January 22, 2025

Greetings Faculty, Staff, and Students,

Happy New Year and welcome back! I hope your holiday break was restful and filled with meaningful moments spent with the people and activities you cherish.

For me, having my family together under one roof in Butte for the holidays is always a highlight.

As we begin 2025, I find myself reflecting on the past year while looking ahead with hope and optimism. Each year, I'm reminded of the invaluable importance of relationships and feel truly fortunate to be surrounded by such incredible students, colleagues, friends, and family.

A recent article I read on artificial intelligence highlighted how technology can achieve remarkable feats, but at the end of the day, it is the human heart that is essential to building and sustaining meaningful connections—a sentiment that resonates deeply with me.

As you explore this edition of the Chancellor Check-In, you'll find stories that reflect the heart of Tech: our community's incredible achievements, innovative initiatives, and boundless promise for the future.

It's a great day to be an Oredigger, and as we prepare to celebrate 125 years of Montana Tech, 2025 promises to be another extraordinary chapter in our shared journey.

Les P. Cook
Chancellor

CHANCELLOR SEARCH UPDATE

The search for our next Montana Tech chancellor is back on. Recruiting will be underway through February 21, 2025 with the intent to conduct on-campus interviews the week of March 31. If you know someone who might be a good fit, please refer them to the website for details.

CASUAL CLOTHING CLOSET OPENS, DONATIONS WELCOME

Montana Tech is encouraging the community to kick-off the New Year by cleaning out their closets and donating gently used items to the new Casual Clothing Closet.

Program Manager of Outreach and Belonging Cheyenne Crooker says the inspiration for the Casual Clothing Closet came from their father, who was a first-generation student at Montana Tech in the early 1990s. The idea for the Casual Clothing Closet was fully formed, earlier this fall, at a reception for international students. Read more

STUDENTS CARVE NOSTALGIC VINTAGE CHRISTMAS SCENE

Mechanical engineering senior Ethan Heggem and biological sciences senior Aubrey Teller participated in the 24th annual Butte Ice Carving Contest in December. They carved their creation in front of Steele's Furniture. Heggem has been carving for six years, and Aubrey joined in about three years ago.

"This year, we carved a vintage pickup truck hauling a Christmas tree in the bed," Heggem said. "The inspiration of this piece came from the rustic art commonly associated with the holidays. This art usually depicts the simpler times of the past, showing warm fireplaces, glowing cabin windows, or vintage vehicles driving down a snowy path towards home. Although we were not around during these times, this art often invokes a sense of nostalgia and comfort during the holiday season." Read more

CAMPUS COMMUNITY MEMBERS VOLUNTEER AS SNOW BUDDIES

Winter weather is back in the Mining City, and a few members of the campus community are volunteering their time with Snow Buddies, a local program that provides shoveled walks to those with physical limitations or disabilities.

Stephanie Cook participates in the program, and shovels two properties in the area near campus.

"After coming from somewhere that receives over 300 inches of snow during the winter, I was very experienced in shoveling so the Snow Buddies program was a natural fit for me," Stephanie said. "We are lucky to have a wonderful grounds crew that maintains our sidewalks so this is a way I can give back to our community." Read more

SPRING CAREER FAIR COMING UP ON FEBRUARY 6, 20025

Montana Tech will hold its Spring 2025 Career Fair in-person on Thursday, February 6, 2025, from 8:00 a.m. to 2:30 p.m. in the HPER. Companies will be able to conduct 2nd Day Interviews on Friday, February 7.

The Career Fair, hosted by Career Services, offers organizations from all industries a chance to discuss career opportunities and to share

career development information with Montana Tech students of all academic levels and majors – from freshman to graduate students. Read more

MARIE MOEBUS PRESIDENTIAL SCHOLARSHIP SETS HEGGEM UP FOR SUCCESS AS FUTURE ENGINEER IN ENERGY INDUSTRY

From the time he was a young boy, Ethan Heggem enjoyed creating solutions to the puzzles and problems he encountered. As a mechanical engineering senior, Heggem is preparing to spend his professional career doing the same on a much larger scale, with a deep arsenal of tools made possible by a high-quality, hands-on STEM education.

Heggem, a Butte native, says receiving the Marie Moebus Presidential Scholarship has helped greatly expand the depth of his academic experiences. The scholarship is Montana Tech's most prestigious and competitive award that is a combination of a tuition waiver and cash and is renewable for up to four years. Read more

MONTANA TECH STUDENT PURSUES NURSING DREAMS WITH HELP OF LANCE SCHOLARS PROGRAM

When Taylor McKinley-Whitcomb of Victor was trying to choose a college, she thoroughly explored her options.

"I applied to every college in Montana," McKinley-Whitcomb said. "My mom and I started touring campuses. When I toured Montana Tech, I felt like

LANCE SCHOLARS PROGRAM HELPS MINING ENGINEERING TRANSFER STUDENT LAUNCH CAREER

Transferring to a new college can come with challenges, but one mining engineering sophomore from Boulder, Montana, secured a hands-on summer internship and earned two major scholarships to cover most of his education even before starting classes at Montana Tech.

I was at home, and I never toured another campus. I was set on Tech."

McKinley-Whitcomb then set out to fund her education. "I applied for every scholarship I possibly could," she said. Read more

"It was convenient to apply for the Lance Scholars Program," said Rutger Shultz. "All the information was right there on the website. It was super simple. I think I did it all in a day. It wasn't a long essay. It was short and sweet." Read more

HIGHLANDS COLLEGE RECEIVES $5.75 MILLION TO TRAIN BROADBAND WORKERS

Highlands College has been awarded $5,750,000 by the U.S. Department of Labor to develop micro credential programs that will train broadband workers across Western Montana in partnership with other academic institutions and local telecommunications employers.

The grant is one of 18 awarded to colleges in 14 states to support programs that help community colleges scale affordable, high-quality workforce training to meet employers' and workers' skill development needs in critical industry sectors, such as advanced manufacturing, clean energy, semiconductors and biotechnology. The funding is part of the Strengthening Community Colleges Training Grants program administered by the Employment and Training Administration. Read more

DILLON HIGH SCHOOL SENIOR TOUTS ADVANTAGES OF AUTOMOTIVE TECHNOLOGY SPRING DEGREE

When Beaverhead County High School senior Chase Brown crosses the high school graduation stage in May, he'll be on track to launch a career as an automotive technician in a year. That's because Brown took advantage of Highlands College's Automotive Technology Sprint Degree.

The Sprint Degree allows students to take general education courses required for the Associate of Science in Automotive Technology degree online while in high school. Read more

STUDENTS OVERCOMES FEAR OF HEIGHTS TO EARN PRE-APPRENTICE LINE CERTIFICATE

When Misty Gittleson, of Dillon, Montana, and Kaila Roberson, of Tennessee, began the Pre-Apprentice Line Program at Highlands College this fall, they both had the same major fear to overcome.

"I have been afraid of heights my whole life," Roberson said, adding that she went skydiving last year to help her overcome the fear.

"I'm also terrified of heights, so the first week of class was very tough," Gittleson said. Read more

From Lance College of MInes & Engineering Interim Dean Jack Skinner

ENVIRONMENTAL ENGINEERING UPDATE

Robin Bullock, Director of CERA and faculty in environmental engineering, received notice of an award from DNRC for her research on geothermal energy in mine workings and green concrete. She also received notice of a DOE award for research in the Region 6 CORE-CM project for which the University of Utah is the lead. Montana Tech joins this CORE critical mineral project along with universities in Utah, Colorado, Wyoming, New Mexico, and Texas.

Meggie Olson (PhD student) and Raja Nagisetty (Professor) from Environmental Engineering have been developing a drone-based thermal remote sensing method to generate reach scale thermal orthomosaics to understand the thermal sources and sinks. This thermal imaging data can be used to prioritize fish habitat projects that would protect and enhance cold-water refuge areas. For 2024 summer, the research group has collected drone-based thermal data for 20-miles of lower Thompson River near Thompson Falls, MT, and Phase 7 reach of the Upper Clark Fork River. Using these images, the researchers have demonstrated the application of technology to develop wide-reach longitudinal temperature profiles and evaluate various temperature sources and sinks. This effort was funded by MT Natural Resources Damage Program and MT Fish, Wildlife, and Parks.

PETROLEUM ENGINEERING UPDATE

Two petroleum engineering students, Avery Schubarth and Shaena Jackson, have been awarded the prestigious AADE Rockies Scholarship! This recognition highlights their academic excellence, leadership, and dedication to the petroleum engineering field. Avery Schubarth, a sophomore from Fairfield, MT, is not only excelling in her studies but is also an active member of SPE, AADE, and SWE. Outside of academics, she enjoys athletics, weightlifting, and spending time with friends and family. Shaena Jackson, a senior who joined us last year from Alberta, Canada, serves as the SPE Secretary, a committed AADE member, and a passionate PetroBowl participant. When not on campus, you'll find her hiking in the mountains or experimenting with new recipes in the kitchen. We are incredibly proud of these talented students and can't wait to see all they achieve in the future. Congratulations, Avery and Shaena, this is just the beginning of your bright journeys!

MECHANICAL ENGINEERING UPDATE

Evan Griffiths recently published a journal article entitled "High strain rate behavior of polycaprolactone reinforced with aramid nanofiber for insight into dynamic behavior," authored by Evan A. Griffiths, Blaine M. Berrington, Jessica M. Andriolo, Scott L. Coguill, Brahmananda Pramanik, and Jack L. Skinner. In the article, Griffiths discusses self-healing polymer materials that quickly repair following damage. Products made from these polymers maintain functionality and provide improved sustainability. One drawback to self-healing materials that repair quickly is a lack of strength. Griffiths worked to improve strength through the addition of nanoscale para-aramid (Kevlar like) dopants and examined performance of the reinforced composite using dynamic impact tests. Griffiths recently graduated with an MS degree in General

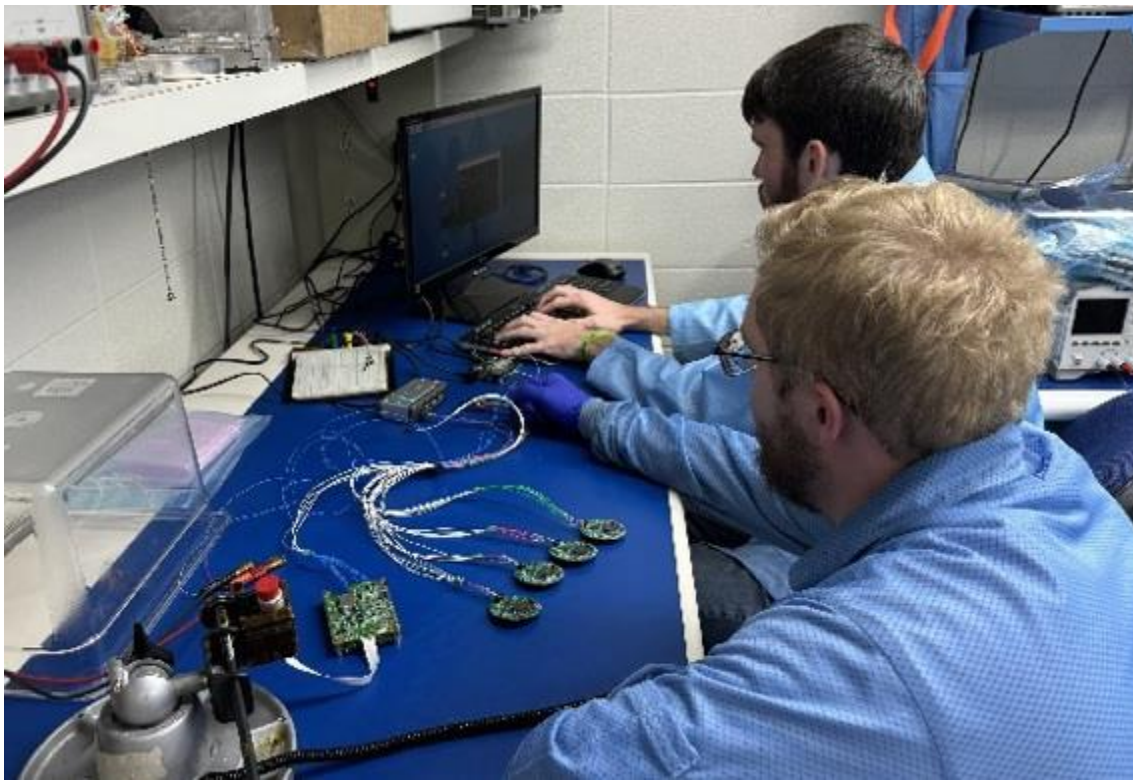
Engineering with a Mechanical Engineering concentration and is pursuing a PhD degree in Materials Science at Montana Tech. The article can be found here.

The Department of Energy has awarded funds for a collaborative research effort between the **Montana Tech Nanotechnology Laboratory and Idaho National Laboratory** focused on self-powered gamma ray photovoltaics. The project will provide $625,000 in research dollars to Montana Tech over the next two years and support both graduate and undergraduate student researchers and faculty and staff at Montana Tech. The project aims to study materials and devices with applications in the medical, archaeological, and nuclear industries.

MOTHER, SON EARN GRADUATE TOGETHER

Nearly 200 students walked across the graduation stage on December 14, 2024, among them two graduates who have an extra special bond.

Dawn and Matthew Ingersoll are a mother-son duo from Butte, who will both be awarded master's degrees. Dawn (B.S. Business, '01) will earn her Master of Project Engineering and Management degree, while Matthew (B.S. Environmental Engineering, '23), will earn a Master of Science in Environmental Engineering degree. For Matthew, the achievement is a natural progression, as he was on a carefully tailored accelerated track to complete a bachelor's and master's in five years. Dawn's journey took a little longer. Read more



MONTANA TECH ELECTRICAL ENGINEERING ALUMNUS PART OF ROCKET, SATELLITE AEROSPACE PROJECTS

When one thinks of “electrical engineering,” it may call to mind all of the powerlines and energy infrastructure that facilitate day-to-day operations in the modern world. One Montana Tech electrical engineering alumnus is encouraging prospective students to think outside of that view, to consider ways electrical engineers can pursue careers in the increasingly important field of aerospace engineering.
Tyler Holliday, (B.S. Electrical Engineering, ’18; M.S. Electrical Engineering, ’20), is currently a senior research engineer at the Space Science and Engineering Laboratory at Montana State University. Holliday’s work has mostly centered around the REAL CubeSat, a project scheduled to launch a satellite into space next year that will take measurements of electron loss in the uppermost layers of Earth's atmosphere. Read more

ELECTRICAL ENGINEERING GRADUATES KEEP HEATERS RUNNING, LIGHTS ON THROUGH DANGEROUS WINTER CONDITIONS

When temperatures plummet to a life-threatening 50 below zero in the worst of Montana winters, Montana Tech alumni are on the front lines, making sure NorthWestern Energy customers stay warm and safe.

“The electrical system provides critical service to all, especially under extreme conditions,” said Nate Thompson, supervisor of relay engineering for NorthWestern Energy. “The past couple of winters have seen temperatures reach -50 in some parts of the state and the importance of serving NorthWestern’s customers is readily apparent. For example, an electrical cooperative NorthWestern provides transmission service to had a piece of equipment fail last year, knocking out power to thousands of their members. The engineering challenge was designing and implementing a safe and secure temporary solution to get their members back into power as quickly as possible. Within only a couple of hours of getting the call, their members were starting to get restored. It is gratifying to work for a company that does the right thing to help the cooperative get power back to their members under those conditions.” Read more

COLLEGE OF LETTERS, SCIENCES & PROFESSIONAL STUDIES UPDATE

MONTANA TECH RESEARCHERS EXPLORE EARLY EARTH ANALOGS IN NEW NATURE COMMUNICATIONS ARTICLE

Researchers with Montana Tech’s Laboratory Exploring Geobiochemical Engineering and Natural Dynamics (LEGEND) have released a new article in the peer-reviewed, multidisciplinary, scientific journal Nature Communications, featuring hot springs in Yellowstone National Park.

The article, co-authored with researchers Dr. Daniel Colman, Ph.D. candidate Lisa Keller, Ph.D. candidate Anna Shoemaker and Dr. Eric Boyd at Montana State University, may offer new insight into how life could have evolved on Earth. Read more

SHERRY LESAR SCHOOL OF NURSING EARNS HEALTHCARE SIMULATION STANDARDS OF BEST PRACTICE ENDORSEMENT

Montana Technological University recently earned the Healthcare Simulation Standards of Best Practice endorsement from the International Nursing Association for Clinical Simulation and Learning (INACSL), which establishes the University's Sherry Lesar School of Nursing as a leading provider of simulation education. Read more

MONTANA TECH NURSING GRADUATES RECEIVE 100% PASS RATE ON NCLEX-RN EXAM

Montana Tech's Sherry Lesar School of Nursing is celebrating after receiving news that 100% of graduates taking the NCLEX-RN exam in May 2024 and December 2023 passed.

The NCLEX-RN exam is the licensing exam required to become a registered nurse in the U.S., Canada, and Australia. Read more

ADVANCING SCIENCE AT NEAR LIGHT SPEED

Two groups of researchers were able to secure beam time at the Stanford Synchrotron Radiation Lightsource (SSRL) this summer, a highly competitive achievement that only 1,700 users get to experience each year. The researchers will use data collected and experience gained at the facility to develop fuel cell technology and understand the origins of sphalerite, a critical mineral containing ore found in southwestern Montana. Read more

'DOC ROCK' REMEMBERED AS HARD AS ROCKS PROFESSOR

Montana Tech students had a nickname for Geological Engineering Professor Hugh Dresser: around campus he was known as “Doc Rock.” This nickname was a sign of respect for his notorious reputation as an instructor that pushed his students to their mental and physical limits in pursuit of a high quality, hands-on education that would prepare them to lead successful careers. Read more

ELGREN HITS THE GROUND RUNNING

Provost and Executive Vice Chancellor Tim Elgren joined the team on July 15, 2024, and says a theme emerged in his early days on campus: nonstop meetings.

“It’s been a great few weeks getting to know folks, and an introduction to the University,” Elgren said. “Now that students and faculty are back on campus, it has been exciting to meet them and share their excitement for being at Montana Tech.”

Elgren is in the process of meeting with each department. “I ask them, ‘What are you most proud of in your graduates and in your programs?’” Elgren said. Read more

HIGH-FLYING TECH

Whether he’s conducting missions at the Lubrecht Experimental Forest in Greenough, the Bear Paw Mountains on the Hi-Line, the Moulton Reservoir Ski Trails, or the mountainous areas of the Sheep Creek district in southern Ravalli County, when Geophysics Professor Dr. Xiaobing Zhou uses any of his drone systems, folks nearby often stop and take notice. It would be hard not to. His drones and drone-borne equipment are large, and carry what Zhou says is some of the best aero-geophysical and remote sensing equipment in Montana, used in his geophysical research focused on both hydrological impacts after wildfire, and identifying areas where rare earth minerals occur in Montana. Read more

THE CALCULATED ADVENTURER

As an undergrad assisting Professor Martha Apple with botany research in Glacier National Park back in 2012, DJ Moritz had a Kairos moment when he

IMPACTING GLOBAL HEALTH

An estimated 20 million people die by preventable deaths each year worldwide, though primarily in low- and middle-income countries, and an

crossed paths with a hiker making his way along the full length of the famed Continental Divide National Scenic Trail. The encounter planted a seed that lay dormant for about five years before he started seriously planning to make the trek himself. Read more

Oredigger has worked her way onto the front lines of researching and implementing ways to help reduce those numbers. Tara Rava Zolnikov, Ph.D., M.S., M.S., M.S(c) initially wanted to go into forensics when she chose Biological Sciences as her major. Read more

PETROLEUM ENGINEERS FIND SUCCESS ABROAD

The partitioned zone between Kuwait and Saudi Arabia is approximately 7,100 miles from Butte, Montana, yet multiple Orediggers have found a home working in the rich oilfields for Chevron Corporation. Chevron is a 50% partner in the Partitioned Zone with Kuwait Gulf Oil Company. Read more

OREDIGGER SPOTLIGHT: JERRY SHUPE '02 OCCUPATIONAL SAFETY & HEALTH

Jerry Shupe has always had a passion for helping people. Throughout high school and college, he worked at the Butte YMCA as a lifeguard and swim instructor and taught CPR and first aid classes. Shupe graduated with an OSH degree in 2002 and immediately started an internship with Hensel Phelps in Northern California. Read more

ESTABLISHING MONTANA TECH AS A NATIONAL ENERGY LEADER

“Enhance Tech’s prominence as a national energy leader”— that’s my job description. Punch above

EXPANDING ADDITIVE MANUFACTURING CAPABILITIES

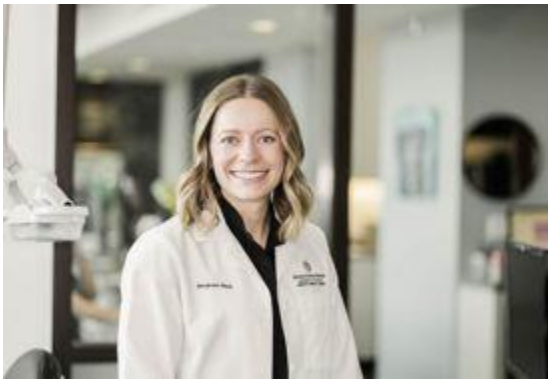
More than $1 million in recent equipment acquisitions by Montana Tech’s Mechanical

our weight—that's what it will take to get the job done. As Orediggers, we welcome the challenge.

My strategy as the first-ever Lance Energy Chair at Montana Tech is to leverage private funding and deepen our relationships with industry, trade organizations, national labs, and State and Federal agencies. The position is funded by a thoughtful donation from Ryan and Lisa Lance. Although my work is funded by a private source, I am an employee of the State of Montana and a member of the Montana Tech faculty. Being on the faculty keeps me connected with the University. The private funding allows me to think long term for the success of Montana Tech. Read more

Engineering department has catapulted its capacity for 3D printing to a level that is attracting collaborators from around Montana.

The equipment includes an Xact Metal and two One Click Metal MPrint laser powder bed fusion printers and two MPURE power handling systems. The combined capabilities of all three pieces of equipment give MTAM members the ability to print stainless steel, titanium, and nickel-based alloys. Funding for the printers was obtained through a cooperative agreement with the Army Research Laboratory. The three machines totaled more than $630,000 and arrived on Montana Tech's campus in 2023 and 2024. Read more



BUILDING PERFECT SMILES

As Margeaux Black, DDS, MSD grew up in Butte, her orthodontist, Dr. Timothy Ballweber, DDS, joked that she should shadow him when she got older to see if she too might want to go into orthodontics. When Black found herself in a pre-professional health class as a freshman, her mother suggested that she follow up with Dr. Ballweber to see if Margeaux could take him up on his offer. Read more

BIRD COUNTERS MAKE A DIFFERENCE

The Helmet Vanga, or Euryceros prevostii, is what Biological Sciences senior Caleb Lashway calls a special bird.

Found only in the virgin rainforest of Madagascar, the black bird with a blue bill and rust-colored wings and tailfeathers is rare. "If you find them, it means you have gotten away from everything in the beautiful, uncut forest," Lashway said. Read more

FIELD CAMPUS DEVELOPMENT UNDERWAY

Recent major investments will provide initial funding towards an expansion of projects at the Energy, Environment, and Innovation Field Campus (EEIFC) west of Montana Tech, with an early focus on developing a smart photonic sensing systems test bed.

In July, the U.S. Economic Development Administration awarded a total of $504 million to only 12 Tech Hubs across the nation out of more than 300 initial applications. The Headwaters Hub, one of the 12, includes the Butte, Bozeman, Missoula, and Kalispell areas. Its focus is smart photonic sensor systems. Read more

RESTORING THE ECOSYSTEM AT BARREN SUGARLOAF PEAK

The barren top of Sugarloaf Peak towers above much of the Mount Haggin Wildlife Management Area, located southwest of Anaconda. The peak is painted red and milky white by loose soils on mostly unvegetated hillsides that contrast starkly with the conifer forest below. It's been 141 years since smelting began in the area in 1883, and the landscape of the top of Sugarloaf is a lingering fingerprint left by anthropogenic influence during decades of mining, logging, and smelting. Read more

Upcoming Events

1/23: WBB v Northern (5:00 pm) | MBB v Northern (7:00 pm)
1/25: WBB vs Rocky (2:00 pm) | MBB v Rocky (4:00 pm)
2/01: WBB v Western (2:00 pm) | MBB v Western (4:00 pm)
2/05: Career Fair Welcome Social (4:30-6:00 pm, SUB)
2/06: Spring Career Fair (8:00 am, HPER)
2/17: President's Day
2/20: WBB v Western (5:00 pm) | MBB v Western (7:00 pm)
2/21: Singo (6:00 pm, KC)
2/22: WBB v Providence (2:00 pm) | MBB v Providence (4:00 pm)

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