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JULY

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UM Students Stepping up to Help with Campus COVID-19 Preparations

31 JULY 2020 •
COLLEGE OF HEALTH

UM STUDENTS STEPPING UP TO HELP WITH CAMPUS COVID-19 PREPARATIONS

31 JULY 2020 •
UM students Sara Bigelow (left) and Gold Moua volunteer for the new Griz Health program to help keep campus healthy this fall.

MISSOULA – As the University of Montana readies for a safe return to campus this fall, students are volunteering for a new program, Griz Health, which will give them an opportunity to be part of the campus response to COVID-19.

As participants in the program, students will be involved in symptom checks on campus, providing the most up-to-date information about COVID-19, potentially helping at Grizzly Athletic events and, if the need arises, supporting the Missoula City-County Public Health Department as it conducts surge-capacity contact-tracing on campus.

“For many students, this pandemic has created a lot of uncertainty and a feeling of powerlessness,” said Lily Apedaile, heath science education program coordinator for UM health and Medicine. “Griz Health allows these students to be on the frontlines of mitigating COVID-19 on UM’s campus, as well as in the greater Missoula community.”

Apedaile said response from students has been overwhelmingly positive to the launch of Griz
Health, with many signing up to serve soon after the call for volunteers went out. “UM students have a real drive to make a difference in the community,” she said, noting that they've filled almost half of the 75 spots ultimately needed for the program.

Sara Bigelow, a senior majoring in public and community health, welcomed the chance to contribute to campus well-being. “This is a good opportunity to educate people at UM about how to stay healthy and safe,” she said.

Professors Curtis Noonan and Tony Ward of UM’s School of Public Health and Community Health Sciences spearheaded the development of the online self-paced contact-tracing training program, with help from the Montana Department of Health and Human Services and the Missoula City-County Public Health Department.

“We relied on our strong collaborative relationship with state and local public health agency experts to build the initial training,” said Noonan. “We will continue to supplement the Griz Health training throughout the year with campus and community experts involved in the pandemic response.”

UM Health and Medicine, in collaboration with the Western Montana Area Health Education Center, coordinated the overall development of Griz Health, with assistance from UMOnline.

Gold Moua, a junior majoring in human biology who plans to enroll in medical school, said the contract-tracing training brought home how important this work is and helped her realize how well it aligned with her values of caring for people’s health. It also will be valuable experience for her future career.

“This is an opportunity to experience clinical language and context,” she said. “And it will help solidify my medical school applications by showing my commitment to health and well-being.”

Apedaile noted that a number of Missoula community partners also have pitched in to help support Griz Health. Dolce Software will provide free access to their Dolce app to help the Griz Health coordinators schedule students for various events. Garage Tees has assisted in the design and ordering of cloth masks for the Griz Health students to wear on-campus and in the community.

Just like the dynamic nature of this pandemic, Apedaile said, the Griz Health Program and student roles will constantly adapt to campus needs for keeping healthy during COVID-19.
UM Students Stepping up to Help with Campus COVID-19 Preparations
Study: Rural Residents With Disabilities Downplay Public Health Advice

30 JULY 2020 •

Frequent handwashing is recommended to help combat COVID-19.

MISSOULA – A new study from the University of Montana finds rural Americans with
disabilities are less likely to adhere to public health recommendations.

People with disabilities are at higher risk for COVID-19 than their urban counterparts, and the study surveyed people nationwide. It was conducted by UM’s Research and Training Center on Disability in Rural Communities, which is a research center of UM’s Rural Institute for Inclusive Communities.

Andrew Myers, who co-authored the research, said the center compared people’s likeliness to follow measures, such as frequent hand washing and wearing masks, with who they trusted for health information.

“We focused on people with disabilities because they often experience higher rates of secondary health conditions that place them at heightened risk of COVID-19 complications,” Myers said. “We found rural respondents reported higher rates of COVID-19 health risk factors, but less adherence to public health recommendations. Overall, individuals with health risk factors reported adopting fewer public health recommendations than individuals without health risk factors.”

He said rural and urban areas diverge on who people trust and notes health messaging hasn’t always been consistent.

“Folks tend to trust people they understand, and so that could be a reason that you see a difference in who folks trust,” Myers explains.

Trust was highest for service providers, although it was lower in rural areas. People also tended to trust Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases since 1984, with urban residents having more confidence in his guidance.

Myers said high trust in President Donald Trump was linked to people less likely to follow health measures. Myers said most health messaging has been urban-centric, such as warning people against joining large crowds.

“You might not even encounter a large crowd, so it wouldn't really be applicable to you – hence perhaps a tendency to think, ‘Oh, well that's not really for us because the health messaging doesn't take into account my context, so why would I be listening to that?’” he said.
Myers said the survey focuses on people with disabilities in part because they face some of the highest risks during this pandemic.

“In really any kind of health crisis, they’re usually the first to lose services, the first to experience any kinds of impacts – whether it be from health or economic,” he points out.

The survey took place in late April and early May, after most state shutdowns were in place but before they began phasing in reopening. It was conducted on the Amazon platform Mechanical Turk, which recruits people for work like filling out surveys.

The full study is online at https://scholarworks.umt.edu/ruralinst_health_wellness/49/.

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**Contact:** Andrew Myers, UM Rural Institute on Disabilities Project director, 406-243-5467, andrew.myers@umontana.edu.
The new concrete is textured to resemble bricks, reflecting UM’s classical aesthetic and original design.
MISSOULA – The University of Montana is paving a new future and the way forward includes the turning of some old stones. One-hundred-year-old bricks, to be exact.

This summer, the historic brick walkways of UM’s Oval got a facelift, thanks to a large-scale reconstruction project in the heart of campus. What used to be clunky and timeworn bricks that made riding bikes, rushing to class or wheelchair accessibility difficult, is now stamped, smooth concrete — leaving behind generations of stubbed toes and careful balancing on the iconic and beloved paths.

“The problem was so many of them had become damaged from years of the freeze-thaw cycle,” said Kevin Krebsbach, director of UM Facility Services. “It caused most of them to settle and create hazards.”

Funds for the $250,000 infrastructure investment, awarded to Knife River of Missoula, were made available from a University bond sale last year that generated $63 million earmarked for investments in student-serving infrastructure and capital improvements. The new concrete is textured to resemble bricks, reflecting UM’s classical aesthetic and original design.
The walkways didn’t exist at UM until 1969, when the bricks – originally laid in downtown Missoula streets between 1912 and 1914 – were removed and installed on campus as crossways that run east-west and north-south on the Oval. The first 80 years of campus lacked walkways across the Oval, and it was considered taboo to walk across the campus greens. University archives include records of a paddling punishment for those caught breaking the rules and a silent sentinel who blew a whistle when the greens were trespassed.

Krebsbach said most of the original brick workmanship was on-par for the times, despite some improper installation and flawed placement of the brick’s concrete borders that had worsened over time. The bricks came from former Denny-Renton Clay & Coal Company in Renton, Washington – once the largest producers of brick pavers in the world.

Reflecting UM’s commitment to sustainability and bypassing the landfill as much as possible, Facilities Services wanted to recycle as many of the original bricks as possible that were still in usable condition. Krebsbach said about 80% of the original bricks, estimated to be between 60,000 to 70,000, are still usable and are currently sitting on pallets for future projects, or for a potential sale to the public – following many inquiries from alumni and the public about the project.

The walkway completion is part of an ongoing series of the Oval’s restoration, Krebsbach said, and has been dependent upon when funds have become available, thanks in large part to alumni, friends and partners of UM. Past improvements include installing an automated irrigation system. Lampposts on the inner and outer Oval, also from the 1960s and still in operation, are eventually slated to be replaced with sustainable LED lights. A sale of tree sponsorships called the Oval Tree Project, organized by the UM Alumni Association, provided funds to replace trees on the Oval, which is also home to the Montana State Arboretum.

“What’s neat to me about the whole project is the restoring of the Oval’s grandeur and making something better that was already there,” Krebsbach said.

In 1893, the Montana State Legislature authorized the creation of the University of Montana and in 1895 it opened its doors, though it wasn’t until 1899 until the University moved to its current location. A dedicated green space and designated historic district within the City of Missoula, the 220 acres of the UM mountain campus are only surpassed in area by the Fort Missoula Historic District.

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Contact: Kevin Krebsbach, UM director of Facility Services, 406-243-2787.
Community Members, Organizations Invited to Open Forum on University Design

MISSOULA – The University of Montana is eager to hear what Montanans think about how UM can better serve community, business and statewide needs to realize its vision of becoming a flagship for the future.
The University Design Team, a committee created this spring by UM President Seth Bodnar, is charged with delivering strategic recommendations that chart direction for UM’s long-term success and impact. This includes gathering input from stakeholders across the state.

The public is invited to a free one-hour Zoom forum that seeks to garner community input and feedback on the ways the University can innovate to better deliver on its mission for continued relevance and national prominence. The forum will be held at 10 a.m. Friday, July 24. Participants are encouraged to register for the session at https://bit.ly/2Wrj8Lf and complete a brief survey at https://bit.ly/3h7DpgQ before attending.

“At this early stage in our process, it’s critically important we hear from our external constituencies and listen to their perspectives about the UM of the future,” said Paul Gladen, co-chair of the UDT and director of UM’s Blackstone LaunchPad. “Our community members are strongly encouraged to share their ideas and feedback about UM’s future.”

Building upon recent strategic planning at UM and drawing upon the perspectives of public stakeholders that include statewide community leaders, business and nonprofit leaders, admitted students and prospective students, the UDT will identify design principles and potential strategies to position the University for thoughtful change, impact and continued relevance. The team is expected to deliver a set of recommendations to President Bodnar sometime this fall.

“A public university can only fulfill its mission if it’s adapting to the broader needs and demands of the stakeholder it serves,” said Adrea Lawrence, dean of UM’s Phyllis J. Washington College of Education. “A central priority of the committee is transparency with our community and state, and we encourage anyone with an interest in what the future of UM could look like to join us.”

Spurred by the COVID-19 pandemic and rapid changes in higher education and technology, the UDT ultimately is tasked with delivering a strategic vision for Montana’s flagship research institution – one that serves students of the future and parlays UM’s people, programs and places into national prominence. The committee represents a cross-section of campus personnel and disciplines and includes student representation.

For more information on the UDT visit https://bit.ly/3cSlyqO.
Community Members, Organizations Invited to Open Forum on University Design

Contact: Paul Gladen, University Design Team co-chair, Blackstone LaunchPad and Accelerate Montana director, 406-396-3534, paul.gladen@umontana.edu; Adrea Lawrence, University Design Team co-chair, UM Phyllis J. Washington College of Education dean, 406-243-5054, adrea.lawrence@umontana.edu.
Community Members, Organizations Invited to Open Forum on University Design

Postdoctoral fellow Asia Marie Riel, left, and undergraduate Madeleine Boller are two of the researchers working in UM chemistry faculty member Orion Berryman’s lab to develop molecules that can bend into helical shapes.
MISSOULA – A proper balance of molecules within the body is key to preventing many diseases, and University of Montana chemistry researchers are working to understand and maintain this critical balance. Thanks to funding from two new grants totaling more than $400,000, chemistry faculty member Orion B. Berryman and his team can delve deeper into the molecular biology behind diseases like cystic fibrosis.

Berryman’s lab will use the first grant, a three-year National Science Foundation Disciplinary Research Program Grant of $420,000, to study what is known as hydrogen bond-enhanced halogen bonds. These bonds are forces within a molecule that can be used to help control its shape and therefore affect its properties.

Berryman and his researchers are studying this bonding as they design new molecules to aid in investigating and combating the diseases that occur from malfunctioning cell-membrane channels.

“This grant is important because of the myriad diseases associated with anion channelopathies,” Berryman said. “Finding new ways to study and treat these diseases will have a positive impact on human health.”

When the delicate balance of molecules within a cell is disrupted, it can result in diseases such as cystic fibrosis, where too much chloride causes a build-up of mucous in the lungs or bartter syndrome – an imbalance of potassium, sodium, chloride and other molecules that negatively affects the kidneys.

The molecules Berryman’s team are building are able to fold into a predictable helical shape, which produces tiny pores and allows anions to move across cell membranes, maintaining the body’s balance of molecules.

The second award for Berryman’s lab will aid a critically underrepresented group at work on the molecule-building project – female undergraduate chemistry students.

The funding allows postdoctoral fellow Dr. Asia Marie Riel to help enhance the experiences of female chemistry undergraduates during the 2020-21 academic year with $5,000 awarded by the University Grant Program.
“A significant topic among women in STEM is the lack of representation in the field as mentors, which highlights the importance of this grant to foster women mentoring women in chemistry,” Riel said.

She said studies show that women who participate in research at the undergraduate level develop self-efficacy in chemistry research and identify themselves as scientists, ultimately staying in science-related careers.

Riel works with three female undergraduate students in Berryman’s lab – McKenna Wendt, Madeleine Boller and Emily Carroll – who were all recruited for their passion for chemistry. The trio will synthesize and study the synthetic molecules that can help with anion transport across cell membranes.

Building a molecule requires patience and precision. Since the molecules are synthetic, they first must be purified and identified.

“Many of the molecules we are generating in the lab are novel compounds, meaning no one has made them before, and they are not found in biological sources,” Riel said. “An important part of the work, aside from mixing chemicals, is proving that you made what you think you made. Only after the confirmation of the molecules’ identity can we then study its properties.”

As the undergraduates work on molecule-building research, they will receive mentoring from Riel, whose passion lies in teaching chemistry both in the classroom and the lab and inspiring the next generation of scientists.

“I am excited to mentor and teach hands-on chemistry to young women scientists and hope that this grant provides an experience to motivate them to continue their pursuits of a STEM-related career,” she said.

The lab has already made significant progress, having recently produced a long, linear molecule that spontaneously folds into a helix.

“We have new results that confirm the helical coiling of these molecules,” Berryman said. “Really exciting stuff.”

Learn more about Berryman’s research on the Orion Berryman Research Group webpage.
UM Chemist Receives $425K for Cutting-Edge Research, Buoying Women in STEM

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**Contact:** Orion Berryman, associate professor, UM Department of Chemistry and Biochemistry, 406-243-4546, orion.berryman@umontana.edu; Asia Marie Riel, chemistry postdoctoral researcher, asiamarie.riel@umontana.edu.
UM Chemist Receives $425K for Cutting-Edge Research, Buoying Women in STEM
UM's Maureen and Mike Mansfield Center now can offer a new cross-cultural exchange in the midst of the coronavirus pandemic, thanks to a new grant from the Stevens Initiative.
MISSOULA -- The University of Montana’s Maureen and Mike Mansfield Center will become one of 18 programs funded by the Stevens Initiative Response to the Coronavirus Pandemic. With the $50,000 funding, the center will plan a virtual exchange program this fall between students at UM and in Egypt, providing youth opportunities to develop skills and relationships otherwise not possible during the coronavirus pandemic.

Around the world, schools and institutions are using virtual exchanges to help young people develop cross-cultural relationships and vital skills. While traditional in-person education and exchange programs have been canceled for the summer, virtual exchange programs continue to be a sustainable and accessible global learning tool.

“While we cannot predict what lies ahead with the pandemic, we are pleased to work with our grantees to provide virtual exchange opportunities when the world is deeply in need of connection,” said Christine Shiau, managing director of the Stevens Initiative at the Aspen Institute. “Together, we are revamping curriculum, leveraging technology and innovating to build programs that might not have existed otherwise.”

Under the Stevens Initiative, UM’s Mansfield Center will spend the summer preparing to connect students from Montana and Egypt to highlight the importance of citizen diplomacy. This virtual exchange program is designed to enhance global competencies and the internationalization of communities. Participants will learn leadership skills in a shared fall 2020 course on Public Diplomacy offered by UM’s Global Leadership Initiative.

“Drawing on our rich experience in international exchange, this funding allows us to continue to create opportunities for Montanans and to foster globally minded leaders of integrity despite the challenges presented by the pandemic,” said Deena Mansour, executive director of the Mansfield Center.

A list of other Stevens Initiative grant recipients is online, with international collaborations focusing on topics ranging from STEM and sustainability to storytelling and nursing.

The Stevens Initiative is an international effort to build global competence and career readiness skills for young people in the U.S., the Middle East and North Africa by growing and enhancing the field of virtual exchange. Created in 2015 as a lasting tribute to Ambassador J. Christopher Stevens, the initiative is committed to helping expand the virtual exchange field through three pillars of work: investing in promising programs, sharing knowledge and resources and advocating for virtual exchange adoption.
The Stevens Initiative is sponsored by the U.S. Department of State, with U.S. government funding administered by the Aspen Institute, a global nonprofit. It is also supported by the Bezos Family Foundation and the governments of Morocco and the United Arab Emirates.

For more information, contact Jon Purves, senior media relations associate at the Aspen Institute, at jon.purves@aspeninstitute.org or the Bureau of Educational and Cultural Affairs in the U.S. Department of State at ECA-Press@state.gov.

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Contact: Deena Mansour, executive director, UM Maureen and Mike Mansfield Center, 406-243-2713, deena.mansour@umontana.edu.
UM Mansfield Center Receives Grant to Connect U.S., Egyptian Youth
New research suggests crop monitoring by surveyors can become incredibly accurate when perception and judgment bias are removed from evaluations.
MISSOULA – Farmers have eyeballed their crops to gauge how well they are doing since the
dawn of time. Though it may not seem too trustworthy or scientific, new research from the
University of Montana and the Spanish Research Council suggests this type of evaluation
can produce a lot of high-value information for crop monitoring and yield production.

Marco Maneta is a UM geosciences associate professor and co-author of the study, which
was published in the Proceedings of the National Academy of Sciences. His team developed
statistical methods that strip all perception and judgment bias from categorical assessments
of crop status performed by U.S. Department of Agriculture surveyors.

“Once the biases are removed, people become amazing sensors of crop status,” Maneta
said. “This is because humans have the capacity to integrate contextual information into their
assessment that standard sensors typically don’t capture, such as prior meteorological
conditions, agricultural practices and technology, and other relevant nuances that are difficult
to measure or quantify.”

The USDA conducts weekly qualitative surveys of crop status during the growing season for
all major crops in the U.S. Maneta said these surveys are an important source of information
for policymakers, market analysts and farm insurance companies, among others. The surveys
started in the mid-1980s and can be used to study how production responds to varying
climate conditions.

“These visual surveys have been available for a long time but have been underutilized by
physical scientists for research purposes because human judgment is subjective and has
been deemed unreliable for scientific studies,” said study lead author Santiago Begueria of
the Spanish Research Council.

What are some of the biases people have? Maneta said some surveyors are simply more
optimistic in their evaluations because of their personalities. Some are more sensitive to
recognizing signs such as dryness, while others are overly influenced by recent weather
events.

“Bias also can be introduced if the person has selective memory and tends to remember
years with better-than-normal conditions,” he said.

Maneta said they converted qualitative surveys into a continuous quantitative metric of crop
conditions that removed the personal or location biases of the surveyors. This creates a
strong crop-condition metric that can be used for scientific analysis or for crop monitoring and early warning systems.

“Our new crop-condition metric was shown to predict crop yields mid-season more accurately that the predictions issued by the USDA or the predictions used by analysts,” Maneta said. “It can also be used to anticipate the impacts of drought on agriculture and inform where to allocate relief funds, which has the potential to reduce agricultural market volatility and improve food security.”

The paper is online at http://www.pnas.org/cgi/doi/10.1073/pnas.1917774117.

###

**Contact:** Marco Maneta, UM geosciences associate professor, 406-243-2454, marco.maneta@umontana.edu.
COLLEGE OF HUMANITIES AND SCIENCES,

UM LAUNCHES HISTORY INTERNSHIPS FOCUSED ON COVID-19

14 JULY 2020 •

Public history interns meet with UM faculty members via Zoom.

MISSOULA – The Department of History at the University of Montana is creating a new certificate program in the vitally important field of public history. As part of this initiative, a group of UM undergraduate students, doctoral students and alumni recently completed a six-week Oral History Internship, led by three history department faculty members.
The purpose of the project was for students to gain knowledge and experience in the practice of oral history and to contribute to the public-record testimonies about how people, businesses and organizations in western Montana experienced the coronavirus pandemic during the lockdown and phased reopening in the spring and summer of 2020.

“This oral history internship experience really allowed our student scholars to partner with this place that is Missoula, Montana, and the greater Rocky Mountain West,” said Kyle Volk, chair of UM Department of History. “These internships provide students with professional, hands-on experience that make the past relevant and accessible to the wider public.”

Student work produced a collection of 20 recorded and transcribed interviews that will be donated to Archives and Special Collections at UM’s Maureen and Mike Mansfield Library. Entitled “University of Montana COVID-19 Oral History Project,” the interviews will be available in the library’s digital collections.

Both the interviewees and the interviewers in this project come from diverse backgrounds and offer different perspectives on recent COVID-19 experiences:

- **John Stefanek** is a doctoral student studying modern U.S. history. Having personal interest in Greek life, exotic pets and video games, he interviewed two fraternity presidents at UM and Montana State University, the owner of an exotic pet business based in Helena and a married couple from Helena who stream video games on Twitch.

- **Michael Larmann** is a doctoral student studying early American history. His interviewees were concentrated in Missoula and include retailers, a restaurant, the Missoula Paddleheads baseball team and the local music band Letter B. Larmann also conducted interviews on behalf of the Downtown Missoula Partnership, including the Missoula branch of the International Rescue Committee, which works with refugees.

- **Sophia Etier**, a Montana resident, graduated in this spring with a Bachelor of Arts in History and is currently enrolled in a public history graduate program at Southern New Hampshire University. Because of her involvement in public history, she interviewed the executive and assistant directors of the Historical Museum at Fort Missoula, as well as the Missoula historic preservation officer. Also having an interest in health care during the pandemic, Etier interviewed the executive director of the All Nations Health Center.

- **Riley Erion** is a recent UM graduate who received an undergraduate degree in history. Her
interviews included the co-owners of Hype House, a spin studio and the executive director of the Poverello Center.

- Madeline Hagan is an undergraduate student studying history, philosophy and African-American studies. She interviewed a single-mother student, an environmental studies professor and a Black Lives Matter protester.

For more information email Volk at kylevolk@umontana.edu. More information about UM public history internships is online at https://bit.ly/3ftKSX6.

###

**Contact:** Kyle G. Volk, chair, UM Department of History, 406-544-5787, kyle.volk@umontana.edu.
MISSOULA – The University of Montana’s Family Medicine Residency of Western Montana just received a $2.5 million grant from the U.S. Department of Health and Human Services’ Health Resources and Services Administration. UM’s program is now one of 20 throughout the country to receive an award for residency training in primary care.
The grant will enhance training for resident physicians in rural or underserved areas, while encouraging graduates to pursue careers in rural and underserved primary care after completion of training.

“This funding will allow us to build on our already robust rural medical education and create new rural training opportunities,” said Dr. Darin Bell, FMRWM assistant director of rural education and the principle investigator on the grant. “With it we will have the resources to develop a number of new programs that have been in various stages of planning for several years.”

The five-year award for FMRWM’s Enhanced Rural Access and Training program will facilitate increased learning opportunities in rural and underserved areas through training in addiction medicine, telehealth and interprofessional education.

It also will allow FMRWM to develop an intensive training track that enables residents to complete much of their training and work as primary care doctors in rural areas. Additionally, the grant funds will allow FMRWM to expand its network of rural partner communities and institutions and provide professional development and education for these partners.

“We basically put everything on our rural wish list for the next five years into the grant,” said Dr. Rob Stenger, FMRWM program director. “All activities will be focused on enhancing our current rural training opportunities or building new ones for our residents.”

The residency program welcomed its inaugural class of 10 residents in 2013 and partnered with a core group of nine rural training sites. Seven years later, FMRWM now partners with 16 rural training sites throughout Western Montana and recently graduated its fifth class of family medicine physicians. Over 70% of the graduates have gone on to practice in rural and underserved areas, making the program one of the top producers of rural family physicians in the country.

“This award has a big impact in helping us continue to fulfill our mission of training the highest quality family doctors for rural and underserved communities in Montana,” Bell said. “Our unique training program has already proven highly successful, and we will continue to develop our training in innovative ways which will further distinguish us as a top-tier training program for rural family medicine.”

Headquartered in Missoula, FMRWM is sponsored by UM and affiliated with the University of
Washington Family Medicine Residency Network. The program’s sponsoring hospitals in western Montana are Kalispell Regional Healthcare, Providence St. Patrick Hospital in Missoula and Community Medical Center in Missoula. Residents are involved in continuity clinic training at Partnership Health Center in Missoula and Flathead Community Health Center in Kalispell.

FMRWM works with an extensive rural training network of 16 sites: Barrett Hospital and HealthCare, Dillon; Blackfeet Community Hospital, Browning; Central Montana Medical Center, Lewistown; Clark Fork Valley Hospital, Plains; Community Hospital of Anaconda, Anaconda; Deer Lodge Medical Center, Deer Lodge; Eureka Healthcare-North Valley Hospital, Eureka; Madison Valley Medical Center, Ennis; Marcus Daly Memorial Hospital, Hamilton; Northwest Community Health Center, Libby; Providence St. Joseph Medical Center, Polson; Ruby Valley Medical Center, Sheridan; St. Luke Community Hospital, Ronan; St. James Medical Group & Southwest Montana Community Health Center, Butte; Stoneybrook Medicine, Stevensville; and Tribal Health of the Confederated Salish and Kootenai Tribes, St. Ignatius.

Contact: Darin Bell, assistant director for rural education, Family Medicine Residency of Western Montana, 406-258-4124, darin.bell@umontana.edu; Rob Stenger, FMRWM program director, 406-243-4424, robert.stenger@umontana.edu.
UM Family Medicine Residency Program Earns $2.5M Grant
MISSOULA – The University of Montana released its plan Friday, July 10, for a healthy return to in-person instruction and campus activities for fall semester. “UM Healthy Fall 2020” is online at https://bit.ly/3gJZPoi.
Campus officials have spent hundreds of hours carefully crafting the plan at the direction of the Montana University System. The plan provides general health and safety guidelines for 11 key areas, including instruction, student housing, food services, events, athletics, transportation and facilities, among others.

A draft version of the plan was released June 19, and UM employees, students and other stakeholders provided feedback for the current plan.

“Together, we’ve created a framework for the fall that provides guidance for all aspects of campus operations, yet allows us to remain flexible and adaptive as new information or best practices emerge as COVID-19 continues to pose challenges,” UM President Seth Bodnar said.

He lauded the work of all those involved in the planning process. He said the pace and scale of the effort demanded an all-hands approach tackled by multiple teams. Each team included subject-matter experts, design thinkers, collaborators and problem-solvers.

One example was the Healthy Advisory Group, which is composed of experts from UM’s College of Health and the College of Humanities and Sciences. This group advised campus leaders about the best practices for mitigating risk of COVID-19 transmission and focused in four key areas: mitigation, testing, tracing and isolation/quarantine as they relate specifically to COVID-19. Team members included experts from Missoula City-County Health Department and Providence St. Patrick Hospital in Missoula.

“The safety of our UM family and all who visit our campus is foremost in our minds as we plan for the fall semester and beyond,” Bodnar said. “Our ability to resume campus operations relies on our resilience, adaptability and commitment to minimizing the risks of COVID-19 infection while enabling our students to pursue an education that prepares them for a bright future.”

He said the plan will be adjusted as new information becomes available and requirements are implemented and updated.

###

Contact: Paula Short, UM spokesperson, associate vice president of University Relations and
UM Releases Healthy Return Plan for Fall Semester

Strategic Communications, 406-243-5806, paula.short@umontana.edu.
UM RESEARCH PROVIDES INSIGHTS INTO SEABIRDS THAT FLY AND SWIM

08 JULY 2020

Masters of both sea and air, puffins decorate a shoreline cliff. (Photo by Daniel Zatz, CC BY-NC 2.0)

MISSOULA – New research by University of Montana doctoral student Anthony Lapsansky
provides insights into how four species of seabirds have developed the ability to cruise through both air and water.

Lapsansky’s study was published in the open-access journal eLife. It reveals that birds from the Alcidae family, which includes puffins, murres and their relatives, produce efficient propulsive wakes while flying and swimming. This means that the animals likely spend relatively low amounts of metabolic energy when creating the force they need to move in both air and water.

Lapsansky said the findings suggest that alcids have been optimized for movement in two very different environments through the course of their evolution.

“Birds that use their wings for ‘flight’ in air and water are expected to fly poorly in both environments compared to those that stick to either air or water only,” said Lapsansky, who is a Ph.D. candidate at UM’s Field Research Station at Fort Missoula. “In other words, these jacks-of-all-trades should be the masters of none. Interestingly, however, alcids seem to contradict this notion of a trade-off between aerial and aquatic flight performance, and we wanted to investigate this further.”

To gain a better understanding of the potential evolutionary trade-offs between the two types of flight, Lapsansky and his team tested whether alcids exhibit efficient Strouhal numbers when flying in water and air. Animals move in these environments by using oscillating appendages, and the Strouhal number describes the frequency at which an animal produces pulses of force with appendages to power its movement.

Only a narrow range of Strouhal numbers are efficient – if a bird flaps its wings too fast or too slow for a given amplitude and flight speed, then it wastes energy. But most birds have converged on this narrow range of Strouhal numbers, meaning that natural selection has tuned them to exhibit efficient flapping and swimming movements.

Additionally, Lapsansky and his team studied whether birds that fly in air and water use their muscles in the same way in both environments.

“Muscles typically consist of fibers that are tuned for specific activities, but this hardly seems possible when the same muscles are used for movement in two drastically different environments,” Lapsansky aid. “We hypothesized that alcids maintain efficient Strouhal numbers and consistent stroke velocities across air and water, which would allow them to
mitigate the costs of being able to cruise through both environments.”

The team used videography to measure the wing movements of four species of alcids that differ substantially in body mass – from 450 grams to 1 kilogram – and represent distant branches of the alcid family tree. Their measurements showed that alcids cruise at Strouhal numbers between 0.10 and 0.40 in both air and water – similar to animals that stick to air or water only – but flap their wings approximately 50% slower in water.

Lapsansky said this suggests the birds either contract their muscles at inefficient velocities or maintain a two-geared muscle system, highlighting a clear cost to using their wings for movement in air and water.

“Our work provides detailed new insights into how evolution has shaped alcid flight in response to competing environmental demands in air and water,” said paper co-author Bret Tobalske, a professor and director of the Field Research Station, which is part of UM’s Division of Biological Sciences. “Further research is now needed to understand the necessary changes that take place in the flight muscles of these birds to allow them to transition between air and water and back again.”

Contact: Anthony “Tony” Lapsansky, UM doctoral student in ecology and evolution, 406-243-6631, anthony.lapsansky@umconnect.umt.edu.
UM Research Provides Insights into Seabirds that Fly and Swim
UM Big Sky Poll: Montanans Prefer to Cast Their Ballot by Mail
VOTING PREFERENCES DURING THE PANDEMIC

IN A STUDY OF 517 MONTANANS

54% BELIEVE THAT MONTANA'S COVID-19 POLICIES ARE "ABOUT RIGHT"

25% THINK IT IS UNSAFE TO VOTE AT A POLLING PLACE THIS NOVEMBER

66% WOULD PREFER TO CAST THEIR VOTE VIA MAIL IN BALLOT

VOTING & ELECTIONS

HAVE "A LOT OF TRUST" THAT ELECTIONS ARE FAIR

30%

"STRONGLY AGREE" THAT THEIR VOTE MATTERS

53%

WHEN VOTING BY MAIL, BALLOTS SHOULD BE COUNTED IF THEY ARE...

47% RECEIVED BY THE ELECTIONS OFFICE BEFORE THE CLOSE OF POLLS

44% POSTMARKED BY ELECTION DAY

People would be more likely to vote if:

51% A general election voter guide was provided

MISSOULA – New research
from the University of Montana’s Big Sky Poll found that the majority of Montanans would prefer to cast their ballot by mail this November.

Funded by the Headwaters Foundation, the poll found that 57% of respondents said they believe voting at a polling place November 2020 is safe, however, 66% prefer casting their ballot by mail. The poll also found:

- 53% of registered voters strongly believe their vote matters.
- 54% of Montanans believe Montana’s COVID-19 policies are “about right.”
- 51% would like to see a general election voter guide provided by the state.
- 48% would like a reminder providing information on where and when to vote.

Participants were split on how mail-in-ballots should be counted:

- 44% believe mail-in ballots should be counted if they are postmarked by Election Day.
- 47% believe ballots should be counted if they are received by the elections office before the close of polls.

“As Montana continues to navigate the implications of COVID-19, our results provide timely perspectives for state decision-makers to craft public policies in response to these times,” said Sara Rinfret, co-director of UM’s Big Sky Poll.

Rinfret is a professor and chair of UM’s Max S. Baucus Institute and the Department of Public Administration and Policy. She and Justin Angle, associate professor of marketing in UM’s College of Business, co-direct the poll, which provides applied learning opportunities at UM
UM Big Sky Poll: Montanans Prefer to Cast Their Ballot by Mail

and is a fellowship opportunity for students in UM’s Master of Public Administration, law and Master of Science in Business Analytics degree programs.

UM’s Big Sky Poll recently concluded a yearlong investigation of civic engagement across Montana, assessing how and why Montanans engage in public policy and what hampers those efforts. The poll asked 517 registered voters how the COVID-19 pandemic has impacted their public participation in the Big Sky state.

The UM Big Sky Poll was conducted online June 17 - 26, with 517 randomly selected registered Montana voters. The poll has a margin of error of +/- 4.31% points at a 95% confidence level. Survey results were weighted by geography, gender and education level to more accurately reflect demographics of the registered voter population in Montana.

Use of findings require attribution to the UM Big Sky Poll. Full results from this research are available on the UM Big Sky Poll website at http://www.umt.edu/bigskypoll/. More information on the Big Sky Poll is online at http://www.umt.edu/bigskypoll/.

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Contact: Sara Rinfret, professor and chair, UM Department of Public Administration and Policy, 406-243-4702, sara.rinfret@umontana.edu; Justin Angle, interim chair, UM Department of Management and Marketing, 406-243-6747, Justin.angle@umontana.edu.
FLBS intern Grant Marshall samples stonefly specimens from the alluvial aquifer beneath the Nyack floodplain outside of Glacier National Park.
FLATHEAD LAKE – In a new study published in the scientific journal Ecology, researchers from the University of Montana’s Flathead Lake Biological Station may have unlocked a mystery surrounding unique aquatic insects in the Flathead watershed.

“There’s a surprising adaptation of stoneflies in alluvial aquifers that allows them to use low-oxygen or oxygen-free environments,” said FLBS researcher Rachel Malison, lead author on the study. “These aquifers are hotspots of biodiversity, and this study highlights the vital role gravel-bed river floodplains play on the landscape.”
River floodplains are among the most biodiverse landscapes on earth. They provide an important habitat for aquatic and terrestrial organisms, and their aquifers (i.e., shallow groundwater beneath and adjacent to the river) are key components of complex ecosystems worldwide. The Nyack floodplain of the Middle Fork Flathead River outside Glacier National Park, for instance, sustains everything from microbes to grizzly bears and is home to over half of the 100-plus species of stoneflies known in the state of Montana.

But there’s a unique mystery at work within these river floodplains. Out of sight and under the surface, alluvial aquifers are composed of unconsolidated materials and offer limited sources of carbon for sustaining organisms and food webs. Alluvial aquifers also can contain extreme environmental conditions and an abundance of methane gas, which is typically produced in freshwater ecosystems within anoxic (zero-oxygen) or hypoxic (significantly low-oxygen) environments.

To this point, most stoneflies are thought to require highly oxygenated water environments to survive. But in the alluvial aquifer of the Nyack floodplain, large populations of subterranean stoneflies exist that can be found in low-oxygen environments, and significant portions of their biomass carbon derive from methane.

The question of how these stoneflies could survive and possibly access food in such an inhospitable, low-oxygen environment, is a question that Malison and her team of researchers set out to address.

“It was in the early-1990s that [FLBS researcher] Bonnie Ellis first discovered that a species of stonefly in the Nyack floodplain had the ability to survive anoxia exposure, and it’s been a mystery ever since,” Malison said. “No other stoneflies have this adaptation, so we wanted to investigate to better understand how large populations of stoneflies might be supported in aquifer food webs.”

Through the course of their study, Malison and her fellow researchers tested the anoxic and hypoxic responses of nearly 2,500 stonefly individuals in three alluvial aquifer species and nine river species. Compared to their surface-dwelling relatives, the aquifer stoneflies performed better in low-oxygen and oxygen-free conditions, surviving an average of three times longer than their above-ground counterparts.

Additionally, the aquifer stoneflies were still able to keep moving and crawling when exposed
to 76 hours without oxygen, which has important implications for how these species may be able to access different food resources in the aquifer.

Delving into the DNA of the stoneflies, the researchers showed that the aquifer stoneflies have gene sequences for hemocyanin, an oxygen-transport respiratory protein, which could represent a possible mechanism for the stoneflies’ ability to survive at low-oxygen levels.

The results of the study show that subterranean stoneflies likely are able to exploit rich carbon resources in anoxic zones, which may explain their extraordinarily high abundance in gravel-bed floodplain aquifers. Additionally, their remarkable ability to perform well in low-oxygen and oxygen-free conditions is unique within the entire order of stoneflies.

It’s a discovery that suggests unconventional and surprising methane sources likely support a crucial component of biodiversity and productivity in floodplains all over the world.

“These findings begin to help us understand how vulnerable different stoneflies might be to climate change,” Malison said. “As waters warm they contain less oxygen, potentially causing stress and negatively influencing populations of the more sensitive species.”

This study was made possible thanks to funding from the National Science Foundation. In addition to Malison, other researchers on the study included current FLBS researchers Amanda DelVecchia, Brian Hand and Gordon Luikart; FLBS researchers emerita Jack Stanford and Bonnie Ellis; UM researcher Arthur Woods; and Ehime University (Japan) researchers Maribet Gamboa and Kozo Watanabe, as well as past FLBS intern Hailey Jacobson.

The complete study is found in the science journal Ecology at https://esajournals.onlinelibrary.wiley.com/doi/10.1002/ecy.3127.

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**Contact:** Rachel Malison, research scientist, UM Flathead Lake Biological Station, 406-872-4518, rachel.malison@umontana.edu; Tom Bansak, FLBS associate director, 406-872-4503, tom.bansak@umontana.edu.
MISSOULA – A new group of 10 resident family physicians will start training this week as
UM Family Medicine Residency Program Welcomes Class of 2023

part of the University of Montana’s Family Medicine Residency of Western Montana.

FMRWM develops family physicians who are compassionate, clinically competent and motivated to serve patients and communities in the rural and underserved areas of Montana. To date, 77% of the program’s graduates have gone on to practice in rural or underserved areas, with 72% remaining in Montana.

“Welcoming our new class of residents is always one of the most exciting times of the year for us at FMRWM,” said Dr. Amy Matheny, associate program director. “It gives all of us at the program a chance to reflect on our mission and values as we start a new academic year and commence the training of our new family medicine colleagues.”

Entry into the program is highly competitive, with over 1,000 applications received and 127 in-person interviews completed. This new class was matched with UM’s residency through the National Resident Matching Program, which uses a computerized mathematical algorithm to match applicants to medical residency programs across the United States.

The 2023 class includes Ben Merbler, DO Kansas City University College of Medicine; Paige O’Connor, DO Kansas City University COM; Jacqueline Ordemann, MD Tufts University-Maine; Stephen Reale, MD Tufts University; Jonathan Rhea, DO Des Moines University COM; Rachael Schmidt, MD University of Nebraska; Melanie Scott, DO Pacific NW University COM; KatiLyn Lucas, DO Pacific NW University COM; Taylor Simmons, MD University of Washington-Idaho WWAMI; and Barbara Steward, DO Pacific NW University COM.

Headquartered in Missoula, FMRWM is sponsored by UM and affiliated with the University of Washington Family Medicine Residency Network. The program’s sponsoring hospitals in western Montana are Kalispell Regional Healthcare, Providence St. Patrick Hospital in Missoula and Community Medical Center in Missoula. Residents are involved in continuity clinic training at Partnership Health Center in Missoula and Flathead Community Health Center in Kalispell.

FMRWM works with an extensive rural training network of 16 sites: Barrett Hospital and HealthCare, Dillon; Blackfeet Community Hospital, Browning; Central Montana Medical Center, Lewistown; Clark Fork Valley Hospital, Plains; Community Hospital of Anaconda, Anaconda; Deer Lodge Medical Center, Deer Lodge; Eureka Healthcare-North Valley Hospital, Eureka; Madison Valley Medical Center, Ennis; Marcus Daly Memorial Hospital, Hamilton; Northwest Community Health Center, Libby; Providence St. Joseph Medical Center,
UM Family Medicine Residency Program Welcomes Class of 2023

Polson; Ruby Valley Medical Center, Sheridan; St. Luke Community Hospital, Ronan; St. James Medical Group & Southwest Montana Community Health Center, Butte; Stoneybrook Medicine, Stevensville; and Tribal Health of the Confederated Salish and Kootenai Tribes, St. Ignatius.

For more information visit http://health.umt.edu/fmrwm/.

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Contact: Nathan Gilliam, program coordinator, UM Family Medicine Residency of Western Montana, 406-258-4451, nathan.gilliam@mso.umt.edu.
UM Family Medicine Residency Program Welcomes Class of 2023