

## CAMPUS REPORT

**DATE:** April 7, 2014  
**TO:** Board of Regents  
**FROM:** Donald M. Blackletter, Chancellor, Montana Tech  
**RE:** Campus Report for the May 22-23, 2014 Board of Regents' Meeting

### STUDENT ACHIEVEMENT

- Montana Tech's Association of Computing Machinery (ACM) Club sponsored an industry trip to Seattle over spring break. Sixteen computer science and software engineering students visited Microsoft, Philips, Amazon, and Mercent on March 20th and 21st to learn about different career opportunities that await them.
- Montana Tech's Chapter of American Indian Science and Engineering Society (AISES) hosted the 2014 spring conference for AISES Region I (Pacific Northwest, three western Canadian provinces, and Alaska) on April 4-5, 2014. Attended by about 80 students, faculty, and others from high schools, tribal colleges, and universities, the conference featured an opening ceremony with keynote speeches from Regent Major Robinson and Louie Gong, numerous talks and workshops, and an evening Pow Wow for the participants and public. Paul Nepine (Chapter President and a petroleum engineering major) and vice president Matt Sparboe led the chapter in organizing the event. Denise Juneau, Superintendent of Public Instruction, was unable to attend, but sent an inspiring video greeting enjoyed by the attendees.
- Montana Tech students Maureen Chorney and Joy Reistad presented a poster titled "Parental Abuse, Risky Behavior, and Psychopathic Traits in Adolescents and Early Adulthood" at the Biennial Meeting of the Society for Research on Adolescence in Austin, TX. This presentation was the result of their SURF research made possible by MT INBRE.
- Two Montana Tech undergraduate research students are presenting their results at the Montana Space Grant Consortium Student Research Symposium at MSU on April 7th. Tyler Cook (Metallurgical & Materials Engineering) will discuss "Oxidation Kinetics of Nicrofer-6025HT for use in Elevated Temperature Electrochemical Devices." Cameron Kauffman (General Engineering, Mechanical option) will present "A Study of Rivet Holes in Composite Materials."
- During the first week of February, two teams from Montana Tech travelled to Reno, Nevada to compete in the Heavy/Highway Bidding Competition sponsored by the Associated General Contractors of America (AGC) and the Associated Schools of Construction (ASC). During the competition, each student team was allowed 15-16 hours to prepare a bid on a large construction project averaging \$25-\$30 + million. Along with the bid, the students prepared a project binder containing a schedule, description of construction methods, quality assurance, safety, logistics, labor requirements, and risk analysis. The teams also prepared and delivered a 20-minute presentation to their respective corporate problem sponsors.
- Montana Tech has filed for a provisional patent on the "Sand Funnel," a device co-designed by senior Petroleum Engineering student Chris Bulau and John Getty, Instructor in Petroleum Engineering.
- The Montana Tech Digger Hockey team traveled to Ogden, Utah for the Mountain West Collegiate Hockey League playoffs in the end of February. They beat Utah State University in a shootout to advance to the Championship game against Weber State University. Weber scored with three minutes left in the game to beat the Diggers for the League Championship. Due to number of games played and Regional rankings, both Weber and Utah advanced to Nationals.
- A computer science major, Joy Reistad, and a metallurgical engineering major, Maureen Chorney, collaborated with psychology professor Scott Risser during summer 2013 on a research project on "Parental Abuse, Risky Behaviors, and Psychopathic Traits in Adolescents and Early Adults." They presented a research poster in March at the Society for Research on Adolescents (SRA) Biennial Meeting in Austin Texas, alongside many graduate students and seniors in social and behavioral sciences from other universities.
- Haythem Memmi, a senior majoring in Computer Science with minors in Mathematical Sciences and Statistics, was chosen to receive a 2014-2015 Microsoft Scholarship Award. A Microsoft Scholarship allows undergraduate students to achieve their goal of making a real difference in the software industry. Memmi, originally from Tunisia, chose to pursue his education at Montana Tech because of the high

quality education in the Computer Science Department at Tech, along with the affordability of tuition. Memmi will graduate from Montana Tech in December 2014. After graduation, he plans to pursue his graduate studies in Human Computer Interaction.

#### **FACULTY EFFORTS**

- The following faculty earned Merit Awards for 2013-14:  
Dr. Waleed Al-Rawashdeh (Mathematics); Dr. Gordon Flanders (Business); Mr. John Getty (Petroleum Engineering); Dr. Julie Hart (Safety Health and Industrial Hygiene); Ms. Jeanne Larson (Environmental Engineering); Dr. Larry Smith (Geological Engineering); Ms. Alice McDonough (Highlands College); Ms. Vickie Petritz (Highlands College); Dr. Roger Jensen (Safety, Health and Industrial Hygiene); Dr. Dan Trudnowski (Electrical Engineering); Dr. Mary MacLaughlin (Geological Engineering); Dr. Jack Skinner (General Engineering); Dr. Brian Kukay (General Engineering); and Ms. Kelly Amtmann (Nursing).
- Biological Sciences Professors Dr. Amy Kuenzi and Dr. Richard Douglass are featured in *Virus Hunters with David Quammen: Hanta* a short video produced by the Weather Channel. At <http://stories.weather.com/virushunters>, click on "HANTA."
- Ronda Coguill of CAMP was an expert panelist at the recent Small Business Workshop hosted by Senator Jon Tester. Ronda introduced the Montana Center for Manufacturing Technology (MCMT) and presented information pertinent to Montana manufacturers. The workshop was hosted at Carroll College and over 150 small business manufacturers attended.
- Keith Vertanen, Assistant Professor of Computer Science, along with students Justin Emge and Haythem Memmi, co-authored a paper "Text Blaster: A Multi-Player Touchscreen Typing Game". The team will present their work at the interactivity track of the ACM Conference on Human Factors in Computing Systems (CHI).
- Jeff Braun of the Computer Science Department presented a paper co-authored with Dr. Michele Van Dyne's entitled "Effectiveness of a Computational Thinking (CS0) Course on Student Analytical Skills" at the ACM SIGCSE Conference on Computer Science Education in Atlanta, GA (March 6-8, 2014).
- Dr. Chris Danielson, Associate Professor of History in the Liberal Studies Department at Montana Tech, was invited to lecture at the University of Houston-Victoria in Victoria, Texas. Dr. Danielson presented his research on race and politics from his most recent book, *The Color of Politics: Racism in the American Political Arena Today*, which was selected by the UHV library as their book of the week and generated a great deal of interest among both faculty and students. Danielson said the book challenges the notion of a post-racial era and historically looks at the role race has played in elections.
- Dr. Waleed Al-Rawashdeh, Assistant Professor of Mathematics, authored the peer-reviewed paper: "Weighted Composition Operators between Weighted Bergman and Sp Spaces", *Bulletin of Mathematical Analysis and Applications*, 5(2013), 54-64. This paper is out of the Montana Tech Seed Grant (Bi6214).
- Dr. Waleed Al-Rawashdeh gave a talk at AMS/MAA national Joint Mathematics Meeting that held in Baltimore, MD, January 2014. The talk's title is "Weighted Composition Operators between Weighted Bergman and Sp Spaces".
- Dr. Al-Rawashdeh also co-chaired a Session on Operator Theory and Banach Spaces for the American Mathematical Society, AMS/MAA National Joint Mathematics Meeting, Baltimore, MD, Jan. 14 – 18, 2014.
- Dr. Suzan Gazioglu of the Mathematical Sciences Department attended the 2014 XLI (Extended Learning Institute - MUS) Conference in Butte, Montana (March 27-28, 2014) and presented a talk entitled "Integrating SMART Podium into Online Teaching."
- Math faculty member Laurie Battle was awarded a grant from the Core Fulbright U.S. Scholar Program to spend the 2014-2015 academic year at National Chung Hsing University (NCHU) in Taichung, Taiwan. She will do collaborative research with a faculty member in Life Sciences at NCHU, using mathematical modeling to investigate the effect of dam removal on the endangered Formosan salmon. She will also teach two graduate courses on mathematical modeling for biologists.
- Keith Vertanen, Assistant Professor of Computer Science, co-authored a paper "Uncertain Text Entry on Mobile Devices" to be presented at the ACM Conference on Human Factors in Computing Systems (CHI).
- Keith Vertanen, Assistant Professor of Computer Science, co-authored a paper "An Evaluation of Dasher with a High-Performance Language Model as a Gaze Communication Method" to be presented at the ACM International Working Conference on Advanced Visual Interfaces (AVI).

- Dr. Jerry Downey, Dr. Bill Gleason and Dr. Courtney Young are sharing a grant for approximately \$1M to do research on rare earth elements, specifically to do chloride volatilization, solution recovery, and flotation separations, respectively. By the time the projects conclude in late December, the projects will have employed 8 undergraduate and 5 graduate students of which 2 are expected to be the first students in the collaborative MatSci PhD Program.
- Keith Vertanen, Assistant Professor of Computer Science, is co-organizing a Special Interest Group (SIG) meeting "The Usability of Text Entry Systems Now and in the Future" at the ACM Conference on Human Factors in Computing Systems (CHI).
- Dr. Courtney Young, Metallurgical Engineering professor and department head, has accepted an invitation to participate in International Congress XXII in Mazatlan, Mexico, April 27-April 30 as a plenary speaker and instructor for a portion of precious metals short course. Unfortunately, his planned presentation in Chile July 23-25 at Gecamin's Hydroprocessing 2014 was cancelled due to the earthquake the country recently experienced.
- Dr. Chris Gammons and grad student Joshua White (Geological Engineering) recently had a paper published in the journal Mineralium Deposita entitled: "Paragenesis of cobalt and nickel in the Black Butte shale-hosted copper deposit, Belt Basin, Montana". Gammons co-authored another recent paper with Dr. Steve Parker (Chemistry) and others in the journal Biogeochemistry entitled "Dissolved oxygen and dissolved inorganic carbon stable isotope composition and concentrations fluxes across several shallow floodplain aquifers". Gammons recently delivered an invited workshop presentation on "Nitrogen compounds in mining-influenced waters" for Goldcorp Inc. at their biannual international meeting on Safety and the Environment.
- Dr. Laurie Battle, Dr. Hilary Risser, and Ms. Becky Johnson from the department of mathematical sciences have been awarded a continuation grant from the Mathematics Association of America Tensor foundation. The grant will provide funding for a math and music summer camp for middle school age girls. The two week "Create Math" program will engage middle school girls in exciting and creative applications of mathematics from June 16<sup>th</sup> through June 26<sup>th</sup>. Young women in grades 6 through 8 are eligible to participate. They will be invited back to Butte to a follow up experience during the Montana Folk Festival.
- Dr. Glenn Shaw of Geological Engineering recently had 3 papers published in journals: 1) Characterizing groundwater-lake interactions and its impact on lake water quality appeared in the Journal of Hydrology, 2) Critical loads of acid deposition for wilderness lakes in the Sierra Nevada (California) estimated by the steady-state water chemistry model appeared in Water, Air & Soil Pollution, and 3) Groundwater and surface water flow to the Merced River, Yosemite Valley, California: 36Cl and Cl<sup>-</sup> evidence appeared in Water Resources Research. He was invited to speak on the second paper at the Deposition FARM Team, which is a National group consisting of scientists and managers who focus on atmospheric deposition of pollutants.
- Dr. Suzan Gazioglu of the Mathematical Sciences Department gave a lecture presentation on "Tackling Steady-State Constraint in Sensitivity Analysis of Compartmental Models" at the Spring Montana Tech Public Lecture Series (February 20, 2014).

#### **MONTANA BUREAU OF MINES AND GEOLOGY ACTIVITY**

- Montana Tech and the Montana Bureau of Mines and Geology (MBMG) took possession of its new office building in Billings, Montana on January 31, 2014. The new office will provide much needed space and improved public access. The Board of Regents authorized the purchase in late 2013 and the transaction was completed after concurrence from Governor Steve Bullock.
- MBMG scientists John LaFave (Ground Water Assessment Program Leader), technical advisor to the Upper Missouri River Basin Advisory Committee, and Ginette Abdo (Ground Water Investigations Program Leader) presented a talk titled Groundwater Assessment and Investigations: Upper Missouri River Basin during the Advisory Committee's February meeting in Helena, Montana.
- Nicholas Tucci, MBMG geoscientist working on the hydrogeology of the Butte Mine Flooding Operable Unit, spoke to the Silver Bow Kiwanis in Butte, Montana, about the rotational slumps that occurred in the Berkeley Pit wall in late 2013 and current results from groundwater monitoring.
- Luke Buckley, MBMG Computer Software Engineer and chief designer of the Ground Water Information Center database, presented a talk on Earth Science Data Delivery at MBMG to the Montana Water Well Driller Association's annual convention in Billings, Montana, on February 7, 2014.

- John Wheaton, MBMG Hydrogeologist, presented an overview of MBMG activities with an emphasis on current groundwater research in the Clark Fork River basin to the Clark Fork Basin Task Force in Missoula on February, 12, 2014.
- On February 19, 2014 Michael Stickney, Director of MBMG's Earthquake Studies Office, met with U.S. Forest Service personnel to help design new interpretive displays for the newly renovated Earthquake Lake Visitors Center scheduled to open in May 2014.
- MBMG geoscientist Nicholas Tucci presented a guest lecture on Montana Superfund Issues to Montana Tech's Environmental Issues class in February, 2014.
- Dr. Gary Icopini, MBMG Hydrogeologist, presented an update on MBMG activities within the Butte-Anaconda-Deer Lodge Superfund areas to the 2014 Superfund/Environmental Cleanup Interagency meeting in Helena, Montana, on February 27, 2014.
- MBMG geologists Susan Vuke and Catherine McDonald were notified on March 14, 2014 that their proposal to the U.S. Geological Survey's STATEMAP program was awarded \$175,607. MBMG's award was the 6th highest among the 43 states that applied for fiscal year 2015 funding. The competitive grant program partially funds geologic mapping in Montana.
- State Geologist and Director of the Montana Bureau of Mines and Geology, Dr. John Metesh, spoke to the Legislature's Water Policy Interim Committee on March 18, 2014. Dr. Metesh addressed the technical aspects of stream depletion zones, a recent addition to Montana's water appropriation code.
- State Geologist and Director of the Montana Bureau of Mines and Geology, Dr. John Metesh, spoke to the Legislature's Environmental Quality Council on March 20, 2014. Dr. Metesh addressed the need for accurate and timely aggregate-resources information in Montana. The need for accessible sand and gravel is particularly acute in northeast Montana because of the rapid development of oil and gas fields in the Williston Basin.
- MBMG geologist Dr. Colleen Elliott spoke at the Montana Environmental Education Association annual meeting March 21, 2014 about The Story of CFWEP - the Clark Fork Watershed Education Program and guided a Butte Hill field trip.
- On March 21, 2014 during the Montana Environmental Education Association conference hosted by Montana Tech and the Clark Fork Water Education Program, MBMG geoscientist Nicholas Tucci presented a Parrot Tailings Water Quality Demonstration at the site of the historic Parrott Tailings in Butte, Montana. The demonstration showed how copper contained in the brilliant blue water from the tailings will plate out onto iron.
- On March 27, 2014 MBMG geoscientist Nicholas Tucci spoke to the Butte, Montana, Natural Resources Damage Council about his recently completed project: Tailings/impacted sediment delineation of the Diggings East, Blacktail Creek Berm, and Northside Tailings study area.
- MBMG geologist, Dr. Kaleb Scarberry represented the Montana Tech Mineral Museum at the Museums Association of Montana annual meeting March 20-22, 2014, In Helena, Montana.
- MBMG geologist Dr. Jesse Mosolf presented a talk titled Melding traditional and modern techniques to create and distribute digital geologic maps in Montana at the Geological Society of America's Northeastern Section Meeting in Lancaster, Pennsylvania, on March 24, 2014.
- MBMG hydrogeologists Shawn Kuzara and Kevin Chandler spoke to the Cascade County Commissioners during a public meeting on March 31, 2014 about Sustainable water supplies from the Madison Aquifer, Central Montana. The presentation contained findings from a three-year, \$287,000 grant from the Montana Department of Natural Resources and Conservation.
- MBMG and the Butte-Silver Bow County government have agreed to transfer ownership of indexed exploration core samples for selected underground mines in the Butte Mining District from the county to the MBMG. The MBMG will maintain public access to this irreplaceable information resource as part of the Mining Archives development project funded by the last Legislature.
- The Montana Bureau of Mines and Geology released Ground Water Assessment Atlas 3, Groundwater resources of the Middle Yellowstone River area: Treasure and Yellowstone counties, Montana Part A\*-- Descriptive Overview and Water-Quality Data by MBMG hydrogeologists James Madison, John LaFave, Thomas Patton, John Olson (former employee), and Dr. Larry Smith (Montana Tech Geology Department).