

CAMPUS REPORT

DATE: December 10, 2014
TO: Board of Regents
FROM: Donald M. Blackketter, Chancellor, Montana Tech
RE: Campus Report for the January 6, 2015 Board of Regents' Meeting

- On December 3 and 4, twelve Montana High Schools which have been designated 21st Century Community Learning Centers met at Montana Tech to obtain training with "F1 in Schools." High school teams will build a model Formula 1 (F1) race car. Over the course of the project, students will develop a business plan for building the car, design the car using Computer Aided Design (CAD), turn the designs into CAM (Computer Aided Manufacturing) instructions, mill the car from balsa wood using a CNC (Computer Numerical Control) router, test the model in a wind tunnel, and ultimately race their carbon dioxide powered cars at Montana Tech next April. The project, organized and sponsored in part by the Society of Automotive Engineers (SAE) and the Montana Office of Public Instruction, is designed to interest students in STEM (Science, Technology, Engineering, and Mathematics) careers by involving them in a hands on project using science and engineering principles and skills. Winners of state competitions have the opportunity to compete at the national level, where last year a team of girls from Georgia took home top honors. Montana schools participating in this event include Browning, Corvallis, Frazer, Hamilton, Harlem, Hays, Hot Springs, Libby, Noxon, Plains, Rocky Boy, and Ronan.
- TheBestSchools.org has named Montana Tech's Health Care Informatics degree program one of the best in the nation. The university landed No. 6 on the list. The top degree programs were selected based on academic excellence, types of available classes, faculty strength, rankings and reputation, including reputation for quality online degree programs.

STUDENT ACHIEVEMENT

- Justin Emge, a senior in computer science, and Adam Cass, a senior in software engineering, volunteered at the Supercomputing Conference (SC14) held November 15-21 in New Orleans. When Justin and Adam were not volunteering, they attended technical presentations and learned about the latest in high performance computing (HPC), networking and storage technologies from company representatives in the exhibit hall.
- The Montana Tech Digger Hockey team is currently ranked #5 in the ACHA Division II West Region (out of 39 teams), at the end of the second ranking period. Their win/loss record is 13-3. The top two teams in each Region advance to Nationals while #2 through #8 compete for two more spots. This season the Diggers beat Arizona State, Utah State, Weber State, Montana State, Brigham Young, San Jose State and Western Washington; their losses are to Boise State and University of Utah.
- Ronda Coguill, along with students Cameron Kauffman and Richard LaDouceur, attended the CAMX conference in Orlando, Florida. Cameron and Richard presented papers in the full conference sessions on their work with advanced materials. Ronda attended meetings for the student advisors and met with several materials industry representatives to further partnerships and collaborative activities for the SAMPE group and CAMP.
- Seven Montana Tech Safety, Health and Industrial Hygiene students were each awarded \$1,000 scholarships at the fall Northwest Occupational Health Conference in Richland, Washington. The awards were sponsored by the Pacific Northwest Section of the American Industrial Hygiene Association. Awards were based on the students' academic achievements, extra-curricular activities and the potential to succeed in the field of Occupational Health and Safety. The scholarship recipients include undergraduates Allison Jensen and Siobhan Wock, and graduate students Shelby Fortune, Jeshua Sargetis, Kasey Kaszycki, Jacob Havlovick and David Evans.
- Two mathematics majors, Kaitlyn Rudy and Justin Gomez, will be presenting their poster on "Online Professional Learning Networks" at the Joint Mathematics Meeting in San Antonio in January 2015. Both Ms. Rudy and Mr. Gomez received travel grants from the Mathematics Association of America to support travel to the conference.
- A team of three undergraduate mathematics students, Kaitlyn Rudy, Kelly Mellott and Tyler Taylor competed in the Montana Mathematical Modeling Challenge in September of 2014 at Carroll College.

- Montana Tech's student government, the Associated Students of Montana Tech (ASMT), recently launched a new program on campus in order to keep students safe on the weekends. The program, called ASMT Safe Rides, encourages students not to drink and drive by providing taxi rides to any student who calls.
- The transition for veterans returning as students on college campuses can be difficult. Montana Tech hosts Veterans Day luncheons on campus for faculty, staff and students who served in the military. This year, Montana Tech student veterans Dexter Richards and Greg Hansen were recipients of the first annual Distinguished Student Veteran Award. The campus community nominated 16 students based on the following criteria: reliability, initiative, uniqueness of contribution, community and campus services. The event is sponsored by the Montana Tech Veterans Task Force and Student Services.
- Macy Ricketts, a double major in Technical Communication and Biological Sciences, exhibited 18 photographs of Glacier National Park in shows at Montana Tech and at Butte's Phoenix Gallery. The photos were from Rickett's work on the Global Research Initiative in Alpine Environments (GLORIA) with Professor Martha Apple, Biological Sciences, funded by RM-CESU. The two shows were part of Rickett's work in science communication with her advisor Dr. Pat Munday, Technical Communication.

FACULTY EFFORTS

- Dr. Pat Munday, Professor of Science & Technology Studies (Technical Communication), published his photograph "*Lomatium macrocarpum* - Desert Parsley or Bear Root" in *The Pryor Mountains - Crow Sacred Lands*, a forthcoming documentary video by The Pryor's Coalition about Burton Pretty On Top, a Crow Elder, and the cultural relationship of the Crows to their sacred mountains.
- Recently retired (August 2014) Liberal Studies Professor Robert Ziegler reports that his article "Dans le pays du miroir, les fictions de fuite dans Marcel Schwob" appeared in the latest issue (2014) of *Spicilege*.
- Dr. Courtney Young, Dept Head and Lewis S. Prater Professor of Metallurgical & Materials Engineering, will be recognized with the Society of Mining Engineering's Presidential Citation for his efforts as Vice Chair of Educational Sustainability Committee. The committee worked to develop a proposal for funding Faculty Grants and PhD students.
- Dr. Courtney Young was appointed to serve a 3-year term on the Board of Trustees for American Exploration & Mining Association (formerly NW Mining Association).
- Dr. Chris Danielson, Associate Professor of Liberal Studies, has published an essay/chapter in a book entitled, "Right Turn? The Republican Party and African-American Politics in Post-1965 Mississippi." Glen Feldman, ed. *Nation Within a Nation: The American South and the Federal Government*. University Press of Florida, 2014.
- Dr. Waleed Al-Rawashdeh, Associate Professor of Mathematics, is the author of the peer-reviewed papers: "*Composition Operators on Weighted Hardy Spaces*", *Rocky Mountain Journal of Mathematics*, 44(2014), 1053-1072; and "*Composition Operators on Generalized Nevanlinna Class*", *Missouri Journal of Mathematical Sciences*, 26 (2014), 14-22.
- Dr. Henrietta Shirk, Associate Professor, Professional and Technical Communication, presented a paper on "Hildegard von Bingen's *Viriditas*: A Prototypical Ecocritical Worldview" at the Rocky Mountain Modern Language Association (RMMLA) 68th Annual Convention, Boise, ID, October 10, 2014.
- Dr. Henrietta Shirk presented a paper on "The Power of the Parlor: A Nineteenth-Century Rhetorical Space for Knowledge Creation" at the National Communication Association (NCA) 100th Annual Convention, Chicago, IL, November 21, 2014.
- Dr. Hilary Smith Risser, Associate Professor in the Department of Mathematical Sciences had a paper entitled "Newbies and Celebrities: Detecting social roles in an online network of teachers via participation patterns" in the *International Journal of Computer-Supported Collaborative Learning*.
- Ronda Cogull of CAMP attended The Composite Consortium meetings at the Long Island Forum for Technology facility in New York. She toured the newly renovated Grumman Aircraft facility that hosts a manufacturing prototyping center for composite materials.
- Drs. Matt Donnelly and Dan Trudnowski of the Electrical Engineering Department at Montana Tech have been awarded a research grant from the U.S. Department of Energy, Office of Science, under Award Number: DE-SC0012671 to study futuristic power systems. The grant is in partnership with the University of Wyoming and titled, "Atmosphere to Grid: Addressing Barriers to Energy Conversion and

Delivery.” Montana Tech’s award is \$670,000 over three years. Montana Tech’s team will research methodologies for operating and controlling futuristic grids.

- Dr. Brian Kukay, Associate Professor in Montana Tech’s General Engineering Department, authored a chapter titled Post Fire Assessment of Wood, in a popular book, titled *Wood and Timber Condition Assessment Manual*.
- A paper based on data from the ongoing Montana hantavirus project has been accepted for publication in the journal *Ecology*, *Environmental fluctuations lead to predictability in Sin Nombre hantavirus outbreaks*. Angela D. Luis, Richard J. Douglass, James N. Mills, Ottar N. Bjørnstad. *Ecology* (In Press). Dr. Luis has recently joined the University of Montana, Dept. of Ecosystem and Conservation Sciences as an Assistant Professor.
- Dr. John Morrison, Professor in the Electrical Engineering Department at Montana Tech, and Mr. Bill Morrison, Research Engineering in the Montana Tech Electrical Engineering Department, were recently awarded a patent entitled, “Method of estimating pulse response using an impedance spectrum,” US Patent 8868363. Electrochemical Impedance Spectrum data are used to predict performance of an energy storage device such as a battery. Dr. Morrison’s patent allows for the spectrum to be calculated in-situ. Co-authors on the patent include Dr. Jon Christophersen and Mr. Chester Motloch, both of Idaho Falls.

HIGHLANDS COLLEGE

- Highlands College faculty member John Jackam was awarded a patent entitled “Production of biodiesel and glycerin from high free fatty acid feedstocks,” US Patent 8,728,177. A specialist in alternative energy, Jackam teaches in the Sustainable Energy Technology – Wind Program at Highlands College. The patent was awarded for original work creating a system and method for the conversion of free fatty acids to glycerides and the subsequent conversion of glycerides to glycerin and biodiesel.
- Highlands College held its First Annual Fall Psychology Student Research, Creative and Scholarly Activity Celebration in November. The event featured poster presentations from 48 students from Dr. Elyse Lovell’s Introduction to Psychology classes. As part of their coursework, students learned about research and the process of research.
- The Highlands College Student Leadership Team sponsored its Annual Halloween Open House. About 600 children and parents visited the open house which featured trick or treating, a movie with popcorn and hot chocolate and Charlie Oredigger – a favorite of the children.
- The Highlands College Radiologic Technology Program observed National Radiologic Technology Week in November. The weeklong celebration commemorated the discovery of the x-ray by Wilhelm Conrad Roentgen on November 8, 1895. The theme of the 2014 Recognition week, “*Many Views with One Vision*,” called attention to the important role medical imaging and radiation therapy professionals play in patient care and health care safety.
- Highlands College continued its “Passport To Program” with a diversity celebration of the country of Brazil. Speaking at Passport To... celebration were Brazilian students: Thaiza Costa E Silva and Joao Oliveria. They spoke about their country and their lives there.
- The Highlands College Student Leadership Team sponsored its Annual Thanksgiving Luncheon in late November. The event was attended by an estimated 300 students, faculty and staff.
- The Highlands College Medical Assisting Program, observed National Medical Assistants Recognition Week. The College held a special celebration to honor the medical assisting profession and celebrate the 9th year of the Medical Assistant Program at Highlands College. The theme of the 2014 Recognition week, “*Medical Assistants, Providing Care For Life*,” emphasized the medical assistants’ commitment as a vital member of the healthcare team.
- Students at Highlands College and Montana Tech adopted a new word as part of the ongoing effort to prevent campus sexual assault or other types of victimization. The new word is “FRONTSTANDER”. The origin of the word came from the well-known “Bystander Awareness” efforts which attempt to help students understand that if they are “bystanders” witnessing a friend in a compromising or dangerous sexual situation, they should step forward and intervene. Thus, they should be FRONTSTANDERS.
- The Highlands College Student Leadership sponsored a Fall Blood Drive in partnership with the United Blood Center. A large number of students, faculty and staff donated blood.
- Highlands College faculty member Dr. Elyse Lovell authored a chapter in a research book titled “*Building Sustainable Futures for Adult Learners*”. She co-authored the research with University of

Montana student Dustin Barnes. Their book chapter is entitled: *“College Enrollment Choices Predicted by Social Capital, Academic Encouragement, Environment and Student-Parent Differences.”*

- Highlands College faculty member Dr. Elyse Lovell authored a paper in the peer-reviewed, prestigious *Journal of College Student Retention: Research, Theory & Practice*. The title of her research journal article was: *“College Students Who are Parents Need Equitable Services for Retention.”*
- Highlands College’s Director of the Associate of Science Program, Michelle Morley, began her doctoral studies this Fall in the MSU Adult Education Program.

STAFF AND PROGRAMS

- The Montana Tech Department of Business and Information Technology hosted its First Friday Executive Lecture Series on December 5 at noon in the Frank and Ann Gilmore University Relations Center. Montana Tech alumnus Brad Archibald, President and CEO of Pioneer Technical Services, gave a talk.

MONTANA BUREAU OF MINES AND GEOLOGY ACTIVITY

- MBMG hydrogeologists Jon Reiten and Kevin Chandler were invited instructors at Richland County’s “Outdoor Classroom” field activity for area students that took place near Culbertson, Montana, on October 7, 2014. Reiten and Chandler used hands-on activities to teach students about the local geology and groundwater resources.
- MBMG hydrogeologists John Wheaton and James Rose lead a tour of the Kalispell Valley that focused on groundwater occurrence in the valley’s deep aquifer. About 40 groundwater professionals and other scientists participated during the Montana Section of the American Water Resources Association annual meeting on October 9, 2014.
- MBMG hydrogeologist James Madison presented a paper on: *The hydrogeologic framework of Cascade and Teton Counties*, to the annual meeting of the Montana Section of the American Water Resources Association on October 9, 2014 in Kalispell, Montana.
- MBMG hydrogeologist Allan English spoke about: *Establishment of baseline conditions and long-term monitoring of groundwater within the Yellowstone Controlled Groundwater Area in Gallatin and Madison Counties, Montana*, to the annual meeting of the Montana Section of the American Water Resources Association on October 9, 2014 in Kalispell, Montana.
- John LaFave, Montana Ground Water Assessment Program Leader, presented papers on: *Tracking Montana’s Groundwater*, and *A Survey of Nitrate in Montana Groundwater*, to the annual meeting of the Montana Section of the American Water Resources Association on October 9, 2014 in Kalispell, Montana.
- Camela Carstarphen, a MBMG hydrogeologist with the Ground Water Assessment Program, presented a poster on: *Water wells, springs, and streams visited during the Gallatin-Madison Groundwater Characterization Study*, to the annual meeting of the Montana Section of the American Water Resources Association on October 9, 2014 in Kalispell, Montana.
- MBMG hydrogeologist with the Ground Water Investigations Program, Andrew Bobst, spoke about *Groundwater and surface-water interaction within the Boulder River Valley* to the annual meeting of the Montana Section of the American Water Resources Association on October 10, 2014 in Kalispell, Montana.
- Montana Tech graduate student Nicole Brancheau, who works for the Ground Water Investigations Program, presented a paper: *Estimating mountain front recharge in the Waterloo area of the Upper Jefferson River Valley*, to the annual meeting of the Montana Section of the American Water Resources Association on October 10, 2014 in Kalispell, Montana.
- MBMG hydrogeologist Kevin Chandler spoke about: *A new conceptual model for recharge to the Madison Aquifer in Central Montana*, to the annual meeting of the Montana Section of the American Water Resources Association on October 10, 2014 in Kalispell, Montana.
- MBMG hydrogeologist Dean Snyder with the Ground Water Investigations Program presented a paper on: *Hydrogeology and water budget of the Eightmile Creek fan, Florence, Montana*, to the annual meeting of the Montana Section of the American Water Resources Association on October 10, 2014 in Kalispell, Montana.
- James Rose, a hydrogeologist with the Ground Water Investigations Program, presented a paper on: *Long-term aquifer tests from the deep aquifer of the Flathead River Valley near Kalispell, Montana*, to the annual meeting of the Montana Section of the American Water Resources Association on October 10, 2014 in Kalispell, Montana.

- MBMG hydrogeologist Kevin Chandler presented a paper on: *Modeling aquifer responses to urban sprawl, West Billings area, Montana*, to the Montana Geological Society's October 15, 2014 meeting in Billings Montana.
- MBMG Senior Research Geologist Susan Vuke co-authored a paper with Robert Schwartz of the Department of Geology, Allegheny College, Meadville PA. The paper: *Estuarine sedimentation at the southern terminus of a pre-Albian seaway in the Cretaceous foreland basin of western Montana – Lower Kootenai Formation*, was presented at the Geological Society of America meeting in Vancouver B.C. on October 21, 2014.
- Dr. Jesse Mosolf, Assistant Research Geologist at MBMG, gave an invited talk titled: *The tectonic evolution of central Chile's long-lived volcanic arc*, at the Department of Geosciences' colloquium, Idaho State University, Pocatello, ID, November 2014.
- MBMG Senior Hydrogeologists Ginette Abdo (Ground Water Investigations Program leader) and John LaFave (Ground Water Assessment Program leader) presented an update on the Ground Water Investigations and Ground Water Assessment Programs to the Clark Fork Basin Task Force in Missoula, Montana, on November 17, 2014; and at the Montana Salinity Control and the Montana Association of Conservation Districts annual meetings at Fairmont Hot Springs, Montana, on November 18, 2014.
- MBMG Director and State Geologist Dr. John Metesh attended the Western States Seismic Policy board of Director's meeting in Sacramento, California, on November 19, 2014.
- MBMG released Open-File Report 651: *Annual coalbed-methane regional groundwater monitoring report: Powder River Basin, Montana* by MBMG hydrogeologists Dr. Elizabeth Meredith and Shaw Kuzara; Open-File Report 655: *A MODFLOW tool to define boundaries of a stream depletion zone* by MBMG hydrogeologist Andrew Bobst and Montana Tech Graduate Student Scott Fleener.
- On December 9, 2014, MBMG released its 27th annual wall calendar that each year features some aspect of Montana's geological or natural resources. The focus of the 2015 calendar is Montana's groundwater resources.