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UM Research Reveals How Bacteria Defeat Drugs That Fight Cystic Fibrosis
UM researcher Laura Jennings helped discover a strategy used by bacteria to defeat antibiotics and other drugs used to fight infections caused by cystic fibrosis.

MISSOULA – University of Montana researchers and their partners have discovered a slimy strategy used by bacteria to defeat antibiotics and other drugs used to combat infections afflicting people with cystic fibrosis. The research was published Feb. 23 in the journal Cell Reports.

Cystic fibrosis is a life-threatening disease that causes persistent lung infections and limits a
person’s ability to breathe over time. A common strain of bacteria, Pseudomonas aeruginosa, often thrives in the lungs of people with cystic fibrosis, as well as in wounds from burns or diabetic ulcers. Once a P. aeruginosa infection is established, it can be incredibly difficult to cure, despite repeated courses of antibiotics.

Dr. Laura Jennings, a research assistant professor in UM’s Division of Biological Sciences and an affiliate with the University’s Center for Translational Medicine, said their research showed that the stubborn germs living in the lungs of cystic fibrosis patients create a self-produced carbohydrate slime. And this slime makes the bacteria more resistant to the antibiotics prescribed by doctors, as well as drugs that reduce the thickness of mucus.

“We found the first direct evidence that these carbohydrates are produced at the sites of infection,” Jennings said. “We showed that one of the carbohydrates, called Pel, sticks to extracellular DNA, which is abundant in the thick mucus secretions prominent in cystic fibrosis lungs.

“This interaction makes a slimy protective layer around the bacteria, making them harder to kill,” she said. “As such, it reduces the pathogen’s susceptibility to antibiotics and drugs aimed at reducing the thickness of airway mucus by digesting DNA.”

She said the work supports a hypothesis that it’s the carbohydrates that group, or aggregate, the bacteria in cystic fibrosis lungs.

“This is important because we know that physically breaking up bacterial aggregates can restore bacterial susceptibility to killing with antibiotics and cells of the immune system,” Jennings said. “Therefore, understanding the mechanisms that promote bacterial aggregation may facilitate new therapeutic approaches aimed at digesting the carbohydrates holding bacterial cells together.”

The research also suggests that the carbohydrate Pel likely diminishes the efficacy of the most commonly used therapeutics for cystic fibrosis, which are inhaled antibiotics and a drug that breaks down the thickness of the airway mucus, making it easier to cough up.

The paper in Cell Reports is titled “P. aeruginosa aggregates in cystic-fibrosis sputum produce exopolysaccharides that likely impede current therapies.” Dr. Matthew Parsek from the University of Washington is the senior author. Jennings is the lead author and a former postdoctoral fellow in Parsek’s laboratory. Other authors are from UW, UM and The Ohio State
UM Research Reveals How Bacteria Defeat Drugs That Fight Cystic Fibrosis

Contact: Dr. Laura Jennings, research assistant professor, UM Division of Biological Sciences, laura.jennings@mso.umt.edu.
HOME ON THE RANGE: UM ALUMNA MAKES HAY IN BUSINESS, RANCH LIFE

24 FEBRUARY 2021
MISSOULA – When Loni Judisch was a lanky elementary school student, she would race her classmates behind the little Bynum school, under the wide-open skies of Montana’s Rocky Mountain Front.

Inevitably, Judisch would stop running, catch her breath and look back. She was always far ahead of her classmates.

“I learned I was fast during track and field days with neighboring schools,” Judisch said.

Later, her speed followed her through Conrad High School, where she still holds the high school state record for the women’s 400-meter.

She raced all the way to the University of Montana, where the UM legacy ran for track and field, competing in the unforgiving 400-meter and 200-relay sprint and relays for five years. At UM, she received the Most Valuable Track Athlete award and learned to balance the demands of a Division I athlete while working toward two degrees.

In 2008, in the worst recession and job market of a generation, she graduated from UM with bachelor’s degrees in business administration and fine arts.

“I remember imagining myself as a professional sprinter or working somewhere in
the corporate marketing world after college, but deep down I was always a rural kid,” she said. “I always had an entrepreneurial spirit.”

So, she made the decision to join her husband and high school sweetheart, Ross Judisch, to work the 100-year old Judisch Ranch, homesteaded by Ross’s family near the tiny town of Ledger, Montana.

Returning home after college to family and land felt natural, she said. After all, agriculture and UM are both in her roots.

Her grandfather ran a sheep and cattle ranch in Bynum all his life, the same town where her great-grandfather Ira taught at Bynum School for more than 50 years. Her dad and UM alumni ’82 Rock Perkins, was an ag lender in Conrad, banking and farming on and off throughout his career.

Now a mother of three children, ages 11, 9 and 3, and smack dab in the middle of calving season, Judisch and her family manage and market Haymaker Beef. The business sells cuts and boxes of pasture raised beef from the Judisch Ranch’s Black Angus and Charolais mix.
herd. They help run the 900-head cattle operation with the extended Judisch family.

The business is good and growing, and there is always work to be done. The cows need to be checked. Meals need making. Calves monitored, kids off to school, and bills need to be paid.

“Ranch life never stops,” she said. “Running multiple businesses only makes it more challenging, but that’s when I remember (from UM track) to stay in my lane and focus and not get distracted on someone else’s race. The same is true in business and life.”

The cows feed on native grasses and are fed a mixture of grass and hay and alfalfa in winter months. Cows that will be processed are fed a mixture of grass, hay and grain, making for exceptionally tender cuts, which Judisch boxes and ships to Montana customers directly from the ranch after being processed at Lolo’s Locker.

She also sells cuts at local farmer’s markets and explores additional markets in schools, restaurants and possibly grocery stores.

“It’s really an interesting time to be in agriculture in Montana,” she said. “Markets change, and there’s a lot of new, innovative technology, ideas, program sand commodities out there. There’s also an influx of younger people in our area coming back to ranch and farm.”

Judisch said her UM classes in business, marketing and economics provided the confidence and skills required of an entrepreneur to remain profitable and competitive in Montana’s $2.5 billion livestock industry.

“Ag has always been a risky business, and it always will be,” she said. “For me, the difference is having that business background so we can make decisions that won’t jeopardize the entire operation.”

Navigating federal funds that help small businesses stay afloat in the pandemic, Judisch applied for a CARES Act grant and used the funds to buy a freezer for a value-add to the ranch. She sold out of stock of earlier this year with the most in-demand cuts being Haymaker’s assorted boxes of ribeye, T-bone, New York strips, tenderloins, flat irons and sirloins.

“Montana has been a leader in farm-to-table for some time, and we’re edging into the market with ranch-to-table,” she said. “When you look at overhead, transportation costs and shipping,
making a choice for operating direct-to-consumer can keep prices low and increase long-term sustainability.

The physical demands of packing and shipping boxes of meat, hosting toddlers, working cows, feeding cattle and bailing hay isn't for the weak, but it's something Judisch said is a choice every day.

“\[I\] remember my UM track coach, Bryan Schweyen, sharing with us that no matter how hard I'm working, there is always someone out there who is going to be working harder than you,” she said. “That has stuck with me years later. It applies to every area of life.”

Judisch also makes time for her artistic side that was nurtured at UM in painting classes. She started with a camera off eBay a few years back and now runs a photography business capturing senior portraits, weddings and local families in the area.

She manages the Haymaker Beef business, website and Instagram account, where she documents ranch and family life, sharing the daily rituals of animal care and chores that might make just about anyone pine for a day job on the ranch’s pastures.

“There’s up and downs every day, to be sure, but to be able to combine your work and your life can be pretty great,” she said. “I owe a lot of my training and creativity to UM. Especially the idea that it takes hard work to be successful.”

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Jenny Lavey, UM News Service

**Contact:** Loni Judisch, owner, Haymaker Beef, 406-868-8979, hello@haymakerbeef.com.
Originally from Shelby, lab technician Ashley Bielawski works in researcher Sarah Certel's UM laboratory.
MISSOULA – The University of Montana is ranked in the top 10 nationwide for research growth, according to data from the National Science Foundation.

NSF is the national repository for data on research activity for 725 institutions of higher education across the nation. According to that data, UM ranked No. 6 nationally for research growth among all universities with more than $100 million in research expenditures.

“This ranking further underscores that UM faculty and student researchers are making a profound impact on some of the most pressing issues facing society,” said Scott Whittenburg, UM vice president for research and creative scholarship. “Whether it is critical COVID-19 vaccine research or studying snowpack to identify flood and drought risks, UM researchers are providing an incredible resource to our state.

“Amidst the pandemic, we have already exceeded $100 million in research awards this year,” he said, “which bodes well for continued research growth at UM.”

Research expenditures grew from $55 million in 2014 to $104.7 million in 2019 – the last year that data has been reported – nearly doubling the amount of research expenditures at Montana’s flagship university in just five years.

“Every dollar invested in research at UM is felt across our community and the region,” UM President Seth Bodnar said. “Our growing research enterprise at UM is leading to not only new knowledge with benefits across sectors but also the creation of spin-off businesses that create new jobs and new opportunities for Montanans.”

Funding for UM’s research activity is secured by a large, diverse set of sources, including federal contracts and research grants. In 2019 alone, NIH invested $28.1 million in UM for research activities and the U.S. Department of Agriculture contributed another $6.5 million.

Research growth at UM is measured across a wide range of disciplines, which include health sciences, biological and biomedical sciences, natural resources and conservation, mathematical and physical sciences, geosciences, social sciences and computer sciences, and engineering.

To learn more about some of the ongoing research activities at UM, visit
UM Ranked No. 6 in Nation for Research Growth


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**Contact:** Scott Whittenburg, UM vice president for research and creative scholarship, 406-243-6670, scott.whittenburg@umontana.edu; Dave Kuntz, UM director of strategic communications, 406-243-5659, dave.kuntz@umontana.edu.
Missoula College Now Offers Completely Online Two-Year Associate Degrees
Missoula College and UMOnline announce the creation of new, completely online associates degrees. With a special focus on recruiting active military service members and new remote learners, the degrees are intended as transfer degrees for the completion of a bachelor’s degree at any institution.

MISSOULA — Missoula College and the University of Montana announce the creation and open enrollment of the University’s first online associate of arts and associate of sciences degrees.

The two-year online degrees recognize the pandemic’s effect on an emerging remote workforce and new learners, while reflecting the University’s mission to provide accessible education, said Tom Gallagher, dean of Missoula College.

“Missoula College is thrilled to announce these two new degrees, which we’ve been working on for some time,” Gallagher said. “All of us at UM and at Missoula College have been thinking deeply about serving our community by making education accessible. The new online AA and AS degrees speak directly to those efforts.”

Offered through UMOncine and hosted by Missoula College, each associate degree includes 60 credits of general education classes through Missoula College. Both degrees are intended as transfer degrees to any four-year degree program, including those at UM.

“The primary purpose of the AA and AS degree is for transferring and for our students to ultimately complete a baccalaureate degree,” Gallagher said. “Our staff and faculty are here to help students in that trajectory every step of the way.”

Nearly every institution in the Montana University System recognizes an AA or AS degree for satisfying general education credits.

Students pursuing an online AA or AS degree can work closely with an academic adviser to design a curriculum tailored to their academic and professional goals, and online students will
have access to support services for academic advising, tuition and scholarship support, tutorial needs and technology support. Students pursuing an AA or AS also can take up to six credits a semester on UM’s central mountain campus.

Gallagher said credits for either the AS or AA can be paired with one of several Missoula College certificate programs and students can add a workforce credential to complete the degree.

“The idea is that our students will develop career skills in addition to preparing for a bachelor’s degree,” he said. “If you graduate from Missoula College, we make sure you’re ready for any job and that extends to students looking to transfer into four-year degree programs.”

The new online degrees were developed with a specific focus on active military members, who may be deployed all over the world. Kim Reiser, Missoula College department chair of Applied Arts and Sciences, said the new online degrees can reach new learners, including active military, whether they are a Montana resident or not.

“We're excited the new associate degree offerings can open doors, including our actively deployed members of the military,” she said.

Reiser said she worked closely with UM’s Mansfield Center’s Defense Critical Language and Culture Program, which provides language and cultural training to active military members for the Department of Defense and for U.S. National Security objectives. She said there was a clear need to make online programs more accessible to active military students.

“We realized that providing associates degrees online is another way to help our military service members get a jump-start on their education, and to have college credit attached to their military service.”

Reiser said the degrees may be particularly attractive to federal, nonresident, military service members, who are actively deployed and may want to begin completing general education requirements. The capability of UM’s Vets Office to provide liaison support to active military members was noted in UM being named one of the top military-friendly online colleges in 2020.

For the last two years, Reiser said Missoula College faculty members have been reviewing the student experience of their pathway to a degree, from the application process all the way to completion.
“We found breakdowns in various places, and that information has helped us to refine how we can best provide support to onboard students and get them set up for classes,” she said. “We now have a short application on the website, and the entire process is easier. The result is a bigger and better effort to serve our military and general student populations.”

For more information on the new online associates of arts and sciences degrees or to apply, visit https://www.umt.edu/umonline/programs/associateminors.php.

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**Contact:** Tom Gallagher, dean, Missoula College, 406-243-7801, thomas.gallagher@umontana.edu; Kim Reiser, department chair, Missoula College, 406-243-7839, kim.reiser@umontana.edu.
Missoula College Now Offers Completely Online Two-Year Associate Degrees

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Expert on Race, Racism to Present Next UM President’s Lecture

18 February 2021
MISSOULA – An educator, expert on racism and bestselling author will headline the next installment of the President’s Lecture Series at the University of Montana.

Dr. Beverly Daniel Tatum will present “A Virtual Conversation About Race and Racism” at noon Wednesday, March 3, via Zoom. This event will be moderated by Dr. Karla Bird, president of Blackfeet Community College, and will be open to the entire Montana community. Audience members are asked to register in advance at www.umt.edu/president to join the conversation.

Tatum also participated in an interview on UM’s “A New Angle” podcast, and she will participate in an intimate moderated discussion with Montana University System Teaching Scholars.

A clinical psychologist widely known for her expertise on race relations, Tatum is president emerita of Spelman College in Atlanta. She is a thought leader in higher education and the author of several books, including the bestselling “Why Are All the Black Kids Sitting Together in the Cafeteria? and Other Conversations About Race” (now in a 20th anniversary edition) and “Can We Talk About Race? and Other Conversations in an Era of School Resegregation” (2007).

Tatum was the 2013 recipient of the Carnegie Academic Leadership Award and the 2014 recipient of the American Psychological Association Award for Outstanding Lifetime Contributions to Psychology. She holds master’s and doctorate degrees in clinical psychology from the University of Michigan and a master’s degree in religious studies from Hartford Seminary.

“Dr. Tatum is a sought-after speaker whose expertise on racial identity development, race and education deserves our attention,” said Kelly Webster, chief of staff with the UM Office of the President. “We are excited to invite the Montana community to learn from her and to explore strategies for building more equity-minded environments.”

UM’s Mansfield Library maintains a “Resources Against Racism” webpage, which Webster said
includes information on Tatum's work and other resources for building inclusive, anti-racist communities.

Additionally, state teachers can earn renewal credits through the Montana Office of Public Instruction by participating in Tatum's talk. Those interested should email Randi Edwards in advance at randi.edwards@mso.umt.edu for more information.

For decades, the President's Lecture Series has provided opportunities to gather, learn and discuss important ideas and issues that animate UM and the communities of Montana. UM President Seth Bodnar continues this tradition by hosting a series that challenges all to engage in meaningful and enjoyable learning, both on and off campus. This installment is online to protect people during the pandemic.

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Contact: UM Office of the President, 406-243-2311, thepresident@umontana.edu.
Expert on Race, Racism to Present Next UM President’s Lecture
UM Law School Ranked No. 4 Nationally for Affordability

18 FEBRUARY 2021
MISSOULA – Best Value Schools recently released a national list of the 20 Most Affordable Law Schools, and the University of Montana’s Alexander Blewett III School of Law ranked fourth for its low cost of tuition.

“Without the added pressure to make ends meet or to pay back exorbitant student loans, I’ve been able to keep a healthy life balance and stay focused on learning the law,” said second-year law student Jhevon McMillan.

“The cost put me at ease when deciding to come to Missoula,” he said. “The affordability will no doubt inspire more people like me to attend, creating greater diversity in the Montana legal community.”

Besides the reasonable tuition, McMillan said, the true value of his Montana legal education is the relationships he has formed with professors, fellow students and staff members that would have been more difficult at a larger school with a bigger price tag.

“In my experience, our unique community allows us to easily interact with one another often,” he said. “Because of that, I’ve become friends with everyone. The feeling is ‘We are all in this together.’”

In the ranking, Best Value Schools cited the practical education UM law students receive in faculty-supervised, experience-based clinics in settings ranging from criminal defense offices to environmental nonprofits.

“While the Blewett School of Law is extremely affordable, I think the amount of hands-on experience, as well as the kind and caring community, truly make the school stand above the rest,” said Gabrielle Broere, a third-year law student.

“In clinic, I have been able to work on cases that have tested me and forced me to grow in ways I never imagined,” she said. “My clinical experience has helped me to further my skills and feel ready to work after graduation.”
Best Value Schools highlighted that over 33% of Blewett School of Law graduates are placed in judicial clerkships and more than 92% pass the bar exam on their first attempt as evidence of the high-quality level of education provided to students at a less-expensive school. (The national, first-time bar pass rate in 2019 was 79.6%).

Best Value’s recognition is one of many accolades garnered by UM’s law school, which is frequently cited by educational and industry organizations for being a top school in the areas of practical training and environmental law. The school’s Margery Hunter Brown Indian Law Clinic is the oldest such clinic in the U.S.

It also houses the first accredited Master of Public Administration program in the nation within a law school, placing UM on the cutting edge for training the next generation of students interested in law, policy and public service.

“This ranking reflects our commitment to delivering the best possible legal education at a cost that will allow our graduates to pursue their career goals without the debt burden so many new lawyers carry,” said Paul Kirgis, dean of the law school.

For more information about the Alexander Blewett III School of Law, visit https://www.umt.edu/law/.

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**Contact:** Andi Armstrong, Blewett School of Law director of marketing and communications, 406-243-6509, andrea.armstrong@umontana.edu.
UM Leads Career Readiness with New Partnership

UM students and the broader public now have access to Kaplan Credegree programs.
MISSOULA – The University of Montana has contracted with Kaplan, a global educational services provider, to offer students Kaplan Credegree, a program designed to enhance the job readiness and marketability of college students by partnering traditional four-year degrees with Kaplan’s educational programs. The partnership allows students to complete their degree while earning industry-recognized credentials valued by employers.

UM is one of a small but growing number of educational institutions that are making a major investment in alternative credentialing programs. More than 70% of respondents in a 2019 Quest Research Group survey, agreed that an in-demand industry credential combined with a traditional degree would help college students have a more well-rounded education and overall skill set.

Kaplan Credegree will be offered to UM students, alumni and members of the public looking to upskill in 30 tech fields, including high-demand skill sets like cybersecurity, data science, data literacy and digital marketing. Such skills are in particular demand in Montana where the high-tech sector is growing faster than any other part of the state’s economy, according to a study by UM’s Bureau of Business and Economic Research for The Montana High Tech Business Alliance.

“The University of Montana is expanding the scale and scope of career-related experiential learning, and the new Kaplan offerings will enhance these efforts,” UM President Seth Bodnar said. “They will help us expand the breadth of opportunity available at a flagship university with the intensely personal ways we engage with our students to ensure every graduate leaves our campus with robust work-based experience. We are creating a distinctive undergraduate experience that is academically rigorous and personally engaging – designed specifically to ensure every student is prepared to succeed in life and in their chosen career – all in the context of a vibrant experience on and off campus.”

To graduate both broadly educated and specifically skilled is the ultimate goal now, said Brandon Busteed, president of University Partners and Global Head, Learn-Work Innovation at Kaplan.

“The University of Montana is taking a real leadership role in this effort,” Busteed said. “It is well-known for providing its students with a world-class liberal arts education. Coupled with Kaplan’s Credegree programs, students will be even better equipped to close the skills gap and thrive in the world of work.”
Contact: Andrea Vernon, executive director, UM Experimental Learning and Career Success, 406-243-5159, andrea.vernon@umontana.edu.
UM Announces Newest Student Advocate Class

Members of the 2020-21 class of student Advocates pose for a group photo at the University of Montana.
MISSOULA – The University of Montana has announced the 2020-21 class selected for the UM Advocates, a student leadership group that assists with recruiting, outreach, campus orientations and special events.

“The Advocates are an incredible asset to the University of Montana,” UM President Seth Bodnar said. “They are students with great leadership skills, knowledge of the University of Montana and energy to serve in a very important role on campus – often as a first point of contact for prospective students, new employees and visiting officials.”

The UM Advocates program was founded in 1969. Students are selected as UM Advocates after a rigorous process that includes interviews, presentations and written applications.

The 2020-2021 UM Advocates are listed in alphabetical order below:

- **Addison Hultgren** of **Huntley, Montana**. Hultgren is a 2020 graduate of Huntley Project High School.

- **Aliya Peek** of **Portland, Oregon**. Peek is a 2020 graduate of Lincoln High School.

- **Ann Killen** of **Huntley, Montana**. Killen is a 2020 graduate of Huntley Project High School.

- **Ashley Pepper** of **Castle Rock, Colorado**. Pepper is a 2020 graduate of Douglas County High School.

- **August Tolzman** of **Seattle, Washington**. Tolzman is a 2020 graduate of West Seattle High School.

- **Brooklyn Grubbs** of **Creswell, Oregon**. Grubbs is a 2020 graduate of Creswell High School.

- **Christine Compton** of **Billings, Montana**. Compton is a 2020 graduate of Billings West High School.

- **Emily Hanson** of **Kalispell, Montana**. Hanson is a 2020 graduate of Glacier High School.

- **Emma Funk** of **Livingston, Montana**. Funk is a 2019 graduate of Highland High School.
UM Announces Newest Student Advocate Class

- **Grace Friend** of **Boise, Idaho**. Friend is a 2019 graduate of Eagle High School.

- **Grant Anderson** of **White Salmon, Washington**. Anderson is a 2019 graduate of Columbia High School.

- **Holly Sudol** of **Edmonds, Washington**. Sudol is a 2019 graduate of Archbishop Murphy High School.

- **Jacey Grange** of **Saint Maries, Idaho**. Grange is a 2020 graduate of Kootenai Jr.-Sr. High.

- **Jasmine Gruber** of **Kalispell, Montana**. Gruber is a 2019 graduate of Glacier High.

- **Jorgie Hawthorne** of **Great Falls, Montana**. Hawthorne is a 2020 graduate of Great Falls High School.

- **Joselyn Jolly** of **Kalispell, Montana**. Jolly is a 2020 graduate of Glacier High School.

- **Keeza Leavens** of **Rapid City, South Dakota**. Leavens is a 2020 graduate of Rapid City Central High School.

- **Kyle Wonders** of **Newbury Park, California**. Wonders is a 2020 graduate of Newbury Park High School.

- **Liv Wilson** of **Kalispell, Montana**. Wilson is a 2020 graduate of Glacier High School.

- **Madeleine Itschner** of **West Linn, Oregon**. Itschner is a 2018 graduate of West Linn High School.

- **Madeline Staples** of **Butte, Montana**. Staples is a 2020 graduate of Butte High School.

- **Madison Biggs** of **Reno, Nevada**. Biggs is a 2020 graduate of Academy of Arts, Careers and Technology High School.

- **Marian Kale** of **Billings, Montana**. Kale is a 2020 graduate of Billings Central Catholic High School.

- **Maura Lynch** of **Spokane, Washington**. Lynch is a 2020 graduate of Joel E. Ferris High School.

- **Molly Keller** of **Deer Park, Washington**. Keller is a 2020 graduate of Deer Park High
UM Announces Newest Student Advocate Class

- **Rachel Scuri** of **Meridian, Idaho**. Scuri is a 2020 graduate of Rocky Mountain High School.

- **Stephanie Kowal** of **Great Falls, Montana**. Kowal is a 2020 graduate of Great Falls High School.

- **Zandy Zender** of **Bellingham, Washington**. Zender is a 2018 graduate of Mount Baker Senior High School.

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**Contact**: Dave Kuntz, UM director of strategic communications, 406-243-5659, dave.kuntz@umontana.edu.
UM Announces Newest Student Advocate Class
UNIVERSITY OF MONTANA

FAUCI LECTURE AT UM INSPIRES STUDENTS, DRAWS 6,000 ATTENDEES

17 FEBRUARY 2021
MISSOULA – Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, addressed the global response to the COVID-19 pandemic Feb. 17 in a conversation hosted by the University of Montana’s Mike and Maureen Mansfield Center.

Over 6,000 people tuned into the virtual event to hear from the world’s leading infectious disease expert about the vaccine rollout, impact of the COVID-19 virus and lessons learned through the pandemic.

Fauci took questions from the audience, including inquiries from Billy Miller of Helena and Riley Johnson of Pablo about the timeline for a “return to normal.”

“There is a light at the end of the tunnel, and it is because we have vaccines that are safe,” Fauci said. “When we get 70-85% of the population vaccinated, it will give us blanket protection. By next fall, we can begin to approach a significant degree of normality.”

Fauci was quick to raise awareness of one potential hurdle in the attempt to achieve herd immunity: variants of the virus that are developing across the world.

“The one wild card is the emergence of variants, but we are already working on vaccines that address these variants of the virus,” Fauci added.

Kaylee Kronsperger, a UM senior studying human biological sciences, asked Fauci how to encourage people who are skeptical of the vaccine to change their minds.

Fauci responded, “Be patient and help ensure that people know these vaccines have been shown to be effective in tens of thousands of people.”

Fielding a question from Confederated Salish and Kootenai Tribal Council Chairwoman Shelly Fyant about the federal government’s historical malpractice against Native Americans, Fauci acknowledged the disproportionate impact COVID-19 has had on Montana’s Native American population and he encouraged Native Americans to see out the vaccine right away.
When asked what advice and guidance he would give to UM students studying science and public health, Fauci made a pitch to follow in his footsteps towards public service.

“There is an extraordinary impact one can have at the government level,” he said. “There is no more gratifying feeling to know that your impact touches lives in different countries.”

While attending a watch party in the Mansfield Library, UM student Rachel Scuri was excited about how much detail Fauci covered during the hour-long event. “There was a lot I learned about the vaccine development process,” said the ecosystem science restoration and environmental chemistry major. “It is just shocking when Dr. Fauci said that vaccine development began just five days after the virus was discovered.”

Fauci is no stranger to western Montana, which is home to the NIAD’s Rocky Mountain Labs and UM’s Center for Translational Medicine, which was awarded a $2.5 million grant from the National Institutes of Health to identify and advance COVID-19 vaccines.

Contact: Dave Kuntz, UM director of strategic communications, 406-243-5659, dave.kuntz@umontana.edu
UM Bio Station Launches Water Monitoring Program for Civic Groups

12 FEBRUARY 2021
FLATHEAD LAKE – The University of Montana’s Flathead Lake Biological Station is launching a new program that will provide scientific expertise, guidance and funding to citizen-led watershed groups in Montana to build capacity for freshwater monitoring and ensure the use of scientifically sound methodologies.

The new program, Monitoring Montana Waters, is funded by PlusFish Philanthropy, a U.S.-based private organization dedicated to protecting healthy aquatic ecosystems and the benefits they provide. While the bio station has conducted water quality monitoring for over 40 years – providing assistance to numerous volunteer and watershed groups – the funding from PlusFish allows it to formalize the program and increase the breadth and amount of assistance provided.

Water quality data is critical to making informed management decisions regarding environmental change and pollutants, said Rachel Malison, FLBS researcher and MMW developer.

“Because regulatory agencies have limited resources, trained members of watershed groups serve a crucial role by monitoring water quality across Montana,” Malison said. “By engaging citizen-led groups, helping them design plans and obtain training and funding needed to analyze samples, we hope to support the collection of credible scientific data that will support managers in making important decisions to protect our Montana waters.”

MMW provides assistance for monitoring efforts throughout the state through a variety of opportunities, many of which come at no cost to participating groups. This includes help designing effective monitoring plans and developing written sampling and analysis, one-on-one training in sampling methods with FLBS researchers and help with data analysis and reporting.

The program also offers small grants that can be used to purchase monitoring gear.
UM Bio Station Launches Water Monitoring Program for Civic Groups

and supports the costs of sample analyses at the FLBS Freshwater Research Lab. Participating groups are required to provide a cost match for MMW grants.

Malison hopes that through MMW, researchers also can assist watershed groups in locating freshwater ecosystems that need more attention and will help determine areas of concern.

“Initially, we plan for MMW to focus mostly on rivers and streams, because that’s where the greatest data needs are,” said Malison. “But we will also support lake monitoring groups.”

MMW isn’t the first program of its kind in the state. Montana Department of Environmental Quality, the Montana State University Extension Water Quality Program and the Montana Watershed Coordination Council have provided training and resources to citizen monitoring groups for over a decade. The MMW program will work closely with these partners to complement existing efforts and amplify statewide collaborative water monitoring efforts.

“Clean water is our most important resource, both in Montana and at the global scale. The more we’re able to work together to monitor our waters and integrate our data, the better off we’re all going to be,” Malison said. “We’re really excited about where this program might take us, and can’t wait to work alongside the incredible monitoring, training and outreach that’s already being done.”

Malison said that while MMW is still in the process of taking shape, the program is ready to start engaging watershed groups. Any groups interested in participating in the program are asked to complete the MMW online contact form or send an email to mmw@flbs.umt.edu. For more information about the program and funding opportunities visit the MMW website.

Contact: Rachel Malison, research scientist, Flathead Lake Biological Station, 406-872-4518, rachel.malison@umontana.edu; Tom Bansak, associate director, Flathead Lake Biological Station, 406-872-4503, tom.bansak@umontana.edu.
UM Enrollment Numbers Hold Steady Amidst Pandemic

09 FEBRUARY 2021
UM worked to boost the student experience during the pandemic with a new outdoor skating rink on the Oval.

MISSOULA – The University of Montana today announced spring 2021 semester enrollment held steady at the state’s flagship university – a triumph amid the ongoing COVID-19 pandemic.

“UM has transformed nearly every aspect of campus to best serve our students during the pandemic,” UM President Seth Bodnar said. “I am deeply grateful for the way our faculty and staff have risen to face the historic challenges of COVID-19 and have maintained a tireless commitment to our students’ success.”

Throughout the pandemic, UM has prioritized maintaining high-quality classroom instruction while providing students flexibility to continue their education in the manner they choose.

UM’s fall semester-to-spring semester retention rate is 88%, a significant achievement that University leaders credit in part to the hard work of faculty and staff members in maintaining much of the on-campus, vibrant atmosphere that UM is known for.

After graduating more than 800 students at the conclusion of the fall 2020 semester, UM welcomed 575 new first-time students to campus this spring. In total, there are now 9,500 students enrolled at UM.

“Whether it is maintaining safe, in-person classes, increasing remote offerings, bolstering student-focused advising or reimagining the student experience, UM continues to provide students with an educational experience that is academically rigorous and personally engaging,” Bodnar said. “Most of all, we are confident that every student who has graduated during the pandemic is prepared to succeed, no matter their chosen career.”

“There is no doubt that COVID-19 has impacted the student experience,” said Sarah Swager, UM vice provost for student success. “But we have worked with students to reimagine that UM energy and excitement in the COVID-era. As a result, students are able to ice skate in between classes, sit around fire pits to catch up with friends, attend exclusive movie nights and participate in a variety of activities that are sponsored by campus clubs, organizations and other groups.”
UM’s renewed student recruitment and retention strategy is bearing fruit during the pandemic, in which the number of 2020 high school graduates enrolling in college nationwide is down 21.7% compared with a year ago.


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**Contact:** Dave Kuntz, UM director of strategic communications, 406-899-5998, dave.kuntz@umontana.edu.
UM Enrollment Numbers Hold Steady Amidst Pandemic
UM Alumni Association Features ‘A Time of Healing’ Lecture Series

09 FEBRUARY 2021
MISSOULA – The University of Montana Alumni Association will host a lecture series dedicated to the aftermath of COVID-19, its many impacts on society and discussions on how to move forward from the pandemic.

In its 23rd year, the Community Lecture Series features UM faculty who present lectures and engage with UM alumni and community members on timely topics. Free and open to the public, the 2021 series is titled “Belief and Truth in a Time of Healing” and features six digital lectures on Zoom Webinar and Facebook Live on the topics of truth and healing from physical, mental and emotional perspectives. Each lecture will feature a Q-and-A, and registration is requested at http://bit.ly/3jypWky.

The schedule of lectures is:

- **Feb. 9:** “Healing Through Community in the Face of Death: Lessons from the Black Plague and its Aftermath,” Ashby Kinch, UM professor of English Literature

- **Feb. 16:** “Healing Following Trauma: Finding Truth and Meaning in Narratives,” Annie Belcourt, UM pharmacy professor.

- **Feb. 23:** “Public Pleas and Family Feuds: The Challenges of Changing Behavior and Maintaining Relationships in a Pandemic,” Heather Voorhees, UM communications assistant professor.

- **March 2:** “The Gatekeeper’s Dilemma: Information Flow in the Pandemic Age,” Lee Banville, UM journalism associate professor.

- **March 9:** “Healing and Modern Medicine after COVID-19,” Jay Evans, UM research professor for the Division of Biomedical Sciences and pharmaceutical sciences.

- **March 16:** “The Perils of Forced Agreement: Why Americans Were Divided on COVID-19 and What We Should (and Shouldn’t) Do About It,” Luke Conway, UM psychology
UM Alumni Association Features ‘A Time of Healing’ Lecture Series

For more information on the Community Lecture Series visit https://grizalum.org/ or call the Office of Alumni Relations at 406-243-5211.

Contact: Jodi Moreau, UM Alumni Association associate director, 406-243-5211, jodi.moreau@mso.umt.edu.
UM Alumni Association Features ‘A Time of Healing’ Lecture Series
UM Pharmacy Students Leading ‘Operation: Immunization’
MISSOULA – The trick to a good shot is one swift movement, said Travis Schweer, a University of Montana pharmacy student.

“The entire process has to be fluid, almost graceful – you can’t be nervous – so that you don’t scare yourself or the patient,” Schweer said.

The third-year UM pharmacy student from Collbran, Colorado, would know what it takes to deliver a safe and effective vaccine. Volunteering to immunize UM and Missoula-area community members against COVID-19, Schweer is one of several UM pharmacy doctoral students administering hundreds of vaccine doses by the week. The student-run committee named Operation: Immunization handles the organizing and scheduling of vaccination clinics and ensures phased delivery of the vaccines from Moderna and Pfizer is as efficient and safe as possible.

Led by UM pharmacy students and Ken Chatriand, manager of the UM Pharmacy and coordinator of community pharmacy practice experiences, UM students are on the frontlines – at the very front of the line, masked-up, with needles, syringes and swabs to put their clinical training to use in real time against COVID-19. Their efforts also are supported by the UM chapter of the American Pharmacists Association.

The pharmacy students are trained and certified as pharmacy-based immunizers in their first two weeks of the University’s four-year pharmacy doctoral degree, housed in the Skaggs School of Pharmacy in UM’s College of Health.

“I never would have thought in 100 years that a global pandemic would hit while I was in school, studying to practice in health care,” Schweer said. “I guess it gives new meaning to hands-on training. And I’m really glad we’re able to step-up and extend the health care reach into our community in these trying times.”

Schweer said he volunteers what little time he has in between classes, fatherhood and working nearly full-time at the Walmart Pharmacy in Missoula to help with vaccine clinics on campus and around town.
“There was an email sent out to pharmacy classmates asking if anyone had the time or interest to help,” he said. “UM feels like a small, tight community, especially in my pharmacy class. It just felt natural to help – to be there with a skill that we are trained in and to provide that service.”

Providing expertise in the middle of the biggest pandemic of the century is exactly the kind of role UM pharmacy can fill, said Marketa Marvanova, dean of the Skaggs School of Pharmacy.

“Pharmacists can play a really significant role in preventative care and population health, not only during a pandemic but also with annual vaccinations when we have vaccine-preventable diseases under control,” Marvanova said. “Right now, we do not have one infectious disease under control. Providing immunizations is a way to contribute the knowledge, skills and abilities of our students and the greater profession of pharmacy, to become part of the solution.”

Marvanova said the University’s Doctor of Pharmacy program specifically trains and certifies all enrolled pharmacy students on immunizations early in program so they are prepared early for clinical experiences.

“We enable our students to have a lot of experience in vaccinations, and that is an attribute that has allowed these wonderfully passionate students to be a critical force in managing COVID-19 locally,” she said.

Stepping-up to serve when called is natural to Nate Bennett. The Army National Guard veteran, third-year UM pharmacy student and committee chair of Operation: Immunization said he can’t quite guesstimate how many vaccinations he’s administered in the last month, but that it’s been a lot.

“We’ve been working closely with the University’s Incident Command Team, Missoula City-County Health Department and, of course, the UM Pharmacy and students to be a solution to the problem,” Bennett said.

Leading and organizing the vaccinations and flu clinics reflects Bennett’s training in the Army National Guard, skills he said he applies to balancing his coursework and duties in the PharmD program. He said “being actively engaged” not only helps build resumes, it also provides an opportunity for “practice making perfect.”
Bennett said working closely alongside Chatriand has provided him an up-close lens into the life of a pharmacist, a connection between clinical training and coursework and one-on-one mentoring.

Chatriand took notice of Bennett’s penchant for communication and people skills during the vaccination clinics, and recommended Bennett speak to a UM pharmacy alumnus who specializes in ambulatory pharmacy care – a specialized discipline of pharmacy that addresses outpatient medication needs and develops sustained relationships with patients.

The field requires an advanced two-years of additional clinical training, and specialized programs boast an extremely competitive acceptance rate, according to the National Institutes of Health.

“Ken noticed I like talking with patients and helped me see that I can extend my career path in a specialized nature,” he said. “Thanks to Ken, I now have that connection and interest in ambulatory pharmacy that I’m actively pursuing.”

Bennett said he plans one day to practice ambulatory care for veteran populations and feels "extremely well prepared" from UM’s pharmacy program, citing the program’s interprofessional collaboration and overall affordability.

When he placed the call for fellow students interested in helping with the vaccine clinics, Bennett was moved by the response.

“I think most of us are looking at this moment not only to practice and refine our skills, but to truly be of service as pharmacists-in-training,” he said. “It will be wild looking back on this one day.”

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**Contact:** Kenneth Chatriand, UM pharmacist, pharmacy manager, 406-243-5171, kenneth.chatriand@umontana.edu; Dave Kuntz, UM director of strategic communications, 406-243-5659, dave.kuntz@umontana.edu.

**Related stories:**
UM Partners with Missoula County on Mobile Vaccine Events
UM Begins Phase 1A of Vaccine Rollout
UM Named Vaccine Provider, Distributer
UM’s Master of Public Administration Ranked Fifth in the Country
MISSOULA – The University of Montana’s Master of Public Administration (MPA) was recently featured by Best Value Schools in its 2021 Best Masters in Nonprofit Management Programs, ranking fifth out of the top 30 programs in the country.

In its ranking, Best Value Schools cited UM’s nonprofit administration and public service concentration, part of the MPA, as the top program in the region. The MPA is offered through the Alexander Blewett III School of Law’s Department of Public Administration and Policy.

"The MPA and nonprofit certificate programs at the University of Montana offer flexibility and affordability for working professionals," said Bree Muehlbauer, a UM graduate student who has completed the nonprofit certificate and is in her second semester of MPA studies.

“The coursework helped elevate my understanding of the field and enhanced my skills as an effective nonprofit leader – both professionally and in my volunteer work,” Muehlbauer said. “Many of my assignments had immediate applications, and I continue to use projects I developed in the program.”

Along with affordable tuition, Best Value Schools noted that UM provides optional internship opportunities and requires a portfolio project.

“The program does an outstanding job of teaching the theoretical foundations of nonprofit administration within the broader context of public administration,” said Mike Ashton, a second-year UM student in the MPA program. “Just as important, the program’s focus on applying theory to practice has allowed me to use and strengthen my learning immediately, both on the job and in my board responsibilities.”

Dr. Sara Rinfret, chair of the Department of Public Administration and Policy and director of the MPA program, credits UM’s commitment to community and industry collaboration for readying graduates to step quickly into meaningful jobs.
“We are fortunate to have curriculum that is carefully designed in partnership with the Montana Nonprofit Association to meet workforce needs,” she said.

For more information about the Department of Public Administration and Policy, visit https://www.umt.edu/law/mpa/.

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Contact: Dr. Sara Rinfret, UM Department of Public Administration and Policy chair, 406-243-4702, sara.rinfret@umontana.edu.
UM’s New Online Courses for Women Entrepreneurs Open to All Montanans
MISSOULA – Pursue Your Passions, the University of Montana’s women’s entrepreneurship and leadership program, is offering two new and one returning online course this spring. All courses are open to the public, as well as UM students. Although the classes are designed for women, anyone can enroll.

“Women can be more risk averse or less likely to speak up than their male counterparts,” said Morgan Slemberger, director of women’s entrepreneurship and leadership at UM. “PYP is designed to create a safe space for women to share their ideas out loud, with each other.”

The upcoming schedule of PYP courses will include a practical introduction to business for people with a start-up idea, as well as introductions for anyone looking to expand their professional networks to support their business or career. The classes are:

- **Build Your Brand and Network**: Feb. 22- April 30.
- **Business Basics I**: March 15- April 30.
- **Business Basics II**: May 10- June 18.

Since 2015, PYP has helped Montana women realize their personal and professional goals. According to a 2020 survey, students in the Build Your Brand and Network course reported an overall 60% increase in their likelihood to apply for a managerial or leadership position, and 48% reported an increase in their overall network and brand confidence.

“Our courses are online, but in the future the courses will be accompanied by an online network where women can interact together and support each other,” Slemberger said. “There are also weekly opportunities to connect with the women in their courses live on Zoom.”
Now may not be a bad time to investigate a business idea that has been sitting on the back burner, said Christine Littig, chair of the PYP board and Missoula Small Business Development COVID relief business adviser.

“There are so many moving parts in business, and our classes work to provide women with practical learning tools, as well as community connection to peers and resources,” Littig said. “Each class focuses on various tools that will support women in achieving their own definition of success – whether it be building a personal network or understanding business basics to start something.”

All PYP classes are accompanied by digital badges of completion, a unique resume or social media detail that is intended to lift PYP learners a step above their competition.

“We hope there are systemic implications for these badges that begin to support women in their next promotion, attaining a new job or as they start to investigate investment for their businesses,” Slemberger says.

In addition to digital badging, each online class provides a platform for women to connect with resources and each other to further support opportunities and learning.

To learn more about Pursue Your Passions, or to enroll in the courses, visit www.umt.edu/passion or text the phrase “passion220” to 52855.

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**Contact:** Morgan Slemberger, UM Accelerate Montana director of women’s entrepreneurship and leadership, 971-219-4101, morgan.slemberger@mso.umt.edu.
UM’s New Online Courses for Women Entrepreneurs Open to All Montanans
Missoula native and University of Montana junior, Betta Lyon-Delsordo, has created an interdisciplinary academic path at UM by combining Spanish, computer science, cybersecurity and a host of international experiences. She hopes to one day bring more tech jobs to Montana and encourage more women to join the computer science field.

MISSOULA – At first meeting, Betta Lyon-Delsordo embodies that humble, unassuming quintessentially Missoula spirit. She’s also a triplet, a Big Sky High School valedictorian and – like most University of Montana students – balances a passion for learning with plenty of time spent outside.

Then she’ll casually share she once “did a stint” at a Buddhist center in California, that she taught herself to code in middle school – before she became interested in ethical hacking – or was named a Presidential Leadership Scholar and a National Merit Scholar at UM.

She might mention her time living and working on five different continents – experiences she said provided her a lens into what keeps most women from economic mobility. Or she may reference her long-term goal of buoying Montana’s remote tech job sector, her web-design side hustle or becoming fluent in Spanish.

This is where the University of Montana comes in.

It all sounds like a lot to pack into such a young life, but her trajectory characterizes the “power of the ‘and’ that permeates the UM experience.

“I heard President Bodnar say that once, and it really stuck with me,” she said. “He encouraged us to make room for the ‘and’ – that interdisciplinary combination that can create opportunities you would never imagine.”

For Lyon-Delsordo, a unique academic path started even before she came to campus.

When she was a junior in high school, she was selected as a Fellow for a high school youth exchange program sponsored by the U.S. Department of State and managed by UM’s Mansfield Center. The fellowship awarded her a five-week cultural exchange to Thailand, which sparked in her a lifelong love of travel and absorbing new cultures. That thread is woven into her UM education.

“That experience for me was transformative,” she said. “It opened my eyes to all that is really
possible at UM, especially in terms of the amazing international opportunities.”

As her high school career concluded, Lyon-Delsordo chose to attend the Davidson Honors College at UM. It was close to home “but provided just about any opportunity” she wanted.

“I’ve been able to do a lot because there is that support here,” she said. “Everything I’ve wanted to do; I’ve been met with the phrase ‘let’s make it happen.’”

Patricia Duce, UM computer science lecturer, said Lyon-Delsordo’s natural curiosity is evident in the classroom.

“She is curious about everything, engages in conversation and willing to go above and beyond what is expected,” Duce said. “Betta takes advantage of every opportunity to learn whether it is in the classroom or on one of her adventures.”

Double-majoring in computer science and Spanish, she’s also completing Missoula College’s certificate in cybersecurity and the University’s certificate in the Franke Global Leadership Initiative.

She said her love for cultures and languages – both coding and foreign – complement each other. Working with UM faculty members to secure an independent study, she was able to travel the world while working as a digital nomad – a term used to describe people who work remotely or are location independent. While globe-hopping, she interned for GatherBoard, a Missoula technology firm that manages an events calendar system, and she created a bilingual blog called “Traveling Intern Series” sharing her travels and tech work.

After ending up in Spain, Lyon-Delsordo mentored and coached a girls’ coding team that ended up making it to the semifinals in the world championship. She went to Spain specifically because she wanted “to learn what it was like to code when English isn’t your first language.”

Despite the pandemic canceling her plans to study abroad in Puerto Rico this year, she sought out an internship for this summer with a local tech firm – with the help of the University – to ethically hack businesses and help them reveal holes in their cybersecurity.

At UM, Lyon-Delsordo said combining her Spanish language and literature classes, alongside computer science coursework, has helped her visualize a glaring gender imbalance for women
in technology.

She credits UM classes in Latin American history and women in Spanish literature for deepening her understanding of the intersection of politics, social justice and feminism.

“Those topics might seem separate from computer science, but really they are a big part of our global, socioeconomic situation, and they touch every industry in some way or another,” she said.

UM Spanish Professor Clary Loisel said Lyon-Delsordo’s penchant for critical thinking was evident in his classes, as she made timely connections between Latin American literature and world events.

“Her global approach to learning is absolutely amazing,” Loisel said. “I had the privilege of working with her for an independent study as she traveled around the world. She took the initiative to write one of the finest undergraduate papers I have ever read and even created a blog.”

Loisel said he views Lyon-Delsordo as a student with “unlimited potential” who will make important contributions to the world.

One major task on Lyon-Delsordo’s agenda is tackling the gender imbalance in computer science and making careers in technology more accessible. She sees computer, web and coding skills a good fit for women not only because of the in-demand workforce skills, but because the job can be done essentially from anywhere.

For now, she has her sights set on graduate school and hopes to one day work in cybersecurity to improve lives and lessen risks for ordinary people.

“I’m really happy with all of the connections and threads I’ve created at UM,” she said. “I would say that whatever amount you put into it, you’re going to get that and more out of it.”

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Jenny Lavey, UM News Service
Note to media: You are welcome to fully republish this content in print or online by crediting the UM News Service. Contact news@umontana.edu with questions or call 406-243-5914.

Contact: Dave Kuntz, UM director of strategic communications, 406-243-5659, dave.kuntz@umontana.edu.
Study Finds Substantial Economic Benefits From Whitefish and Flathead Lakes
According to a recent study, lakefront property sales surrounding Flathead Lake (pictured) exhibited a 114% average premium compared to similar property sales located 2 km away from the lake between 2004 and 2018, while Whitefish Lake showed a 254% average premium.

By Lori Curtis, Whitefish Lake Institute

WHITEFISH – Area researchers have found two clear western Montana lakes – Flathead and Whitefish – generate home values that result in upwards of $3 billion in property value and $25 million in property tax revenues for local and state governments.

The study was conducted by the University of Montana’s Flathead Lake Biological Station and the Whitefish Lake Institute.

“We sought to economically quantify the aesthetic benefits landowners derive from living on or near lakes with exceptional water quality,” said Nanette Nelson, an FLBS research economist and lead author of the study. “Our results suggest that highly desirable lakes like Flathead and Whitefish Lakes enhance surrounding property values, thereby contributing significantly to the local tax base and economy of both lake-based communities.”

The study dataset included over 7,000 arms-length sales transactions occurring within 2 km of Whitefish Lake and Flathead Lake between 2004 and 2018.

Results revealed a 254% or $1.3 million average premium for the same home on the lakefront of Whitefish Lake versus 2 km from the lake. Flathead Lake exhibited a 114% or $0.5 million average premium. Summing across all properties within 2 km of both lakes yielded aggregate premiums upwards of $3 billion.

The effect of Flathead Lake on surrounding lakefront parcels equaled $12 million to $17 million in property tax revenues, while Whitefish Lake generated $5 million to $8 million. This is important because in the state of Montana, over 94% of local government and school district
tax collections are derived from property taxes.

“This study reveals the economic importance of maintaining water quality in our lakes,” said Lori Curtis, WLI science and education director and study co-author. “Scientists from the bio station and WLI conduct research and continuously monitor the health of the two lakes, engage students in water quality education and make recommendations to help citizens and leaders make informed resource management decisions.

“These study results provide us with an economic argument in communicating the significance of maintaining water quality and of our work,” she said.

The complete report on the economic benefits of Flathead and Whitefish Lakes is available on the WLI website.

About the Flathead Lake Biological Station
The FLBS mission is to serve the Flathead Lake region, the state of Montana, the nation and the world by advancing cutting-edge research, monitoring, education and outreach platform for limnology, ecology and environmental science at Flathead Lake.

About the Whitefish Lake Institute
Founded in 2005, the Whitefish Lake Institute is committed to science, education and community stewardship to protect and improve Whitefish Lake and Whitefish-area water resources today and provide a collective vision for tomorrow.

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Study Finds Substantial Economic Benefits From Whitefish and Flathead Lakes
UM / News / Alum Features UM Whitebark Research in MontanaPBS Film

ALUM FEATURES UM WHITEBARK RESEARCH IN MONTANA PBS FILM

01 FEBRUARY 2021
MISSOULA –
As whitebark pine across the West rapidly die from a fungus, beetles and human-altered fire landscapes – all accelerated by a changing climate – a new film on MontanaPBS gives viewers a flicker of hope for the survival of this iconic tree species.

“Ghost Forests,” produced by University of Montana journalism alumna Breanna McCabe, premieres at 7 p.m. Thursday, Feb. 18, on MontanaPBS and online at http://montanapbs.org/ghostforests.

McCabe, a 2020 graduate of UM’s Environmental Science and Natural Resource Journalism Program, takes viewers into the high country of the Rocky Mountains in Montana and Canada to the elevations where whitebark pine grow. The tree is known as a “keystone species” essential to the survival of a number of animals, including grizzly bears that depend on its seeds for food. McCabe introduces viewers to the tree’s killers, and also, some of its saviors, including UM Professor Diana Six, a forest entomologist.

“Diana Six’s research sparked this entire project,” McCabe said. “I was entirely unfamiliar with the whitebark pine and its coolness factor before she told me about her latest discovery.”

McCabe’s journalism adviser, Nadia White, had seated her at a table with Six at the annual
Crown Reporting Project dinner, a UM School of Journalism event. Each student has an end-of-dinner deadline to stand up and pitch an environmental story from their table for the chance to earn a fellowship to tell the story.

“I was fascinated when Six told me that she found some trees show genetic resistance to mountain pine beetle attacks,” McCabe said, “but, it turns out, that’s not all whitebark are up against. The more I learned, the bigger the story became.”

Forest managers across the west have long tried to stop the spread of white pine blister rust, an exotic disease humans introduced in North America around 1910. The airborne fungus attacks five-needle pines, including whitebark. Between mountain pine beetle attacks and blister rust, scientists estimate we’ve lost 60% to 80% of whitebark pine across its range, which stretches from western Canada to the Sierra Nevada range.

“It was alarming for me to realize just how precarious of a position the tree is in,” McCabe said. “Especially after I’d just learned about how important whitebark is, not only to the ecosystem, but for humans, too.”

McCabe takes viewers to one of Six’s study sites in southwest Montana and to three mountaintops in Canada’s Yoho and Kootenay national parks. Parks Canada resource managers climb promisingly resistant trees to collect the cones to propagate into seedlings. But it’s a slow process – it takes five years before they have results. And in the film, they admit they won’t see the results of their labor.

“These forests are turning into ghost forests before our eyes,” McCabe said.

In addition to the Feb. 18 premiere, MontanaPBS will broadcast “Ghost Forests” at 10:30 a.m. Sunday, Feb. 21, and 2:30 a.m. Monday, Feb. 22. To watch a preview of the film, visit http://www.montanapbs.org/ghostforests.

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