

## CAMPUS REPORT

**DATE:** October 25, 2017  
**TO:** Board of Regents  
**FROM:** Donald M. Blackketter, Chancellor, Montana Tech  
**RE:** Campus Report for the November 16, 2017 Board of Regents Meeting

### STUDENT ACHIEVEMENT

- Geological Engineering grad students Kyle Eastman and Margaret Doolittle teamed up with Dr. Gammons and others on a paper entitled "The Mount Evans gossan: a source of natural acid rock drainage and a possible source of metals and sulfur for the Butte porphyry-lode orebodies" which was published in the 2017 volume of Northwest Geology.

### FACULTY EFFORTS

- Dr. Courtney Young, Dr. Avimanyu Das, Mr. Gary Wyss and Mr. Prince Sarfo published a paper in Waste Management entitled "Recovery of metal values from copper slag and reuse of residual secondary slag" on Oct 5, 2017. Courtney is Dept Head and Lew S. Prater Distinguished Prof of M&ME, Das will be Associate Prof in M&ME, and Gary is Analytical Specialist for CAMP. Prince was a MS student in M&ME for this work but is now a MatSci PhD Student.
- Dr. Katherine Zodrow, Environmental Engineering, presented a talk, "Water Treatment Technologies for Mine Waste Remediation and Metals Recovery," at the MUS Materials Science Program Annual Meeting Symposium on September 8<sup>th</sup>. The talk included the work of Environmental Engineering graduate students Eric Hull and Christina Eggenesperger.
- Dr. Suzan Gazioglu, Professor of Statistics, served on the Program Committee for the World Education Day-2017 Conference in Dalian-China.
- Dr. Waleed Al-Rawashdeh, Associate Professor of Mathematics, is the author of the peer-reviewed papers: "Generalized Composition Operators on Weighted Hilbert Spaces of Analytic Functions", *Int. J. Advanced Research in Mathematics*, Vol10 (2017); and "Direct and Reverse Carleson Conditions on Generalized Weighted Bergman-Orlicz Spaces", *Analysis in Theory and Applications*, Vol33 (2017).
- Dr. Gazioglu also gave an invited talk titled "Techniques and Tools for Teaching Statistics Online" and co-chaired the Online education, Smart Education and Distance Education Forum at the World Education Day-2017 Conference (Sept 27-29).
- Dr. Chris Gammons collaborated with M.S. student Nick Allin on two papers and two presentations at the 2017 SGA (Society for Geology Applied to Mineral Deposits) meeting in Quebec City in August. The titles were: 1) "Stability of Fe(III) chloride complexes and hematite solubility to 300°C: Applications to the origin of IOCG deposits" and 2) "Reduction of arsenite and sulfate by elemental copper, nickel and cobalt: implications to the formation of arsenide minerals in low temperature hydrothermal deposits".
- Recent faculty efforts from the Civil Engineering Program reflect Dr. Liping Jiang's publishable paper titled, "Refuge Lake Reclassification in 620 Minnesota Cisco Lakes under Future Climate Scenarios." Dr. Kishor Shrestha's two publishable papers titled, "Quality of Road Maintenance Works Performed by State Force versus Private Contractors in Nevada" and, "Carbon Dioxide Emissions by the Transportation Section and its Impact on Health in the Kathmandu Valley, Nepal." In addition, Dr. Brian Kukay was part of a 13-person ASCE/SEI Blue Ribbon Panel team who recently completed a review of the proposed ASCE/SEI Manual of Practice: Structural Fire Engineering. Kukay will also be contributing

to a special project of the ASCE/SEI Committee, on the Performance of Wood Construction, used to improve the quality of light-frame wood construction in the United States. Mr. Matt Egloff completed US Shooting's Safe Sport Policy Training. In 2012 The US Olympic and US Paralympic created the Safe Sport Policy and Training to improve athlete safety across the US Olympic Committee's (USOC's) 47 National Governing Bodies (NGBs). Mr. Larry Hunter led a six student team to a second place finish in a design build competition. The students were Chance Sparrow, Cody Wiers, Daniel Van Dyk, Chris Liebel, and James Cutler

- Dr. Henrietta Shirk, the Writing Program, presented a paper at the Annual Conference of the Rocky Mountain Modern Language Association in Spokane, Washington, titled "Elizabeth Bisland's 1889-1890 Journey Around the World." Dr. Shirk also presented a paper at the Ivan Doig Symposium held at MSU in Bozeman titled "Searching for 'The West' in Ivan Doig's Winter Brothers.
- Dr. Robert Pal, Assistant Professor of the Biological Science delivered an oral presentation (Ecological impact of cheatgrass at home and away?), at the Annual Meeting of the Ecological Society of America in Portland, Oregon.

Dr. Robert Pal, Assistant Professor of the Biological Science was an invited speaker at the International Congress of Ecology in Beijing (China) where he delivered an oral presentation (Exploring exotic plant invasions on a biogeographic scale).

- Dr. Robert Pal, Assistant Professor of the Biological Science published a per-reviewed paper in GENETIC RESOURCES AND CROP EVOLUTION in the frame of an international collaboration (authors: Rita Filep, Lajos Balogh, Viktória Lilla Balázs, Ágnes Farkas, Robert W Pal, Szilvia Czigle, Dóra Czégényi, Nóra Papp), entitled: *Helianthus tuberosus L. agg. in the Carpathian Basin: A blessing or a curse?*

## MONTANA BUREAU OF MINES AND GEOLOGY ACTIVITY

- MBMG Mining Archives Manager, Margaret Delaney and Library Tech III Data Preservation, Anthony Roth, attended the 2017 USGS/AASG Data Rescue and Preservation Workshop, September 26-28, 2017 in Salt Lake City, Utah.
- MBMG held the 2017 Mining and Mineral Symposium October 11-14, 2017. The Symposium featured two field trips, two-days of academic and scientific presentations, a student poster competition, and several evening gatherings. Nearly 80 people attended and included geologists, mining engineers, mineralogists, and students. The poster competition featured entries from eight Montana Tech students and one student from both Colorado State University and the Colorado School of Mines.
- MBMG Economic Geologist, Stan Korzeb, Museum Assistant, John Foley and Montana Tech Emeritus Professor, Dr. Pete Knudsen prepared a mineral display for the Denver Gem and Mineral shows on September 8 - 17, 2017.
- MBMG Geologist, Dr. Kaleb Scarberry, served on University Colorado State student Phil Dalhof and Jack McCane master thesis committee.
- MBMG Hydrogeologist, Dr. Elizabeth Meredith, presented **Characterizing Water Around Oil and Gas Resources** at Montana State University Earth Sciences Seminar in Bozeman, Montana on September 14, 2017.
- MBMG Hydrogeologist, Dr. Elizabeth Meredith, presented **The Energy, Water, and Agriculture Nexus: The Eastern Montana Experience** at the Pacific Economic Cooperation Council (PECC)

International Project 2017-2018: Sustainable Development and Circular Economy Seminar 1: Natural Resources Industry – Mining, Forestry, Oil & Gas in Bozeman, Montana on September 20, 2017.

- MBMG Director of Earthquake Studies, Michael Stickney was invited to present **Montana Pre-Disaster Mitigation Plan** to the Montana Disaster and Emergency Services of the Department of Military Affairs on September 13 and October 4, 2017.
- MBMG Hydrogeologist, Jeremy Crowley presented **Drone Usage** at the Montana Bureau of Mines and Geology Brown Bag Lunch Series in Butte, Montana on September 27, 2017.
- MBMG Publications Editor, Susan Barth presented **How to Prepare Reports to Give to Publications** at the Montana Bureau of Mines and Geology Brown Bag Lunch Series in Butte, Montana on October 18, 2017.
- MBMG Economic Geologist, Stan Korzeb presented **Silver Mineralization of the Oro Fino Mining District, Deer Lodge County, Montana** at the Colorado Mineral and Fossil Lecture Series in Denver, Colorado on September 12, 2017.
- MBMG Economic Geologist, Stan Korzeb and Geologist Dr. Kaleb Scarberry presented a poster **Timing of Mineralization Related to Emplacement of the Boulder Batholith** at the 2017 MBMG Mining and Mineral Symposium at Montana Tech, Butte, Montana on October 13, 2017.
- MBMG Geologist, Jeff Lonn led a guided field trip along the Bitterroot Fault along the Coyote Coulee Trail South of Hamilton, Montana on September 30, 2017.
- MBMG Geologist, Dr. Kaleb Scarberry, led a guided field trip of the mineralized eastern margin of the Boulder Batholith for 25 Mining and Mineral Symposium Conference attendees. The trip included a tour of the Golden Sunlight mine northeast of Whitehall, Montana on October 14, 2017.
- MBMG Geologist, Dr. Kaleb Scarberry, coordinated and attended Continental Pit Mine Tour with a group of Economic Geology students from Colorado State University in Butte, Montana on October 3, 2017.
- MBMG Data Systems Manager II, Luke Buckley presented **Montana: Ground Water Information Center–The Water Well Record Database for the State of Montana** at the National Ground Water Association's (NGWA) Virtual Conference on October 11, 2017.
- MBMG Data Systems Manager II, Luke Buckley had an abstract **User-Centered Design: Best Practices to Effectively Deliver Montana Surface-Water Data** published in the Program for the 2017 Annual Meeting, Montana Chapter, American Water Resources Association Abstracts with Programs, October 18 – 20, 2017.
- MBMG Hydrogeologist, Dr. Elizabeth Meredith had an abstract **Characterizing Water Resources Around Oil and Gas Development** published in the Program for the 2017 Annual

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- MBMG Ground Water Assessment Program Manager, John LaFave and Hydrogeologist Thomas Patton had an abstract **Montana in the National Ground-water Monitoring Network** published in the Program for the 2017 Annual Meeting, Montana Chapter, American Water Resources Association Abstracts with Programs, October 18 – 20, 2017.
- MBMG Hydrogeologist, Andrew Bobst had an abstract **Effects of Beaver Mimicry Restoration on Stream Flows, Riparian Groundwater Levels, and Water Temperatures** published in the Program for the 2017 Annual Meeting, Montana Chapter, American Water Resources Association Abstracts with Programs, October 18 – 20, 2017.
- MBMG Hydrogeologist, Camela Carstarphen had an abstract **Groundwater Quality of the Intermountane Basins, Gallatin, and Madison Counties, Southwest Montana** published in the Program for the 2017 Annual Meeting, Montana Chapter, American Water Resources Association Abstracts with Programs, October 18 – 20, 2017.
- MBMG Professional Scientist, Matthew Berzel had an abstract **Tracking Potential Leakage of Tailing Lake Water into Background Groundwater in Butte, Montana, using Geochemical and Stable Isotope Tracers** published in the Program for the 2017 Annual Meeting, Montana Chapter, American Water Resources Association Abstracts with Programs, October 18 – 20, 2017.
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- MBMG Emeritus Research Geologist, Dr. Dick Berg presented **New Concepts in Understanding Montana Sapphire Genesis** at the 2017 MBMG Mining and Mineral Symposium at Montana Tech in Butte, Montana on October 12, 2017.
- MBMG GIS Specialist, Paul Thale and Undergrad student in Geophysical Engineering, Christopher Smith presented **Identification of Areas Susceptible to Ground Subsidence Due to Mine Drift or Shaft Collapse in Butte, MT** at the 2017 MBMG Mining and Mineral Symposium at Montana Tech in Butte, Montana on October 13, 2017.
- MBMG Emeritus Research Geologist, Dr. Dick Berg presented **Sapphire Deposits along the Missouri River near Helena, Montana** at the Montana Crystal Collectors event in Bozeman, Montana on October 7, 2017.
- MBMG Geologist, Phyllis Hargrave presented **MBMG's Abandoned and Inactive Mines Inventory and Sampling Program - 8000 Mines and So Little Time** at the 2017 MBMG Mining and Mineral Symposium at Montana Tech, Butte, Montana on October 13, 2017.
- The Director of the Montana Bureau of Mines and Geology and State Geologist, Dr. John Metesh presented **History of Butte Mine Flooding** at the 2017 MBMG Mining and Mineral Symposium at Montana Tech, Butte, Montana on October 13, 2017.
- MBMG Geologist, Dr. Kaleb Scarberry presented **Eocene Ignimbrite Flare-up in Montana: Timing and Style of Emplacement of the Lowland Creek Volcanic Field** at the 2017 MBMG Mining and Mineral Symposium at Montana Tech, Butte, Montana on October 12, 2017.
- MBMG Geologist, Dr. Jesse Mosolf presented **Using Your Smartphone for Field Work** at the 2017 MBMG Mining and Mineral Symposium at Montana Tech, Butte, Montana on October 12, 2017.
- MBMG Hydrogeologist, Alan English presented **Pharmaceuticals & Other Organic Wastewater Contaminants in Source Waters** at the 84th Annual Fall Water School for Water & Wastewater Operators & Managers in Bozeman, Montana on October 10, 2017.
- MBMG Hydrogeologist, Alan English presented an **Update on Monitoring Activities** at the Technical Oversight Committee of Yellowstone Controlled Groundwater Area at the Yellowstone Science Center in Gardiner, Montana on October 11, 2017.
- MBMG Professional Scientist, Matthew Berzel presented a poster **Identifying Environmental Tracers Using Water Chemistry and Stable Isotopes, Moulton Road Area, Butte, Montana** at the 2017 MBMG Mining and Mineral Symposium at Montana Tech, Butte, Montana on October 13, 2017.

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- MBMG Economic Geologist, Stan Korzeb presented **Silver Mineralization of the Oro Fino Mining District, Deer Lodge County, Montana** at the Colorado Mineral and Fossil Lecture Series in Denver, Colorado on September 12, 2017.
- The Montana Bureau of Mines and Geology released Open-File Report 697: *Stratigraphic cross section of Mississippian through lower Cretaceous rocks, northern Montana disturbed belt to Williston Basin, Montana* by Geologist Jay Gunderson, and Lloyd C. Furer; Open-File Report 693: *Geologic map of the Gravely Mountain 7.5' quadrangle, Powell County, Montana* by Geologist, Dr. Jesse Mosolf and Susan Vuke; Hydrogeologic Map 11: *Principal Aquifers of Montana* by Hydrogeologist Jeremy Crowley, John LaFave, Robert Bergantino, Camela Carstarphen and Thomas Patton; Geologic Map 70: *Geologic map of the Lincoln Gulch 7.5' quadrangle, southwestern Montana* by Geologist Dr. Colleen Elliott.