



Rocky Mountains

Cooperative Ecosystem Studies Unit

Research, Education & Technical Assistance

NEWSLETTER

Summer 2018

RM-CESU NEWS & EVENTS



RM-CESU Announces the Annual Competition for Student Award: The Rocky Mountains CESU annually recognizes "above and beyond" accomplishments by student(s) involved in Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU) projects. Nominations may be submitted by any representative of the federal agency that sponsored the RM-CESU project, or by the student's RM-CESU university.

Nominations for Student Award are due August 15, 2018. The Award winner(s) will receive a citation and give a presentation on their project results at annual RM-CESU Fall Meeting. For nomination instructions, go to the RM-CESU web site at [Student Award](#).

RM-CESU University Partners Contribute to Special Issue of *Frontiers in Ecology and Environment* on Social-Ecological Systems in Mountain Landscapes

In the journal, *Frontiers in Ecology and Environment*, Special Issue Volume 16, Issue S1, January 2018, a number of researchers from RM-CESU partner universities have contributed to papers on the topic of "**Applying social-ecological systems science to complex mountain landscapes**". The articles in this Special Issue demonstrate the importance of interdisciplinary, team-based collaboration and the value of using multiple sources of knowledge to improve ecological resilience and community sustainability within complex mountain landscapes. Small changes can reverberate through multiple systems, resulting in surprises, and no place exhibits the potential for this better than the mountain landscapes of the American West. Titles of the articles by partners at the following institutions (University of Idaho, University of Utah, Utah State University, Colorado State University, USDA-Forest Service, University of Montana, University of Wyoming, US Geological Survey) include:



Bark beetles have ravaged 85,000 square miles of forest in the western United States since 2000, including this area in California as seen in 2016. U.S. Forest Service

- **MtnSEON and social-ecological systems science in complex mountain landscapes**
- **Cattle grazing and fish recovery on US federal lands: can social-ecological systems science help?**
- **A social-ecological perspective for riverscape management in the Columbia River Basin**
- **Bark beetles as agents of change in social-ecological systems**

The mountain landscapes of the American West share several features, including: (1) low but rapidly expanding human populations relative to their land areas; (2) relatively large populations of indigenous residents (ie Native Americans) as well as local, multi-generational subsistence residents (ie ranchers and farmers); (3) an influx of high-amenity land buyers who modify local economic conditions; (4) the potential for downstream impacts due to the landscapes' position in the headwaters of river basins; (5) large extents of land governed by federal agencies, including designated wilderness and recreation areas, monuments, and parks; and (6) vast reserves of valuable natural resources.

RM-CESU's Climate Change and Ice Patch Project in Glacier National Park is still in the News:

Back in 2010, the National Park Service selected a project to be funded through the Climate Change Response Program, involved with effects of climate change on Cultural Resources from a long list of proposals. The five-year project is titled: "*Ice Patches as Sources of Archeological and Paleoecological Data in Climate Change Research in Glacier National Park*". This field and modelling project was a collaboration among a number of Rocky Mountains CESU partners, the National Park Service, Glacier National Park (PI Lon Johnson), the University of Wyoming (PI Robert Kelly), the Institute for Arctic and Alpine Research at University of Colorado Boulder (PI Craig Lee), the Confederated Salish and Kootenai Tribes of the Flathead Reservation (PI Francis Auld), the Blackfeet Nation (PI John Murray) and the NPS-Rocky Mountains CESU (PI Pei-Lin Yu).

The final report was compiled in 2017, and reported that there were important paleobiological remnants found at the base of melting ice fields, including animal bone (bison), fossil wood and organic materials. These paleobiological discoveries have potential to inform our understanding about ancient climates and ecosystems, as well as the ways

that these systems changed over time. This information also serves as a baseline for future monitoring of natural and cultural resource changes with increased snow and ice patch melting in protected areas. Climate change-related phenomena are new and critical concerns for Native Americans who have ancient heritage links with what is now Glacier National Park. Glaciers and snowscapes are integral parts tribal creation stories. The Rocky Mountains alpine zones are important special areas for hunting, gathering, and ceremonial use.

The importance of these findings continue to be recognized both internationally and locally through a series of presentations by the investigators. Dr. Pei-Lin Yu made a presentation about the Ice Patch project at



Francis Auld, Confederated Salish and Kootenai Tribes, receives award from the Montana Preservation Alliance. Photo credit: Dr. Craig Lee

the National Dong Hwa University, which has its own College of Indigenous Studies in Taiwan (<http://www.cis.ndhu.edu.tw/bin/home.php?Lang=en>) in May 2018. Also in June 2018 Dr. Craig Lee presented the

project findings at the Montana Preservation Alliance's "Preservation Road Show" in Columbia Falls, Montana. At that meeting the Ice Patch investigator from the Confederated Salish and Kootenai Tribes, Francis Auld, was presented with the Montana Preservation Alliance's "Individual Achievement" award.

For up-to-date developments related to the Ice Patch project, please go to the [project web site](#).

PARTNER NEWS:

Western State Colorado University: Western Unveiling Outdoor Industry MBA for 2018-19 The School of Graduate Studies at Western State Colorado University recently announced the formation of a new and innovative opportunity. Starting with the 2018-19 academic year, Western will offer an Outdoor Industry MBA.

The two-year, online program includes an MBA core as well as specific tracks for either the product or service side of the outdoor-recreation economy, which generates \$887 billion annually in consumer spending, [according to the Outdoor Industry Association](#). The program also includes residencies, immersion experiences and guest lectures from outdoor industry experts.

"The Outdoor Industry MBA at Western will give graduate students the tools and connections necessary to make forward-thinking change within this fast-growing industry," said program director Pete Sherman. "We have a unique approach to class scheduling where we offer the industry-specific courses first. This way, students can apply content from class immediately to the workplace."

Ideal candidates have a bachelor's degree, professional experience in the industry and the desire to take their career to the next level. They have a lifestyle rooted in the outdoors, an aspiration to foster growth in this environmentally conscious, sustainable business sector and an interest in strengthening their network within the outdoor industry. Read more: [Outdoor Industry MBA](#)

Montana State University: MSU Partnership with tribal communities brings digital storytelling to life A team of faculty and students from Montana State University is working with several American Indian tribes across the state to provide tools to help those communities record important oral histories and bring digital storytelling to life.

MSU professors Christine Stanton, Lucia Ricciardelli and Jioanna Carjuzaa, along with MSU students and other partners, are part of the Digital Storywork Partnership, an MSU project offering a series of filmmaking and research workshops to members of tribal communities who request them. Stanton and Carjuzaa are both professors in the Department of Education in the College of Education, Health and Human Development, while Ricciardelli is a film professor in the School of Film and Photography in the College of Arts and Architecture.

"This is a really exciting partnership," Stanton said. "We're thrilled to be working with these tribal communities to help their stories to be told." [Storytelling](#)

CALENDAR:

September 11-14, 2018: 14th Biennial Scientific Conference on the Greater Yellowstone Ecosystem, Big Sky, MT. The conference focuses on the human experience and the role scientific research and communication play in the future of wild places like the Greater Yellowstone Ecosystem. [Tracking the Human Footprint](#)

October 9-13, 2018: 2018 National Wilderness Workshop, Gunnison, CO. The National Wilderness Workshop brings together land management agencies and partner organizations to address and work on national wilderness stewardship issues. The theme for this year's workshop, "**Connect to Wilderness Heritage**" comes from the 2020

Vision: Interagency stewardship priorities for America's National Wilderness Preservation System, established during the 50th Anniversary of the Wilderness Act. [2018 Workshop](#)

JOB OPPORTUNITIES

For details, visit [Job Opportunities](#)

Assistant Professor in Outdoor Recreation and Management, Haub School of the Environment and Natural Resources, University of Wyoming, Laramie, WY (screening will begin 9/1/2018)

Post-Doctoral Researcher - expertise in modeling and evolution to develop quantitative models that integrate genomic, phenotype, and demographic rate data to forecast the adaptive capacity of species under different climate change scenarios, Biology Department, Boise State University, Boise, ID (closes 8/7/2018)

Assistant Fire Management Specialist, Center for Integrated Research on the Environment (CIRE), University of Montana. Work Location: Vandenberg Air Force Base, California (closes 7/31/2018)

Wildlife Biologist/Game Technician, Center of Environmental Management of Military Lands, Colorado State University, Work Location: Fort Polk, LA (closes 7/30/2018)

Natural Resource Specialist, Center of Environmental Management of Military Lands, Colorado State University, Work Location: Joint Base Andrews, MA (closes 7 30/2018)

GIS Analyst, Center of Environmental Management of Military Lands, Colorado State University, Work Location: Robins Air Force Base, GA (closes 7/30/2018)

GIS Analyst, Center of Environmental Management of Military Lands, Colorado State University, Work Location: Joint Base Charleston (closes 7/29/2018)

Post-Doctoral Fellow - Adaptive Silviculture for Climate Change, Department of Forest and Rangeland Stewardship, Colorado State University, Fort Collins, CO (closes 7/30/2018)

Social Scientist, Acadia National Park, Bar Harbor, ME (closes 7/24/2018)

Lecturer-Anthropology, University of Wyoming, Laramie, WY (closes 7/18/2018)

If you would like to post an announcement in the next RM-CESU Newsletter or on the website, please contact the RM-CESU Coordinator at rmcesu@cfc.umt.edu.