SEEKING
A TINY, SPINY MENACE
Students in their own words

Wanted: mentors with biz savvy
Tech inventors are looking for partners who can help bring their ideas to market.

Cold lands, warm hearts
In Latin America, Tech volunteers discover the transformative power of service.

Yes man
For Mike Paddock ’87 ’88, the perfect vacation is building schools and bridges.

A party for Marvin
Two Peace Corps volunteers help a disabled youth realize his dream of attending college.

Well done
Students benefit as much as villagers as they bring clean water to rural Guatemalan communities.

Snow warriors
The men behind the miracle

A plague of fleas
A tiny freshwater carnivore eats its way through northern waters

Wesley House
For over three decades, a home for Methodist students

From the Alumni Association

Class notes

Letters

In memoriam

Transitions

Editor
Marcia Goodrich

Graphic designer
Clare Rosen

Photographer
Sarah Bird

Art director
Brandy Tichonoff

Inside cover
Winter stayed late at Tech this year. Sarah Bird captured this photo in April.

On the cover
PhD student Martin Hobmeier samples the waters of Portage Lake for the spiny water flea, an invasive exotic species. He is aided by Research Associate Foad Yousef. Sarah Bird photo; story on page 26.
Pavlis Honors College to house Tech’s signature programs

Michigan Tech has created the new Pavlis Honors College to house four extraordinary programs in leadership, research, and service: the Enterprise Program, the Pavlis Institute for Global Technological Leadership, the Honors Institute, and the Summer Undergraduate Research Fellowship Program. The new College recognizes Frank E. Pavlis ’38, a longtime friend of the University.

Pavlis’s support of these programs began in 2005, when he underwrote the Pavlis Institute. Since then, the institute has enrolled nearly two hundred students whose studies have taken them all over the world. Now his vision extends to the College: “Through the Honors College, Michigan Tech will establish itself as a leader in educating scientists, engineers, and entrepreneurs who can be global leaders in the management of innovation,” he said.

Students in the Pavlis Honors College programs predict that it will add a new dimension to their experience. “I’m so excited about the opportunities to collaborate with Research Scholars and members of the Pavlis Institute,” said Anna Waller, a member of the Honors Institute. “When I see others doing great things, it motivates me to reach for the stars.”

“Participating in the Pavlis Institute has been transformational,” said David Shull. “I’ve been able to work with people from Houghton to Dubai, and it’s challenged me, stretched my comfort level. And now, the College will bring people together who want to change the world. We’ll see an incredible synergy.”

Pavlis earned his BS in Chemical Engineering at Michigan Tech in 1938, graduating at the top of his class. In 1940, he signed on as the first employee of Air Products and Chemicals. Forty years later, he retired from the Fortune 500 company as vice president of world trade.

“Nine years ago, we modeled the Pavlis Institute on Frank’s extraordinary experiences,” said Michigan Tech President Glenn Mroz. “The skills he developed and seeks to pass on will be even more critical to today’s students enrolled in the Honors College. We are grateful for his exceptional contributions and extremely proud that he is part of the Michigan Tech family.”
Left to right, David Shull, representing the Pavlis Institute; Anna Waller of the Honors Institute; Enterprise team member Sumit Jaripatke; and Kerry King, also of the Honors Institute; raise the roof on the new Pavlis Honors College, which will house a number of Michigan Tech’s signature programs.
Tech Athletics staffer helps US to sled hockey gold

Joel Isaacson ’01, associate athletic director for external relations, helped the United States Sled Hockey Team to the gold medal at the Paralympic Games in Sochi, Russia, in March.

Isaacson was the team’s equipment manager as the Americans defeated the Russians 1–0 in the gold medal game at Bolshoy Ice Dome, which also played host to men’s and women’s ice hockey during the Olympic games.

“It was an unbelievable experience,” said Isaacson, who has worked with the team of disabled athletes for the last four years. “The venues were top notch, and the Russian people were very welcoming. Working with this team and winning the gold was unforgettable.”

Team USA, which has won three of the last four Paralympic gold medals in sled hockey, defeated rival Canada 3–0 in the semifinals before besting the host nation 1–0 in the gold-medal game.

The seventeen team members include amputees and men with congenital conditions that qualify them for the Paralympics.

“These guys are the best at what they do,” said Isaacson. “It’s amazing to be around them and see the adversity they overcome on a daily basis. It’s also infectious to see their passion for the sport.”

Sled hockey, also called sledge hockey, is played like regular ice hockey with some exceptions. Players sit on sleds with medal blades and propel themselves with modified hockey sticks.

Yes, you can teach engineers to write

Many engineering students panic at the prospect of putting words on paper. To complicate matters, their lab reports are graded by graduate students, including many foreign nationals.

“Most are nonnative English speakers, so asking them to evaluate native speakers’ writing can be a little touchy,” said Nancy Barr, technical communications advisor for the mechanical engineering–engineering mechanics department.

So Barr launched a class to teach those graduate students how to evaluate undergraduate lab reports by applying standard guidelines and grading rubrics.

It’s an excellent course, said PhD student Ranjeeth Naik. “Once you know the guidelines, the reports almost grade themselves, and it’s much easier for our students to improve.”

Naik is not alone in his enthusiasm. According to student surveys, the new guidelines and rubrics “are overwhelmingly appreciated,” Barr said. “The undergraduates felt it saved them time and that they learned something.”
A new Welcome Center named for John Edgar McAllister will be built this summer to introduce future students and their families to the campus. The $998,000 project will consist of a 3,000-square-foot addition and remodeling of another 1,500 square feet of the Memorial Union. The Admissions Office and Visitors Center in the Administration Building seats only forty campus visitors and has limited parking. The new center will seat more than one hundred. The project is funded entirely by donors, with the majority coming from the John Edgar McAllister Trust. McAllister, a former civil engineering student, established a thriving consulting business. After his death in 1959, he left a bequest to benefit the University and its students.
Power to the people

Every Chinese New Year, everyone in Yawei Wei’s hometown, Zao Yuan, turns on their televisions and microwaves, and the power goes out. That got him wondering: isn’t there some way to get more electricity to China’s rural villages?

Wei, a master’s student in electrical engineering, pondered a solution. Grid improvements would be costly. He might not be able to keep the lights on during New Year’s Eve. But he could bring more electricity to Zao Yuan. Specifically, he could bring solar panels to his cousin’s roof.

Last summer, the family installed a ten-kilowatt system of forty-eight panels above his roof with the enthusiastic support of the local power utility. “They think it might be part of a solution to help balance our electrical demand,” Wei said. “People are using much more electricity than they used to, even five years ago.”

So far, the system has worked so well Wei and his cousin plan to add a twenty-kilowatt system. And they are also encouraging others in their village to get on the solar bandwagon.

“My cousin is teaching people in the neighborhood about it, and they are getting interested. It can be complicated, but if you follow the steps, you can have your own photovoltaic system.”

He hopes his experience will inspire others. “I wanted to share this idea with other Michigan Tech students, not only Chinese but Indian and African,” Wei said. “If I can do this in my hometown to benefit my people, maybe they can too. Mine is not a lonely case.”

Student investment team twice triumphant

Thanks to a portfolio that grew nearly 30 percent during 2013, Michigan Tech’s Applied Portfolio Management Program Gold Team has won two global investment competitions.

The students won the value category at both the Global Asset Management Education (GAME) Forum IV, hosted by Quinnipiac University in New York City; and the Redefining Investment Strategy Education (RISE) competition at the University of Dayton. At GAME, which attracted competitors from 140 colleges and universities, the team helped close the NASDAQ.

Their best performing stock? Jazz Pharmaceutical, with an increase of 140 percent. “We’re glad we didn’t sell Jazz in November, like we were thinking of doing,” said team member Nathan Sturos.
“That was me, last Friday morning, in the library, snapping pics of my coffee and muffin. With earbuds in, I was listening to music, ‘studying,’ browsing Facebook and posting to Instagram. What is wrong with me?”
Katelyn Waara, news editor, on her increasingly intimate relationship with procrastination. (April 1)

“The first time I ever [saw] an e-cigarette was in Dillman, and I was caught completely off guard.”
Katherine Baeckeroot on the fallout from a tobacco ban that went into effect on campus last fall. Should e-cigarettes also be banned? she asks. (March 18)

“After extensive research I discovered that, contrary to popular belief, soy isn’t just that nasty tofu that you heard about watching cartoons as a kid.”
You heard it here first. Garret Patterson determines soy is, in fact, edible. (February 25)

“The prices are expensive . . . even though [the food] is not high quality.”
Yummy stir fries and salad bars notwithstanding, Leslie Mundell blames the University for the Freshman 15 and upholds a hallowed tradition passed down through generations of college students: bad-mouthing dorm food. (December 10)
MENTORS WANTED

It’s not enough to have a great idea. For an idea to change the world, somebody has to make it real.

Michigan Tech is a mother lode of innovation, a gadget-y geyser of creativity and imagination. But moving these innovations to the market requires a team of individuals with complementary interests, experiences, and expertise. Michigan Tech has a deep bench of talented scientist-inventors looking to make connections with others who can round out their teams and help them move forward on commercializing early-stage technologies.

The fledgling entrepreneurs on the following pages are looking for a special kind of missing person: mentors, advisors, and partners with the business acumen to help shepherd their new ideas through the Valley of Death that lies between a cool discovery in the lab and successful commercialization.

That missing person may be you. If your passion is nanotechnology, health, auto safety, or killer apps, you may want to connect with one of these inventors. If something else lights your fire, get in touch. Chances are, somebody at Michigan Tech is working on it.

To learn more, contact Jim Baker ’93 ’95 ’05 in the Office of Innovation and Industry Engagement at 906-487-3459 or jrbaker@mtu.edu.
What is it? A “lab on a chip” microdevice that can identify blood type and hematocrit, the proportion of blood that is made up of red blood cells.

What makes it new and unique? This hand-held microdevice offers two tests in one at a fraction of the cost. It works quickly and simply by using electrical fields to draw a single drop of blood through channels the width of a human hair. Under these conditions, each blood type behaves in a unique way that’s easy to identify.

Conventional blood-type tests cost from $15 for a home kit to $95 for an industry-standard lab test and require messy mixing of blood and antibodies. Currently, a separate test is required to measure hematocrit, which blood banks use to determine if a prospective donor qualifies to give blood or not.

How will it change the world? Blood banks have the most to gain. This new microdevice would allow them to rapidly, reliably, and inexpensively determine blood type and hematocrit on site. Not only would they save money, they could also use the results to determine the best product for each donor to give (e.g. whole blood, red cells, plasma, etc.). Ultimately, everyone would benefit. While donors give blood for free, the testing and processing expenses for a single pint of blood can exceed $200, and millions of pints of blood are used every year in the United States alone. This technology could lower the cost of saving lives.
COMPANY

Divinare Health

David Shull, Andrew Hoekstra, and Kyle Johnston

What is it? A mobile app that measures your heart rate, sleep quality, and activity level and recommends steps you can take to improve your health.

What makes it new and unique? Plenty of e-gadgets, such as Fitbit, gather data related to personal fitness and tell you, say, how many stairs you’ve climbed. The Divinare Health software suite gives you personalized recommendations on how to improve your health based on that data. Plus, it will monitor information posted on your social media networks and offer helpful advice: for example, you might want to postpone a visit to your friend who has just come down with the flu.

How will it change the world? This software has the potential to improve the health and fitness of anyone who uses it, which could have huge implications in the US alone, where healthcare costs are the highest in the world. The developers hope their software will eventually be able to predict your chances of getting cancer and heart disease and offer ways to lower your risk.

COMPANY

Nano Innovations

Yoke Khin Yap, professor of physics

What is it? A suite of nanomaterials that are highly heat conducting (ten times more than metals) and electrically insulating.

What makes it new and unique? Most, if not all, heat-conducting materials also conduct electricity. Think copper.

How will it change the world? These nanomaterials can draw heat away from the “hot spot” of electrical and electronic devices without causing a short circuit. This has advantages for all kinds of products, but here’s what they could do for electric and hybrid vehicles, from the Chevy Volt and Ford Focus EV to the Tesla:

• help them run smoothly without overheating
• open the door to a redesign of the heat-management systems, reducing vehicle weight and yielding better mileage
• cool the lithium ion batteries, making them safer and reducing the risk of fire (remember Boeing’s embarrassing little incident with the Dreamliner?)
Mike Paddock ’87 ’88 calls his volunteer work in Central America “almost like an addiction.” “I’ve learned so much,” says grad student Kelli Whelan ’10 of her efforts in Guatemala.

It’s not uncommon for students and alumni from the chilly north to travel to Latin America and other developing regions with the aim of helping people wracked by poverty, disaster, and war. What is sometimes unsaid is the degree to which these selfless acts rebound upon the givers.

Many Michigan Tech people insist they have been enriched more than they can measure by their humanitarian efforts. Here are three of their stories.
Babies were dying. The scarce water available to La Garrucha, Guatemala, was often rationed, and what remained was tainted with animal droppings and other contaminants—a problem that could have fatal consequences.

So villagers enlisted the help of civil engineer Mike Paddock, PE, PS, and engineering students he mentored at Milwaukee’s Marquette University. Their mission: to build a new water system that could capture and purify water from a spring fourteen miles away. The end result delivered twenty-one gallons of clean water a day for each person and much more: it increased school attendance because children no longer had to spend time fetching water and firewood to boil contaminated water, reduced deforestation, and lowered the infant mortality rate.

Those are the sorts of rewards that drive Paddock, a board member of Engineers Without Borders–USA (EWB-USA), to commit every spare minute to using his engineering skills to help rural communities abroad. Over the past decade, Paddock has designed and/or built more than seventy-five projects, from water systems to schools to bridges, in Ghana, Guatemala, Nicaragua, and Bolivia. He travels, mostly to Guatemala, five or six times a year as a mentor to student chapters of EWB-USA and Bridges to Prosperity, another service organization.

“It’s become almost like an addiction,” he says of his volunteer work. “This is where all my vacation goes, this is where all my weekends go, this is where all my free time goes. My wife is a saint.”

Paddock also has a rather demanding day job. As a senior transportation project manager for global engineering firm CH2M HILL, he currently manages a $1.7 billion Milwaukee-area interchange reconstruction project considered to be the largest transportation project in state history.
“Mike is that rare breed that can take paper and make it a reality, and he can also teach others to do the same thing,” says Cathy Leslie ’83, executive director of EWB-USA. “He definitely believes in the good that engineers can do, and he is passionate about making sure we’re all doing the right thing. He has a really great moral compass.”

Paddock learned about global issues and community service from his father and fellow alum, Robert ’62. At Michigan Tech, where he earned back-to-back bachelor’s degrees in land surveying and civil engineering, Paddock volunteered to room with an international student from Panama and planned to get involved with international development work later in life. Then, at age thirty-one, he was diagnosed with stage four lymphoma.

“That was kind of a wakeup call for me. Before that, I was thinking I’d have plenty of time to do community service after I got my career in order and started a family. I now thought, ‘I’ve got to seize the moment,’” he says. “At the same time, I picked up an alumni magazine from Michigan Tech, and there was an article about a professor, Linda Phillips.”

Phillips had created a Senior Design class that put students to work on real-life engineering problems in Bolivia. Paddock volunteered to help, and soon he was on a plane to Bolivia to build a school and improve its water quality. Paddock worked with Michigan Tech students for three years before connecting with universities closer to home in Milwaukee.

The EWB projects operate a little differently from the work Paddock oversees at home: Imagine mixing concrete one bucket at a time, hauling equipment with oxen, and passing rocks by hand along a line of 100-plus villagers.

But the end results are something any engineer would be proud of. In fact, the Rio Motagua Bridge that Paddock built with Marquette University students in Joyabaj, Guatemala, was a finalist for the 2009 American Society of Civil Engineers’ Outstanding Civil Engineering Achievement Award, a first for EWB-USA.

“Even though these are small projects, they can be very technically challenging,” says Paddock, whose team invented a new kind of truss for the Rio Motagua Bridge.

Often, the before-and-afters are dramatic. Paddock will never forget one scene he witnessed at the Rio Arco near Xecpup, Guatemala: An older woman reached out a hand to help her daughter and infant granddaughter, who was strapped to the mother’s back, gingerly cross the three skinny logs that served as a bridge some twenty feet across the waters rushing far below. Any misstep off the path—just fifteen or so inches wide—would be disastrous. Paddock took a picture of the makeshift crossing, right before he and a team of locally trained builders built a new, significantly safer pedestrian bridge.

“I like bridges because they make a very positive impact on people. They can make a big difference in terms of access to education, access to health care, and access to markets,” he explains.
Even more than bridges, schools are his first love. “I measure everything in my life by schools. For me, it keeps it real,” he says. “I drive an eight-year-old pickup truck. I could get a new one, but that’s two schools. I can live with the old pickup truck.”

As a result of his cancer, Paddock and his wife, Cathy (Thaens) Paddock ’88, don’t have children. “But I like to say the kids in Guatemala are my kids,” he says with a smile. And he has other “kids,” too—the students he has mentored at numerous colleges, including the University of Notre Dame, Rice University, Marquette University, University of Wisconsin–Milwaukee, the Milwaukee School of Engineering, University of Maryland, University of Wisconsin–Platteville, Virginia Tech, and Michigan Tech.

It would actually be easier to do these projects without students, because they can only travel during school breaks and always have a learning curve, Paddock says. “But I think the concept is to build some capacity,” he says. “I’m just one person, but it would be great if there would be a lot of other people doing what I’m doing. And I see that happening. Some of my past students are now mentors, so that’s a good opportunity to pay it forward.”

So how much can you accomplish with a team of students and just a week or two on the ground? More than you might think, and for a relatively low price tag. “A project that in the States might cost a quarter of a million dollars, we can actually accomplish with $20,000 to $25,000 of donations because the labor and design are free, and generally materials are much cheaper over there,” Paddock explains.

Paddock’s employer, CH2M HILL, and other corporate sponsors often provide funding for construction materials. The community abroad contributes the labor and other resources, whether it’s sand from a river or lumber from nearby trees.

“They provide what they can, and it’s really important that occurs because this is their project and we want them to own it, because long-term they’re going to maintain it,” he says.

Paddock’s impact goes beyond his time in a single community. His design templates for water line crossings were distributed to all municipalities in Guatemala, and his cost-effective design for more earthquake-resistant schools has spread throughout the region.

And his reputation has also spread—something that he’s not entirely comfortable with.

When Hurricane Agatha hit Guatemala, he opened up a local newspaper to see a photo of the Rio Motagua Bridge with the headline, “Unbeatable bridge.” Although the hurricane did send water over the EWB-built bridge, it held up. “Sometimes people think we have some special recipe to build bridges, and so everybody wants us to build their bridges, and I have to keep telling them, we’re more lucky than good,” Paddock says.

Paddock is very careful not to diminish local capacity. Although Guatemalan community leaders frequently call him with requests for help, he urges them to work with a local engineer or skilled mason when they can. EWB-USA’s new Service Corps program furthers that goal by providing American-trained engineers as backup for in-country engineers so funders and communities are comfortable using their skills.

Still, he doesn’t hesitate to respond to the call when he’s needed, as he was during the aftermath of Hurricane Stan in 2005. “It was one of the best times to be an engineer and one of the worst times of my life,” he says. “I don’t think I’ve ever been involved in anything in my entire life where I’ve had as much of an impact, because it was critical disaster relief, trying to put people’s lives back together. But at the same time, it was absolutely heartbreaking because you could see the death and devastation.”

He was digging the foundation for another bridge in Guatemala when Hurricane Agatha hit in 2010. He returned home as scheduled, only to have the Guatemalan government and a friend from a local nonprofit call him eight days later. “Michael, I need you,” the friend said. Paddock responded, “When?” “Tomorrow would be fine,” the friend told him.

And so, in typical Paddock style, he caught the next available flight and got to work.

Engineers Without Borders–USA, which includes around three hundred chapters around the nation, is always looking for more help. Paddock and Leslie urge their fellow alumni to get involved on three levels:

**Design mentors:** This usually involves meeting with students once a week—it could be over Skype—to review their designs. “We need more experienced mentors who have construction backgrounds,” Leslie says.

**Construction work:** That involves traveling to a community abroad to build a project alongside villagers and EWB-USA volunteers.

**Donations to fund a project’s materials:** “A little bit goes a long way,” Paddock says.

Learn more at ewb-usa.org.
Michigan Tech graduate students Hans Lechner and Emily Gochis were exploring the streets of the tiny, impoverished Salvadoran village of San José las Flores when they heard music booming from a little house. Someone was singing at the top of his lungs—in English.

That’s how they discovered Marvin Rene Huezo Mendoza. The seventeen-year-old was sitting in a room plastered with art, singing along with the Doors. But to greet Lechner and Gochis, he had to crawl across the room.

Marvin was disabled from a bout with polio when he was two. His family couldn’t afford crutches, let alone a wheelchair.

The boy was cautiously friendly. His family had supported the leftist Farabundo Marti National Liberation Front rebel forces in El Salvador, and he was suspicious of American policy and interests in his country.

He and Hans had something in common though—a love of music and literature. They began talking about musical groups and found that they both loved the Doors. Marvin started relaxing.

Lechner and Gochis learned that the art work on the walls was Marvin’s and that he had taught himself to sing in English by listening to American songs.

“I took an immediate liking to him,” says Lechner. The PCMI student taught Marvin to play chess, and they spent many happy hours competing for a checkmate. They exchanged music and became good friends.

Marvin’s disability had kept him from attending school. A family friend who worked at the local high school started tutoring him and had arranged for someone from the Salvadoran Ministry of Education to come to Marvin’s home to give him final exams. Finally, with the help of a church group, Marvin managed to enter high school, and he started looking into colleges on his own. But he was the son of a woodcutter in a remote village. His family could never send him to college. His disability made it impossible for him to do physical labor or work in a factory. His future looked bleak.

Lechner and Gochis’s hearts ached for Marvin. “Here was this proud, smart person who had taken the initiative to get himself a high school education, and he couldn’t even get around,” says Gochis. They knew Marvin should go to college. “He needs an opportunity to use his intellect.”

Then they heard about Tony Gasbarro, a returned Peace Corps volunteer and professor emeritus at the University of Alaska Fairbanks. Gasbarro is deeply involved in humanitarian and development work through Project Salvador, a nonprofit that helps needy young people get an education.

Project Salvador agreed to work with the Michigan Tech students to help Marvin achieve his dream of a college education and a fulfilling future.

The first task was making him more mobile. Lechner and Gochis could easily have bought him a pair of crutches, but in keeping with Peace Corps philosophy, they wanted to make Marvin an active participant in his own progress. They suggested that he sell some of his art work to pay for crutches. He agreed, and Marvin’s art was eagerly purchased by other Peace Corps volunteers.

Lechner and Gochis’s Peace Corps service in El Salvador ended in 2009, and they returned to...
Houghton. There they started the Marvin Fund, throwing a fundraising party in the fall of 2010. The first Marvin Party attracted about sixty guests. The party has become an annual affair, attracting more than a hundred people last fall.

Admission is free, with a donation requested. Michigan Tech faculty, staff, and students donate music, food, and drink. Lechner and Gochis raffle off Marvin’s art work and other Central American arts and crafts. “We’re trying to weave some of the Salvadoran culture into the event,” Gochis explains.

Many returned Peace Corps volunteers and PCMI students, as well as other graduate students and members of Spanish and Cerveza, Global City, and Engineers Without Borders, have gotten involved. Peterlin Distributing lends a beer trailer. A special treat for those over twenty-one is jello shots. The plastic bags of jello made with vodka are a North American adaptation of a Salvadoran favorite—small plastic bags filled with frozen juice.

“We don’t ask for anything; people just volunteer,” Lechner says.

The students have raised enough to send Marvin to college in the capital, San Salvador, where he studies business and marketing. It’s a forty-five minute bus ride for Marvin, but he doesn’t mind. With Lechner and Gochis’s help, he has forearm crutches now.

Life is still far from easy. Marvin has undergone more surgeries on his legs. His father has died. He’s been robbed on his bus ride to San Salvador.

The $2,000 annual scholarship that sends Marvin to college is paid through Project Salvador directly to the university. That’s a big load off Lechner and Gochis’s minds, since gang warfare and extortion are rife in El Salvador. This way they know that the money they raise is actually going to pay for Marvin’s education.

Lechner and Gochis, both PhD students in geology, haven’t seen Marvin since they left in 2009. Lechner returned to El Salvador briefly for field work and took a quick side trip to Marvin’s house, but Marvin was working on a mayoral campaign and wasn’t there.

They keep in touch by letters and on Facebook. When Marvin graduates, they’d like to bring him to Houghton as guest of honor at his own Marvin Party. And what does Marvin think about all this?

“My childhood was a constant struggle,” he says. “I suffered constant bone fractures caused by my disease. The disease controlled my life. Hospitals were my second home. “My life took a radical turn when I met my friend, or should I say brother, Hans, and his wife Emily. They are like angels in my life. When Hans told me that there was a way to receive a scholarship, I was very happy. Now I’m in my fourth year of college, thanks to Hans and Emily and all those friends that I don’t know who collaborate with their donations. A thousand thanks to everyone for helping me to achieve my dreams.”

As for Lechner and Gochis, they’re thrilled that the Peace Corps promise that “you are going to change more than the people you help” has proved true. “Marvin has changed us forever,” says Gochis. “He is a true friend.”

Emily Gochis and Hans Lechner hold a photo of Marvin Rene Huezo Mendoza. With their help and his own hard work, the polio-stricken youth from a poor village in El Salvador is finishing college.

HOW TO HELP

Project Salvador: Learn more and donate at www.projectsalvador.org/scholarshipprogram.html
Sue Ellen Kingsley was on a mission: her friends were in dire need of clean drinking water and had asked for her help. It was 2006, and she had just returned home to the Copper Country from a small village in northwestern Guatemala, where she had been working as an accompanier. “Accompaniment programs bring in people from privileged countries to provide space for native people to do what they need to do, even when their home country is in turmoil,” she explains. “There’s much less danger of violence from the government and military when there are accompanying present.”

People in her community needed more than peace and safety; they also needed good wells, so she brought word to Michigan Tech’s civil and environmental engineering department. Coincidentally, a new student chapter of Engineers Without Borders–USA (EWB-USA) had recently been founded—and this was exactly the type of project they were looking to take on.

EWB-USA pairs volunteers with developing communities to improve their quality of life. Its student chapters give undergraduates and graduate students a chance to practice real-world engineering before being handed their diplomas, says David Watkins, EWB advisor and professor of civil and environmental engineering.

Not every student gets to complete an entire project. But they learn a lot; EWB-USA operates on an industry model—with feasibility assessments, data collection, alternatives analyses, detailed plans, and countless consultations with practicing engineers and the clients (citizens of developing nations, in this case) along the way. Once a plan is finalized, it’s sent to EWB’s national office for approval before students are sent abroad to implement their project.

“The Michigan Tech chapter typically has two or three projects going on at one time,” says Watkins. “Right now, we’re working with communities in Bolivia and Guatemala.”

Because of Kingsley, EWB-USA students have been working with citizens in the same part of Guatemala for almost ten years on various projects, including an ongoing effort to bring clean, safe drinking water to the area’s fifty or sixty families.

In recent years, local residents have built four hand-dug wells, engineered by EWB-USA students. The wells, each about thirty feet deep, provide a clean alternative to the stagnant, contaminated runoff the villagers had been drinking before.

Installing the new wells hasn’t gone off without a few snafus. Specs have been misinterpreted by community construction teams, and even with new wells, some citizens find it hard to break their old water-collection habits or to maintain the new equipment once the EWB team heads home.

“It’s frustrating at times, sure,” says Kelli Whelan, an environmental engineering master’s student. “But I’ve still learned so much. If the implementation had gone perfectly smoothly, it wouldn’t have been as rewarding.”

Sue Ellen Kingsley crossing the Rio Ixcan in a wooden canoe, the main way to access the Guatemalan communities of Fronterizo and Cantón.

PHOTO: LINDA BELOTE

WELL DONE

Students learn lessons in engineering and life bringing good water to Guatemalan villages.
been as beneficial for the students involved. We’ve encountered social and technical road blocks, but everything we’ve done has been completely, 100-percent applicable to our engineering education.”

Esther Johnson, a 2009 civil engineering graduate, agrees. She helped design a large, one-room school in Honduras to withstand earthquakes and hurricanes. Because a partnership with a local non-governmental organization broke down, however, the building was never constructed.

“It was a heartbreaking decision for the team,” Johnson said. “It took responsible students and great mentoring to realize that this project was only going to succeed if it had the support of the community, which it did not.”

“I think we got more out of it that way,” she added. “We learned how to take a step back as engineers and see the true value of a project in empowering a community.”

The skills Johnson learned as a student gave her the confidence to lead; she has served as president of the EWB-USA Detroit Professional Chapter since 2010, where she puts students in local university chapters in contact with professional mentors and is the project manager of a latrine program in El Salvador, partnering with Michigan State University students.

Now, seventeen years after Kingsley’s first visit to this part of Guatemala, it’s become clear how large of an influence EWB-USA has had.

“There was no communication in or out of the area,” says Kingsley. “Just getting there was a massive feat. Now, the community is much more connected. Life is better. There are cell phones and electricity, and children aren’t falling ill with diarrhea and awful diseases because of their water.”

But EWB-USA projects are far from a one-sided endeavor, she adds.

“I really don’t like to think of it all as students helping developing communities, because the students have benefited as much—if not more—than the Guatemalans,” she says. “EWB provides them an incredible amount of personal and professional growth. These students are our hope for international wellbeing in the future.”

ABOUT TWO DOZEN TECH STUDENTS ARE WORKING ON EWB PROJECTS.

Clockwise from above: Ashley (Thode) Julien ’10, left, and Esther Johnson ’09 standing behind Honduran children and a woman from the community where they had hoped to build a school; EWB team working on a septic system they designed for a school in Bolivia; EWB member Ashley Maes ’10 testing drinking water in Honduras.


HOW TO HELP
Dawn is still an hour away, but last night’s snow-covered parking lots and walkways are cleared for students trudging to their early-morning classes. Pictured left to right are Nathan Maki, Peter “Buster” Anttila, Jerod Ledgerwood, Brian Pichette, Bill Vater, Jim Hill, and Dave Usitalo, who began plowing the snow at 4:00 AM.
BY KEVIN HODUR '13

Tech stays up and running after a blizzard that would bring a lesser school to its knees. Our secret weapon? The guys on the grounds crew.
The National Weather Service Office in Marquette has issued a blizzard warning, effective this evening from 7:00 pm Eastern Standard Time to 8:00 pm Saturday.

Pete Pelissero takes a swig from his coffee mug and flips on the utility lights of the small SUV as we drive up the hill between the McNair and Wadsworth residence halls. He isn’t worried about the robotic warning of an incoming storm crackling in over the radio. “We’ve got plenty to do today. We can worry about tomorrow in the morning.”

Pelissero has a knack for understatement, something that comes through as he talks about his crew. “They take care of all of the snow removal on campus beyond six feet from buildings, and they deliver freight, move furniture, collect recycling, handle grounds; there’s always something that needs to be done. They work hard.”

When he says “they,” he’s referring to six crew members and a single on-call worker. Seven people to handle the 270-plus inches of snow so far this season. That equals 100,800 cubic yards, or 19 million pounds, and it’s only February. Those hardy souls are also responsible for setup and cleanup for Winter Carnival, K-Day, commencement, orientation, Parade of Nations, broomball, Alumni Reunion, Career Fair, and much, much more.

“Oh, they have to clear snow from a couple of spots in Hancock that are Tech’s too. And the golf course, ski hill, places like that.”

Each crew member has put in more than 150 hours of overtime this winter. When the snow hits, they start at four in the morning and go to three-thirty in the afternoon. “Heck, their coffee break isn’t until nine. Then they have to go home and deal
with their own snow,” says Pelissero.

His radio chirps: it’s Jerod Ledgerwood reporting on some downed trees behind Daniell Heights. Ledgerwood, the lead equipment operator, has been with Tech for sixteen years. While this winter has been bad, he’s seen his share of brutal winters along the way. “There have been comparable winters while I’ve been here,” he says later. “But yeah, this is a big one.”

The four-o’clock-in-the-morning starts Pelissero mentions are just the half of it. “I’ll actually come in and start at three sometimes,” Ledgerwood says. “We have to get those commuter lots clear before the campus gets going for the day, and I’m usually pretty pumped up to get that done.”

“There’s a lot of adrenaline flowing when you do this job. Snow removal can be tough, looking out for cars and being efficient with your time.”

Ledgerwood recalls an evening a few weeks earlier when a water line at the Student Development Complex broke, spraying a steady stream out onto the frozen sidewalk. “I got the call at ten-thirty at night. It was a twelve-hour day, but we’ve got to get this done.”

That job was tricky: the first valve was jammed, and after consulting some utility charts, they found another valve, located beyond the reach of their wrench. “We went back to the shop, hacked off the handle, and welded on a longer one. Problem solved.”

They finished up around 2:00 AM, and rather than going home for an hour, Ledgerwood worked on through the night and day, finishing up the next evening.

“The funny thing is, I felt good, not tired, at the end of it. There’s always something new and something different to take care of, it’s an adventure. It gives you energy.”

When asked how he’d made it through the long winter, Ledgerwood shrugs. “You just roll through it,” he says. “I love being busy. I love my job.”

“And we’ll be working on all of the projects that have been pushed to the back burner soon enough,” he continues. “Hanging banners on the highway, fixing signage, trimming trees. Then before we know it we’ll get next season’s salt, and it will be go time again.”

Pelissero and Ledgerwood finish on the radio, and Pelissero turns his attention to the mounds of snow in the lot east of the Rozsa Center. “With the storm tomorrow, we’ll take what we’re dumping here and blow it down the hill toward the water,” Pelissero says. “That’s about the best we can do with it, get ready for the next load.”

They’ll use their Snogo on these mounds, one of several pieces of equipment in their garage along the Keweenaw Waterway. Alongside the front-end loaders, the dump trucks, the plows, and the little golf cart-like machine used by the Ice Patrol on the sidewalks (which has a crack in the windshield—it’s been a rough winter all around), the Snogo is a sixties-era snowblower on steroids, mounted on a massive front-end loader.

“Those things go forever,” Pelissero says. “We’ll have to replace some pins, but equipment like this was built to last.”

The breeze picks up slightly as Pelissero’s Ford Escape bounces down Phoenix Drive to the main garage. There’s still a blizzard coming. Is he worried?

“No, not really,” he says. “I mean, we’ve got everyone scheduled to come in at four. We’ll just get here and get to work. What else can we do?”

“Hey, check this out,” Pelissero says, setting the radio down, pointing to the large aerial photo of campus on his wall. “They took this photo some time early in the summer. Take a look at the SDC lot.” I look, following the dark streaks on the pavement to the edges. “Those are snow piles. It must have been a snowy one that year.”

“It’ll be neat,” he says, the clock chiming nine, the crew’s first break of the day, “to see how far into the spring we have snow.” He laughs. “I bet some of the spots will still be there in July.”
A PLAGUE OF FLEAS
The zooplankton never saw it coming. Well, perhaps it would be more correct to say that they never smelled it coming. These tiny, eyeless water creatures recognize predators by their scent, and zooplankton in the Upper Midwest have never added the spiny water flea to their stink list. The results have been catastrophic.

“The word I use is blindsiding,” says limnologist W. Charles Kerfoot. “When *Bythotrephes longimanus* was introduced here from northern Europe thirty years ago, the native species were totally oblivious to it.”

They still are, which is why the spiny water flea, aka *Bythotrephes* (pronounced BITH-oh-TREH-feez) is devouring its way through the Great Lakes and into the surrounding inland waters. It’s famous among anglers for forming tangled, sticky gobs on fishing gear and anchor lines, but what’s merely a nuisance to people is emerging as the region’s next great aquatic calamity. This half-inch-long predator with a spiky tail is on the verge of disrupting an entire ecosystem from the bottom up.

Kerfoot recently completed a three-year study in the region that shows just how widespread these carnivorous crustaceans have become. Since *Bythotrephes* needs cool conditions, it has not gained a footing in southerly waters. But it is having a field day in a band of lakes stretching from eastern Ontario to northern Minnesota. His group sampled the waters in dozens of sites from New York to northwestern Minnesota; they found eighty-three sites that were infested.

The scientists checked out Lakes Michigan and Superior and many interior lakes and lingered two years in Voyageurs National Park, on Minnesota’s border with Canada, to examine *Bythotrephes’* long-term effect on the native zooplankton. Three of the park’s lakes—Rainy, Kabetogama, and Namakan—had significant densities of the spiny water flea. Compared to nearby lakes with little or no *Bythotrephes*, they had far fewer of the native zooplankton that support a food web topped by pike, bass, walleye—and of course, fishermen.
They also compared their measurements with data from as far back as 2001 and found that some native zooplankton species had nose-dived. Plus, the mass of the entire food web had slumped drastically, as much as 80 percent. They documented similar crashes in native zooplankton species that feed on other zooplankton, probably because *Bythotrephes* is muscling in on their food supply.

*“Bythotrephes is having as much impact on the plankton communities as quagga mussels have had in Lake Huron and Lake Michigan,” said Kerfoot. “We expect it will have cascading effects up to the fish, but right now, we can see a major collapse of the plankton community.”*

*Bythotrephes* is no big deal in its native waters. “The zooplankton communities in Scandinavia and northern Europe have adjusted to it,” Kerfoot said. “They have evolved together, and the prey species *Bythotrephes* eats have developed devices to protect themselves, like helmets and spines.” North American zooplankton like many *Daphnia* and *Bosmina* species, which are favorites on *Bythotrephes*’ menu, have similar hardware but “fail to sense the presence of the exotic and don’t deploy the defenses.”

Thanks to its own impressive armor—the spiny water flea is mostly long, pokey tail with a three or four barbs sticking out the bottom for good measure—*Bythotrephes* has also blindsided native fish.

“My students were first to show that the tail barbs protected them against fish. When the fish try to eat them, they get stuck by the barbs,” said Kerfoot. “The spine can poke right through the wall of the stomach.”

Since it can only live in fresh water, *Bythotrephes* could never have swum across the Atlantic on its own. “It came in ballast water, no question,” Kerfoot said. Like other notorious invasives—including zebra and quagga mussels—it was transplanted by ships loading ballast in one part of the world and dumping it in the Great Lakes.
Ocean-going vessels can’t be blamed directly for *Bythotrephes* in Voyageurs National Park, however.

“It is transported to inland lakes by recreational fishing,” said Kerfoot. The spiny water flea’s enormous, barbed spine attaches to all types of surfaces—fishing lines, nets, anchor ropes—and unless boats and fishing gear are thoroughly cleaned, they can carry spiny water fleas and their resting eggs between lakes, infecting one after another.

*Bythotrephes* resting eggs are exceptionally hardy. “We discovered that the eggs are special: big, round, and thick shelled,” said Kerfoot. “They go through fish guts intact.”

That means that minnows taken from *Bythotrephes*-infested waters and used for bait elsewhere can poop viable eggs into the new lake.

Right now, there’s no way to get *Bythotrephes* out of infested lakes. But by taking a few simple precautions, boaters and anglers can stop it from spreading. Isle Royale National Park is proof.

The Lake Superior island is one of the few places in the Upper Midwest where Kerfoot’s team found no *Bythotrephes* in inland lakes. There, boaters must disinfect all vessels before putting them in water, and anglers are limited to artificial bait. In addition, motorized craft are banned.

“Once people get behind an effort to stop hitchhikers, it’s really effective,” Kerfoot said. “People do care. Unfortunately, that doesn’t stop the odd Typhoid Mary. In some places along Highway 41 in Michigan’s Keweenaw Peninsula, every lake with a boat ramp that we tested had *Bythotrephes.*”

Nevertheless, all the dedicated, responsible fishermen in America can only do so much. The primary highway for invasive aquatic species, the ballast tanks of ocean-going vessels entering the Great Lakes, is still open. Though exotics have been invading the region since the St. Lawrence Seaway opened in 1959, many freighters still release contaminated ballast water into the system.

“They can pick up something in the southern Great Lakes and pollute Thunder Bay or Duluth,” said Kerfoot. “We absolutely have to cut that conduit off.”

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**5 WAYS TO PROTECT OUR LAKES AND STREAMS FROM THE SPINY WATER FLEA**

1. After removing your boat from the water, drain all water from bilge, live wells, ballast tanks, etc. before leaving the site.

2. Remove all plants, animals, and any other organic materials after boating and dispose of them on dry land at the site. Don’t take aquatic hitchhikers home with you.

3. Dry all your fishing and boating gear thoroughly before putting it in another body of water. Or…

4. Clean all surfaces with hot water (over 104 degrees Fahrenheit), a high-pressure hose, or disinfectant, like a household bleach solution.

5. Don’t transfer fish directly from one lake or stream to another, either whole or cut up for bait.

To assure your minnows won’t spread *Bythotrephes* eggs, keep them for twenty-four hours and then transfer them to a container with clean water. Too much hassle? Then avoid lake spot-tailed shiners and use river emerald shiners, which don’t eat *Bythotrephes* or its eggs.
BY TERRY REYNOLDS AND ERIK NORDBERG ’13

The Harold Meese Center, located just off the main campus near Jim’s Foodmart, has a somewhat holier-than-thou history. Now the home of the Department of Cognitive and Learning Sciences, the building has its roots as a religious boarding facility called the Wesley House.

Named for John Wesley, the eighteenth-century founder of Methodism, the germ for the building’s construction dates back more than fifty years. In 1957, James “Jim” Jones and Carl Schjonberg, faculty in the Department of Electrical Engineering and members of local Methodist congregations, met with a group of students to discuss sponsoring a house. It would be like a fraternity, but with rules appropriate to their religious faith.

The national Methodist Church had traditionally sponsored “Wesley Houses”—gathering places and programming centers for its college ministries. Jones, Schjonberg, and other interested local Methodists received encouragement from the church’s Detroit Conference, but no direct funding.

But the promoters gathered enough local sponsors and, in September 1957, purchased a house near the University for the project. This first Wesley House sat near the Memorial Union on Hubbell Street in what was at that time a residential neighborhood. Jones and his associates created a governing board drawn from members of local Methodist churches, especially Grace Methodist Church of Houghton.

Thirty-five Methodist students became the first residents. Additional students from other faiths took their meals at the house, where Mabel Roberts, the former owner, continued to live in a small apartment. She prepared meals and helped run the house, at times lecturing the students about noise and rules.
Dan Koss ’60 was among those non-Methodists who took his meals there. His first dinner was on a Friday, and pork chops were on the menu. “All eyes were on me as the plate full of chops was put squarely at my seat,” Koss said. “At the time, Catholics were forbidden to eat meat on Friday, so the boys figured I would pass and there would be extra chops for them. To their amazement, I stabbed three chops and passed the plate.”

Pandemonium ensued, since the per student allotment was two chops. “The last guy ended up with only one chop,” Koss said. “Moral of the story: never underestimate a hungry Catholic Tech student.”

Recreation and meeting rooms were added, and the dining area was enlarged, in the process reducing the rooming capacity. In the 1960s, Jones played an increasingly personal role in the house’s operation, addressing minor repairs, contracting major repairs, and mentoring a generation of residents.

During these early decades, Tech’s Methodist student group had a very active program, bringing in visiting speakers, screening films, participating in Winter Carnival, and hiring a bus to transport students to Grace Methodist Church on Sundays. In recognition, the Detroit Conference provided some funding and, in 1966, supported the appointment of a full-time campus minister, Robert Dobson.

The Wesley House board purchased an adjacent home for Dobson’s residence, but in 1968 both structures were demolished as part of Michigan Tech’s new campus plan and the rerouting of Highway 41. In response, the board purchased two residences on Houghton Avenue, just east of Jim’s Foodmart, to serve as a temporary housing for Wesley House residents. Following a fundraising initiative, these buildings were razed and a new structure was erected in 1974. An addition constructed three years later provided recreation spaces with small game rooms, a music room, and a large gathering area with a ping-pong table.

During the 1970s, as Michigan Tech’s enrollment was peaking, Wesley House housed between thirty-five and forty-eight students. The organization began to accept other denominations, and room and board rates were kept competitive—usually several hundred dollars below Michigan Tech dorm rates. A cook provided the meals.

House rules limited residents to male students who were members of Christian student groups or local churches. Rules restricted female visitors to the recreational area on the main floor, prohibiting them from the male sleeping quarters. Rules prohibited profane language, loud music, smoking, alcoholic drinks, drugs, pornography, suggestive posters, and the like.

By the early 1990s, however, Wesley House was in decline. Jim Jones’s death at the start of the decade removed the one person with the passion, dedication, and time to oversee operations and keep costs low. Moreover, the house increasingly faced the problem of securing sufficient residents and revenue to cover maintenance and operating costs. Declines in University enrollment created a glut of affordable campus housing, and fewer students seemed attracted to the ideals upon which the Wesley House had been founded.

Several attempts to boost occupancy and reduce losses failed, and in 1995 the board voted to close the house and put the structure up for sale. Michigan Tech, after initial hesitation, bought the building and extensively remodeled it to create the Harold Meese Center.

The Wesley House Board reconstituted itself as the John Wesley–James Jones Memorial Foundation in 1998. Using the proceeds from the building’s sale as an endowment, the group awards scholarships to Christian students (around $250,000 to date) and mini-grants to support local churches’ campus activities and campus Christian organizations.

A note about the authors

Terry Reynolds, emeritus professor in the Department of Social Sciences, served on the Wesley House Board beginning in the mid-1980s and continued as president of the John Wesley–James Jones Memorial Foundation. Erik Nordberg, formerly the University archivist, is now executive director of the Michigan Humanities Council.
MTU Q&A
Fred Williams, professor emeritus of chemistry

Williams began teaching chemistry at Michigan Tech in 1965, retiring in 2003, and was so creative the University instituted the Frederick D. Williams Instructional Innovation Award in his honor. Perhaps most remarkably, he gave his first-year students extra credit for writing limericks—so long as they related to chemistry.

What was your favorite class?
Freshman chemistry. They were babies . . . more fun.

You were known as a good teacher in many ways, but you were the only one who had your students do limericks. How on earth did you think of that?
I don’t know. I think jokes worked occasionally, and then the limericks grew out of the jokes.

At one point, you told students they could no longer use “Fred” in their limericks. Why?
Fred was too easy to rhyme.

Did you also do explosions and things like that in class?
Oh yes.

Limericks from Williams’ first-year chemistry students

A hot solvent and solute were mated
As solution they both circulated
But as they got older
And their test tube got colder
Their offspring just precipitated.

A salt at the dawn of creation
Prayed to Aquarius for solvation
And that solvating force
Caused an ionic divorce
In a sacrament known as hydration.

A Neanderthal teacher named Fred
Died in his cave on his bed
When his carbon-14 was taken
Its half-life was mistaken
For it proved he was living, not dead.

It must be like putting on a magic show.
It is.

When you weren’t teaching chemistry, what did you do?
I taught polymers.

I bet you didn’t have to use limericks with those students.
No.

Which student surprised you the most?
I had a blind student. He surprised me all the time,

how well he covered the subject matter. He was a very good student.

You were at Tech a long time. How did the students change?
They became more serious, much more serious.

If you were to give a young teacher just starting out any advice, what would that be?
Enjoy yourself.

New directors and officers of the Michigan Tech Alumni Association Board of Directors will be confirmed at the biennial meeting of the Michigan Tech Alumni Association on Friday, August 8, in the Memorial Union Ballroom on the Michigan Tech campus.
Sign up for Keweenaw Geoheritage tours this summer

Join geologist and professor emeritus Bill Rose for any of five short field trips on the Keweenaw’s geological heritage. Participants will be covering lots of ground by boat, van, and short walks. Cost is $325 for each trip and includes materials, transportation, and lunch.

Lavas, July 21–22 Visit ancient, massive lava flows and learn how they shape the Keweenaw Peninsula.

The Keweenaw Fault, July 23–24 Learn about the massive thrust fault which split the peninsula lengthwise and uplifted rocks, including copper.

Jacobsville Sandstone, July 25–26 These red rocks originate from the ancient Huron Mountains that eroded and filled the great valley of the Keweenaw rift. We will visit important fossils in the area.

Keweenaw Glacial Geology, July 28–29 The Keweenaw was recently covered with more than two miles of ice. Explore this glacial history and how the lake and landscape have evolved since the glacial retreat.

Lake Superior Today, July 30–31 This huge lake has a major affect on weather and daily life. Learn about active processes of the lake today, including changes wrought by humans.

For more information and to register, visit www.geo.mtu.edu/~raman/SilverI/KeweenawGeoheritage/July_2014_Geotours.html. If you have any questions, email keweenawgeology@gmail.com.

A blast from carnivals past


Visit http://digitalcommons.mtu.edu/wintercarnival and see how much (and how little) Winter Carnival has changed over the past fifty years.

The Winter Carnival Pictorials from 50, 40, and 25 years ago have been digitized and are online through the Van Pelt and Opie Library’s Digital Commons, a growing part of the University’s digital library. This project is a collaboration among the library, Michigan Tech’s Alumni Office, and The Michigan Tech Lode. You can share your Carnival memories at www.mtu.edu/memories.
Connect with your regional chapter

Did you know that the Michigan Tech Network has over 70,000 alumni and friends covering 6 continents, more than 100 countries, and all 50 states? There are 70 regional chapters (plus 8 international) that are accessible, fun, friendly, and a great way to stay in touch with alumni and friends.

Chapter volunteers strive to provide a range of activities and are a good source of information about the University and the Michigan Tech Alumni Association.

Invitations lists for Alumni Association events are determined by the ZIP code we have on file for you. Be sure we have your current address and email so we can keep you posted about what’s happening in your area. Many chapters also have active Facebook pages which can keep you informed.

You can update your information by visiting www.huskylink.mtu.edu, or simply contact the Alumni Relations office at 877-866-2586 or alumni@mtu.edu.

You can find a list of our alumni events on our webpage, www.mtu.edu/alumni, and on our Facebook Page, facebook.com/MichiganTechAlumniAssociation.

Two chapters meet regularly at local watering holes. The Green Bay chapter convenes on the third Thursday of every month at the Keweenaw Pub, 368 Main Avenue, DePere, Wisconsin.

West Michigan Chapter gathers on the last Thursday of every month at Schmohz Brewery, 2600 Patterson SE, Grand Rapids.

Save the date: Alumni Reunion is on the horizon

Alumni Reunion 2014 is just around the corner, August 7–9. With fun events for all ages, including outdoor adventures, children's science activities, boat rides, presentations from popular professors, picnics with pasties, pickled eggs and beer, and much more. Reunion is a perfect time to come back to campus.

This year’s featured classes will be the Golden Ms (those who graduated fifty-plus years ago) and the classes of ’64, ’74, ’84, ’89, ’94, and ’04. Other special alumni group reunions are being planned for women’s basketball, tennis, and the Ford Forestry Center.

For schedule and registration information, visit www.mtu.edu/reunion.

Alumni triumph in Winter Carnival broomball

For the first time since its start during Homecoming 2009, the Alumni–Student Broomball Invitational took place during Winter Carnival. In spite of the cold, more than seventy-five alumni and friends on eight teams enjoyed the two-day tournament on the outdoor broomball courts. In the end, the alumni team, Kilty as Charged, was victorious over the Fellowship of the Rink student team in a 12–0 blowout. The Alumni Cup comes back to alumni until the tournament at Winter Carnival 2015.
What floats their (concrete) boat

Michigan Tech is a force to be reckoned with in the American Society of Civil Engineers Concrete Canoe contest, making it to the nationals 12 times in the last 14 years. Team members Mike Larson, right, and Karl Schlicker explain why.

**Commitment** “We never stop looking for ways to improve.”—Mike

**Friendship + teamwork** “The team bonding experience is like nothing else.”—Mike

**Heritage** “When we have a problem, all we have to do is shoot our alumni an email.”—Karl

**Generosity** Their success depends on gifts from many sources, including the Annual Fund. Your yearly gift helps students like Mike and Karl make the most of their Tech experience.

**To give, go to www.mtu.edu/giving or call 877-386-3688.**

The Annual Fund recognizes gifts made from July 1 to June 30 of the following year.

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The Annual Fund

Making a difference—every day, every year.
In the late 1960s, he enrolled in the new optics program at the University of Arizona, where he became a professor after completing his doctorate in 1976. Now in his fourth decade at the college, Dereniak received its Award of Distinction for Undergraduate Teaching in 2006.

In 2009, he was honored by the US Army with the Commander’s Award for Public Service for his extensive work while he was teaching at West Point. In 2010, the Optical Sciences gave him the Esther Hoffman Beller Medal for contributions to science and engineering education.

Jenness enlisted in the Navy and was a Seabee combat engineer, supporting intelligence operations in Ben Tre province of South Vietnam. In 1969, his compound was attacked and he was wounded in the leg. Despite his injury, he was able to return fire and drove the enemy to retreat. Jenness was treated for his wounds and remained in the field; eventually, he was awarded the Combat Action Ribbon and the Vietnam Service Medal, but not the Purple Heart, awarded for injuries sustained during combat in Vietnam.

At the encouragement of his family, he contacted the Navy, which responded that they had no record of either his combat or his injury. Eventually, US Senator Amy Klobuchar of Minnesota interceded on his behalf, and he received his Purple Heart on December 23. The story appeared in the Minneapolis Star Tribune, www.startribune.com/politics/statelocal/237100721.html.

Eustace L. Dereniak ‘63 (Electrical Engineering), an internationally recognized expert in infrared detectors and systems, has been named 2013 Alumnus of the Year by the University of Arizona and its College of Optical Sciences.

What’s up with you? Submit your own class note and photo online at mtu.edu/alumni/connect/huskylink or email us at techfund@mtu.edu.
1980s

Duane Mariotti ’80 (Electrical Engineering) has relocated to Orange County in Southern California. He is employed as a clinical (biomedical) engineer with Kaiser Permanente Healthcare. He has three adult children: Melanie, 26, Melissa, 24, and Matthew, 19.

Roger Markham ’85 (Technology) is human resources manager for the City of Gaylord. His wife, Paula (Hainault) Markham, is the daughter of the late mechanical engineering professor Paul Hainault. Their daughter, Alice, is a Tech freshman studying business administration and marketing.

Stacey Keener ’88 (Computer Science) received her twenty-five-year pin this year for her length of service to NASA. This from Jayne (Reuschel) Nitz ’88 (Computer Science): “I don’t know if Tech likes to hear about it when graduates stray from the math/science path (Editor’s note: we don’t mind at all!), but after four years in computer science and many years as a professional mother, I started a new part-time occupation when I began songwriting in 1999. My Christian contemporary songs appear on five of Christian singer Chris Driesbach’s CDs. Also, my choir song, “Come To the Table,” was published by Northwestern Publishing House in 2010.”

1990s

Laura and Peter Elzinga ’92 (Civil Engineering) announce the birth of a son, Cort Brennan, born on July 2, 2013.

Jeffrey Haas ’93 (Computer Science) was promoted to distinguished engineer at Juniper Networks.

Vicki (Lay) Stuettgen ’93 (Civil Engineering) has recently accepted the position of director of supply chain with First Quality Tissue in Anderson, South Carolina.

Dan Wagner ’94, PE, (Environmental Engineering) has been named director of engineering for Gourdie-Fraser, a civil engineering consulting firm located in Traverse City. He will be responsible for directing the projects and services of their engineering department, where he will apply his twenty years of civil engineering experience gained working on hundreds of projects primarily throughout northwest Michigan.

Charlie Kinzel ’95, PE, (Electrical Engineering) has opened Brewery Terra Firma with Master Brewer John Niedermaier. One of only a handful in the country, this is Michigan’s first agriculture-based brewery: a modern brewery located on a legacy farm providing beer made with ingredients grown on site. The facility incorporates heat reclamation and applies brewery effluent to the land for crop fertilization and irrigation.

Kevin ’97 (Mechanical Engineering) and Jodi (Cianek) ’00 (Chemical Engineering)

Britton welcomed their second daughter, Julia Rose, on August 17. She joins big sister Claire. Kevin is now a Six Sigma Black Belt at Hemlock Semiconductor Corporation.

Matthew Prater ’98 (Mechanical Engineering) married Nicole Erickson, from Cokato, Minnesota, in June. The couple is moving to Pittsfield, Massachusetts, where Prater recently accepted a position as senior counsel, intellectual property at SABIC Innovative Plastics.

Laura and Tim ’99 Bindon (Mechanical Engineering Technology) welcomed their second son, Foster Jude, on October 30. He joins big brother Hudson Timothy (born March 18, 2012). Erin and Steven ’99 Ducat (Civil Engineering) gave birth to their second child, son Emmett Christopher, on August 9.

2000s

Matthew Sohrweide ’01 (Business Administration) has earned an MBA from the University of Wisconsin-Oshkosh with an emphasis in project management and entry to the International Honor Society Beta Gamma Sigma on December 18, 2010. He was also named the 2010–11 UW-Oshkosh MBA Outstanding Graduate.

Amber (Harris) Kumpf ’02 (Applied Geophysics) and her husband, Rob, welcomed their first child on June 13, 2013. Liam Mitchell was 21 inches long and weighed 7 pounds, 13 ounces. They reside in Norton Shores, where Amber teaches geology and oceanography at Muskegon Community College.

Roland N. Alix ’03 (Civil Engineering) has been elected to the Board of Directors of Hubbell, Roth and Clark as a full partner. HRC is a professional consulting civil engineering firm that represents municipal and government agencies across the Lower Peninsula.
Jim and Erica (Valencia) ’03 McDonald (Chemistry) welcomed their first son, Jack David, born October 6.

Matt and Bridget ’03 ’04 Walsh (BS, MS Environmental Engineering) welcomed their son, Liam Matthew, on October 26. Liam was 9 pounds, 8.7 ounces, and 22.5 inches long. His older sisters, Keira and Bebhinn, are very excited to have a baby brother.


Heather Wiitanen ’05 (Scientific and Technical Communication) is happy to announce the arrival of Vienna Leelizabeth, born May 27, 2013.

Jilllan Rothe ’06 (Mechanical Engineering, Business Administration) has accepted a new position within Cat Insurance to become its first power systems–focused rep for all of Asia and Australia. She has moved to Singapore.

Jessica Lynn Engwis ’08 and Charles Joshua Swan ’08 (both Electrical Engineering) were married on October 12. Jessica is a software design leader with General Motors in Milford. Charles is employed by General Motors as a design engineer in Pontiac. The couple resides in Farmington Hills.

Patrick ’07 (Civil Engineering) and Kaari (Nevanen) Flannery ’09 ’10 (Mechanical Engineering, MBA) were married July 6, 2013, in Duluth, Minnesota. The couple lives in the Minneapolis metro area.

Sadie and Andrew Wiltshire ’09 (Mechanical Engineering Technology, Business Administration) announce the birth of their daughter, Josephine “Josie” James, born December 18.
2010s

**Amanda Nerg** ’10 (Business Administration) is pursuing her master’s in acquisition and contract management at the Naval Postgraduate School in Monterey, California, and is conducting research for her thesis related to her career in contracting. She will graduate in December and move on to her next assignment in the Air Force. “I am very thankful for the education I received at Michigan Tech. Without it, I don’t believe I would have been competitive enough in the application process and probably would not have been able to enjoy this wonderful opportunity now,” she says.

Alyssa and **Steven ’10 Tangney** (Mechanical Engineering Technology) welcomed daughter Addison Avarie to their family September 20. She was 7 pounds, 11.5 ounces, and 20.25 inches long.

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**Class notes**

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**facebook**

**What you say**

From the Michigan Tech Alumni Association Facebook page

**Tales from the Thanksgiving Drive of 1985, which surfaced when you were asked to share your most memorable experiences involving snow.**

Worst drive ever. That drive from L’Anse to Houghton was scary. I told everyone that if the car in front of us went in the ditch, so would we, because that was all I could see. Crazy to get hit by a wave off Superior, which immediately froze on the windshield! I remember buying a t-shirt someone made saying “I Survived Thanksgiving Drive 85.”

Driving up from the Chicago area in a sporty Camero (or some such ridiculous winter vehicle), we went off the road in the UP somewhere. Completely buried. Picked up by an Eagle Plow driver and spent the night in his trailer. Dicey. Bonus=Eagle Plow ride!

We were driving on the curve at L’Anse right along the bay. I was in the passenger seat watching waves wash over the car. My roommate was driving and suddenly sounded a bit panicked when he notified me that the brakes weren’t working as we headed towards a huge V-plow coming towards us trying to clear the road. Fortunately friction did its job. The next morning on campus my car stalled out and I opened the hood to find the entire engine compartment of my Olds Cutlass Supreme packed full of snow.

We couldn’t stop because my driver had a tank of piranhas on the back seat and we didn’t want them to freeze to death. So we kept going. It took us 18 hours to get from Detroit to Houghton. We (and the fish) made it.
Letters to the editor

I want you to know how much I enjoy your publication. With so many sources of information vying for attention, it’s not often I read something cover to cover the moment I receive it, but I find that’s often the case with Michigan Tech Magazine. I’m usually impressed by the wide and interesting range of content, always nicely held together with our common thread. The writing, photographs, and attractive layout make it a good read.

Keep up the good work,

Walter Pearson, BSME ’62
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Transitions

Kenneth Kraft
1930–2014

Professor Emeritus of Biological Sciences Ken Kraft, 83, passed away January 12 at his Chassell Township home.

Kraft’s research was in invertebrate ecology, particularly in aquatic environments. His career at Michigan Tech began in 1961, in the Forestry Department, where he taught zoology. He joined the biological sciences department when it was formed in 1962 but rejoined the forestry faculty before retiring in 1996.

“He was a very soft spoken gentleman who had a great smile,” said longtime staff member Pat Asselin. “He was a pleasure to know and work with.”

Kraft was instrumental in setting up Tech’s first research program on Lake Superior through his connections with faculty at the University of Minnesota–Duluth. “He was the nicest guy I knew,” said Professor Emeritus Jim Spain, also of biological sciences. “We did work together on Lake Superior. We once took a boat and a student to Rabbit Island to find a heron rookery. Well, we searched all over and couldn’t find it. We went back to the boat to discover that we had parked it right underneath the rookery.”

Kraft was one of the founders of the Unitarian Universalist Fellowship in Houghton, according to fellow church member Harriet King. “He served as president, did our newsletters, and always brought fresh eggs from his farm,” she remembered.

Keith M. Baldwin
1928–2014

Keith M. Baldwin, 85, passed away January 16, at Marquette General Hospital.

Baldwin came to the Michigan College of Mining and Technology in 1963 as an associate professor of physics. In the early 1970s, Baldwin also worked at the Keweenaw Research Center on vehicle research projects and helped secure contracts for vehicle testing. After early retirement from Michigan Tech in 1984, he partnered with the University to form KMB/Tech, developing lab equipment for physics teachers.

Don Daavittila, professor emeritus of physics, knew him well. “He was very interested in his subject and a very good teacher,” he said. “I enjoyed knowing him very much. Keith was a good guy.”

Physics Professor Don Beck recalled his teaching ability. “I remember him saying that he liked teaching C and D students especially because he was able to see how much they learned as they progressed through his courses.”

Baldwin graduated from Michigan State University in 1950 with a degree in physics and was commissioned upon graduation as a second lieutenant in the US Army. After his discharge he attended the University of Maine–Orono, receiving a master’s in physics in 1955.

Retirements

The following faculty and staff retired from Michigan Tech recently. The years they first came to Tech are listed below.

Becky Christianson, interim director of employment services, Human Resources, 1978

Michael D. Dube, equipment operator II, Facilities Management, 1979


Carol J. Janisse, office assistant 5, Innovation and Industry Engagement, 1993

Rosella M. Juntunen, senior staff assistant, Institutional Equity, 1968

Ruth I. Kramer, engineer/scientist/academic advisor, Materials Science and Engineering, 1984

Steven R. Seidel, professor, Computer Science, 1984

JoAnne Stimac, administrative aide, Mechanical Engineering–Engineering Mechanics, 1999

Calvin L. White, professor, Materials Science and Engineering, 1986
You can help the next generation of Huskies and even provide security for you and the people you love. To learn more, call us or visit our website.

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giftplan@mtu.edu
906-487-3325
www.mtulegacy.org
Blaze of glory

Even if you don’t know a furlong from a fetlock, you’ve probably heard that California Chrome, pictured above, won the Kentucky Derby and the Preakness but lost his bid for the Triple Crown in the Belmont. It’s been a bittersweet journey for his owners, including Steve and Carolyn Coburn, pictured on the far left, and Perry Martin ’78 and his wife, Denise, right. Martin graduated from Michigan Tech with a BS in Applied Physics and owns a materials-testing business in Sacramento, California. But his heart was drawn to the horses when he was a kid hanging out at the track, where he doubtless dreamed of winning thoroughbred racing’s biggest trophy. But even though California Chrome has fallen one jewel short of a crown, the big chestnut colt with a blaze and four white feet has given us all an amazing ride.