

# GEOGRAPHY

2017 Fall Newsletter



University of Colorado Boulder

## *Inside this issue:*

- ★ *Message from the Chair, pg 2*
- ★ *Tom Veblen Named CU Distinguished Professor, pg 3*
- ★ *Mark Serreze Named Professor of Distinction, pg 6*
- ★ *Yaffa Truelove, New Geography Faculty Member, pg 6*
- ★ *New Geography Instructors, Mike Dwyer and Sarah Kelly, pg 8*
- ★ *Graduate Student IGNITE Talks, pg 11*
- ★ *Department News, pg 14*
- ★ *Donor Support, pg 15*



*Emily Yeh, Department Chair*

Happy holidays from the Geography Department! We have had a busy and productive summer and fall, and we're eager to share some of what we've been doing with you.



Emily at Chaktsal gang, the first of four major prostration sites along the circumambulation route of Mount Kailash, Tibet, July 2016

This fall Professor **Yaffa Truelove** joined the department from the National University of Singapore where she taught for two years after receiving her PhD from Cambridge University. Professor Truelove is appointed jointly between the Geography Department and the International Affairs Program, and works on urban infrastructure and water governance in India. We also welcomed two new instructors. **Sarah Kelly** is teaching for and managing the newly approved GIS and Computational Science Certificate. Dr. **Michael Dwyer** was hired through a grant obtained by CU Boulder's Center for Asian Studies to teach courses on Southeast Asia, as well as other human and environment-society geography classes.

Several of our faculty members have received significant honors this fall in recognition of their scholarly achievement. Professor **Mark Serreze** was named a 2017 College of Arts and Sciences Professor of Distinction (*pg 6*), in recognition of his exceptional research, teaching and service. Professor Serreze, who is also director of the National Snow and Ice Data Center and a fellow of the Cooperative Institute for Research in the Environmental Sciences, focuses on making sense of rapid environmental changes unfolding in the Arctic with global warming, and is a frequent media contact on these issues. He joins two other faculty members in our department, Professor **John O'Loughlin** and Professor **Tom Veblen**, in holding this title, which has been conferred on fewer than 5% of the faculty in the College.

Also this semester, Professor **Tom Veblen** was named a University of Colorado Distinguished Professor by the Board of Regents (*pg 3*), the highest honor bestowed upon professors across the entire University of Colorado system. The title recognizes his international leadership in the fields of biogeography, forest and fire ecology, and tree ring research; his mentorship and training of an entire generation of biogeographers, including particularly researchers in Chile and Argentina; and his extensive engagement with federal and state land managers, among many other aspects of his research, teaching, and service work. He joins two other Geography faculty members in having received this rare honor, Distinguished Professor Emeritus **Roger Barry** and now-deceased Distinguished Professor Emeritus **Gilbert White**.

We were very happy to host a Geography Alumni and Friends event on October 27, 2017 coinciding with CU Boulder's Homecoming Weekend. Professor **Waleed Abdalati** gave an inspiring keynote address, "Earth from Space: The Power of Perspective," highlighting how advances in satellite and other remote sensing techniques have transformed understandings of the planet, as well as providing insights about his experience as NASA's Chief Scientist. Following the reception, six current graduate

Message from the Department Chair



students – **Ridge Zackary, Nick Lewis, Martha Morrissey, Sam Smith, Caitlin Ryan, and Alice Hill** (*pg 11*) – also presented their research. Ranging from first year MA students to final-year PhD candidates and spanning the subdisciplines of Geography, these students sparked excitement about their research through dynamic, 5-minute IGNITE talks. There were 78 attendees, including alumni, retired faculty members, current faculty and staff, current students, guests, and other friends of the department. We hope to continue to build bridges with our alumni and our broader community beyond the campus, and look forward to future events as one avenue for doing so.

Finally, though the department has fared well, there are many challenges ahead. The most recent was the House tax bill, which proposed the elimination of the tax exemption for tuition waivers/remissions. If this were to have become law, it would have had a devastating effect on graduate students, who are vital to both the research and teaching missions of the university. At the same time, the House’s proposed reauthorization of the Higher Education Act would have eliminated subsidized loans, on which nearly six million undergraduate students across the US depend, as well as the supplemental education opportunity grant and student loan programs for graduate and professional studies. These provisions, like the elimination of the tax exemption for tuition remissions, would make higher education much less accessible and affordable to all but the wealthy. These would be serious potential blows to the ability of our country to continue to produce the skilled and educated citizens needed by the United States and indeed the world in the 21st century. While it now seems that these measures will not be included in the final tax bill, the threats they pose underscore our students’ increasing need for support in these precarious times.

### *Tom Veblen Named University of Colorado Distinguished Professor*



Professor Tom Veblen

[geography.colorado.edu](http://geography.colorado.edu)

**Jeff Nicholson** recently interviewed **Tom Veblen** to discuss being given the University’s highest faculty honor, Distinguished Professor, and learn more about Tom’s exceptional career. Read the full interview on the Geography website in the News & Events section.

#### **What does being named Distinguished Professor mean to you?**

It’s a real honor to be included in a group of CU faculty with such impressive accomplishments as previous and current members of the Distinguished Professor group. It’s really an honor to be in the same group as the geographers who previously have had this honor: Gilbert White, going way back, and more recently Roger Barry. As I told the Board of Regents at the awards ceremony: “This award reflects the achievements of many



people, not just my own efforts. The research accomplishments of my research group obviously reflect the successes of many CU graduate students and postdocs over several decades. This award reflects the superb teaching and collaborative mentoring by my colleagues in the Geography Department – it is really true that ‘it takes a village’ to launch the careers of the highly successful alumni of our graduate program.” The recognition is particularly timely in the context of the political attacks on science in general and on those who do research on climate change impacts.

### **When you were starting out, what made you decide to pursue Geography?**

My case is very similar to a lot of people who get into Geography. We just stumbled into taking a course which captured our interests which we found motivating. It was about 1966, my sophomore year at Berkeley, when I took an introductory physical geography class taught by Ted Oberlander, a geomorphologist. At that stage, it was clearly the best course I took at Berkeley while I was exploring various majors. The subject matter resonated with me, but it all really goes back to having an excellent teacher.

### **You’ve been in the CU Geography department since the early 1980s. What was the department like then compared to now?**

In the 1960s and 1970s, CU was not a top-ranked research university. It was in the 1970s and 1980s when CU’s research reputation really took off. I came here during a transition period when many of the 12 or so Geography faculty members were no longer very active in research. Yet, the old guard was highly supportive of young faculty and created an atmosphere that allowed the department to advance rapidly on the research front in the early 1980s. These days, we have double the number of faculty. Geography is regarded as one of the top research departments on campus and one of the top geography departments in the U.S. and internationally.

### **Did you have any mentors or role models along the way? How did they help you?**

When I was just starting grad school at Berkeley, we had a visiting faculty member, a young guy named Martin Kellman—certainly a “young turk” in the context of the Berkeley department trying to extend the glory days of preeminent geographer Carl Sauer. He had just finished his PhD at Australia National University and was visiting from Simon Fraser University where he had been recently hired. Martin’s example showed me that biogeography and plant ecology were attractive and attainable fields for someone with degrees in geography as long as we sought the appropriate training in related subjects such as forestry, soils and botany. I only took one class from him, but we stayed in frequent contact throughout my time in grad school and during my early career. He would occasionally send me a note on something I had recently published—his comments were typically both congratulatory and sometimes a bit critical. The example of Martin’s research has been of fundamental importance to me in terms of developing scientifically important research questions, and steadfastly pursuing those questions over decades of sustained research effort. His approach to research is the antithesis of the “low hanging fruit” approach encouraged by our funding and rewards systems today. The high quality of his research set an aspirational standard for me.



## **Can you tell us an impactful or humorous story from your career?**

I was a young postdoc in New Zealand working with the Forest Service in the late 1970s. A colleague of mine, Glenn Stewart, and I wrote a review paper which was essentially a critique of the science underlying much of the forest management being done in New Zealand at that time. We took a draft manuscript to one of the most senior scientists in the Forest Service who was one of the most prestigious scientists in New Zealand. In his written critique as well as his oral comments, he thoroughly trashed the manuscript and commented that if the manuscript were published we would be embarrassed. Glenn and I were about ready to get up and leave his office when he said, "But there's one way I can think of to save this manuscript: if you bring me in as a co-author." We just said, "thank you" and left. We knew at that moment we had written a pretty good critique of the conventional wisdom.

## **As a scientist, what are your fears and concerns for our collective future?**

My major concern is with the current political attacks on the credibility of science. Although there are debates about the details, for the most part, everyone who is a serious researcher in forest ecology is in agreement warming temperatures are accelerating large forest disturbances (wildfire, bark beetle outbreaks) and tree mortality events. I'm worried about political influence on the conduct and application of science— not acknowledging the fundamental underlying role of climate change in forest changes is a serious impediment to meaningful discussions of appropriate societal responses. It's a pretty threatening situation right now, and tenured university faculty have a special obligation to stand up against the political bullying of science.

## **What makes you hopeful for the future?**

Based on teaching talented and highly motivated interdisciplinary graduate students for several decades at CU, I'm optimistic about the future of environmental science in general. Young people are picking up skills very quickly and they're really motivated. They're excited. They're passionate about their work. I'm very excited about the quality of research in the environmental sciences.

## **What advice can you give to students about their careers and the study of Geography?**

It's as simple as "love what you do and do what you love." At the graduate-level, for people who are considering an academic or research-oriented career, the key thing is to explore the intellectual subfields and the types of research activities that can motivate them for many years. Try to discover what you're passionate about intellectually—and, then just go for it!

## **Of what are you most proud?**

Clearly it's the accomplishments of my students. I've had 33 PhD students graduate from CU and I've got another 4 PhD students in the works right now. I'm extremely proud of how those students have gone on to become highly accomplished and respected researchers and teachers and to educate their own graduate students who in turn are mentoring the next generation.



## *Mark Serreze, Professor of Distinction, 2017*

Mark Serreze was named 2017 Professor of Distinction by the College of Arts and Sciences in recognition of his exceptional service, teaching and research. This title is reserved for scholars and artists of national and international acclaim whose college peers also recognize as exceptionally talented teachers and colleagues. Honorees of this award hold this title for the remainder of their careers in the College of Arts and Sciences at CU Boulder.



Professor Mark Serreze

In addition to being a professor of geography, Dr. Serreze is a fellow of the CU Cooperative Institute for Research in Environmental Sciences, and director of the CIRES National Snow and Ice Data Center. He specializes in Arctic climate research, including atmosphere-sea ice interactions, synoptic climatology, boundary layer problems, numerical weather prediction and climate change. At the College event honoring his achievement, he spoke about “Shifting Priorities: A Personal Journey.”

Dr. Serreze's research over the past decade has increasingly focused on making sense of the rapid environmental changes unfolding in the Arctic. He has conducted fieldwork in the Canadian and Alaskan Arctic on tundra, sea ice and glaciers. Serreze has published more than 100 papers in peer-reviewed literature, and is recognized as a Thompson Reuters Highly Cited Researcher. In 2014, he was elected fellow of the American Meteorological Society. He has published an award-winning textbook, *The Arctic Climate System* (now in its second edition), and teaches a course under the same title. His popular science book, *Brave New Arctic: The Untold Story of the Melting North*, will appear in print in April 2018. Serreze has testified before the U.S. Congress, is a frequent media contact on issues of climate and climate change, and has appeared in television documentaries.

## *Yaffa Truelove, Assistant Professor*

At the nexus of urban geography and human-environment relations, my research is deeply invested in questions of social and environmental justice in cities. My early work focused on precarious urban waterscapes in South Asian cities in order to build knowledge and theory that can contribute to more equitable access and rights in cities of the global South. My current research interests span across geographic locations, including Indian megacities, small and medium-sized towns and the urban-rural interface in South Asia, as well as cities and their infrastructures in the U.S.



Professor Yaffa Truelove



Women organizing for water in informal settlement in Delhi, India

My early work and PhD dissertation studied the social life of water and the many ways it is governed in India's capital, Delhi. This research traces the unequal hydro-social geographies of water in a city where more than 50% of the population lacks official rights to the state's piped water supply. In addition to exploring the complexities of water governance, this research analyzes how Delhi's water politics shapes the everyday practices of city-dwellers,

consequently reinforcing particular class, gender and ethno-religious differences and inequities in the city.

More recently in two new projects, I examine how urban water infrastructure, rather than being an apolitical backdrop, is both an instrument of governance and socio-technical assemblage that actively shapes urban society, social inequity, and unequal urban experiences. The first is a collaboration in 2016 with researchers from the University of Durham on a comparative project investigating diverse urbanisms and infrastructural politics in cities of the global South. In this research, we specifically



Woman getting tubewell water, Delhi, India

examine the politics of precarious infrastructures (including housing, water and sanitation) both within, and between, the cities of Mumbai, Delhi and Cape Town. Our research findings demonstrate intra-urban comparison across cities can complement inter-urban comparative work, helping to reveal the varied



Women waiting hours for state tanker water to arrive in an informal settlement of Delhi, and then filling containers for their households.



New Faculty

and contradictory processes and practices shaping cities, new scales and spaces of urban politics, and the diverse routes through which progressive change can occur with regard to social and environmental justice.

Second, is a project examining the Delhi water emergency of February 2016, an event instigated by *Jat* groups in Haryana that prevented a major artery of Delhi's water supply from entering the metropolis. While the disrupted infrastructure was portrayed by the government and media as producing a uniform city-wide crisis in which taps went dry, this research analyzes the ways in which the effects of the declared emergency were unevenly distributed and mitigated. Building on the work of urban political ecologists who expose the power relations embedded in the infrastructures and (impeded) flows of water, my findings show that the water crisis produced socially differentiated forms of infrastructural violence and inequities in its aftermath.

Now that I joined the Geography Department in the Fall of 2017, I am looking forward to also expanding my urban geographical and water governance research to include local work on urban inequality and water governance in cities of Colorado and the U.S., in addition to South Asia. I am very excited about the opportunity to build collaborations within the Department and University, and am also enjoying the beautiful hikes, mountains, and scenery that Boulder has to offer!

### *Mike Dwyer, Instructor, Ph.D. University of California Berkeley, 2011*

My work is motivated by a desire to study the legacies of underdevelopment while also investigating how Development itself is changing as American hegemony is increasingly contested, both in Southeast Asia and globally. I use struggles over agribusiness investment, land titling, forest governance, and energy infrastructure development as avenues into larger questions of social and economic justice, historical legacies of conflict, and associated public policy. Engaging scholarship on uneven development, ongoing state formation and transnational governance, my work argues for, and attempts to describe, more just and sustainable approaches to governance institutions and policy-making.



Contested community forestry landscape, northeastern Cambodia

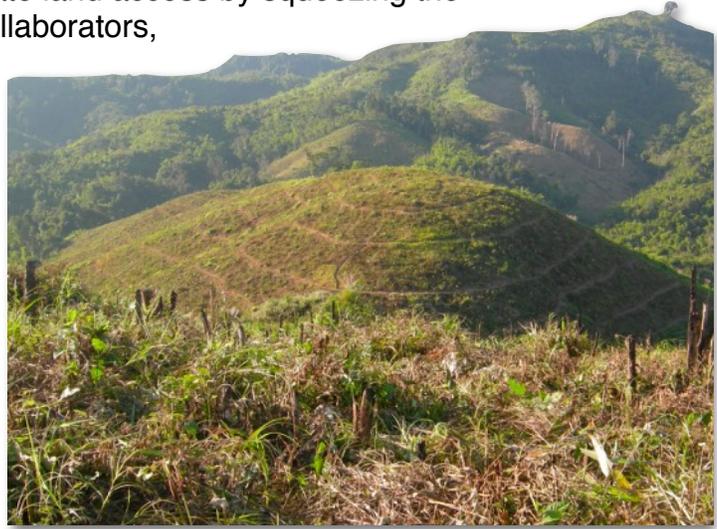
My research agenda has grown largely from my dissertation project, *Territorial Affairs: Turning Battlefields into*

*Marketplaces in Postwar Laos* (2011). This project framed Laos's contemporary development landscape in terms of a long postwar transition that was occurring both locally and through protracted processes of state formation and international assistance.

New Instructors



I showed how legacies of Cold War conflict continue to exacerbate the uneven development of Chinese rubber plantation projects in northern Laos, providing a way for Lao authorities to create cheap corporate land access by squeezing the descendants of perceived American collaborators, while simultaneously appearing to maintain populist (“land to the tiller”) commitments to local landownership. Looking also at the internal politics of state regulation, I showed why this socially uneven enclosure and dispossession became all but lost as individual investment projects were translated into official spatial data. My work thus challenges popular and scholarly audiences to go beyond narratives of “land grabbing by the Chinese” and other foreign powers, and look instead at both longer-term processes that are at once local and transnational in order to explain why land deals become land grabs in some places but not in others. I am currently developing this work into a book manuscript for the University of Washington Press.



Corporate rubber concession, northern Laos

Since finishing at Berkeley, I have applied the ethnographic, historical and spatial methods that I developed for my dissertation to two projects focused on the theme of spatial transparency. The first studies the geography of land titling in Cambodia and Laos. The first stage of this project showed how far titling-in-practice has to go – both literally and politically/institutionally – in order to be the solution to land grabbing imagined by many in the policy world. A second phase of this project, begun in 2016 and continuing currently with research in Laos, examines alternative mechanisms for community titling which are being implemented “below the radar” with local governments, in the face of ongoing central-level resistance to recognizing community-owned lands.

A second project examines the geography of climate-change mitigation efforts in the forest sector. This project has found that current REDD+ efforts are both socially regressive (targeting the poor) and unlikely to result in emissions-based crediting. Taking a different tack than critical scholars who have focused on the abstract question of the commodification of nature, we argued that actually engaging the industrial drivers of forest loss at scale could transform the status quo for the better if



Post-socialist development propaganda, southern Laos



donors would actually put their money where their mouths are.

With colleagues at the University of Helsinki, I am currently expanding this work to study how, in the absence of functional ways to value forests and finance rural infrastructure development, forest rents in Laos are being used as a makeshift (and highly unsustainable and inefficient) way to finance things like roads and rural energy projects. This system is a direct legacy of state socialism and underdevelopment in the Mekong region, and has persisted in the shadows of ongoing transnational forest governance reforms and efforts to “green” the economies of the region using mechanisms like REDD+ and commodity-chain reforms.

These projects are collectively providing material for two books. The first, mentioned above, follows my engagement with the global land-grab debate outlined above. The second draws on my research on land-titling projects in Southeast Asia, and is still in the early stages. When completed, it will use these land-titling projects as an avenue into the shifting geopolitics of international cooperation in Southeast Asia, as Western development hegemony becomes increasingly contested across the region.

### *Sarah Kelly, Instructor, M.A. University of South Florida, 2008*

Prior to moving to Colorado I taught at colleges in both Florida and Oregon. Additionally, I worked for the Oregon Department of State Lands administering the state’s wetland and waterway regulatory program. Before moving to Oregon I worked in environmental consulting, directing and coordinating large compliance monitoring projects in Florida and Indiana. My academic

interests include GIS applications in ecological restoration, spatial statistics, and spatial epidemiology/health. I obtained my master’s degree from the University of South Florida where I focused my studies on the use of GIS for locating potential wetland restoration sites and mapping historical landscapes using General Land Office survey data.



Sarah Kelly: Racing photo.



Sarah Kelly: Permit compliance monitoring for a stream habitat restoration project.

Outside of academia, I am the lead navigator on an adventure racing team, am an avid trail runner, mountain biker, and yogi, and enjoy spending time with my 6-year-old daughter.



*Alice Hill, The Role of Ice and Snow in Central Asian Water Supplies*

Alice Hill's IGNITE talk presented part of her dissertation research quantifying the role of ice and snow in Central Asian water supplies. Will Asian rivers run dry when glaciers melt out and snowpacks become smaller in a warmer world? Alice presented her approach to characterizing this vulnerability over large scales in data scarce areas like



Yurt dinner, Son Kol, Kyrgyzstan



Filtering samples at the base of the Kara Batkak glacier, Kyrgyzstan

the Naryn River basin, headwater stem to the Syr Darya and the disappearing North Aral Sea. Using satellite imagery and targeted isotope and hydrochemical sampling in the field, Alice shows that snow and ice meltwaters play a dominant role in both surface and groundwater supplies to downstream communities. The combined influence of social, political and climate induced pressures on water supplies in the Naryn basin, and the Central Asian region in general, suggest the need for proactive planning and adaptation strategies, and warrant concern of future water stress in melt-sourced Central Asian watersheds.

*Caitlin Ryan, Re-imagining Central Asian Geography: Moving Beyond Ethnicity and Conflict*

In her IGNITE talk, Caitlin Ryan examined two episodes of violent ethnic conflict in Kyrgyzstan's second largest city of Osh. She debunked a number of sticky myths about Central Asian conflict and ethnicity, including the false idea that Stalin drew borders with the aim of dividing and conquering the region, and the related notion that conflicts in Osh have been primarily driven by "ancient ethnic hatreds." Instead, Caitlin argued that ethnic identities such as Uzbek and Kyrgyz were produced through the Russian and Soviet imperial projects of





nation building. Drawing on new findings from her dissertation fieldwork, she demonstrated how historical processes have structured a certain kind of ethnically segregated and fragmented urban space in Osh, which gives us greater insight into conflict processes. In a region that receives millions of foreign aid dollars targeted at preventative development, peace-building and other humanitarian initiatives, Caitlin argues that the history of urban transformation in Osh offers one way to move beyond the reification of ethnicity as the most important marker of difference.

### *Martha Morrissey, Crowdsourced Data and Cycling*

In her IGNITE talk, Martha Morrissey discussed a critical issue in alternative transportation studies, understanding how new data sources detailing cycling volumes can be used to augment traditional cycling data such as surveys and manual counts. Her research asks: “How can cycling flows in specific city corridors be understood and modeled through the fusion of crowdsourced data and traditional data sources?” The goals of her master's work are to a) synthesize multiple cycling volume data sources and b) create a modeling framework to predict the volume of cyclists at a city corridor level. Understanding cycling volumes will lead to insights into where new infrastructure should be developed and if current infrastructure is meeting current and/or expected demand.



Martha Morrissey commuting in Boulder

Traditionally, sources of volume data have come from cities counting individual cyclists at selected intersections during peak commute hours (typically 7-9am and 4-6pm, but the hours vary by city). These manual cycling counts are time-intensive, expensive, and temporally and spatially sparse since they are restricted to certain intersections at certain times of day. Emerging data sources that offer cycling counts now include data from bike share programs, as well as crowd sourced data from fitness tracking apps such as Strava. Strava is a popular app, with over 7 million activities worldwide uploaded to the site weekly, that allows users to record and view fitness activities using a GPS enabled watch or smart phone. The modeling framework Martha is using to address this research question will move beyond basic linear regression to take advantage of the high temporal and spatial resolution of modern cycling data sources, and the model(s) will

take into account the spatial connections between road segments, which traditional (linear regression) models fail to account for. Drawing from the field of traffic volume and speed prediction, this research will employ spatially recurrent neural networks.

Predictors used in the modeling efforts will include month, type of bike infrastructure, slope of the road, traffic volume, car speed limit, and number of past cycling accidents along the road segment.



*Sam Smith, Spaces and Identities in Three State History Museums*

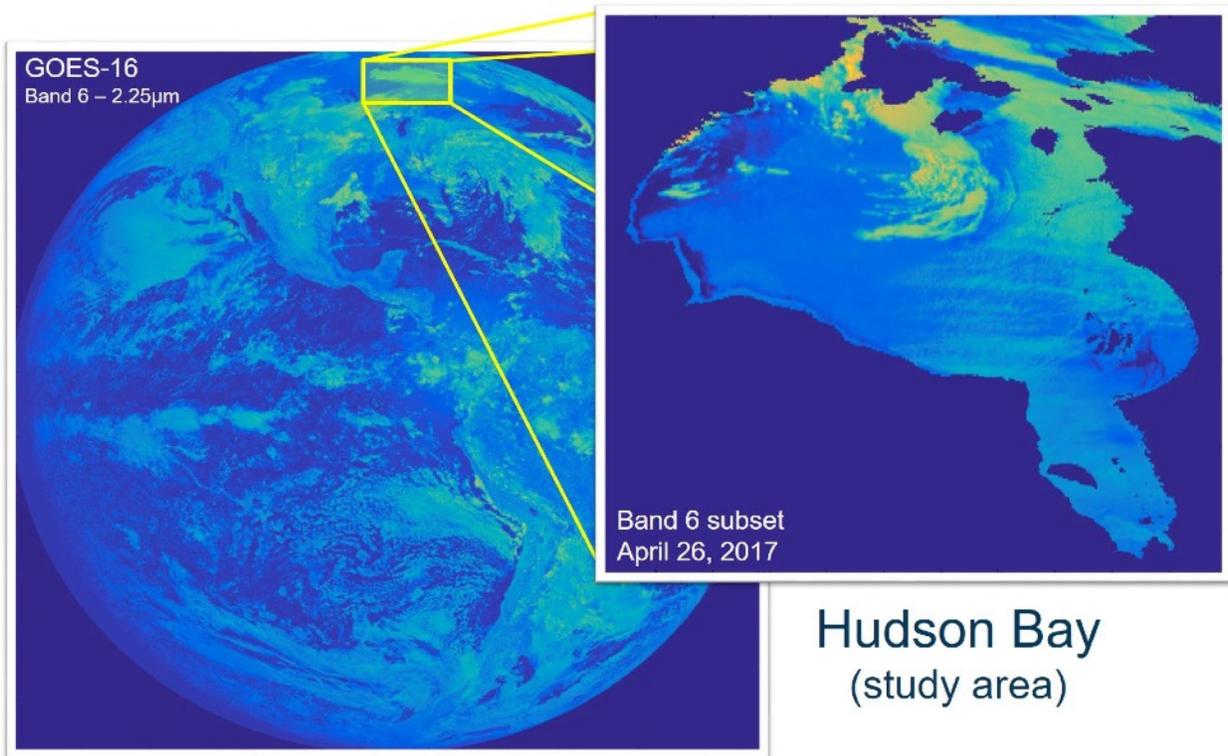
Sam Smith studies how the complex past of the American West is presented to visitors in museums and historic sites. In this IGNITE talk, he compared the state history museums of Colorado, New Mexico, and Wyoming. These three museums—each recently rebuilt or renovated—combine “official” presentations of each state’s history with more recent critical views on themes of ethnicity, labor, gender, and environmental impact. The spaces of each museum present not only distillations of each state’s geography and history, but also spatialized narratives that organize and articulate each state’s identity. These narrative structures are different for each of the three museums, but each functions to partially reconcile the conflict between Western frontier iconography, and more critical readings of the region’s past.



Sam Smith

*Nick Lewis, Weather Satellite Data*

Using a NOAA weather satellite as a proxy data set for Air Force missile warning data, Nick Lewis is assessing the feasibility of developing a single channel shortwave infrared algorithm for the detection and characterization of sea ice in Hudson Bay. If successful, this product could be applied to other data sets which ultimately could provide high temporal resolution maps of Arctic sea ice conditions which will aid in maritime operations (civil, commercial, and military) as the Arctic becomes more accessible in the coming years.





## *Professor Jennifer Balch, RIO Faculty Fellow*

Geography professor **Jennifer Balch** has been named a RIO Faculty Fellow. The Research & Innovation Office (RIO) Faculty Fellows Program is a campus-wide research and creative works leadership program that supports rising CU Boulder faculty interested in furthering their leadership skills to achieve maximum impact within and beyond the campus. The Program seeks to identify and develop tenured and tenure-track assistant or associate professors who are poised to lead significant collaborative projects, develop vision and deliver novel and impactful scholarly work.

## *Professor Holly Barnard, UROP Mentorship*

**Holly Barnard** provided exemplary mentorship in the Undergraduate Research Opportunities Program (UROP) this past summer. Holly mentored UROP Grant recipient Aidan Manning on the project "Physiological Response of Ponderosa Pine to Extreme Summer Precipitation Events."

Each year, UROP awards hundreds of students of all majors a total of over \$500,000 in funding to support projects driven by their own curiosities or goals and guided by experienced researchers, scholars and creative professionals like Holly. What makes these experiences applying classroom learning valuable beyond the refinement of disciplinary skills or knowledge is the relationship students develop with their faculty mentors, who take an interest in them and help them build bridges to life after graduation. Holly's mentorship opens opportunities for Geography students to take advantage of UROP and all of the benefits of engaging in research, scholarly and creative work.

## *Professor Seth Spielman, SPAIG Award*

At the Joint Statistical Meeting of the American Statistical Association this past summer, Professor **Seth Spielman** and David Folch were recipients of the 2017 SPAIG Award. SPAIG is the Statistical Partnership Among Academe, Industry, and Government Committee.

## *From members of Professor Noah Molotch's Mountain Hydrology group*

**John Knowles** (PhD 2015) received a grant from the Fort Collins-based Colorado Water Institute that will extend his current postdoc with Noah Molotch (Co-PI on the grant) into next year. In September, he began working at the University of Arizona where he will begin a second postdoc with Greg Barron-Gafford in the spring focused on carbon and water cycling from the "sky-island" mountain ecosystems of southwestern North America.

**Alice Hill**, PhD Candidate: A [National Geographic kid's chapter book](#) just came out with Chapter 2 telling the story of Alice Hill's Peruvian Andes research, with a woman-scientist-adventurer theme. Not a bad outreach piece to the next-gen scientist audience!

**Katherine (Kate) Hale**, MA student, is using the Distributed Hydrology Soil Vegetation Model to explore streamflow efficiency across rain and snow events in Critical Zone Observatories across the western US. Preliminary work was presented at AGU this December.



**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.

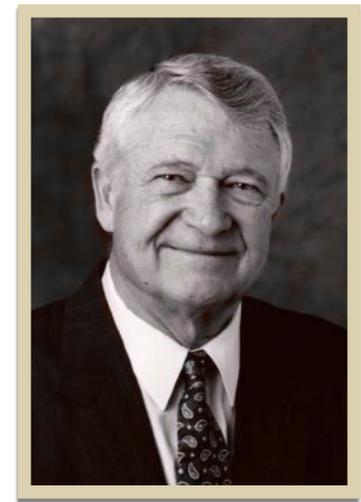
**GIVE NOW** Go online to: [giving.cu.edu/fund/geography-department](http://giving.cu.edu/fund/geography-department)

## 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.

**GIVE NOW** Go online to: [giving.cu.edu/fund/david-hill-endowed-scholarship-fund](http://giving.cu.edu/fund/david-hill-endowed-scholarship-fund)



A. David Hill

### *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.

**GIVE NOW** Go online to: [giving.cu.edu/fund/albert-w-smith-geography-scholarship-fund](http://giving.cu.edu/fund/albert-w-smith-geography-scholarship-fund)

### *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.

**GIVE NOW** Go online to: [giving.cu.edu/fund/karl-and-barbara-von-dreden-stacey-scholarship-fund](http://giving.cu.edu/fund/karl-and-barbara-von-dreden-stacey-scholarship-fund)

### *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.

**GIVE NOW** Go online to: [giving.cu.edu/fund/theodore-c-myers-memorial-fund](http://giving.cu.edu/fund/theodore-c-myers-memorial-fund)



## *Mable B. Duncan Scholarship Fund*

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

**GIVE NOW** Go online to: [giving.cu.edu/fund/mable-b-duncan-scholarship-fund](http://giving.cu.edu/fund/mable-b-duncan-scholarship-fund)

## **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.

**GIVE NOW** Go online to: [giving.cu.edu/fund/gary-l-gaile-dart-graduate-fellowship-geography](http://giving.cu.edu/fund/gary-l-gaile-dart-graduate-fellowship-geography)

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

This fund provides invaluable support for graduate student research.

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### *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 PhD. 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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