

CAMPUS REPORT

DATE: August 7, 2015
TO: Board of Regents
FROM: Donald M. Blackketter, Chancellor, Montana Tech
RE: Campus Report for the September 16-17, 2015 Board of Regents' Meeting

STUDENT ACHIEVEMENT

- Alicia Kastelitz (Sr., Petroleum) presented a talk at a meeting of the American Petroleum Institute (API) standards task group, SG13TG10, that focusses on testing procedures for proppant for hydraulic fracturing operations. Her talk, co-authored with Rachael Wilford, (Postbac, Petroleum) was titled "Application of Automated Optical Particle Size Analyzer." The presentation prompted the group to initiate an inter-laboratory study to evaluate the technology. It is expected that Montana Tech will be a part of that effort.
- Student Jesse L. Bowden and Professor Courtney Young co-wrote a paper which was recognized as one of the best at the Copper Cobalt Africa Conference in Livingstone/Victoria Falls, Zambia. It will be republished from the conference proceedings in the Journal of Southern African Institute of Mining and Metallurgy (SAIMM).
- Dr. Pat Munday and interdisciplinary MS candidate Shanny Spang-Gion were selected to participate in the Indigenous Knowledge Field Camp hosted by the University of Idaho and the Nez Perce Tribe for August 2015.

FACULTY EFFORTS

- Dr. Henrietta Shirk, Associate Professor of Professional and Technical Communication, was invited to present a paper entitled "Taking the Waters": Historical Recovery of a Lost Hot Springs, at the Association for the Study of Literature and Environment's Eleventh Biennial Conference in Moscow, Idaho, in June. Dr. Shirk also chaired a session "Underground Waters? Aquifers, Aesthetics, and Politics" at this conference.
- The Health Care Informatics Department graduated its first students supported through the Rural Health IT Workforce Program by offering a course in "advanced reporting from health care databases" this Summer. These students earned Montana Tech's Health Information Technology certificate funded by the Health Resources and Services Administration's Rural Health IT Workforce Program. Montana Tech is one of a limited number of Universities educating students in association with this program.
- The Montana Tech Library would like to report its institutional repository, Digital Commons, had 18,500 full text downloads during Fiscal Year 2014-2015. These downloads were from over 75 countries. Dr. Jack Skinner and his students had the most downloaded paper with 703 downloads for the year. The paper is titled, "Analytical Parametric Model Used to Study the Influence of Electrostatic Force on Surface Coverage During Electrospinning of Polymer Fibers." Joshua Beisel, Jerry Kyeremateng, Lance Purkett, Jessica Andriolo, and Jack L. Skinner.
- Geophysical Engineering Lab Instructor John Getty has been awarded a contract to provide analytical services to a USGS project for evaluation of material for use as proppant. The material is sourced from deposits within the State of Nebraska in an effort to locate proppant grade sand. This work is similar to the Survey of Native Proppant (SNaP), funded by the Montana Board of Oil and Gas and being conducted by the Montana Bureau of Mines and Geology and the Montana Tech Department of Geophysical Engineering.
- Dr. Scott Risser, Associate Professor of Psychology, was invited to present his paper *Examining Psychopathic Affective Traits in Non-Adjudicated Samples*, at the XXXIVth International Congress of Law and Mental Health in Vienna, Austria in July.
- Dr. Pat Munday, Professor of Science & Technology Studies (Professional and Technical Communication Department), delivered a seminar on research methods, conducted an environmental tour, and led field work sessions for high school students from the Yellowstone English & Environmental Studies Program International. The students — who came from China, South Korea, and Taiwan — stayed at Montana Tech while studying "the Butte Model" of environmental remedy and restoration.

- Dr. Munday also was local lead on a team that created a striking mural of the rare Big Hole River grayling on a building in uptown Butte. The mural artist was Noah Greenwald of Portland, OR, and the project was funded by the Center for Biological Diversity as part of an endangered species awareness campaign to create murals in cities throughout the United States.
- The Professional & Technical Communication Department hosted Professor Wei of China's Guangdong College of Business & Technology. This was the first step in a faculty/faculty exchange planned for Spring Semester 2017.

PROGRAMS, RESEARCH & ECONOMIC DEVELOPMENT

- Amy Verlanic, Executive Director of Montana Tech's Institute for Educational Opportunities, announced that the TRIO Student Support Services (SSS) grant from the U.S. Department of Education has been awarded to Montana Tech. The grant provides \$1,100,000 to the Institute of Educational Opportunities so that it may offer services to 120 of Montana Tech's Science, Technology, Engineering, Mathematics and Health Science students for five years.
- The State of Montana was awarded 14 SSS Grants. Montana Tech received the only SSS that is a STEM/Health Science grant. This award helps the Institute for Educational Opportunities to continue to provide services to first generation, low-income and disabled students at Montana Tech.

MONTANA BUREAU OF MINES AND GEOLOGY ACTIVITY

- The Montana Tech Mineral Museum, curated by the MBMG, has several new exhibits including one of native copper specimens from locations nationwide and one of meteorites found in Montana. The museum's most recent addition is a 8-ft tall fossil skeleton of a cave bear (extant from 30,000 to 400,000 years ago).
- Ginette Abdo, Program Manager for MBMG's Ground Water Investigations Program, presented: *An update on Ground Water investigations in Ravalli County* to the Ravalli County Conservation District in Hamilton on April 14, 2015.
- Ground Water Investigations Program Manager, Ginette Abdo, presented: *GWIP in the Hamilton, Montana area* to the Water Resources Class at the Bitterroot College on April 15, 2015.
- John LaFave, Program Manager for MBMG's Ground Water Assessment Program, presented: *Tracking Montana's groundwater: 20 years of lessons learned* at the Montana State University-Bozeman, Institute of Ecosystems Rough Cut Lecture Series on April 22, 2015.
- MBMG Research Division Chief, Thomas Patton, presented: *Climate 2015: when it rains it stores!* to a meeting of the Clark Fork/Kootenai River Basins Task Force in Missoula on April 23, 2015.
- John LaFave, Program Manager for MBMG's Ground Water Assessment Program, presented: *Groundwater conditions and use in the Clark Fork and Kootenai River Basins* to the 2015 Clark Fork Symposium convened at the University of Montana-Missoula on April 24, 2015.
- John LaFave, Program Manager for MBMG's Ground Water Assessment Program and Jeremy Crowley, Hydrogeologist for the Ground Water Assessment Program, presented: *Long-term trends in base flow, precipitation, and groundwater development in the Bitterroot Watershed* to the 2015 Clark Fork Symposium convened at the University of Montana-Missoula on April 24, 2015.
- MBMG hydrogeologist for the Ground Water Investigations Program demonstrated general groundwater principles to the *Jefferson River Watershed Rally* in Whitehall on April 28, 2015.
- The Montana Bureau of Mines and Geology and Montana Tech hosted the *2015 Mining and Mineral Symposium* on the Montana Tech Campus May 8-10, 2015. About 50 conference attendees from Colorado, Idaho, Montana, New Mexico, and Washington heard papers from 13 presenters and toured Montana Tech's Orphan Boy Underground Mine Laboratory.
- MBMG field Geologist, Dr. Kaleb Scarberry, presented: *Vent deposits within the Late Cretaceous Elkhorn Mountains Volcanics* to the *2015 Mining and Mineral Symposium* hosted by the Montana Bureau of Mines and Geology and Montana Tech on May 9, 2015.
- Montana Tech Professor, Dr. Chris Gammons, presented: *Silver mineralogy of the Butte mines* to the *2015 Mining and Mineral Symposium* hosted by the Montana Bureau of Mines and Geology and Montana Tech on May 10, 2015.
- Dr. Richard Berg, MBMG emeritus research geologist, presented: *Montana sapphires* to the *2015 Mining and Mineral Symposium* hosted by the Montana Bureau of Mines and Geology and Montana Tech on May 10, 2015.
- MBMG Director of Earthquake Studies, Mike Stickney presented at the Bear Creek Field Camp on May 14, 2015. Mike discussed the geology of the Madison Range and the seismology of southwest Montana

with 8th grade students from Ennis, Harrison, Alder, Cardwell, Sheridan, Twin Bridges, and West Yellowstone, Montana. The U.S. Forest Service organizes this field camp annually at the Bear Creek station southeast of Ennis to educate students about the history and use of natural resources.

- MBMG Director, Dr. John Metesh; Ground Water Investigations Program Manager, Ginette Abdo; and Ground Water Assessment Program Manager, John LaFave were invited to present overviews of MGMG's groundwater programs to the initial meeting of the Water Policy Interim Committee in Helena, on June 1, 2015.
- The Montana Bureau of Mines and Geology and the Montana Tech Department of Geological Engineering will provide technical support to the Butte Science Mine's project: *Promoting Stewardship of Water Resources Through Hands-on Science Discovery Exhibits*. The MBMG will help design and provide scientific validation for the exhibits. Dr. Colleen Elliott (MBMG geologist) and Dr. Douglas Coe (Dean of the College of Letters, Sciences, and Professional Studies) are on the Science Mine's board of directors.
- The Montana Bureau of Mines and Geology released Open File Report 658: *2014 annual coalbed methane regional groundwater monitoring report: Powder River Basin, Montana* by MBMG hydrogeologists Dr. Elizabeth Meredith and Shawn Kuzara; and Open File Report 657: *Geologic map of the Maurice Mountain 7.5 minute quadrangle* by MGMG geologist Jeffery Lonn.
- Michael Stickney, Director of Earthquake Studies at the MBMG, served on Western Michigan State student Jessica Szkody's thesis committee. Jessica studied the relationship between seismicity data collected by the MBMG's monitoring network and previously mapped faults in southwestern Montana and successfully defended her thesis in June 2015.
- On July 5, 2015 the Billings Gazette reported on Dr. Jay Gunderson's, a MBMG geologist in the Billings office, discovery of a significant occurrence of asteroid fossils (star fish) in south-central Montana's upper Jurassic Swift Formation. Scientists from Rock Valley College and the University of Illinois, Urbana, collected specimens from the locality and noted that within a small area there were more than twenty individual starfish representing four to six species. The scientists report that the find, "...could be the most diverse starfish fauna known from the Jurassic, a time when modern starfish orders make their earliest known appearances."
- The Montana Standard, Butte Montana, published a Special report on July 19, 2015, *Deep in the heart of Butte*, that reviewed progress to date and current activity in the Butte Priority Soils Superfund Site. MBMG hydrogeologists Ted Duaine and Dr. Gary Icopini were interviewed and demonstrated how bright blue/green water from the Parrot Tailings will plate copper onto iron nails.
- Ted Duaine, hydrogeologist with the Montana Bureau of Mines and Geology, and Dr. Bryce Hill, electrical engineering professor with Montana Tech received a grant from Montana Resources to develop remote control systems to guide a boat while collecting samples in the Berkeley Pit. MBMG scientists have been unable to collect samples since 2012 when a landslide made entry too dangerous. The grant money will fund Abdullah Alangari, an Electrical Engineering graduate student. The award created public interest and Dr. Gary Icopini and Dr. Bryce Hill were interviewed by the Montana standard as well as by the local television stations.
- MBMG hydrogeologist, Alan English, and geologist, Dr. Kaleb Scarberry, teamed up to offer a presentation on July 23, 2015 about the geology and water resources of Montana to students at the Montana Learning Center, Canyon Ferry, Montana.
- MBMG Geologists Katie McDonald and Dr. Jesse Mosolf organized the 40th annual field conference of the Tobacco Root Geological Society which convened from July 30 to August 2, 2015 in Elliston, Montana. MBMG geologists and Montana Tech Geological Engineering Professors Dr. Chris Gammons, Stanley Korzeb, Jeff Lonn, Catherine McDonald, Dr. Jesse Mosolf, Dr. Kaleb Scarberry, Dr. Larry Smith, Michael Stickney, and Susan Vuke authored or coauthored six papers, six field guides, and led field trips. The papers and guides were published in volume 44 of Northwest Geology, the society's journal. About 80 people attended the meeting.
- MBMG geologist Dr. Kaleb Scarberry is mentoring three Oregon State University graduate students who are working on an EDMAP project titled, *Igneous geology of the Ratio Mountain Quadrangle, Montana*. Dr. Scarberry is training the students in field procedures to map volcanic rock stratigraphy.
- The Montana Bureau of Mines and Geology has set the dates for the 2016 Mining and Mineral Symposium to be held in Butte on October 19-22, 2016. The theme will be: Geology of Metallic Mineral Deposits, Northern Rocky Mountains, USA.

- Margaret Delaney, MBMG Mining Archives Manager, received a grant from the National Geophysical and Geologic Data Preservation Project to index and catalogue the works of Dr. Richard Berg, who spent 45 years at MBMG.
- Dr. John Metesh, State Geologist and Director of the Montana Bureau of Mines and Geology, will chair the American Association of State Geologists' (AASG's) Data Preservation Committee which acts as a liaison between the State Geologists and various agencies of the Federal government regarding the preservation of geologic data.
- The Montana Bureau of Mines and Geology released Open File Report 660: *Asteroid fossils from the upper Jurassic of south-central Montana*, by MBMG geologist Dr. Jay Gunderson; Ground Water Assessment Atlas 6, Map 3: *Shallow groundwater altitude in bedrock units of the Carbon–Stillwater Study, Carbon and Stillwater Counties, Montana*, by hydrogeologists Daniel Blythe and Jon Reiten; and Ground Water Assessment Atlas 8, Map 3: *Data for water wells, springs, and streams visited during the Gallatin-Madison Ground Water Characterization Study*, by Camela Carstarphen, Jeremy Crowley, Donald Mason, Michael Richter, James Madison, and Daniel Blythe.