LRES *Newsletter* *Fall 2020*

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Canola Field- Bozeman, MT

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MONTANA STATE UNIVERSITY
Department of
Land Resources & Environmental Sciences

Land Resources and
Environmental Sciences

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Congrats Graduates and Happy Holidays to All!

Please enjoy perusing this fall's departmental newsletter highlighting some of LRES' many research, teaching, and service pursuits. We are excited to share that we currently enroll 213 undergraduate students, 89 M.S. students, and 22 Ph.D. students. Our 16 graduating seniors did an incredible job on their Fall Capstone Project; they explored how the pandemic is affecting the environment (see more on page 5).

The department extends its deepest congratulations to our graduates for your remarkable accomlishments in graduating this semester!! Please see our faculty/staff tribute to you all on p.3. Our best wishes to you in your future endeavors. Please keep asking questions, stay in touch, and be well.

Tracy Sterling, Professor & Department Head

Celebrate Story Mill Park from a (Social) Distance!

This past Veteran's Day, November 11th, LRES faculty, staff, and students gathered at Story Mill Park for fellowship and exploration of local research projects led by the department. The event was well attended,within S.E.A.T. approval limits, on this chilly day!

Socializing is hard these days! COVID-19 affects every part of our lives, and is also a catalyst for changing the way we think and the way we get things done. In the spirit of innovation, the LRES Community Committee planned and hosted a COVID-safe, end-of-the-semester event in celebration of Story Mill Park!

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Celebrate Story Mill Park

continued...

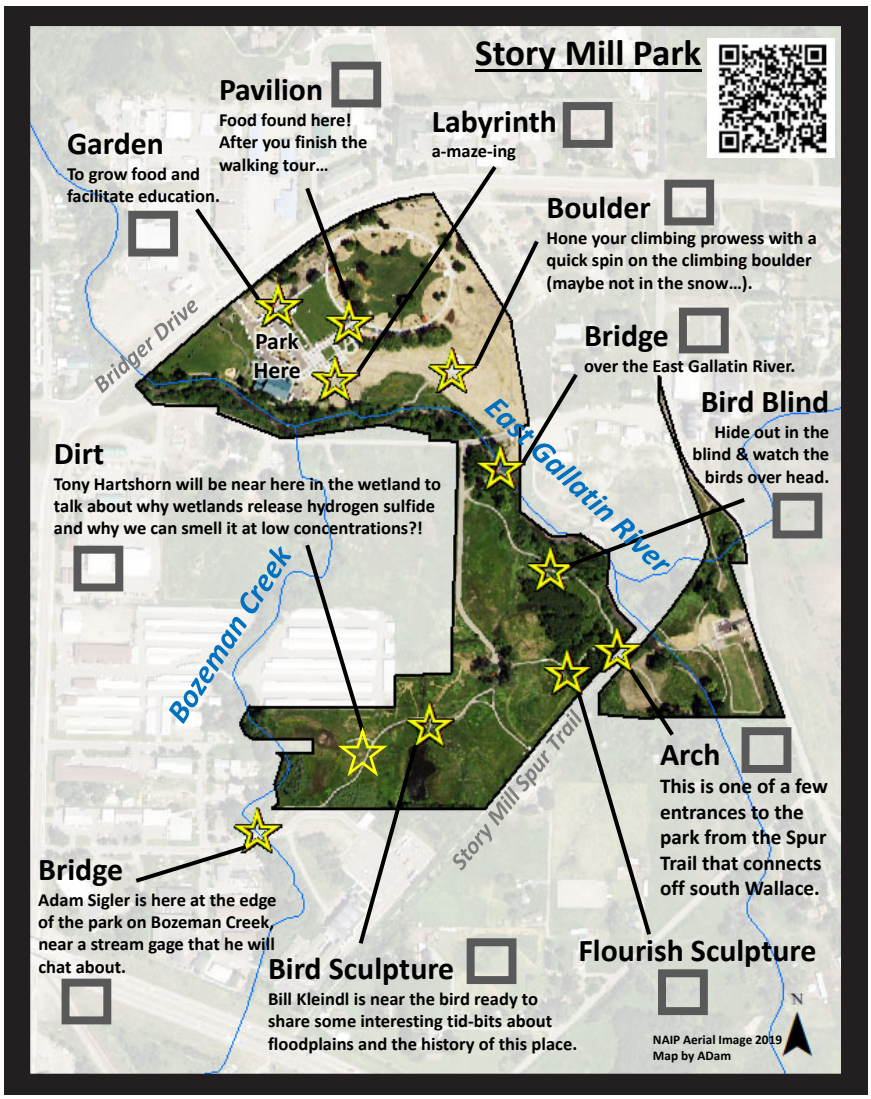
Drs. Powell and Sterling with her dog Zia participate in the event

Story Mill Park was created with several goals in mind – wildlife, open space, water quality, and wetland restoration. The Park is located at the confluence of two important streams in the Gallatin Valley; Bozeman Creek flows northward from the Gallatin Range, through downtown Bozeman, and intersects the East Gallatin River, which drains the northern part of the valley and is a favored local fishing stream.

LRES has deep connections to Story Mill Park. Since its inception, faculty members in the department have used the site for research and education. For instance, in 2016, the departmental Capstone class cataloged the ecosystem services provided by the park. When the community committee was looking for an outdoor venue to host a get-together to mark the end of the semester, Story Mill was an obvious choice.

About 20 faculty, staff, and students from LRES arrived at the park on Veteran's Day this year. Nick Fox and Adam Sigler had taken charge of creating a map of the assets of the pack, including the climbing rock, the labyrinth, sculptures, community garden, bridges, and other noteworthy sites! Upon arrival, members of the department were offered a map and encouraged to walk a route exploring the various assets, checking off each on their map as they walked mile-long the circuit in small groups. Tony Hartshorn, Bill Kleindl and Adam Sigler hosted stops along the way where they talked about their past research on the site. The final stop was at a pavilion, where participants shared a meal from Cravins!
The weather was brisk, but all were in good cheer, despite the omnipresent masks and need to maintain a respectful distance. Hosting the event outdoors in November might not have been our first choice, but perhaps it was a good choice! Everyone seemed to enjoy getting out for some exercise and fresh air!

Geoff Poole, Community Committee Chair



We invite you to take a stroll with your friends/family to see these sites. Use the QR code to view an interactive map created by committee member Nick Fox or visit https://arcg.is/19GP9b- don't forget to bring a writing utensil to check them off!

Above: Adam Sigler, a member of the community committee, met participants where Bozeman Creek flows under Bond street to talk about urban influence on the creek. Adam talked about flow monitoring that Brent Zundel (a former student employee in the Envionrmental Analytical Lab in LRES) does at a Montana Department of Natural Resources and Conservation (NRC) gage at this site. Adam also talked about water quality monitoring that Torie Haraldson (an alumni of the LRES master's program) does at this site for the Gallatin Local Water Quality District. Last year when monitoring macroinvertebrates at this site, Torie had a black bear as an onlooker from a tree near the site!

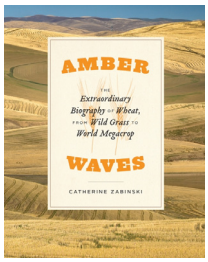
A Tribute to Our Graduates: From LRES Faculty + Staff

Congratulations Graduates!

Insert: Recent Ph.D., Dr. W. Adam Sigler is hooded by Dr. Stephanie Ewing.

From left to right: Dr. Stephanie Ewing, Dr. W. Adam Sigler, COA Dean Dr. Sreekala Bajwa, Dr. Geoff Poole and Dr. Samuel Carlson at a graduation event in Lindley Park.

LRES Recognition



Catherine Zabinski explores the history of wheat in new book, *Amber Waves* which she discussed in a featured interview with BBC

Listen here: https://www.bbc.co.uk/sounds/play/m000my18

Jack Brookshire published in *Global Change Biology* about plant productivity in Northern Great Plains

Luke McKay named newest member of Yellowstone Volcano Observatory

Ann Marie Reinhold partnered with MSU researchers and the Idaho National Lab to work on a $3.1 million cybersecurity project. **Reinhold** was also receintly the featured scientist on the *EPSCOR CREWS blog* and excerpts form her interview were featured in the *Cool Careers* section of the *Autumn 2020 Montana Girls STEM Collaborative* newsletter.

Stephanie Ewing, Rob Payn and Ann Marie Reinhold team receives NSF grant to study nitrogen impact on water quality

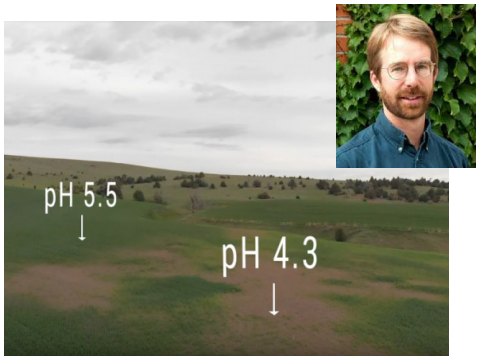
M.S. student **Zach Fighter** (middle) and MSU's American Indigenous Business Leaders win national business plan competition

Bruce Maxwell and other MSU/COA stakeholders to partner with Blackfeet Community College to improve access for Native students

Laissa Cavallini dos Santos placed second in the graduate student 10-Minute Paper competition on Biocontrol during Enomological Society of America's virtual meeting.

LRES faculty participated in Virtual Field Days. Learn more here: https://agresearch.montana.edu/virtualfielddays.html

Nick Fox and the Post Farm's Dave Gettel have been working with a student who has created an interactive map for the Post Farm to engage researchers with stakeholders on the great working happening there. Several semesters of students collected data combined to create David Forbes' interactive map.Viewers can search by crop, find info regarding the researcher and read about what the researchers were doing this past Fall.



MSU video, "*Acidification of cropland soils: Impact, causes, and solutions*," produced by **Clain Jones** and graduate student Nate Kenney, was recognized in the audiovisual section of the Excellence in Extension Awards for 2020. The new video focuses on cropland soil acidification and management

View here: https://www.youtube.com/watch?v+cjWneDQVyV8&feature+youtu.be.

Clain Jones received the Soil Science Education and Extension Award from SSSA.

LRES Ph.D. student **Mary Farina** awarded a NASA grant to monitor ecological processes including the permafrost study photographed above in Fairbanks, Alaska.

Fabian Menalled and Timothy Seipel partner with Roland Ebel (HHD) and faculty from CARC for a nearly $300,000 food waste study funded by the Environmental Protection Agency.

Continued on Pg. 5

LRES Recognition

continued...

Tony Hartshorn receives one of NACTA's Educator Award

John Priscu featured in *Quanta* magazine on '*Islands of Fertility*' beneath Antarctica's Ice.

Bob Peterson presented the commencement speech for the University of Nebraska's Entomology Department during their virtual summer graduation celebration.

Happy Retirement!

Rick Engel

Jeff Holmes

Milestones in Service

Stephanie Ewing- 10 yrs
Scott Powell- 10 yrs
Megan Hofland- 15 yrs
Lisa Rew- 15 yrs
Clain Jones- 20 yrs
Marni Rolston- 25 yrs
Kevin O'Neill- 35 yrs
John Priscu- 35 yrs

Pure Gold

Ana Murphy received one of this year's PURE GOLD awards. Ana was nominated by Dr. Bob Peterson and Mr. Nicholas Fox. The following are brief excerpts from our faculty:

"Calm. Confident. Those terms describe Ana Murphy, MSU senior accounting clerk. Her quick responsiveness and assured, positive direction not only helped [the department] get through a very disorienting time, but also resulted in MSU delivering on its mission for the people of Montana. Ana was the calm in the COVID-19 storm for faculty, students, and staff in LRES- and still is."

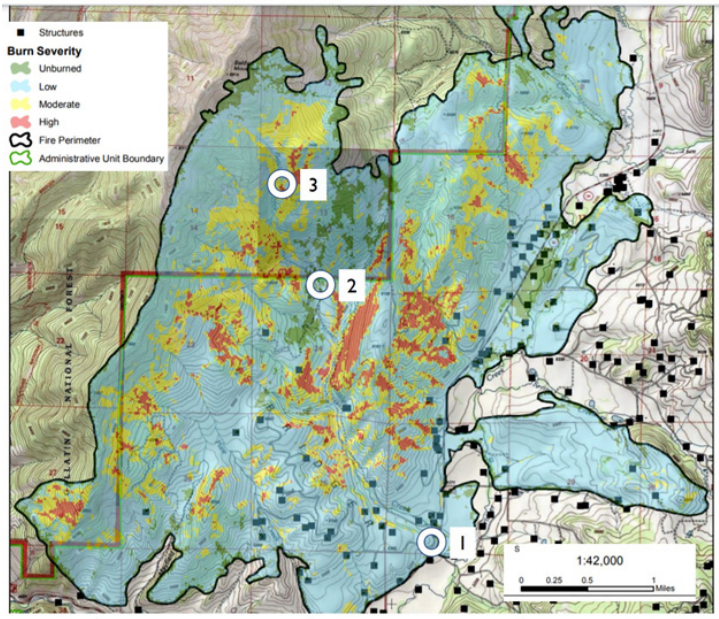
Nielsen Graduate Research Assistantship Awardee

The Nielsen Graduate Research Assistantship is awarded to graduate students providing research support to full-time faculty in soil science, specifically *Montana Pedogenesis*, or the basic understanding of Montana soils.

FY21 Awardee
Advisor: Ewing

Kendall Wojcik's research focus is on how agricultural management interacts with dynamic plaant communities to affect soil carbon cycling in semiarid landscapes. Kendall earned her B.S. in Agroecology-SUstainable Food & Bioenergy Systems with Land Resources & Environmental Sciences in May 2017. She is in her second year of M.S. work in Dr. Ewing's Environmental Analytical Lab.

ENSC 245 Explores Fire in the Bridger Foothills



On Friday afternoon, Sept. 4th, a small plume of smoke could be seen just northwest of the "M." From what we now know, the Bridger Foothills Fire (BFF) had most likely begun as a holdover lightning strike at that one point on the southern Bridgers several weeks earlier. Within 24 hours, that small fire would have expanded to burn more than 7000 acres, including a large fraction of privately owned land on the eastern side of the southern Bridgers, over the ridge from the "M." Several campus connections between the landowners and MSU made the first LRES-supported fieldtrip to the BFF possible on Saturday, October 10th: first, emeritus professor Cliff Montagne toured the burn area with landowners Bob Newhall, Joan Kresich, and Jo Newhall on Tuesday, Sept. 15th (Cliff had ridden horses with Bob around Bozeman and ski-coached Jo back in the day); second, Tony Hartshorn had toured the Newhall property with permission before it burned in June with one of our undergraduates Lyra Reynolds, who'd obtained Undergraduate Scholar Program funding to study snow effects on soil moistures; and third, Erik Anderson (LRES undergraduate 2014, M.S. Microbiology 2018) was generating and ground-truthing a burn severity map for the US Forest Service's Burned Area Emergency Response team.

Erik and Tony and 2 TAs, including Lyra, gathered the 19 students, nearly all of them having driven themselves there, at the Bridger Canyon Fire Station (#1 on the map) that Saturday. Fall colors were on brilliant display. A fun fact is that the fire station itself appears to sit on a very large (100-foot-thick?) combination of historical debris flows, mudslides, landslides, and alluvium (water-transported material)… all delivered by the quite modest-looking (right now) Beasley Creek. With permission from a neighbor of the Newhalls, students from Tony Soil's class caravanned up the private Beasley Creek Road to their jumping-off point (#2 on the map), an unnamed tributary of Beasley Creek. Within minutes of walking, they stumbled upon another reminder of the susceptibility of these drainages to post-fire debris flows: a 20-foot-tall snout of an old (but *how* old?!?) landslide being freshly carved by a rivulet of water.

Over the next 2 hours, as we aimed for point #3 on the map, the students explored some of the complexities of the spatially varied geology (lots of sandstone and claystone units), soils (from sandier to clayier), and vegetation communities, and highly spatially variable burn severities.

Of course it was no typical fieldtrip, given the COVID-19 precautions we observed, including hiking-while-masked. Future work parties aimed at slope stabilization efforts on the Newhall property and their neighbors' properties are planned. It's just these types of community-supported and community-supporting fieldtrips we think continue to separate our program from other environmental science programs; if *you'd* like to support this type of hands-on-learning in the future—consistent with our institution's tagline Mountains & Minds—please reach out!

Tony Hartshorn, ENSC 245 Instructor & Associate Professor

LRES Capstone:
ENSC 499R Capstone Course students take to the pavillion!

This semester the LRES Capstone class presented their final project at the LRES seminar on November 16. The title of the presentation was "Contemporary disconnect between science, policy, and action: How does the pandemic affect the environment and what role does it play in reframing the debate on climate change?". Over the course of the semester, the 16 students worked hard to overcome the obstacles presented by COVID-19. Class meetings were primarily in our outdoor classroom space in the Wally Byam Park on the corner of 11th Ave. and College St. (see photo). The students worked diligently to explore the increasingly polarized and politicized issue of science in American politics as seen through the lens of the COVID-19 pandemic and the climate change debate.

Students adapt to a new class environment this Fall as professors find more creative ways to keep students engaged and hold in-person classes whenever possible. A beautiful fall day doesn't hurt!

The final project addressed the following key questions:

1. What are the environmental impacts of medical waste?
2. How does COVID-19 affect greenhouse gas emissions and human-wildlife interactions?
3. Who rejects science and why?
4. What has shifted in the perception and action of COVID-19?
5. How have lessons from the COVID-19 pandemic reframed the climate change debate?

Overall, the Capstone course was a tremendous success this semester, thanks to the resilience and determination of the class of 2020. I am extremely proud of this group of students.

Scott Powell, Associate Professor

LRES Faculty/ Staff & Student Winter Social

Martin Luther King Day
January 18, 2021*
at CrossCut Ranch

*Stay tuned for details...

New LRES Graduate Students

2020

Master of Science

Kaleb Baber
M.S. LRES
Advisor: Jones
Shea Crowther
M.S. ENTO
Advisor: O'Neill/Slominski
Clare Dittemore
M.S. ENTO
Advisor: Peterson
Zachary Fighter
M.S. LRES
Advisor: Mangold/Powell
Madison Foster
M.S. LRES
Advisor: Payn
Kara Hettinger
M.S. LRES
Advisor: Miller/Seipel
Katerina Lozano
M.S. LRES
Advisor: Peterson
Adrian Massey
M.S. LRES
Advisor: Peterson/Kleindl

Doctor of Philosophy

Samuel Koeshall
Ph.D. ESEC
Advisor: Miller
Hayley Oakland
Ph.D. ESEC
Advisor: Poole
Amanda Shine
Ph.D. ESEC
Advisor: Powell/Torrion
Madelyne Willis
Ph.D. ESEC
Advisor: Sterling/Foreman

Professional Master of Science

Sarah Beard
M.S. LRES Online
Columbus, GA
Emily Branum
M.S. LRES Online
Erwin, TN
Karli Cich
M.S. LRES Online
White Bear Lake, MN
Carly Jensen
M.S. LRES Online
Clifton, CO
Garett Masin
M.S. LRES Online
Billings, MT
Spencer Ostergaard
M.S. LRES Online
Mammoth Lakes, CA
Joshua Pratt
M.S. LRES Online
Mint Hill, NC
Jessica Smith
M.S. LRES Online
Seattle, WA
Samantha Thomas
M.S. LRES Online
New Martinsville, WV
Torren Valdez
M.S. LRES Online
Olympia, WA
Erin Bradley
M.S. LRES Online
Monterey, CA
Stephanie Espinoza
M.S. LRES Online
Arlee, MT
Alison Beres-Nork
M.S. LRES Online
Bethany, CT
Leah Robinson
M.S. LRES Online
Bellingham, WA
Stefan Kelly
M.S. LRES Online
Prairie City, OR
Jason Saiz
M.S. LRES Online
Lubbock, TX
Zachary Nelson
M.S. LRES Online
White Lake, MI
Claudia Macfarlane
M.S. LRES Online
Stockton, CA
Shawn Edwards
M.S. LRES Online
Bozeman, MT
Carmela Rourke
M.S. LRES Online
Enid, OK
Jenna Sexton
M.S. LRES Online
Livermore, CA
Tegan Hanson
M.S. LRES Online
Baton Rouge, LA
Shelbie Shoemake
M.S. LRES Online
Eagle River, AK
Jason Hanlon
M.S. LRES Online
Dodson, MT
Melissa Petrich
M.S. LRES Online
Billings, MT
Christopher Artigas
M.S. LRES Online
Henderson, NV
Andrew Yamagiwa
M.S. LRES Online
Ventura, CA
Michael Keech
M.S. LRES Online
Helena, MT
Andrew Bielakowski
M.S. LRES Online
Des Moines, WA
Melissa Maggio
M.S. LRES Online
Missoula, MT
Theresa TenEyck
M.S. LRES Online
Palm Coast, FL
Allison Law
M.S. LRES Online
Portland, OR
David Trujillo
M.S. LRES Online
Aurora, CO
Helena Wilson
M.S. LRES Online
Twisp, WA
Craig Davis
M.S. LRES Online
Columbus, OH
Inga Hawbaker
M.S. LRES Online
Scobey, MT
Monica Coe
M.S. LRES Online
Cayo, Belize
Ryan Jadey
M.S. LRES Online
Tacoma, WA

Meet your GSO!

The LRES Graduate student Organization (GSO) changed their constitution to include the following roles. Meet the leaders below. Please reach out to them to learn about opportunities to serve and learn!

Laissa Cavallini dos Santos
Chair
Responsibilities: Organize, schedule and preside over all meetings of the organization. Record and produce minutes of all meetings. Handle the organization's correspondences to LRES graduate students. Apply for funding. Register the club at the Office of Student Engagement. When necessary, act as official representative of the organization at other meetings and events.
Hobbies: In my free time I like to hike, camp, and ski.

Clare Dittemore
Co-Chair
Responsibilities: Assist chair in all capacities.
Hobbies: I love to read. I also boulder in the summer and XC ski in the winter.

Sasha Loewen
Social Chair
Responsibilities: Plan and host social events for LRES graduate students
Hobbies: I like to farm in my free time, and when it is too snowy to farm I snowboard.

John Bowley
Treasurer
Responsibilities: Handle the majority of financial transactions of the organization. Maintain thorough and accurate records of accounts and transaction history. These records may be used to create financial reports for the organization as needed
Hobbies: Hiking, Fly Fishing, Reading, Cooking, Camping, Collecting Insects.

Mei Ling Wong
Graduate Student Liaison
Responsibilities: Represent the graduate student organization at LRES faculty/staff meetings. Strengthen the communication between students, faculty, and staff, and coordinate mentoring opportunities for graduate students.
Hobbies: I like to meet people and do things together with people. I like to cook Chinese food.

Save the Date for the Spring LRES Research Colloquium

The 11th Annual LRES Research Colloquium will be held in the Strand Union Ballrooms C &D on **April 14, 2021** (more details coming soon).

The event offers on-campus and online graduate and undergraduate LRES students an opportunity to present their research to friends, colleagues, and faculty in an informal setting. All LRES undergraduate and graduate students are encouraged to submit a poster and/or oral presentation. Travel grants are available (when applicable) to assist online M.S. students who would like to participate in person. Come and share what you have been working so hard on!

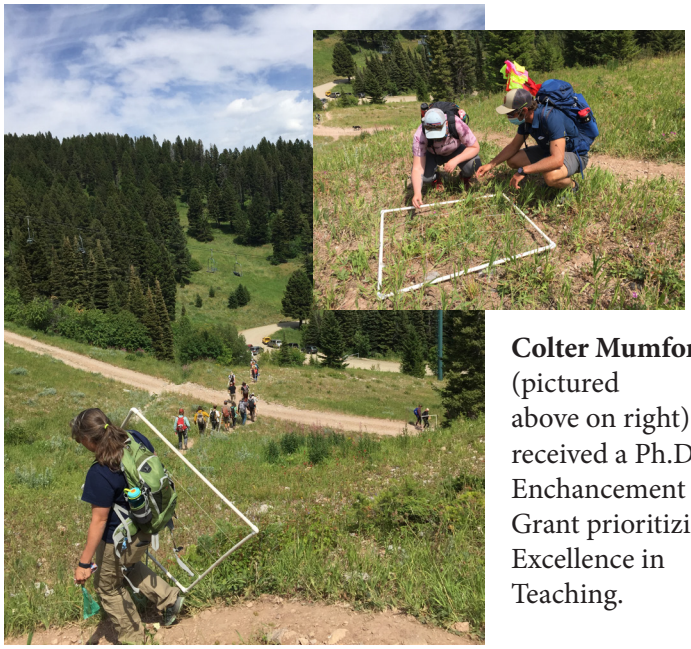
Other highlights of the Colloquium include a keynote speaker, prizes and awards for the best presentation(s). Questions? Interested in helping organize the event?

Email **lresgso@gmail.com** or touch base with current **LRES GSO Leadership**.

Above: Members of GSO participate in a socially-distant social to build community and share research. LRES GSO welcomed the new graduate students on August 21st with a barbecue at the Bozeman Pond. Grad students had the chance to -safely- interact with one another and become acquanted with others in their department.

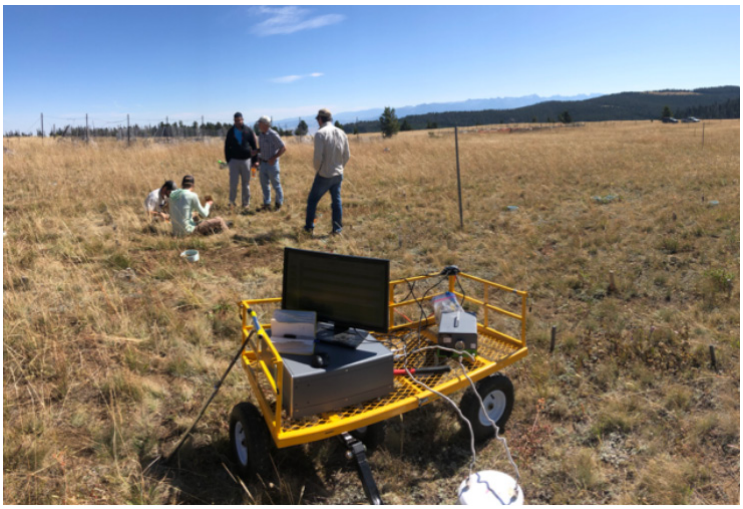
LRES in Photos

Research and Field Courses Around MT



Colter Mumford (pictured above on right) received a Ph.D. Enchancement Grant prioritizing Excellence in Teaching.

ENSC 410/LRE 510 students collecting surveys at Bridger Bowl



Studying the Effects of Global Change Across Western Sub-Alpine Grasslands

Perennial bunchgrass research

Annual Wheatgrass Study in Yellowstone National Park

Organic Pea-Wheat Cropping System Near Shonkin, Montana

Beartooth Mountains Treeline Research

Wheat Stress Research at the MSU Post Agronomy Farm

New LRES Grants Awarded from Dec. 2019 - Nov. 2020

These funds fuel our research and teaching mission-to discover new knowledge, to engage and train students using laboratory and field studies across local to global scales, and to enrich the lives of Montanans. Please take a minute to congratulate our faculty and staff **in bold** on their meaningful work and impressive accomplishments.

Federal Grants

Bureau of Land Management (BLM)

McNew & **Hartshorn**	Utility and validation of soil sampling protocols within sage-grouse habitats in Northcentral Montana

National Aeronatics and Space Administration (NASA)

Powell, Watts & Farina	A multi-scale analysis to address uncertainty in scaling bottom-up estimates of carbon exchanges in Alaska

National Park Service (NPS)

Maxwell	Technical and professional assistance to the Greater Yellowstone Network, National Park Service

National Science Foundation (NSF)

Dore	Collaborative Research: Influence of phosphorus deficiency on enigmatic biological methane production in oxic freshwater lakes
Ewing & Payn	NSF EPSCoR Consortium for Research on Environmental Water Systems (CREWS) Year-3
Ewing, Payn, Reinhold & Warnat	Using continuous soil solute signals to infer transport and reaction dynamics that regulate water quality
Inskeep & Dlakic	OPUS-CRS: Integration of phylogenomic and metabolic analyses to understand the biodiverity of deeply rooted microbial lineages
Poole & Albertson	Macroinvertebrate ecosystem engineers mediate whole-stream metabolism and nutrient uptake

Rocky Mountain Research Station (RMRS)

Weaver	Increasing options for toadflax biocontrol: Regional deployment of *Rhinusa pilosa*, new biocontrol agent for yellow toadflax (*Linaria vulgaris*)

USDA Animal And Plant Health Inspection Service (APHIS)

Littlefield	Rearing and release of the hoary cress gall mite *Aceria drabae* within the Western U.S.
Weaver	Mass rearing of *Rhinusa pilosa* for biological control of invasive yellow toadflax

USDA Forest Service (USDFOR)

Peterson	Army cutworm moth ecology in the Eastern Greater Yellowstone Ecosystem
Weaver	Pheromonal compounds produced by immature *Diorhabda carinulata* that can be used to displace adult aggregations

USDA National Institute of Food and Agriculture (NIFA)

Keith & Dyer	Evolution and regulation of non-target site resistance in *Avena fatua*
Maxwell, Ewing & Hegedus	Nitrogen fertilizer management based on site-specific maximized profit and minimized pollution
Menalled & Seipel	Interacting agricultural pests: Joint management of *Bromus tectorum* and *Fusarium* crown rot in small grain systems
Miller & Koeshall	Measuring intra-field variability in pea protein to understand influencing factors in Montana cropping systems
Rew, Mangold, Zabinski & Sowell	An integrated management decision framework for cheatgrass control in the Northeastern region of sagebrush steppe
Rew & Mumford	Restoring disturbed rangelands with site-specific seeding
Slominski & O'Neill	Assessing the lethal and sublethal effects of exposure to neonicotinoid-contaminated soil on wild and managed non-*Apis* bee species

US Environmental Protection Agency (USEPA)

Maxwell, Grossenbacher & Kuo	Montana Pollution Prevention Program: Brewery sustainability certification & P2 student internship collaborative for Montana's food & beverages manufacturing & processing industries

US Geological Survey (USGS)

Kleindl	M104B State Water Resources Research Institute Program

Montana Grants

Montana Department of Agriculture (MDA)

Littlefield	Enhanced mitigation of the Eastern Heath Snail, *Xerolenta obvia*, in Montana

Montana Department of Environmental Quality (MTDEQ)

Sigler	2020-2021 Volunteer Water Quality Monitoring Support

Montana Fertilizer Tax Fund

Ewing, Brookshire & Payn	Research Analytical Chemist- Environmental Analytical Laboratory
Jones & Miller	Enhancing nitrogen fixation in pea and lentil through breeding and management
Maxwell	On-farm experiments to optimizing site-specific application of nitrogen fertilizer rates to maximize producer profits
Miller, Jones, & Zabinski	A long-term assessment of nitrogen fertilizer effects on soil quality across cropping systems
Miller, Ewing, & Jones	Long-term N management in alternative crop rotations

Montana Natural Resource Damage Program (MTNRDP)

Kleindl & Peterson	Graduate funding to study invertebrate colonization

Montana Noxious Weed Trust Fund

Littlefield	Screening biocontrol agents for oxeye daisy and common tansy
Littlefield	Continued host testing of a gall wasp for invasive hawkweeds
Littlefield	Rearing and release of the hoary cress gall mite and screening of a seed pod weevil
Littlefield	Biology and host testing of a leaf mining beetle for Russian knapweed
Mangold & Rew	Developing and monitoring protocols for evaluating weed management outcomes
Mangold & Frame-Martin	Montana Noxious Weed Education Campaign
Weaver	New solutions for old problems: Identifying the best available biological and chemical control options for the integrated management of invasive toadflaxes
Weaver	Continued mass rearing, release, and monitoring of the Northern tamarisk leaf beetle: A biological control agent for saltcedar
Weaver	Continuing development of candidate agents for biological control of Russian olive

Montana Wheat & Barley Committee

Miller, Bekkerman, **Ewing & Jones**	Soil carbon accrual in progressive Montana crop rotations
Seipel, Dyer, **Jones & Keith**	Assessing herbicide efficacy and persistence in response to soil acidification in Montana
Weaver	Wheat Genomics
Weaver	IPM of Wheat Stem Sawfly

Private, University, Regional and Other State Grants

Confederated Tribes of the Umatilla Indian Reservation

Poole	Modeling hyporheic exchange and heat transport

Idaho National Laboratory

Izurieta & **Reinhold**	Cyber QR Ops: Improving the quality and resiliency of critical computing infrastructure

USA DRY Pea and Lentil Council

E. Davis & Menalled	2020 Weed Control Research in Pulse Crops

Vital Ground Foundation

Maxwell	Preventing grizzly bear and human conflicts along the Rocky Mountain Front

Woods Hole Research Center Inc.

Powell	Very high resolution remote sensing mapping of surface water, vegetation, and carbon emissions for the WHRC Yukon-Kushokwim Delta Research Watershed

LRES 2020-2021 Scholarship Recipients

Annin Scholarship
Laura Steverson

Battle Ridge Ranch Scholarship
Niah Brass
Edward Shaw

CHS University Scholarship
Nolan Diffley

College of Agriculture Scholarship
Cassidy Leno

Clyde and Helen Erskine Fund for Excellence in Agriculture Scholarship
Haley Buckbee

Anthony C. Gaffke Scholarship
Lexi Emeny
Reilly Tunby

Gallatin Valley Ag Committee Scholarship
Reilly Tunby

Gough Family Scholarship
Laura Steverson

Charlotte Rose Hughes Memorial
Daniel Chichinsky
Braedon Lineman
Joshua Poole

Bill & Anita Jones Scholarship
Erin Bjorklund
Haley Buckbee
Emily Daniels
Nicole Ellis
Lexi Emeny
Jaydyn Engan
Anna Galipeau
Mickayla Johnson
Vanessa Orcutt
Amelia Pease
Rabi Phelan
Joshua Poole
Kieran Wilder

Land Resources Stewardship Scholarship
Jade Berghoff
Tyler Boyd
Jaydyn Engan
Anna Galipeau
Amelia Pease
Sophie Pigman

John S. McFarlane Endowed Scholarship
Kyle Olszowka

Cliff Montagne LRES Scholarship
Kyle Olszowka

Frank F. Munshower Scholarship
Jordan Meyer-Morey

Nielsen Graduate Research Assistantship
Kendall Wojcik

Newman/Abbot Nutrition Undergraduate Scholarship
Haley Buckbee

Wyman E. and RuthM. Nyquist Meritorious Scholarship in Agriculture
Elise Reynaud

Arthur H. and Margaret C. Post Scholarship
Rachel Robbins

George S. Severson Agricultural Scholarship
Gracie Tooke

Wagner Heritage Scholarship
Mickayla Johnson

Opportunities to Support LRES

A gift to the department is a great way to support student and faculty endeavors. Donations can be earmarked for student scholarships or internships, graduate fellowships, undergraduate and graduate student programs, endowed professorships, and more.

For information about making a donation to the Department, please contact Jesse Tufte, MSU Alumni Foundation, College of Agriculture, Director of Development (406-994-4815 or jesse.tufte@msuaf.org).

MONTANA STATE UNIVERSITY
Department of Land Resources & Environmental Sciences

LRES Degrees Awarded Fall 2020

Bachelor of Science

Environmental Sciences

Natalie Crane
Cameron Daley
Andrew Farber
David Forbes
Eli Harmon
Richard Jones
Morgan Katsch
Nicholas Markson
Kyle Olszowka
Vanessa Orcutt
Margaret Scheifele
Bailey Servais
Meghan Tomczyk (Summer)
Reilly Tunby
Leah Wimmer
Melissa Wysocki

Sustainable Foods & Bioenergy Systems-Agroecology

Jaime Rae Base
Nathaniel Bowen
Daniel Chichinsky
Haylee Crowe
Nathaniel Shields-Auble

Master of Science

Land Resources & Environmental Sciences

Kristen D'Agati
Mary Ellyn DuPre

Professional Master of Science

Land Resources & Environmental Sciences

Welles Bretherton
Danielle Korecki
Erik Norderud
Aeriel Rozwara
Erin Walaszczyk

Doctor of Philosophy

Ecology & Environmental Sciences

Buddhi Acchami
Samuel Carlson
Miranda Margetts
W. Adam Sigler