, 9 a.m.–noon
- Access level 3, Fri., March 23, 9 a.m.–noon
- Excel level 1, Tues., March 13, 8:30–11:30 a.m.
- Excel level 2, Tues., March 13, 12:30–3:30 p.m.
- FrontPage, Tues., March 20, 9 a.m.–4 p.m.
- HTML, Tues., March 27, 9 a.m.–4 p.m.
- PowerPoint, Thurs., March 22, 8:30 a.m.–3:30 p.m.
- Publisher, Thurs., March 29, 8:30–11:30 a.m.
- QuickBooks, Tues., March 6, 9 a.m.–4 p.m.
- Windows level 1, Thurs., March 1, 8:30–11:30 a.m.
- Windows level 2, Thurs., March 1, 12:30–3:30 p.m.
- Word level 1, Thurs., March 8, 8:30–11:30 a.m.
- Word level 2, Thurs., March 8, 12:30–3:30 p.m.
- Word level 3, Thurs., March 15,

News You Can Use

Cribs, Highchairs Recalled

In cooperation with the U.S. Consumer Product Safety Commission, companies are recalling two models of highchairs and baby cribs.

Simmons Juvenile Products, of New London, Wis., is voluntarily recalling more than 68,600 wooden cribs for repair.

Bracket hooks that position the height of the mattress can break, causing the mattress to collapse and putting babies at risk of being trapped and suffocated. No fatalities or major injuries have been reported. Many of the cribs were sold from 1998 through 2000 under the name "Little Folks." Simmons and the two-digit year of manufacture are written on a label affixed to the crib's headboard. The year is the two-digit number following the model number. "Little Folk" is on another label affixed to the headboard. "Simmons" is written on the top rail. Simmons will help consumers determine if their crib is recalled.

Consumers should stop using these recalled cribs immediately and contact Simmons at 800-421-2951 or <http://www.simmonsjp.com> to receive free replacement brackets by overnight mail.

Graco Children's Products Inc. is recalling about 860,000 highchairs. The chair's legs

can come out, causing the chair to fall to the ground and children to suffer serious injuries from the fall. Graco has received 108 reports of the highchair legs coming out of the seat, including 105 injuries ranging from a mild concussion to bumps and bruises.

The model and serial numbers of these Graco highchairs are located on a sticker beneath the seat. The model number contains "3170," "36051" or "74001" within it. The first six numbers in the serial number indicate the date of manufacture. The recalled highchairs were manufactured from January 1, 1995, through December 8, 1997 (or from 010195 through 120897). The highchairs have a white plastic seat and white metal legs, and "Graco" is printed on the front of the tray.

The highchairs were sold nationwide from January 1995 through June 1998. Consumers should stop using the highchairs immediately and call Graco at 800-617-7447 anytime to receive a free repair kit. Additional information is available at <http://www.gracobaby.com>. Consumers should have the highchair available when they call. Highchairs with push pins on the legs that snap into the seat are not part of this recall.

GEM Center Inviting K-12 Students to "Make a Difference" for Earth Day

The GEM Center for Science and Environmental Outreach is joining with other groups to sponsor the first "We Can Make A Difference" Program in celebration of Earth Day 2001. Participating students will develop a project that increases their environmental awareness and improves their school or local community.

Some project ideas include planting a butterfly garden, building bird-nesting boxes or bat boxes, organizing a tree-planting project, setting up an in-school recycling program, and conducting a stream clean-up.

Winners in the grades K-5 group will receive a special Earth Day Toolbox contain-

ing a variety of items, including books, bug boxes, magnifiers, and animal track molds. Winners in the grades 6-12 group will receive a unique paddling experience on the Portage Waterway in the 36-foot *Spirit of the Voyageur* canoe, courtesy of professional canoeist and storyteller Ron Hobart.

For more information, contact Andrea Hinsenkamp at 487-3341 or alhinsen@mtu.edu or visit <http://emmap.mtu.edu/gem/>.

This program is also sponsored by the Copper Country AmeriCorps Program and the Western Upper Peninsula Center for Science, Mathematics and Environmental Outreach.

Memorial Union on Limited Hours over Spring Break

The Memorial Union will operate on reduced hours during spring break, March 2–11.

The bowling alley and pool room are closed for the week, except for March 3, Family Fun Day. The food mall will be open 7:30 a.m.–1:30 p.m. on the weekdays and closed on the weekends. The Corner Store will be closed on the weekends and open 7:30 a.m.–3:00 p.m. during the week. The Campus Store will be open 8:00 a.m.–4:30 p.m. during the week and closed on the weekends, except for Family Fun Day: it will be open noon–4:00 p.m. March 3.

The building will close at 6:00 p.m. Friday, March 2. It will be open 10:00 a.m.–4:00 p.m. for Family Fun Day; closed Sunday, March 4, and Saturday, March 10; open 7:00 a.m.–5:00 p.m. Monday–Friday, March 5–9; and open 11:00 a.m.–9:00 p.m. Sunday, March 11.

The Tech Express and Manager's Offices will be open Monday–Friday, 8:00 a.m.–4:30 p.m. Regular hours resume March 12.

Club Indigo Unveils 2001-02 Season

by Joe Kirkish

Club Indigo's new season features old favorites and fine food. Held monthly (more or less) on a Friday evening, Club Indigo begins with a gourmet buffet at 6:00 p.m. followed by a great old movie at 7:15 p.m. Cost for both is \$12, \$3.50 for the movie alone, at the Calumet Theatre. Club Indigo is sponsored by the Mu Beta Psi music fraternity and benefits the Calumet Theatre. For buffet reservations, call the theater at 337-2610.

The season opens March 16, with the favorite musical *Singin' in the Rain*, a breezy and still-funny take on the early days of Hollywood with Gene Kelly, Donald O'Connor, Debbie Reynolds and Jean Hagen.

Lies My Father Told Me is set for April 20. This charming little gem is about a seven-year-old kid who grows up and loses his innocence in a Montreal ghetto back in the early 1920s.

The May 18 film is *Shall We Dance?* a Japanese tribute to Fred Astaire and ballroom dancing so lovable it won Best Foreign Film of 1996. It's funny, touching, and unforgettable.

Strangers on a Train will be shown June

15. This was Alfred Hitchcock's favorite suspense film, typical Hitchcock with a mix of wry humor and suspense.

See *Casablanca* on the big screen July 20. It's Bergman and Bogey in top form in this favorite romance, complete with "As Time Goes By."

August 24 brings *Adam's Rib*, the best Tracy/Hepburn screwball comedy, in which they trade blows as spouses and opposing lawyers in court. It's a riot!

Pianist Melvin Kangas returns September 7 to accompany *The Cameraman*, a hilarious Buster Keaton silent comedy, in which the great stone face bumbles as a love-sick newsreel cameraman.

Mediterraneo will be shown October 19. In this sweet, amusing comedy, Italian sailors isolated on a Greek island play *la dolce vita* with its female population.

The Club Indigo season ends with *A Christmas Story*, on November 16. Canadian humorist Jean Shepherd recounts the year when, as a child, he dreamed of getting a Red Ryder BB gun for Christmas. It's a charmer and a laugh a minute.

have on the backs of our existing research programs," he said.

Barna said that buildings should have to compete for funding in the same process. Wray said that could be unrealistic, since they cost millions of dollars and are funded primarily through state capital appropriations and private giving.

Because it lacked a quorum, the senate could not elect representatives to the Dean of Engineering Review Committee or the Dean of the Graduate School Search Committee. Senate President **Bob Keen** noted that a faculty member from outside the College of Engineering was still needed to serve on the dean's review committee.

Senate Continued from page 1

"The plan rewards boundary-spanning activities," Senator **Kelly Strong** (SBE) noted. "But my experience is that the system starves boundary-spanning activities." As long as resources flow into departments, departmental priorities will take precedence over interdisciplinary activities, he said.

"I don't have an answer for you," Wray said. "I will attempt to create a climate that makes these efforts successful."

Senator **Bruce Barna** (Chemical Engineering) asked whether the process would be limited to new initiatives. No, Wray replied. The process would also be open to any ongoing research.

"We've achieved what recognition we

New Staff

Terri L. Martin has joined the staff of the J. R. Van Pelt Library as a secretary. She was previously a secretary at Butler, Durham, and Towson. Martin has a BS from Western Michigan University, is married to Wayne Martin, and lives in L'Anse. She enjoys writing children's books, hiking, canoeing, camping, and skiing.

Rose M. Martell has joined the Youth Programs staff in Educational Opportunity as a secretary. She was previously a teacher for BHK Child Development. In addition, Martell was a stock broker and customer service officer at a bank for seventeen years. She has a BS in Secondary Education, with an English major and an Art minor, from the University of Wisconsin-Oshkosh. She is married to William D. Martell, has three children, Anemone, 21, Daniel, 19, and Peter, 17, and lives in Osceola Township. Martell enjoys perennial gardening and sharing plants and ideas, kayaking, whitewater canoeing, cross-country skiing, hiking, reading, journaling, and baking bread.

Joanne M. Polzien has joined the Research Services staff as an administrative associate. She has worked for the Michigan Tech Fund for fourteen years. She and her husband, Doug, live in Lake Linden.

Susan Abramson has joined the Residential Food Service staff as a food service helper. She was previously breakfast-lunch cook at the Keweenaw Mountain Lodge. Abramson lives in Calumet with her husband, Kurt, and has three children, Kurt Jr., John, and Brian.



March

National Women's Month

- 1 Thursday**
5:00 p.m.—Strategic Planning forum for faculty, staff, students—Memorial Union Ballroom A
- 2 Friday**
10:00 p.m.—Spring Break begins
- 3 Saturday**
10:00 a.m.-4:00 p.m.—Family Fun Day—SDC, Memorial Union

POSITIONS AVAILABLE AT MICHIGAN TECH

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

For a complete list of job openings, visit www.admin.mtu.edu/hro/postings/index.shtml

The following positions will be posted Friday, March 2, 2001, at 1:00 p.m. through noon, Friday, March 9, 2001, in the Human Resources Office.

- Custodian—Facilities Management (AFSCME internal posting only)
- Secretary N3—Alumni Relations (UAW internal and external posting)
- Secretary II N4—Social Sciences (Regular, full-time, nine-month position; UAW internal and external posting)
- Secretary II N4—Educational Opportunity (Regular, part-time position; UAW internal and external posting)
- Administrative Aide—Office of Student Records and Registration (UAW internal posting)
- Analyst Programmer—Information Technology

University employees are reminded to apply in writing prior to noon, Friday, March 9, 2001, 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.