

NORTHERN'S Community College

By Rebecca Tavernini

With President Obama shining a spotlight on community colleges, calling them the "unsung heroes of America's education system," and calling on them to produce an additional 5 million graduates in the next 10 years, Northern's own community college programs—those offering one- and two-year degrees—are also at a critical crossroads and often undervalued for the vital roles they serve.

"In the coming years, jobs requiring at least an associate degree are going to grow twice as fast as jobs that don't require college," the president said. He also noted that the U.S. is lagging far behind other nations in the number of residents with at least an associate degree. As a matter of fact, Americans rank 12th, with 40 percent of 25-34 years olds holding a degree, far behind frontrunners Canada, Korea and the Russian Federation, all with 55 percent, according to 2007 figures from the College Board.

"Community colleges are at the center of Americans' effort to educate our way to a better economy," added community college professor and second lady of the United States Jill Biden.

Seeing the same writing on the wall, over the last year, NMU's College of Professional Studies dean, faculty and department heads offering technical and community college programs engaged in strategic planning and integrating NMU's campus-wide Road Map to 2015 into a Road Map for Northern's technical and community college programs. They also sought input from our region's K-12 schools, communities and businesses to better prepare students for the modern-day rigors of vocational education and to plan programs to meet employers' needs, now and in the future.

Charting the future of NMU's Technical and Community College Programs

NMU offers 40 technical and community college programs in which 1,522 students—16 percent— are

"Community colleges aren't just the key to the future of their students. They're also one of the keys to the future of our country."

—President Barack Obama

enrolled. That number has steadily increased over the last 10 years, with a little less than 1,000 students enrolled in 2001. The majority of technical and community college students seeking diploma, certificate or associate degrees, take courses in the Technology and Occupational Sciences and the Engineering Technology departments, which comprise the School of Technology and Applied Sciences. Most of these students come from across the Upper Peninsula, while the programs in general business, construction/ building, food service/hospitality and industrial maintenance draw students

from across the state and beyond.

Some of the main goals of the technical and community college programs Road Map are to:

- Study current needs of industries in the region to provide curricula and develop innovative new programs to fill critical regional needs
- Develop collaborative new interdisciplinary initiatives, mentorships and internships and entrepreneurial experiences and service learning opportunities
- Improve retention and completion rates by working with K-12 schools to ensure better academic preparedness and more collaborations with NMU's programs.
- Offer classes at times convenient to employed students
- Provide more laddering opportunities from certificate or associate degrees to bachelor's degrees (which make it easier to seamlessly move into the advanced degree program)
- Increase marketing of the programs
- Work with alumni to better promote career opportunities and job satisfaction

"The future holds vast opportunities for success and growth in Northern's technical and community college programs," says Paul Lang, dean of the College of Professional Studies. "Improvement of these programs increases the potential for student achievement at NMU and in their professional careers. It is critical that these departments continue to be a vital part of Northern, the go-to university for developing student potential."

Cool programs, hot opportunities

Mike Rudisill, head of the Engineering Technology Department, says NMU's electrical and mechanical engineering programs have great job placement rates, especially outside of the U.P.

Graduates have gone on to work for places like the National Weather Service, major regional utility companies, defense contractors and their own manufacturing businesses. Teachers graduating with the secondary education industrial technology degree are also in high demand.

In Technology and Occupational Sciences, the fastest growing program is industrial maintenance, which went from 30 students up to 80 in six years. The new welding certificate is expected to attract even more students to fill a national shortage.

Sustainability is also a growing field. The alternative energies minor is popular not only with applied sciences students, but also with those in business and environmental science. Students get to work with a small wind generator and a solar array and stay current on emerging technologies.

A bioenergy class worked in conjunction with the Chemistry Department on a project that arose from two sources of waste: NMU's waste recyclable paper, and waste algae water, left over from chemistry experiments. Because algae, through photosynthesis, consumes carbon dioxide and emits oxygen, the waste paper was soaked in the algae water to reduce carbon emissions. The students then created cylindrical briquettes with the paper that could be burned as a clean fuel source. Students in the class also learned how to make 100 percent biodiesel fuel, tested it in an oil furnace, and found



Engineering students with the 2005 Baja vehicle

that it burned cleanly and efficiently when compared to fossil fuel-based heating oil.

Then there's the hands-on, feet-on learning with the Engineering Technology Department's Baja vehicle and hybrid mini-Baja car. This summer, six NMU students and faculty sponsor Robert Marlor competed at the 2010 Society of Automotive Engineers Baja West Race, an inter-collegiate design competition. Teams of university students from around the world design and build small off-road cars with engines of the same specifications, that are highly maneuverable and can withstand extremely harsh terrain. The main event is an exciting four-hour endurance race in which cars are able to race at top speed over a motocross race track. "From observing other teams, our breakdowns in the pits, talking to

Working with partnership businesses also energizes many programs, offered in response to their need for skilled workers.



race professionals, and the trip in its entirety, we learned a semester's worth of knowledge," says student Matt Barbercheck.

Powerful partnerships

Working with partnership businesses also energizes

many programs, offered in response to their need for skilled workers.

For instance, the School of Technology and Applied Sciences works closely with Cliffs Natural Resources to prepare entry-level technical employees for both the Tilden and Empire mining/processing operations. Associate degree programs in industrial electrical and industrial maintenance, along with similar baccalaureate programs, prepare graduates for employment with Cliffs. Additionally, an apprenticeship program is being developed that will serve the mining operations as well as the proposed nugget processing plant expansion. Cliffs management views the technical programs at NMU as virtually a sole source provider of its entry level technical talent and relies on NMU to provide on-going factory testing and skill upgrade training for existing workers. This testing and training requires labs equipped with the industry's highest technology manufacturing and processing components, which the company assists NMU in acquiring.

Similarly, working with Michigan Works! to help promote the aviation maintenance technology certificate and associate degree programs has resulted in increased enrollment, and with partner American Eagle, students are able to work part time at the company's repair facility at Sawyer International Airport while still earning their degree, and many (30 to 50 percent) have been hired right out

of the program.

Collaborating with Upper Peninsula Power Company and the Lake Superior Community Partnership Foundation and Midwest Skills Development Center resulted in the electrical line technician program. The power company and other utilities were also instrumental in helping NMU secure the \$673,000 grant to start the electrical power technician associate degree program to fill a critical need for skilled employees.

And with orthopedic implant design and manufacturer Pioneer Surgical Technology, students in the computer numerical control technician certificate program learn at the Jacobetti Center and at the company's plant, are offered an internship and trained for full-time positions after graduation.

"Mechanics, welders, electricians, pipefitters, make quite a good salary, sometimes a much higher salary than a person with a bachelor's or even a master's degree," says Frank Chong, deputy assistant secretary for community colleges at the Office of Vocational and Adult Education in the U.S. Department of Education (see page 12 for an interview with Chong). "Many career-technical fields have average wages in the \$50-60,000 range. I wouldn't necessarily equate the type of degree you get with your salary in today's economy because it's all about job demand, and some of that demand right now is in the career-technical fields."

Challenges, rewards

While the future is bright for many careers in the technical and community college fields and for attracting more students into these programs, getting them into college is only part of the battle. Nationally, just 25

percent of community college students earn a degree or transfer to a four-year institution within three years and more than half never do.

The retention rate for NMU students in these programs is 38 percent, compared with the rate of 50 percent for NMU baccalaureate degree students.

That's because students in community colleges and NMU's less-than-four-year degree programs generally face more challenges than students in baccalaureate programs. On the national level, 80 percent or more of students attending community college are disadvantaged, academically, economically or in other ways. At Northern, 63 percent have academic records that indicate they will need special assistance to succeed in college. Economically, approximately 50 percent of NMU's technical and community college students receive PELL aid (for financially disadvantaged families) in comparison with 32 percent of NMU's baccalaureate students. And 10 percent of students in these programs are minorities, compared to 2 percent overall at NMU.

However, overcoming those obstacles and beating the odds is a key ingredient to the success of NMU's technical and community college program graduates.

"One of the biggest positives to come from two-year programs is that students develop a real sense of self-confidence," says Daryl Kobie, technology and occupational sciences department head. "They feel successful completing a two-year program when they really had no aspirations to go to school. And then many go on to get a baccalaureate degree, something they never ever would have considered prior to completing a vocational program." ■



NMU's TCC Programs

Associate Degrees

Applied Child Development
Art and Design
Automotive Service Technology
Aviation Maintenance Technology
Building Technology
Climate Control Technology
Clinical Laboratory Technology
Computer Information Systems
Criminal Justice
Electrical Technology
Engineering Design
Food Service Management
General Business
General University Studies
Health Information Processing
Industrial Maintenance
Law Enforcement
Liberal Arts and Sciences
Office Information Assistant
Pre-radiography
Pre-respiratory Therapy
Pre-surgical Technology
Radiography
Respiratory Therapy
Surgical Technology

Certificate Programs

Automotive Service Technology
Aviation Maintenance Technology
Clinical Assistant
Computer Numerical Control Technician
Cosmetology
Heating, Ventilation, Air Conditioning and Refrigeration
Office Services

Vocational Diploma Programs

Advanced Law Enforcement
Electrical Line Technician
Local Corrections



Leonard Beck

The Future of Education

Dr. Frank Chong, deputy assistant secretary for community colleges at the Office of Vocational and Adult Education in the U.S. Department of Education, was a featured speaker at NMU’s Uniting Neighbors in the Experience of Diversity (UNITED) Conference, where he presented his speech, “The Audacity to Finish.” Prior to the presentation, he sat down with NMU student Jeremy Johnson to discuss current initiatives of the U.S. Department of Education and the role of associate, certificate and technical degree programs in today’s global market.

Q: What does your job in the Office of Vocational and Adult Education involve?

A: My primary role as assistant deputy secretary in the U.S. Department of Education is to really work on the presidents’ college completion goal. Last July, President Obama came up to Macomb (Mich.) Community College and set out a goal of restoring America as having the highest graduation rate in the world by 2020. It’s basically a 10-year plan. By 2020 we need to lift our

graduation rate from 40 to 60 percent, and that would restore us as the best educated and most competitive work force in the world.

The reason we need that is because the more educated our young people and our mid-career people are, the better off our economy will be. Where I work—the Office of Vocational and Adult Education—we’re responsible for all of the adult literacy, GED programs and the career technical education programs. We help students look at both associate and bachelor’s degrees, as well as industry-recognized certificates because not everybody is going to

get a bachelor's or an associate's degree. The goal, though, is to get them started—at least have a certificate that they can become employable with. Then they can look at education with a career ladder approach, if more education is needed or desired.

But we always encourage students to go back and get as much education as possible, not just for the job piece, but for one's own personal benefit and having an informed society and some of the other intrinsic values of being an educated person.

Q: What are some of the initiatives right now for the U.S. Department of Education?

A: I'm part of a team of folks that work to really lift community colleges to a prominent place in the higher educational system. Often in the past, community colleges were seen as high schools with ashtrays—as they were often referred to. However, we're learning that 45 percent of all students that go to college, go to a community college. It's a large sector of students.

So it's very important for people like myself to visit places like Northern Michigan University to talk to people about what's working and what's not working, and ask how can the federal government be more supportive. Too many students are starting, but not finishing, and it's better for us to come to Michigan and ask the students themselves, and the faculty, rather than try and figure out in Washington why that is happening.

Q: Is there more emphasis placed on community college and vocational/technical program opportunities right now than in the recent past?

A: Historically as the economy goes south, enrollment goes north. Community colleges throughout the nation have been experiencing record enrollments. But states are experiencing very difficult financial challenges, so we have to figure out different ways of providing education. Quite honestly, we're looking at different models, innovative models, things that will get us better time-to-degree. We've been very good at access and getting students into programs and pretty good at keeping them in, but we haven't been as good at getting them out with a degree. We're trying to get foundations, the philanthropic community, and corporations and the business sector



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involved, too. They have a great stake in whether America reaches the president's goal.

Over the next decade, something like 8 out of the 10 fastest growing professions will require some type of college degree. The most important statistic is the one that reveals that people who do not have college degrees have twice the unemployment rate as those who have degrees.

Q: Some people hold the perception that one- and two-year degrees and vocational-type degrees are for academically challenged students.

What would you say to parents, teachers and guidance counselors about these types of educational opportunities?

A: What I would say is that every child learns differently; every person has different skills and talents. I was at the Jacobetti Center today and I was looking at some of the work these students were doing with automobiles and helicopters. I couldn't do that even though I went to Harvard and have a doctorate degree. I think our society needs both, not one or the other. We need graduates who are able to heat our homes, make sure the lights go on and develop sustainable energy for our environment, and that can happen either at the university level or the community college level.

Q: What is your impression of the associate, certificate and diploma programs at NMU?

A: I think they're very impressive. I think they're looking at really meeting local industry demand. I know there was a paper mill that shut down recently and through the Trade Adjustment Act Funds, NMU's welding program is retraining some of those folks. I toured and learned about your aviation maintenance program and understand that American Eagle has a maintenance facility at the local airport, so a lot of the graduates from here will end up getting jobs there or in the region. I also learned about your culinary programs. The Food Network has made culinary careers really popular.

People have to follow their passion, and if your passion is food or automobiles or engineering, then you should follow it. I think the people I met at the Jacobetti Center today are following their passions and interests. They'll enjoy their chosen careers because of that. ■



The Evolution of the Jacobetti Center

An integral part of Northern Michigan University's continued growth over the past 30 years can be credited to NMU's School of Technology and Applied Sciences, housed in the Jacobetti Center, a division of the university that has more than fulfilled its original intention of preparing individuals for skilled trades.

The center, and NMU's role in vocational training, got its start as seven school buildings scattered throughout the Marquette area, known as the Area Training Center and NMU Skills Center. The training center began in 1962 under President John F. Kennedy's Manpower Development and Training Act. It was part of JFK's New Frontier concept of government. The idea of the act was to retrain people who had lost their jobs or who were without skills for industry.

The Area Training Center's first building was an old railroad depot on Spring Street that became a stenography, data processing and machine tool

classroom. Students pursuing a post-secondary degree, along with high school students interested in vocational training, took classes and learned applied skills at the various sites.

Training in occupational skills, namely automotive, domestic service operations, metals and office occupations, was provided to more than 4,000 men and women, with more than 86 percent placed in jobs.

After several years and reduced federal spending on the center, it became obvious that it would be more efficient to have the sites located under one roof. Michigan Representative Dominic Jacobetti was interested in the project and plans were developed in 1977. On July 28, 1978, Jacobetti, NMU President John X. Jamrich, Senator Joe Mack and Michigan Governor William Milliken were present for the groundbreaking



The center under construction

of the \$16.5 million facility just north of campus on Sugarloaf Avenue/County Road 550.

In April 1980, the center was named the D. J. Jacobetti Vocational Skills Center. In 1981, the center, with five acres, or 225,000 square feet, opened its doors, ready to provide a strong Upper Peninsula labor force in business and manufacturing.

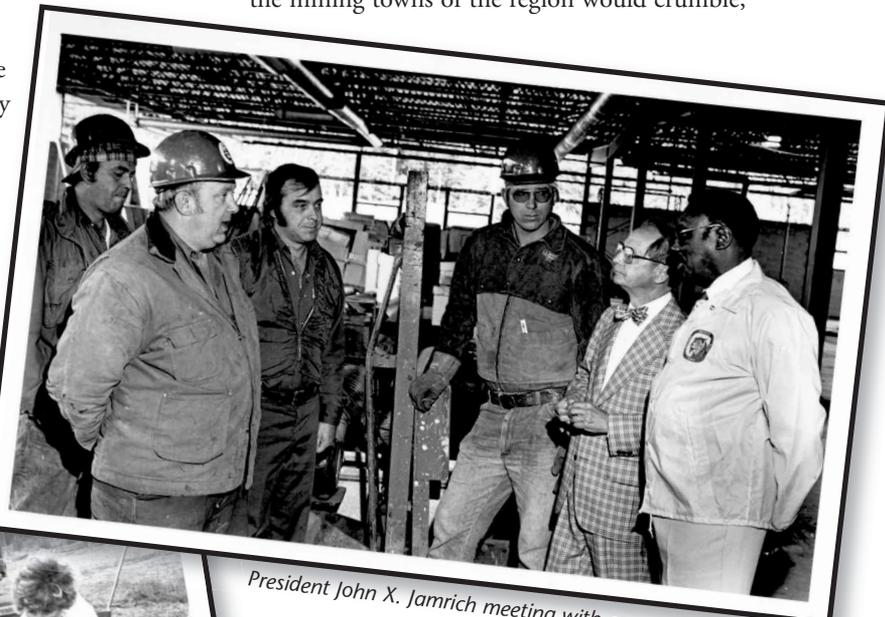
By the late '80s, NMU's Department of Industry and Technology joined the center. The department had previously focused on teacher training, but was steadily beginning to train individuals for positions in industry. This union formed what is referred to today as the School of Technology and Applied Sciences, made up of the Engineering Technology and Technology and Occupational Sciences departments.

Today, in what is now called simply the Jacobetti Center, more than 1,200 students learn a wide range of skills, from automotive maintenance to electrical engineering to food service management to cosmetology. The NMU community and area residents also enjoy the student-run Culinary Cafe and gourmet restaurant Chez Nous.

1905 when 10 buildings were destroyed, five men were killed and 10 more were left injured.

Some say that this explosion jarred the chimney on Longyear Hall and led to the fire that destroyed the building.

Later, New Process Metals Company took over the property. The company was created as a result of John Tyler Jones' desire to perfect a furnace able to process low-grade iron ore, fearing that without such an innovation the mining towns of the region would crumble,



President John X. Jamrich meeting with construction workers.



Dressed for digging, June Jamrich (right) and two unidentified women initiate the center's groundbreaking in 1978.

The land the center sits on has an interesting connection to the area's industrial past.

In 1870, the property was used by the Lake Superior Powder Company, a manufacturer of gun and blasting powder, which was essential to the community's growth at the time. In its first year, 25 buildings were erected on the grounds, and the company made headway until a series of explosions began in 1881 and ended with the last one in

as did the lumbering towns. Under the advice of J.M. Longyear, who held many mining properties, Jones came to Marquette to further develop the process of recovering iron ore by burning it in a 120-foot revolving tube turned by an electric motor. Unfortunately, iron ore was abundant during Jones' lifetime and his furnace met with one problem after another. (The iron process did become practical and was adopted by industry in the 1940s.) The plant was closed and

dismantled in 1915.

Nearly 100 years later, the concrete remains of the New Process Metals Company can still be seen on the east end of the parking lot of the Jacobetti Center, marking this area's history of industry and continued dedication to the Upper Peninsula's growth and innovation. ■

From A Sense of Time by Russ Magnaghi; Northern Michigan University: The First 75 Years by Miriam Hilton; and the School of Technology and Applied Sciences website. Photos courtesy of the Central Upper Peninsula and NMU Archives.

Filling a Need in the U.P.

By Cindy Paavola '84 BS

Vocational-technical programs at Northern Michigan University have always played an important role in preparing workers for the Upper Peninsula workforce. Today that role appears to be even more critical. A study prepared for Operation Action Upper Peninsula in 2009 by economics professor Tawni Hunt Ferrarini analyzed the anticipated U.P. workforce needs through 2015, outlining fields where there is projected growth and those that will have high replacement rates to absorb retirements.

“The study was done to assist the U.P.’s private and public sector to make data-driven decisions based on the projected areas of growth in the region and the areas expected to decline. The market is dynamic, and

data analysis of this type helps us understand where we are and gives us a feel for where we could head in the future. Both help the private and public sector devise 5- and 10-year workforce plans,” says Ferrarini, who is the director of NMU’s Center for Economic Education and Entrepreneurship. Ferrarini was also recently appointed to a second two-year term as NMU’s Sam M. Cohodas Professor, a position charged to work with the campus community and regional organizations in the areas of economic analysis and development.

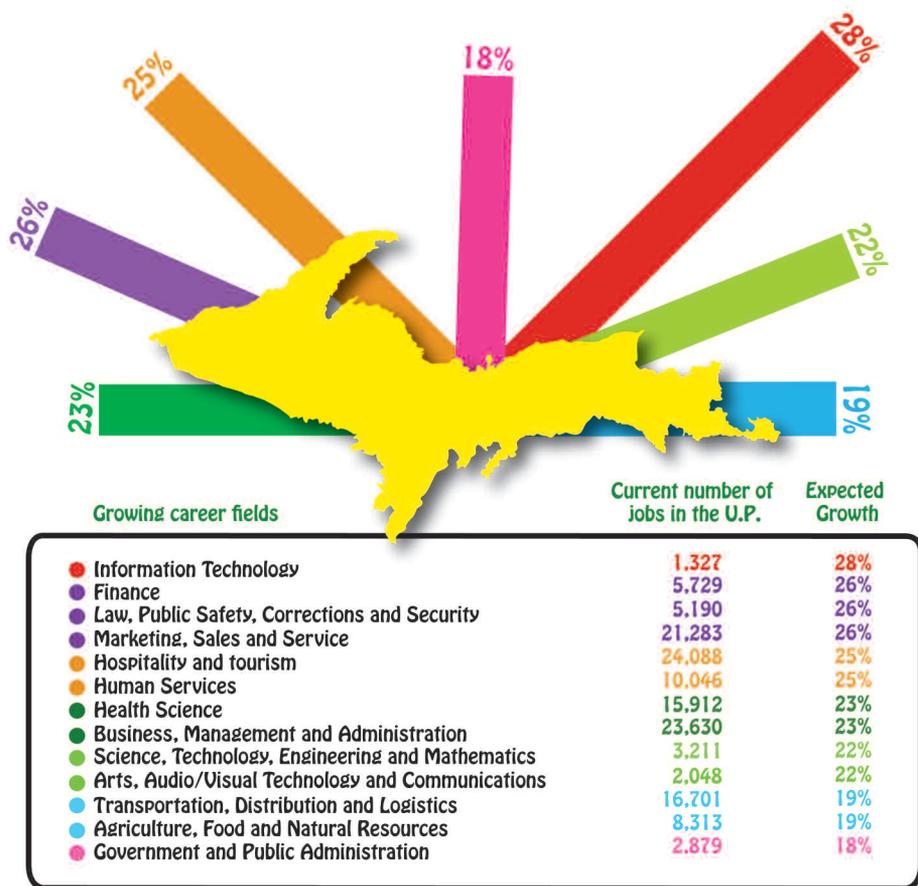
While the study revealed one fact already well known to the U.P. business community—that there is an ongoing trend of outmigration of the area’s young people—one surprise result was the level of outmigration

by mid-career professionals. Also, the study confirmed that many of the high demand U.P. job areas of the next five years will be in professional fields that require associate degrees, certificates or diplomas.

In terms of both number of anticipated jobs and percentage of expected growth, the highest areas of need in the U.P. through 2015 will be in the fields of hospitality and tourism; business, management and administration; marketing, sales and service; transportation, distribution and logistics; and health science. The areas with large percentages of expected growth will be in information technology; finance; law, public safety, corrections and security; human services; and science, technology, engineering and mathematics.

Ferrarini adds that a number of these jobs will have good salaries. “There is a misconception nationally that jobs that require less-than-a-baccalaureate degree pay poorly, and that’s not necessarily true nationally or in the U.P.”

She recommends that students entering college who want to live in a particular geographical area, such as the Upper Peninsula, should be proactive in finding as much data and research on job projections for the area as possible. “Research the market and get informed about what is transpiring. Make a plan that helps you provide value to someone else in need of your skills, experiences and education. You are competing for jobs with people around the globe—even in the Upper Peninsula. Students should devise a plan for the future and be prepared and willing to learn for life because their jobs will keep changing throughout their careers.” ■

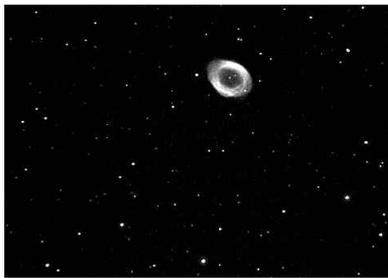


Telescope Mount Makes Science Possible

A unique collaboration between the engineering technology and physics departments has resulted in a much clearer view of the universe. The telescope in the NMU observatory on the roof of West Science has a new mount, enabling it to follow the sky's motion more accurately—within small fractions of a degree—so it can be used to take time-exposure photographs.

“We’re actually able to do science with this now,” says physics professor Mark Jacobs, who teaches astronomy and spent a one-year sabbatical working on the project. “In its previous state, it was only good enough for observations by eye—more for entertainment value than science. But the most interesting things in the sky are not visible to the eye, even with a telescope, and no one practices professional astronomy that way anymore.”

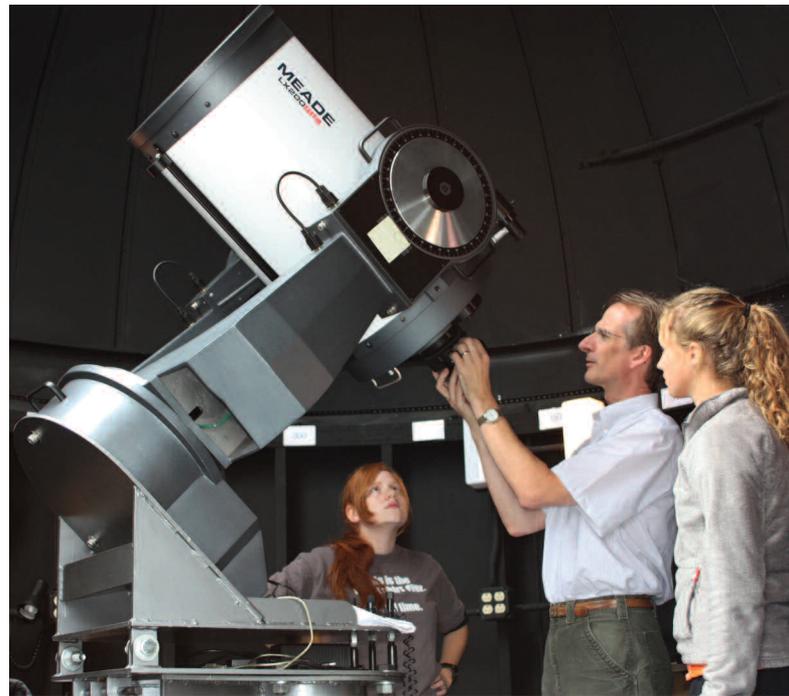
Jacobs said the old mount wasn’t properly balanced or capable of being finely adjusted to achieve the pinpoint accuracy required to use a camera that can show the dim objects. After looking at commercially available options for a new one, he decided to custom-design the equipment. It became an interdisciplinary project when he recruited engineering technology instructor Cale Polkinghorne’s expertise in cutting and welding the steel.



The ring nebula, also known as M57, in the constellation Lyra. The raw 15-second exposure image was processed by Amelia Shirtz to achieve this final image.

“It was something neither of us could have done alone,” says Jacobs.” It’s fun to see inside someone else’s world once in a while. I spent many afternoons in the machine shop at Jacobetti.”

The “surprisingly low-budget” effort cost less than \$1,000, but will enhance the potential for research and possibly lead to advanced astronomy courses beyond the introductory level currently offered. Jacobs said an example of a practical use for the new system might be studying variable stars, which slowly cycle from bright to dim. Students could measure the length of the cycle and the extent of variation between a star’s highest and lowest light output.



Physics professor Mark Jacobs with student Amelia Shirtz, who assisted with the project, and freshman fellow Andi Shepherd.

Student Amelia Shirtz is making a light box to calibrate the camera and optimize its pixel-to-pixel sensitivity. Fellow student Andi Shepherd is measuring the dark current—electronic “noise” produced by the camera even when no light is being measured. The sensitivity and dark current measurements will allow images taken with the camera to be calibrated for scientific measurements.

“More thought went into this project than I realized,” Shirtz says of the experience. “Jacobs has pages and pages of calculations and notes from the design phase. I learned that measurements are very important and I got to see him use equations I learned in my introductory physics class, like the center of mass.”

A computer operates the telescope and camera. The latter replaces the telescope eyepiece, but has no built-in optics because the telescope does all of the focusing with its 16-inch diameter mirror. Bigger mirrors are capable of capturing brighter and more detailed images. That’s why the Hubble telescope’s primary mirror, with a diameter of 94.5 inches, has produced vivid, dynamic images of planets, stars and galaxies.

“That’s a totally different league, but with the renovations to our observatory, we can take pictures and get scientific information out of them. It’s not Hubble, but for us, it’s pretty good.” ■

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Alumni in action

BIG (APPLE) HAIR

By Rebecca Tavernini



When Troy Revord's friend talked him into taking a cosmetology course with her at Northern because she didn't know anyone in the class, **Revord '93 Voc.** turned a corner in his life—one that led to the corner of Fifth Avenue in New York City, overlooking Central Park.

As a hairdresser at the swanky John Barrett Salon, which sits atop the Bergdorf Goodman department store, Revord styles the rich and famous, and everyday New Yorker (if there is such a thing), while enjoying one of the best views of the city, and the life he had dreamed of.

But it wasn't a career he had even considered, although he recalls that as a child, he would often give his sister's (**Jennifer '02 BSN**) Barbies bobs, to her dismay. In fact, he nearly dropped out of the cosmetology program at NMU. "I wasn't crazy about the idea of what I thought would be working on old ladies' hair," he says. "But my wonderful instructor, Myra [Grimes], believed in me and pushed me. She encouraged me to stick with it, and had me

compete in VICA (Vocational Industrial Clubs of America), which let me do more artistic styling. That kept me interested in school and gave me the chance to travel. I made it to nationals and placed fourth."

That traveling, and his own travels to Europe, helped fulfill some of his wanderlust, though he was disappointed with most of the cities he visited. "They just weren't big enough." On a trip to New York City, he instantly knew he had found the place he wanted to be. "But I thought to myself, I'm just a boy from the U.P., I can't move to New York City."

After graduating he worked in a salon in his hometown of Marquette for a number of years, then set off for the bright lights of Baltimore, where he developed a devoted clientele. But the dream of New York kept tugging. "I came to a point where I knew if I didn't do this I would regret it. I realized it was only me who was stopping me."

Circumstance stepped in as well. One of his Baltimore clients was going to be a bridesmaid for her sister, who happened to be the fashion editor for *Cosmopolitan*. When the wedding party was getting their hair styled at John Barrett, the salon owner asked Revord's client who had done her hair. He told her to tell Troy that if he ever came to the city, he had a job waiting for him.

Ten years later, Revord reports, "I'm very happy where I'm at in my career. My job is creative and in New York City you make a lot of money. Tipping is huge. And I have fun talking to people all day."

On the other hand, all that talk-

ing and entertaining—and staying on schedule—can be exhausting, he says.

"New Yorkers aren't as sharing about their personal life as people are elsewhere. They all have a shrink for that," he jokes. "And they're very specific. They tell you just what they want done with their hair, and they'll instruct you how to do it. But they do that with everything, like how they want their coffee made at Starbucks."

Being at the center of the universe, Revord has also been instructed by a number of stars, including Fergie, Anjelica Huston, Courtney Love and the late Brittany Murphy. "The bigger the celebrity, the easier they are to work with," he finds. "The less-known and the ones on the way up have a more diva-like attitude." While generally stylists will go to a celebrity's hotel or apartment for the appointment, some luminaries, like Martha Stewart and Kelsey Grammer, come into the salon and sit with everyone else.

Revord himself has been in the limelight on "Split Ends" on the Style Network and other cable shows.

But he takes it all in stride. "What I learned at NMU is confidence. I left with a very firm foundation. Now, whatever happens during the day, I try to remind myself that it's just hair, and not take it too seriously."

Still, on his way home on the subway to his hipster neighborhood, he can't help but take in the hair trends of the passengers, like the popular Gwyneth Paltrow-inspired shoulder-length bob, which would look amazing on Barbie. ■



By Rebecca Tavernini

Coffee, tea or rental property?

It's the stuff of romance novels... A beautiful young woman calls to have a leaky faucet fixed in her apartment. In walks the dashing landlord. They fall in love, get married, and together manage 260 rental units, open four drive-thru coffee shops, a beverage distribution company and construction business. And have three children in the space of a year and a half—two of them twins.

So they may not be walking peacefully off into the sunset together, but **Melissa '97 AB and Mark '93 BS Curran** are enjoying being a husband-and-wife team, complementing each other's skills they learned at NMU.

Melissa, who has an associate degree as an office information assistant, handles the bookkeeping for the Marquette businesses, billing, collections and payroll, manages tenant leases, orders coffee beans and syrups, and oversees office and shop employees. Mark, who has a management degree, "is the brains behind it all," as Melissa says. "He comes up with the ideas and works to put them into play. If it weren't for him I wouldn't be managing all of our businesses."

She adds, "And if it weren't for NMU, we wouldn't be doing what we're doing," explaining that nearly all of

"Our business is wonderful because we're here to make people happy, whether it's giving them a perfect cup of coffee or finding their perfect home to live in."

their perfect home to live in."

While extremely busy, Melissa is happy also, doing what she loves, and being a mom. "I just always wanted to work in an office," she says. "Both my mom and grandma worked in offices while I was growing up and I always enjoyed visiting them and watching what they did. After starting out in the four-year program, I realized that I could do just as well by having an associate degree."

During school, she had an internship at State Farm Insurance in Marquette that led to regular employment after she graduated, and before she met Mark. "NMU taught me a lot—but getting out into the real world



Melissa and Mark with Riley and twins Logan and Lexi.

taught me just as much! I'm so grateful for that internship. And every day I use what I learned at NMU and I appreciate that. The professors taught me so much about what employers want out

of an employee and how to give it to them."

In the real world she's also picked up some impressive barista skills. "Have you tried the pumpkin spice latte or hot caramel apple cider with whipped cream?" she asks out the coffee shop window, with a big smile. Happily ever after. ■

their Cruise-N-Coffee employees are NMU students, and many of their coffee clients and rental property tenants are NMU faculty, staff and students. "I really enjoy working with our Cruise-n-Coffee employees—we work well with their school schedules, and they're such great girls." The Currans currently own two coffee shops, figuring four, with two out of town, was just too many when the twins came along. They are also just completing two new buildings at their Cedarville Townhomes property in addition to managing other apartment buildings and rental homes.

"Our business is wonderful because we're here to make people happy, whether it's giving them a perfect cup of coffee or finding

Traveling by air can be a nerve-wracking experience, especially when you start to imagine all the things that could go wrong. But it's people like **Travis Steinmetz '01 AT** who are working 'round the clock to ensure planes are well maintained who make flying one of the safest forms of travel.

"The most important thing that I learned at NMU was about the integrity that is required in the aviation field. The dedication to detail that aviation technicians employ is extremely important to keep people safe when they travel and conduct business while in the air," says Steinmetz, who works for Executive Jet Management in White Plains, N.Y. The company is the industry leader in aircraft management of business jets and charter aviation.

Steinmetz is one of a crew of four on the overnight shift who perform maintenance on not only the EJM fleet, but on aircraft of parent company Netjets Aviation as well.

"I work on about 20 different types of aircraft," he explains. "The diversity of the aircraft that we maintain forces me to push myself to always be learning new systems and maintenance techniques."

Sitting in the cockpit, albeit on the ground, also forms a connection for him with his late grandfather, **Urban Steinmetz '65 MA**, who was a private pilot, and flew as a B-17 tail



By Rebecca Tavernini

Air Repair

gunner in World War II. Plus, Steinmetz says, "I grew up loving aircraft and the space program, and I thought that maintaining aircraft would get me involved in something that I love."

He and his family also share a history of love at Northern. His parents, **James '74 BS and Theresa (Kerbyson) '74** met at Northern ("and are Wildcat hockey fans to this day," he reports). Travis and his wife, **Apryl (Hagen) '02 BS**, got married while attending NMU. Today the couple enjoys playing together in the Praise Band at their church. In the

family tradition, Travis's sisters, **Kerry Fine '95 BS, '05 MA** and **Tonya '99 BS**, are also NMU alumni.

While the ups and downs of the airline industry don't affect his employment, he says the attacks on September 11 did, when he was working at American Eagle at Sawyer and was laid off because of the hardships the events caused the airline.

He landed in a good place, though. With EJM backed by mogul Warren Buffet, and Steinmetz's skill and dedication, it should be smooth flying for both him and the company's executive passengers. ■



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Entering a high-energy career

By Kristi Evans

Sarah Paris '10 BS, '08 AAS went absolutely nowhere after graduation and has her NMU education to thank for it. But let's quickly dispense with any negative assumptions. Paris was a good student and well-equipped to launch a successful career. It's just that when a valuable opportunity surfaced, she did not have to step foot off campus to pursue it.

In fact, when Paris started a full-time internship with Johnson Controls last May, she worked primarily in the same two buildings she called "home" during college: the Jacobetti Center, where she took most classes toward her degrees in climate control and construction management; and the University Center, where she spent four years with Dining Services. Going nowhere was fine with Paris if it meant prospective employment with a company that helps buildings and organizations achieve sustainability.

"Johnson Controls does exactly what I'm interested in," she says. "I'm glad the timing worked out that they were starting a project at Northern as I was finishing my degree. I never wanted to build buildings. I liked heating and air-conditioning more. But I also like the project management side and that's what my internship involves. Pretty much everything related to the project channels through me. My boss has the final say, but I've learned a



Sarah Paris talks with NMU sports facilities assistant director Carl Bammert as she does a water audit at the Berry Events Center.

lot about the process."

Paris has experienced all three branches of the company—solutions, systems and service—to varying degrees. She is primarily involved in the management portion, or solutions. The service section took her into mechanical rooms so she could understand commercial units because her education had focused more on residential. She has also seen how systems are controlled online.

NMU hired the Milwaukee-based Johnson Controls for performance contracting on campus facilities with high energy consumption. This included evaluating the systems and recommending modifications that would increase efficiency and lower operating costs. Paris was in charge of the lighting crew in the University Center and Jacobetti over the summer.

"We retrofitted lights, either replacing entire fixtures or bulbs for energy savings," says Paris. "We also installed devices so the mechanical systems can be controlled from the Services Building and turned on or off at certain times. And there are occupancy sensors so if no one's in a room, the lights will shut off automatically."

While enrolled in Northern's associate-level climate control program, Paris won a 2008 Michigan Breaking Traditions Award.

Plumbing was Paris' first choice for a career. The Chicago native applied to take the test for a local apprentice program, but was unsuccessful in two attempts. She trained for a vet nurse position at a cat-only hospital, promising herself that if she wasn't happy by age 25, she would go back to school.

"I started looking for heating and air-conditioning programs and Northern was one of the first schools I saw on my web search. The location was appealing because I like hiking and the outdoors. I had always lived by Lake Michigan, so a larger lake was a bonus. I never thought I'd leave the city, but I got used to it after a year."

While enrolled in Northern's associate-level climate control program, Paris was nominated for and won a 2008 Michigan Breaking Traditions Award, which recognizes students who have been successful in career and technical education areas that are nontraditional for their gender. Because she also wanted to obtain a bachelor's degree, she studied construction management simultaneously.

Paris' internship was scheduled to end at about the time this story went to press. If the resume-boosting experience leads to permanent employment with Johnson Controls or a similar company, she will have demonstrated—through her extended stay on campus—that sometimes going nowhere can really take you places. ■

Harnessing her Personal Power



By Kristi Evans

Brzoznowski in pole climbing gear, during her line tech training at NMU's field station and taking measurements at her office in Madison, Wis.

Why would a woman with a fear of heights willingly put herself in the position of having to climb 50-foot poles?

"I wanted more for my daughter."

Suzanne Brzoznowski '08 BS '06 Voc. was a single mother working three minimum-wage jobs and living with her parents. She was desperate for a career that offered stable employment and a decent income, allowing her to take care of young Justine—now age seven—on her own.

"A man at church knew some guys who went through the electrical line technician program at NMU and said I should look into it," she says. "I've always loved math and knew that would involve a lot of numbers with volts and ampacity [or electrical current rating]. I also loved the physical aspect, but I didn't realize my fear of heights was that bad until I went up that pole and realized the only things stopping me from falling were my gaffs and belt. It was hard, but I stuck with it."

Shortly before completing the vocational diploma program, Brzoznowski sat down with former dean Bill Rigby, who encouraged her to consider re-enrolling in a bachelor's degree program based on positive

reports he had received from instructors about her aptitude for book work.

"I thought hard about that, wondering if I could continue and whether it would benefit both my daughter and me. I also talked with a few people in the line tech industry to see what it would be like if I started working right away. They said when you first graduate, you have to use gaffs all the time. The thought of being tethered to a pole most of the time was too much for me. It would have been fine if I knew I would be doing most of my work from a bucket truck. So I decided to continue on to the electronic engineering technology program in the hope of opening other doors."

One week after walking in NMU's commencement, Brzoznowski started as a design engineer for Realtime Utility Engineers in Madison, Wis. The consulting firm provides engineering services to electric utilities nationwide for substation and transmission lines, along with wind park collector systems. Brzoznowski designs and sizes the cables that run underground and connect to the big turbines in wind parks, then works with contractors to build them. Her field work takes her as far as Arizona, but most of her time is spent on the phone or computer at her desk.

Despite her status as the first female graduate of the line tech program, Brzoznowski doesn't consider herself a groundbreaker. But she said being the only woman among 30 students at NMU proved helpful in adapting at Realtime, where she's one of three women among 100 employees.

"It's me and the boys again," she jokes. "Apparently I took on some of that mentality from being surrounded by guys at Northern because I get along really well with everyone at the office and in the field. They're amazing people to work with and I love the fact I'm doing something that is kind of helping the earth with the turbines. It's something I started learning about in school and I really thought it was the coolest thing."

"NMU was instrumental in getting me where I am today—not only the education, but the relationships I had and still have with the instructors. They fostered the attitude of 'You can do this and we have a support system if you need help.'"

Now in pursuit of her professional engineer's license, Brzoznowski continues her career ascent. But she's happily doing it with both feet planted firmly on the ground and no fear of the heights she might reach. ■



The Traveling Tech

By Rebecca Tavernini

Theresa (Norberg) Williams '96 AT didn't expect to find herself eating whale in a muktuk contest in the Arctic Circle as part of her career as a traveling medical technician, but she couldn't have been more delighted. Even if it didn't taste very good.

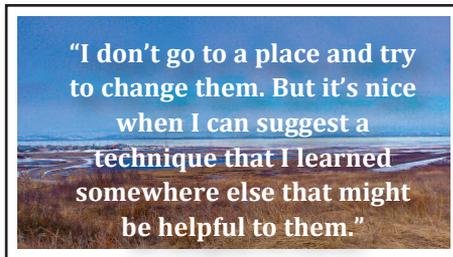
"I like seeing new things, trying new things," she says. Which is just what she got to do during her contract working in a hospital in Kotzebue, Alaska, and what she enjoys about being able to choose the location and duration of her work assignments. Because many rural areas have trouble attracting and keeping health professionals, lucrative short-term contracts are offered to those not only looking for adventure but also looking to lend their valuable skills to communities in need.

This particular hospital serves 13 different Inuit villages. "The people there are so warm, and there is so much culture," Williams says. "They took me fishing and shared their traditions, which are still strong. If someone in town kills a seal, the local staff will just leave work to go help and celebrate."

With 90 percent of the health professionals at the hospital being traveling contract workers, Williams also enjoyed meeting so many people from different places. Just as she did at two other assignments she has had so far, both in Colorado.

She's been doing this for a few

years now, working for four companies who offer her assignments, which she is free to accept or decline. They pay for her flight, housing, meals and rental car or mileage. She prefers contracts that go from the fall through the spring, and then spends the summer with her husband, grown children and grandchild in Chatham. "It does get lonely, being away from your family," she says, but her husband comes to visit her and they get to explore new parts of the world, while she makes excellent income and does what she loves.



The lifestyle does have other challenges too. "You have to be ready to jump into a new hospital, learn new technologies and the way they do things. Many protocols are the same anywhere you are, but you need to try to fit into the culture. I don't go to a place and try to change them. But it's nice when I can suggest a technique that I learned somewhere else that might be helpful to them."

She picked up some of those techniques when she worked at Munising Memorial Hospital and at St. Francis Hospital in Escanaba, where she had also interned. "I can't thank Northern enough for sending

me to St. Francis," she says. "The people there taught me so much. And I learned patience and the willingness to teach someone else what you've learned from my professors at Northern. I enjoy passing along that baton."

Working with human fluids, Williams says it's also fascinating how people in different parts of the country will have different hemoglobin or sodium levels in their blood, due to elevation or regional diet. And she can't beat the rush of being part of a team trying to figure out what's ailing a person, or being responsible for preparing and supplying the blood and plasma that saves someone's life. "Even little things are very gratifying, like when a woman comes in for a pregnancy test and she really wants to be pregnant, and being able to run the tests and tell her she is."

Because she loves what she does and wants to open up more opportunities for herself by becoming certified to practice in all of the states, Williams has returned to Northern for a bachelor's degree as a clinical scientist, which she will complete in December. When she passes her board examinations she can travel and work just about anywhere she wants, including the Caribbean, which she's seriously eyeing—a far cry from the Arctic Circle, but not a bad place to spend a winter, put a new degree to good use and try out some local delicacies. ■

The work of some engineers in new product development is completed after the design phase, but **Eric Lintula '08 BS** thrives on participating in the entire process. He not only develops spinal fixation implants, but also navigates them through patent and regulatory requirements, travels to



By Kristi Evans

intellectual property laws.

Lintula could not have predicted his future when he enrolled at NMU. "My first year was very bad. I had a low GPA and I wasn't focused. It wasn't until the second year that I changed direction, set goals and became a tutor. My professors saw that and liked it. That's when I started building a relationship with them and being involved in

Human Engineering

manufacturers to monitor their production and—most rewarding of all—observes surgeries that rely on his creations to bring relief to people suffering from chronic pain.

"It's fascinating to see what was once a hunk of metal transformed into a valuable implant going into someone's body," he says. "It's also gratifying to know that for every surgery, we're positively affecting someone's quality of life. That's a big part of my inspiration for doing what I do."

Lintula is director of engineering at Nexxt Spine Inc. in Fishers, Ind. It was the promise of being immersed in all aspects of new product development that lured him to the small start-up company last winter. One of his first tasks was to redesign a lumbar fixation implant. He previously was an intern, then process engineer at Pioneer Surgical Technology in Marquette, a designer and manufacturer of spinal/orthopedic implants and instruments.

At Pioneer, Lintula worked on the research and development team. One project was the NUBAC® System, the first nuclear articulating disc. Material from inside a degenerative lumbar disc is replaced with two pieces of plastic to restore the height of the disc and

preserve the motion of the spine.

"The level of regulation for implants varies and you need to gain clearance from the government to sell your product on the market," explains Lintula. "It was beneficial that one of my first roles after college was working with the different levels of regulation."

Lintula gained other hands-on experience while enrolled in NMU's mechanical engineering program. He was an intern for Argonics, a local producer of polyurethane products for industrial applications worldwide. There he developed an appreciation for full involvement in the process.

"It was one of my most valuable experiences. I wore many hats and learned a lot. As an example, I worked on an aggregate elbow to flow liquid that was really abrasive. I designed the elbow and the tooling to manufacture it and created the process for pouring polyurethane in the mold, letting it cure, breaking the mold apart and inspecting the final product. It was unusual from most engineering positions, which typically would cover only one aspect."

Now that he is at Nexxt Spine, he is working on an MBA degree so he's better equipped to make wise business decisions and navigate business and

other activities at the school."

After teaching a summer Upward Bound course and demonstrating the Solidworks computer-assisted design (CAD) program, Lintula was encouraged to enter Model Mania. The competition was previously open to professionals only, but more than 300 students participated that year. Each was given a two-dimensional printout used to create a 3D part within 20 minutes on Solidworks. Lintula placed fourth and received a \$2,000 scholarship.

"That's where I set the bar for my future potential hire and I used it in conversation with prospective employers," he says. "I never would have done that without the encouragement of the professors at Northern. They work closely with students to find opportunities and they're very inspirational.

"I also have to credit my parents, Tim and Kathie, for their uninterrupted support and direction. They've been instrumental in the decisions I've made up to this point." As the couple witnessed their son's fascination with Legos as a youngster, perhaps they could foresee the good that would come of his skills in building and manipulating things. ■

BLUE ON THE OUTSIDE, green and gold at heart

By Kristi Evans



A force to be reckoned with: front row kneeling, Officer Greg Ryan '05; second row, Sgt. Joe Whitney '00, Sgt. Keith Bredael '90, Captain Rudy Nyman '90, Lt. Carlos del Plaine '87, Deputy Chief Pete Helein '81. NMU alumni not pictured are Officer Zach Pyles '07 and Sgt. Kevin Thompson '88.

Nearly 10 percent of the Appleton Police Department's officers either graduated from or attended NMU. Three of the city's finest—**Deputy Chief Pete Helein '81, Capt. Rudy Nyman '90 and Lt. Carlos del Plaine '87**—were asked what accounts for this relatively high proportion. All agree that it is the quality of Northern's criminal justice program and the APD's continued satisfaction with the job performance of recruits who went through it.

"NMU is recognized as a great university offering a comprehensive program led by highly competent

professors," says Helein. "That reputation speaks loudly. So does the work ethic of the U.P. and Wisconsin students Northern typically attracts. It's this combination that the APD finds appealing and the reason we continue to hire recruits with NMU ties.

"I had the opportunity to attend a college job fair in Marquette about four years ago. It was great being back on campus, connecting with the professors and students, and teaching in classes. I could see the level of enthusiasm and passion. The program continues to move in the right direction."

Helein is the veteran among former Wildcats on the force, with

more than 27 years' experience. After graduating from NMU, he earned a master's in police administration, which he said is now almost a requirement for promotion opportunities. Helein has advanced to overall supervisor of every officer in uniform and direct supervisor of plainclothes drug and gang officers. The DePere, Wis., native played football for NMU from 1977-81 and said the qualities of student athletes translate well to police work.

"It's a team effort here, too, because you count on the men and women you work with on a daily basis," he says. "Discipline and work

ethic are also critical. Our department's mission is to fight crime and solve problems. It's not glamorized as you see on TV. We spend a lot of time identifying and evaluating so we don't respond to the same addresses and deal with the same people. The reality is we find as much success in problem-solving as we do in arrests. Paying attention to the small things helps reduce crime."

Nyman said it was this progressive philosophy of community- and problem-oriented policing that convinced him to accept a job with the APD in 1992. After three years on patrol duty, he was assigned as one of the department's first community liaison officers.

"Instead of burglaries, robberies and car accidents, the main focus was on quality-of-life issues," says the Ishpeming native. "It might be as simple as a noise complaint, to something more severe, such as an ongoing drug house. We used the SARA model—scan, analyze, respond and assess—to identify the root cause. I interacted with schools, church groups, the Boys and Girls Club and the Hmong-American Partnership in that position. Today, problem-oriented policing permeates our entire department, from patrol to investigations."

A longtime desire to help those who could not stand up for themselves led Nyman to consider either a military or law enforcement career. He ended up doing both. During a two-year assignment with the U.S. Army Military Police in Kaiserslautern, Germany, Nyman served as a patrol officer and as a bodyguard for a three-star general.

"Being there during the mid-'80s heyday for European terrorism involving Germany's Red Army Faction and the Italian Red Brigade reinforced what I wanted to do," he recalls. "I had an opportunity to extend my military career as an enlisted person, but I already set a goal of getting a four-year degree in criminal justice at NMU. I wanted to see it completed."

Northern has comprehensive programs in law enforcement, corrections and criminal justice—from a regional police academy, vocational diplomas and associate degrees, to an online loss prevention management bachelor's degree to a master's degree.

Nyman later was accepted into the Michigan State Police Academy, but the May graduation fell on his wedding day. His plan to attend a later one was foiled when the state put a post-election freeze on admissions to the academies because of budget cuts. They reopened, but not until after he had committed to training and working in Wisconsin. "I'm thrilled fate raised its head with the Michigan State Police and that I ended up in Appleton. It's a great city and a great police department."

That closing sentiment is shared by del Plaine, who was hired during his senior year in 1985 and even passed up a spring break trip to Florida with friends while waiting to hear if he got the job. He had to leave school early to join the Appleton force. Del Plaine said Northern was "very accommodating" in allowing him to take correspondence courses and transfer credits so he could complete his degree in 1987. He also said his student employee experience with NMU Public Safety gave him an edge on his application.

"I started as a lot guard and later

worked at the front desk," said del Plaine. "They put me through the police academy held at Northern and, after that, I would occasionally ride with full-time officers on the weekends. I'm sure all that experience, combined with a letter of recommendation from Chief [Ken] Chant, went a long way toward my getting the job here."

The Minneapolis native is a night shift supervisor, splitting his

time between the station handling administrative duties and on the road overseeing those on patrol. Del Plaine and his colleagues agree that the APD is a rewarding and

innovative work environment because it promotes lateral transfers, a wide variety of assignments and diverse backgrounds among its employees. Some are former nurses or teachers who were on the front line of many situations police typically encounter.

"It's about more than having a degree in law enforcement," adds del Plaine. "Anyone can be taught to fill out the blanks on a ticket or accident form. It's the quality of the people that counts. You need someone with good common sense, a strong moral foundation and the ability to talk with people and make good decisions. That's hard to teach once someone's hired."

"NMU has a lot of those people, which says something for the quality of students it attracts and what the university does with them once they get there. The criminal justice program and faculty are highly regarded. Having the Northern experience has helped people get hired here, and the APD has benefitted by having Northern grads on staff." ■