

SCHOOL OF FOREST RESOURCES AND ENVIRONMENTAL SCIENCE

# Re:Generations

WINTER 2016-17



Michigan Technological University  
School of Forest Resources  
and Environmental Science

Committed to our future students, current students, and our alumni.



**TERRY L. SHARIK**  
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# A message from the dean

## DEAR ALUMNI AND FRIENDS,

As we embark on a new year, we are pleased to share with you the many good things that are happening in the School of Forest Resources and Environmental Science at Michigan Technological University. Perhaps most noteworthy are the three new administrative staff hires that constitute our "Engagement Team." Jerry Jondreau, our new director of recruiting, is responsible for attracting students to our program. Stacy Cotey, our professional advisor, ensures that their curricular needs are met and they feel good about being here. Erin Froese, our director of development, sends them into the work place and follows their career development. You can read more about Jerry, Stacy, and Erin, and what they do, later in this newsletter.

One of the Engagement Team's charges is to increase the number, quality, and diversity of our student body. Given the relatively low percentage of women and under-represented minorities in the

natural resources professional workforce, increasing diversity in our programs is essential. This includes bringing prospective students to Michigan Tech and the Ford Center and Forest to get a taste of life as an SFRES student. In this regard, we have initiated a series of summer experiences for minority youth and their families at the Ford Center and Forest in cooperation with the Keweenaw Bay Indian Community, Great Lakes Indian Fish and Wildlife Commission, Greening of Detroit, Michigan Chapter of the Boy Scouts of America, and Michigan Department of Natural Resources. We are also working to increase the size of our international student body through recruiting efforts focused on countries with specific natural resource management needs. Our goal is to build a body of students from all backgrounds, who are passionate about our lands and their management.

With warmest wishes for the new year,

**TERRY L. SHARIK**

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▼ Greenhouse Management class learning to care for tree seedlings



## New Faculty



### **CURTIS EDSON**

#### **Geospatial Information Science**

Curtis Edson joined the SFRES faculty in August 2016 as an assistant professor of geospatial information science after retiring from the US Army. During his military career, Curtis served as a combat engineer, construction engineer, and geospatial engineer. Most recently, he taught remote sensing, aerial photogrammetry, surveying, geographic information systems, and cartography at the United

States Military Academy. His research interests include remote sensing, forest biomass estimation, unmanned aerial systems, multispectral and hyperspectral imagery, and environmental monitoring and resource inventory using terrestrial and aerial Light Detection and Ranging. He is married to Katie and they have three sons.



### **MATTHEW KELLY**

#### **Natural Resource Management**

Matthew Kelly joined the SFRES faculty in January 2016 as an assistant professor of natural resource management. Matt completed his MS and PhD in Forest Resource Management from the State University of New York, College of Environmental Science and Forestry, where he studied private landowner preferences for forest

conservation programs in the New York City watershed. He also investigated the costs of implementing best management practices to protect water quality during harvest operations. In his free time, Matt enjoys skiing, hiking, soccer, and playing a variety of musical instruments.



### **MARK RUDNICKI**

#### **Forest Biomaterials**

Mark Rudnicki joined Michigan Tech in January 2015 as a professor of practice to develop the University's forest biomaterials programs. He serves as executive director of the Michigan Forest Biomaterials Institute, coordinating statewide efforts to bolster Michigan's innovation and competitiveness in forest biomaterials. Mark leads Michigan Tech's partnership in the Michigan Wood Innovation

Team and is an advising member of the Michigan Wood Energy Team. Before joining Tech, Mark was a tenured associate professor of forest ecology at the University of Connecticut, where he led a large research program that integrated silviculture, boundary layer meteorology, and engineering that investigated tree biomechanics and tree responses to wind.



▲ from left to right | ERIN FROESE, STACY COTEY, JERRY JONDREAU

## New Staff

The School has created an Engagement Team to rebrand SFRES through outreach and engagement with current and potential students as well as alumni. SFRES is the only school at Michigan Tech to have its own engagement team. Meet Erin Froese, Stacy Cotey, and Jerry Jondreau, our three-person team:

**ERIN FROESE**, who serves as director of advancement, has started and run two successful businesses: a plant nursery and a child care center. A native of British Columbia, Canada, she has a lifelong affinity for natural resources and the environment. She has hiked the West Coast Trail and sailed the British Columbia Gulf Islands.

Erin served as a forestry outreach intern in Mackenzie, BC, which she says gave her a unique perspective on natural resource-dependent communities.

"Selling Michigan Tech and the School of Forest Resources and Environmental Science seems like a natural fit," Erin says. "We have amazing students, a strong research record, and alumni who love Houghton and our School. Helping alumni find the area they are passionate about supporting is what I'm endeavoring to do."

**STACY COTEY**, who serves as a student advisor, grew up in Muscatine, Iowa, along the Mississippi River, and has lived in the Upper Peninsula for 20 years. She and her husband have an 80-acre farm near Calumet, where they live with their golden retriever and four small draft horses.

Before joining SFRES, Stacy worked as an academic advisor, instructor, and director of pre-health professional studies in Michigan Tech's Department of Biological Sciences. She has taught natural resource and biology courses at several Midwest colleges. For three years, she was a watershed project manager in Dickinson County, Michigan, and she has worked for other natural resource agencies including the State of Michigan, US Forest Service, and National Park Service.

"I am excited about my new position because I enjoy helping students to achieve their career goals, especially in the ecology and natural resources fields," she says.

**JERRY JONDREAU** earned a BS in Forestry cum laude from Michigan Tech in 2012, where he received the Outstanding Senior in Forestry award. He was vice president of the Michigan Tech chapter of the American Indian Science and Engineering Society, and co-founder and vice president of the Michigan Tech Wildland Fire Club. He has worked as a tribal forester and director of the Keweenaw Bay Indian Community (KBIC) Forestry Department.

A member of the KBIC Ojibwe tribe, Jerry hopes to bring the tribal perspective of the natural world to Michigan Tech and SFRES. "There is a valuable tribal perspective that is almost entirely lost to the world of natural resources management," he says. His recruiting efforts will focus on increasing diversity within SFRES. "That's the way to bring a more diverse perspective to the field," he says.

Jerry was born in Marquette. He and his partner have five children and another on the way. They follow tribal cultural traditions, such as making maple syrup at a sugarbush, ricing, using traditional medicines, and foraging in the forest.



▲ Forest Ecology lab at the northern white-cedar stand along the Eagle River's west branch

## Current Research

Each year, our faculty and staff attract funding to support their research. This funding leads to new discoveries, peer-reviewed publications, and presentations at technical and professional meetings, all of which promote our School, our programs, and our research. The list below highlights some of our recently funded research:

**"Adding value to small-diameter hazardous fuels through thermal modification."**

Natural Resources Research Institute, University of Minnesota Duluth. 2015-20. PIs: Larkin GM, Richter DL, Laks PE.

**"Collaborative Research: Plant Genotype-Phenotype (G2P) Association Discovery via Integrative Genome-Scale Biological Network & Genome-Wide Association Analysis."**

National Science Foundation. 2015-18. PI: Wei H.

**"Development and application of EST-SSRs in the endangered species *Quercus georgiana*."**

The Morton Arboretum. 2015-16. PI: Gailing O.

**"Enhancing the nanostructure of the lignocellulosic cell wall as a natural template for highly-ordered mesoporous carbons."**

USDA AFRI NIFA Program. 2015-18. PIs: Wang J, Xie X.

**"Environmental fate of carbon in logging residues under operational forest management."**

National Council for Air and Stream Improvement, Inc. 2015-16. PI: Froese RE.

**"Wood it matter: Tracing isotopically labeled wood into the soil."**

Research Excellence Fund, Michigan Tech. 2015-17. PIs: Resh SC, Kane E, Jurgensen MF.

**"Analysis of Nutrient Poor Sandy Soils of Wisconsin."**

Wisconsin Department of Natural Resources. 2016-17. PI: Kane ES.

**"CNH-S: Andes bofedales and cattle: The impacts of changing hydrology and glacial retreat on community livelihoods in Peru's Cordillera Blanca."**

National Science Foundation. 2016-21. PIs: Bowser G., Taber AB, Young KR, Boone RB, Chimner RA.

**"Effects of prescribed fire on aspen and grassland restoration in a wolf, elk, aspen system."**

Earth Watch. PI: Edson CB.

**"Ensuring salvaged, beetle-killed trees are utilized for the highest and best use through the application of new technologies."**

USDA Forest Service. 2016-18. PIs: Dickinson YL, Ross RJ, Wang X, Rudnicki M, Forsman JW.

**"Great Lakes Northern Forest CESU: Beech reintroduction at Pictured Rocks National Lakeshore and Sleeping Bear Dunes National Lakeshore."**

National Park Service. 2016-19. Dickinson YL, Storer AJ.

**"National woodland owner survey: Analytical and outreach support."**

USDA Forest Service. 2016-17. PI: Froese RE.



**XINFENG XIE**  
Forest Biomaterials

## Faculty Focus

“The purpose of research is to connect the dots. In Michigan, we have wood resources, and we have industries—how do you connect them together? With technology.”

Xinfeng Xie, assistant professor of forest biomaterials, came to Michigan Tech in 2016 with a dual forestry and engineering background. He received his bachelor’s degree in agriculture, with a specialization in forestry, and his master’s degree in engineering, specializing in wood science and technology, from the Central South University of Forestry and Technology in China. He received his PhD in Forest Resources, Wood Science and Technology, from the University of Maine.

At Michigan Tech, Xinfeng focuses on wood use with two areas of emphasis: wood waste materials and high-value products. Xinfeng’s work centers on lignin, an organic substance also known as black liquor. Paper mills remove lignin from wood during the process of making paper—it constitutes about 30 percent of woody biomass from the pulp and paper industry. Up until now, black liquor’s use and value has been limited, but Xinfeng’s research could change all that.

Lignin could be a base for carbon fiber. It can also be used as a plastic, solvent, fuel, or oxygen-rich fuel additive. The first step, though, is to clean it by putting it through a purification process that “upgrades” the material. Xinfeng’s USDA-funded research focuses on this process, known as fractionation—separating lignin into different groups for different purposes.

“From one byproduct, you have at least four potential uses,” he says. “It’s a green material from nature—biodegradable and renewable—we just need to modify it to fit the application.”

Xinfeng is also interested in transitioning pulp and paper mills into biorefineries designed to put every component of the wood to use. He calls this an integrated separation and conversion process.

“There will be no byproducts,” he says, “just intermediate chemicals that can be upgraded to better products. All are useful and can serve a purpose.”

Such shifts in industry are key to shifting the state toward a bio-based economy. Michigan Tech is the leading institute in terms of the bioeconomy, Xinfeng says, but he admits that we still have a long way to go.

“It’s a systematic transformation,” he explains. “My hope is that I and the Michigan Tech community can continue to contribute meaningfully to the transformation.”

**“Ottawa NF-wide monitoring for invasive earthworms and forest soils to inform landscape-scale management and restoration.”**

USDA Forest Service. 2016-21.  
PI: Orr BD.

**“Understanding the vulnerability and resiliency of Boreal-Taiga ecosystems to wildfire in a changing climate: A study of the 2014 Northwest territories wildfires.”**

NASA. 2016-19. PIs: Bourgeau-Chavez L, Kane ES, French NH, Balzer J, de Groot W, Flannigan M, Turetsky M.



# THE OTTER RIVER CAMP

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## A Sense of Place

Most SFRES alumni and friends need no introduction to the Otter River Camp. Acquired in 1955, the camp has been a year-round respite from campus life, a place to relax and experience the outdoors, and an opportunity to study and reflect on diverse natural systems. The 18-acre property's centerpiece is a 1,600-square-foot cabin constructed of red pine logs and nestled along the bank of the Otter River.

Built in 1935 by the Michigan Department of Conservation, the camp operated as a fish hatchery until donated to what was then the Michigan College of Mining and Technology, with the understanding that the fledgling forestry program would use and maintain the cabin into the future.

And use it we have! Among many improvements, we constructed a sandstone foundation in 1959 and a sauna in 1970, installed roofing in 1973, 1990, and 1998, and of course built a new outhouse in 1997 that was updated in 2008.

Unfortunately, we are now at a crossroads with the cabin. Volunteer labor and financial gifts have prolonged its life, but the cabin has suffered from progressive structural deterioration. With its location along the river, the cabin experiences flooding every 5 to 10 years. Successive reviews by USDA Forest Products Lab engineers revealed that the cabin is now structurally unsound, and we have made the difficult decision to close it to any further use. Our students are heartbroken, but we are developing a vision for the future.





▲ JUDY HESTERBERG | 1998

[mtu.edu/forest/giving/current-priorities](http://mtu.edu/forest/giving/current-priorities)

To our students, the Otter River Camp has been home to outdoor activities that could not take place on the Tech Trails—like trout fishing, gathering edible plants, and upland bird hunting. It's also a place where students escape the college life routine of homework and studying, get back to nature, and rekindle a passion for the outdoors.

Most importantly, the cabin is a place for socializing—a place where many memories have been made, where students learn and experience things that cannot be learned in class. Without the cabin, future

students will not have these formative experiences.

Recently, there has been much discussion about what the future of the camp could be. Restoring the cabin in place is not feasible given its condition—inevitably, it will be demolished after we salvage historic artifacts. While ideas for its replacement included Adirondack shelters or perhaps a yurt, for the students there is only one thing that can meet their needs: a four-season cabin. For most of the academic year, when students are here in the Keweenaw, the cabin is under winter conditions. That is

why a four-season cabin is our current vision—anything else would not be very useful.

The next step is to speak with you, our alumni and friends, to hear your thoughts about the future of the Otter River Camp. Please let us know! And please consider the Otter River Camp Fund when you make choices about annual giving.

**ROBERT FROESE  
AND CALVIN NORMAN**

email: [froese@mtu.edu](mailto:froese@mtu.edu)  
or [cnorman@mtu.edu](mailto:cnorman@mtu.edu)

► Annual Otter River Camp cleanup





# Diversity Fund

▲ Students practicing regeneration counts in a Keweenaw County upland hardwood forest

Dean Terry Sharik has donated a gift to establish the Terry L. Sharik Endowed Fund for Natural Resources Workforce Diversity (Diversity Fund). "I decided to make this gift because I care deeply about the future of the natural resources profession, which in my opinion requires a diverse workforce if it is to serve society at a high level," Sharik says. "That diversity is woefully lacking at the present, especially with respect to gender and, even more so, race and ethnicity."

The endowment will provide permanent resources for efforts to increase and support underrepresented populations of students, faculty, and staff in

SFRES. To that end, it will support a variety of initiatives that could include scholarships, on-campus visits by natural resources leaders from underrepresented populations, sending Michigan Tech people to conferences on diversity issues, supplementing faculty and staff salaries, and creating social networks for underrepresented groups.

Sharik plans to seed the fund with \$25,000 by 2017 and donate an additional 10 percent of his estate upon his death. The fund is designed to enable others to contribute to it, and Sharik hopes they will do so in the near future.

"Terry's generous gift is especially significant because it reinforces his and Michigan Tech's commitment to diversity," says Michigan Tech President Glenn Mroz. "It is also an outstanding example of the culture of philanthropy among our own faculty and staff."

Earlier this year, Sharik also endowed a natural resources diversity fund at West Virginia University, where he earned his Bachelor of Science in Forestry and Wildlife Management in 1964. He is also giving to the University of Michigan, where he received his Master of Forestry in Forest Recreation and his PhD in Forest Botany, in 1966 and 1970,



# Student Focus



**PETER HOCH**  
Forestry Student

"Resilient" often describes landscapes and ecosystems. It also applies to senior Peter Hoch. In September 2014, Peter was diagnosed with Stage 4 Hodgkin's lymphoma and had to leave fall camp for chemotherapy treatments. Despite his six-month struggle with cancer, Peter continued his studies online, and he returned to camp cancer-free the following fall.

For Peter, "success is doing something you like and making a positive change." He is the Xi Sigma Pi vice president, Forestry Club merchandiser, Forest Guild member, and St. Albert's Chapel Rat. Also an Eagle Scout, Peter plans to remain involved with Boy Scouts, as it was a fifth-grade camping trip that triggered his love of the outdoors and opened his eyes to a career in forestry. As a Davey Tree intern, Peter found he enjoys connecting with and educating customers about forestry. After he graduates, Peter plans to work for Davey and spend time with family in Berkley, Michigan.

respectively, with the funds to be used for similar purposes.

"I feel strongly that I should give back to the academic institutions that put me on my professional career path and helped make me who I am today," said Sharik at the time. "Secondly, I feel deeply that we need to increase diversity in the natural resources profession to a point where it is reflective of society as a whole."

Bill Roberts, associate vice president of advancement and alumni engagement at Michigan Tech, called Sharik's gift "a wonderful example of leadership in philanthropy on campus."

You can donate to the Diversity Fund or any of our other giving priorities at:

› [mtu.edu/forest/giving/current-priorities](http://mtu.edu/forest/giving/current-priorities)

# In Memoriam



## **JOHN WHEELER '16**

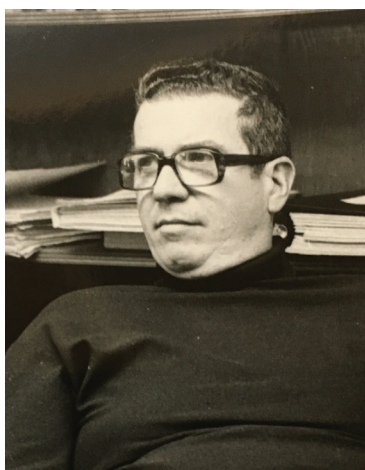
### **Forestry Graduate**

John Wheeler, an SFRES senior, died in a car accident on November 23, 2016. He was 22. John was awarded his earned degree posthumously at Midyear Commencement.

A lover of the outdoors, John grew up roaming the woods south of his home in Houghton. After attending Houghton schools, John studied forestry at Michigan Tech, a natural career choice that became his passion. He was known on campus as

a hardworking student and a natural leader.

John was a remarkable person—industrious and intelligent. He brought light and laughter into the lives of all who knew him through his wit, kindness, and positive attitude. He will be greatly missed. Jim Schmierer, SFRES school forester, said it best: “We will miss John as a student, but mostly, we will miss him becoming a colleague.”



## **ROSWELL MILLER**

### **Forestry Associate Professor Emeritus**

Associate Professor Emeritus Roswell K. Miller passed away on July 23, less than two weeks before his 84th birthday.

Ros received his bachelor's and master's degrees in forestry from the State College of New York at Syracuse and his PhD from the University of Michigan. He worked as a forester, a forest engineer, and a surveyor before joining the Michigan Tech faculty in 1965.

Ros helped develop the School's graduate program and the land surveying option, which later became a full

curriculum. His research interests included forest fire fuels, forest fire management, forestry management, and surveying. He served three terms on the Michigan Board of Forestry and for more than six years on the editorial board of the *Journal of Forestry*.

Ros was a hockey enthusiast whose other interests included Copper Country railway history, Greek mythology, and wildflower photography. He and his wife Ruth—high school sweethearts—were married for 61 years.



### **GAIL LARSEN '82**

#### **Forestry Alumna**

Gail Marie (Maule) Larsen, 56, passed away on September 7, 2016 following a courageous three-year battle with brain cancer. Gail earned her Bachelor of Science in Forestry at Michigan Tech in 1982 and married her husband Arnold the same year. Gail began her career in natural resources as a

wholesale nursery grower before working as a fish biologist for the Washington State Department of Fish and Wildlife. She later managed a tribal fisheries program and hatchery on the Green River. Gail was also active in and passionate about organizing family fishing derbies.



### **ROBERT OLSZEWSKI '78**

#### **Forestry Alumnus**

Beloved alumnus Robert Olszewski passed away on April 19, 2015. He received a Bachelor of Science in Forestry at Michigan Tech and a Master of Science in Forest Hydrology at the University of Georgia (UGA).

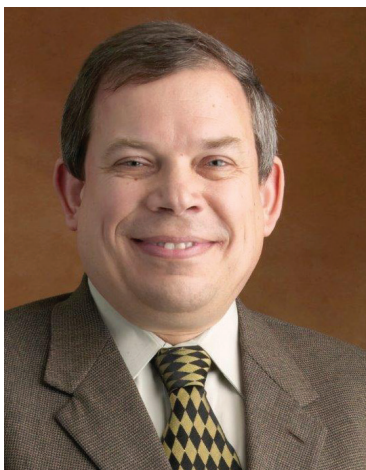
Rob began his career in Florida as the state forest hydrologist and then as the Forestry Association's director of governmental affairs. In 1993, he moved to Atlanta to join Georgia-Pacific. He later served as vice president of environmental affairs for Plum Creek.

Rob was involved in several professional associations,

including the Sustainable Forestry Initiative, National Alliance of Forest Owners, Forest Landowners Association, and advisory committees at Auburn University and UGA, where he was also a guest lecturer.

Michigan Tech recognized Rob as an Outstanding Alumnus in 2007.

Rob met his wife Mary at Michigan Tech, and they married in 1979. Rob was honored at this year's Sustainable Forestry Initiative Conference, where Mary accepted the award in his honor.



# Making Tracks...

**1** Michigan Tech's Ford Forest was designated a Model Forest by the Forest Stewards Guild in November 2015. The Model Forest program recognizes sustainable forest management practices. Ford Forest is managed by long-time Guild member Jim Schmierer.

**2** Sarah Harttung, an applied ecology student specializing in biotechnology, won the Provost's Award for Leadership at the 22nd Annual Student Leadership Awards. Harttung has been involved in five research labs, explored multiple facets of climate change for two summers as part of an Undergraduate Research Fellowship, and is working to publish papers from both projects.

**3** Twenty Detroit high school students participated in the 2016 Michigan Tech-Upper Peninsula Trip in June to explore career paths in natural resources and engineering. The students investigated invasive earthworms at the USDA Forest Research Lab, assessed the health of local streams and wetlands with Associate Professor Rod Chimner, and took a scientific journey aboard the Michigan Tech research vessel *Agassiz* with Professor Marty Auer.

**4** Forty-three SFRES students attended the Society of American Foresters National Convention in Madison, Wisconsin this October—the largest contingent we've ever sent to a national conference. Our SAF Quizbowl team placed second among the 35 universities competing for the Quizbowl title.

**5** The Michigan Chapter of the Sustainable Forestry Initiative sponsored two scholarships in memory of SFRES alumnus Robert Olszewski. This year's scholarships were awarded to seniors Sara Kelso and Alex Helman.

**6** In the mid-1980s, researcher Dana Richter stored more than 135 forest fungi cultures in an SFRES lab. The cultures were grown in petri dishes and small pieces were sealed in tubes of sterile water, a little-used technique at the time. Twenty-five years later, as part of a Michigan Tech-funded Summer Undergraduate Research Fellowship, Jill Smith (Forestry '11) found that some of these fungi were still able to perform their ecological function. Five years after that—and 30 years after the cultures were stored—Richter's student lab assistant Thomas Dixon (Biology '16) found that 70 percent of the decay fungi were still viable. The *Canadian Journal of Microbiology* published Richter, Dixon, and Smith's work this past summer. In the paper's acknowledgments, Michigan Tech's former Institute of Wood Research and the School of Forest Resources and Environmental Science were thanked for providing facilities that allowed long-term maintenance of the cultures.



JIM SCHMIERER



DETROIT HIGH SCHOOL STUDENTS



DANA RICHTER

2

**SARAH HARTUNG**  
Applied Ecology Student,  
Biotechnology Concentration  
Winner of Provost's  
Award for Leadership





Michigan Technological University

# School of Forest Resources and Environmental Science

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**ANDREW STORER**  
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## Message from the Associate Dean:

We hope you enjoyed reading this newsletter and learning about the many exciting things happening in the School. In closing, I would like to share with you a few recent developments. In response to feedback from employers, alumni, and the natural resource community, we have added a required senior-level class, Communication in Natural Resources. During the course's first year, nine instructors covered a range of topics, from writing grants, op-eds, and informational literature for the public, to summarizing peer-reviewed papers and preparing for job interviews. We will review this class each year to make sure it meets the needs of our students and those who employ them.

We also piloted a summer camp at the Ford Center and Forest to give students the flexibility to complete classes during the summer while mastering the important field skills that make our graduates stand out from the pack. We will track "summer camp" students as they complete their capstone class and enter the workforce.

We continue to improve our teaching and work space with refinished wood floors, updated flags in our atrium, and improved classroom furnishings. Please visit and see how your support can improve the teaching and working environment. We enjoy seeing you and are eager to hear your input on all we do!

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