



**Michigan
Technological
University**

Michigan Technological University
Digital Commons @ Michigan Tech

Department of Chemical Engineering
Newsletters

Department of Chemical Engineering

Fall 2004

Fall 2004 ChE Newsletter

Department of Chemical Engineering, Michigan Technological University

Follow this and additional works at: <https://digitalcommons.mtu.edu/chemical-newsletters>

 Part of the [Chemical Engineering Commons](#)

Recommended Citation

Department of Chemical Engineering, Michigan Technological University, "Fall 2004 ChE Newsletter" (2004). *Department of Chemical Engineering Newsletters*. 4.
<https://digitalcommons.mtu.edu/chemical-newsletters/4>

Follow this and additional works at: <https://digitalcommons.mtu.edu/chemical-newsletters>

 Part of the [Chemical Engineering Commons](#)

MichiganTech Department of Chemical Engineering



Michael E. Mullins

Letter from the Chair

After 265 inches of snow and a cold, wet spring, another school year has drawn to a close. Another group of seniors has braved four (or five) years of challenging courses and six-foot snow banks to complete their degrees.

In a time of diminishing state support for higher education and administrative changes at the university,

our faculty and staff have worked hard to maintain our program as one of the finest undergraduate chemical engineering departments in the nation. We continue to set our sights high. This year we have further upgraded our teaching labs and classrooms; installed 50 new workstations in our computer labs; added new minors in minerals processing and polymer science and engineering; raised additional scholarship dollars; and continued to revise and improve our curriculum in innovative ways.

We are very happy to welcome Associate Professor John Sandell to the chemical engineering faculty from the School of Technology. For the last 7 years, **Dr. Sandell** has taught in the Chemical Technology program. While there he developed a reputation for excellence in teaching, and has been a finalist for Michigan Tech's outstanding teacher award on three occasions, including this year. We look forward to his contributions to the department.

Other faculty highlights in education and research include:

Dr. Komar Kawatra won a U.S. Department of Education GANN award which will support 6 Ph.D. students over the next 3 years.

Dr. Michael Mullins received a \$1 million award from the U.S. Department of Energy to establish the Michigan technology center for nanostructure and lightweight structures at Michigan Tech.

Dr. David Shonnard is co-PI on a successful 5 million dollar proposal to the National Science Foundations -IGERT program. This program will support numerous Ph.D. students in the area of sustainable manufacturing.

Dr. Gerry Caneba is spending a second summer as a visiting researcher at NASA in Houston studying the production and use of carbon nanotubes.

Over the past year, a major effort has gone into wrapping up our program's ABET accreditation process (which occurs every 6 years) under the leadership of **Drs. Nam Kim, David Shonnard, and Sean Clancey**.

A minor in Minerals Processing has been added to the

(continued on page 5)

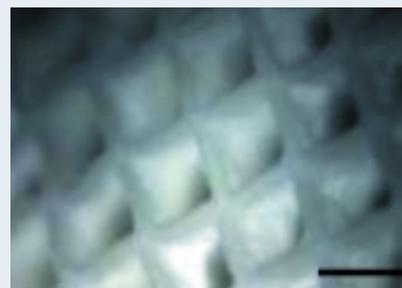
Michigan Tech nano research gets \$1 million boost from House

Michigan Tech University has received \$1 million for fuel cell research. The U.S. House Tuesday (November 18, 2003) approved the funding for Tech for nano- and micro-technology research as part of the final version of the 2003-04 fiscal year Energy and Water Appropriations bill. The research focuses on using extremely small components in the development of hydrogen fuel cell technology. Dale Tahtinen, Tech's vice president of government relations, said the funding will greatly enhance the university's research into nanotechnology.

"The potential is tremendous for some incredible breakthroughs," Tahtinen said.

Lead Scientist Professor Michael Mullins, chairman of MTU's chemical engi-

(continued on page 7)



New Inductees for Chemical Engineering Distinguished Academy Honored

In 1995 the Department of Chemical Engineering established the Distinguished Academy of Chemical Engineering to honor alumni and special friends of the department. The Distinguished Academy of Chemical Engineering serves to confirm the department's reputation for producing graduates that attain the highest levels of leadership in their careers, communities, and society as a whole. Each Academy member reflects the excellence to which our students should aspire. The Academy not only honors each member's accomplishments, but provides role models to our students as they embark on their own professional and personal lives. To this end, each Distinguished Academy inductee has a permanent plaque with a portrait and brief professional and personal statement of accomplishments prominently placed in the department for all our students to view.

Our most recent Distinguished Academy members were inducted on October 9th, 2003. They represent another outstanding group of alumni whose life accomplishments we would like to briefly share with you here. Also, if you have comments on the Distinguished Academy, or know of an alumnus that should be recognized by induction into the Academy, please let us know.

(continued on page 2)

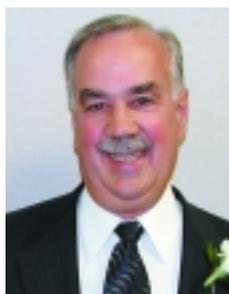
New Inductees (continued from page 1)



Dr. Dennis A. Clifford, '63

A Professor of Environmental Engineering at the University of Houston and 1963 graduate of Michigan Tech, Dr. Dennis Clifford conducts research and teaches courses in Water Chemistry and Physical-Chemical Treatment Processes. He is a Professional Engineer with more than thirty years of experience in

water and soil treatment focusing on the removal of inorganic and radioactive contaminants. Upon receiving his bachelor's degree in chemical engineering from MTU, Dennis worked for nine years as an Instrument Engineer, Project Manager, and Laboratory Manager for the Dow Chemical Co., Fisher Scientific Co., and NUS Corporation. He earned a master's degree in Environmental Engineering from the University of Michigan in 1973 and an MS in Chemical Engineering from the U of M. He was named Most Outstanding Graduate Student in Civil and Environmental Engineering while earning his doctorate in Environmental Engineering in 1976. Dennis has twice been named an Outstanding Teacher at the University of Houston, where he directed the Environmental Engineering Program for 10 years until being named Chair of the Civil and Environmental Engineering Department in 1996. Dennis has received five million dollars in research grants at UH, and has more than 100 publications to his name. He has given more than 50 invited lectures at universities and research institutes around the world. He has won Best Paper awards from the American Water Works Association and AIChE, and has been honored with the Flour Daniel Engineering Faculty Excellence Award, the University of Houston Sigma Xi Research Award, and the Halliburton Senior Research Award of the College of Engineering. Married to Joan Seeman, the 1962 Winter Carnival Queen at MTU, the couple have three children and four grandchildren.



Dennis C. Garceau, '63

A native of Ishpeming, Michigan, Dennis C. Garceau received his bachelor's degree in chemical engineering from Michigan Tech in 1963. He left that year for Decatur, Illinois to join the Archer Daniels Midland Company. After a brief apprenticeship, he served in various engineering and managerial positions in Illinois, South

Carolina, Kansas, Minnesota, and France before returning to Decatur to manage the construction and start-up of its new corn wet milling plant and its entry into the alcohol market with its new potable alcohol facility. After spending eight years managing ADM's soybean crushing, refining, and packaging operation, Dennis was transferred to Europe as the Vice-President of European Operations. After six years in Europe, he returned to Decatur as Vice President of the Oilseed Processing Division with global responsibilities for Production and Engineering. In 2000, he was made a Corporate Officer and President of Technical Services. In 2001, he was appointed Global Technical Director and

presently is serving as Vice President/Manufacturing and Technical Services, with global responsibility for the Oilseed, Cocoa, Nutraceutical, Grain, Milling, Co-generation, Design Services, and Fabrication Divisions. He and his wife Carla have four children.



Donald E. Pfuehler, '67

Currently President and CEO of Hemlock Semiconductor Corporation, Donald E. Pfuehler began his career at Dow Corning as a co-op student in Process Engineering. He held various positions in Process Engineering, Manufacturing, Facilities Engineering, and Economic Evaluation before being named manager of Facilities

Engineering in 1983. In 1984, Don became manufacturing manager for Fluids, Resins, and Process Industries. In 1986, he was named manager of Personnel, and later became director of Human Resources. He became director of Manufacturing Technology in 1989, and was named general manager of the Basic Technology Business in 1991. He became director of Manufacturing and Engineering for the U.S. Area Core Products Group in 1993, and Global Rubber Business Manager in 1995. He assumed his current position in 1997. Don holds a bachelor's degree in chemical engineering from Michigan Tech and a master's degree in business administration from Central Michigan University. He and his wife Pam live in Midland, Michigan and have one child.



Julie A. Fream, '83

A 1983 graduate of Michigan Tech with a bachelor's degree in chemical engineering, Julie A. Fream began her career with General Motors in 1983 as a manufacturing engineer. She held various sales and marketing positions until 1989, when she joined Ford and worked in program management and product planning for

the company's truck operations until 1993. In that year Julie went to TRW, where she held various sales and marketing positions until 1998, when she moved to Visteon as the Associate Director of Global Marketing, Sales, and Service for the company's Ford account. She was then named Visteon's Director of Ford Sales, where she was charged with leading the sales activity for a four billion dollar account with Ford in North America. In her current position as Vice-President of Visteon Corporation's DaimlerChrysler (DCX) North America customer business group, Julie leads the company's efforts to develop and implement business strategies and strengthen the organization's North American business with the automaker. She was previously vice-president of marketing and was responsible for leading a global team in the development of the company's customer and product marketing strategies. A native of Mt. Clemens, Michigan, Julie moved to Dearborn at the age of three and graduated from high school there in 1980. Along with her degree from MTU, Julie also holds a master's degree in business administration from the Harvard Business School.



Kenneth A. Brunk, '69

A resident of Centennial, Colorado and 1969 graduate of MTU's Department of Metallurgy and Materials Engineering, Kenneth A. Brunk began his career in 1969 in the Research and Development Center at Owens-Illinois in Toledo, Ohio. As Superintendent /Engineer of a silica and milling operation in Illinois, Ken

was instrumental in developing several process improvements and automation practices. He was promoted to Vice President of Technology of UNIMIN Corporation in 1977, where he was responsible for the exploration, development, engineering, and construction of three plants in the U.S. and played a major role in developing operations in Europe. After establishing a start-up engineering company in 1980, he joined Newmont Mining Corporation as a Senior Metallurgical Engineer in 1981. He was instrumental in developing a patented technology for the treatment of refractory gold ores, and rose through the ranks to become Vice President of Business Development in 1991. Ken joined Bateman Engineering as Vice President and Corporate General Manager in 1997, and in 1999 re-started his consulting firm of KSB Management LLC. In October of 2001 he became President and CEO of HW Process Technologies Inc., where he is working to commercialize the patented membrane technologies developed by the company. He is also President and CEO of the Harrison Western Group of companies, which provide construction and contract mining services. Among his other activities, Ken is a past president of the Mining and Metallurgical Society of America, a Director of the Mineral Information Institute, and a past Director the Western Museum of Mining and Industry. Ken has received numerous awards, including the Distinguished Nevadan for Services to Education, and his most recent, the AIME's James Douglas Gold Medal for advancement in non-ferrous metallurgy.



Peter J. Meyers, Jr., '53

Born in Kingsford, Michigan in 1928, Peter Meyers graduated from Kingsford High School in 1946. He joined the U.S. Navy afterward, eventually receiving in 1950 a commission as a Second Lieutenant in the U.S. Army-Chemical Corps. Pete received his bachelor's degree in chemical engineering from the Michigan

College of Mining and Technology in 1953. He joined DuPont as a research engineer that same year, and over the years he was assigned to a variety of positions in research, process and product development, plant design, construction liaison, engineering, and manufacturing. He went to Tennessee in 1955 as a Senior Engineer, and was promoted to Research Group Leader in 1956. In 1963, Pete was promoted to Manufacturing Superintendent, and in 1965 was named Product Supervisor at the Seaford, Delaware plant. Over the next 17 years, Pete was transferred to operations in Delaware, Tennessee, and South Carolina. He was promoted to Production Manager, Film Division-Polymer Products in 1980, and in 1982, he was sent to Switzerland

as Director of Polymer Products. There his responsibilities grew to include all of DuPonts European manufacturing, safety, and environmental issues. He also directed the efforts of numerous subsidiaries. Pete's final assignment at DuPont was as Vice President Manufacturing-Agricultural Products, which involved direction of 45 plants all over the world. He retired in 1991 after 38 years of service, and summers in Pennsylvania and winters in South Carolina. Pete and his wife Shirley have four children and eleven grandchildren.



Robert J. Ockun, '63

Upon his graduation from Michigan Tech with a bachelor's degree in chemical engineering in 1963, Robert J. Ockun joined Hercules Powder Company in Applications Research in Wilmington, Delaware, becoming an authority on corrosion prevention coatings, specialty coatings for the US Military, and adhesion promoters for

plastics. In 1967 he transferred to Chicago in plastic sales, eventually becoming Product Director for Hercules in 1982. With the formation of HIMONT in 1983, a worldwide joint venture of Hercules and Montedison's plastic businesses, Robert became the first Director of Sales and Marketing for HIMONT USA. In 1987, he became Worldwide Business Director, Resins, responsible for developing the global business strategy for polypropylene resin and worldwide acquisition of strategic feedstocks. As Vice President of Resins in 1988, he was responsible for initiating and managing joint venture projects around the world. In 1991 he was named Senior Vice President of HIMONT NA, President of HIMONT USA, and Chairman and President of HIMONT Canada, responsible for all of HIMONT's one billion dollar North American business operations. Retiring in 1999, he signed on for a two-year restructuring assignment as President and CEO of Epsilon Products Company. Robert is a founding member of the American Plastics Council, chairing the advertising committee responsible for the national television and media campaign "Plastics Make it Possible." He was also the corporate executive member of the Chemical Manufacturers Association and member of the Society of Plastics Industry. Robert also has served on the Board of Directors of several North American and European companies and has been inducted into Who's Who in Executive and Professionals.



Ron O. Harma, '60

A native of Hurley Wisconsin, Ronald Harma received his bachelor of science degree in Metallurgical Engineering (Minerals Processing) from Michigan Tech in 1960. He continued on to receive a B.S. in Engineering Administration and an M.S. in Metallurgical Engineering from MTU in 1961. His first position

was as a process engineer for the Kennecott Copper Corporation in Salt Lake City, Utah. Joining the Cleveland-Cliffs Iron Company in Ishpeming, Michigan in 1963, Ron

progressed through positions in technology and operations and management, including manager of Research and Development, plant manager, and manager of Central Services. In the early 1970s he was part of a small management team responsible for the design, start-up, and operation of the Tilden Mine Plant near Ishpeming, an operation unique world-wide for its ore processing technology. He transferred to the Cleveland-Cliffs corporate offices in Cleveland, Ohio in 1987 as general manager of Research and Development. Ron served as director of International Projects for mergers and acquisitions until his retirement in 2001 after more than 37 years of service. He

is currently doing independent international consulting in Australia, Brazil, the Ukraine, and Siberia. A distinguished member of the Society of Mining Engineers, he has served as chairman of the local section and has chaired several national committees. Ron is an Emeritus Member of the Michigan Tech College of Engineering Industrial Advisory Board, a Life Trustee of the Michigan Tech Fund, and a member of the President's Club. He is married to the former Ann Marie O'Leary of Hancock, once a department secretary in Metallurgical Engineering, and has two children and two grandchildren. His son is a 1990 graduate of MTU. Ron and his wife reside in Westlake, Ohio.

Undergraduate Expo 2004- AFG takes 3rd Place in Poster Presentation

3rd Place Award Enterprise Poster Presentation Alternative Fuels Group (AFG) Enterprise

Sponsor: US Army Tank-Automotive and Armaments Command

Advisor: Dr. Jason Keith, Assistant Professor, Chemical Engineering

AFG is an enterprise that focuses on the use of alternative fuels and in particular hydrogen fuel cells. With the rising cost in gas and the over dependence on foreign sources of fuel for the US, the need to research and use alternative energy is paramount. Our current project objectives are to become familiar with hydrogen fuel cell operation and implement the fuel cell onto a John Deere Electric Gator-which will serve as an intermediate deliverable to our sponsor- the US Army TACOM. Next year we will then design and build a MULE, an army transport vehicle that utilizes hydrogen fuel cell and diesel hybrid engine-which will be the final deliverable for our sponsor. In the years after we plan to test and improve the MULE chassis and power systems.

Study and investigation were the subject for this year's annual Undergraduate Exposition. The theme was "Quality Leadership and Innovation in Action." Students presented their Senior Design projects along with Undergraduate Research and Enterprise Team projects. A distinguished panel of judges made up of University faculty members and corporate representatives critiqued the projects in three categories: abstracts, posters and presentations. Student participants from all engineering and science disciplines competed for a wide range of cash prizes.

The goal of the Undergraduate Exposition is to provide an opportunity for students to present their research, design and independent study projects. Students gain professional experience and build their resumes through direct exposure to real world problems and competitiveness. The Expo not only serves as a means of showcasing the hard work of many of Michigan Tech's talented students, but also the quality of education that is afforded to Michigan Tech students due to the generous donations made by industry.

Projects were judged within their respective classes of: Undergraduate Research, Senior Design, and Enterprise.

Undergraduate Research participants competed in three (3) categories- abstract, poster, and presentation. The Enterprise teams competed in the poster and presentation portion of the competition.

Many of the projects displayed were sponsored by industry. Through sponsorship, industry is able to link up with the fresh, new engineering talent at Michigan Tech and contribute significantly to their education and the mission of the University. Members of industry and various academic department advisory boards were on campus to view the various projects. The projects and posters were available for viewing by the campus and community throughout the day.

The Expo is a combined effort of the Department of Educational Opportunity and the College of Engineering. If you are curious as to how you can participate in next year's Expo or would simply like more information surrounding the event, please contact Mary Raber at (906) 487-2005 or mraber@mtu.edu



Brian Howson (ME-EM), Christopher Kimojino (CM), Rachel Smith (CM), and Jeff Beard (CM).

Letter from the Chair (continued from page 1)

department under the leadership of **Dr. Carl Nesbitt**, and **Dr. Komar Kawatra**. This maintains a tie to our mining and minerals heritage, which goes all the way back to the "ore dressing" major in the 19th century.

A new interdisciplinary minor in Polymer Science and Engineering is being put into place with the help of **Drs. Faith Morrison**, **Gerry Caneba**, and **Julie King**. We are looking at introducing an additional minor in biochemical processing next year.

Our students have also had some impressive accomplishments during the past year. Some highlights include:

Our student chapter of AIChE sent 17 students to the AIChE annual meeting in San Francisco, where our ChemE car team finished 2nd in the national competition. Our AIChE chapter also participated in the regional meeting, helped with our department open houses, called prospective students, and numerous other activities that helped the department.

Our honor society, **OCÉ**, also had a productive and busy year, once again helping to plan and run the regional science fair for elementary and middle school students.

Our two Enterprise programs, **Consumer Product**

Manufacturing (CPM) and the **Alternative Fuels Group (AFG)**, continue to go strong, with the **AFG enterprise** placing 3rd in the campus-wide competition this year for outstanding Enterprise.

Junior **Nick Ballor** won a prestigious Goldwater Scholarship. He is the first Michigan Tech student to ever win this national award.

Our cooperative education program continues to grow, with almost a third of our students now participating. Fifteen years ago less than 5 percent of our students participated.

The numbers of students campus-wide participating in study-abroad programs has grown from less than 30 students 5 years ago to around 250 students this past year.

Undergraduate research also continues to grow, with over 30 chemical engineering students working with a faculty mentor during the past year.

During a time of change and some economic challenges, the Department of Chemical Engineering has adapted well and continues to be a pillar of education at Michigan Tech. Our alumni and friends are a critical part of our strength as a department. We would like to hear from you, so we hope you will take a few minutes to fill out the attached update card, or to email me at memullin@mtu.edu.

Chem-E Car Takes Second Place in the Nationals

Michigan Tech's Chem-E car team rode to its best finish ever in national competition taking the silver metal at the AIChE finals held Nov. 16, 2004 in San Francisco. The MTU team finished second among 25 top teams from across the US.

Competitors built shoe-box-sized model cars powered by chemical reactions- no Energizer batteries allowed. The goal was to make the car travel a specific distance, stopping as close to the finish line as possible.

The MTU team's car is powered by a hydrogen fuel cell and has a custom machined copper body to represent the Copper Country.

The team also received an award for most consistent performance, with two runs of almost exactly the same length. "They were the only school in the competition to do that," Keith said. "They worked pretty hard trying to perfect their design. You never know what will happen. They tested in the building under certain conditions, but then there was this ballroom with the bumpy floors."



After taking ninth place in the 2001 competition, the team wanted to replace their original Tupperware-framed, battery-powered car with something new. They became one of the first groups to use hydrogen fuel cells in the Chem-E Car competition.

Students who represented Michigan Tech at the conference were Kevin Lamkin (head of the Chem-E car team), Jeremiah White, Lemayian C. Kimojino, James Eickhoff, Adetoun Ayorinde, Nicholas Ballor, Clint Winninger, Mike Scudder, Hugh Simmonds, Jonathan Jelsma, Abram Walters, Andrew Pressler, Matthew Guyton, Rachel Smith and Jesten Neill. Other MTU students who worked on the design and construction of the cars were Kenneth Koers and Jeremiah McConnell.

The Chem-E team's sponsors included BASF, USG, the Michigan Tech Fund's Parents' Fund, the Department of Chemical Engineering, and the AIChE MTU chapter. The first place team was from the University of Dayton.

By Megan Gilge

Tech Topics editorial assistant, MTU Tech Topics



Generation II



Generation III



Generation IV



Generation V

Western UP Science Fair

The Chemical Engineering Honor Society, Omega Chi Epsilon, has worked with the Copper Country Intermediate School District (CCISD) for the past four years in organizing and helping to run the Western



Upper Peninsula Science Fair.

This past March (2004) the science fair hosted exhibits by upper elementary and middle school students from five western U.P. counties with a record number of exhibits.

The Western U.P. Center for Science, which co-sponsored the event, is a partnership servicing 21 school districts and the community in Houghton, Baraga, Gogebic, Ontonagon, and Keweenaw Counties

For photos of this years Science Fair please visit the Western Upper Peninsula Center for Science, Mathematics and Environmental Education's website at http://wupcenter.mtu.edu/education/WUP_science_fair_festival_2004/index.html

Photos courtesy of Webmaster Emil Groth (ehgroth@mtu.edu)

Sandell Joins Department

We are pleased to announce that Dr. John F. Sandell has joined the department as an associate professor. Dr. Sandell comes to us from the School of Technology, where he was associate professor and program coordinator. Along with his appointment here, Dr. Sandell maintains a position as adjunct associate professor in the Civil and Environmental Engineering Department. John holds a bachelor's degree in chemical engineering, and an MS and PhD in environmental engineering, all from MTU.



A three-time finalist for the MTU Distinguished Teaching Award, and the recipient of the Faculty of the Year Award from the MTU chapter of the American Society of Civil

Engineers, John brings an extensive background in teaching, research, and industrial consulting. As a consultant for the Kemper Corporation in 1986-87, he conducted process evaluations at 100 industrial facilities in the U.S. and Canada. From 1987 to 1990, John did consulting work for the International Risk Management Corporation, visiting approximately 350 industrial facilities.

John has served as principal investigator (PI) or co-PI on funded proposals exceeding \$864,000 over a five-year period. In addition, he secured funding for a minority-focused chemical process operations program exceeding \$240,000. He assisted other faculty members in establishing the Carbon Technology Center at MTU in 1998. Active in University service, John has served as department representative on the University Senate, and is a member of the MTU Diversity Committee.

John is interested in researching issues related to engineering pedagogy, and has other research interests including alternative materials utilization, fire protection, and chemical process safety. He is looking forward to working with chemical engineering students. "I am very excited and enthusiastic about teaching in the chemical engineering department," he said. "We're very happy to have John here," said department head Mike Mullins. "He brings a strong interest in undergraduate education and pedagogical research, and will make a solid contribution in both those areas. Also, he is working in the area of chemical process safety, which has been a long-time focus of this department."

A native of Ishpeming, John lives in Houghton with his wife Shelly, a department coordinator in the Civil and Environmental Engineering Department, and his two children, daughter Lindsay, 4, and son Logan, 8 months.

Kimojino Awarded Fellowship

JULY 23, 2004 -- Christopher Kimojino, a junior in chemical engineering, has been awarded a \$10,000 General Motors Sullivan Fellowship.

The GM Sullivan Fellowship Program is a partnership between General Motors and the United Negro College Fund in honor of the late Reverend Dr. Leon H. Sullivan. The purpose of this fellowship is to support universal human rights by promoting equal opportunity, fair competition, and sustainable development; respecting voluntary freedom of association; and protecting human health and the environment.

Kimojino will receive \$5,000 of the fellowship as a scholarship, and \$5,000 will support Enterprise curriculum development. As part of the award requirements, Kimojino, along with Mary Raber, industrial projects coordinator for the

(continued on next page)

MTU nano research (continued from page 1)

neering department said he's excited about the news. Mullins said the department has been working on developing better fuel cells. "Under the Department of Energy grants, we'll be developing new nanotechnologies to apply to electro-chemical systems, hydrogen storage and other fuel cell materials," he said. Leslie Thomsen, press secretary for U.S. Rep. Bart Stupak, D-Menominee, said fuel cell research is an important energy initiative.

"It's the wave of the future in relation to the development of new sources of energy to lessen our dependence on foreign oil," Thomsen said. According to Stupak's office, the research will involve the development of lightweight and nanostructured materials to develop safe and efficient hydrogen fuel storage for automobiles. Mullins

said the nanostructured materials involve designing the underlying material to a level that's almost as small as a molecule. The work "nano" literally means 1-billionth and refers to extremely small materials. Tahtinen said Stupak and Sens. Carl Levin and Debbie Stabenow have been strong supporters of Tech research. "The funding is yet another indication of the great support and appreciation of Michigan Tech's researchers in various fields," Tahtinen said.

Ryan Olson

The Daily Mining Gazette

Wednesday- November 19, 2003

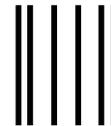
Kimojimo (continued from previous page)

Enterprise program, attended an off-campus training program sponsored by GM to help them master the Sullivan principles. As part of the Enterprise program, engineering students partner with industrial sponsors to implement creative solutions to current industrial design challenges.

Kimojino, working with Raber, will incorporate the Sullivan principles into the Enterprise program's 1-credit elective engineering ethics module. He will also serve as a member of the consumer product manufacturing enterprise.

Raber and Dr. Sheryl Sorby, associate dean of engineering and the chair of Engineering Fundamentals, will be primary mentors for Kimojino, and he will then mentor his peers.

Kimojino is currently working in the Warren Tech Center in Warren, completing a paid internship with GM. When he returns he will compile a report on the Sullivan principles and his experience as a Sullivan fellow and assist Raber in the development of the Enterprise engineering ethics course material.



**NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES**

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 10 HOUGHTON, MICHIGAN

POSTAGE WILL BE PAID BY ADDRESSEE

**Attn: Dr. Michael E. Mullins
Department of Chemical Engineering
Michigan Technological University
1400 Townsend Drive
Houghton MI 49931-9989**





Michigan Technological University
 Department of Chemical Engineering
 1400 Townsend Drive
 Houghton, MI 49931-1295

Do you have some news for us?

Send it to: Dr. Michael Mullins
 Department of Chemical Engineering
 Michigan Technological University
 1400 Townsend Drive
 Houghton, MI 49931-1295

Phone: 906/ 487-3132
Fax: 906/ 487-3213
E-mail: memullin@mtu.edu

Name _____ Date _____

E-Mail address _____ Maiden name _____

Street Address _____ Graduation date _____ Degree BS MS PhD

City _____ State _____ ZIP _____

Phone _____ Employer phone _____

Current position _____ Is this a new position? _____

Current employer _____ Is this a new employer? _____

Employer address _____

What's happening? _____

Let us know what's new in your life, and we'll publish it in our next newsletter. We're interested in marriages, births, deaths, promotions, new jobs, new responsibilities, retirements, etc. If interested in making a gift, please call the Michigan Tech Fund at 906-487-3325 for procedure details. Gifts to Tech can also be made by visiting the Tech Fund web site at www.mtf.mtu.edu, or by phoning the Tech Fund at 906-487-2310.