A Message from the Dean

Dear Colleagues,

Happy Belated St. Patrick’s Day to you all.

Earlier this month, I visited our congressional delegation in Washington, D.C. along with Mr. Dale Schuler, our representative on the Council on Agricultural Research, Extension and Teaching, and other MSU representatives. We had excellent visits with the offices of our four congressional representatives from Montana. We shared with them the research challenges important to Montana for consideration in the Farm Bill and the FY24 budget.

An exciting update from the state legislature: the combined request from MAES and Extension for base funding support for our precision agriculture program was
brought back as a decision package. It was voted by the House and will be moving forward to the Senate. This wouldn’t have happened without strong, continued support from the agriculture producers of Montana, and we are so grateful.

I am pleased to announce that Laura Wilson joins us today, March 27, as the new assistant to the VP for Agriculture. She will be in the Dean’s Office in Linfield Hall, and I am excited about the new ideas and energy she will bring to our college. Please take some time to introduce yourself to her and welcome her to our wonderful college family!

As many of you know, Susan Fraser will be leaving us after 10 years of service. It will be a big loss for the college, as many people think of Susan as the face of college. I join our entire COA/MAES family in thanking Susan for the many years she has given to our college and wishing her the very best in the next adventure she will be embarking on.

Dr. Sreekala Bajwa
Our Ag Ambassadors represented MSU spectacularly at the annual state FFA Convention in Great Falls March 22-25.
Thank you to these spectacular students for their hard work and dedication to engaging the next generation of Bobcats! (Thank you assistant dean Liz Greenfield for the photos.)

Announcements

- Former ARS professor Raymond Ansotegui passed away March 2. You can read his obituary here. The Montana Stockgrowers Foundation has also started a scholarship fund in Dr. Ansotegui’s name; you can donate here.
- Professor emeritus Nancy Callan, formerly of the Western Ag Research Center, passed away March 16. We will share an obituary when we have one.
- The ARS department is pleased to welcome Dan Atwater, assistant professor of rangeland ecology! Dan can be reached in ABB 313 or
at daniel.atwater@montana.edu.

- Reagan Colyer, communications director, will host trainings on **how to effectively write impact statements** based on your research. If you haven't already responded to the poll with your preferred meeting times, **please do so here**.

- The **Fulbright Scholar Award** competition is now open. **More information can be found here** - be sure to share with interested students!

- **Student employment opportunity:** NWARC is seeking summer employees/interns for its Field Crop Physiology Program. Interested students can reach out to Jessica Torrion or call 406-755-4303.

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### New Grants

- **Nine** new grants were awarded to COA/MAES faculty and staff in February, totaling more than **$610,000**.

### Recent Grants:

- **Lance McNew:** Evaluation of Motus technology for monitoring ground-dwelling birds. Montana's Outdoor Legacy Foundation. **$11,716**

- **Chris Posbergh:** Evaluating the influence of breed and management on the carbon sequestration capacity of Montana range wool. Bair Ranch Foundation. **$25,925**

- **Hayes Goosey:** Assessing Sulfur Fertilization as a Means to Improve Statewide Forage Quality and Value by Reducing Nitrate Accumulations in Cereal Forages. MT Fertilizer Advisory. **$62,693**

- **Jamie Sherman, Hayes Goosey, Jessica Torrion, Kent McVay, Patrick Carr:** Relationship between fertility and water management, production and quality of advanced spring forage, feed and malt barley lines. MT Fertilizer Advisory. **$52,400.**

- **Jessica Torrion, Hayes Goosey, Peggy Lamb:** Nitrogen requirement for sustained yield and optimal quality of cool-season perennial forages. MT Fertilizer Advisory. **$48,862.**

- **Perry Miller, Clain Jones, Hayes Goosey, Stephanie Ewing, Manbir Rakkar:** pH remediation by perennial forages following 18yr of N management in alternative crop rotations. MT Fertilizer Advisory. **$26,643.**
• **Mosley, J.C., D.A. McGranahan, C.L. Wonkka, S. Dangi, and J. Angerer:** Rangeland Resilience Following Wildfire: Opportunities for Livestock Grazing? USDA-NIFA. $258,000

• **Jeff Mosley** also received $1,000 gift from the Stillwater County Range Committee to support efforts in outreach youth education.

• **Sarah McCoski, Carl Yeoman:** The development of a bovine uterine organoid co-culture system for improved in vitro Embryogenesis. Bair Ranch Foundation. $76,313.

• **Sarah McCoski, Rodrigo Marques, Makayla Ogg.** Maternal injectable mineral supplementation effects on progeny growth and reproductive performance. Bair Ranch Foundation. $64,100.

• **Rodrigo Marques, Sarah McCoski, Christian Posbergh:** Maternal fatty acids supplementation and its impacts on offspring. National Sheep Improvement Center / USDA $39,860.50

• **Sam Wyffels:** A synthesis of the literature related to conifer expansion and impacts to sustainable range beef cattle production across the western United States. National Cattleman’s Beef Association. $10,000

• **Susan Tuddenham, Rebecca Brotman, Carl Yeoman:** The vaginal microenvironment in asymptomatic versus symptomatic bacterial vaginosis. NIH-NIAID. $482,098

• **Cornelia Jessen, Abigail Morgan, Carl Yeoman:** Exploring psychosocial, behavioral, and biomedical factors associated with reproductive and gynecological health among Alaska Native women. NIH-NIGMS-AK-INBRE. $42,000.

• **Adam Sigler, Mari Eggers, Michelle Grocke:** Pilot funding - “Uncovering and addressing environmental health risks associated with Montana groundwater,”
The COA mourns the loss of former ARS professor Raymond Ansotegui. This image was shared by his daughter after his passing on March 2.

Around 50 people, including 15-20 students, came to an equine educational presentation by Dr. Al Flint about biosecurity and backcountry first aid for horses (see images above and below). Feedback from attendees was wonderful.
Taylor Bayne presents at the Society for Range Management annual meeting in Boise (see below).

Funding Opportunities

- **USDA Organic Agriculture Research and Extension Initiative**: Deadline 4/13/23
- **MSU Outreach and Engagement Council Seed Grant Program**: Deadline 4/14/23
- **National Fish and Wildlife Foundation America the Beautiful Challenge 2023**: Preliminary deadline 4/20/23
• **USDA Gus Schumacher Nutrition Incentive Program**: Final Deadline 5/4/23
• **NSF Plant Genome Research Program**: proposals accepted anytime
• **Robert Wood Johnson Foundation Evidence for Action: Innovative Research to Advance Racial Equity**: proposals accepted anytime
• **USDA Ag and Food Research Initiative - Foundational and Applied Science Program**: due dates vary by program
• **USDA AFRI Sustainable Agricultural Systems Program**: due dates vary

### Upcoming Events

- The deadline to nominate awardees for the COA/MAES Awards of Excellence is **March 29**.
- The COA's Inaugural Three-Minute Thesis Competition will be held on **March 30** at 1:30 p.m. in SUB 235.
- The Bair Ranch Foundation Seminar "A Forest Service Approach to Leveraging Technology to Aid Public Land Administration” will be held at noon on **March 30** with speaker Matt Reeves, in ABB 134 or via Webex here.
- The Montana Spring Biocontrol Meeting will be held **April 4** in Billings, with our own Jeff Littlefield presenting!
- A number of COA students will present at the **National Conference on Undergraduate Research** in Eau Claire, Wisconsin **April 13-14**. Participating students include:
  - Andee Baker, DATE
  - Emma Dardenne-Ankringa, MCB
  - Jessica DeWit, MCB
  - Emory Hoelscher-Hull, MCB
  - Ella Horgan, MCB
  - Elsa O'Neill, Biotechnology
  - Natasha Peterson, MCB
  - Joseph Triem, MCB
  - Sarah Warnke, MCB
  - LaShae Zanca, MBC
- The Central and Eastern Montana Invasive Species Team will host an Eastern Heath Snail public meeting on **April 25** in Stanford, MT. Jeff Littlefield will also present at that meeting - thank you for your outreach, Dr. Littlefield!
COA/MAES in the news

https://www.montana.edu/news/22754

MSU alumnus appears on HBO rock climbing competition

www.montana.edu

Brad Burns competed on “The Climb,” hosted by champion rock climber Chris Sharma and actor Jason Momoa.

https://www.montana.edu/news/22749/

MSU professor Eric Boyd’s pyrite research featured by Department of Energy

www.montana.edu

Boyd’s work was selected as a “Science Highlight” by the DOE, which features particularly unique research from across the nation.

https://www.montana.edu/news/22720
As soil acidity threatens Montana fields, Montana State research explores remedies

Manbir Rakkar and Clain Jones are examining ways to tailor responses to the emerging issue through on-farm experiments.

Montana State research team publishes research into rare neurological disorder

Faculty and graduate students in five MSU labs collaborated to examine the effects of familial dysautonomia on the gut microbiomes of patients.
Awards and Recognitions

- **Mariana Carrera** of the DAEE accepted a position as Associate Editor at the *Journal of Economic Behavior and Organization*. Dr. Carrera also served as a mentor in the American Economic Association's [CSWEP CeMENT program](https://www.cswe.org/ceMENT) and was promoted to Research Associate at the National Bureau for Economic Research. Congratulations, Dr. Carrera!

- **Taylor Bayne**, master's student in ARS, took third place in the oral presentation competition at the Society for Range Management's annual meeting in Boise, Idaho (see photo above). Bayne's presentation was titled, "Smart wildlife monitoring: Evaluating camera traps enabled with artificial intelligence." Faculty co-authors are Jared Beaver, Lance McNew and Jeff Mosely.

- **Jeff Mosley** was pictured in the Winter 2022/2023 issue of RANGE Magazine, teaching about rangeland health on the Spotted Dog Wildlife Management Area near Deer Lodge.

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**A Note from the Communications Director:** Please submit newsletter items and/or story ideas to reagan.colyer@montana.edu. The newsletter will aim to go out the last Monday of each month, but submissions are accepted anytime.
Recap: Western Society of Weed Science and Western Aquatic Plant Management Society Meetings

The College of Agriculture was well-represented by faculty and students at the meeting of the Western Society of Weed Science and the Western Aquatic Plant Management Society in Boise, ID, from February 27 - March 2. Several graduate students and faculty presented (graduate students indicated by *):

**Weeds of Range, Forest, and Natural Areas**

- Long-term efficacy of indaziflam to suppress ventenata and response of other vegetation. Lilly Sencenbaugh*, Jane Mangold, Lisa Rew
- Impact of native vegetation on cheatgrass fitness: A neighborhood competition study. Erin Teichroew*, Bruce Maxwell, and Lisa Rew
- Testing ventenata control treatments on the Crow Reservation in southeastern Montana. Zach Fighter*, Scott Powell, Jane Mangold, Robert Demery, David Hopkins
- Renovating crested wheatgrass monocultures into functional rangeland by integrating herbicide and seeding. Peter Bugoni*, Jane Mangold

**Weeds of Agronomic Crops**

- Influence of planting date and fall-applied soil active herbicides on weed control in chickpea. Akamjot Brar*, Qasim Khan, Fabian Menalled, Zach Miller, Clint Beiermann, Kent McVay, Lovreet Shergill
- Effect of seeding rate and herbicide applications on weed management and yield potential of chickpea. Het Desai*, Fabian Menalled, Tim Seipel, Lovreet Shergill
- Monitoring herbicide resistant weeds in sugarbeet cropping systems in SE Montana. Lovreet Shergill*, Het Desai, Todd Gaines
Aquatic Weeds

- A centralized database of watermilfoil strains across the United States: Initial insights, and utility for stakeholder communication and management decision-making. Ashley Wolfe*, Ryan Thum, Raymond Newman
- Clonal diversity of invasive crested floating heart in the Southeastern United States. Zachary Kuzniar*, Ryan Thum
- Whole-genome sequencing of an herbicide selection experiment identifies a chromosomal region associated with fluridone resistance in Eurasian watermilfoil. Ryan Thum and gregory Chorak.

Erin Teichroew, MS student in LRES advised by Lisa Rew, took second place in the oral presentation contest for Weeds of Range, Forest and Natural Areas. Two students received scholarships to participate in the conference: Lilly Sencenbaugh, Ph.D. student in LRES advised by Lisa Rew, and Zach Fighter, M.S. student in LRES advised by Jane Mangold and Scott Powell. Additionally, Teichroew, Sencenbaugh, and Colter Mumford, Ph.D. student advised by Lisa Rew, received scholarships from College of Ag, the Graduate School and the LRES department.

Faculty participated in service activities, including: Lovreet Shergill, DRC, chaired the WERA77 meeting and Herbicide resistant plants committee and was a member of the poster committee; and Jane Mangold, LRES, served as Education and Regulatory Chair on the WSWS Board of Directors, organized and moderated “Water in the West: Implications for Weed Management” symposium and chaired a discussion session.

Recent Publications

- "A New Tytthonyx LeConte (Coleoptera: Cantharidae) from Dominican Amber, with Notes on Diagnostic Characters of West Indian Cantharids with Short Elytra," *BioOne Complete*: Michael A. Ivie, Fabrizio Fanti, Vinicius S. Ferreira.
- "A sensitive and specific genetically encoded potassium ion biosensor for in vivo applications across the tree of life," *PLOS Biology*: Sheng-Yi Wu, Yurong


- "Abutilon theophrasti’s Resilience against Allelochemical-Based Weed Management in Sustainable Agriculture – Due to Collection of Highly Advantageous Microorganisms?" *Plants*. Tabaglio, Fiorini, Sterling, and Schultz.


- "Assessing Youth Safety Knowledge through the Agriculture Experience Tracker (AET)," *Journal of Agricultural Safety and Health*: Scott W. Smalley, Dustin K. Perry, Alyx Shultz, Rebecca G. Lawver, Michael L. Pate, Roger Hanagriff, Clay Ewell.


- "Comparison of Enrichment and Plating Media for Recovery of Virulent Strains of Yersinia enterocolitica from Inoculated Beef Stew," *Journal of Food*
Protection: D.A. Schiemann.

- "Dietary sugars and amino acids increase longevity and enhance reproductive parameters of Bracon cephi and B. lissogaster, two parasitoids that specialise on wheat stem sawfly," *Physiological Entomology*: Laissa Cavallini, Robert K. D. Peterson, David K. Weaver.
- "Effects of tillage and fallow rotation on wireworm populations and damage to cereal grain crops in Montana," *Crop, Forage & Turfgrass Management*: Anuar Morales-Rodriguez, David Wichman, Kevin W. Wanner.
- "Efficient extraction of atomization processes from high-fidelity simulations," *Computers & Fluids*: Brendan Christensen, Mark Owkes.
- "Electrospun polycaprolactone scaffolds loaded with a 1,4-naphthoquinone derivative for anticancer therapy," *Materials Letters*: Nadezhda V. Danilenko, Evgeny N. Bolbasov, Andrei I. Khlebnikov, Igor A. Schepetkin, Sergei I. Tverdokhlebov, Mark T. Quinn.
- "Evaluation of wheat stem sawfly-resistant solid stem Qss.msub-3BL alleles in hard red winter wheat," *Crop Science*: Mei Ling Wong, Philip L. Bruckner, Jim E. Berg, Peggy F. Lamb, Megan L. Hofland, Christopher G. Caron, Nancy K. Blake, David K. Weaver, Jason P. Cook.
- "Impacts of Rumen Degradable or Undegradable Protein Supplementation on Supplement Intake and Performance of Yearling Heifers and Cows Grazing Dryland Pastures," *Animals*: Marley K. Manoukian, Timothy DelCurto, Janessa
Kluth, T. J. Carlisle, Noah Davis, Makae Nack, Samuel A. Wyffels, Abe Scheaffer, Tom W. Geary, Megan L. Van Emon.

- "Importance of Foot and Leg Structure for Beef Cattle in Forage-Based Production Systems," *Animals*. Taylre Sitz, Hannah DelCurto-Wyffels, Megan Van Emon, Sam Wyffels, Kelli Retallick, Esther Tarpoff, Kurt Kangas, Tim DelCurto.


- "Missense alleles of the HMW glutenin subunits Dx5 and Dy10 have small changes in function relative to missense changes in Puroindoline a and b," *Cereal Chemistry*. John M. Martin, Jinrui Zhang, Andrew C. Hogg, Michael J. Giroux.


- "Rapid upwards spread of non-native plants in mountains across continents," *Nature Ecology & Evolution*. Evelin Iseli, Chelsea Chisholm,


"The Bark-Gnawing Beetles of Montana, USA (Coleoptera: Trogossitidae, Peltidae, and Lophocateridae), Including New Substantial Distributional Records for Tenebroides collaris (Sturm)," *BioOne Complete*: Michael G. Kippenhan.


"The spillover effects of parental verbal conflict on classmates' cognitive and noncognitive outcomes," *Economic Inquiry*: Weina Zhou, Andrew J. Hill.


"Traits that distinguish dominant species across aridity gradients differ from those that respond to soil moisture," *Oecologica*: Robert J. Griffin-Nolan, Andrew J. Felton, Ingrid J. Slette, Melinda D. Smith, Alan K. Knapp.

"Transcriptional responses to 2,4-D herbicide treatment of a Eurasian (Myriophyllum spicatum) and a hybrid (M. spicatum × M. sibiricum) genotype of watermilfoil that differ in their sensitivity to 2,4-," *Aquatic Botany*: Gregory M. Chorak, Fernando H. Correr, Jennifer Lachowiec, Gillian Reynolds, Ryan A. Thum.