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UM Associate Professor Hilary Martens is one of three UM researchers to earn National Science Foundation CAREER awards this year. The awards are given to promising early career faculty members to provide a foundation of leadership integrating education with research.
MISSOULA – From her University of Montana lab in landlocked Missoula, Montana, geosciences researcher Hilary Martens has garnered an international reputation for research ciphering the interplay of large bodies of water and the Earth and its impact on everything from drought to volcanoes.

In just a few short years, her findings have generated a number of large and prestigious grants to further her research, including her most recent from the National Science Foundation's Faculty Early Career Development Program.

Called CAREER awards, these grants – Martens’ was $689,069 – are given to promising early career faculty members to provide a foundation of leadership integrating education with research.

Martens, associate professor in geosciences, is one of three UM researchers receiving CAREER awards this year. Evolutionary geneticist Brandon S. Cooper earned a $1.5 million grant to study cellular-level organisms that can impact public health, and atmospheric chemist Lu Hu earned $800,000 to study harmful volatile organic compounds in wildfire smoke.

“Receiving three NSF CAREER awards for new faculty is quite an achievement,” said Scott Whittenburg, UM vice president for research and creative scholarship. “Roughly 300 such awards are granted each year, and universities are lucky to have one award. The fact that three UM faculty members received this recognition is a testament to the quality of faculty that the University has been able to attract.”

These days Martens and her research team study the ebb and flow of ocean tides and the massive forces they exert on the Earth due to their weight, which actively changes the shape of our planet. By tracking the daily, centimeter-scale changes in Earth’s shape, the research can provide new information on the internal structure of our planet with implications for its formation and evolution, as well as surface hazards such as earthquakes.

“This new funding will allow us to advance our models so we can account for regional variations in structure,” said Martens, noting that some regions of South America, for example, are particularly stable thanks to areas called cratons. These cratons resist tectonic forces leading to large earthquakes.

“We are hoping to shed more light on the density of cratons,” Martens said.
At UM, she directs the Martens Lab, a geophysics research group that studies earthquakes in Montana and the interactions between the Earth and its water surfaces. Her extensive background in space science, planetary science and geophysics began at UM, where she earned undergraduate degrees in music and physics as a Presidential Leadership Scholar in UM’s Davidson Honors College. She went on to earn master’s degrees in geophysics from the University of Cambridge, University College London and the California Institute of Technology.

While earning her doctorate in geophysics in 2016 from the California Institute of Technology, Martens began her initial research into the relationship between ocean tides and changes in the Earth’s shape.

“I love studying earth systems and space science, and this combines the best of both,” she said. “Ocean tides are influenced by the moon and sun.”

In 2021, she received a $443,627 from NASA’s Earth Surface and Interior Division to conduct further studies on the structure of the Earth’s interior using GPS observations of ocean tides.

That award was preceded by a $1.4 million NSF grant in 2020 as part of a multidisciplinary team to track changes in the shape of the Earth from the storage and flow of water in mountain watersheds.

For that project, Martens’ team uses GPS to track changes in the shape of the Earth from the storage and flow of water. GPS receivers can determine sagging of Earth’s surface under the weight of water to the accuracy of 1 mm, and the team uses that information to estimate the total amount of water added or removed from a watershed daily or over a period of years.

“Understanding mountain watersheds is crucial, because they serve as critical reservoirs of fresh water for human communities and other natural ecosystems worldwide,” she said.

In addition to research dollars, CAREER grants come with funding for important educational work, Martens said. She will use funding for enhancing student access to the Griz Shared Computer Cluster, a super computer developed for computational processes and models like those that Martens uses in her research.

“We want to provide a sandbox of sorts for students who want to get started in high-
performance computing or who need it for their research and education,” Martens said. “Access to this computer gives our students unique opportunities to advance their studies.”

Contact: Hilary Martens, UM associate professor of geosciences, 406-243-6855, hilary.martens@umontana.edu.
Tidal Wave: UM Researcher Joins Two Others in Receiving Prestigious Science Grant
MISSOULA – The Montana Law Review at the University of Montana’s Alexander Blewett III School of Law will host a symposium celebrating the 50th anniversary of the Montana Constitution.

Named after UM alum and former U.S. Court of Appeals judge for the Ninth Circuit, “The
Honorable James R. Browning Symposium” will take place Sept. 15-16, on the UM campus.

“The Montana Law Review could not be more excited to welcome an incredible lineup of academics, judges, practitioners and citizens to the law school for a celebration of Montana’s constitution,” said Blake Koemans a UM law student and member of the Montana Law Review. “What our fellow citizens crafted for us all in 1972 stands as first among equals and is a model for the nation and the world in protecting individual rights, freedoms and dignities.

“All Montanans should know, understand, and engage with this document because it is the legal underpinning of the values we should hope to protect for this and future generations in Montana.”

On Sept. 15, the symposium will kick off with a panel that includes a dynamic lineup that includes delegate to the 1972 Montana Constitutional Convention Mae Nan Ellingson, legendary Montana political journalist Chuck Johnson, Constitutional Convention researcher Rick Applegate and retired Justice of the Montana Supreme Court Jim Nelson. President Seth Bodnar and Acting Dean of the Law School Elaine Gagliardi will give opening remarks. Keynote speakers for the following day are former Montana Gov. Marc Racicot and Chief Judge for the U.S. Court of Appeals for the Sixth Circuit Jeffrey Sutton.

Panel members for the events also include distinguished faculty members from across the country, as well as members of the Montana legal community. Experts in voting rights, election law, reproductive rights, liberty interests, substantive due process, environmental law and many other topics will discuss Montana’s unique constitutional culture and how the law will change over the next 50 years.

The symposium is open to the public. Interested attorneys can register for CLE credit for the event. Those who are interested in attending can register online. A full schedule of symposium events also is available online.

The Montana Law Review is a legal periodical published twice a year. Established in 1940 and composed of second- and third-year law students, the Montana Law Review serves as a primary resource of legal scholarship in the State of Montana.

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Contact: Blake Keomans, Montana Law Review, 406-243-5258,
UM Law School Events Celebrate 50th Anniversary of Montana Constitution

blake.koemans@umconnect.umt.edu.
The newest class of University of Montana students finished a busy week of Orientation with the second-annual Freshman Float.

By Kyle Spurr, UM News Service

MISSOULA – After a busy week of Orientation and welcoming events, the University of Montana’s newest class kicked back and relaxed Friday afternoon at the second-annual Freshman Float.
Hundreds of students met near UM’s Campus Recreation building and rode shuttles to the Clark Fork River. The groups of students then floated several miles of river back to campus, where UM hosted a party on the Riverbowl with snacks, games and music.

Some students who traveled from across the country to attend UM had never floated a river before, while others were well versed in the joy of floating during the summertime in Missoula.

Addie Glidewell, a freshman student from Missoula, came with a new friend she met during the week, Ashley Sellers, of Stanwood, Washington, north of Seattle.

“I float the river all the time,” Glidewell said. “I love floating the river because I think it’s a really fun social event.”

Glidewell was excited to share the experience with Sellers, who had never floated before. Sellers got the first taste of her new Missoula lifestyle when she saw the Freshman Float listed as a new student activity.

“I never had the opportunity,” Sellers said. “It sounded like so much fun.”

Glidewell gave her friend pointers for a successful float. They made sure to wear sunscreen and bucket hats and planned to stay close to each other along the way.

“For people who don't float this is a good time to connect,” Glidewell said. “This is what the locals do.”

Contact: Dave Kuntz, UM director of strategic communications, 406-243-5659, dave.kuntz@umontana.edu

Launch UM virtual tour.
UM’s Newest Class Finishes Busy Week With Freshman Float
MacKenzie Weiland is one of numerous students who pursued valuable internships this summer through ElevateU, the University’s career readiness program.
MISSOULA – It’s a safe bet there aren’t many University of Montana students who can boast to learning tons about frogs this summer, but ecosystem science and restoration major Mackenzie Weiland has accomplished just that during her 2022 research internship.

Wearing hip waders and packing traps, Weiland studied egg masses and tadpole development in Milltown State Park to pinpoint possible causes for reductions in tadpole development in the federal Superfund site and now popular park.

“Chances are that predation by nonnative fish is affecting tadpoles,” said Weiland, who has loved frogs and turtles since childhood. “Although metal contamination in the area could also be a factor.”

Weiland, who plans to conduct metal testing before the summer is over, is one of 11 students who pursued valuable internships this summer thanks in part to scholarships made possible by the generous support of the Dennis and Phyllis Washington Foundation. The scholarships, part of a nearly $1 million grant to UM’s Experiential Learning and Career Success office, were coordinated through ElevateU, the University’s career readiness program.

Wildlife biology undergraduate Amber Guerra used her summer internship to broaden her knowledge on policy making related to environmental justice and waste cleanup.

Too often, experience-building internships are unpaid or students only receive a small stipend. In this way, unpaid internships perpetuate inequality, with valuable career-building opportunities often out of reach for first-generation or minority students. Creating more accessible internship and work experience opportunities, then, is central part of UM’s efforts to prepare students for their careers after graduation, said Andrea Vernon executive director for UM’s ELCS.

“Summer is a time for many students to earn money for the upcoming school year,” Vernon said. “Without help, they can’t afford to invest time getting hands-on experience in their field.”

Each of the interns this summer received $1,000 through the Dennis and Phyllis Washington Foundation’s support of ElevateU, making what may have been an inaccessible opportunity within reach for these students.
“We are deeply grateful for this support of students and UM’s signature career-readiness program, ElevateU. The internship support for students is especially impactful,” Vernon said. “It’s well known that students who participate in internships during their academic studies are more successful in finding employment in their field. They also start out at higher responsibility levels and they advance faster in their careers.”

In addition to connecting students to experience-building internships, ElevateU provides all UM students with career coaching and structured career development programming.

“Combining hands-on learning through internships and apprenticeships with academic studies is the best way to prepare students for successful careers immediately upon graduation,” said Mike Halligan, executive director of the Dennis and Phyllis Washington Foundation. “The Washington Companies aggressively pursues internships and apprenticeships as a great way to create a pipeline of future, highly engaged and highly qualified employees.”

Lauren Tucker, an exercise science major, gained valuable experience working with seniors while on her internship to Costa Rica.

Wildlife biology undergraduate Amber Guerra initially turned down an invitation to participate in a public policy and natural resources internship program this summer in Washington, D.C., because she couldn’t afford not to work for pay. Thanks to a stipend from the program and ElevateU, however, she ultimately got to work in the U.S. Department of Interior’s Office of Environmental Policy and Compliance. The experience she said is broadening her knowledge on policy making related to environmental justice and waste cleanup.

“I’ve worked on a number of projects, including writing story maps looking at the successful cleanup of abandoned mines that will be published on a public website,” Guerra said. “It’s rewarding in these cases to see happy endings.”

As a member of UM’s Franke Global Leadership Initiative, exercise science major Lauren Tucker is required to complete a 12-week abroad experience. She applied for a scholarship from ElevateU to travel to Costa Rica to work at health clinics where she gained clinical experience toward her goal of being a physical therapist. While there she worked with elderly
adults at a day center teaching them about health issues like diabetes and leading them through chair exercises.

"It was really a great opportunity to learn how to see the needs of clients, to meet those needs and to ask important questions," she said. "I am so excited about where this experience will take me."

Environmental science and sustainability major Rianna Bowers spent her summer internship tending to UM's Firewise Demonstration Garden, where she learned valuable skills for cultivating plants that reduce the risk of property loss from fire. Bowers has assisted with general maintenance of the garden, hosted volunteer events and provided tours to school children.

"I am very passionate about creating a better community around me," she said. "I hope to use these experiences to work for a nonprofit or in agricultural justice."

Mark Spring, who is majoring in multidisciplinary studies with a focus and minor in gerontology combined with nonprofit administration, is committed to improving the lives of senior Montanans. He spent his internship fulfilling many roles at the Missoula Senior Center, where he serves as board president. That included preparing lunch meals, learning about the organization’s financials, operating its thrift shop and even renewing a gaming license for bingo.

“I just jumped in here and started learning about governance to follow my interest in nonprofit management,” said Spring, who is a member of UM’s Davidson Honors College. “The scholarship gave me the boost I needed to free my mind from personal financial concerns and
concentrate on learning.”

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The Dennis and Phyllis Washington Foundation supports a broad spectrum of worthy organizations benefiting at-risk youth, economically and socially disadvantaged individuals and families, and those with special needs. The foundation is funded by contributions from the Washington Companies and the Washington Family.

The UM Foundation is an independent nonprofit organization that has inspired philanthropic support to enhance excellence and opportunity at UM since 1950.

**Contact:** Dave Kuntz, UM strategic communications director, 406-243-5659, dave.kuntz@umontana.edu.

Launch UM virtual tour.
Dave Roemer, a University of Montana alumnus, can’t wait to explore more of Glacier National Park as its new superintendent.

By Kelly Mulcaire, UM News Service

MISSOULA – Glacier National Park is known as the Crown of the Continent, and standing along the shoreline of Lake McDonald on a warm July afternoon, it's easy to see why. Everything from the crystal-clear water to the still snow-capped rocky peaks glistens under the
sun. Trees and vegetation are still a verdant jewel tone, due in part to the late rain and snow that has kept Glacier’s famous Going-to-the-Sun Road shut to traffic well into the peak tourism season. It’s one million acres of some of the best views and wildlife spotting Montana has to offer.

UM alumnus and new park Superintendent Dave Roemer can’t wait to explore it. He’s been to the park before, in 2003 as part of a team mapping out wildfire recovery, but he didn’t cover many miles.

“Modern firefighting – you’re down in a basement at a computer the whole time,” he said with a smile. “I’m hoping I’ll get out of the basement now and see some things.”

After growing up on Long Island, New York, and then spending his undergraduate years at Antioch College in Ohio, Roemer was ready to head west.

He took a Greyhound bus across the country to work a summer position with the National Park Service in New Mexico. The enjoyment he got from working outdoors was something he wanted to make into a career, so he began searching for a graduate degree to make it possible. He settled on Montana and earned a master’s in environmental studies at UM.

“Apart from loving Missoula and loving the campus, the coursework I was taking, the teachers and classmates that I was going to school with were a big part of the experience that I treasure,” he said.

One class in environmental law gave Roemer a look at the real-world impacts of his studies. His mock legislation on cave conservation sparked the interest of a state lawmaker. The two met over coffee at Butterfly Herbs in Missoula to discuss making the legislation real. Roemer then went to Helena to testify, and the Cave Conservation Act of 1993 was signed into law.

Surprisingly, the closest Roemer got to Glacier as a student was picking up a new student at the train station in Whitefish. He was too busy further west, working in the Kootenai National Forest and Idaho panhandle surveying bat and harlequin duck populations.

After graduating, Roemer began a career with the National Parks Service, starting at Carlsbad Caverns and then moving to Bryce Canyon and Big Thicket. Most recently, he served as the deputy superintendent at Redwood National Park.
Roemer said his time at Redwood highlighted the importance of incorporating tribal perspectives. This year, the park worked in partnership with the Yurok Tribe to restore California condors to their historic range along the northern California coast. He hopes to bring an emphasis on tribal partners to his time at Glacier, where the land is essential to the cultures of the Blackfeet, Salish, Pend d’Oreille and Kootenai tribes.

“Telling park stories is incomplete without those stories being told by the people who were the first stewards and caretakers of these lands,” Roemer said.

Meeting with him on day two of his tenure, Roemer is aware of the opportunity for adventure and discovery at Glacier. He’s also aware of the challenges that lay ahead.

With a pandemic-fueled boom in outdoor recreation, the park saw its second-highest visitation ever in 2021. Roemer is enthusiastic about people rediscovering what national parks have to offer but acknowledges it might require some adjustments to how we approach recreation and conservation.

“The lens that I always view park challenges through is how can we apply the best available science, how can we faithfully follow law and policy and how can we make the best decisions for future generations in the park,” Roemer explains. “Sometimes that involves not doing something that might be easy and expedient in the moment, but trying to think it through and think about how your decision affects situations in the long term.”

Roemer’s wife and two kids will soon join him in Montana. He’s looking forward to taking them on backpacking trips and a tour of Missoula, where they may even catch a Griz game on campus.

###

**Contact:** Kelly Mulcaire, digital communications manager, UM Alumni Relations, 406-243-4658, kelly.mulcaire@umontana.edu.
UM Alumnus Ready to Lead Glacier National Park
MISSOULA – The University of Montana Alumni Association is now accepting registrations for the 2022 Homecoming Parade.
Participants will be invited to celebrate and honor this year's theme – Might of Montana.

The parade will return after a two-year hiatus on Saturday, Sept. 24. Registration to participate in the parade is $50 through Aug. 30 and $75 beginning on Sept. 1.

Members of the public can register a float or reserve a space to walk in the parade on the UM Alumni Association webpage.

“We are thrilled this beloved tradition is returning to our community,” said LeAnn Meyer, UM director of alumni relations. “As we welcome thousands of alumni and friends to celebrate during this festive week, we know the might of Montana will be roaring.”

Due to ongoing construction on the Beartracks Bridge, the parade this year will be re-routed along South Avenue. More details on the parade staging and route will be available next month.

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**Contact:** LeAnn Meyer, UM director of alumni relations, 406-243-5258, leann.meyer@umontana.edu.
Registration Open for Return of UM Homecoming Parade
UM GRADS LAND FULBRIGHT AWARDS TO TEACH ENGLISH ABROAD

16 AUGUST 2022

Dante Filpula
Ankney

MISSOULA
– Two recent University of Montana graduates
will continue their educational adventures abroad as Fulbright English teaching assistants.

Dante Filpula Ankney, who graduated in May with a journalism degree and wilderness studies minor, will use his award from the Fulbright U.S. Student Program to teach in Bulgaria. Camryn Vaughn, who earned degrees this past December in political science and Russian, will use her award to teach in Georgia.

The two will work overseas during the 2022-23 Fulbright cycle. Filpula Ankney grew up in Laurel, and Vaughn’s hometown is Lewistown.

Camryn Vaughn

"Fulbright awards are outstanding
opportunities to gain international experience and perspective," said Kylla Benes, director of UM’s Office of External Scholarships and Fellowships. “These awards went to two amazing UM students who will serve as exceptional representatives of UM and the U.S. abroad, and the transformative experience will certainly propel them toward their future goals.”

During his time at UM, Filpula Ankney worked for the Montana Kaimin (UM’s student newspaper), the Laurel Outlook newspaper and the Montana Media Lab, which allowed him to teach journalism to high school students on four Native American reservations across Montana. He also interned with the Montana Innocence Project, the Boulder Monitor newspaper and UM-based Montana Public Radio.

“My unique experience this past summer taught me how to teach students with a different background than my own,” Filpula Ankney said. “This Fulbright grant will allow me to continue connecting and learning about people to best teach and promote understanding in my role as a journalist.”

Vaughn is passionate about international education. As a high school junior, she studied in Austria on a Rotary Youth Exchange. At UM in 2019, she studied overseas in Bishkek, Kyrgyzstan.
On campus she has worked for UM’s Mansfield Library as both an oral history editor and assistant for an audio description project. She also interned with UM’s Global Engagement Office, and she worked at the University’s Mansfield Center as an undergraduate program coordinator. As part of UM’s Global Leadership Initiative, her capstone project focused on students’ access to global experiences during and after COVID-19.

She is currently a project coordinator for the Mansfield Center working with cultural exchange program participants from Montana and around the world.

“I appreciate what international education has done for me,” Vaughn said. “My communication skills have grown by bounds, and my international connections have increased my self-awareness and understanding of my own culture and language.”

The Fulbright U.S. Student Program creates connections with more than 140 countries worldwide. Program participants pursue graduate study, conduct research and teach English abroad as they expand perspectives through academic and personal advancement, as well as cross-cultural dialogue. Over 100 UM students and alumni have earned Fulbright awards used in 50 different countries around the globe.

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**Contact:** Kylla Benes, director, UM Office of External Scholarships and Fellowships, 406-243-5241, kylla.benes@umont.edu.

Launch UM virtual tour.
UM Grads Land Fulbright Awards to Teach English Abroad

UM ENCOURAGES COMMUNITY TO ‘PAINT MISSOULA MAROON’ AHEAD OF ACADEMIC YEAR

MISSOULA – The University of Montana is again inviting Missoula to celebrate the community’s healthy and vibrant Griz Pride by displaying maroon and silver for the arrival of
students, visitors and fans to the community this fall.

Beginning on August 17, Griz Kits will be distributed by the University to area businesses and neighborhoods to help “Paint Missoula Maroon.” The kits, delivered by UM students and staff, will include UM stickers, yard signs, flags and window decals for display on cars, in windows and on sidewalks to celebrate the beginning of a new academic year and a renewal of Griz pride.

The Paint Missoula Maroon tradition started last year in an effort to recapture community vibrancy following challenges caused by the COVID-19 pandemic. The success of last year’s effort helped lead to a renewed sense of community and UM pride, and it now serves as an annual tradition to welcome Grizzlies back to town after the summer break.

“This is an exciting time of year,” said UM President Seth Bodnar. “We are thrilled to again ‘Paint Missoula Maroon’ as we welcome another large first-year class to Missoula and prepare for another exciting year of Grizzly athletics. We are grateful to have a community that supports UM so deeply, and this is just another way that folks across Missoula can express their support for our students.”

If members of the public are interested in a Griz Kit, please drop by the Grizzly Scholarship Association Office located on the first floor of the Adams Center.

###

Contact: Dave Kuntz, UM director of strategic communications, 406-243-5659, dave.kuntz@umontana.edu.

Launch UM virtual tour.
UM chemistry Professor Aaron Thomas earned funding for a $10 million program to increase representation of Alaska Natives and Native Americans in STEM disciplines across the West.
UM Leads $10M Project to Advance Native American STEM Education Across the West

MISSOULA – The National Science Foundation recently awarded $10 million to a six-state collaborative working to boost the underrepresentation of Alaska Native and American Indian (AI/AN) students in STEM disciplines and the workforce.

The grant award funds Cultivating Indigenous Research Communities for Leadership in Education, or the CIRCLES Alliance. The alliance is led by principal investigator Aaron Thomas, a University of Montana chemistry professor and director of UM Indigenous Research and STEM Education. Partners include universities and research institutions in Idaho, Montana, New Mexico, North Dakota, South Dakota and Wyoming.

UM will receive $1.8 million of the total award to build a network for developing and disseminating science, technology, engineering and math educational resources, as well as implementing longitudinal programming, mentorship and teacher preparation in support of AI/AN student success.

The CIRCLES Alliance launched in 2020 with support from NSF’s EPScoR and INCLUDES programs. (EPScoR: Established Program to Stimulate Competitive Research. INCLUDES: Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science.)

With this new funding, the alliance is poised to serve students and educators at the kindergarten through undergraduate levels across the Mountain West.

Ultimately, through research and collaboration with tribal communities, the CIRCLES Alliance aims to inform educational institutions and the NSF in Native cultural understanding and humility and to shift approaches toward AI/AN education.

“The CIRCLES Alliance’s goal is to encourage AI/AN students to identify academically and culturally with being a Native scientist, technician, engineer or mathematician,” Thomas said. “The hope is that more of these students will enter and persist in STEM-related fields and the workforce.”

To this end, the Alliance’s prior work has included partnering with tribal communities to better understand how STEM and Indigenous science are valued within those communities, as well as gain Native perspectives on addressing the challenge of better serving AI/AN students in public education institutions.
UM is home to the **Indigenous Research and STEM Education Program**, which is dedicated to advancement of Native American, Alaskan Native, Native Hawaiian and First Nation students in STEM academic disciplines and professions.

*Members of the six-state CIRCLES Alliance pose for a picture.*

###

**Contact:** Aaron Thomas, UM director of Indigenous Research and STEM Education, chemistry professor, 406-243-2052, aaron.thomas@umontana.edu.

Launch UM virtual tour.
UM Leads $10M Project to Advance Native American STEM Education Across the West
UM Department of Counseling master’s graduate Rachel Keo said she felt confident taking the National Counselor Exam thanks to the department’s supportive faculty.
MISSOULA – Rachel Keo, a University of Montana counseling master’s graduate and former school teacher, was understandably nervous about taking the National Counselor Examination in May.

Passing the NCE is a professional requirement for earning licensure in her field, so it’s a big deal. Plus, it wasn’t cheap, costing almost $300. She had to travel to Helena, a city she had never visited, to take the exam, and there were the nagging facts that the test was timed and taken on a computer. She jokingly said she prefers paper.

But in the back of her mind she knew she had studied under some of the best faculty in the field. So good, in fact, that the UM Department of Counseling has boasted a 100% passage rate for the NCE since 2017, with students placing in the 80th percentile nationally.

“Our professors are passionate and supportive about our learning,” said Keo, who handily passed the NCE. “There’s a confidence you get when you come from a good program.”

UM’s counseling program, housed in the Phyllis J. Washington College of Education, offers two master’s tracks – school counseling and clinical mental health counseling – as well as doctoral level degrees and a specialist degree in counseling education.

Justine Cohen said the pairing of UM’s programs in mental health and school counseling has made her a better school counselor.

John Sommers-Flanagan, a professor in the Department of Counseling, credits both the faculty and the students for the department’s success, which includes a 100% job placement rate for master’s graduates during the past six years.
“Our faculty are certainly supportive and encourage students to pursue what they want to pursue,” he said, “but our students also are smart and highly motivated. They genuinely want to help other people.”

The school’s reputation, Sommers-Flanagan adds, has led to strong application rates, primarily from Montana but also from across the U.S.

“The last two years we’ve had around 100 applicants each year, and we can only accept 25 to 30 students,” he said, adding that some 80% of graduates stay in the state after they graduate.

A close student-to-faculty ratio, added counseling department Chair Kirsten Murray, is critical for their students’ success.

“Our grads are getting 600 hours of active clinical practice under our close supervision. Because of the clinical nature of the work, we hold to a tight 1:12 student faculty ratio,” she said.

“We just added another faculty member to increase our capacity because demand is so high,” Murray added.

Montana, like much of the country, faces a critical shortage of counselors in mental health fields and school settings. At any given time, there are more than 40 openings for school counselors around the state – mostly in rural communities – and nearly all the state’s population lives in federally designated Mental Health Professional Shortage Areas, according to the Montana Department of Health and Human Services.

“The need for more mental health care professionals has been an issue for some time, but it’s become even more critical the past few years as more people, and in particular young people, report feelings of sadness and depression,” said Adrea Lawrence, professor and dean of UM’s college of education. “The students that graduate from our program play a key role in improving the mental health of our communities.”

Lawrence added that school counselors are often the only mental health providers students encounter during their K-12 years.
“School counselors play such an important part of the team that educates students,” she said. “They help students achieve their academic goals and career development, but they also are there to help them work through social and emotional needs.”

Keo, who studied mental health counseling, is spending the summer completing clinical internships at the YWCA and UM’s Student Advocacy Resource Center.

“I love working with students one-on-one talking about life questions,” she said. “It’s really rewarding to see them make progress.”

Graduate Justine Cohen, who shares Keo’s love for working with students, spent a yearlong internship in Frenchtown Elementary and said the school and experience were “outstanding.” She now works at a middle school in Vancouver, Washington.

“The pairing of UM’s programs in mental health and counseling is a perfect combination because it makes you a better school counselor,” said Cohen, who earned a bachelor’s in psychology at UM before working in the University’s Clinical Psychology Center while earning her master’s in school counseling. “All of my cohorts were such hard workers – so determined and such high achievers. I felt confident taking the NCE. Having that certification is such a plus.”

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Contact: Dave Kuntz, UM strategic communications director, 406-243-5659, dave.kuntz@umontana.edu.

Launch UM virtual tour.
Tradition Continues: Entire Class of UM Counseling Graduates Pass National Test
Lu Hu, a UM associate professor of environmental and analytical chemistry, recently earned a prestigious early CAREER award from the National Science Foundation. (UM photo by Tommy Martino)
MISSOULA – University of Montana researcher Lu Hu contends our understanding of wildfire smoke is a bit hazy. But the atmospheric chemist recently earned a prestigious federal award to take a deep dive into the true nature of the smoke that clouds our Western skies.

Dr. Hu’s award is from the Faculty Early Career Development Program. CAREER awards are among the most respected National Science Foundation awards, given to promising early career faculty members to provide a foundation for a lifetime of leadership integrating education with research.

Hu will use the five-year, $800,000 grant to improve the ability of researchers to analyze the true chemical composition of wildfire smoke, as well as improve air-quality models.

“I feel pretty good about earning this award,” he said. “It’s nice to be recognized by my colleagues in the field, and it means what we do is really important. We need to study in smoke what we cannot see with our human eyes – especially when it causes respiratory and other diseases.”
A native of China, Hu earned his Ph.D. from the University of Minnesota before becoming a postdoc at Harvard for several years. He joined UM in 2017, where he and his collaborators immediately embarked on a research project that involved flying a plane through smoke billowing off active wildfires. The plane carried a mass spectrometer instrument to minutely analyze what was in the smoke.

Hu is most interested in volatile organic compounds. VOCs in their gas phase can diffuse, transform and travel. Many can have direct negative impacts on human health. Science has the ability to measure about 150 VOCs in the atmosphere, but there are many more to discover. Hu said mass spectrometry is used to identify and quantify VOCs.

“When we look at smoke, we see the particulate matter,” he said. “The actual chemical composition is much more complex. So we can examine VOCs and rank them in terms of what are the most important for human health impacts. We also rank them in terms of how reactive
they are and their ability to generate secondary pollutants.”

He said many VOCs are hazardous and regulated by the Environmental Protection Agency. Wildfires are the second leading producer of VOCs. Trees – oddly enough – are the No. 1 producer globally.

“VOCs can be produced by plants for many reasons – as byproducts of photosynthesis, plant growth, defense, induced by various stresses or even for communication,” Hu said. “What you smell when walking in a ponderosa pine forest or cutting a Christmas tree is VOC. You are fine around that in remote areas. But VOCs are volatile and can mix with human-caused pollutants like NOx [nitrogen oxides]. So if you have VOCs from trees or wildfire smoke next to heavy traffic from cars, it becomes this perfect atmospheric cocktail where all these ingredients come together in sunlight, and that can be bad.”

Bad means formation of substances like ozone. High in the atmosphere, ozone is good because it protects us from harmful ultraviolet radiation. But ground-level ozone is regulated by the EPA and can aggravate lung problems such as asthma, emphysema and bronchitis. VOCs also may produce other harmful chemicals, like formaldehyde.

“We cannot measure VOCs well,” Hu said. “This project will work to improve our analytical skills – to improve our use of mass spectrometry – to better quantify them. With all our current models, we still cannot predict the formation of ozone when we have wildfire smoke.”

Some VOCs in wildfire smoke are classified as a group of substances called furans, which possibly can be carcinogenic. Furans are produced during combustion processes like power generation and burning fossil fuels. Hu said the lifetime for most furans is about an hour, after which they “react out” and transform into other things that also are potentially harmful.

When the analytics improve, Hu then hopes to update and improve air quality models.

“With big cities like Salt Lake City or Denver, wildfires bring in additional pollutants – additional VOCs – and can mix with local pollutants to generate ozone particulate matter,” he said. “All the current air quality models don’t simulate these very reactive furans. Lacking those in the models are part of the reason we cannot predict ozone correctly. So that’s the direction we are heading to.”

As part of his research project, Hu will fund the continuation of a long-term, air-monitoring site

based on the fourth floor of UM’s Clapp Building. He said Missoula is an ideal location for the site because the area acts as a natural receptor for smoke traveling from the West Coast and British Columbia. The site was launched by his UM colleague and researcher Dr. Bob Yokelson, with Hu adding in VOC measurements.

The CAREER award also will fund a wildfire smoke exhibit and curriculum with UM’s spectrUM Discovery Area, a hands-on science center that inspires a culture of learning and science for children and others. (On the day of this interview, Hu was excitedly ordering low-cost carbon dioxide sensors for the exhibit.)

While working the lab, Hu is assisted by three graduate students. He also has two postdocs on his team, and he said the CAREER award will support one additional graduate and another postdoc for two years. He also recruits a UM undergraduate lab worker from his chemistry classes.

And when he isn’t studying wildfire smoke and teaching, he also co-directs the statewide Montana Science Fair for middle and high school students, which has been held at UM since 1955.

Hu earned the CAREER award in his last year of eligibility, so he feels fortunate. “Getting an award like this is good,” he said. “It’s a rewarding moment for a faculty member, like seeing your students grow.”

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UM Scientist Earns Prestigious Award for Wildfire Smoke Research
Carissa Russell is earning an undergraduate degree in public health at the University of Montana.

By Cary Shimek, UM News Service

MISSOULA – Carissa Russell wants to work with communities to improve the health of minority populations.
This realization hit her while working toward an undergraduate degree in public health at the University of Montana. An incoming senior from Portland, Oregon, Russell paired her major with a minor in Spanish. This academic mix helped her land an internship with UM’s Rural Institute, where she worked as a research assistant and translator for three different research projects.

“Those projects really opened my eyes to what it means to be part of the public health community – serving not just the majority but also those who need more support,” Russell said. “I also was able to take a lot of classes so I could become more culturally competent. Honestly, I got a whole new view of the world.”

She is earning a Bachelor of Science in Public Health, a relatively new undergraduate offering at UM that recently earned national accreditation from the Council on Education for Public Health. The program launched in 2020.

“The COVID-19 pandemic taught us the importance of public health,” said Tony Ward, a professor and chair of UM’s School of Public and Community Health Sciences. “As a result, we are seeing a significant increase in the number of public health and health care job opportunities – not only locally but regionally and globally.

“In addition to COVID-19, there are other emerging threats to our population, including climate change, homelessness related to rising housing costs and the mental health crisis,” he said. “So there has never been a more important time to be a public health professional.”

A public health degree prepares graduates to work in a variety of settings, including public health departments, hospitals and clinics, nonprofits, worksite wellness programs, human resource offices and community-based health agencies.

Ward said UM’s undergraduate degree in public health is growing as more students learn about the program. About 30 students are enrolled.

“The program fills a unique niche in our area,” Ward said. “We are the only CEPH-accredited undergraduate program in Montana and one of only a handful in our region.”

He said the program’s new accreditation will extend until 2024, when the entire school will reapply for renewal. The school’s Master of Public Health and Ph.D. in Public Health already have achieved accreditation.
Russell said accreditation matters to her.

“It shows the University has put forward the solid academics we need for our major,” she said. “I was very excited to hear the news.”

Russell first came to UM to major in exercise science. Soon she realized she wanted a career with a little less science and more community work. An adviser suggested she try a class from Dr. Annie Sondag in the School of Public and Community Health Sciences. It “flipped a switch” for her, and she switched majors.

“I think UM really pushes for us to get out and get some real-life experience in the community,” Russell said. “We are really able to work with community through programs like (the Flagship Community-School Program) and the Missoula City-County Health Department.”

She said the program has done great things for her, and she’s excited to get out and use her degree after she graduates next May. Where will she be in five years?

“I want to have my master’s degree by then and working out in the community,” she said. “I want to be working toward making health care more available and equitable for everyone.”

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UM RESEARCHERS TEAM WITH PADDLEHEADS FOR BALANCE STUDY

04 AUGUST 2022

UM researcher Andy Kittelson (left) worked with Paddlehead players this week on a study that may lead to improved rehabilitation following concussions and other vestibular injuries. (UM photo by Shanna Madison)

MISSOULA – Researchers at the University of Montana recently teamed up with the Missoula Paddleheads to advance important research to help understand athletes’ sense of equilibrium and balance.

During the first week of August, faculty, staff and students from UM’s School of Physical
Therapy and Rehabilitation Science worked with the Paddleheads to improve rehabilitation practices for athletes following concussions and other vestibular injuries. The vestibular system links the inner ear to the brain and controls balance.

Conducting this research are UM Assistant Professors Brian Loyd and Andy Kittelson of UM’s School of Physical Therapy and Rehabilitation Sciences, as well as Research Lab Manager Tiffany Quindry and summer undergraduate Research Fellow Tyler Filippini.

"We are very excited to partner with the Paddleheads to better understand vestibular function in elite athletes," said Kittelson. "This is a unique example of team science and something that I don't think is possible in too many places. It’s another reminder of how Missoula is a pretty special community."

The research team is at Ogren Park at Allegiance Field in Missoula from 2 to 3 p.m. through Thursday, Aug. 4, to conduct the study.

One goal of this research is to develop metrics of vestibular performance to enable targeted, high-level rehabilitation following injuries like concussions. This work with the Paddleheads also aligns with two larger UM studies funded by the National Institute of Health and Department of Defense that explores novel methods for assessing vestibular function in older adults, active-duty service members and military veterans.

Dr. Kittelson also serves as the director of the Design-Physio Lab, which aims to develop data science applications to aid clinical decisions in rehabilitation. Dr. Loyd is the director of the Community Ambulation, Mobility and Participation (CAMP) Lab which works to better understand and optimize vestibular performance and mobility for people in Missoula and beyond.

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UM Researchers Team With Paddleheads for Balance Study