



Michigan  
Technological  
University

COLLEGE OF FOREST RESOURCES AND ENVIRONMENTAL SCIENCE

# RE:GENERATIONS

WINTER 2022

COMMITTED TO OUR FUTURE STUDENTS, CURRENT STUDENTS, AND OUR ALUMNI.





# A MESSAGE FROM THE DEAN

## ANDREW J. STORER

DEAR ALUMNI AND FRIENDS,

Welcome to the latest edition of Re:Generations! There are many achievements in the College to report and many exciting times ahead. This edition includes stories about research conducted by some of our newest faculty members, the Student Learning Center run by the Xi Sigma Pi honor society, and features on some of our outstanding alumni.

The College has been focusing on growing our academic programs and research, along with maintaining our reputation for quality and excellence. Since 2018, enrollment in our undergraduate programs has grown 40 percent, and we most recently added a new major in environmental science and sustainability. We market our programs nationally with the outstanding support of University Marketing and Communications, with a focus on both our traditional areas of excellence and emerging areas that we have built from these.

Since 2018, research expenditures in the College have increased by 20 percent, which reflects the outstanding ability of our faculty and research staff to attract competitive funds from federal and state agencies, as well as other

sources. This results in enhanced research opportunities for our undergraduate students to gain experience in field and lab research, and support for new graduate students to train in research and be mentored by the nationally and internationally renowned faculty in the College.

In our previous edition, we reported on the charge to our Diversity Committee to develop the first unit diversity plan on campus. Not only has this committee finalized that plan, they have also worked on delivering some of the tasks described in the plan, including a unit climate survey to collect baseline information relating to diversity, equity, inclusion, and sense of belonging in the College. The plan is available on our website at [mtu.edu/forest/diversity](http://mtu.edu/forest/diversity).

We know complex problems are more effectively worked on by groups that reflect diverse backgrounds and perspectives, and the College aims to maximize our role in addressing the challenges we face locally, nationally, and globally. We also know students are more likely to be successful if they have a strong sense of belonging in the College, and opportunities to enhance this sense of belonging are consistent with our commitment to student success and increasing access to our programs.

Finally, I would like to report on

a recent temporary change in the leadership in the College while I serve as interim provost for the University. Contributing to my agreeing to this role was the knowledge that the College's excellent faculty leaders will continue to move us forward over these months. David Flaspohler is currently serving as interim dean, Molly Cavaleri as interim associate dean and graduate program director, and Andy Burton as interim associate dean for research. Each has served as part of the College Leadership Council over the last few years, and I am grateful for them for bringing their energy, skills, and enthusiasm to these roles.

We love to hear from alumni and greatly enjoy opportunities to visit with them. If you are in Houghton, please stop by and see us. As always, we are grateful for your support and the interest you have in the long-term success of the College!

With best wishes,

Andrew J. Storer  
Dean and Professor  
[storer@mtu.edu](mailto:storer@mtu.edu)



### On the Cover

Students in one of Professor Chris Miller's outdoor labs visit Hungarian Falls.

### College of Forest Resources and Environmental Science

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## TABLE OF CONTENTS

A Message from the Dean	2
Silviculture on the Basis of Plant Functional Traits	4
Creating a New National Park in Equatorial Guinea to Protect Wildlife, Habitats	6
Xi Sigma Pi National Forestry Honors Society	8
CFRES Faculty Part of MI-SAPPHIRE Research Team	10

A Message from the Interim Dean	11
Alumni Spotlight	12
Making Tracks	14
New and Departing Faculty	16
In Memoriam	17
How Rings Have Told the Hidden Stories Trees Hold	18

# RETIREMENT



Blair Orr left the University in January 2022 after 30 years of service to Michigan Tech. He will be remembered for a great many contributions to the College, especially for the development and directorship of the Peace Corps Master's International program in CFRES and other units on campus. Graduates of this program have a tremendous regard for Blair and the continuous support he provided to them as students and graduates of the program. Blair was recognized in many ways for his contributions, including receiving the University's Distinguished Teaching Award in 2010 and the Michigan Technological University Board of Trustees Silver Medal in 2012.



# SILVICULTURE ON THE BASIS OF PLANT FUNCTIONAL TRAITS

Silvics, the life history characteristics of trees, has long been a cornerstone of our understanding of forest dynamics. These include shade tolerance, seed production and dispersal, size, and lifespan; they interact to shape a species niche and role in a forest ecosystem. Indeed, silvics lays the foundation for the practice of silviculture to manipulate forest composition, structure, and function to achieve specific objectives. However, like species names, broad classifications like shade tolerance neither capture the full spectrum of species responses to variation in the environment nor effects on ecosystem function (e.g., productivity).

Julia Burton, recently hired associate professor in CFRES, is taking a deep dive into improving our understanding of silvics by quantifying species functional traits. "By measuring morphological and physiological characteristics of leaves, for example, we can obtain a finer resolution of how plants differ in terms of their responses to different ecological drivers and their effects on ecosystem functions," Burton says.

Like Aesop's fabled tortoise and hare, variation in leaf morphology among species often reflects a

tradeoff between fast and slow returns on investment of mass and carbon. That is, species can either have acquisitive, thin, short-lived deciduous leaves with relatively fast rates of photosynthesis and respiration, or

conservative species' thick, long-lived evergreen leaves that photosynthesize and respire more slowly. This "leaf economics spectrum" has been postulated to be correlated to analogous stem and root traits, but Burton's research shows that stem and root traits can represent independent dimensions of functional variation. Thus, multiple dimensions are more required to characterize differences in the ecological strategies of plant species.

In addition to characterizing differences among species, Burton's research has shown that trait variation within species is lower than trait variation among species for morphological traits, but not chemical traits. Moreover, she has shown that species respond similarly





Burton and her students are now exploring methods of incorporating plant functional traits into silvicultural planning and prescription development. Like species diversity, communities can be characterized in terms of the composition and diversity of functional traits. Indeed, functional traits better represent the diversity of ecological strategies and functions in a community. Therefore, Burton suspects that functional diversity, not species diversity, will be central to sustaining ecosystem functions and services such as carbon storage and sequestration in the face of climate change, invasive species, and changes in disturbance regimes.

This summer, Burton and her team will be developing a database of functional traits that can be used in conjunction with long-term vegetation data from permanent plots at the Huron Mountain Club. They will explore processes underlying high rates of carbon storage and sequestration in old-growth forests and test the hypothesis that functional diversity increases carbon storage and sequestration rates.



to environmental variation. Therefore, representing species with a single value may be appropriate for community-level studies. However, because traits do vary along environmental gradients, accounting for intraspecific variation may be more important for ecosystem-level studies.

Furthermore, in collaboration with her students and colleagues at Michigan Tech, the State University of New York College of Environmental Science and Forestry, and the Northern Institute for Applied Climate Science, Burton plans to work with forest managers in the western Upper Peninsula to design alternative climate change adaptation and mitigation strategies that build adaptive capacity

through silviculture (ACTS). Treatments that restore and rehabilitate adaptive capacity will be tested alongside transition treatments that incorporate assisted migration of species better adapted to future conditions. Both aim to boost functional diversity by retaining and/or introducing a functionally diverse set of species. ACTS treatments will be implemented in northern hardwood forests spanning a broad climate gradient at the Ford Center and at two locations in New York, and compared to business-as-usual and no-action treatments.

Through manipulative experiments and observational studies, Burton and her team are broadly focused on: 1) understanding effects of changes in climate, disturbance regimes, and invasive species on forest community structure and function; and 2) developing silvicultural strategies to sustain the broad range of values and services forests provide. By examining and managing forest ecosystems through the lens of traits, they will uncover some of the complex dynamics underlying ecosystem functions and services.





# CREATING A NEW NATIONAL PARK IN EQUATORIAL GUINEA TO PROTECT WILDLIFE, HABITATS

Since 2013, Jared Wolfe and Kristin Brzeski, professors of wildlife ecology, have been studying the birds and mammals of Equatorial Guinea, a small Central African country unknown to most Americans.

Equatorial Guinea's relatively low population density and unspoiled forested interior make it a uniquely important place to protect threatened populations of the world's most trafficked wildlife, including gorillas, chimpanzees, forest elephants, and giant pangolins. Despite Equatorial Guinea's remarkable biodiversity, it has been recognized as the country least known to science.

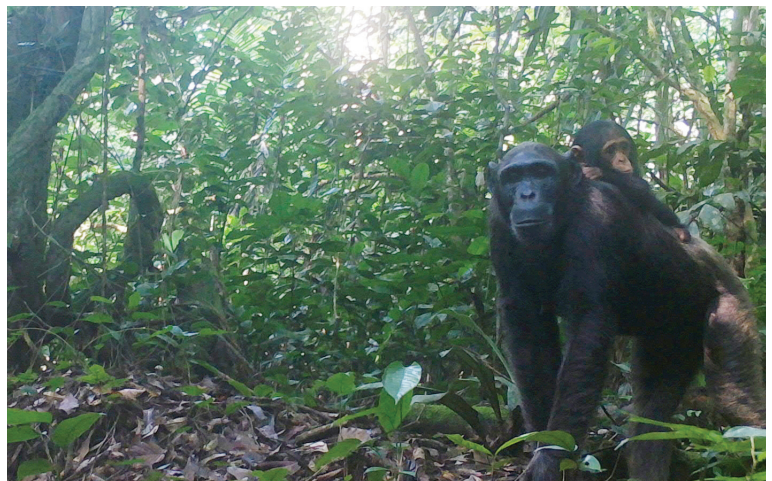
To protect wildlife in Central Africa, Wolfe and Brzeski, in collaboration with several other partners, co-founded Biodiversity Initiative, a nonprofit that works with the Equatoguinean government to survey biodiversity and develop strategies to combat illegal logging and poaching throughout the

country's extensive network of protected areas. Most recently, Wolfe, Brzeski, and several other collaborators pitched an ambitious idea to their government partners: the strategic creation of a new national park.

The location of the proposed national park coincides with the country's new capital city, Ciudad de la Paz, in the forested interior. Recognizing that construction of the new city will lead to


accelerated forest clearing, the team suggested that the national park be located immediately adjacent to the capital city to protect a dizzying array of wildlife and their habitat from certain destruction.

To develop the baseline information needed to justify the creation of the park, the collaborative team spent several years conducting wildlife surveys within its proposed boundaries and in adjacent protected areas.







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**“Tentatively called Reserva de la Paz, the new national park will cover approximately 270,000 acres and will border two existing protected areas: Altos de Nsork and Piedra Bere. ”**

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These efforts included cutting-edge research by CFRES PhD candidate Tiff DeGroot, who developed spatial models that predict patterns of biodiversity based on changes in vegetative cover and forest integrity.

Over several years, the collaborative team deployed camera traps, mist-netted birds, trapped small mammals, and collected insects for eDNA analysis. The end result was strong evidence that the proposed park and adjoining protected areas host populations of chimpanzees, gorillas, leopards, and African gray parrots—all at risk of local extinction.

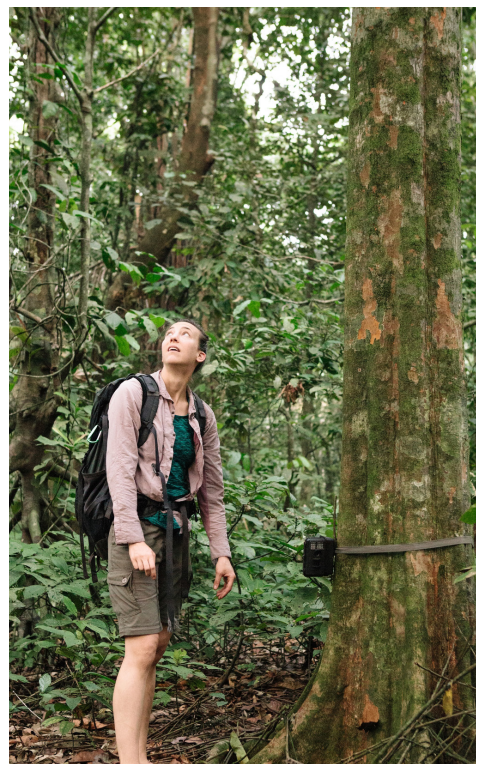
After reviewing the team’s findings, the government of Equatorial Guinea supported the creation of the park, yet lacked the financial resources for adequate park development and management. Given the urgent need for support, the collaborative team partnered with mapping wizard Mike Hyslop, teaching professor at

CFRES, to develop a proposal for funding. The final proposal was submitted to the Rainforest Trust, asking for \$1.6 million dollars to cover the initial construction of guard houses, basic infrastructure, and the first five years of operational costs. After several months of review, Wolfe and Brzeski recently learned that the Rainforest Trust agreed to support their proposal.

Tentatively called Reserva de la Paz, the new national park will cover approximately 270,000 acres and will border two existing protected areas: Altos de Nsork and Piedra Bere.

Creating a new national park is a daunting task and will require the collaboration of numerous people in Equatorial Guinea, CFRES, and partner

institutions. The team aims to officially launch the park in two years, protecting its wildlife and their habitat into perpetuity.



# XI SIGMA PI NATIONAL FORESTRY HONORS SOCIETY



*The Learning Center and Resource Center are located in Hesterberg Hall. They are meant to provide current students with resources, which they suggest to the College, that will help students find academic success.*

Xi Sigma Pi National Forestry Honors Academy began at the University of Washington in 1908. The society promotes a fraternal spirit among those involved with the forest, who vow to maintain a high standard of scholarship in the field and improve the forestry profession. Michigan Technological University's Xi Sigma Pi chapter began in 1971, while the well-known Gene Hesterberg was serving as the department head. The society is governed through biennial conventions held in conjunction with the Society of American Foresters.

Each chapter of Xi Sigma Pi participates in events that vary by university and community traditions. Tech's chapter holds their annual symposium each year near the end of the spring semester. Leaders in the chapter organize professionals to speak at this formal event. 2022's topic, "Future of Forests," featured speakers Maria Janowiak, Rachel Tarpey, and Jerry Jondreau, who influenced attendees in their areas of expertise on climate

change and land management practices, Indigenous perspectives of forestry, and adapting traditional forestry practices to a changing climate.



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**"We've all been there, so you don't have to struggle. Seeing my peers struggling through a class reach out for tutoring, then leave with a grade better than they expected, is an invaluable experience."**

.....

In fall 2021, MTU's chapter of Xi Sigma Pi gained a new task when they coordinated with College leaders to create a space where members and their peers have better access to resources, known as the Learning Center. The leaders of the chapter pride themselves on this new space, which provides one-on-one scheduled or walk-in peer tutoring for every class CFRES offers, a library of

textbooks required for classes, recommended books, sun lamps, plants, and plenty of natural light with a beautiful view down campus. In relevant fashion, this year's president joined Xi Sig because of his passion for helping others through tutoring.

To be eligible to join Xi Sigma Pi, Michigan Tech students must be junior status or higher and have completed at least 10 credits in forestry-related natural resource management classes, as well as being in the top 25 percent of their class. Equally as important, students must display traits of academic excellence and holistic professionalism, including leadership.

## MAKE A GIFT

Help support student leaders in CFRES organizations by donating to our Student Professional Development fund.

[mtu.edu/forest/giving/programs](https://mtu.edu/forest/giving/programs)







**President: Stelle Barone (he/him)**  
**Major: Applied Ecology and Environmental Science**

**Why should students consider joining Xi Sig?**

**SB:** Most people join for the networking

opportunities. It's a great way for other folks in natural resources to see your work ethic and communication skills, but I think the joy of connecting with my peers through tutoring and symposium was the most motivating reason for me.

**What are your goals for the chapter or the resource center?**

**SB:** Diversity is a great way to expand our impact on the community and increase networking opportunities. I am hoping to get more textbooks and field resources to be available for students because textbook prices can be a challenge for many. I also hope to promote the resource center since it is so new, and encourage students in all natural resource majors to join the society, not just those who fit with the term "forestry" like the name of the society might suggest.



**Secretary: Cassie Gabalis (she/her)**  
**Major: Applied Ecology and Environmental Science**

**What does Xi Sigma Pi mean to you?**

**CG:** Being a member means representing

CFRES both at the University level and national level, and building a stronger community, as well as more LGBT+ representation and visibility in Xi Sig and the greater CFRES community as a transgender woman.

**Why is the Learning Center important for CFRES? As an officer, what do you hope to accomplish?**

**CG:** Knowledge sharing is crucial for community building, in my opinion. I am hoping to develop greater solidarity between CFRES and the LGBT+ community, especially considering the events happening around the world lately.



**Vice President: Jordan Zych (she/her)**  
**Major: Natural Resource Management**

**What does Xi Sig mean to you?**

**JZ:** Joining Xi Sig means a lot to me because it is a lifelong connection to all of the other

members, regardless of age or location, and it represents an academic achievement. I am excited to collaborate with the e-board on how we can help Xi Sigma Pi evolve and encourage a respectful community of young professionals rooted in our passion for higher learning in natural resources.

**What can students expect from the Learning Center?**

**JZ:** Students who utilize the Learning Center can expect to get help on any assignments or skills that they need on an individual level. There isn't any other help center or learning center on campus targeted toward our department. Utilizing the Learning Center on the main campus is often not effective because the math and writing formats we use can be very specific to our classes.



**Faculty Advisor: Mickey Jarvi (he/him)**  
**Assistant Teaching Professor**

**What is your history and role in Xi Sigma Pi?**

**MJ:** I was initiated at Tech around 2008. I didn't have a title on e-board, but I stepped up by being in charge of

organizing new initiates while I was a member. As the advisor, I attend all meetings, guide students in planning symposium and other events, get e-board members to one professional org conference of their choice per year, still help organize initiations, and help advise tutors with their expertise to help their peers.

**What does being a Xi Sig member mean to you?**

**MJ:** Be stewards of the land, support each other, and hold each other accountable.

**How does the Learning Center increase student success?**

**MJ:** Tutors get to choose what topics they would like to tutor, typically based on the classes they excelled most in. This means they are comfortable with what they are teaching their peers. Having current students as tutors also allows those seeking help to experience different styles of teaching/learning, which might be the extra boost they need to understand the information.

# CFRES FACULTY PART OF MI-SAPPHIRE RESEARCH TEAM

Hairong Wei and Kristin Brzeski are members of a Michigan Tech research team receiving \$4.3 million from the Michigan Department of Health and Human Services (MDHHS) to help expand the state's genetic sequencing capacity for infectious diseases.

The project, called the Michigan Sequencing Academic Partnership for Public Health Innovation and Response (MI-SAPPHIRE), is funded through an Epidemiology and Laboratory Capacity grant MDHHS received from the Centers for Disease Control and Prevention. MI-SAPPHIRE activities will include sequence generation and analysis, such as sample collection and sequencing; data processing, storage and sharing; and data interpretation and analytics.

Wei is one of Michigan Tech's three co-principal investigators (co-PIs), and Brzeski is one of five senior researchers at Tech tapped to join the project. They will work with research teams

from Michigan State University, the University of Michigan, and Wayne State University.

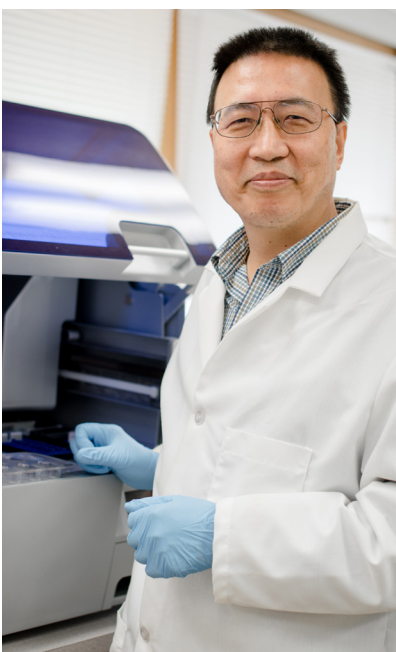
Together, the four universities will receive \$18.5 million in federal funds over the next two years to increase sequencing capacity in Michigan. The project will start with SARS-CoV-2 and then expand to other infectious disease threats with potential for broad community spread.



"The COVID-19 pandemic has highlighted the importance and need for genomic sequencing, surveillance and epidemiology capacity both globally and right here in Michigan," said Elizabeth Hertel, MDHHS director. "The MDHHS Bureau of Laboratories has rapidly expanded its efforts to identify COVID-19 variants since the start of the pandemic to support public health actions. MI-SAPPHIRE will allow our state to expand sequencing and analysis capacity and the number of pathogens that undergo routine sequencing, and ensure we are sampling diverse geographic areas across the state."

Caryn Heldt, the James and Lorna Mack Endowed Chair of Cellular and Molecular Engineering at Michigan Tech and the director of the University's Health Research Institute, will serve as a co-PI alongside Wei.

"While we will start with SARS-CoV-2 sequencing, the capacity we are building will then be used to sequence other pathogens, ranging from drug-resistant gonorrhea to zoonotic diseases, like avian influenza," Heldt said. "Collectively, Michigan Tech has expertise in genomic sequencing, zoonotic diseases, and the computational infrastructure needed to store, catalog, and evaluate large genomic datasets. Combine this expertise with the relationships we have with local providers and the Western Upper Peninsula Health Department, and we are excited to help the state scale their capacity and continue to support our community in response to the COVID-19 pandemic and in addressing future health threats."





# A MESSAGE FROM THE INTERIM DEAN DAVID FLASPOHLER



## DEAR ALUMNI AND FRIENDS,

Greetings to all of our alumni, students, and supporters!

As Andrew noted, late this spring, I had the honor of being asked to serve as interim dean. I write this as I approach six months in the position and I can honestly say that my respect for what Andrew has provided at the helm of CFRES for the last several years grows daily. I am incredibly fortunate to lead an academic unit characterized by growth in undergraduate and graduate student numbers, excellence in teaching and research, and a strong sense of community. My focus as interim dean is to nurture and cultivate these qualities and to work with our faculty and staff to find ways to further enrich the climate and academic offerings for our students.

In this vein, allow me to share one recent initiative. As a result of the climate survey mentioned in Andrew's message, we initiated a series of meetings with the CFRES Diversity Committee

and instructors for the Integrated Field Practicum (IFP/summer and fall camp). From these meetings came several specific action items designed to improve the learning environment, professionalize the culture, and elevate the academic atmosphere at the Ford Forestry Center during these courses.

One action was a greatly expanded course orientation to include presentations from the director of the Ford Center and representatives from Public Safety and Police Services, Residence Life, Equal Opportunity Compliance and Title XI, the Office of Student Conduct, the Office of the Vice President for Diversity and Inclusion, the Center for Diversity and Inclusion, and myself. All of these presentations included time for questions and discussion with the fall camp students. Tara Bal, one of the IFP professors, had the excellent idea to package this orientation session into a Certificate in Professional Leadership that students can include on their resumes; we intend to do just that.

These changes focus on making the Ford Center experience one that provides an opportunity for strong professional growth for foresters, wildlife and applied ecologists, future scientists, and

land managers. We believe a CFRES education should provide our students with knowledge, experience, and sensitivities that will put them at the forefront of their professions as they work with an increasingly diverse and creative workforce.

This is just one example of our commitment to ensuring that when our students graduate, they understand what employers will expect of them, whether they are assessing a timber sale, counting birds, restoring a wetland, running a polymerase chain reaction gel, or analyzing geographic information systems data as part of a team. Our goal is to empower our graduates with state-of-the-science skills and an exceptional level of professional preparedness. One measure of our success will be how often future employers hire our graduates and how often that is followed by something along the lines of: "Wow, I can tell you're a CFRES grad!"

A handwritten signature in black ink that reads "David Flaspohler". The signature is fluid and cursive, written over a white background.

David Flaspohler  
Interim Dean and Professor  
Director of Undergraduate  
Programs  
dflaspo@mtu.edu

# ALUMNI SPOTLIGHT



**AMBER OJA '12**  
**BS in Forestry and Wildlife Ecology and Management**

While working on a biology/pre-med degree at Michigan Tech, I met some folks from the “forestry department” and couldn’t believe what they were studying and how much time they spent outdoors. I’d interject, “Wait, what are you studying up there?” and could literally feel their enthusiasm for the curriculum, the professors, and the culture. I quickly realized the campus on the hill (CFRES) was the place for me.

The forestry profession is a broad one and choosing a path isn’t always easy, but luckily the diverse student body and exposure to numerous facets of the profession via field tours and professional engagement on campus led me to industrial forestry. After graduating in 2012 with a degree in forestry and wildlife ecology and management, I accepted a seasonal position with Compass

Land Consultants. After six months of cruising large tracts of land and marking timber, I accepted a log scaling position back home with Northern Hardwoods. This fast-paced sawmill environment was right up my alley, but when an opportunity with Plum Creek arose, I couldn’t pass it up, and accepted a forester position after two years at the mill. As a forester, I managed 70,000 acres of industrial timberland alongside an amazing group of colleagues and for three different companies: Plum Creek, then Weyerhaeuser, and currently Lyme Great Lakes Timberlands. After six years as a region forester for the company, I was promoted to my current role of area manager.

A favorite part of my career has been my ability to stay connected with CFRES by hosting field tours, speaking on campus, and attending annual career fairs. This engagement allows our company to meet and network with students and faculty. It’s also a chance for current students to witness industrial forestry—right in their backyard. That exposure during my time at CFRES led me to where I am today, so I am happy to pay it forward any chance I get.

When reflecting on “success throughout my career,” it’s best to share advice I got long ago: Surround yourself with good people who are working toward something you can feel good about—and with that, success will happen organically. Forestry was and continues to be that for me. Witnessing folks excel and enjoy their careers while having a positive impact on the land base, our communities, and the local economy is the pinnacle of success in my eyes, and I hope others find their success story within this profession!







**BRITTANY VANDERWALL '14**  
**BS in Forestry**  
**Ecology Minor**

Since seventh grade, I knew I wanted to attend Michigan Tech—but it wasn't until I'd arrived that I chose forestry. Until that choice, I had never even heard of it. Now, it's been more than eight years since I graduated with a forestry degree, and I can't imagine any other path in this life.

Soon after I graduated at 22 years old, I got hired as a district forester with the Presque Isle Conservation District. Since the job was focused on landowner outreach and education, I wanted to be involved in the greater forestry community to stay informed on emerging issues within the profession. My interest led me to serve as a statewide leader with both the Michigan Society of American Foresters and Michigan Tree Farm, and as a national leader with the American Forest Foundation. For several years, I focused on building my leadership skills and capacity. In 2019, I was the American Forest Foundation's National Leadership Award recipient for my role in our Tree Farm Committee successes.

I recently started a new position

as the senior forestry manager for the Midwest's Family Forest Carbon Program with the American Forest Foundation. In this role, I will be working to connect private landowners and foresters with natural climate solutions throughout Michigan and northern Wisconsin.


This year, I was named the 2022 Outstanding Young Alumni by the College of Forest Resources and Environmental Science. It was such an honor to receive this designation. CFRES was the foundation on which I have built all my career successes. It pleases me to see the major strides made within the College toward a more diverse, inclusive, and equitable environment. Forestry as a profession has traditionally been a bit of a monoculture. The science and practice of forestry can only benefit when all voices are at the table.

Outside the context of my career, I have been building a

life in Rogers City on the Lake Huron coast. Civic engagement is important to me, as we each play a part in building our community vitality. I am also a regular performer with our local community theater.



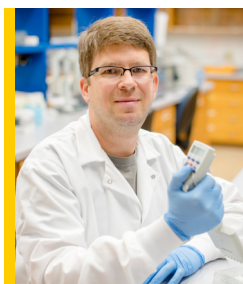
To be a thriving professional, one must be engaged with their personal self. Enjoying your career and finding your niche is an important piece of life success, but so is everything else. When you establish yourself as both a professional and a person, both the present and the future become so much clearer.

.....  .....

**“CFRES was the foundation on which I have built all my career successes. It pleases me to see the major strides made within the College toward a more diverse, inclusive, and equitable environment.”**

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# MAKING TRACKS



Associate Professors **Fengjing Liu** and **Carsten Külheim** were both awarded tenure by the Board of Trustees, and **Molly Cavaleri** was promoted to professor. Congratulations to these great faculty for the recognition of their contributions in teaching, research, and service to the University and their professional organizations.



CFRES faculty have won the University's Distinguished Teaching Awards in each of the last two years. In 2021, **Mike Hyslop** was recognized in the assistant professor/lecturer category, and in 2022, **Cavaleri** received the award in the associate professor/professor category. These awards reflect the commitment of CFRES faculty to the success of students, and are based on teaching evaluations from students, along with comments that they and others submit for each of the finalists for the awards.



Interim Associate Dean for Research and Coordinator of Interdisciplinary, Multi-Institutional Research **Andy Burton** has been appointed as Distinguished Professor by the University. This title is used to recognize outstanding faculty members who have made substantial contributions to the University and their discipline.





**Stacy Cotey** has been with the College over the last six years in the roles of advisor and instructor. She has been appointed as an assistant teaching professor in wildlife ecology, and will continue to teach classes in Landscape Ecology and Planning, and develop new classes such as Animal Behavior to support our growing wildlife ecology and conservation program. She will also continue research focused on otters, and advisement of our undergraduate students.



Welcome to **John Carroll**, our new facility coordinator at the Ford Center. We are excited to see the progress he is already making in improving our facilities to enhance the experiences of students, researchers, and residents. In addition, **Mark Rudnicki**, Ford Center and Forest director, led an enthusiastic group of student, faculty, and staff volunteers in planting over a thousand trees at the center. Over time, these trees will reduce the area of mowed grass, reduce noise from the highway, and enhance the appearance of the facility.



**Val Gagnon** has been appointed as an assistant professor in the College. Previously, she was a research assistant professor, and in her new role, she will continue as director of University-Indigenous community partnerships with the Great Lakes Research Center. She teaches our Natural Resources Policy class, along with classes such as Indigenous Natural Resource Management. Her research focuses on environmental justice and policy, and Indigenous wisdom in the Great Lakes region.



**Chris Miller**—a favorite instructor for many students—has been appointed as a teaching assistant professor. He will continue to teach classes with a focus on the quantitative side of our programs, including our Field Techniques, Biometrics, and Forest Economics classes. He will also continue to oversee our greenhouse operations, which provide opportunities for first-year students to gain paid work experience in the College through the Earn-and-Learn program.



**Jim Schmierer** has been with the College for many years as a forester, instructor, and senior lecturer. He has now moved into a new position as an assistant teaching professor in applied forestry. He will be teaching classes such as Capstone, Timber Harvesting, and other field-focused classes in applied forestry. He also has background working in the arboriculture industry, and can sometimes be seen demonstrating tree climbing techniques outside the building!

# NEW AND DEPARTING FACULTY



## NEW FACULTY

**Julia Burton** has joined the College as an associate professor of silviculture. She brings experience in teaching and research from her two previous institutions, including most recently the State University of New York's College of Environmental Science and Forestry. As an established researcher and educator in her field, she has ongoing research investigating how silvicultural treatments affect the sustainability of forest ecosystems with changing climate and other disturbances, and how they vary over space and time. She is also interested in linkages between species composition and structure, and ecosystem functions and services using trait-based models.



**Steve Voelker** has joined the College as an associate professor in forest ecology and management. He was most recently at the State University of New York's College of Environmental Science and Forestry, and has an established research program exploring the information held in tree rings, including using stable isotopes to gain insights into the climatic conditions at different times in the growth of trees. In the short term, he is teaching Natural Resource Management, and will be developing classes in Climate Change that will benefit our students and those from other academic programs.

## DEPARTING FACULTY

Congratulations to **Robert Froese**, who has been appointed as associate professor and endowed chair in forest growth and yield in the Renewable Resources Department, Faculty of Agricultural, Life & Environmental Sciences, at the University of Alberta.

Congratulations to **Matt Kelly**, who has been appointed as both the Cheshire County forester and a forestry field specialist with the University of New Hampshire.



## AT LAST!

We were finally able to hold an in-person celebration this spring with an Overstory event that included a dinner, door prizes, and the opportunity to celebrate our newest graduates. These students have navigated a complex path through their University careers during the pandemic. We are so proud of their achievements and look forward to hearing from them as they embark on the next stages of their careers.



# IN MEMORIAM

## ***Collin Hagan '19 Forestry***

In August, Collin passed away from injuries sustained while fighting the Big Swamp Fire on the Willamette National Forest near Oakridge, Oregon. He was employed by the Bureau of Land Management on the Craig Interagency Hotshot Crew in Colorado. A recent graduate of our program, Collin had completed an associate's degree at Gogebic Community College prior to transferring to Michigan Tech. A more detailed story about Collin's journey will appear in the next edition of Re:Generations.

## ***Dave Myrold '77 Forestry***

Dave was the first member of his family to attend and graduate from college, and became a preeminent researcher in soil biology and ecology. He earned his MS in Soil Science and PhD in Microbiology, then taught and conducted research at Oregon State University until his retirement in 2021. During his career in soil science, he attended or presented at scientific conferences or universities on each of the continents. The 47 graduate students he mentored spanned all corners of the globe. He received many awards and was elected a Fellow by the American Association for the Advancement of Science, Soil Science Society of America, and American Society of Agronomy. His scientific publications numbered in the hundreds.

## ***Steve Shetron***

Steve was a professor in soils science from 1970-97, and was named a professor emeritus after retirement. He spent years doing research at the Ford Center and Forest in Alberta and shared his passion for soils research with many students, for whom his door was always open. He mentored many graduate students in their research and helped endow the Shetron-Jurgensen Annual Fellowship. He continued supporting the College and the Shetron-Jurgensen Scholarship Fund after retirement, and taught summer classes in soil taxonomy as recently as 2012.

## ***Bernie Carr***

Bernie was a professor in our forestry technician program, and was named a professor emeritus after retirement. He began in a teaching position soon after the program's creation, and was a coordinator before earning the rank of professor. He joined Tech planning to stay up to five years, and ended up staying 35. The joy and challenges of working with the students kept him teaching, especially in the early years. He was a Golden Member of the Society of American Foresters (SAF) with more than 50 years of continuous membership, and was an SAF Fellow and former chair of the Michigan society.

## ***Jerry Vande Hei '58 Forestry***

Jerry was a member of our Honor Academy. He served two years as a US Army corporal in Korea before graduating from the School of Forestry. He married Patricia Simonar and they had four children. They lived throughout Wisconsin due to Jerry's career in forestry, and finally settled in Sun Prairie in 1973. Jerry retired in 1995 as chief of the Forest Management Division of the Wisconsin DNR. He was an avid sportsman, enjoying hunting and fishing, and spent as much time as he could at his cherished cabin in Phillips. He shared his love for the outdoors with his kids and grandchildren, and they created many memories together as a family.

## ***Dan O'Brien '78 Forestry***

Dan married Janet Kempainen in 1981. He began a 42-year career with the Boy Scouts of America (BSA) after graduating from Michigan Tech. He was an Eagle Scout and served as scout executive for the BSA Abraham Lincoln Council in Springfield, Illinois, for 24 years, retiring in 2020. He received many honors, including the 2021 Outstanding Eagle Scout Award from the National Eagle Scout Association and the 2020 Trailblazer Award from the Abraham Lincoln Council. He was a lifelong brother of the Alpha Phi Omega service fraternity, a vigil member of the Order of the Arrow, and a member and past president of the Rotary Club of Springfield South.



# HOW RINGS HAVE TOLD THE HIDDEN STORIES TREES HOLD





You have probably gazed at a large and old tree, without knowing its age, but understanding it has been here much longer than we have. Some of us have carefully counted the rings on a stump and considered the time and the weather and events that tree has seen.

Much like ancient texts and oral histories passed down among generations, tree rings have stories to tell. To discover and decode many of these stories, special training is needed. Steve Voelker, a new faculty member at the College, is an expert in dendrochronology—the science of tree rings—which assigns absolute dates to each tree ring formed in the past. In other words, he specializes in telling the stories held by the trees. Tree rings can be used for insights on many past events in history, but Voelker is most interested in past forest productivity and past climate variability.

You may be asking yourself why we would need knowledge of past tree growth when existing forest inventories on public and private lands can extend back decades. Well, tree ring lessons from the past can provide specific guidance on how the productivity of our forests will respond to future climates. For example, repeated forest inventories provide records of forest growth and mortality as averaged over years to decades—but it is very difficult to attribute trends in growth to climate, because all kinds of climate variability will have occurred within a 10-year period between measurements. As a consequence, for many tree species of Upper Great Lakes forests, we do not know the tipping point at which warming temperatures, which may initially benefit the current generation of trees, transition to drought stress that will increasingly limit growth and decrease forest health.

In these times of rapidly changing climate, many stakeholders in the future of Michigan's forests would benefit from understanding tree growth responses to past climate so we can accurately project forest growth across a warming climate over the next 50 or 100 years. Voelker is working at multiple sites and with multiple species across the region to better understand how climate will affect the growth of Michigan's forests.

The stories trees can tell us have been essential to understanding climate change. Globally, climate-sensitive tree ring records extend hundreds to thousands of years before instrumental measurements. This tree ring evidence of past temperatures has featured prominently in Intergovernmental Panel on Climate Change (IPCC) reports and has been essential to our

understanding global warming responses to rising atmospheric carbon dioxide concentrations. However, in the Upper Great Lakes region, there have been no tree ring records available to understand past temperature variability for two reasons. First, most tree species of this region do not live very long and their wood decays quickly when they die compared to those on remote mountaintops in the western United States. Second, growth of most trees in this region is more closely tied to the amount of summer wetness or drought, so their growth responses to temperature are often obscured.

To overcome these limitations and understand climate history of this region, Voelker is working on a project funded by the National Science Foundation. To find really old tree ring records, he and his team have not targeted the rocky and rugged mountaintops of Michigan's Upper Peninsula. Rather, in recent years, they have targeted lakes and rivers, where they find



submerged logs and driftwood that often date to the historic logging era of the late 1800s or even before that. The oldest pieces of wood have been preserved from decay underwater for over 500 years!

To focus in on temperature responses, Voelker's team uses stable isotopes of carbon and oxygen, which are chemical signatures imprinted on each tree ring. Soon they hope to have a 500-year reconstruction of winter temperatures centered on the UP, which would be the first of its kind for eastern North America. Furthermore, they hope to pair this with tree ring records elsewhere in North America to understand if recent global warming has caused the jet stream to become more eccentric or "wavy," which could help explain why extreme-weather-related disasters have become more likely. All told, Voelker and his team are excited to uncover more stories from the trees.



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**COLLEGE OF FOREST RESOURCES  
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The Ford Center is well known for its camplike atmosphere, especially by those who have lived there for 14 weeks to attend the Integrated Field Practicum (IFP/summer and fall camp). The village and homes that Henry Ford donated to Michigan Tech in 1954 might be enjoyed as historic or “rustic” by students taking classes and doing research on the forest, but this rustic look is only popular when the village is in full working order—when its water, power, Wi-Fi, and windows are fully functioning. Fortunately, new leadership at the Ford Center has been working hard to provide these comforts to students, faculty, staff, and those living in the village.

The dorm has been reroofed and painted. Old windows have been replaced in village houses. Kitchen staff have a working garden and greenhouses for growing vegetables and herbs. And, the tennis and pickleball court have been refreshed. In

addition, with over a thousand saplings planted in open areas of the Ford Center, the village of Alberta is beginning to look just as beautiful as it was when Ford donated it to MTU. Current IFP students are proud to call the dormitories home—and have been since their first orientation, days after Move-In, when they were greeted with support from campus resources, new and improved recreation equipment, and a progress flag painted on the sidewalk leading to their semester-long housing.

The College of Forest Resources and Environmental Science is dedicated to creating and maintaining students’ sense of belonging while they study and learn at the Ford Center, because camp is unlike any other class at Tech. It’s a place to call home.

**Tomorrow Needs Progress. Tomorrow Needs Michigan Tech.**

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