On the cover
On March 16, Michigan Tech’s women’s basketball team fulfilled a pledge they made to themselves and their fans last fall by winning the 2009 NCAA II Midwest Regional Championships. The victory capped a spectacular 27–6 season.

“I couldn’t be more proud of them,” said head coach John Barnes after their win over the University of Indianapolis. “They are very focused, not only on the court, but also in the classroom. They’ve given their all to get here.”

Team captain Sarah Stream, who owns a 4.0 grade point average, credits a work ethic that just won’t quit. “I think we try as hard as we can at whatever we do,” she said. “Academics are very important to us, and the coach places a big emphasis on how well we do in the classroom.”

As for the University, “I love going to Michigan Tech,” Stream said. “Everyone accepts you for who you are. You can be yourself. It’s challenging, but when you leave here, you’ll have a great education. That’s why we picked Michigan Tech.”

Last fall, the players told one of their biggest fans of their aim to become Midwest champions, so no one was happier to see their dream come true than Michigan Tech President Glenn D. Mroz. “I’m just so proud: they are the epitome of scholar-athletes,” he said. “Many teams have good three-pointers. At Michigan Tech, we have great four-pointers.”
LEARNING to LEAD

by John Gagnon
You cannot lead if people won’t follow, and in January fifty-two Michigan Tech students received intensive lessons in how to take charge without bossing people around.

“Some of my best teachers are people who worked for me,” local businessman Steve Bethel told the students gathered at Michigan Tech’s Ford Center in Alberta, forty miles south of campus, where they tackled, in the words of one student, “cool stuff like changing the world.”

The occasion was LeaderShape, a six-day immersion in “leading with integrity.” Students weighed ideas: being fair and square; letting others take the lead and the credit; “having each other’s back”; leading by example, not directive; being guided by principles, not self-interest; and steadily working at it. “You’re not born a leader,” Bethel told the group. “You have to earn that.”

This is year fourteen of LeaderShape at Tech; since 1996, more than 600 students have participated in this rigorous, internationally recognized institute. They tackle a packed agenda from early morning to late at night. Said one, Cassandra Thiel, a fifth-year student from Tomah, Wisconsin, “It’s six days of being around people constantly, and you’re talking about deep issues. You have to think a lot. At the end of the week, I was exhausted.”

Students alternately were comic and serious, quiet and raucous—even hushed and intent on day three, when they shared their dreams for the world, posted on tear sheets affixed to the wall, clarions all.

Why is there enough religion to incite violence but not enough to inspire peace? pondered Patrick Dreyer, a computer science major from Hastings, Michigan. “After hundreds of years of wars,” he imagined, “the religions of the world have stopped fighting. The day has come when people can be proud of their religion.” Another student applied a sticky-note of encouragement to Dreyer’s tear sheet: Faith after fear.

The students stayed at the Ford Center round the clock. Sequestered from distractions (cell phones are relegated to the dorms), they were a captive audience with the freedom to wonder about such matters as eliminating hunger, curing AIDS, defeating war, and providing health care for children all over the world.

What are some of the keys to leading people? facilitator Kristin Skarie asks the group.

“Give them the illusion of choice,” a student suggests.

“Why does it have to be an illusion?” Skarie responds. “Why can’t it be a choice?”

“They might say no,” the student rejoins.

The favorite session for Caleb Goff, a sophomore in mathematics from Lac du Flambeau, Wisconsin, was a personality assessment that divided students into four leadership types: Dominant. Influential. Steady. Conscientious.

Goff scored high for steadiness.

“We don’t need credit,” he said about himself and others like him. “We don’t need to be in the limelight. We settle for making sure things get done. We work for team harmony,” attributes that he intends to leverage as a resident assistant in McNair Hall.

Thiel aims to apply what she learned back on campus. She is passionate about the practice of building landfills near poor communities, and she wants to bring a speaker on environmental justice to campus.

Thiel gets tripped up by a black dog of uncertainty whispering from her shoulder: “You can’t do that. You’re going to fail.”

“I’m too softspoken,” she has learned.

“LeaderShape helps you lead your own life, too.”

Alumna Laura Walikainen participated in LeaderShape in 2003. “It’s great stuff,” she said. Fresh from the program, she established the Social Sciences Student Society, or 4S, for students in her major. She then applied its precepts to her own life, gaining admission to a highly selective graduate program at the University of Delaware, where she is now working on a PhD.

“You can talk about leadership,” she says, “but unless you have a goal, a concrete idea, it’s hard to put the idea to work.”

Jason Bergeron, assistant director of student activities, has been the campus coordinator of LeaderShape for three years.

“We push them mentally and physically,” he says, “It’s not a boot camp, but it can be tiring.”

The outcomes? “Students feel like they can accomplish anything and can create significant change in the world.

“Our goal is to push and challenge students so they learn about themselves and other people. Everybody is teaching everybody else, and everybody is learning from everybody else. It teaches you that it’s okay to be an idealist.”

Facilitator Skarie says the participants bring as much to LeaderShape as they take away. “They give me hope,” she said. “They see more possibilities sometimes than I do.”

One of those optimists is Jay Daniels, 37, a junior in industrial technology and the oldest student in the group, who came away saying, “I love it. It costs sixty dollars, and what you learn is priceless.”

❖  ❖  ❖
Dean Johnson has just spent the last two days giving his finance students a primer on America’s two greatest economic crises: the 1929 stock market crash and the 2008 implosion of the housing market. “The particulars are different,” says the associate professor of finance. “But the basics are familiar to us.”

Both the housing and stock market bubbles were driven by debt—“buying on margin”—and fueled by the false expectation that values would always rise. Borrowing, or purchasing assets on margin, creates leverage, Johnson says.

“Back in the 1920s, instead of paying 100 percent of the stock price, people would borrow as much as 90 percent, creating higher demand and higher stock prices,” he says. “Back then it was stock markets and buying on margin, whereas now it is homebuyers and mortgages.”

Borrowing also fueled consumer spending. The once-popular practice of taking out second and third mortgages to finance big-ticket purchases was a classic example. Borrow $50,000 against the equity on your home, buy a boat. Watch the value of your home skyrocket, borrow another $50,000, and send your kid to college.

“Americans enjoyed the extra cash from refinancing or putting down a small amount on a home purchase,” Johnson says. They spent the extra money, and that helped the economy.

“But when the bubble breaks . . .”

. . . the value of your home collapses. You are saddled with paying back loans worth more than your house. Defaulting becomes an option.

“There was way too much leverage in the housing and banking markets,” Johnson says. “One little blip and everything started to unwind.”
Complicating matters, connections weakened between the lender and the borrower. With Fannie Mae and Freddie Mac buying mortgages from financial institutions, and loan officers earning big commissions for generating loans, there was less concern about the homeowners’ ability to repay.

Johnson says there’s plenty of blame to go around: banks, Fannie Mae and Freddie Mac, and politicians who, seeing increased homeownership as good, did nothing.

“And there’s no easy fix,” he says. “We have to take our medicine. It took twenty years to create the over-leverage, and it will take time to undo that. The most important thing a fix can provide is to restore faith in the business and finance system. Human psychology is important. If people are cautious and not spending money, the government and financial industry must take action that will push capital liquidity.”

“The economy is based on trust,” he says, “and people want to know that there is credit available in the financial and business segments.”

The federal government did some “right things”: allowing lots of credit, loans, and bank mergers; and putting capital into financial institutions. However, the government must not be afraid to allow new companies to emerge out of the bankruptcies of existing companies.

Johnson’s role as advisor to the Applied Portfolio Management Program (APMP) has offered another teaching moment, as his students have watched their investments skid into the red: 28 percent for the Black Team; 16 percent for the Gold Team.

The student teams manage an asset portfolio on behalf of the Michigan Tech Fund, using donations from a variety of sources. In better times, they made lots of money, won national competitions, and learned about the finer points of finance.

“This year, they are also learning how to present bad news to their advisory board,” Johnson smiles. “It’s just like having to deliver a presentation with bad news as a CEO would do to a board of directors.”

The APMP Advisory Board was meeting over Winter Carnival weekend. Before a run-through of the presentation, the two teams discussed what was bad (“commodities and financial”), good (“health care and utilities usually, but it was hard to escape the bad”), and their strategy for the future (“hope and pray”).

Senior Zack Martin of the Black Team said the market also affords lots of opportunities for investors willing to look beyond the horizon. “The scope is huge. We are buying things long-term, and we have significant cash positions,” he says. “Investing in this type of a market happens only once in a lifetime.”

Don Murray, a fourth-year student in finance and accounting, was on the Gold Team, and he said they were “staying with their fundamental philosophy and staying in for long term.”

They also had the last laugh. They had to loan the Black Team some money when they had no cash in their portfolio. Murray smiles: “It was a bailout.”
Wayne Pennington asks his students a tough question every year. “What would it take to make the price of oil collapse?”

With some prodding, they come up with three answers: peace in the Middle East, respect for law and order in Russia and Venezuela, and a worldwide recession.

“Well, they got the last one right-on this time,” says the chair of the geological and mining engineering and sciences department.

It’s been a generation since energy markets saw anything close to the turbulence of the last year, and Michigan Tech students are signing up in record numbers to better understand the brave new world they’ll be entering upon graduation. Across campus, enrollment has doubled in Mark Roberts’s energy economics class, where he explains how a herd mentality has jostled with old-fashioned rules of supply and demand to wreak havoc in oil markets.

For years, economists panned the notion that oil supplies might not be able to keep up with global demand, says Roberts, a professor of mineral economics in the School of Business and Economics. But red flags went up in 2007, as the economies of China and India surged toward the energy-gobbling Western model.

As in the housing market, high oil prices begat higher prices, with speculators driving up the cost of a barrel today on the assumption that they could sell it at a profit tomorrow.

Last summer’s spike was part of “froth,” so experts claimed: leftover exuberance. Then, the realities of the unraveling global economy began to hit home, and prices tanked.

“World demand has actually dropped by as much as two million barrels a day,” Roberts says. “That’s 2 to 3 percent of world demand, and oil markets are very sensitive to that.”

He also believes that the seemingly boundless price of gas, which peaked at over $4 a gallon in 2008, may have shaped the consumer’s psyche. “The high price of gas last year finally shocked people into cutting back on use, and demand hasn’t recovered, even though prices have now fallen because of the recession,” Roberts says.

Monumental challenges

The current preoccupation with energy prices masks a looming threat—chronic energy shortages in the face of rising demand.

“Humankind’s greatest challenge will be to provide the average global citizen enough energy to live a life similar to what we in the US are experiencing right now,” Joe Dancy ’76 says.

Dancy, manager of the Texas-based LSGI Technology Venture Fund LP, also fears that the supply of oil soon won’t keep up with demand from China and India.
“Everyone wants to drive a car, have a house with indoor plumbing and electricity, and even have the Western diet, which takes lots of fossil fuel to produce,” he says.

At the same time, a supply crunch could be around the corner, Dancy says. The yield from oil fields tends to decline over the years. And, with the price of a barrel of oil dropping from $147 to around $30 (it’s about $55 at this writing), there’s not much incentive to invest in new production.

“We used 86 million barrels of crude oil per day last year, so every year, due to natural field declines, we lose 4–6 million barrels per day,” he says. “We need to spend billions to maintain that flow, and with the credit crunch, it is not being spent.”

**Power play: beyond oil**

Dancy says natural gas could provide one answer to dwindling oil supplies.

“The new shale wells [located in Texas, Louisiana, and Pennsylvania in the US] have great initial production rates, but decline on average 50 percent the first year,” he says. “But we have to keep drilling for natural gas; environmentally it is a great fuel. We can even run cars on natural gas.”

In addition, economic pressures will force the US to turn toward nuclear energy, said Michigan Tech geophysicist Roger Turpening.

“Nuclear power will be phased in as oil declines,” Turpening predicts. “Globally, nuclear energy is finding favor.” Sweden is moving forward with plans for new plants, and nuclear plants are prevalent in France, Japan, Great Britain, and elsewhere.

While disposing of spent fuel remains a thorny problem, nuclear energy offers a huge advantage over traditional energy sources, Turpening adds: no greenhouse gas emissions, period.

Barry Solomon is not so sure about a nuclear solution.

“I’m skeptical,” says the professor of geography and environmental policy. “We’ve tried nuclear in
the past. It’s very expensive, and the waste is still a problem.”

Solomon is optimistic about alternative energy sources, though they feed but a fraction of the world’s energy appetite.

“Wind is the most rapidly growing energy source in the US, if not the world,” Solomon says, “and it’s cost effective in most locations. In fact, the US has passed Germany to become number one again in wind power capacity and generation.”

Over the long term, Solomon says, the public may park their internal-combustion vehicles in favor of electric cars.

**Reinventing the automobile**

“The automobile is being reinvented to be driven with electric motors, powered with electricity stored in advanced batteries, and controlled with highly integrated and electronically controlled systems,” says Terry Woychowski ’78.

He should know.

Woychowski is General Motors’ executive director of North American vehicle chief engineers, and he says by 2020 there could be as many as 1.1 billion automobiles in the “global auto park.” Placed end to end, they would form a line that circles the earth 125 times. That future calls for technologies that meet consumer demand while sustaining the planet.

A partnership between GM, the Engineering Society of Detroit, and Michigan Tech to retrain automotive engineers in advanced propulsion technologies could be part of that effort.

“Much work needs to be done,” Woychowski says. “But products like the Chevy Volt will be the beginning of the reinvention of the automobile.”

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**Nine Energy Sources: Pros and Cons**

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<thead>
<tr>
<th>Source</th>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td>Coal</td>
<td>Abundant, cheap, good fuel for industrial heating and for electric power generation</td>
<td>Expenses of mitigation of environmental impacts in mining and CO2 and sulfur dioxide emissions</td>
</tr>
<tr>
<td>Petroleum (Oil)</td>
<td>Readily available, easy to transport, excellent fuel for vehicles</td>
<td>Volatile pricing, air pollution, carbon dioxide emissions, heavy reliance on foreign markets</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>Very convenient, “greener” than oil, good for stationary uses</td>
<td>Variable pricing, expensive to transport overseas</td>
</tr>
<tr>
<td>Hydroelectric</td>
<td>Cheap to operate, very controllable</td>
<td>Expensive to build, few good sites remain, flooding causes major environmental impact</td>
</tr>
<tr>
<td>Nuclear</td>
<td>Cheap to operate, no air pollution or carbon dioxide emissions</td>
<td>Very expensive to build, unpopular, unresolved radioactive waste disposal issue</td>
</tr>
<tr>
<td>Wind</td>
<td>Cheap to operate, few environmental impacts</td>
<td>Intermittent operation, best locations are far from energy users</td>
</tr>
<tr>
<td>Solar (electric)</td>
<td>Very cheap to operate, low environmental impact, useful in remote areas</td>
<td>Intermittent operation, best in sunny southwest locations, expensive to install</td>
</tr>
<tr>
<td>Solar (heat)</td>
<td>Cheap to operate, few environmental impacts</td>
<td>Intermittent operation, often unavailable when needed (cloudy weather)</td>
</tr>
<tr>
<td>Biomass (corn, wood, etc.)</td>
<td>Widely available raw materials for inexpensive fuels, with many uses</td>
<td>Labor-intensive to collect</td>
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**Watt’s in store for the auto industry?** Vehicles like the Chevy Volt could herald “the reinvention of the automobile,” says GM executive Terry Woychowski ’78.
When your neighbors are laid off, that’s a recession. When you get laid off, that’s something else, and they don’t call it a depression for nothing, says Jim Turnquist.

The director of Michigan Tech’s Career Center knows about the fear and self doubt that comes with being out of work.

“In the early 1980s, I accepted an offer with a company in Lansing, and they told me I was going to be promoted,” he says. “Then they said, Merry Christmas, we’re going to lay you off.”

Even though many of his peers were also collecting unemployment, Turnquist found himself questioning his abilities and, ultimately, wondering if he was to blame for his predicament. Finally, he came home to the Copper Country and began to regroup. “Just to make money, I was mowing lawns, painting, cleaning houses . . .”

Turnquist, who graduated from Tech in 1979, started frequenting the Placement Office (now the Career Center), checking the newspapers and bulletin boards for leads.

He is now returning the favor. The Career Center is working with the Michigan Tech Alumni Association to offer a variety of services to job-seeking alumni.

“We want our alums to leverage one of the most powerful networks they will ever have: HuskyLink,” says Brent Burns, associate director of alumni relations.

Brenda Rudiger, director of alumni relations, says Tech alumni have an intrinsic advantage: their education. “They are skilled people, trained in
Job search resources

Visit http://alumni.mtu.edu/careertools/ and leverage the power of your Michigan Tech network.

HuskyLink Get Connected, Get Involved
Reconnect and build new relationships through the online alumni directory.

NACElink
Search and apply for positions online, upload your resume for employers to browse.

Michigan Tech Facebook and Linkedin Groups
Network with fellow Huskies regarding career opportunities.

Michigan Tech Career Center
Alumni have access to resume reviews, mock interviews, job search strategies, campus and virtual career fairs, and more.

MyPlan
This free online program combines interest inventories and skill, values, and personality tests to help alumni explore career options.

CashCourse
Being financially savvy is critical to success, and this financial literacy tool can help.

Graduate School: www.gradschool.mtu.edu/
Take the next step in your career by exploring grad school programs.

Online Learning and iTunes U: http://itunes.mtu.edu/
Undergraduate and graduate courses are available, or explore topics just for fun at iTunes U.

You can help too. If you know of an organization that is looking for top-notch people, whether new Michigan Tech graduates or experienced alumni, email Jim Turnquist ’79, director, Career Services, jaturnqu@mtu.edu, or Tina Giachino, manager, Job Development, tgiachin@mtu.edu; or call the Career Center at 906-487-2313.

problem solving, who can hit the ground running,” she said. “This makes them valuable to employers, especially fellow alumni who know what they can bring to the workplace.”

In addition to the HuskyLink network, Tech alumni groups have formed on the social-networking sites Facebook and LinkedIn. CashCourse, a financial literacy tool originally developed for new grads, is also available and may be especially useful to those who find themselves suddenly strapped.

Alumni are always welcome at the University’s two Career Fairs in February and October, when dozens of employers come to Michigan Tech and interview job candidates. The Career Center also provides resume reviews, mock interviews, job search counseling, and more.

The Alumni Association has been taking Career Fairs on the road. Two events are planned in early May for Detroit and Ann Arbor to give alumni a chance to network as well as learn about starting their own businesses and explore educational opportunities.

“These tools will help alumni hire their fellow grads,” Burns says. “Companies continue to need experienced professionals, as well as recent graduates new to the job market.”

Losing a job can be a good time to refocus your professional and personal priorities. If that means more education, alumni can visit Michigan Tech’s iTunes U site and download lectures for free. Unemployment could also be the ideal time to pursue a graduate degree; Tech offers a number of options, including distance learning.

All Tech alumni have free access to MyPlan, an online tool that uses a variety of assessment tests to help you plot a career path.

“It helps you decide what field you want to go into, based on your personality, skills, values, and interests,” Turnquist says. If you weren’t especially happy in your former job, MyPlan can provide guidance in selecting a new line of work.

Networks, counseling, and training are all great tactics, but the most important thing a job seeker can do is keep trying.

“People who have lost their jobs can be sensitive to their situation and are not always thinking clearly,” Turnquist says. “They sometimes feel like they’ve lost their identity. And they are scared. They are afraid they won’t ever get another job.”

“You’ve got to be patient,” he says, speaking from experience. “You’ve got to keep a positive attitude.” Because the best way to find a job is to look for one.
Nearly a year into the new Experience Tech initiative, the opinion of undergraduates and staff at Michigan Technological University seems unanimous: it’s a hit.

The student-driven initiative gives students free access to Mont Ripley Ski Hill, Portage Lake Golf Course, the Gates Tennis Center, Department of Visual and Performing Arts events, hockey games, and intramural sports. The plan is subsidized by a $64-per-semester fee. To put that in perspective, a season pass to ski Mont Ripley cost $250 in 2007–08.

“I’m thrilled with the progress,” says Nate Kroodsma, who, along with fellow student Nik Chaphalkar, handled the majority of the initiative’s research and planning through their work with Tech’s Student Commission. “Judging by my own experiences and what I’ve heard from others, I couldn’t be happier with the outcome.”

Not everyone supported the measure. Graduate students said their additional responsibilities prevented them from taking advantage of Experience Tech. But overall, participation in extracurriculars is way up since Experience Tech started.

“It’s been a tremendous success so far,” says Director of Sports and Recreation Mike Abbott ’80. “I know the plan has been a huge boon for the Gates Tennis Center, and the golf course saw a 143 percent increase in rounds. We’re extremely happy.”

At the Gates Tennis Center, Recreation Manager Kevin Kalinec reports that usage has shifted from predominantly nonstudent players to a mix of about fifty-fifty.

“Simply put, there’s just a lot more tennis happening out there,” Kalinec says. “We’re seeing students we’ve never seen before out there trying it out. It’s been a great plan.”

Attendance at athletic events is up, and the visual and performing arts department reports a 112 percent increase in student turnout for events such as the fall symphony and jazz concerts.

Vice President for Student Affairs Les Cook calls the initiative a “great success.”

“I am proud of our students’ ingenuity,” Cook says. “And I’m glad to be part of a university that not only listens to what students want, but embraces their adventurous side as well.”

$128 buys students an all-you-can-handle year of skiing, concerts, golf, hockey, theater, tennis, and more.
Once upon a time we emailed. Now we tweet.

by Kara Sokol

Still catching up to 2009 techno-speak? Tweets are comments—short, fizzy, and informative—posted on twitter.com, a burgeoning text-messaging broadcasting site growing in popularity by the day. Site members “follow” fellow users to receive the links, news, and addictive third-person musings they post—and share their own.

Prefer something more community-based? Head to Facebook, where you can build a community of friends, post and view videos and photos, play games, bond over shared interests, comment on virtually everything, and reconnect with old flames, family members, and football coaches.

Communication has changed. We have entered an age where text messages are sent nearly twice as often as phone calls are made, the Internet blogosphere doubles in size roughly every six months, and human web clicks top 100 billion per day. It’s no longer just about finding information. There’s a new blueprint being followed by today’s Internet users: build communities around a common interest, share cool stuff with your friends, and talk (tweet) about it . . . over and over.

This new age of communication is opening doors for Michigan Tech students and alumni to gather, share, and connect like never before. Whether it be through blogs, videos, or virtual communities, Techies are coming together to talk sports, relive old stories, debate the quality of this year’s Winter Carnival statues . . . even profess their love for pickled eggs, pasties, and locally brewed beer.

So what’s an alum to do but dive right in? Whether you’re a techno-savvy whiz or a web rookie, you’ll find a trove of great content—not to mention hundreds of ways to connect with others in the Michigan Tech community—in these sites. Now that’s something to tweet about.

In 1984, there were one thousand Internet devices in existence. Today, that number tops one billion.
For more fun facts (and eye-opening statistics), view “The Machine is Us/ing Us” at www.youtube.com/watch?v=6gmP4nk0EOE.
Waste not...

by Jennifer Donovan

Partnering with industry, Michigan universities are blazing a trail to an energy-efficient future. And, as a university partner in three of the state’s six Centers of Energy Excellence, as well as a partner in two new federally funded biofuel and plant biotechnology research centers, Michigan Tech is at the forefront of that pioneering venture.
What does the future of energy look like? It looks like forests, like grasses, like culled potatoes and sugar beets. It’s based on plants instead of petroleum. It makes use of the waste as well as the primary product. And it involves much more than turning corn into ethanol.

“In our Centers of Energy Excellence, we’re looking for ways to turn problems into possibilities, to turn a waste stream into a revenue stream,” says David Reed, Michigan Tech vice president for research and a key player in the development of the three centers. “That’s the only way to make a bioeconomy economically viable.”

Each Center of Energy Excellence focuses on a different piece of the bioenergy puzzle. In the partnership between Michigan Tech and Working Bugs LLC, for example, the East Lansing–based company operates a bio-refinery, using fermentation processes to make products like fuel additives and solvents from biochemicals rather than petrochemicals.

Up to now, most of the world’s energy requirements have been met by nonrenewable petroleum. Biochemicals, by comparison, are a sustainable source of energy and chemical products, since they rely on raw materials that can be planted, grown, harvested, and grown again.

**Biofuels**

Economical mass-production of biofuels such as ethanol is one key objective of bioenergy research. One of Michigan Tech’s Centers of Energy Excellence—a partnership between Michigan Tech, a new company called Frontier Renewable Resources (FRR), and Michigan State University—focuses on biofuel. The center is funded by a $2 million grant to the universities from the Michigan Strategic Fund.

FRR was established by Boston-based Mascoma Corporation and JM Longyear, a natural resources firm based in Marquette, Michigan, that has extensive forest land holdings in the Upper Peninsula of Michigan. Together, the partners will construct the first commercial-scale cellulosic ethanol plant in the United States, located at Kinross, in the eastern UP.

Michigan Tech’s expertise in forestry, environmental science, manufacturing, and sustainable energy makes the University the perfect research partner for a venture like this.

“It’s absolutely crucial for new energy companies to partner with institutions like Michigan Tech,” says Stephen Hicks, director and CEO of Frontier Renewable Resources and a member of the University’s Board of Control. “The exchange of ideas and technology between a premier research university like Michigan Tech and the private sector can help bring the best technology to the public and make the Upper Peninsula a twenty-first century energy leader.

“The goal ultimately is to create well-paying jobs and attract new energy investments to the UP and Michigan.”

A team of researchers is heading Michigan Tech’s Center of Energy Excellence partnership with FRR. They include Robert Froese, associate professor of forest resources and environmental science; John Sutherland, director of the University’s Sustainable Futures Institute; David Shonnard, Robbins Professor of Sustainability in Chemical Engineering; and Maria Janowiak ’05, ’07, outreach scientist in forest resources and environmental science. Their work will focus on “what goes on before you get to the gate of the manufacturing plant,” says Froese.

That includes evaluating land that could provide the raw materials—the biomass—to make biofuel, increasing the availability of the trees or grasses on which biofuel is based, and assessing the most efficient, cost-effective, and environmentally friendly ways to harvest, handle, and transport the raw materials to the biofuel production plant. The project will address a spectrum of sustainability issues, including biodiversity, ecological concerns, and so on.

“We’re looking for ways to turn a waste stream into a revenue stream.”

—David Reed, vice president for research

“It’s an ideal partnership between people who know the process and people who know the land.”

—Robert Froese, associate professor of forest resources and environmental science
carbon sequestration, convincing land owners to grow appropriate biomass, and finding ways to use land efficiently without degrading it.

“It’s an ideal partnership between people who know the process and people who know the land,” says Froese.

**Turning waste into revenue**

But, as important as it is, biofuel is only part of the bioeconomy equation. Much of the biomass used in producing biofuel is wasted. Unless we find ways to turn the waste from biofuel production into marketable products, biofuels might simply cost too much.

That’s where Michigan Tech’s other two Centers of Energy Excellence come in. Both are led by Shonnard. One is the partnership between the University and Working Bugs.

Working Bugs is one of a new generation of bio-based industries that are finding ways to create higher value products from biofuel production co-products. Working Bugs puts non-pathogenic microorganisms to work fermenting the sugars generated by biofuel production, producing biochemicals that can be used in products such as aromatics and solvents. The partnership between biofuel and biochemical production adds economic stability to the industry.

“Our philosophy is, always look for the best possible use of resources and materials,” says Dianne Holman, managing partner of Working Bugs. A civil engineer herself, Holman is thrilled to be working with Michigan Tech to find new ways to treat and prepare the biomass that her “working bugs” ferment. “Michigan Tech has a reputation for being extremely innovative and easy to work with,” she explains. “It’s good to bring new minds in to look at what we’re doing. It opens new avenues for research and gives the University faculty and students a chance to work with industry to solve real problems, while producing revenue ideas for the company.”

The partnership between Tech and Working Bugs is supported by another $2 million grant from the Michigan Strategic Fund.

Tech’s third Center of Energy Excellence is a partnership with American Process Inc. of Atlanta, Valero Energy of San Antonio, Texas, and Decorative Panels International, of Alpena, Michigan. Its goal is to convert the hemicelluloses in the waste stream from panel manufacturing into products such as cellulosic ethanol, a biofuel, and a biodegradable road de-icer derived from acetic acid—new revenue streams—while cleaning the wastewater for reuse in the manufacturing plant.

“This is an exciting project that turns a waste stream into marketable products, leveraging Michigan Tech’s and API’s knowhow in the field of cellulosic ethanol,” says Theodora Retsina, president of American Process. “It’s a formidable partnership. The experience and knowledge we gain from this project will help us replicate it at other sites.”

This Center of Energy Excellence is supported by $4 million from the Michigan Strategic Fund.

Recently, a $1.4 million US Department of Energy appropriation was approved to fund a Forestry Biofuel Statewide Collaboration Center jointly operated in Escanaba by Michigan Tech and Michigan State. The two universities also will share in new federal funding for a nationwide Consortium for Plant Biotechnology Research, supporting agricultural research at universities across the country.

Reed sees Tech’s Centers of Energy Excellence as a highway to energy independence. “We’re going to be making fuel for Michigan from sustainably produced Michigan resources, creating jobs, attracting industry to the state, and finding ways to turn the waste from that fuel into economically viable consumer products,” he predicts. “That’s what the bioeconomy is all about.”
Teams wearing the black and gold uniforms of Michigan Tech have taken to the playing fields and courts of Central America. No, the Huskies didn’t add another grueling bus trip to their 2008–09 schedule. The athletes are Nicaraguan youth who are now wearing uniforms and using equipment donated by Michigan Tech’s Athletic and Intramural Departments.

The Nicaraguan connection was made with the help of John Gierke ’84, ’86, ’90, a professor of geological and mining engineering and sciences and faculty advisor for intramural athletics at Michigan Tech. Gierke had made several trips to Nicaragua with Aqua Terra Tech, a Michigan Tech Enterprise team, to improve community water supplies.

There he met Moises Guillon, a staff member with the organization Wisconsin/Nicaragua Partners of the Americas.

“Moises helped us with our fieldwork and drove us around,” said Gierke. “The last time I saw him, he told me about his new responsibility for creating sports leagues and asked if we had any old equipment we might donate.”

The intramural department came up with plenty of used equipment: mainly footballs, volleyballs, soccer balls, and basketballs.

Athletic Director Suzanne Sanregret ’93, ’06 also presented Gierke with boxes of older uniforms that were in good shape but no longer being used.

Sanregret was thrilled to find a new home for the old uniforms. “It was a perfect fit,” she said. “We were very happy to see them go for a good cause.”

Gierke hauled the items to Stevens Point, Wisconsin. The Wisconsin National Guard transported them from there to Managua, Nicaragua’s capital city.

With a little tailoring to suit the smaller frames of the Nicaraguan athletes, the Tech jerseys and shorts proved fully functional. The volleyball jerseys morphed into softball uniforms; the basketball jerseys are finding a place on Nicaragua’s blacktop courts.

For the basketball team El Cadil, it means being able to play in the league this year.

“The kids were not allowed to play last year because the league required uniforms, and they couldn’t find a sponsor,” Guillen explained. “They are now known as the Michigan team. They are very grateful to Michigan Tech.”

Although only a few students from Latin America have played sports for the Huskies, who knows? Maybe a Nicaraguan will be “sponsored” by Michigan Tech and dunk the game-winner in Houghton some day.
Writing in 1948, George Orwell predicted that world culture would be transformed by autocratic politicians, government-controlled media, and computing machines into a repressive, totalitarian nightmare where “Big Brother” would be constantly watching you. When 1984 finally arrived, some social commentators felt we hadn’t heeded Orwell’s warnings and had allowed technology to erode our essential human nature. The Michigan Tech Lode even hinted that the “proliferation of computers and the data banks of credit bureaus” were making Big Brother a reality—or at least a distinct possibility.

Yet, looking back twenty-five years to the computing activity on the Michigan Tech campus, one wonders what all of the fuss was about. Certainly in comparison to our current generation of computer technologies, things look rather tame.

Texas Instruments advertised its TI-66 calculator in the Lode with “170 built-in scientific, engineering, and statistical functions” and a “10-digit angled Liquid Crystal Display”—for only $69.95. Hewlett-Packard advertisements offered to “end the pencil-and-paper drudgery” with up to 6,437 bytes of memory in their HP-41CX.

Actually, 1984 was a big year for computing at Michigan Tech and one in which the campus was clearly state of the art. A new Digital Equipment VAX 11/750 mini-mainframe, purchased with a grant from the National Science Foundation’s Computer Research Equipment Program, became the third VAX maintained by Physics, Mathematics, and Computer Science. (This systems group continues today as the Center for Experimental Computation). The new system was reserved primarily for faculty research, including higher-performance experimental computing and some sensitive military projects, while the other two units were used for course work.

“Those VAX computers operated on about 8 meg of memory but allowed us to run either Digital Equipment’s operating system or the latest version of the Berkeley Unix operating system,” recalls Jim Hoel, a mainframe systems manager at
reported student disgust with lab fees, some of which ranged up to $24 per class, with charges based upon actual connect time on the mainframe system ($1.50 per hour). The newspaper offered “Tips for Thrifty Sperry Use” on another of the campus mainframes, a Sperry 1100/80, including using non-peak hours (evenings, weekends, and holidays) and executing programs as batch rather than demand processes.

Personal computers began appearing on people’s desk tops, too. The Apple Macintosh made its debut on January 24, 1984, but IBM and Sperry desktops were more popular on the Tech campus. Hoping to increase personal computer literacy, Michigan Tech launched a program in September 1984 for students, faculty, and staff to buy a personal desktop computer at a greatly reduced price—and to pay on installments over two years without interest. Those wishing to “build their own” could buy components or a compatible machine from Ultramatic Data Processing in Hancock with “up to 512 kilobytes of memory and a fast-access 320 kilobyte floppy drive.”

Computing also made forays into administrative offices. Ann Roth recalls that the early word processing systems, although crude by today’s standards, were pretty impressive. “The Sperry Unisys desktop computers were a step up from my first memory typewriter. There was no spell-check, no graphical interface, and hardly any text formatting, but being able to see your mistake on the screen and change it right there was a big thing compared to carbon paper, white-out, and trying to realign the typewriter to fix a mistake.”

“We were wowed by how much information we could save on a floppy disk in comparison to the memory typewriter,” Roth recalls. “On the desktop, saving a file took seconds, and you could hear the machine chugging away while it saved the file.”

Many celebrated what automation could offer the campus community. “Campus-wide computer literacy will dramatically change the role of the professor in the classroom,” reported the Michigan Tech Alumnus in December.

“Computers are beginning to ‘teach’ the routine, basic material. This leaves faculty more time to be motivators—asking the probing questions and stimulating student creativity with their own research experiences.”

Automatic teaching hasn’t yet replaced the teacher in the classroom, though some could argue that distance education is beginning to alter the equation.

Yet, looking back over those twenty-five years, it is hard to imagine Big Brother establishing much control with 8 meg mainframes, 512 kb desktops, and 5-inch floppies.
Ice in his veins

The stereotypical ME major is a thrill-seeking motorhead with a yen for Formula cars. John Davenport, who earned his BS in Mechanical Engineering from Tech in 1992, has turned toward a quieter, but no less hair-raising, sport.

Armed with expertise in building carbon-epoxy parts—a holdover from his time studying under ME professor Mohan Rao—Davenport crafted a competition iceboat at home, in his garage.

“Ice boating has been around a couple hundred years,” says Davenport, a member of Tech’s Engineering Advisory Board and a process development engineer with General Electric’s Healthcare division, in Milwaukee. “Before planes, iceboats were the fastest vehicles on the planet; they would race trains.”

From the vantage point of the sailor, whose head may be rushing by the ice at about 65 mph during a race, an iceboat probably still feels like the fastest vehicle this side of a Saturn rocket. Davenport has spent plenty of time in that position, up to the point of placing third in the 2002 North American championships. He was once tapped as technical expert by Marlboro, which filmed him sailing in Tierra del Fuego for a TV commercial for the Argentine market featuring extreme sports.

Iceboats, he notes, have no brakes. “That forces a different way of thinking about collision avoidance.”

Davenport now spends less time risking his neck and more pursuing his career. But he still takes the iceboat out of his garage periodically and goes flying across frozen lakes. When it comes to “hard water” sailing, he says, “I’ve got the hook in my mouth.”

Breaking News: A Michigan Tech alumnus has pledged $50,000 in Annual Fund support this fiscal year if we can attract an additional 2,000 Annual Fund gifts by June 30, 2009. Please help us take a step closer to receiving this generous challenge gift which will benefit both current and future Michigan Tech students!

Your gift helps the University
- Support high-quality educational programs
- Educate highly qualified graduates
- Explore the boundaries of new knowledge
- Recruit some of the world’s top faculty
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Please join your fellow alumni and friends who have already sent in their gift.

Give every year, make a difference every day.

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Toll-free 1-877-386-3688
Michigan Tech Fund
1400 Townsend Drive
Houghton, MI 49931-1295
Alumni Association notes

The power of the network

So we’re sitting at home one night in late February. I had several days off so I asked Sharon what we should do. I knew there was a Michigan Tech Alumni Association pub night in Jacksonville, Florida, that week and wondered if we should make the 400-mile drive and check it out. Sharon said of course we should, so we set off in the morning and arrived in time to surprise Alumni Relations Director Brenda Rudiger, whom I accidentally forgot to inform that we would be coming.

To our delight there was an excellent turnout of Michigan Tech alums, and we had a wonderful time. The event was organized by Nicole Vestich ('07, Business) and her fiancé, Ben Biesterveld ('06, EE), who both live and work in the Jacksonville area. They did a great job of putting the event together, choosing a micro-brewery/bar and grill as the venue. They were assisted by the Michigan Tech Alumni Regional Network organized by Alumni Relations Associate Director Brent Burns.

An Alumni Network is a loosely associated group of Michigan Tech alumni. The network can be regional, as in Jacksonville, or based on a common affinity or corporate affiliation. The purpose is to connect alumni and facilitate events of a common interest such as pub nights, Tech gamewatches, athletic events, or picnics. Alumni Relations staff support the networks by helping to plan your event, including communicating with local alumni, online registration through HuskyLink, and generally making sure your event is a success. It worked in Jacksonville.

As it turns out, there are over a thousand Michigan Tech alumni living in Florida, and we are present in all fifty states. The Jacksonville event included people like Eric Peterson ('70, CE and Business) and his wife, Pat, who were instrumental in starting the Michigan Tech Rail Transportation Program, something Eric said was “one of the most gratifying experiences of my life.” We also met Matt Lahti ('06, CE), who’s from St. Augustine and told me, “Tech made me as a person.” Matt’s dad is Bruce Lahti ('71 Business), originally from Marquette, a former Tech hockey equipment manager, and now general manager of the nearby World Golf Hall of Fame (a great place to visit). There were Chris ('03 ME) and Elaine ('05 CE) Bien, who came despite the fact that Elaine had to be at her job site at 4:00 am for a bridge deck pour. And I met Mark Walter ('75 Bio Sci), whom we figured must have been one of my biology lab instructors back in the day, but neither of us could actually recall the other. Oh well.

The point is, it was fun, it was informative, it was Tech, and the Alumni Regional Network made it possible. Right here in the heart of Florida, 1,500 miles from the Keweenaw.

Mark Mitchell ’77
President, Michigan Tech Alumni Association

Regional alumni event schedule

May 14
Houghton Keweenaw Alumni Chapter—Explore the Miscowaubik Club

May 15
Milwaukee Alumni Event—Pub Night

May 20
Green Bay, Wisconsin—Golf Outing

May 30
Grand Rapids, West Michigan Chapter—Golf Outing

May 30
Midland, Michigan—Great Lakes Loons Baseball Outing

June 26 and 27
Houghton—Tae Kwon Do Reunion

July 17
Saginaw, Michigan—Golf Outing

August 1
Grand Rapids, Michigan—Whitecaps Baseball Outing

August 6–8
Houghton—Alumni Reunion

August 16
Detroit—Fourth Annual Tigers Baseball Outing

August 25
Anaheim, California—Angels vs. Tigers Baseball Outing

September 6
Copper Harbor, Michigan—Fat Tire Festival

October 3
Grand Rapids, Michigan—Battle at the Ballpark Tailgate, Huskies vs. Ferris Football

October 9–11
Houghton—Homecoming 2009

For up-to-date listings of alumni events visit http://alumni.mtu.edu/.

Show your pride!
The Michigan Tech Alumni Association offers a wide range of products and services to help you show your pride in your alma mater.

For details visit www.alumni.mtu.edu/products or call 1-877-688-2586.

Michigan Technological University ■ www.mtu.edu 23
The über-alum
Shepherding new graduates into the world of work

Jim Heldt ’86 unpacks the Kohler display for the February Job Fair at Michigan Tech. There are fewer companies this year, but the subdued atmosphere hasn’t dampened Heldt’s enthusiasm for this event or Michigan Tech students.

Todd Stewart ’68 is not surprised. As the new director of institutional partnerships, he’s seen many such über-alums involved with their alma mater in many different ways.

“Enthusiastic and active alums like Jim Heldt who are champions for Michigan Tech within their companies are really the key to establishing and developing our partnerships with industry,” Stewart says.

Considering his pedigree, Heldt is a natural.

His father, Lloyd (whom he resembles), was chair of the Department of Metallurgy (later, materials science and engineering) from 1978 to 1992, so the younger Heldt “grew up on the Tech campus, and, counting the courses I took in high school, I was on campus from 1979 to 1986.”

His commitment to Tech goes beyond recruiting and includes sitting on advisory boards for the School of Technology in the past and the Career Center now. He also is active with the Senior Design program, working with mechanical engineering and materials science engineering students.

“Courses like Senior Design offer the advantage of providing value back to the sponsoring company, solving problems in a concentrated environment that is very difficult to duplicate in a manufacturing facility,” Heldt says. “Of course, it also allows me to get back to Tech more often, too.”

At the Career Fair, Heldt says, “Today, I’m focusing mainly on co-ops, but five out of the six engineers working for me are Tech grads.”

He knows co-ops.

Heldt counts his three co-op experiences as an undergrad among his fondest memories. “I don’t know how you can figure out what you want to do for a living without co-oping or interning,” he says. Further, he served as a guest instructor/project leader in the Materials Selection and Design course in the late 1980s and early 1990s.

Now he is the manager of supplier quality for the engine division of Kohler, with plants in North America, India, Italy, and China, and sales and service on seven continents.

Stewart also knows the importance of those co-ops and other industry programs in the University’s big picture.

“Our corporate partners, like Kohler, are absolutely critical to Michigan Tech’s success,” he says. “They hire our graduates, offer co-op and intern opportunities for our students, and provide essential financial support for our educational and research programs.”

Jim Turnquist, director of the Career Center, agrees. “Since Jim has been at Kohler, he has made a huge difference with their relationship with Michigan Tech. Jim is a go-getter, and he makes things happen. He has strong intuitive skills with great follow-through, and he’s easy to talk with. There is no doubt he loves the UP, especially Houghton and Tech.”

The feeling’s mutual.

Alumni Reunion Weekend
August 6–8, 2009

This year’s featured classes are 1959, 1969, 1979, 1984, 1989, 1999, and the Golden Ms (those who graduated fifty-plus years ago). Also featured will be our women’s basketball alumnae.

Planning to attend Reunion? Request a 2009 Reunion Registration Package by calling 1-877-688-2586 or send us an email with your name, class year, and mailing address to alumni@mtu.edu. Registration packages will be available in June of 2009. You can also plan to register online after June 15.

Not able to attend Reunion? You can still reconnect with your classmates by visiting http://huskylink.mtu.edu/join to access HuskyLink, Michigan Tech’s online alumni community. You can use the HuskyLink online directory to track down your classmates and also share your favorite Tech memories by posting a Class Note. Don’t forget to include pictures!

One of the most recognizable mottos in the world was coined not by a copywriter but by an engineer. Ford Motor Company’s “Quality Is Job One” was a slogan and a corporate touchstone for seventeen years, practically forever in the short-attention-span world of marketing. It originated with one man’s obsession with making everything better.

“Dan Rivard was the face of Total Quality Improvement at Ford Motor Company for an entire era,” said Shea McGrew, Michigan Tech’s vice president for advancement. “To this day, he lives and breathes it.”

Rivard ’59 joined Ford in 1960 and quickly rose through the ranks. In the 1980s, he was executive director for product and process quality improvement, leading efforts to fundamentally change the way the company created and produced vehicles. “I learned inside Ford that permanently imbedded processes are so important,” he says. He led several large-scale process improvements that helped save the auto giant “from the jaws of the lion” at least three times.

His career also included a mechanical engineer’s dream come true. In 1993, he was called out of retirement to lead the company’s international racing effort, giving him entrée to the pressure-cooker world of NASCAR, Formula 1, Indy cars, and World Cup rallies. There, he again applied the lessons learned in industry to racing performance and safety.

“Process improvement applies to everything,” he said. “In racing, it’s not only the race car itself; you have to look at the driver, the track, and how the team does business. You have to take a holistic approach.”

It’s a never-ending effort, he stressed. “You need to look at how you do things everyday in every way, to improve forever. The world constantly moves around you, and if you don’t adapt, you fall behind. That’s what process improvement is about.”

Rivard now helps Tech’s current students learn some of those lessons through the Dan and Carol Rivard Product Realization Center. (Carol is a Houghton native whom Dan met at Tech.) A gift to the Department of Mechanical Engineering Mechanics (ME-EM), the lab allows students to design, model, and fabricate new products.

“When Tech students work on projects like these, they learn how to work under pressure and produce a superior product,” he says. “When we had big problems at Ford, the Tech guys’ hands-on laboratory and teamwork experiences gave them the skills and confidence to get their hands dirty and solve them,” he says.

The Rivards’ decision to support an entire lab was executed via a “bargain sale”: They sold Tech a parcel of lakefront property below market value but still realized a profit. Then the University resold it at a net gain. Their donation is helping other students shape their future, just as Rivard’s Tech education launched his own career.

“I thought I was growing up to be a carpenter,” he says, recalling that he was first in his family to attend college. If he’d been a carpenter, he probably would have been a great one. But it’s no surprise that Rivard instead became a senior executive at a Fortune 500 company. “He truly believes that with enough common sense and technical knowhow, any organization can improve itself by remaking its processes,” McGrew said. “And he has applied those rules to himself.”

Rivard has served on the Board of Control, the Alumni Association Board, and the Michigan Tech Fund Board of Trustees. He is a member of the Mechanical Engineering–Engineering Mechanics Academy and was awarded an honorary PhD in Mechanical Engineering. He also received the Alumni Association’s Distinguished Alumnus Award and Outstanding Service Award.

To learn more about supporting Michigan Tech through a real estate transaction, contact Eric Halonen, director of major and planned giving, at 906-487-3325 or ehalonen@mtu.edu.
Slush the magic dragon

Ryan Olszowy ’02 and brothers Max ’06 and Luke Dehtiar ’04 didn’t think they had a snowball’s chance of winning the 2009 US Nationals Snow Sculpting Competition.

The three Tech grads—all engineers—were pitted against professional snow artists from throughout the nation. True, the trio had twice before tasted the ice wine of snow-statue victory: their First-Year Experience diorama of Ares, the Greek god of war, took the blue ribbon in its division during Winter Carnival 2001, as did their gothic French cathedral in 2002. But, when they saw their competitors’ intricate artwork, replete with “negative space,” they concluded that an also-ran finish was inevitable.

However, the sun shone down on the team from Michigan, and their “Dragon’s Den” entry snatched victory from the fiery jaws of defeat.

“The weather was terrible,” said Olszowy. For the last 15 hours of the 73-hour event, the carvers fought ice-melting temps of 55 to 57 degrees Fahrenheit. “Any sculpture that had something delicate or intricate started to lose it. Throughout the night, statues were falling to the ground. It was really sad.”

Steeled with an icy resolve, the Tech grads drew on a basic statue-building technique honed during pre-dawn statue construction at their alma mater.

“We got together and said, ‘Nobody is going to out-slush us,’” said Olszowy. “The weather played to our strength. No one else knew how to slush things back together the way we did.”

“Michigan Tech prepared us for that,” said Max Dehtiar. “We had to change from carving dry snow to rebuilding what the sun was taking away.”

So, mixing a mortar of sub-freezing snow and near-freezing water, they patched together their sculpture, an original design of a mother dragon jealously guarding her eggs.

“We had to put it back together three times, but it was enough,” Olszowy said. “Artistically it didn’t look that great, but we won people’s choice, as well as winning first place.

“It was nice,” he smiles, “even though we felt like we cheated because we know how to slush.”
Padma Bhusan conferred on Rath

Bhatkta Rath ’58 has been honored with the 2009 Padma Bhushan from the Indian government, its third-highest civilian award. Established in 1954 by the president of India, it recognizes distinguished service of a high order to the nation in any field.

A senior executive of the US Department of Defense, Rath is head of the Materials Science and Component Technology Directorate and associate director of research of the Naval Research Laboratory.

Rath has received awards from several countries, including the US, during his career, which spans more than four decades. He graduated from Ravenshaw College in 1954 and completed his master’s and doctoral studies at Michigan Tech and the Illinois Institute of Technology. He joined the faculty of Washington State University in 1961. He was the commencement speaker at Michigan Tech’s 2007 Midyear Commencement and was awarded an honorary doctorate.

He has published more than 200 technical papers and reports, received two publication awards, and edited and co-edited over twenty books on topics in materials science and engineering. He was elected 2004–05 president of ASM International and to the Board of Trustees of the ASM Materials Education Foundation to promote science, engineering and mathematics education in high schools in the US, India, Canada, and other countries.

Left: Rath delivers the 2007 Midyear Commencement speech..
Bruce Greenwood ’69 announces a reunion of the Class of 1969 and Coup D’Etat at the Tech reunion on August 6–8. If you are interested, contact Bruce at brgnmg@aol.com.

Christopher Lenicheck ’70 is vice commander, American Legion, Fluvanna County, Va.; counselor, Virginia American Legion Boys State Program; and volunteer staff photographer, Fluvanna County Virginia Historical Society.

Robert Pawling ’70, executive manager of OE Quality Engineering, retired on 1/1/09 from Bridgestone Firestone after thirty-eight and one-half years of service.

Doug Schurig ’73 has retired after a thirty-five-year career with American Motors and Chrysler LLC, most recently as the national operations manager for Fleet Remarketing Operations in Auburn Hills, Mich.

Richard Bell ’77 has taken early retirement after thirty years at General Motors; he lives in Sterling Heights, Mich.

Bill Smith ’77 of Chico, Calif., has been promoted to forest silviculturist for the Plumas National Forest. His first challenge will be planting 12,000 acres of the 2007 Moonlight Fire this spring. It will take 1,600,000 seedlings, 225 tree planters, and 17 days.

David Zimmerman ’77 has retired after a thirty-one-year career with General Motors. “My highlight was being the engineering manager responsible for the chassis systems on the new Corvettes. One of the best engineering jobs in the world.”

Richard Newell ’70: Got up at 5:30 am for a live TV shoot at 7:20 sharp. (Those TV folks are punctual when doing live stuff.) After the workout/photo shoot, we hockey jocks had an opportunity to mug with Holly Morris, Fox 5’s feature reporter.

He started making candy as a sophomore in high school.

“I always liked mixing things, and it’s a chemical reaction when you convert sugars into something. At one point, I was making fifty pounds of candy at Christmas.”

His chemistry career at Tech included studying a “curiosity called ‘silicones’” in the 1960s, the very substances that he would be working with at Lacks. Previously, Woelfel worked at Motor Wheel in Lansing, in charge of a “top secret fiberglass wheel program.”

“I always enjoyed coming up with solutions that others said would never work,” he said. “It was fun to try to reinvent the wheel and get rewarded for it.” Woelfel was issued fifteen US and many foreign patents for wheel inventions.

Wherever he worked, he also emphasized the importance of team-building activities “like potlucks and Toys for Tots,” he said.

And chocolate.

Above: Jim and Kathie Woelfel in Budapest, enjoying retirement.
Bob ’81 and Liz (Giddens) Gilreath ’80 celebrated their twenty-seventh anniversary in June 2008. They have two second-generation Tech students: Rob graduated in May 2007, Paul is a senior at Tech. Daughter Sarah is a junior in high school. “We still live in the area (Hubbell). I work for the Telcom department at Tech, and Liz is an RN in the ER at Portage Health in Hancock.”

Susan Ulanowicz ’82 is an associate marketing manager in Applied Science at Roche Diagnostics, Indianapolis.

Dan Leveille ’83 was promoted to colonel in the Air Force Reserve Command in December and was transferred to Charleston AFB, South Carolina. Dan is now the commander of a new 209-person RED HORSE Squadron. The RED HORSE is a combat heavy engineering and construction squadron charged with providing the Air Force a self-sufficient contingency design-build capability in austere environments. Thus far, Dan has thirty-three years of military service.

Jamie Holden ’86 was recently promoted to corporate secretary and assistant general counsel of Coachmen Industries Inc., in Elkhart, Ind. Coachmen is one of the leading manufacturers of systems-built housing for the residential, commercial, and military markets. Jamie, his wife, Tracey, and daughter PJ live in Granger, Ind.

Margaret Ritchie ’86 is now working for Redmane Technology LLC in Chicago as a software developer.

Claudia and Ronald Stone ’89 announce the birth of Maximilian Tobias Stone, 4/13/08.

Donald Beery ’89 has joined the Fleetwood Group as director of new business development, Electronics Division. In this newly created position, he will support the Fleetwood Group as it expands new products and new markets for its growing RF Wireless electronics portfolio. Don, an electrical engineering grad, is former director and past president of the Michigan Tech Alumni Association Board of Directors.

Hillberg wins Rochester ATHENA Award

Holly Hillberg ’83, chief technology officer and vice president of Carestream Health Inc., has been honored with the ATHENA Award from the Women’s Council of the Rochester (New York) Business Alliance.

“What makes this woman so remarkable—no matter what comes her way from a personal, community, or work challenge—she draws on her inner and spiritual strength to successfully deliver and meet the needs of all around her,” said one nominator.

The ATHENA Award is given annually to a local woman who has demonstrated significant achievements in business, community service, and the professional advancement of women.

Hillberg and her husband, Willy, participate in a local program that engages more than 500 teens in volunteer service. As an alumna of the Rochester Institute of Technology, she serves as a mentor to the school’s women in engineering program. She is a member of the board of the Rochester Engineering Society and, at Michigan Tech, the Presidential Council of Alumnae and the Engineering Advisory Board.

She and her husband have led five youth ministry trips to Brazil, as well as mission trips to communities in need from Coney Island and Appalachia to Ecuador and Russia.

At Carestream, Hillberg leads a team of more than 800 research and development professionals in thirteen global locations. She leads technology and intellectual property strategy, setting direction for research and innovation and driving commercialization efforts.

John Matonich Jr. named president of national surveyors society

John D. Matonich PS ’81, president and CEO of ROWE Professional Services Company, was installed as the president of the National Society of Professional Surveyors in February. The society has approximately 6,500 members nationwide.

Matonich joined ROWE Michigan in 1981. In 1997, he was promoted to president and was named chief executive officer in 2001. The company is headquartered in Flint, Michigan, and has additional offices in Michigan and South Carolina. The company provides civil engineering, land surveying, aerial photography and mapping, landscape architecture, community planning, and land development services.

“I am honored to serve as president of the society,” Matonich said. “ROWE’s management has always encouraged its employees to be active in and promote their professions, as well as to serve their communities. I am proud to carry on that tradition with this appointment.”

Mary O’Connor ’95 announces twin boys born 8/6/08, Owen Joseph and Ryan Carl.

Michelle ’96 and Joel Kraenzlein ’97 announce two future Tech graduates: Lucas, born 9/19/00, and Emily, born 4/25/05. Ryan and Marcy Till ’96 announce the birth of Samantha Danielle Till, born 11/16/08.

Andy ’98 and Becky (Hecksel) Becker ’98 announce the birth of their son, Liam Andrew, in Grand Haven, Mich., on 9/2/08. Big sister Emma, 3, adoringly welcomed him home.


Matthew Meyer ’98 is the technical director for Bremen Castings Inc., located in Bremen, Ind.

Christi Chapman ’99 is now working for the US Fish and Wildlife Service as a wildlife inspector, overseeing the Detroit Land Border and Detroit Metro Airport. “I would eventually like to move south but for now am very happy to be using my biology degree.”

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In Memoriam

The Michigan Tech family extends condolences to the relatives and friends of those who have passed away recently.

1937
Nathan Williams

1938
Michael W. Schwetz

1940
Abe W. Mathews Sr.

1941
Newman H. Bergh
Bruce E. Miller

1946
Warren L. Smith

1947
Dr. Kern C. Jackson

1948
Edward P. Giesecke
Martti A. Lundstrom
George C. Schwaderer, PE
William F. Tilton

1949
Vernon S. Yerebeck
Delevan P. Young

1950
Rene E. Adams
Jayme Nmi Avaiusini
Eino A. Koski
Joseph J. Ramuta

1951
Rodney C. Ames
Owen L. Anderson
Arthur M. Arndt
Paul C. Bilger
Paul M. Uitti

1952
John M. Eisley
Norman V. Jouppi

1953
James H. Henning

1956
Leonard J. Lefevre
Edward G. Lewis

1957
Raymond P. Perlewitz
Janice Silvola Heather (Silvola)

1958
Allen A. Lampela
Richard W. Malpass Jr., MPS
Ronald G. Stenlund, PE

1959
William F. Zeckzer

1960
James D. Anderson
Richard A. Leahy
Carl R. Puuri
Charles R. Tatman
Jesse R. Van Evera

1961
Ralph L. Chiappetta

1962
George T. Carlson
Allan E. Ponnikas
Richard W. Sarau
William J. Zieker

1964
Mark F. Bade
Frederick H. Thomson

1965
John D. Richmond

1966
Konstantine P. Fedeyko
Harvey J. Haverluck

1967
Robert S. Brown

1968
George A. Hajduk

1971
Brian D. Pike
John F. Schweikert

1972
Gene P. Allen

1973
David A. Niemeyer

1976
Donald E. Sudhoff

1978
David R. Jarchow

1979
Kim K. McNeely (Lahti)

1990
Sherri L. Taylor

1991
Erick S. Dyke

1992
Todd R. Tacke

1994
Roy C. Winters

2000
Troy D. Mikula

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