

# 2015 Spring Newsletter GEOGRAPHY



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### *Jessica Barnes: A Student's Perspective*

The opportunities which come along with being a student at CU are amazing. I soon decided to expand my horizons and study abroad in a place I had always wanted to visit but never thought I would – the tropical rainforest of Costa Rica. [Page 7](#)



### *Joe Bryan: Weaponizing Maps*

Professor Bryan's new book *Weaponizing Maps* makes a significant contribution to three distinct fields of inquiry: indigenous politics in the Americas, participatory mapping methods and applications, and the history of geography as a discipline in the U.S. [Page 5](#)



## *Emily Yeh, Department Chair*

Greetings from Boulder to CU Geography alumni and friends! We're coming to the close of an exciting year, as 53 undergraduate and 9 graduate students join the ranks of proud Geography alumni. As we say goodbye to them, we will also be bidding farewell to **Marcia Signer**, our

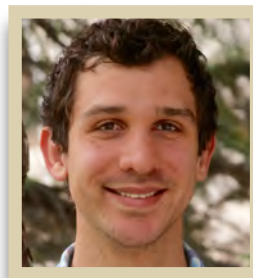
department administrator of more than 20 years, who has so ably kept everything running. We wish her the best in retirement.



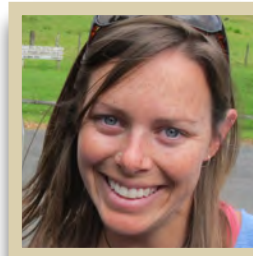
Dr. Emily Yeh, Dept Chair

also received Fulbright and other fellowships this year to conduct research in South Korea, Tanzania, Paraguay, Nepal, Krygyzstan, and Taiwan, among other places.

Our students are doing very well. Six Geography majors were invited this year to join Phi Beta Kappa. Graduate student **Max Counter** won an NSF Graduate Research Fellowship, and **Julia Hicks**, **Chris Jochem**, **Joel Correia** received NSF Doctoral Dissertation Research Improvement Grants. Our doctoral students have



Max Counter



Julia Hicks

Our faculty, too, continue to win numerous honors and awards. Among them, **John O'Loughlin** received the Myron Weiner award of the International Studies Association, in recognition of over forty years of excellent research in spatial analysis of political geography. **Waleed Abdalati** received the 2015 outstanding contributions award in remote sensing from the Association of American Geographers. **Seth Spielman** received the Michael Breheny Prize for best paper of the year in the journal *Environment and Planning B*, for his article, "Neighborhood contexts, health and behavior: Understanding the role of scale and residential sorting."

We have many exciting new initiatives underway. **Jennifer Balch**, **Noah Molotch**, **Bill Travis**, **Barbara Battenfield**, and **Mark Williams** have been leading proposals for an Earth Lab and on global water sustainability for a campus-wide Grand Challenge initiative. **Seth Spielman** spearheaded the formation of a Spatial Analytics Industry Advisory Board, to establish closer working relationships with local industry and assess the development of a professional Masters degree in spatial analytics. We are also in the process of establishing a new undergraduate certificate program in GIS and Computational Science, and we are adding the option of having a formal, transcribed track to the Geography undergraduate major (in Human Geography, Physical Geography, Environment-Society, or GIScience) in addition to the existing general Geography degree.

It's been wonderful to meet and hear from alumni and other friends this past year. Please keep in touch with us, including with any suggestions and comments you have.





**Thank You!** The Department of Geography is grateful to its alumni and friends for their financial support over the years. Our donors have had a big impact, making a difference not only to the Department as a whole, but to the lives of many individual students. There is always a real need for funds to support academic departments. As we strive for higher standards and more and better opportunities for our students, we depend on the caring and generous nature of alumni and friends like you to meet these ever increasing financial needs. Your gift to the Department of Geography can take many different shapes. The information below may help you find the type of gift that best meets your needs, the impact you want, and the way you want to give. The CU Foundation can also assist you with your needs, be they for targeted or unrestricted programs.



### Geography Department Fund

This fund is for academic support in the broad sense. If giving online and you want your gift to go to a specific scholarship, please provide scholarship name in the "Comments" section.

**GIVE NOW** Go online to: [geography.colorado.edu/about/donate](http://geography.colorado.edu/about/donate)

### Undergraduate Scholarship Programs

#### *A. David Hill Scholarship Fund*

Established by Richard L. Knowlton, Professor Hill's former teammate and friend, and recently endowed by Myhra and Graham Hill, his wife and son. Applicant must be a Geography major, and have a minimum GPA of 3.0 in Geography, with a preference for those with interests in the environment-society relationship. Award is based on merit and demonstrated financial eligibility.

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#### *Albert W. Smith Geography Scholarship*

Established in 1983 to honor Professor Smith at his retirement from the Geography Department faculty after thirty-one years of service to the University. Applicant must be a full-time senior majoring in Geography. Award is based on academic performance.

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#### *Karl and Barbara von Dreden Stacey Scholarship*

Established by Katherine and Frank Baxter in honor of Katherine's parents, Barbara von Dreden (CU class of 1940) and Karl Stacey (CU class of 1936). This scholarship supports undergraduate students to engage in summer research with faculty. Preference given to applicants who are juniors or seniors majoring in Geography, and graduates from Colorado high schools. Award is based on academic performance.

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#### *Theodore C. Myers Memorial Scholarship*

Named in honor of long-time geography instructor Ted Myers. Scholarship is awarded to the undergraduate student with the most exceptional honors thesis.

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A. David Hill



## *Mable B. Duncan Scholarship Fund*

To support scholarships for Geography majors at the University of Colorado Boulder, based on financial need.

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## Graduate Scholarship Programs

### *Gary L. Gaile DART Graduate Fellowship in Geography*

This fund, in memory of Professor Gary Gaile, provides a fellowship/scholarship for Geography MA and PhD students doing field research addressing social and environmental concerns in developing areas.

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### *James A. and Jeanne B. DeSana Graduate Research Scholarship Fund*

This fund provides invaluable support for graduate student research.

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### *Gilbert F. White Dissertation Fellowship*

Named in honor of Professor Emeritus Gilbert F. White, this fellowship provides funding to outstanding Ph.D. students in the final year of dissertation preparation. Students are nominated by their academic advisors. Award is based on merit and financial eligibility.

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Please specify "Gilbert F. White Dissertation Fellowship" in the Comments field.

### *Geography Graduate Student Support Fund*

To provide support for graduate students in the Department of Geography at the University of Colorado Boulder. Support may include research support and equipment purchases. Gifts to this fund can be made in memory of (IMO) **Jennifer Dinaburg**. Jennifer, a vibrant, active doctoral candidate in the Geography department, passed away on April 26, 2012 at the age of 31. In her memory, the department has established a small, named fellowship for doctoral field research.

Jenn was passionate about geography in many forms: through the environment, the outdoors, and through learning about China. After studying Chinese language and literature at Connecticut College, she traveled and worked extensively on the Tibetan Plateau. After a degree in environmental studies at Prescott College, her journey brought her to the Geography Ph.D. program in 2008 to study the commercialization of Tibetan medicinal plants in China's northwest Yunnan province. Jenn brought a love of mountains, travel, and unconventional learning to the department, where she was well loved for her sense of humor, wit and spirit.



Jennifer Dinaburg

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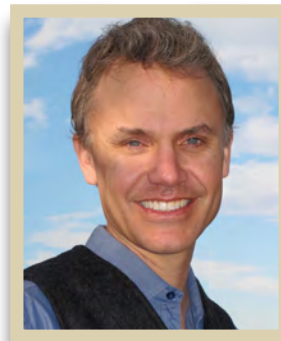
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### *Dr. Joe Bryan: Weaponizing Maps*

Emerging human rights standards define territory as a fundamental human right of indigenous peoples. Yet precisely what these territories look like and how they have come to be remain open questions for social movements and scholars alike. In *Weaponizing Maps*, authors Joe Bryan and Denis Wood trace the emergence of indigenous territories through the intertwined histories of militarized dispossession, indigenous social movements, and participatory mapping. Their account describes how these multiple and often contradictory tendencies have shaped the creation of indigenous territories through discussion of cases from Nicaragua, Mexico, and Canada. Their focus on participatory mapping techniques allows them to explore the tensions between counterinsurgency wars fought in “Indian Country” and “tribal areas” and indigenous peoples’ efforts to use maps to claim rights to territory. Their work demonstrates how indigenous territories have come to be spaces defined by a collective way of life – and as particular battleground.



Joe Bryan

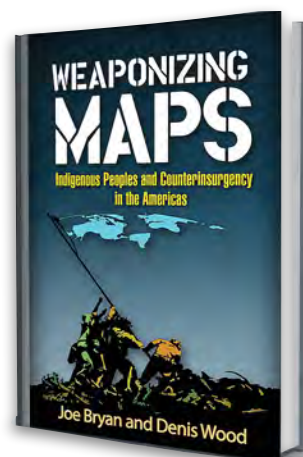


“Private property does not exist in this community. The sale or purchase of communal lands is prohibited. Commissary of Communal Lands, Ixtlán de Juárez, Oaxaca.”

The book draws extensively from Joe Bryan’s two decades of work with indigenous peoples in the Americas, with a particular emphasis on land rights and participatory mapping. His field experience in Nicaragua and Mexico gave shape to the overarching narrative of the book. Denis Wood has been a leading scholar in the field of critical cartography since its inception in the 1980s, writing books like *The Power of Maps* (Guilford, 1992) and *The Natures of Maps* (Chicago, 2008) that have helped define the field. *Weaponizing Maps* grew out of a series of conversations between Bryan and Wood that began in 2008 about participatory mapping. Writing and research was shared equally between them, guided by an outline originally drawn up by Bryan. Research for the book draws from a mix of archival sources, interviews, and fieldwork done in Oaxaca, Mexico and eastern Nicaragua.

*Weaponizing Maps* makes a significant contribution to three distinct fields of inquiry: indigenous politics in the Americas, participatory mapping methods and applications, and the history of geography as a

discipline in the U.S. Few other books take the kind of regional and interdisciplinary approach that Bryan and Wood do, adding both depth and breadth the field. Their work also breaks ground on new approaches to the production and use of maps, raising fundamental questions about how maps are used to “fit” indigenous peoples into the dominant contemporary geopolitical order without consideration for the ways in which that order has come to be.







## *Dr. Suzanne Anderson: Landslides and Weathering*

Suzanne has focused on landslides and weathering over the last year. She worked with Geography Department alum Scott Anderson (M.A., 2013) to use the power of LiDAR based topographic data to document the location, landscape position, and volume of landslides and debris flows in the September 2013 storm in the Colorado Front Range. High resolution LiDAR topography of 600 km<sup>2</sup> of the Boulder Creek watershed had been collected in 2010 as part of the NSF-funded Boulder Creek Critical Zone Observatory project that Suzanne directs. FEMA collected LiDAR data over storm damaged areas soon after the 2013 storm as part of their recovery effort. The team (which also included Geology Professor Robert Anderson) used simple differencing of the two LiDAR datasets to measure the landslide effects. The results contribute to our understanding of landslide hazards in the Front Range, but also yield insight into a problem that has long vexed geomorphology: do rare, large events shape landscapes, or do common, smaller events do the work? Here it seems that both types of events play important roles. Weathering and small scale transport processes build up debris on slopes and load steep channels, which are then swept clear in rare large events like the September 2013 storm. The Anderson-Anderson-Anderson team estimated the average 16 mm of lowering that occurred in basins with debris flows represented ~400 years of weathering build-up of debris. The work was published in the journal *Geology* in May 2015, and has been highlighted in news media from *Wired* magazine to Colorado Public Radio.



Suzanne Anderson

## *Events*

Interviewed by Colorado Public Radio's Ryan Warner for Colorado Matters, aired 4/29/15 (<http://www.cpr.org/news/story/study-2013-front-range-floods-caused-thousand-years-worth-erosion>)

Presented at the Boulder County "One Year Later" Flood Seminar Series, on the physical geography of the Front Range and the 2013 storm, presented 9/15/2014 in Lyons.

Led the Kirk Bryan field trip, during the Geological Society of America Annual Meeting. We took 75 participants to view "Critical zone evolution: Climate and exhumation in the Colorado Front Range".

Invited speaker at the 10th International Symposium on Geochemistry of the Earth's Surface (GES-10) in Paris in August 2014. <http://ges10.web-events.net/>

Invited speaker in the CU School of the Environment and Sustainability Colloquium Series, "The surprisingly deep history of Boulder's iconic landscape", 10/8/2014.

## *A few cool publications:*

Gabor, R.S., Eilers, K.G., McKnight, D.M., Fierer, N., and Anderson, S.P. (2014): From the litter layer to the saprolite: Chemical changes in water-soluble soil organic matter and their correlation to microbial community composition, *Soil Biology and Biochemistry* 68: 166-176, doi:10.1016/j.soilbio.2013.09.029.

Hinckley, E-L, Barnes, RT, Anderson, SP, Williams, MW, and Bernasconi, S (2014): Nitrogen retention and transport differ by hillslope aspect at the rain-snow transition of the Colorado Front Range, *Journal of Geophysical Research-Biogeosciences* 119 (7): 1281-1296, doi:10.1002/2013JG002588.

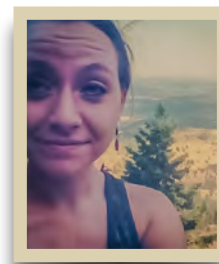
Langston, A, Tucker, GE, Anderson, RS, and Anderson, SP (2015): Evidence for climatic and hillslope-aspect controls on vadose zone hydrology and implications for saprolite weathering, *Earth Surface Processes and Landforms*, doi:10.1002/esp.3718. (Published online 17 March 2015.)

Anderson, SW, Anderson, SP, and Anderson, RS (2015): Exhumation by debris flows in the 2013 Colorado Front Range storm, *Geology* 43 (5): 391-394, doi:10.1130/G36507.1.



## *Jessica Barnes: A Student's Perspective*

Reflecting on what has brought me here, to my senior year majoring in Geography, initially reminds me of my first geography courses. I began my higher education at Arapahoe Community College and enrolled in World Regional Geography and Environmental Sciences. These courses gave me my first taste of how powerful learning about places through landscapes and



Jessica Barnes

cultures could be. This led me to apply to the University of Colorado Boulder, after I received my Associate Degree, because of the Geography Department's great reputation. I immediately felt the small, tight-knit atmosphere of the department as I was the only transfer student to meet with Elizabeth Pike during the Fall 2013 orientation. I was pleased to meet so many down-to-earth people and be living in such a gorgeous place. Hiking and wandering around downtown became some of my favorite hobbies. The opportunities that come

along with being a student at CU are amazing. I soon decided to expand my horizons and study abroad in a place I had always wanted to visit but never thought I would be able to – the tropical rainforest of Costa Rica. I spent two months during the summer of 2014 learning about tropical ecology and conservation in Costa Rica, which allowed me to round out my Ecology and Evolutionary Biology minor. I was also able to conduct my own independent research for two weeks while I was there. This was one of the best opportunities I have ever taken advantage of and I received a ton of help financially from the university. Once I returned, I was able to further develop my research into an honors thesis. The Geography staff supplied me with so much support and encouragement. I could not be more grateful to all of those that assisted me throughout the research. I successfully defended my thesis and am so happy to know I will be able to graduate with honors. Throughout my two years at CU, I have learned what I am most passionate about and have realized how much I still want to learn in the future. I am confident that the tools the professors here in the Geography Department have equipped me with will guide me through whatever challenges I will face in my life and future career. I cannot thank you all enough for making my time here better than I could have ever expected!





## *Chris Jochem, PhD Candidate*

I came to the Geography Department in the fall of 2010 to study health and medical geography. Along the way, my experiences in our department and in the field have changed how I approach environmental exposures and health research. I also got a wicked case of Dengue fever during my time in the field, but that is a story for another time.

My dissertation research examines exposure to arsenic-contaminated drinking water in rural Bangladesh and the resulting human health impacts. Arsenic occurs naturally in the sediments of this region but with high spatial variability due to geology. Human exposure to that arsenic occurs because of public health and development projects that encouraged people to start using wells.



That exposure varies as social, economic, and political factors influence households' access to wells and whether the well taps a contaminated aquifer. It is a classic geographical problem of relations between human activities and the natural environment. The preliminary results are showing that exposure to arsenic has decreased dramatically. While this change is, on the whole, positive, exposure has now become clustered both socially and spatially. Lower socioeconomic status households are at least

three times more likely to be exposed than high status households, and within this pattern there are significant spatial clusters where households are more likely to be exposed. These results are in contrast to just 10-12 years ago when almost everyone was equally likely to be exposed. The implications for health from this new pattern of more selective exposure are still unclear.

My research makes use of a new dataset I helped collect. As part of an interdisciplinary team of researchers from Bangladesh and CU at the Institute of Behavioral Science (IBS), I spent 18 months in Bangladesh helping with questionnaire design, training field staff, monitoring data collection and processing, and visiting with respondents. My background is mostly in data analysis – GIS and spatial statistics. This was my first time on the data collection side of such a large survey (covering about 30,000 people). There is too much to say about that experience. Eye opening is an understatement. Most importantly, though, living there, getting to know our interviewers, and talking with people showed me a context that as a researcher I could never have known looking only at a final dataset.

The department was very welcoming when I returned from my fieldwork and challenged me to think about my research in new ways. My research questions about the effects of arsenic on our health are still valid, but I want to go further. I want to use our data to understand why exposure initially occurred and why some people are still exposed now, decades after the problem was identified. I am still a medical geographer, but now I frame the questions differently and I interpret my findings with the knowledge gained from my time in Bangladesh. The case of arsenic demonstrates that until broader social, political, economic, even historical issues that have led to exposure are addressed, problems of health effects are not likely to be solved. We need this shift in thinking to better address health inequalities and geographers are uniquely trained to study the multiple human and environmental factors that cause health and disease.





## *Dr. Donna D. Rubinoff*

*Ph.D, Department of Geography, University of Colorado-Boulder, 2004*

As an academic geographer at the University of Colorado for ten years, Dr. Rubinoff taught courses on globalization, theory of international development, gender and development, world regional geography, and environmental design. Her doctoral research, conducted in Central America, explored connections between rural development, institutions, gender, and Information and Communication Technologies for Development (ICT4D). All of these have brought unique insights to her work on urbanization as part of a broader system. She has won numerous academic honors: she is a Woodrow Wilson Fellow and received a research grant from the US National Science Foundation.



Dr. Donna Rubinoff

Dr. Rubinoff has over 35 years experience in the field of sustainable urbanism and development. She is the leading expert on the topic in Rwanda, and among the top experts in the East African region.

As Senior Advisor to the City of Kigali from 2011 to 2014, she oversaw all aspects of Sustainable Urbanization governance and implementation, including policy, program, institutional, and capacity development. She also advised the Government of Rwanda on Sustainable Urbanization policy, organizational management, and institutions at a national and secondary city level. She has advised and oriented numerous donor, academic and private sector partners on all aspects of urbanization and rural development in support of their research, investment and policy initiatives. With funding and academic partners including IFC, ICF, UN Habitat, EU, Dutch Cooperation, Carnegie Mellon University, and others, she has developed a wide array of sustainable urbanization implementation initiatives, business process and regulatory reforms, demonstration projects, capacity building, change management and public awareness tools and campaigns. Topic areas have included master planning, E-governance, integrated land use and mobility, affordable housing, non-motorized transport and public realm, integrated water resource management, green infrastructure, alternative energy/energy efficiency, and municipal finance. She was featured on "Quest Means Business in Kigali Future Cities": <http://tinyurl.com/o9kox4p>

Since 2006, as a consultant to the governments of Kenya and Rwanda, Investment Climate Facility, World Bank, UN Habitat, GIZ, and private sector clients, she has led and participated in strategic, marketing, and economic development studies and communications. Of note, she led the OZ Architecture Kigali Master Plans that won the top urban planning awards from the American Planning Association. She has also been rostered as a technical expert for the Rwanda FONERWA national environmental fund and given numerous talks on the topic of sustainable urbanization.

Prior to her academic career, Dr. Rubinoff was an urban designer/planner and landscape architect for fifteen years in the US and Europe, focusing on physical design, institutional and economic aspects of urban redevelopment.



## *Dr. Emily Yeh, Department of Geography Chair*

Emily Yeh's book, *Taming Tibet: Landscape Transformation and the Gift of Chinese Development*, received the Association of Asian Studies Gene Smith Prize for Inner Asia in 2015, and was named a *Foreign Affairs* best book of the year for the Asia-Pacific region. The E. Gene Smith Prize, named in honor of a distinguished scholar of Tibet, is for the best book of the year addressing either contemporary or historical topics in any field of the humanities or the social sciences related to any of the countries and regions in the wide swath of Asia stretching from the eastern border of Afghanistan to Mongolia, i.e., Tibet, Xinjiang or Mongolia, including peoples coming recently from those areas.

## *Dr. Mark Serreze, Department of Geography*

Mark Serreze was elected as a Fellow of the American Meteorological Society (AMS). The award, presented in January 2015 at the annual meeting of the AMS in Phoenix, was in recognition of his contributions to Arctic climate science. Along with his role as Professor in the Department of Geography, Serreze is a Fellow of the CU Cooperative Institute for Research in Environmental Sciences (CIRES) and Director of the CIRES National Snow and Ice Data Center (NSIDC).

## *Dr. Mara Goldman, Department of Geography*

Mara Goldman had a key paper published, "Innovative Grassroots NGOS and the Complex Processes of Women's Empowerment: An empirical investigation from Northern Tanzania", in the journal *World Development*. This is the first publication out of a several year grant and Mara's first on her new work on gender. She also received a National Science Foundation Standard Research Grant: Examining Processes of Knowledge Co-production for Climate Adaptation in East Africa. 2014-2015.

## *Rory Cowie, PhD Fall 2014*

Recent PhD graduate Rory Cowie accepted a teaching position in Bhutan. The SFS program on Eastern Himalayan Forests and Rural Livelihoods (summer) and Himalayan Environment and Society in Transition (fall semester), have hired recent PhD (Fall 2014) Rory Cowie to be part of a residential team of faculty and staff who deliver an interdisciplinary, hands-on learning experience to students spending a semester abroad in Bhutan. Partnering with the Bhutanese Ugyen Wangchuck Institute for Conservation and Environment (UWICE), this program will present a rich learning landscape for students exploring people's relationship with the environment and conservation.

## *Alex Crawford, PhD Candidate*

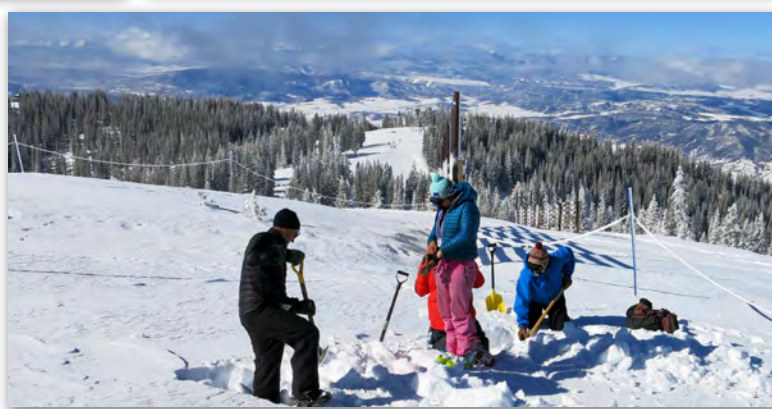
Alex Crawford, PhD Candidate advised by Mark Serreze, was the recipient of a National Science Foundation (NSF) Graduate Research Fellowship (GRF) in 2014. The fellowship period began in May 2014 and lasts for three years. His research under this fellowship focuses on a regional climate feature called the summer Arctic frontal zone (AFZ), a persistent band of strong horizontal temperature gradients that develops each summer along the Arctic coasts of Siberia and Alaska that has significant effects on Arctic storm formation and the region's hydrologic cycle. Alex's research was presented at the fall meeting of the American Geophysical Union in San Francisco and has been published in the *Journal of Climate* (Crawford and Serreze 2015). Alex has also been engaging in broader science education outreach under this fellowship by presenting to students and the general public at the CU Fiske Planetarium. Presentations run the gamut of natural science topics, from climatology to ecology to astronomy.






## *Dr. Noah Molotch, Department of Geography*

The following are selected photos from Noah's students' field trip / experiment in Steamboat Springs, CO. He had 18 people from 6 institutions and 5 different experiments. It is unclear if the skiing shark is one of the experiments.





2015 Spring Newsletter



# GEOGRAPHY

UNIVERSITY OF  
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