

NEXUS

LEAF SPOT(TERS)
Drone research benefits
region's cherry industry ▼

USAF >> NMC
Pilots launch
second careers

Beware 'fake news'
Librarians lead in
information literacy



NEXUS

THE NORTHWESTERN MICHIGAN COLLEGE MAGAZINE

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It's a fact of human nature that people tend to complain more than compliment. So when reader compliments started rolling in after the first issue of *Nexus* hit mailboxes in January, it was both gratifying and exhilarating.

"Had a moment to glance on the Nexus that we received. I had to tell you how great I think it is."

"Interesting, engaging and attractive. Usually I skim the articles. Not this time, I read almost every one."

"I feel much more informed about the exciting things that are happening at NMC."

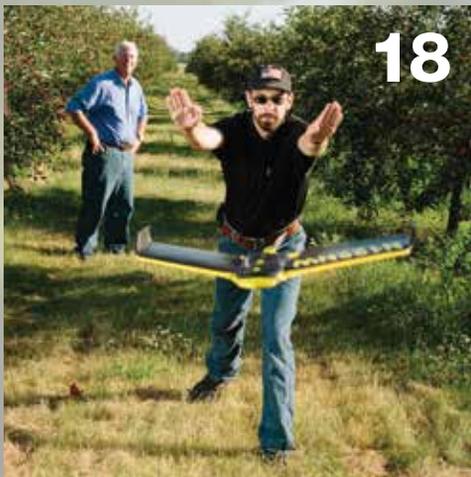
Exciting things is a continuing theme in this second issue. Back in April I ran into a friend whose daughter had just returned from a trip to Washington, D.C., with the NMC Children's Choir (see below and p. 8). "How was it?" I asked. She laughed and replied that when she asked the same question, her daughter answered by launching into an evaluation of the acoustics at the Kennedy Center, where the choir performed, versus Carnegie Hall, where they'd sung on a 2016 trip to New York City.

Her daughter's only 13, and she's sung at two of the premier performance venues in the United States, thanks to NMC! That is exciting and impressive. And yet for NMC faculty and staff, offering that caliber of opportunity to learners is all in a day's work, as you'll see in these pages.

Read on and please continue to let us know what you think. **N**



THANK YOU

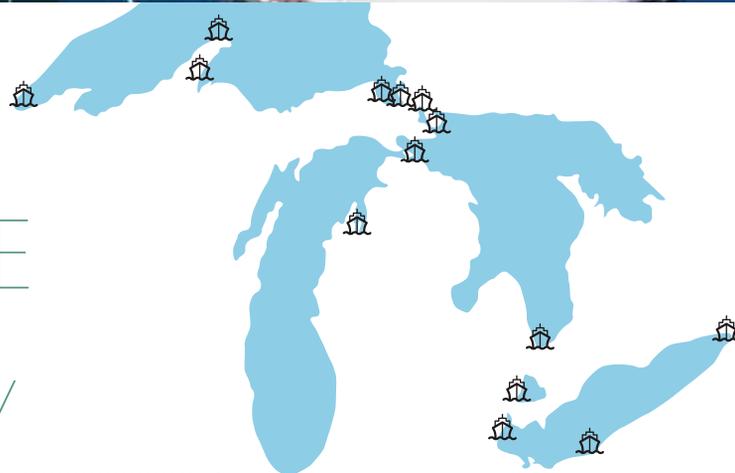


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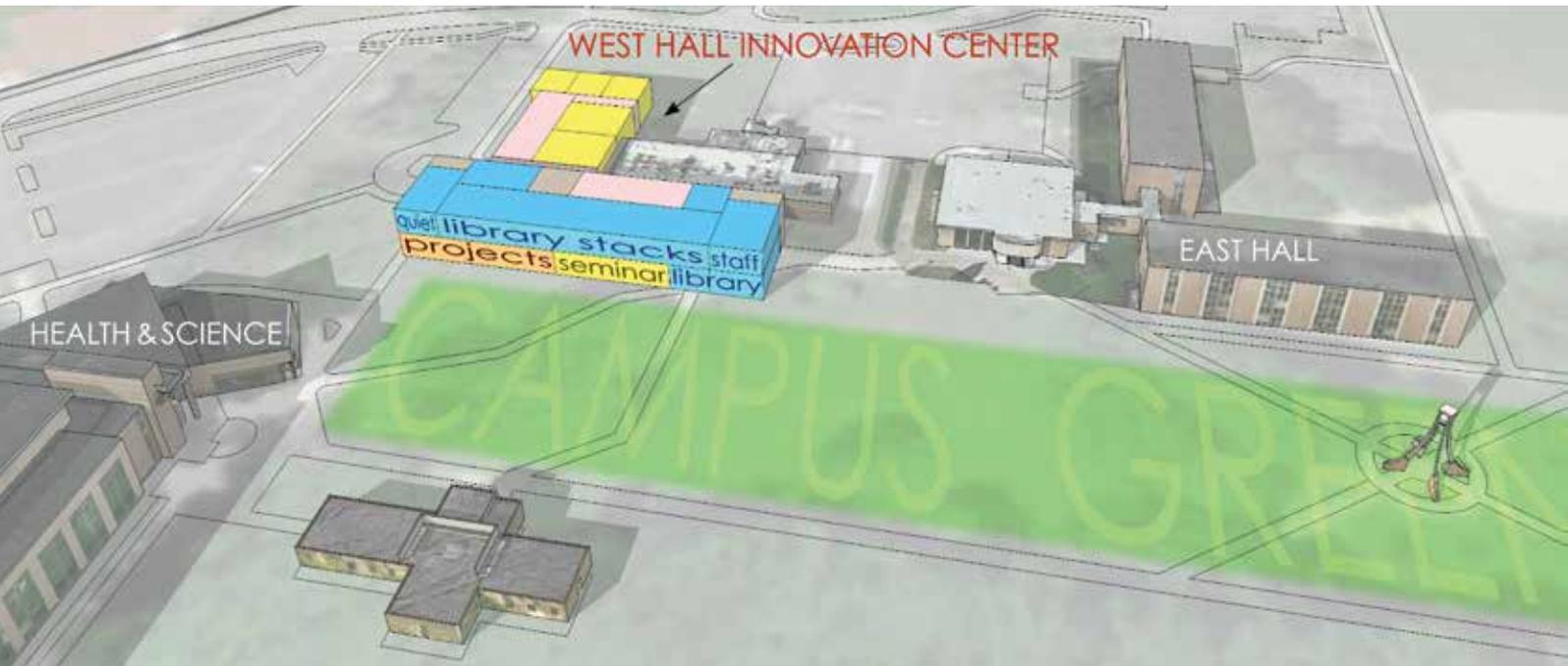
COME SAIL AWAY



The T/S *State of Michigan*, training ship of the Great Lakes Maritime Academy, headed out of its Great Lakes campus port May 15 for its annual spring cruise. The ship will make two circuits of four of the Great Lakes, traveling between Duluth, Minn, and Buffalo, N.Y., before returning to Traverse City Aug. 7. Cadets from Texas A&M Maritime Academy and

Massachusetts Maritime Academy will be aboard with GLMA cadets. Great Lakes Culinary Institute students will also complete internships cooking for the crew of 60.

Check out the *State of Michigan's* route and find links to port webcams at nmc.edu/maritime. **N**



NEW WEST HALL INNOVATION CENTER

INNOVATION IS IN OUR DNA



TIMOTHY J. NELSON,
PRESIDENT

It was innovation that created NMC to serve this community in 1951. It was innovation that fostered the creation of our world-class Denno Museum Center, launched one of the first community college foundations, and gave rise to our successful University Center. It is innovation that propels us to national rankings in several key areas, and it will be innovation that prepares our learners for their future success.

Ten years ago NMC officially named innovation as one of our values. We formalized the innovation process—discovery, incubation and acceleration—and established funding mechanisms for each stage. Some innovations flow through our continuous improvement system, while others are truly transformational. It's those transformational projects, among them our initiatives with veterans, aviation, maritime, fresh water and global opportunities, that continue to set NMC apart as a leader.

We are in the final stages of planning for construction of a new West Hall Innovation Center. This physical space will provide support for innovation by being agile and adaptable to the needs of learners and the community today and in 30 years from now. As I have talked with groups in our region, I've asked them to consider every asset NMC has as part of a larger innovation ecosystem. That includes faculty, staff, students, facilities, and technology.

Ultimately, innovation is not a space or a class, it's a fundamental skillset and orientation. NMC will continue to demonstrate and teach our learners this creative component. In a world fraught with uncertainty, I believe the ability to innovate will be essential to our collective success. **N**



COLLEGE FOR KIDS CONTINUES THROUGH AUG. 11

School's IN for summer! Kids ages 3–17 can choose from more than 160 options in art, sports, music, outdoor adventures, technology and more. Most courses are offered in one-week formats, mornings or afternoons. Some scholarships available.

Details and registration at nmc.edu/kids.

THREE NEW PROGRAMS ENROLLING FOR FALL

TECHNICAL

An associate degree in Welding Technology and a biomedical equipment technician specialization within NMC's Engineering Technology degree will offer students job-specific credentials.

Both will train students for jobs that require more than a high school diploma but less than a bachelor's degree. As Michigan's economy evolves from industrial to knowledge-based, such jobs are considered to be a sweet spot, requiring less time and money to prepare for, yet still providing decent wages.

"There's a technical skill set that's missing. By putting these degree pathways out there, it offers students an opportunity to earn high-wage salaries in our region," said Ed Bailey, director of NMC's Technical Division.

Welding instructor Devan DePauw said the degree will convey graduates' qualifications to employers much more clearly. Previously, students earned a manufacturing technology degree with a welding specialization.

Students choosing the biomedical equipment specialization, developed with Munson Medical Center, will be responsible for the safety inspections, preventive maintenance, calibration, troubleshooting, equipment repair, and the training of hospital personnel in the safe and proper use of this specialized medical equipment.



CULINARY

A one-year baking certificate will expand the offerings of NMC's Great Lakes Culinary Institute, which already offers a comprehensive culinary certificate as well as a culinary degree.

Institute director Fred Laughlin said it will serve the needs of a growing number of students interested specifically in baking and pastry, as well as resorts, hotels and restaurants that are bringing bakery operations in-house.

To earn the 23-credit certificate, students would take three existing classes in both fall and spring semesters as well as one new class, Café Operations, to be offered in summer 2018. While that course is still in development, Laughlin envisions opening Lobdell's Teaching Restaurant for morning hours, selling pastries, desserts, bread and coffee.

All fall semester classes begin Aug. 26.

BIEDERMANS NAMED NMC FELLOWS

Ross and Brenda Biederman have been named the 2017 recipients of the NMC Fellow award, the highest honor bestowed by Northwestern Michigan College.

The couple has been a philanthropic and business force in northern Michigan for decades, winning the 2013 Distinguished Service Award from the Traverse City Area Chamber of Commerce. Virtually every sector of the community has benefitted from their support, including healthcare, arts and culture, and education.

Ross Biederman graduated from NMC in 1959, only a few years after the college

was founded by a group including his father, Les. He was named an Outstanding Alumnus in 2010, and with Brenda has continued the Biederman family legacy of philanthropy. They have supported NMC personally and through the namesake family foundation for 30 years.

The NMC Board of Trustees has named Fellows each year since 1964 as a way of recognizing and thanking those individuals who have made special contributions to the college.



BRENDA AND ROSS BIEDERMAN

NURSING, CULINARY INSTRUCTORS WIN FACULTY EXCELLENCE AWARDS

Nursing instructor Mac Beeker is the 2017 Imogene Wise Faculty Excellence Award winner, and culinary instructor Robert George is the Adjunct Faculty Excellence Award winner.

The recipients were chosen by a student selection committee and announced at commencement. Criteria for both awards include teaching excellence, rapport with students, innovation in the classroom and a sense of dedication.

Beeker began his career at NMC in 2015. He is also an NMC alumnus, graduating from the nursing program in 2010.

“This instructor is number one in my book. I have never had a more dedicated teacher,” said one student in her nomination.

George began his career at NMC in 2006. A student said, “I cannot say enough about how fortunate I feel to be in a class with this instructor. This is hard stuff to teach, yet (he) does so cheerfully and seriously, and always with respect and 100 percent effort.”

The Imogene Wise Award for full-time faculty was first awarded in 1971. The Adjunct Faculty Excellence Award was created in 1999 as a companion.



ON LEFT, NURSING INSTRUCTOR MAC BEEKER



ROBERT GEORGE



JUDGE KEVIN ELSENHEIMER

2017 OUTSTANDING ALUMNI NAMED

Judge Kevin Elsenheimer, class of 1987, and Wei Cao, class of 2009, are the 2017 recipients of the Outstanding Alumni award, bestowed on alumni with significant professional achievements and/or exemplary leadership in the local or global community.

Elsenheimer, a Traverse City native, went on to Michigan State University and Wayne State University Law School. He served as an assistant prosecuting attorney in Antrim County before forming the firm of Young, Graham, Elsenheimer & Wendling, P.C., based in Bellaire.

He was elected to the Michigan House of Representatives in 2004. He served for six years and rose to Minority Leader. In 2017, Elsenheimer was appointed to the 13th Circuit Court bench serving Antrim, Grand Traverse and Leelanau Counties.

Wei lives in Beijing, China. There she has served as a major asset to NMC as the college has embarked on its strategic

effort to expand international engagement and recruit international students over the last several years.

She has been a link to Chinese art galleries for the Denno Museum Center, and to institutions like the Yellow River Conservancy Technical Institute, with whom NMC has a formal partnership and where NMC instructors began teaching in June. Denno executive director Gene Jenneman presented Wei with her award on a trip to China in April.

NMC established the award in 1988.



WEI CAO

NMC TO OFFER UNDERWATER ROV PILOT TRAINING FOR ADCI

Northwestern Michigan College is now the exclusive provider of underwater ROV pilot training credentialed by the Association of Diving Contractors International, a Houston-based association of more than 600 diving companies.

The 10-week program results in an ADCI Pilot Technician Certificate that students obtain as a stand-alone credential. Classes, expected to begin this fall, will be limited to 10 to 12 students, ensuring highly focused instruction and training scenarios.

Students will get hands-on training in multiple underwater scenarios, including open water, deep water, under ice and around structures. Hydraulics, electronics, pumping systems, troubleshooting, deployment scenarios and other fundamentals are also covered. When fully deployed, 24 to 36 people are expected to enroll annually. **N**



MATT MOSS





CAPITAL CHORUS

NMC Director of Music Programs Jeffrey Cobb conducts the Cantus choir, composed of sixth- through ninth-graders, in an impromptu concert in front of the Jefferson Memorial in Washington, D.C., in April. Cantus is the most advanced of NMC's seven children's choirs and regularly travels for a spring performance. This year, they were the only non-high school choir invited to participate in a national choral festival at the Kennedy Center. Auditions for the 2017-18 choir will be held Sept. 7 on campus.

Visit nmc.edu/childrenschoir for details. **N**

INSIDE MY BAG



KATHRYN KILLINGBECK, 23 2017 LAW ENFORCEMENT GRADUATE

A police officer liaison in her high school and family members who served in the military inspired Killingbeck to choose a career in law enforcement.

"I believe officers have honor and integrity. They build the community. I want to be part of that, and make the community a safer place," she said.

An internship split between the Grand Traverse County Sheriff's Department and the Traverse City Police Department whetted her appetite further, and she hopes to join a local force after graduation.

Visit nmc.edu/police for program information.

INSIDE MY BAG LAW ENFORCEMENT

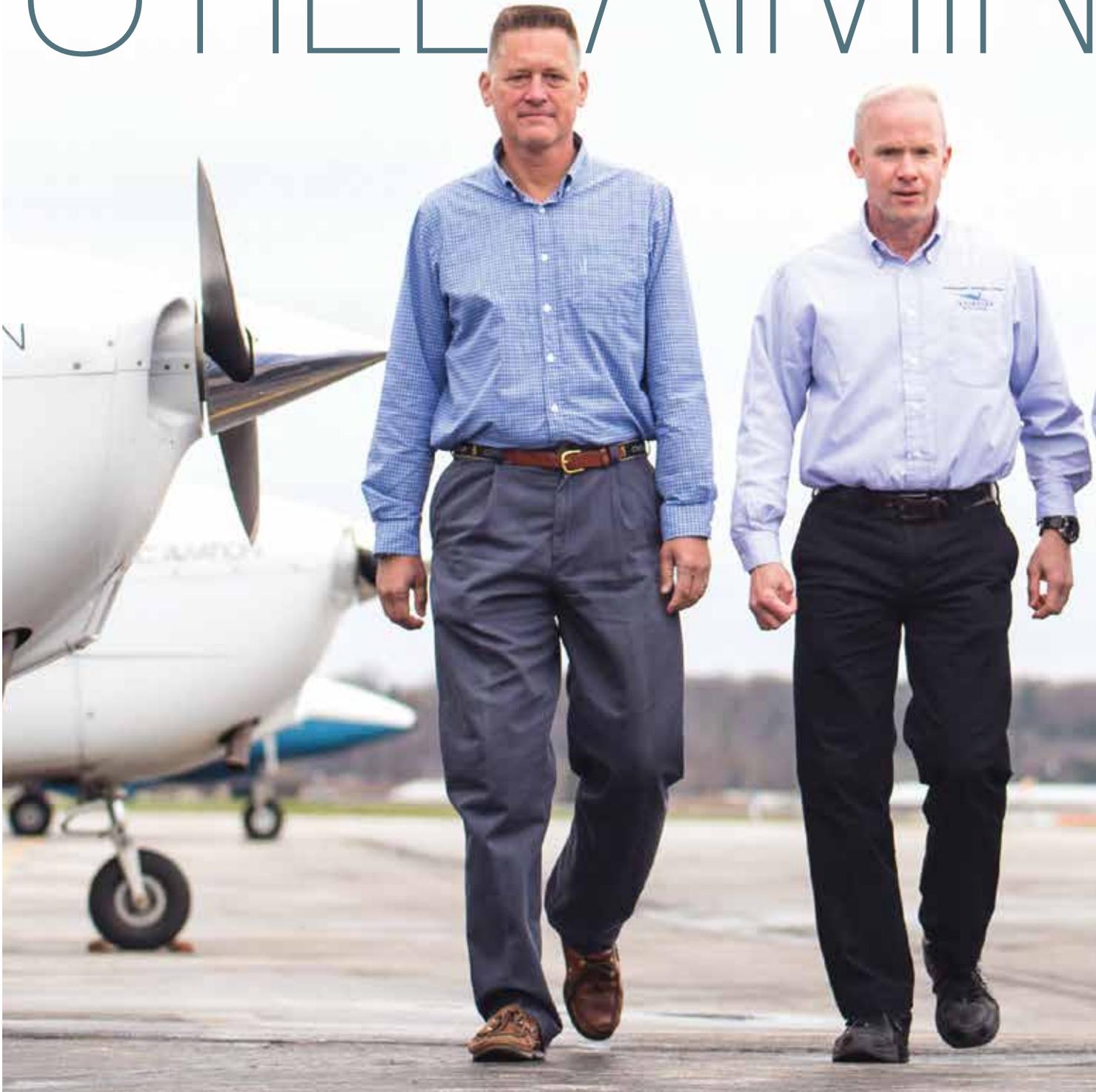


Kathryn's backpack appears on a mat in NMC's Physical Education building, where she took Defensive Tactics and Physical Training. Clockwise from upper left, it includes:

1. Duty belt including dummy handgun, clip pouch and handcuff key
2. Notepad box, pens and highlighters, sticky tabs
3. Protein drink or bar, like Muscle Milk. "I go straight from work to class, so that's either my lunch or a quick snack."
4. Speed measurement and enforcement manual. "It tells us how to run radar effectively to give accurate tickets."
5. Michigan Penal Code and Motor Vehicle handbook—a police officer's Bible—and her laptop
6. Her "cover"—worn only outside.
7. Keys on souvenir keychain her boyfriend got her at a Detroit Red Wings game
8. Interview portfolio and "Back the Blue" bracelet, a gift from her sister. (Since jewelry can't be worn on duty, it's usually in her backpack.)
9. Cell phone, headphones and planner
10. Lip balm, hand sanitizer, hair ties. Female officers' hair must be off their shoulders.
11. Textbooks and manuals for class **N**

DUTY FULFILLED • CLASSROOM CALLS

STILL AIMING



LEFT TO RIGHT: MAJOR GEN. BRIAN BISHOP, LT. COL. BRAD WORTMAN, BRIGADIER GEN. SCOTT DENNIS AND LT. COL. AL LAURSEN

G HIGH



Air Force pilots embark on second careers with NMC Aviation

They have flown F-15s, F-16s and B-52s. Tours of military service have taken them to Afghanistan, Iraq and Korea. They've commanded at all levels in the United States Air Force—including on the Thunderbirds team, the elite air demonstration squadron. Combined, they have more than 90 years of experience as military pilots. Today, you'll find them in the skies over northern Michigan, working with NMC Aviation students.

Meet Brian Bishop, Scott Dennis, Al Laursen and Brad Wortman—all retired from long, accomplished careers in the USAF, but nowhere near ready to hang up their wings. Now, they bring those diverse and impressive experiences to benefit aspiring student pilots.

Brigadier Gen. Dennis, an Elk Rapids High School graduate, is the one local guy. Lt. Col. Wortman had never heard of Traverse City—or Northwestern Michigan College—until his wife chose it as their retirement destination out of the blue. Lt. Col. Laursen started his military career at K.I. Sawyer Air Base in Marquette. Major Gen. Bishop's wife summered in Leelanau County while growing up.

Now they take off and land from a Cherry Capital Airport runway. They join veteran staff of NMC's FAA-approved flight training program, along with recent graduates who teach to earn the flight hours required to launch their own careers as professional pilots. The program celebrates its 50th anniversary this year.

"Military flying is quite a bit different than civilian flying," said Wortman, who started out as an Air Force navigator in the backseat of an F-4 before applying for pilot training. "Just having the military experience ... the stories I can tell."



THE FOURSOME BRINGS 90 YEARS OF MILITARY FLYING EXPERIENCE

Bishop, who retired in 2015, likes to “expand the envelope” of how student pilots think flying can happen. That means training in upset maneuvers, spins, and aerobatics.

“Most of their flying is right-side up,” he said. “I take them upside down. I take my military training and fold those experiences in.”

Likewise, Wortman, who grew up wanting to fly something “with a helmet and an ejection seat,” now appreciates the opportunity to share his military background with pilots just starting out. He also has firsthand experience on the student side—ironically, following his 21-year Air Force career, he became an NMC aviation student.

“I needed to get my flight instructor rating, so I enrolled in the program,” Wortman said. He became an instructor in 2011.

“Most of their flying is right-side up. I take them upside down. I take my military training and fold those experiences in.”

— Brian Bishop

Dennis, who retired to the area even though he no longer had a family connection here, said the experience and perspective he and the other military guys can impart to the students is at the heart of his involvement with the program.

In addition to instructing, Dennis also participates in a mentoring program with the younger instructors. “You don’t go anywhere in the military if you’re not a good instructor,” said Dennis, who among his many assignments taught at the Fighter Weapons School at Nellis Air Force Base in Nevada. Dennis’ combat deployments included operations Northern Watch, Southern Watch, Iraqi Freedom and Enduring Freedom.

For the most part, Laursen spends his days on the ground. He first thought he wanted to be an air ambulance pilot after

retiring from the Air Force and moved to Traverse City to pursue a civilian flying job. But when NMC created a new position focused on aviation student recruitment in 2011, he found it the right fit.

Laursen said he was “pretty lucky” in his 20-year career, spending it all as an instructor pilot, when alternating between flying and desk jobs is more the norm.

In addition to his instructing, Laursen also became very adept at the rules and regulatory structure of the aviation industry while in the Air Force—skills he’s been able to transfer to his position as he works to advise new students and further grow the program.

As a military pilot himself, Laursen understands what it means to have Bishop, Dennis and Wortman on the instructor roster—and how lucky NMC students are for an opportunity to share the skies with them.

And as far as these now-civilian instructor pilots are concerned, they are some of the most beautiful skies they have ever seen. **N**

NMC AVIATION CELEBRATES ITS 50TH ANNIVERSARY THIS YEAR.
FIND OUT ABOUT SPECIAL EVENTS AT NMC.EDU/AVIATION50





MY NMC

Anna Bennett jokes that her husband, Marcus, NMC's Director of Residence Life, has never grown up.

"He went from his mom's house to college, and he never left college," she says. It's now been 17 years of "living in," both here and at Saginaw Valley State University, where the couple met. Currently they and their children, Ava, 4, and M.J., 8, live in a two-bedroom East Hall apartment about 25 feet from Marcus's office, with 200 students as neighbors. Pros: A short commute for Marcus and manicure parties with residents in the conference room for Ava. Cons: "When you live in, it's 24-7," Marcus Bennett says.

Future? (After all, NMC President Tim Nelson once worked in the same role.) Marcus, who finished his Ph.D. last year (no mortgage, another pro), has ambitions, but foresees a position where he's still involved with students. For now, the family is content, and in fact plans to remain in East Hall even when neighboring North Hall opens this fall. **N**



- 1969 Great Lakes Maritime Academy established for male students only
- 1974 Ban on women lifted at U.S. maritime academies
- 1980 Four female cadets graduate from GLMA
- 2002 *T/S State of Michigan*, a former Navy ship, transferred to GLMA. Doris Bautch, director of the Great Lakes region for the U.S. Maritime Administration, oversees transfer.
- 2007 Women on the Water (WOW) professional development organization founded at GLMA; first conference held.
- 2008 Empowerment of Professional Women in the Maritime World international conference held at World Maritime University in Sweden.
- 2009 GLMA hires first female instructor, 2008 alumna Amanda Rogers.

Female representation in international shipping industry estimated at 2 percent.
- 2013 Doris J. Bautch Maritime Scholarship established for female GLMA cadets. “Over the years I kept my eye on the Academy and how effective the female cadets were, and how they were managing to compete with the young men. I was so proud of them,” Bautch explained.
- 2017 Cumulative female GLMA graduates: 69

8 female cadets expected to enroll for fall

WOW conference returns to GLMA October 26–28. About 100 cadets from U.S. and Canadian academies expected to attend.

Visit nmc.edu/wow-conference for information.

W.O.W. TURNS 10

Mariners like Meredith Floyd, a 2016 Great Lakes Maritime Academy graduate, are working to update their disproportionately male industry from the inside out. In 2007 female GLMA cadets founded Women on the Water to support women entering the industry and promote professionalism. WOW groups now exist at academies from California to Canada.

Floyd, shown unloading stone cargo from the freighter *Wilfred Sykes*, particularly values the networking aspect of WOW.

“Everybody knows the same thing when you graduate from school,” she said. Once the job hunt is on, who you know in the industry becomes more and more important. **N**





LEAF SPOTTERS

Joint NMC-MSU agricultural research aims to keep cherry industry thriving

UAS STUDENT WILL SCHULTZ (FOREGROUND) AND FARMER DORANCE AMOS (BACKGROUND) LAUNCH THE EBEE DRONE



BRIAN MATCHETT AND CAMERON WHITE

It looks like another idyllic summer day on Dorance Amos's cherry farm in northern Grand Traverse County, the kind of pastoral scene you'd see on a Pure Michigan billboard.

The tranquility of the rustling green leaves and the beauty of the scarlet cherries belies the reality of the disease and pest threats Amos faces on a daily basis: Brown rot. Mites. Fruit worms. Aphids. And grower enemy No. 1, cherry leaf spot. Invisible or nearly so, silent, and potentially epidemic.

Research jointly conducted on the west side of Grand Traverse Bay by Northwestern Michigan College and Michigan State University last year, however, offers Amos and his fellow growers some real hope for detecting and controlling leaf spot. Leading edge research is rare for a community college, and in this case it may help keep the Cherry Capital, well, the cherry capital.

"(Leaf spot) can emerge and completely infect a tree in a matter of about six days," said Brian Matchett, coordinator of NMC-MSU's joint plant science program. Without proper management, by late July or August, "growers could have a cherry orchard that is completely defoliated."

Afflicted trees then go into winter malnourished, their lifespan diminished. Multiply that across orchards all over

northwest Michigan and the reason for Amos's keen interest in the 2016 cherry leaf spot research, conducted with drones from NMC's Unmanned Aerial Systems program, becomes clear.

Outfitted with four different sensors and operated by UAS student Will Schultz, the drone collected data in weekly flights over orchard plots at MSU's Horticultural Research Center in Leelanau County between May and August. The plots contained trees treated with fungicides designed to control leaf spot as well as untreated control trees.

Post-growing season, plant science student Cameron White took over, crunching the reams of flight data and comparing it against "ground-truth" data on tree health collected in actual orchard walks. His conclusion: It's "highly likely" that leaf spot caused the poorer health observed during UAS flights in the untreated, control group trees.

Armed with that conclusion and data that drills down to individual trees, growers like Amos can adjust orchard management plans, identifying areas of high concern, areas of resistance, and areas to leave alone. "Tree fruit, you've really got some

narrow windows on application, and if you don't get ahead of it, you've got a mess," said Amos, whose orchards were also drone-surveyed last summer.

In other words, miss catching that infestation of leaf spot spores floating up from the orchard floor by a day or two, and kiss your tree health goodbye. On the flip side, go after diseases or pests too aggressively and you might not be able to sell that fruit, either. On both a regulatory and a commercial buyer side, leftover pesticides or insecticides are unacceptable.

"Our threshold of residue is zero," Amos said.

The precision of the leaf spot study data shows that technology can help growers pinpoint the sweet spot in orchard management. It's the kind of research that would more typically be found at a graduate institution. NMC and MSU shared the \$28,000 cost. "What we're doing for cherry

and apple guys could be comparable with what UC (University of California) Davis is doing for Napa Valley," White said.

"What we're doing for cherry and apple guys could be comparable with what UC (University of California) Davis is doing for Napa Valley."

— Cameron White





Photos: George Sundin, MSU

LEAF SPOT (LEFT) CAN EMERGE AND COMPLETELY DEFOLIATE A TREE IN ABOUT SIX DAYS

Through the NMC-MSU program, students earn an associate degree in plant science from NMC and one of three specialized certificates from MSU's Institute of Agricultural Technology. White's is in Fruit & Vegetable Crop Management. Viticulture and Landscape Management certificates are also available.

To Matchett, the research experience that White and Schultz gained is as significant as the findings. He hopes to conduct a second trial this year, building on the 2016 baseline data with real-time analysis available to growers. "What data can we collect that, on any given day of the growing season, can help the grower make a better management decision?" Matchett said. "Instead of spraying the whole block, we can spray a quarter of the block, a given row, or even specific trees, and be very effective."

In the future, drones could be deployed to address the threats they first measured. NMC purchased its first sprayer drone this year and plans to experiment with nozzles, spray patterns and pressure settings this summer. Outfitted with customized nozzles, a drone could spray both pesticide and insecticides, saving the grower fuel costs, and increasing the effectiveness and precision of spray applications. They could be programmed to prune branches to a precise angle, and to monitor and adjust irrigation valves.

White, who is building his own vineyard and plans to plant grapes next year, sees applications in the grape industry, too, from monitoring trellis infrastructure to calculating tank space needs based on grape cluster size.

Increased automation in any industry tends to create fears about job security, but Amos said that technology will be necessary to make food production more efficient and feed a growing population. "It's going to be a very important tool for scouting and other work in the fields," he said. "The challenge is to create more product on the same land."

And agriculture is graying. At 58, Amos is on the younger side of the industry. He believes technology will help entice the next generation. "It can draw a whole new group of young folks, I think ... I hope ...," he said. "There's some really bright kids in the program, and it's fun, because we haven't had young people interested in agriculture in so long."

At 27, White is one of those kids. He also works as a consultant for Crop Production Services, and believes that the

advancements and value of UAS technology makes incorporation of technology inevitable. "Drones to agriculture in the twenty-first century are going to be what engines and tractors were in the twentieth," White said. "We don't want to be on our mules in 2040."

"There's some really bright kids in that program, and it's fun, because we haven't had young people interested in agriculture in so long."

– Dorance Amos

Amos has no such intention. He foresees a future where a group of farmers would collectively own drones and hire a crop service to deploy them to better manage the orchard. "I'm tickled to death Michigan State's teamed up with

Northwestern," he said. "This partnership with the college has enabled us to get in on the ground floor and be part of it." **N**

Watch a video on the research project and learn more about NMC-MSU programs at nmc.edu/plant

DRONE'S VIEW

CHERRY ORCHARD TEST PLOT



ABOUT THE EBEE DRONE

Weight: Less than 5 lbs.

Speed: 25–30 miles per hour

Elevation: Flies 107 feet above orchard

Flight path: Autonomous, controlled by computer, not pilot

Power: Lithium polymer battery—flies for 25–30 minutes/charge

Accessories: Camera with four different lenses, each measuring a different index of plant health

Cost: \$15,000–\$16,000 for drone + software



UAS APPLICATIONS AT HOME AND ABROAD

Thwarting rhino poachers, mitigating climate change and transporting organ donations are just three applications for drones that students may train for at NMC.

The college was on the forefront of unmanned aircraft training, first offering classes in 2010, when drones were considered mostly a defense tool. Since then, civilian uses have exploded, and training at NMC has evolved to include application-specific courses as well as general pilot skills.

On study abroad trips to South Africa in 2015 and 2016, Unmanned Aerial Systems students visited the Shamwari Game Reserve, a private refuge for many species, including endangered rhinos. Drones offer park officials overseeing an area as large as Grand Traverse County a tool to monitor the animals, whose horns are prized for perceived medicinal and cultural purposes.

“Poachers are starting to go after these parks, because they’re getting rare in the wild,” said NMC Chief Unmanned Aerial Systems instructor Carl Rocheleau.

In initial flights conducted on the 2015 trip, the drone noise appeared to frighten the rhinos, Rocheleau said. But other animals, like giraffes, were not bothered. He hopes to try quieter drones on a return trip in 2018, and added that with longer exposure, rhinos could acclimate to their presence.

“They’re looking at long-term applications of the technology,” he said, adding that the reserve’s elephants are also at risk because of their sought-after tusks. “If they don’t start to protect those now, they’re going to wind up in the same situation as the rhino.”

In other countries, anti-poaching drone experiments are being done with support from organizations like the World Wildlife Fund and Google.

Back home, Rocheleau hopes to complete a “proof of concept” this year on another agricultural application, measuring temperature inversions in cherry orchards. Cherries have always been vulnerable to late spring frosts, but the vulnerability has increased in recent years with warm weather episodes occurring earlier in the season, meaning fruit buds emerge before the risk of frost is past.

If a temperature inversion exists—a layer of cold air trapped at ground level by a layer of warmer air above it—farmers can turn on large fans to push the warm air down toward the trees on frosty nights. Absent an inversion, however, fans worsen the cold-damage problem. Currently, stationary, expensive-to-install towers are the only way to test for inversion conditions. Drones outfitted with temperature probes could offer real-time, precise location data which farmers could then use to protect their crops.

A third potential future drone use is organ transport, from a hospital roof to a helipad or airport, where it would go on to the recipient patient.

“It’s saving valuable minutes and expense,” Rocheleau said, noting that this application is the least advanced of those he’s heard, yet not out of the question.

Visit nmc.edu/uas for more information on *Unmanned Aerial Systems*.





JAMI AND KAMI CHUNG

BRANCHING OUT

Sisters discover dual enrollment's value

High academic expectations were as much a part of sisters Jami and Kami Chung's Old Mission Peninsula household as the view of West Bay.

Their father William is a physician. So are both grandfathers, and uncles on both sides of the family. Mother Karin is a recruiter at Hagerty Insurance and runs a specialty food business on the side.

"Our lives were always centered around school," said younger sister Kami, 18, of the environment established for her, Jami and their two younger brothers. Sports and music—cello for Jami, percussion for Kami, piano for both—rounded out the picture.

So perhaps it's not surprising that both sisters chose to take advantage of dual enrollment at NMC during their high school years at Traverse City Central. What each took away, however, illustrates the range of benefits the dual enrollment experience offers.

"I wanted to be more challenged," said eldest sister Jami Chung, 21. She wound up earning her associate degree along with her high school diploma in 2014. Dual enrollment also enabled her to explore off her family's familiar medical path. One favorite class: Underwater archaeology, which led her to Wales to lead a survey project under the director of instructor Mark Holley.

"It was completely non-medicine related, and I had a lot of fun," she said.

Kami used dual-enrollment to take classes that weren't offered at Central. Instead of

Spanish or French, she fulfilled her language requirement with NMC's American Sign Language courses. The discipline and independence required of college was another benefit.

"Getting in a college setting while in high school was really useful to me," said Kami, who graduated from Central in 2016 and followed in her family's medical footsteps by enrolling in the nursing program at the University of Detroit Mercy. "That college mindset is completely different from high school."

Jami started down a medical path at the University of Michigan as well, but then switched from pre-med to pre-law. Even with that switch, thanks to her NMC credits she still graduated this past April, a year early. She plans to spend a year traveling or working before beginning law school.

Kami expects to graduate from UDM in 2020 and is considering further education to become a pediatric nurse practitioner. Both sisters will also be encouraging their younger brothers to take advantage of NMC opportunities that suit their interests, too.

"I definitely saw positives to taking classes at the college," Kami said. **N**

Dual-enrolled high school students are the fastest-growing segment of enrollment at NMC.

Find out more at nmc.edu/dualenroll.



NAVIGATING A SEA OF SOURCES

NMC leads in information literacy efforts

LIBRARIAN ANN GEHT LEADS STUDENTS ON A TOUR OF OSTERLIN LIBRARY

Nearly two decades before “alternative facts” and “fake news” stirred controversy following the 2016 election, NMC librarians launched a quiet revolution on behalf of students.

Information literacy instruction, which teaches students how to find, evaluate and use credible, high-quality sources to complete assignments, started at NMC in 1998. It was standardized for English composition courses in 2004. Today NMC remains at the forefront, among 23 percent of two-year schools that embed information literacy instruction into a required class, according to a 2017 *Library Journal* survey. For the first time, last fall—just as partisan political clickbait flooded Facebook feeds—100 percent of composition students received the instruction,

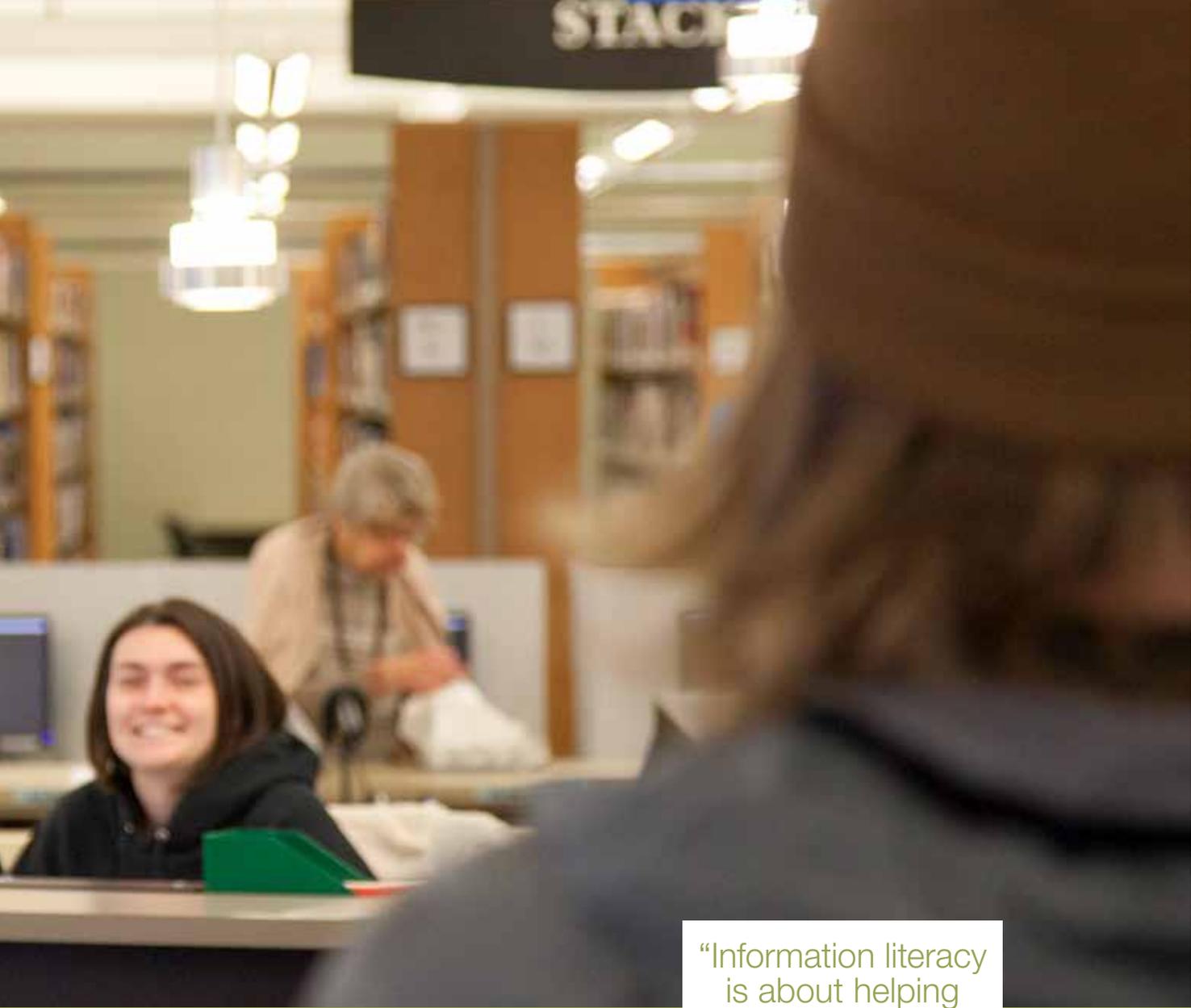
increasingly as relevant to their personal lives as it is to their assignments.

Simply seeing the stacks of physical books, peer-reviewed journals and research databases is an important lesson for students whose only prior research may be Googling on a phone. (In a pre-assessment given to 335 introductory composition students in 2015, more than a quarter of respondents said they had never visited a library previously, nor utilized a library’s website to do research.)

“Students are so used to seeing this mish-mash of stuff on a screen,” said librarian Ann Geht, who’s led the information literacy sessions for four years. “There’s no way to contextualize it.”

Transforming that relative information ignorance to literacy is her mission. A starting point is a source evaluation checklist. It’s not enough to find a source that supports their argument, Geht teaches students. They must be able to identify it (Is it an objective news article? Editorial? Opinion?), find out who created it (Is there a byline or other author credit?), determine if the author holds credentials or expertise in the topic, and verify it is timely.

The Internet has made all that much harder, composition instructor Kristen Salathiel said. When she started teaching at NMC 15 years ago, social media didn’t exist and the Internet itself had not stretched as deeply into students’ lives.



“Information literacy is about helping (students) understand how informed opinion is made.”

– Michael Anderson

“You didn’t have to contend with that before. There’s a lot more bad stuff out there to wade through (online),” she said. “Anyone can publish anything they want, and it’s very easy to make it look legitimate.”

Composition instructor Michael Anderson diagnoses another problem: Students’ assumption of bias everywhere.

“They either think it’s all credible, or none of it’s credible,” Anderson said.

The mainstream media that students are used to digesting relies on clichés and half-truths, he said. The pigeonholed political spectrum—Fox News is conservative, MSNBC is liberal—is particularly unhelpful. Students apply that same frame

of reference to a scholarly publication.

“Students come to academic work thinking it’s just more opinion. So information literacy is about helping them understand how informed opinion is made,” Anderson said.

On the way to learning the difference, his hope is that a student’s curiosity is piqued enough to delve deeper into their topic. Instead of one or two sources, he urges his students to submit papers with sources “by the ton.”

“Now, keep going. Read for two or three hours to get a true understanding of the context,” he said.

When that happens, students are poised for the academic holy

grail: contributing to the discussion themselves in an enlightened, evidence-based fashion.

“When you join an academic conversation, you’re trying to give it your insight,” Salathiel said.

Information literacy is taught in Nursing, Geography, Sociology, and Economics classes, too. NMC librarians also provide outreach to high school seniors working on intensive research projects. **N**





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A VOLUNTEER SINCE 2013**



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ALUMNI NOTES

• **ALLYSON NELSON**, 2007, garnered her first screenwriting credit for the ABC drama *Pretty Little Liars*. The episode, co-written with series and screenwriting veteran Joseph Dougherty, aired April 18. Nelson lives with her husband, 2006 graduate Matt Harting, in Los Angeles, where he is an audio engineer. After meeting on an NMC theater production, both went on to graduate from Columbia College in Chicago.

•• **RYAN FERRIS**, a 2011 aviation alumnus, has been named the youngest chief pilot in company history by Envoy Air and now leads the airline's operations at a major air traffic hub.

Ferris is chief pilot at Envoy's New York base at LaGuardia Airport, the nation's

twentieth busiest airport. He supervises 150 Envoy captains and first officers based at LaGuardia as well as coordinates with multiple other departments, including ground handling, passenger service, Transportation Security Administration and air traffic control to ensure a safe and reliable operation for the passengers. Prior to his new role, Ferris spent three years flying as a first officer for Envoy Air, a subsidiary of American Airlines. He was also a flight instructor at NMC for two and a half years.

"Northwestern Michigan College did an outstanding job preparing me for the responsibilities of this position," said Ferris, originally from Portage, Michigan. "The flight school provided me with

the knowledge and skills to handle the stresses of being an airline pilot, while NMC's critical-thinking-based curriculum helped me develop into a well-rounded manager."

••• **CHERYL BOUSCHOR**, 1987, is the current president of the Michigan Society of Medical Assistants, the society's first president from northwest Michigan. A certified medical assistant and certified professional coder, she was installed in the role in April 2017.

Bouschor started her career in family practice and has spent the last 18 years working in pulmonary and critical care/sleep.

GOT GOOD NEWS?

New job? Earned a professional award, new credential or notched a personal accomplishment?

Share your alumni news by emailing alumni@nmc.edu.



◆◆◆◆ **KATHRYNE (KATIE) IANNI** a 2015 graduate of the Great Lakes Culinary Institute, is the pastry chef at the Grand Traverse Resort and Spa, where she worked as an intern and pastry cook during her education. Ianni worked at GLCI as a teacher's assistant and Adjunct Chef Instructor in 2016 and at Stone House Bread in Traverse City in 2014 and 2015. She started her culinary career at a pizza restaurant in Jacksonville, NC.

KEVIN SCHLUETER, 1989, president and CEO of Kalkaska Screw Products, accepted the company's designation as one of 50 companies to watch in 2017 by Michigan Celebrates Small Business.

KSP is a high-volume precision machining facility that supports the automotive, aerospace, recreational vehicle and other industries with components for air bags, seat belt assemblies, fuel systems, brake systems and engine management systems. The company has created nearly



100 jobs since Schlueter took over leadership in 2010. Schlueter also sits on NMC's alumni steering committee and on the NMC Foundation Board.

◆◆◆◆ The Traverse City Police Department has hired two NMC Police Academy graduates. **DYLAN WENDELS**, class of 2017, accepts congratulations from his new boss and fellow alumnus **CHIEF JEFFREY O'BRIEN** (1991) at his May graduation. Christopher Whetstone, class of 2015, started with the TCPD in April. Both are officers in the patrol division.

SHANE GABIER, who attended NMC 1991–93, is the co-owner of Creatures of the Wind, a New York-based fashion design firm and one of the industry's top labels. Their garments were featured in *Vogue* earlier this year. Fans include artist Pharrell Williams, who wore a COTW jacket on *The Voice*, and former first lady Michelle Obama. After NMC, Gabier attended the Art Institute of Chicago.

Original compositions by alumnus **DAN BELLEVILLE** (1989–90) for the Michigan-based art and nature television show, *Your Brush with Nature* may be heard in 141 different countries since the show was picked up in January 2017 by Netflix, along with other international broadcast and distribution platforms.

Your Brush with Nature features Michigan artist Henier Hertling painting the scene in front of him and teaching the viewer his techniques. Belleville's musical scores are inspired by the imagery of the locations. The fourth and latest season of the show was primarily recorded on location in Michigan with four episodes in Wyoming. Postproduction for the series was done in Michigan. ■

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ALLIANCE

2012 GLCI alumnus turning heads in Warehouse District

Growing up near Cadillac, James Bloomfield remembers that family dinners were a big deal, featuring from-scratch dishes his dad and grandmother prepared.

“Nothing out of a box, ever,” said Bloomfield, now chef at Alliance, a sleek, 32-seat restaurant that’s won raves since Bloomfield opened it in 2016 with legendary regional restaurateur Pete Peterson, whom he first met as a student.

After GLCI, Bloomfield cooked his way to Cape Cod, Mass., and Austin, Texas (with Top Chef and James Beard Award winner Paul Qui.) He catered with Peterson and cooked at other highly-regarded restaurants, including Trattoria Stella. At Alliance he draws daily upon the lessons of NMC’s comprehensive culinary program, “the foundation of my cooking.”

The culinary world is taking notice. Late last year, Alliance was featured in The New York Times. But Bloomfield shrugs off achieving at 28 what for some would be a career pinnacle. “We just have to work harder because of it now. The expectations are higher,” he said. **N**



CALENDAR

JULY
22

Public Viewing Night @ Rogers Observatory

9–11 p.m.

Admission \$2/person or \$5/family

Also Aug. 4, 27, Sept. 1 and 16

Later 2017 dates:

nmc.edu/rogersobservatory

21 International Affairs Forum lecture – U.S./Mexico: Wall or No Wall, A Border in Turmoil

6 p.m., Milliken Auditorium

Tickets free for students and educators, \$10 others

See the season speaker line-up at tciaf.com

AUGUST

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3 Grand Traverse Resort and Spa

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26 Fall semester classes begin

OCTOBER
19

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6 p.m., Milliken Auditorium

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26-28 Women on the Water conference

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