

CAMPUS REPORT

DATE: December 16, 2015
TO: Board of Regents
FROM: Donald M. Blackketter, Chancellor, Montana Tech
RE: Campus Report for the January 19, 2016 Board of Regents' Meeting

- Montana Tech has been ranked number 2 in the best value occupational safety degree programs by College Values Online. The university landed behind Embry-Riddle Aeronautical University – Prescott. Points were awarded based on four categories: Tuition; 20-year average net return on investment (ROI); Number of students receiving financial aid; and Number of minors, concentrations, or areas of emphasis offered by the school.
- Montana Tech was named the winner of the second annual DFW AADE Drillers Cup, an award to recognize the school with the most scholarship recipients out of 13 distinguished engineering schools across the country.

RESEARCH ADVANCEMENT

- Montana Tech completed its Fall 2015 weekly Public Lecture series, with 13 speakers, and has just announced the 15-speaker Spring 2016 schedule. One talk each semester is a Café Scientifique held off-campus and co-sponsored by Montana's NIH-funded INBRE program. Videorecordings of most presentations can be viewed on Montana Tech's Digital Commons: http://digitalcommons.mtech.edu/public_lectures_mtech/.

STUDENT ACHIEVEMENT

- The Dallas/Fort Worth chapter of the American Association of Drilling Engineers awarded scholarships to seven Montana Tech students for the 2015–2016 school year. Applicants from thirteen universities across the country were evaluated based on GPA, part-time work, industry experience, leadership, philanthropy, written essay and financial need. Montana Tech petroleum engineering students each received a \$3,000 scholarship.
- Chen Shihua Brazill, Technical Communication MS candidate, is the author of the peer-reviewed paper, "Analysis of human versus machine translation accuracy", for the international journal TRANSLATOLOGIA. The paper is co-authored by Dr. Michael B. Masters, Associate Professor of Anthropology, and Dr. Pat Munday, Professor of Science & Technology Studies.
- Chen Shihua Brazill is completing her MS-Technical Communication research with a 3-week December visit to China where she is interviewing 20 faculty and surveying more than 300 students at five universities—including Tsinghua University and China University of Mining & Technology in Beijing, and the Guangdong College of Business & Technology, Zhaoqing University, and Sun Yat-sen University in the Guangzhou area. This research was funded by grants from the Technical Communication Department, Dean Doug Coe of CLSPS, and Dean Beverly Hartline of Graduate Studies.
- Chen Shihua Brazill will deliver a guest lecture about Montana Tech and the American system of higher education at Guangdong College.
- Shanara Spang Gion, interdisciplinary MS candidate in Technical Communication and Geological Engineering, facilitated Montana Tech's participation in the web-based PNW Cosmos indigenous mentoring workshop held 04 December 2015. PNW-COSMOS is an NSF-funded alliance focused on increasing the numbers of American Indian/Alaskan Native who enter and complete STEM graduate programs. The four lead institutions are UM, MSU, Washington State, and University of Idaho.
- Dylan Uecker, Graduate Student in the Environmental Engineering program presented a technical paper at the November 2015, annual AWMA/PNWIS conference held in Stevenson, Washington. His paper was titled "Application of QUAL2K to a Macrophyte Rich Effluent Dominated Stream." Dylan received the First Place award for his student paper. Dr. Raja Nagisetty, Assistant Professor of Environmental Engineering, and Dr. Kyle Flynn of the Montana DEQ are co-authors on this paper.
- Sam Hutcheson, Graduate Student in the Environmental Engineering program won Second Place for her presentation at the same conference and the title of her presentation was "Metal Removal Using Nanoparticles." Sam also graduated from Montana Tech with a BS in Environmental Engineering. Dr. Kumar Ganesan is her thesis advisor.

- Garrett Craig, Graduate Student in the Environmental Engineering program won Third Place in the student paper at the same conference and the title of his paper was “Characterizing Nutrient and Heavy Metal Concentrations for Grove Gulch in Butte, MT.” Garrett graduated from the Environmental Engineering program at Montana Tech. Drs. Raja Nagisetty, Bill Drury and Kumar Ganesan are co-authors on this paper.
- In addition, Sarah Hamblock, Graduate Student in the Environmental Engineering program has presented a paper titled “Nutrient Loading and Proposed BMPs for Browns Gulch” at the 2015 Clark Fork Symposium held at the University of Montana in April 2015. Sarah graduated in May of 2015 and is currently employed by CDM Corporation in Helena, Montana. Drs. Raja Nagisetty, Bill Drury and Kumar Ganesan are co-authors on this paper.
- Mechanical Engineering junior Molly Brockway will represent Montana Tech at MS&T Fall Meeting at their student speaker competition. She will present a review paper on the status of critical materials pertaining to Rare Earth Elements.

FACULTY EFFORTS

- Dr. Larry N. Smith, Associate Professor of Geological Engineering, was invited to spend January through April 2016 at Denmark Technical University, Centre for Nuclear Technologies, Risø Campus as a guest researcher. He will be conducting optically stimulated luminescence research on geologic samples from glacial Lake Missoula and Pleistocene and Holocene highstands of Owens Lake, California.
- Dr. Courtney Young hosted Dr. Guojun Ma from Wuhan University of Science & Technology, Wuhan, China for the past year, Dec. 28, 2014 to Dec. 23, 2015. The two oversaw the thesis research of MS Student Prince Sarfo of Ghana with the help of undergraduate Jamie Young. The team submitted an abstract to the 10th International Conference on Molten Slags, Fluxes and Salts (Molten 2016) in Seattle WA, May 22-25, 2016. Their talk on “Characterization and Recovery of Valuables from Waste Copper Smelting Slag” was accepted.
- Dr. Courtney Young and Dr. Avimanyu Das, postdoc in Materials Science, submitted three abstracts which were accepted. M&ME MS Student William Nicholas will present his research on “Surface Chemistry of Rare Earth Elements using Salicylhydroxamic Acid” at SME Annual Meeting in Phoenix AZ, Feb 21-24, 2016. Materials Science PhD Student Richard LaDouceur and former MS Student Francis Dakubo will present their respective research on “Modelling and Optimization of Rare Earth Mineral Flotation using Salicylhydroxamic Acid” and “Simultaneous EW of Copper and Iron Using Membrane Technology” at the International Mineral Processing Congress (IMPC), Quebec City, Canada, Sept 11-15, 2016.
- Dr. Pat Munday, Professor of Science & Technology Studies with the Technical Communication Department, is the author of the peer-reviewed paper, “Mining Cultures & Mary Cults: where the sacred and profane meet”, for the international journal Technology & Culture.
- Dr. Munday delivered the public lecture, “A brief history of the qipao or cheongsam,” to mark the opening of an exhibit of these historically important dresses at the Mai Wah Chinese Culture and History Museum in Butte.
- Dr. Chad Okrusch, Associate Professor of Technical Communication, has been invited to deliver a lecture series at China's Guangdong College of Business & Technology in March 2016. This is the first step in an exchange agreement between Montana Tech and Guangdong.
- Dr. John W. Ray, Professor in Montana Tech's Liberal Studies Department, has had a peer reviewed paper accepted for presentation at the International Hegel Congress to be held at Ruhr University in Bochum, Germany in the spring. Dr. Ray's paper will focus on Hegel's concept of self and the development of this self-concept in the state.
- Dr. Ray has had a peer reviewed paper accepted for presentation at the International Listening Association Convention in Tucson in March. Dr. Ray's paper will focus on a rules based approach to listening.
- Dr. Ray has had a peer reviewed paper accepted for presentation at the Directions in the Humanities international conference to be held at the University of Illinois—Chicago this summer. Dr. Ray's paper will focus on religion and democratic decision making.
- Dr. Ray has had a peer reviewed paper accepted for presentation at a Global Studies International Conference on the effects of Globalization to be held at UCLA this summer. Dr. Ray's paper will focus on the effects of globalization on environmental protection and awareness.

- Dr. Ray and Dr. Chris Danielson of Montana Tech's Liberal Studies Department made presentations in December 2015 at a public forum on the threat terrorism poses for the United States. The forum was sponsored by Montana Tech's Liberal Studies Department.
- Dr. Gordon Flanders, Assistant Professor of Business, had an article entitled "The Effect of Gateway Course Completion Within Selected Major on Persistence for Freshman College Students," published in *Journal of College Student Retention: Research, Theory & Practice* October 19, 2015 doi: 1521025115611396.
- Dr. Gordon Flanders had a refereed paper, co-authored with Dr. Tim Kober titled "The Importance of Establishing Standards to Help Faculty Navigate the Tenure and Promotion Process" published in the conference proceedings of the Marketing Management Association Fall Educators Conference. This paper was also presented at the conference held in San Juan, Puerto Rico, September, 2015.
- Dr. Flanders gave an invited presentation titled The Creation and Adoption of a Required Class, Critical Thinking, Decision Making and the Art of Leadership in a Business Department Curriculum at the 35th International Conference on Critical Thinking and Education Reform held in Berkeley, CA in July, 2015.
- In November, Dan Autenrieth published the article "Client Perceptions of OHSMS Assistance Provided by OSHA On-Site Consultation: Results of a Survey of Colorado Small Business Consultation Clients" in the *Journal of Occupational and Environmental Hygiene*. This study provides new evidence on the benefits of comprehensive occupational health and safety management systems (OHSMS) for small businesses. The article is timely given the development of new OHSMS guidelines and standards currently being pursued by the Occupational Safety and Health Administration.
- Dr. Raja Nagisetty, Assistant Professor of Environmental Engineering, has presented a paper titled "Assessing the Effectiveness of a Riverine Wetland in Processing Nitrogen for Blacktail Creek in Butte, MT" at the 2015 Montana AWRA Conference held at Missoula, MT in October. Jonathan Ball, an Environmental Engineering Graduate Student, and Dr. Bill Drury are co-authors on this paper.

HIGHLANDS COLLEGE INNOVATION

- Highlands College held its Fall, 2015 Research, Creative & Scholarly Activities Presentations the first week of November. There were 45 student poster presentations with 50 students participating.
- Dean John Garic held a "Lunch with the Dean" event with 10 male students identified as leaders or potential leaders by faculty and staff. The discussion topic of the luncheon was focused on the video *Tough Guise 2* by Jackson Katz, Ph.D., who has been recognized for his groundbreaking work in the fields of critical media literacy and gender violence prevention education with a focus on the domination of the male culture of violence.
- The Highlands College faculty and staff were trained by the Rape Prevention Education Team on the statistics and the prevention efforts related to sexual misconduct, including the promotion of the FRONTSTANDER word, concept and initiative.
- Dean John Garic presented at the Not In Our State Conference in Bozeman, along with Counselors Joyce O'Neill and Cricket Pietsch.
- Highlands College Student Leadership sponsored its annual Thanksgiving Luncheon for the students, faculty and staff.
- Highlands College hosted two meetings the Butte and Anaconda Job Services as part of the Rapid Response Effort regarding the layoffs at the Golden Sunlight Mine in Whitehall.

MONTANA BUREAU OF MINES AND GEOLOGY ACTIVITY

- Dr. Gary Icopini, MBMG Hydrogeologist, helped write articles for the September 16 Edition of *PITWATCH*, a website/print vehicle dedicated to informing Butte-Silver Bow residents of conditions near the Berkeley Pit.
- Hydrogeologist James Rose, presented: *Big Sky Project—Groundwater Chemistry and Groundwater Flow* to the annual meeting of the Montana Chapter of the American Water Resources Association in Missoula, Montana, on October 8.
- On October 8 MBMG Hydrogeologist Jeremy Crowley presented: *Decoding the Climate of the Gallatin Watershed, Montana* to the annual meeting of the Montana Chapter of the American Water Resources Association in Missoula, Montana.
- Ground Water Investigations Program Leader Ginette Abdo presented *Integrating water management needs into science—the Ground Water Investigation Program* to the annual meeting of the Montana Chapter of the American Water Resources Association in Missoula, Montana, on October 8.

- Ali Gebril, Hydrogeologist and Numeric Groundwater Modeler for the Ground Water Investigations Program presented *A stochastic water-budget analysis to evaluate the relative importance of recharge/discharge mechanisms in the Deep Aquifer, Kalispell Valley, Montana* to the annual meeting of the Montana Chapter of the American Water Resources Association in Missoula, Montana, on October 8.
- Ground Water Modeler, Mary Sutherland presented *Changing water consumption in a changing landscape; a GIS-based approach to comparing domestic and agricultural consumption* to the annual meeting of the Montana Chapter of the American Water Resources Association in Missoula, Montana, on October 9.
- Ground Water Assessment Program hydrogeologist Dan Blythe presented a poster on *Shallow groundwater quality and geochemistry of the Shields River drainage basin, Central Montana* to the annual meeting of the Montana Chapter of the American Water Resources Association in Missoula, Montana, on October 8.
- Ginette Abdo and John LaFave, program managers for the Ground Water Investigations and Ground Water Assessment Programs, presented *Irrigation and incidental recharge in Montana* at a Montana Department of Natural Resources *Enhancing streamflows through shallow aquifer recharge* technical meeting, October 21, in Helena, Montana.
- On October 26, Montana Bureau of Mines and Geology hydrogeologist, Ted Duaime spoke with Fox MT television about the MBMG's responsibilities regarding the Berkeley Pit and other Superfund activities.
- Thomas Patton, Montana Bureau of Mines and Geology Research Division Chief, attended the annual Subcommittee on Groundwater face-to-face meeting in Reston, Virginia. The subcommittee is a unit of the Advisory Committee on Water Information which is a Congressionally authorized Federal Advisory Committee.
- MBMG Economic Geologist, Stanley Korzeb presented: *New interpretations of vein genesis for the Emery mining district, Powell County, Montana* to the *Metals in Ore Fluids: sources, concentrations, modes of transport, and precipitation* session at the Geological Society of America Annual Meeting in Baltimore, Maryland, on November 2.
- Montana Tech graduate student Connie Thomson presented her proposal *Early investigation results and project plans for the Big Sky groundwater isotope investigation* to her thesis committee on November 10. MBMG hydrogeologist James Rose serves on the committee.
- On November 10 Thomas Patton, Montana Bureau of Mines and Geology Research Division Chief, accepted an invitation to become a member of the National Ground Water Monitoring Network Program Board. The board will be a national review panel that guides the direction of the national network and recommends funding allocations from the U.S. Geological Survey to cooperators.
- James Rose, MBMG Hydrogeologist, spoke at the Flathead Basin Commission monthly meeting about the Ground Water Investigation Program's: *Kalispell project—a deep aquifer Assessment and hydrologic overview* in Kalispell, Montana on November 16.
- MBMG Ground Water Investigations Program Hydrogeologist, Tom Michalek presented: *The Gallatin Valley groundwater-surface water connection* to the Montana State University Earth Sciences Seminar in Bozeman, Montana, on November 19.
- Director of the Montana Bureau of Mines and Geology and State Geologist, Dr. John Metesh, attended the Western States Seismic Policy Council Board meeting in Sacramento, California, November 17-19.
- On December 2, MBMG Economic Geologist Stanley Korzeb spoke on *The exploration potential of the Boulder Batholith, Broadwater, Deer Lodge, Jefferson, Powell and Silver Bow Counties, Montana* at the American Exploration and Mining Association's annual meeting in Spokane, Washington.
- James Rose, MBMG Hydrogeologist presented a public lecture on: *Geology and mining on the J-M Reef, Stillwater Complex, South-Central Montana*. The lecture on December 3 focused on the underground techniques required to successfully mine at the only operating platinum and palladium mine in the United States.
- On December 4, MBMG hydrogeologists James Rose and Kirk Waren presented a lecture summarizing the: *Big Sky Groundwater Investigations Program—development of a water budget at Big Sky, Montana*, to Dr. Robert Payne's senior-level "Watershed Hydrology" class at Montana State University.

- At the *Montana Geological Society's* luncheon talk on December 8, Gary Hues of SM Energy praised the Montana Bureau of Mines and Geology for its online 1:100,000 scale geologic maps and its readily accessible and usable online GIS data.
- Michael Stickney, Director of Earthquake Studies at the Montana Bureau of Mines and Geology, discussed seismic hazards in Silver Bow County with the Butte-Silver Bow County Pre-Disaster Mitigation Planning Committee on December 9.
- The Montana Bureau of Mines and Geology released Open File Report 664: *Geologic map of the Lower Seymour Lake 7.5' quadrangle, southwestern Montana* by Dr. Colleen Elliott; Open File Report 665: *Geologic map of the Nevada Mountain and Granite Butte 7.5' quadrangles, west-central Montana* by Catherine McDonald and Jeff Lonn; Open File Report 666: *Geologic map of the Ophir Creek 7.5' quadrangle, Lewis and Clark, and Powell counties, Montana* by Jeff Lonn and Susan Vuke; Open File Report 667: *Digital coal outcrop patterns for the Powder River Basin of Montana* by Jay Gunderson; Open File Report 668: *Geologic map of the Wilson Park 7.5' quadrangle, southwestern Montana* by Dr. Kaleb Scarberry; and Miscellaneous Publication 57: *Montana Geology 2016—Lewis and Clark Caverns* by Alan English.