Inside Ag | February 2023

Colyer, Reagan

A Message from Dr. Bajwa

Dear Colleagues,

Early this month, we celebrated the 130th anniversary of the founding of the Agriculture College of the State of Montana, which later became Montana State University. The growth and impact MSU had and continues to have on our state and beyond in the last 130 years is simply inspiring. It is the hard work and contributions of our faculty, staff and students that got us where we are today. My sincere gratitude to all of you who make MSU an amazing place to work, and a special congratulations to the **faculty and students who received awards and were recognized on Founders Day**.

Aside from all the excitement on campus, the legislative session is ongoing and our MAES asks to the legislature are foremost in my mind. Our MAES Advisory Council played a crucial role telling our story and making a powerful case for MAES budgetary needs to the legislative committees. Our **general budget request is part of HB 2**. Aside from our base budget with an inflationary adjustment, MAES and

MSU Extension asked for new funds to support the new precision agriculture program.

Our Advisory Council presented four items to the legislative committee in support of MAES:

1. support for our new precision agriculture program,
2. base fund support for our Seed Lab and Wool Lab,
3. a higher inflationary adjustment to support MAES operations and
4. additional budget to support variety testing at research centers.

So far, the HB 2 Section E committee approved a $300K raise in our MAES budget and moving the Seed Lab and Wool Lab to base funding. Additionally, there is a present law adjustment of 6% and a pay plan of 4% raise each year of the biennium and a one-time-only bonus.

Our **capital project requests are part of HB 5**. We asked for a soil, seed and plant processing lab along with restrooms and sanitation lines to the Horticulture building as the first priority for MAES. That project is moving forward. Two of our maintenance project requests ($450K for demolition of feed mill and hay shed at BART farm and $2 million for renovation of lambing barn) are moving forward but with less money than we originally requested: $400K and $200K respectively. Our request for inflationary adjustment for Research Center labs approved in 2021 is moving forward with a $1.6M allocation instead of the $9.3M we requested, while our Wool Lab inflationary adjustment is moving forward at the requested amount.

These bills have a long way to go before they are finalized, and we will be watching. The only bill that has gone through all the processes and is ready for the Governor's signature is the academic brewing license for our researchers that was moved forward by external partners.

I am pleased to announce that **Reagan Colyer is back with us as our communications lead**, and we are able to resume our monthly newsletter. Welcome back, Reagan.

We were Aggies before we became Bobcats. Happy 130th Birthday Aggies and Bobcats!

Sreekala Bajwa

Upcoming and Recent Events

- The inaugural COA **Three-Minute Thesis Competition** is coming up on **March 30.** Contact Tracy Dougher for more information.

Awards and Recognitions

- Professor **Ed Schmidt of the MCB Department** has been awarded a Distinguished Guest Fellowship from the Hungarian Academy of Sciences for his upcoming sabbatical at the Laboratory of Redox Biology, University of Veterinary Medicine, Budapest. He will be integrating the genetically and surgically engineered mouse models he and his team have developed at MSU into advanced studies on gene regulation and metabolism. Dr. Schmidt has also been awarded research grants from the Hungarian Academy of Sciences and the Hungarian Eötvös Loránd Research Network to support the continuation of this work through 2027.
- **DAEE master's graduate Neil Silveus** recently accepted an assistant professor position at Hope College. He is currently finishing his PhD in economics at the University of Pittsburgh and will begin his new position in the fall.
- **DAEE professor Mark Anderson** recently accepted a position on the editorial board of the American Journal of Health Economics.
- **Recent graduate and former Ag Ambassador Erin Brush** was featured by the University of Montana School of Law, where she is now studying. Read UM's story about Erin here!
- Graduate students and faculty in the **LRES department** shared their research with members of the Montana Weed Control Association at the organization’s annual meeting in Helena on February 8. Dr. Lisa Rew and

graduate students Lilly Sencenbaugh, Zach Fighter, Erin Teichroew and Colter Mumford presented their research in a session on invasive annual grasses, which was organized and moderated by Drs. Jane Mangold and Lisa Rew. Noelle Orloff and Jane Mangold presented in a session on revegetation of invasive and noxious weed-infested areas, and this session was organized around a recent publication co-produced by MSU Extension and NRCS. Over 240 people attended the MWCA conference.

Earlier this month, students in the Landscape Design Course LARC 340 visited Field Studio, a local landscape architecture studio. Students are working on site design proposals for a site in Northeast Bozeman at the intersection of Cottonwood street and Ida Ave. (See photos above and below.)

New Grants

- 34 new grants were awarded to COA/MAES faculty and staff in January, totaling nearly **$2.3 million**.

COA/MAES in the news

- **DAEE's Carly Urban** was quoted in a Yahoo! article about high school financial education. Read it here!
- MSU student honored with national med lab science scholarship
- Pair of graduate students accepted to USDA Future Leaders program
- MSU economists to lead economic outlook briefings in Eastern Montana
- MSU teams place first and second at inaugural Ag-Tech summit

- MSU announces finalists for inaugural agritourism fellowship program

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Announcements

- The dean's office is hiring to fill an **Admin Associate IV** position. Applicant screening begins **March 13**, and you can find the job posting here. Feel free to share if you know someone who might be interested!
- The Montana Agricultural Business Association's **Pam Langley Memorial Scholarship** is open for student applications until **May 13**. Three $2000 scholarships will be awarded to students in pursuit of post-secondary education. You can learn more and find the application here.

Funding Opportunities

- MDA Specialty Crop Block Grant Program: Submission Deadline 3/17/23 (Technical Assistance via Zoom 3/8/23 - follow link for details)
- NASA Research Initiation Grant Program: Submission Deadline 3/24/23
- USDA Organic Agriculture Research and Extension Initiative: Deadline 4/13/23
- USDA Gus Schumacher Nutrition Incentive Program: Final Deadline 5/4/23
- NSF Plant Genome Research Program: 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

A Note from the Communication Director: It's so wonderful to be back with the College of Ag and MAES! Thank you for the kind messages and for your patience as I've (re)adjusted to my position. As always, 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, so keep that in mind.

Recent Publications

- A genetically encoded far-red fluorescent calcium ion biosensor derived from a biliverdin-binding protein, *Protein Science:* Rina Hashizume, Hajime Fujii, Sohum Mehta, Keisuke Ota, Yong Qian, Wenchao Zhu, Mikhail Drobizhev, Yusuke Nasu, Jin Zhang, Haruhiko Bito, Robert E. Campbell
- A naturalist perspective of microbiology: Examples from methanogenic archaea, *Environmental Microbiology:* Eric S. Boyd, Rachel L. Spietz, Manjinder Kour, Daniel R. Colman
- Alfalfa Weevil (Coleoptera: Curculionidae) Resistance to Lambda-cyhalothrin in the Western United States, *Journal of Economic Entomology:* E. A. Rodbell, M. L. Hendrick, I. M. Grettenberger, Wanner K. W.
- Anti-CRISPR proteins function through thermodynamic tuning and allosteric regulation of CRISPR RNA-guided surveillance complex, *Nucleic Acids Research*: Angela Patterson, Aidan White, Elizabeth Waymire, Sophie Fleck, Sarah Golden, Royce A. Wilkinson, Blake Wiedenheft, Brian Bothner
- Barriers and Opportunities: Specialty Cultivated Mushroom Production in the United States, *International Journal of Environmental Research and Public Health:* Alexandria Moxley, Roland Ebel, Cathy L. Cripps, Caroline G. Austin, Mary Stein, Meaghan Winder
- Climate disequilibrium dominates uncertainty in long-term projections of primary productivity, *Ecology Letters:* Andrew J. Felton, Robert K. Shriver, Michael Stemkovski, John B. Bradford, Katharine N. Suding, Peter B. Alder
- Climate mitigation potential and soil microbial response of cyanobacteria-fertilized bioenergy crops in a cool semi-arid cropland, *GBP Bioenergy*: Justin D. Gay, Hannah M. Goemann, Bryce Currey, Paul C. Stoy, Jesper Riis Christiansen, Perry R. Miller, Benjamin Poulter, Brent M. Peyton, E. N. Jack Brookshire
- Deep-branching acetogens in serpentinized subsurface fluids of Oman, *Proceedings of the National Academy of Sciences*: Daniel R. Colman, Emily A. Kraus, Patrick H. Thieringer, Kaitlin Rempfert, Alexis S. Templeton, John R. Spear, Eric S. Boyd
- Effectiveness, economics, and safety of drop nets and helicopters with net-gunning for capturing white-tailed deer, *Wildlife Society Bulletin*: Jared T. Beaver, Chad Grantham, M. L. Cooksey, Kevin Skow, Brian L. Pierce, Roel R. Lopez
- Effects of Maternal Protein Supplementation at Mid-Gestation of Cows on Intake, Digestibility, and Feeding Behavior of the Offspring, *Animals*: Karolina Batista Nascimento, Matheus Castilho Galvão, Javier Andrés Moreno Meneses, Gabriel Miranda Moreira, German Darío Ramírez-Zamudio, Stefania Priscilla de

Souza, Ligia Dias Prezotto, Luthesco Haddad Lima Chalfun, Marcio de Souza Duarte, Daniel Rume Casagrande, Mateus Pies Gionbelli

- Food Aid Cargo Preference: Impacts on the Efficiency and Effectiveness of Emergency Food Aid Programs, *The Journal of Law and Economics*: Philip G. Hoxie, Stephanie Mercier, Vincent H. Smith
- Functional genomics analysis identifies loss of HNF1B function as a cause of Mayer-Rokitansky-Kuster-Hauser syndrome: *Human Molecular Genetics*: Ella Thomson, Minh Tran, Gorjana Robevska, Katie Ayers, Jocelyn van der Bergen, Prarthna Gopalakrishnan Bhaskaran, Eric Hann, Sivia Gereghini, Alla Vash-Margita, Miranda Margetts, Alison Hensley, Quan Nguyen, Andrew Sinclair, Peter Koopman, Emanuele Pelosi
- Genome sequence, phylogenetic analysis, and structure-based annotation reveal metabolic potential of Chlorella sp. SLA-04, *Algal Research*: Calvin L. C. Geomann, Royce Wilkinson, William Henriques, Huyen Bui, Hannah M. Geomann, Ross P. Carlson, Sridhar Viamajala, Robin Gerlach, Blake Wiedenheft
- Geography, Geology, and Regional Economic Development, *Journal of Environmental Economics and Management*: Kevin Berry, Alexander James, Brock Smith, Brett Watson
- Identification of SNP Markers Associated with Grain Quality Traits in a Barley Collection (Hordeum vulgare L.) Harvested in Kazakhstan, *Agronomy*: Yuliya Genievskaya, Shyryn Almerekova, Saule Abugalieva, Vladimir Chudinov, Thomas Blake, Aigul Abugalieva, Yerlan Turuspekov
- Impacts of Dam Age on Lifetime Productivity of Angus Replacement Beef Females, *Animals*: Krista R. Wellnitz, Cory T. Parson, Julia M. Dafoe, Darrin L. Boss, Samuel A. Wyffels, Timothy DelCurto, Megan L. Van Emon
- Metaomics unveils the contribution of Alteromonas bacteria to carbon cycling in marine oxygen minimum zones, *Frontiers in Marine Science*: Carlos Henríquez-Castillo, Alvaro M. Plominsky, Salvador Ramírez-Flandes, Anthony D. Bertagnolli, Frank J. Stewart, Osvaldo Ulloa
- Microbes and the fate of neutrophils, *Immunological Reviews*: Scott D. Kobayashi, Frank R. DeLeo, Mark T. Quinn
- Modeling human telencephalic development and autism-associated SHANK3 deficiency using organoids generated from single neural rosettes, *Nature Communications*: Yueqi Wang, Simone Chiola, Guang Yang, Chad Russell, Celeste J. Armstrong, Yuanyuan Wu, Jay Spampanato, Paisley Tarboton, H. M. A. Ullah, Nicolas U. Edgar, Amelia N. Chang, David A. Harmin, Vittoria D. Bocchi, Elena Vezzoli, Dario Besusso, Jun Cui, Elena Cattaneo, Jan Kubanek, Aleksandr Shcheglovitov

- Mortality by ribosomal sequencing (MoRS) provides a window into taxon-specific cell lysis, *The ISME Journal*: Kevin X. Zhong, Jennifer F. Wirth, Amy M. Chan, Curtis A. Suttle
- Norepinephrine transporter defects lead to sympathetic hyperactivity in Familial Dysautonomia models, *Nature Communications*: Hsueh-Fu Wu, Wenxin Yu, Kenyi Saito-Diaz, Chia-Wei Huang, Joseph Carey, Frances Lefcort, Gerald W. Hart, Hong-Xiang Liu, Nadja Zeltner
- Pathogen spillover driven by rapid changes in bat ecology, *Nature*: Peggy Eby, Alison J. Peel, Andrew Hoegh, Wyatt Madden, John R. Giles, Peter J. Hudson, Raina K. Plowright
- Replacing fallow with field pea in wheat production systems across western Nebraska, *Agronomy Journal*: Samuel T. Koeshall, Amanda C. Easterly, Rodrigo Welre, Strahinja Stephanovic, Cody F. Creech
- Selection of favorable alleles of genes controlling flowering and senescence improves malt barley quality, *Molecular Breeding*: Burcu Alptekin, Mohammad Erfatpour, Dylan Mangel, Duke Pauli, Tom Blake, Hannah Turner, Jennifer Lachowiec, Jamie Sherman, Andreas Fischer
- Soil bacterial community response to cover crops, cover crop termination, and predicted climate conditions in a dryland cropping system, *Frontiers in Sustainable Food Systems*: Tindall Ouverson, Darrin Boss, Jed Eberly, Tim Seipel, Fabian D. Menalled, Suzzane Ishaq
- Terrorism and political attitudes: Evidence from European social surveys, *Regional Science and Urban Economics*: Giovanni Peri, Daniels I. Rees, Brock Smith
- The autophagic protein p62 is a target of reactive aldehydes in human and murine cholestatic liver disease, *PLOS One*: Colin T. Shearn, Aimee L. Anderson, Michael W. Devereux, David J. Orlicky, Cole Michel, Dennis R. Petersen, Colin G. Miller, Sanjiv Harpavat, Edward E. Schmidt, Ronald J. Sokol
- Viruses in Subsurface Environments, *Annual Review of Virology*: Jennifer Wirth, Mark Young
- Wax Blends as Tunable Encapsulants for Soil-Degradable Electronics, *ACS Applied Electronic Materials*: Madhur Atreya, Gabrielle Marinick, Carol Baumbauer, Karan Vivek Dikshit, Shangshi Liu, Charlotte Bellerjeau, Jenna Nielson, Sara Khorchidian, Abigail Palmgren, Yongkun Sui, Richard Bardgett, David Baumbauer, Carson J. Bruns, Jason C. Neff, Ana Claudia Arias, Gregory Whiting