

## CAMPUS REPORT

**DATE:** December 20, 2019  
**TO:** Board of Regents  
**FROM:** Les P. Cook, Chancellor, Montana Technological University  
**RE:** Campus Report for January, 2020 Board of Regents Meeting

## STUDENT ACHIEVEMENT

- Benjamin Suslavich received first place on The Minerals, Metals, & Materials Society (TMS) Best Paper Contest – Undergraduate Division for his paper entitled “Synthesis and Characterization of the Hydroxamic Acid N, 3-aihydroxy-2-naphthamide and its Copper (II) Complex – An Investigation on Keto/Enol Forms and Rare Earth Flotation.” Ben did the work under the guidance of Dr. Courtney Young and Dr. Rick LaDouceur.
- Sowmya Sudhakar, MS student in General Engineering – Mechanical Engineering Option was chosen as an Office of the Commissioner of Higher Education Research Fellow for Spring 2020. During her fellowship, Ms. Sudhakar will work with Deputy Commissioner Brock Tessman and the Academic, Research, & Student Affairs leadership team on an initiative that is relevant to student mental health and wellness and development of a Montana science and technology plan. Ms. Sudhakar will earn academic credit and a stipend.
- Lane Huston and Emily Kooistra-Manning (both MS students in General Engineering – Mechanical Engineering Option) received the honor of Editor’s Pick and Most Read in the Journal, along with earning the second overall attention-getting score of any article published in the journal for their publication entitled, “Combined Electrostatic and Air Driven Electrospinning for Biomedical Applications,” in the Journal of Vacuum Science and Technology B. Senior authors included Dr. Jack Skinner, Mechanical Engineering Department Head and Assistant Professor, and Dr. Jessica Andriolo, Postdoctoral Research Associate in Mechanical Engineering. This work was funded by CCDC Army Research Laboratory and the Slater Family Research Trust.

## FACULTY EFFORTS

- Dr. Beverly Hartline, Vice Chancellor for research and Dean of the Graduate School and Dr. Abhishek Choudhury in Mining Engineering visited Guinea to follow up on a partnership with the Guinean Ministry of Mining and Geology to enroll ministry personnel in graduate programs at Montana Tech. They visited the ministry, its national research lab, the Guinean School of Mines in Boke, and three bauxite mining operations.
- Dr. Beverly Hartline also presented invited talks on grant writing and women in science and engineering at an international conference on physics and economic development hosted by the University of Dschang in Cameroon. She also visited a new university in Yaoundé, Cameroon, which was founded this year by a Montana Tech alumna and has several 2-year degree programs that match Montana Tech’s bachelor’s programs.

- Dr. Marisa Pedulla named a Fellow of the American Association for the Advancement of Science (AAAS). New Fellows will be presented an award that will be bestowed on February 15, 2020 at the association's annual meeting in Seattle, Washington.
- Dr. Daqian (DJ) Jiang, Assistant Professor, Environmental Engineering was awarded an USDA-NIFA grant (\$496,771) as the lead investigator. The co-PI is Dr. Gary Icopini from MBMG. The project is titled, 'Solar-Powered Bio-Electrochemical Denitrification: Further Engineering Development and Mechanism Studies'.
- Dr. Daqian (DJ) Jiang, Assistant Professor, Environmental Engineering presented a poster at the American Geophysical Union Fall Meeting in San Francisco, CA entitled: The Stock of Poly-and Perfluoroalkyl Substances in California Carpet and the Associated Emissions. December 9-13, 2019.
- Dr. Daqian (DJ) Jiang, Assistant Professor, Environmental Engineering presented a poster at the American Geophysical Union Fall Meeting in San Francisco, CA entitled: Account of the Energy and Resource Potential in US's Non-Hazardous Industrial Waste: Past, Present, and Future. December 9-13, 2019.
- Dr. Jessica Andriolo, Postdoctoral Research Associate in Mechanical Engineering, published an article in the Journal of Vacuum Science and Technology B entitled, "Bulk and Localized Plasmonic Heating in Nanogold Doped Polymers." Co-authors on the work included McKenzie L. Joseph, MS student in Mechanical Engineering, and senior author Dr. Jack Skinner, Mechanical Engineering Department Head and Associate Professor. This work was funded by the National Science Foundation Established Program to Stimulate Competitive Research and CDC Army Research Laboratory.
- A figure from the article entitled "Bulk and Localized Plasmonic Heating in Nanogold Doped Polymers" from the Journal of Vacuum Science and Technology B was featured as the cover art for Volume 37, Issue 6 of the journal. The article was authored by Dr. Jessica Andriolo, Postdoctoral Research Associate in Mechanical Engineering. Co-authors on the work included McKenzie L. Joseph, MS student in Mechanical Engineering, and senior author Dr. Jack Skinner, Mechanical Engineering Department Head and Associate Professor.
- Dr. Katie Hailer, Chemistry and Geochemistry Department Head and Associate Professor was chosen to receive a Seed Funding Grant for the Established Program to Stimulate Competitive Research (EPSCoR). Dr. Hailer will be working to improve the environmental impact of the metals extraction process through the application of nanotechnology. The grant will cover one year of funding and provide pay for one undergraduate researcher. Dr. Hailer will be working in collaboration with other EPSCoR-funded researchers including Dr. Jerry Downey, Metallurgical and Mining Department Head and Professor, Dr. Jack Skinner, Mechanical Engineering Department Head and Associate Professor, and Dr. Jessica Andriolo, Postdoctoral Research Associate in Mechanical Engineering.

- Hydrogeologist C. Carstarphen attended the American Water Resources Association Annual Meeting and presented *Montana's Precipitation Isotope Network (MTPIN): data and a year's worth of lessons*, November 4-6, Salt Lake City Utah.
- Hydrogeologist R. Breitmeyer attended the American Society of Agronomy, Crop Science Society of America, Soil Science Society of America International Annual Meeting, and moderated a session on *Use and Abuse of Empirical and Physical Models in Soil Physics, Hydrology and Geo-Engineering from Pore to Landscape Scales*, November 10-13, San Antonio, Texas.

MBMG guest lectures and other educational outreach efforts:

- Data Scientist L. Buckley presented *Data Science: Building Collaborations on a 25-year Foundation* at the Computer Science Department–Freshman Seminar, Montana Tech, Butte, MT.
- Hydrogeologist C. Thomson presented *The Berkeley Pit: Chemistry Changes and Sampling Challenges*, Montana Tech Chemistry and Geochemistry Seminar, November 6, Butte, MT.
- Hydrogeologist J. Berglund presented *Academic and Career Path of an Early Career Hydrogeologist* at MSU's Senior Environmental Science Seminar, December 6, Bozeman, MT.
- Geologist M. Stickney was interviewed by Distinctly Montana Magazine for an article titled *Montana in 30 Years: Earthquakes*; <https://www.distinctlymontana.com/people-place>
- Geologist K. McDonald presented "Precambrian and Cambrian quartzites in the Pioneer Mountains: Progress unraveling the messy stratigraphy using new mapping, trace fossils, and detrital zircon data" at MSU's Earth Sciences Fall Seminar Series, December 5, Bozeman, MT.
- Geologists and Hydrogeologists at MBMG's Billings office hosted a Skyview High School student interested in geology as a career for ½ day job shadow, December 11, Butte, MT.
- Geologist S. Korzeb was interviewed about economic geology and mining for the KBMF radio station series "Let's Talk Butte," Nov. 4 Butte MT.
- Hydrogeologist J. Berglund presented a lunch-time seminar, *Geology of the Moon*, at Montana Tech, November 5, Butte, MT.

MBMG committee and public meeting participation:

- Hydrogeologist G. Icopini and Research Division Chief M. Gotkowitz attended the U.S. Forest Service's Beal Mountain Mine Technical Working Group Meeting. December 3, Butte, MT.
- Geologist M. Stickney guided the designation of MBMG's Montana Regional Seismic Network as a partner-member of the U.S. Geological Survey's Advanced National Seismic System, [https://www.usgs.gov/natural-hazards/earthquake-hazards/anss-advanced-national-seismic-system?qt-science\\_support\\_page\\_related\\_con=4#qt-science\\_support\\_page\\_related\\_con](https://www.usgs.gov/natural-hazards/earthquake-hazards/anss-advanced-national-seismic-system?qt-science_support_page_related_con=4#qt-science_support_page_related_con)
- Hydrogeologist C. Carstarphen attended the U.S. Forest Service Region 1 Hydrology, soils, and fish annual meeting, November 3, Missoula, MT.
- Hydrogeologists James Rose and Ron Breitmeyer presented the Groundwater Investigation Program Upper Gallatin River Corridor project at a public meeting, December 11, Big Sky, MT. Hydrogeologist M. Richter also participated in the meeting: <https://www.explorebigsky.com/water-wisdom-gallatin-canyon-groundwater-study-to-impact-water-management/32173>

Publications by MBMB scientists, including those published by the MBMG:

- Korzeb, Stanley L., 2019, Interpretations of new and previous lead isotopic data for Late Cretaceous to Eocene satellite intrusions, Butte granite, volcanic rocks, and base metal veins of the Boulder Batholith, southwestern Montana: MBMG Bulletin 139, 40 p.
- Lonn, J.D., Elliott, C.G., Stewart, D.E., Mosolf, J.G., Burmester, R.F., Lewis, R.S., and Pearson, D.M., 2019, Geologic map of the Bannock Pass 7.5' quadrangle, Beaverhead County, Montana, and Lemhi County, Idaho: MBMG Geologic Map 76, 1 sheet, scale 1:24,000.
- Chandler, K., and Reiten, J., 2019, South Medicine Lake area of the Clear Lake aquifer: Groundwater Model report: MBMG Open-File Report 720, 72 p.
- Duaiame, T.E., Thale, P.R., and Thomson, C.J., 2019, Where has the water gone?: Destinations where water samples from the Berkeley Pit and Horseshoe Bend have been sent for treatability studies and research purposes: MBMG Open-File Report 721, 1 sheet.
- Bergantino, R.N., 2019, Structure contour lines of the Ekalaka area, MBMG Open-File Report 722, 1 sheet, scale 1:250,000.
- Bergantino, R.N., 2019, Structure contour lines of the Billings area, MBMG Open-File Report 723, 1 sheet, scale 1:250,000.
- Lonn, J.D., 2019, 2020 MBMG Calendar: Trapper Peak, Bitterroot Mountains: MBMG Miscellaneous Publications and Maps 67.
- Breitmeyer, R.J., Benson C.H., Edil, T.B. (Forthcoming). Effect of Changing Unit Weight and Decomposition on Unsaturated Hydraulics of Municipal Solid Waste in Bioreactor Landfills. *Journal of Geotechnical and Geoenvironmental Engineering*. 10.1061/(ASCE)GT.1943-5606.0002244.

## CAMPUS HAPPENINGS

- Sarah Raymond, Director of Career Services received an Outstanding Service Award from the Mountain Pacific Association of College and Employers (MPACE) at their annual conference in December 2019
- Amy Verlanic, the executive director of Montana Tech's Institute for Educational Opportunities, received the Butte Local Development Corporation's Educator of the Year Award at their annual dinner and awards ceremony on December 5, 2019.
- Montana Technological University Chancellor Dr. Les Cook announced the hiring of Dr. Steve Gammon as the provost and vice chancellor for academic affairs. Gammon will replace Dr. Douglas Abbott, who served in the role since January of 2007. Dr. Abbott will return to teaching in the Business & Information Technology Department at Montana Tech.