

Geography Connection

University of Utah Department of Geography

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Letter from the Chair

This year the theme has been cluster hire opportunities! Senior Vice President of Academic Affairs (SVPAA) Ruth Watkins put out a call last year for Transformative Excellence Proposals designed to make strategic hires in areas of existing strength that would benefit from a few additional exceptional faculty. Geography organized a successful proposal on Society, Water and Climate and we have spent the majority of our spring semester participating in 12 candidate interviews. This is a very exciting opportunity because half the salary for these hires would come from the SVPAA's office, effectively increasing our faculty size if some of the successful candidates end up in our department. Things are looking good and we will happily report in on our progress in the next newsletter or stay tuned on the department website for updates!



While we look forward to the addition of new faculty, we are sad to say goodbye to Dr. Kathryn Grace. Dr. Grace has accepted a position at the University of Minnesota. While we wish Kathryn and her family the very best we will miss her enthusiastic and significant contributions to our department.

The discussions on a new Orson Spencer Hall are progressing; we are currently waiting for the final approval from the legislature. The timing of the project is not finalized, but we are guessing that if all goes as hoped we'll be in our new building within the next 5 years. Other exciting news includes the development of eight new Geography Emphases (Climate Change, Ecology and Biogeography, Geographic Information Science, Geomorphology and Hydrology, Global Development, Population, and Sustainability, Hazards, Resources and Human Security, Remote Sensing of the Environment and Urban Systems, Location and Resilience). These emphases allow our students to get specialized training (that they have been requesting) that will increase their marketability upon graduation. We are excited to offer these great new options. We also developed a Bachelors to Masters program in GIS. This program will

allow our students who know they want to acquire a bachelors and masters in GIS to do so in an abbreviated time frame by optimizing electives and streamlining their degrees. This will be a great choice for students who want degrees in GIS to save a year of tuition and hit the job market well prepared earlier than the traditional 4 year bachelor + 2 year masters option. We have a strong, productive and enthusiastic department that continues to grow and improve! Check in with us (www.geog.utah.edu). We'd love to hear how everyone is doing and what everyone is up to. Thanks for your continued support!

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Emeritus Faculty

Donald R. Currey (<i>Deceased</i>)	Albert L. Fisher
James W. King	Thomas Kontuly
Chung-Myun Lee	Roger M. McCoy
Merrill K. Ridd	Leroy H. Wullstein



Faculty Affairs

Robert Argenbright: Robert earned a Ph.D. in Geography from the University of California, Berkeley in 1990. Before coming to Utah he was Associate Professor of Geography at UNC-Wilmington where he taught a broad range of human geography courses. At the U, Robert has taught World Regional, Human Geography, Geography of North America, Russia, Urban Geography, as well as History of the Soviet Union. In fall semester 2014 he taught World Cities, GEOG 3610 and Geography of China, BUS 3840, for the first time. He continues to work on his book project, *Moscow under Construction: City-Building, Civil Society, and Urban Governance*. He also expects to publish a historical article concerning ethics in the Soviet Communist Party later this year.



Genevieve Atwood: New! and news from Genevieve Atwood, adjunct. The geography department now offers a course that meets the Humanities Exploration Gen Ed requirement. Geog 2600 The Power of Place explores intersections of the Humanities and geography. Dr. Atwood (physical geographer) and Dr. Bapis (cultural historian) co-teach the course. Students learn to interrogate landscapes and interrogate films for meaning. For example, by the end of the course students recognize how specific elements of physical geography portrayed in settings of literature and films of the American West project values. Ask yourself... how much of your friends' knowledge of distant places comes from films? Geog 2600 prepares students to recognize how Humanities' and Geographers' portrayals of nature have consequences. That's the power of place.



Simon Brewer: Simon is an Assistant Professor in the Geography Department. He works with records of climate change and ecosystem response over broad time and spatial scales. He has a particular interest in integrating observations of ecological change with models, and is currently working on an NSF project to model vegetation changes for North America and Europe over the last 21,000 years. Current research aims are focusing on using long-term records of vegetation change to study resiliency and functional changes. Work from these projects has been presented in China and Germany, and he was elected to the editorial board of Ecological Informatics at the end of last year. He teaches a mixture of classes including advanced statistical analysis, spatial modeling and the impacts of climate change.



Andrea Brunelle: Andrea is serving her second year as chair of the Geography Department. She is a paleoecologist who

studies environmental change with a focus on climate change and past ecosystem disturbances such as fire and bark beetle outbreaks. Much of her work has land management implications. Her geographical areas of interest include the Intermountain West and the American Southwest (including northern Mexico). Her most recent project is investigating the paleoenvironment of the west desert in collaboration with archaeologists from the Dugway Proving Ground. Andrea taught a seminar on the Popular Literature on Climate Change in the fall, and is teaching a climate change course in the business school this spring that enrolled at over 100 students! She is excited to have the chance to explain and discuss the science and implications of climate change with future businessmen and women. She looks forward to the chance to teach it again in the fall.



Larry Coats: has been a life-long resident of the Colorado Plateau, spending decades in each of the Four Corners states (New Mexico 1956-1973; Colorado 1973-1975, 1983-1994; Arizona 1975-1983, 1994-2004; and now Utah 2004-2015). His research includes paleoecology and climate change, especially reconstructing past environments in arid lands using packrat middens as a tool. Currently, he is working on reconstructing the paleoenvironments of Range Creek Canyon to support the archaeological investigations that are in progress, using alluvial sediments and packrat middens, and assisting students using dendroclimatology and bog sediment cores. He has also worked on the late Holocene distributions of Adelie penguins along the Victoria Land Coast of Antarctica, another very arid environment. Along with collaborators Steve Emslie and Tammy Rittenour, Larry recently published two new papers: Packrat middens and Holocene palaeohistory of Colorado pinon (*Pinus edulis*) in western Colorado, *Journal of Biogeography* 2015 42, 565-574, and Investigation of late and post-Fremont alluvial stratigraphy of Range Creek, east-central Utah: use of OSL when radiocarbon fails, *Quaternary International* 2014, in press.



Tom Cova: Tom's research interests are hazards, transportation, and GIScience with a particular focus on wildfire evacuation. Last year he was a visiting scholar at San Diego State University where he researched spatial uncertainty modeling, geovisualization in wildfires, and social media in disasters. Tom teaches Introduction to GIS in addition to GIS & Python, the Geography of Disasters, and occasionally a seminar on Hazards and GIScience. He likes to hike, bike, ski, and travel, and in December he visited northern India where he got to watch his little maharaja



ride an elephant to the Jaipur Palace.

Phil Dennison: Phil and his grad students are working on research projects dealing with remote sensing, vegetation, and wildfire. Phil published two big papers in 2014: a paper describing use of lidar for mapping firefighter safety zones with former grad student Greg Fryer and with Tom Cova; and a paper analyzing wildfire trends in the western U.S. over a nearly 30-year period with Simon Brewer and former grad student James Arnold. The latter paper got quite a bit of media attention, with Phil giving interviews on all 4 local TV stations plus numerous print and radio interviews. Phil was honored to be the recipient of the CSBS Superior Research Award and a University of Utah Honors Professorship in 2014. This spring, Phil is teaching a new graduate seminar on Remote Sensing of Vegetation.



Elizabeth Dudley-Murphy: Elizabeth is Adjunct Associate Professor in the Geography Dept., originally from the Atacama Desert in northern Chile. She received her PhD from the Geography Dept. in 1996 and worked with the Energy & Geoscience Institute (EGI) through last year. She has been teaching GIS in the Civil and Environmental Engineering Department for several years as well as teaching our Intro to GIS class (3140-90) completely online in Canvas. Besides GIS, Elizabeth also teaches three other online classes for the Geography Department and is the faculty representative at the University of Utah for the School for Field Studies, Environmental Field Studies Abroad Program, based in Salem, Massachusetts. Elizabeth is taking a break from research, but her research interests include the application of remote sensing and GIS for urban and vegetation analysis - specifically the urban forest. In the past she worked with colleagues to develop new methods based on high spatial resolution imagery for characterizing the urban forest in the Salt Lake Valley.



Rick Forster: Rick is Associate Dean for Research of the College of Social and Behavior Science. He is a glaciologist using remote sensing satellite and airborne data along with field measurements to study climate change effects on glaciers and seasonal snow. Rick's current NSF and NASA funded research is focused on the Greenland ice sheet where his team discovered an aquifer of water stored year-round in the upper part of the ice sheet within the buried snow. The team will be making more measurements on the aquifer in April and September 2015. Rick was invited to workshops in Nepal and Bhutan this year to initiate research on Himalayan Glaciers.



Kathryn Grace: Kathryn has enjoyed a busy past year working on a number of projects related to food production, health

and development in Africa. She has been invited to spend the summer in Paris, France at the Institut National d'Etudes Demographiques where she will collaborate with French researchers on projects related to health, development and land use in Mali. She was also recently funded by the U's Primary Children's Hospital Foundation to examine water quality, health and development in Burkina Faso - she's looking forward to working with two fabulous graduate students this summer and fall on this project - Geography's Brent Lloyd and Geology's Logan Frederick.



George Hepner: George is the Director of Undergraduate Studies, with responsibilities for undergraduate programs and emphasis areas, funding undergraduate students and programs, and outreach to prospective students on and off campus. He is Director of the U of U initiative for a US Geospatial Intelligence Foundation ([http:// usgif.org/](http://usgif.org/)) certificate in GEOINT. In Fall, 2014, he developed a new course "Project Management" GEOG 6162 to prepare MSGIS and others for project management responsibilities, primarily in the information technology arena. Also, George is coordinating the development effort to raise funds for student scholarships, faculty development and, hopefully, a new building home for the Department. If you would like to financially support, provide internships and mentoring for students or assist with funding efforts for the new building and programs; contact him.



Zach Lundeen: Zach is a Research Assistant Professor and Director of the Rio Mesa Center, a University operated field station located 40 miles north-east of Moab. As director of the Rio Mesa Center, Zach coordinates research, education, and outreach activities at the field station, and acts as the stations' primary administrator, working under the auspices of the VP for Research. He is a physical geographer that primarily studies paleoclimatology and paleoecology, using stable isotope geochemistry, pollen, and other sedimentary proxies. In the past, Zach has taught several different courses in the Geography Department, including Earth Environments, Ocean Environments, Pyrogeography, Water in Utah, Geomorphology, Resource Conservation and Environmental Management, and GeoExcursions. Currently, he co-teaches a course called Water and Sustainability as part of the College of Undergraduate Studies' BlockU program.



Auxiliary and Associate Instructors

Jordan Clayton	Tom Hale	Val John Halford
Jack Hamilton	Harvey Miller	Ola Opara
Ralph Patterson	Pam Perlich	Vincent Salomonson
Jennifer Watt	Ingrid Weinbauer	Bing Xu

Phoebe McNeally: Phoebe is a Research Associate Professor and Director of the DIGIT Lab at the University of Utah. This past year has been very exciting in the DIGIT Lab. The DIGIT Lab continues to support geospatial research across campus as well as provide GIS support to a very diverse group of outside clients. A few notable projects include supporting the Salt Lake Cooperative County Plan by developing an online GIS data sharing network to assist planners; supporting the Escalante River Watershed Partnership's invasive species mapping and mitigation efforts in southern Utah to providing and supporting the management of the national historic trails for the National Park Service - National Trails Intermountain Region. Phoebe also serves as chair-elect on the Utah Geographic Information Council and is actively involved in the Utah professional GIS community. Phoebe's research interests include geographic information science, geographic visualization, spatial decision support systems (SDSS), and snow science. Phoebe is currently working with the Snowbird Ski Patrol on a SDSS for avalanche control work that is being field tested this ski season.



Richard M. Medina: Richard M. Medina is a new faculty member in the Geography Department. His research focuses on terrorism and homeland security, network science, Geographic Information Systems and Science (GIS/GISc), and complex social systems. Before coming to the U, he was an Assistant Professor in the Department of Geography and Geoinformation Science at George Mason University in Fairfax, VA and a Research Scientist in the Geography Information Science and Technology group at Oak Ridge National Laboratory in Oak Ridge, TN. His recent publications focus on terrorist group operations in hybrid space, human terrain, spatial analysis of terrorist attacks in Iraq, and vulnerable dynamic populations, including a 2013 book titled, *The Geography of International Terrorism: An Introduction to Spaces and Places of Violent Non-State Groups*. He teaches courses on GIS, the geography of terrorism, spatial databases, and human geography.



Kathleen Nicoll: During her sabbatical in the spring of 2014, Kathleen mapped numerous landslide deposits in the Himalayas and did a lot of fieldwork for various research projects in the Middle East. She was a keynote speaker at the meeting of the International Society for Saline Lake Research in Beijing, and presented research findings from the Great Salt Lake, which were highlighted in interviews with the BBC radio. Along with a colleague at the University of Kansas, Kathleen edited a thematic volume for *Quaternary International* on soil and sediment archives of ancient landscapes, paleoenvironments, and archaeological site formation processes. Kathleen is serving on the organizing committee for the International Limnogeology Conference and convening sessions for the



International Quaternary Association (INQUA) -- both of which are being held in summer, 2015. Kathleen's Facebook page "Geomorphology Rules" has gone completely global. She started it for her class and lab in geomorphology -- and her postings are now reaching about 45,000 people everyday.

Kenneth Petersen: Ken's specialties are palynology and environmental archaeology. He joined the Geography Department and the RED Lab as an Adjunct Research Faculty in the summer of 2009. His earliest exposure to studies of the interaction of climate and humankind occurred in the mid 1960s while working on high elevation game drive systems and Holocene cirque glaciation in the Colorado Front, above Boulder, Colorado. He completed his Bachelor of Arts degree in anthropology at the University of Utah (where he T.A.ed a pollen analysis class in the Stewart School building in 1970) and went on to get his Master of Arts and Ph.D. degrees in anthropology at Washington State University - all using pollen studies in the western United States. He completed a post doc with field work in Egypt doing pollen studies on Nile flood history. He has lived in Utah, Washington, and Colorado, as he pursued careers associated with archaeological salvage ahead of dam construction, nuclear waste cleanup, and college outreach. Since joining the department he has led the GEOG 6430 PERG Reading Group and taught GEOG 5420/6420 Pollen Analysis. This spring he is teaching Geog/Envst 3330 Urban Environmental Geography. He is a co-author on a research article published in 3/2013 in the *Journal of Archaeological Science* dealing with prehistoric maize production in the American Southwest. He and his wife like to visit their grandchildren and take walks together. Ken is also an avid Amazon Kindle reader.

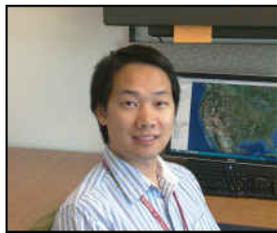


Mitchell Power: Mitchell was invited by colleague Boris Vanniere and the University of Franch-Comte to spend 3 months as a visiting Professor/researcher in Besancon, France. During his stay he and colleagues worked on developing a new version of the global charcoal database (GCD), a project that was first started eight years ago during Mitchell's postdoc at the University of Edinburgh. The change in database structure from Microsoft Access into MySQL format is designed to encourage broader use of the fire history database by interdisciplinary scientists. His time in France was spent teaching paleoclimatology to a group of French graduate students, and collaborating with Dr. Vanniere on several projects that explore fire-climate interactions on regional geographic scales. Mitchell's joint appointment with Geography and the Natural History Museum of Utah continues to develop botanical research on the impacts of changing climate on phenology, with several undergraduate students helping collect and analyze data. The plant collection at the museum contains thousands of specimens from the intermountain west collected during the last 120 years. This collection provides many opportunities to



explore evidence for changes in plant diversity and composition through time, as well as documenting changes seasonal timing of flowering and seed development. This year he is traveling to the Caribbean to begin a project with his PhD student, Joshua Mueller, to examine the ecological impacts of hurricanes in the West Indies over the last several thousand years. He will also be traveling to the Tigray Plateau in Ethiopia to conduct field work studying the collapse of the D-Mt and Aksum empires. He is working with an international team of geochemists and archaeologists to uncover why these once powerful civilizations rapidly vanished during the late Holocene. Mitchell is also participating in the international Quaternary Association (INQUA) conference this summer in Japan. Mitchell continues to balance his time with international research, including recent publications on paleoenvironments in tropical South America and ongoing research exploring ecological legacies and changing plant communities of the Intermountain West.

Neng Wan: Neng is a health geographer interested in using GIScience methods to understand the complex interactions between society, environment, and population health. He is also the founding director of the Utah Geo-Health Lab. His current research projects include smartphone-based mobility and physical activity measurement, aging, environmental exposure to air pollutants and agricultural pesticides, health disparity, and healthcare accessibility. He is currently leading a NIH project that utilize smartphones and GIS to measure older adults' functional status and mobility.



Dennis Wei: Dennis is an economic/urban geographer, with research interests in globalization, urbanization, land use, and sustainable development. He is working on spatial inequality in China funded by the National Natural Science Foundation of China, which includes economic/income, health, education, and environmental dimensions, and finishing up the Lincoln Institute of Land Policy project on urban land expansion and spatial restructuring in China. He had two Ph.D. students graduated in 2014; both got tenure track assistant professor positions (Illinois Institute of Technology and University of Idaho). He has organized five sessions on spatial inequality at the 2015 AAG meeting and is editing special issues in *Applied Geography* (Spatiality of Regional Inequality), *Geographic Review* (Spatial Inequality in Asia), and *Sustainability* (Urban Land and Sustainable Development). He is increasingly working on sustainable development both locally and internationally, including amenity, pollution and human behaviors in Utah and urban sustainability/resilience in China.



Ran Wei is currently an assistant professor in the Department of Geography at the University of Utah. Wei received her PhD in Geography from the Arizona State University in 2013. Her

research has focused on GISciences, spatial analysis and optimization, with applications to important urban and environmental problems, such as land use planning, transportation and energy infrastructure, public health and crime issues. Her work has been published in a number of peer-reviewed journals including *Geographical Analysis*, *International Journal of Geographic Information Science*, the *Professional Geographer*, *Journal of Geographical Systems*, *Environment and Planning B*, *Transactions in GIS*, and *Annals of the Association of American Geographers*. In addition, she was the recipient of 2012 Benjamin Stevens Fellowship from the Regional Science Association International, Best Student Paper awards from the Spatial Analysis and Modeling specialty group of the American Association of Geographers and the University Consortium for Geographic Information Science.



New Graduate Students



Back L-R: Seth Bishop, Josh Reynolds, Jacob Andersen, Brent Lloyd, Lawrence Kellum, Austin Coates, Christopher Fuhrman, Josh Heyer
Front L-R: Noah Brautigam, Laura McNerney, Mickey Campbell, Mengru Mao, Kelsey Howard, Danielle Ward, Yingxie Li, Weiye Xiao, Melanie Cooke

Seth Bishop: "Washington is not a place to live in. The rents are high, the food is bad, the dust is disgusting and the morals are deplorable. Go West, young man, go West and grow up with the country." And so he did. While the food and dust have improved considerably since Horace Greeley's day, it was the desire to seek out new adventure that prompted Seth to pack his bags and leave Washington, DC for the Intermountain West. At the U, Seth is conducting his Master's Thesis on access and demand for Emergency Medical Services, and comparing these metrics with the operational performance indicators of localized response times and patient survivability rates. This work

was inspired by a previous stint in the Bolivian altiplano, where Seth conducted research on the Cochabamba EMS system. Originally from the Granite State, Seth lived Free until the ripe age of 18, when he moved away to attend The George Washington University and major in Latin American and Hemispheric Studies. Upon graduation, Seth worked for Peace Corps HQ as a Program Analyst in the Office of Volunteer Recruitment and Selection. Since moving to Salt Lake, Seth has acclimated by curating modest facial hair, although he has yet to purchase a Subaru.

Noah Brautigam: A native Vermonter, Noah graduated from Middlebury College with a B.A. in Geography in the Spring of 2012. While at Middlebury he studied geopolitics, GIS, cartography, and natural science. A senior semester abroad took him to the Himalayas, where he became interested in the effects of climate change on mountain glacier recession, and the widespread impacts of melting ice and a warming climate in general. After graduating, Noah pursued environmental consulting and snow in Truckee California, where he worked for a local land trust as well as a cross country ski area. His interest in understanding the role of the cryosphere in a warming climate led him from Tahoe to Salt Lake City, to work with Dr. Rick Forster in understanding sea level contributions of the Greenland Ice Sheet. Noah also coaches junior cross country skiing, and likes to run, ski, and bike.

Mickey Campbell: I am a first-year PhD student working with Dr. Phil Dennison on a project exploring the use of GIS and remote sensing in assessing wildland firefighter safety. I grew up in a small town called Saugerties in upstate New York's beautiful Hudson Valley. I received a B.A. in Geography from SUNY Geneseo (2009) followed by a M.S. in Natural Resources (2012) from the University of New Hampshire. As much as I loved life in the northeast, I felt strong gravitation pull coming from the West, which led me to accept a position as a Remote Sensing Specialist at the US Forest Service Remote Sensing Applications Center in Salt Lake City. I enjoyed my time at RSAC, but it didn't take long before I realized academia was ultimately where I belonged. Since beginning my PhD in the Fall of 2014, I have been fortunate to take on a new and exciting research project in a subject area that was previously foreign to me, as well as engage in interesting and challenging work as a graduate assistant in the DIGIT Lab. In my free time, I try to make the most of Utah's ample outdoor recreation opportunities.

Austin Coates: Austin was born and raised in Utah and completed his undergraduate degree at the University of Utah in 2010 with a B.A. in Geography. As a spectral scientist, he worked for the National Geospatial-Intelligence Agency, the Environmental Protection Agency, and NASA's Jet Propulsions Laboratory. Austin also has experience working in the private industry as an ENVI/IDL consultant. As an undergraduate, Austin researched vegetation changes around the Colorado River near Moab, Utah and his current thesis topic is also in the realm of vegetation monitoring and modeling; he is working on the HypSIRI preparatory campaign through hyperspectral remote sensing of drought impacts on specific species in Southern California. What first drew Austin to the field of remote sensing were the pretty pictures and the hope of someday doing fieldwork. For that reason, when he

is not doing research or writing some sick code, you can find Austin climbing, hiking, biking and generally enjoying the mountains

Melanie Cooke: I was born and raised in Laramie Wyoming. I joined the Army when I was 19 and served my country for 3 years in Frankfurt Germany as a chef for the Battalion General. I started my college journey expecting to become an accountant, but after 2 years decided that wasn't for me! I changed my major and decided Physical Geography encompassed so much more of what I truly love. I received my BS in Geography from the University of Utah in 2013. My research interests include paleoenvironment reconstructions, specifically fire history and plant community reconstruction of the Intermountain West and Utah Lake. My hobbies include, climbing, hiking, camping and KNUT animal fostering and rescue.

Chris Fuhriman: Chris is a first year PhD student originally from Ogden, UT. He earned a Bachelor of Science degree in physical geography at the United States Military Academy (West Point, NY) in 1998. Since then he has served as a UH-60 Black Hawk helicopter pilot and aviation officer in the United States Army in many places around the country and the world. In 2008 Chris completed a Master of Arts degree in cultural geography at the University of Hawaii at Manoa. He then served as a faculty member of the Department of Geography and Environmental Engineering at West Point, where he taught a number of undergraduate geography courses including physical geography, the geography of Asia, and the geography of Latin America. Chris' research interests include terrorism, landscape, borders, and perceptions of space and place. He enjoys running, hiking, sports, and traveling with family. Chris and his wife, Sarah, have four children.

Josh Heyer: Josh is a first year master's student in the Geography Department at the University of Utah. He completed a dual B.S. in Geography and Environment and Natural Resources, and a B.A. in Spanish at the University of Wyoming in 2014. In April 2014, he received a NSF Graduate Research Fellowship to explore the hydroclimate of drought in transboundary watersheds. Josh grew up in the Front Range urban corridor of Colorado where he experienced firsthand the impacts of drought and water scarcity, fueling his desire to learn more about the climate system. Currently, Josh is researching the climate controls of drought via spatial correlations of sea-surface temperatures and Western North America hydroclimate, in addition to carrying out paleoecologic research in the RED lab. In March he will be presenting his preliminary thesis work at the PACLIM Conference in Pacific Grove, CA. Outside of research, Josh enjoys traveling, skiing, the outdoors, going to concerts, playing basketball and reading Spanish or English literature.

Kelsey Howard: Kelsey grew up in Salt Lake City, Utah where she received her B.S. in Environmental and Sustainability Studies, as well as a B.S. in Geography from the University of Utah. She initially became interested in

paleoecology as an undergraduate while researching the fire history of a wetland site located in Northern Baja, Mexico. Her interest in paleoecology grew when she later worked on reconstructing a high resolution vegetation record from the Northern Rocky Mountains, ID to better understand mountain pine beetle outbreaks. She continues to study paleoecology as a Master's student in the RED lab by analyzing wetland sediments collected from Utah's west desert. Her research work in the west desert focuses on reconstructing the fire and vegetation histories for the area, as well as refining the chronology of Lake Bonneville's oscillations. This research will be beneficial in understanding the paleoenvironment of the Bonneville Basin while also offering insights on how past environmental and climatic changes impacted prehistoric human populations within the region. When she is not in the lab, Kelsey enjoys spending her time exploring, hiking, camping, and skiing along the Wasatch Front

Lawrence Kellum: Originally from the Chicagoland area, Lawrence moved to Utah during his sophomore year of high school and attended Utah Valley University (UVU), where he earned his B.S. in Geology. As an undergraduate, Lawrence became part of the UVU-Earth Science's ReNHUE Group (Research in Neotectonics, Hazards, and the Urban Environment), where he worked on various paleoseismic investigations of the creeping section of the San Andreas Fault. During his senior year, he was awarded UVU's Summer Undergraduate Research Fellowship, which funded research on the Wasatch Fault. As a graduate student at the University of Utah, Lawrence's research interests include the geomorphic evolution of lacustrine and coastal landforms over time, primarily those of the ancient Lake Bonneville. Since August, he and advisor Dr. Kathleen Nicoll have been gathering and processing sedimentological and GPS survey data from study sites within the Great Basin, and building a hydrodynamic model that facilitates the reconstruction of past depositional environments. In his downtime, Lawrence enjoys spending time with his wife and two sons, and hiking around and studying the geology of Utah's beautiful landscapes.

Yingxie Li: is a Cantonese girl from the southern metropolis of China, Guangzhou. I received my B.S. in GIS from Guangzhou University then came here Salt Lake City, Utah to pursue my M.S. degree in GIS. After two semesters study in University of Utah, I desire to acquire more Web knowledge and sail my passion in Web GIS. Recently, my ongoing projects are constructing a web portal about gas price recommendation from the Web-based application course; optimizing public transit stations for improving public transportation efficiency in Salt Lake City from the Location Analysis course.

In the coming semester, I expect to address my thesis proposal and into thesis writing to apply all I learned from the first year. Salt Lake is a great place for outdoor activities and plenty of sports. If you are also a sporting person, you could find me at CRIMSON LAGOON swimming pool, hiking trails and indoor badminton field.

Brent Lloyd: Brent Lloyd began his PhD in the fall of 2014 and

is focusing his dissertation on agriculture, remote sensing and malnutrition in West Africa. He received the Brian Haslam Graduate Scholarship. Brent received his associates at College of Southern Idaho, bachelors at Utah State University, masters at New Mexico State University and doctorate at Walt Disney World University. Brent has had a variety of jobs in his life including: beet thinner, moving pipe, carnie, potato harvester, green house production, construction, remodeling, trail guide for adolescent youth, cashier, stocker, pest control salesman, FEMA disaster applicant assistant, cleaning specialist, beef production, teaching assistant, graduate assistant, data technician, test engineer, systems engineer, logistics engineer, and an integration engineer. Brent has served a two year mission in Alberta and British Columbia. He has received his Eagle Scout award and was a scout master in New Mexico. Brent dated 120 girls in 5 years from 30 states and 9 countries. He enjoys traveling and experiencing different cultures. Brent has been married for 8 years and has 4 girls. Brent Lloyd is an introvert! In his spare time Brent enjoys doing "old man activities" such as hot tubbing, fishing, and rock hounding.

Laura McNerney: Originally from Phoenix, AZ I pursued a bachelors in Civil and Environmental Engineering at the University of California Los Angeles. At UCLA I focused my studies on water flow and transport with an emphasis on environmental science. I had the opportunity to guide backpacking, climbing and canoeing trips across the state and national parks of California where I helped inspire passion for conservation. These interests motivated me to me to conduct research in a team through three research projects on hydrology promoting climate science during my undergraduate studies. My passion for research further developed into a graduate research project at the University of Utah. Here I have the opportunity to study water transport through the Greenland ice sheet to better understand global sea level rise. When I'm not deep in research, I can be found in skiing, climbing, or biking through the mountains.

Joshua Reynolds: Josh is a first year master's student from Cheyenne, Wyoming. He became fascinated with geography as a result of moving from state to state frequently when he was young. He recently completed his B.S. in Geography (2014) at the University of Wyoming while also earning a certificate in Geographic Information Science. Josh began considering the possibility of graduate school while he was a McNair Scholar at UW, during which he completed a project investigating the use of remote sensing to monitor the phenology of the Laramie Basin Grasslands. His current research interests include GIS, Python Scripting, Natural Hazards and Debris Flows. Josh works as a graduate assistant in the DIGIT Lab and is also a recipient of the Martin Harris Hiatt Memorial Scholarship. Today, he is investigating methods for calculating debris flow run-out zones in Utah and studying risk perception within those zones. After completing his master's, he plans on working in the industry. When he is not working, he enjoys playing basketball, weightlifting, and gaming.

Danielle Ward: I'm originally from Upstate New York, so the opportunity to study out here in Utah surrounded by such

beautiful scenery is one that I'm constantly amazed by. I graduated from the State University of New York at Geneseo in 2014 with a BA in English Literature and Geological Science. During my undergraduate years, I was constantly attempting to connect my two contrasting majors in meaningful interdisciplinary ways. For example, I did an independent study examining geologic references within the work of Mark Twain. Now as a graduate student I continue to do interdisciplinary research as a fellow of the Global Change and Sustainability Center, a program that takes graduate students from multiple departments across campus to work on a sustainability-related project together. In the geography department, I am a member of the RED Lab studying under Dr. Andrea Brunelle. My research is focused on reconstructing the paleoenvironment of Range Creek Canyon using elemental analysis, in order to create an age model for the area and to potentially gain insight into the climate of Range Creek Canyon during Fremont occupation. When I'm not doing research, I enjoy skiing in Little Cottonwood Canyon as well as knitting hats.

Weiye Xiao: I am Weiye, a graduate student in 2014 Fall. I come from China and am now working for my master's degree. My advisor is Yehua Dennis Wei, and my research is focusing on the neighborhood environment. I really enjoyed the last half a year in Salt Lake City with the fresh air, the friendly people, the well-developed facility for students at the university. The professors are kind to answer my questions and help with my research. I took four courses last semester and was really satisfied with what I learned.

This semester, I am working with Dennis Wei as a research assistance which not only helps me get a salary, but also shows me how to do good research and some details about research and publishing a paper. I am taking three courses and also want to finish my proposal before the second year. It is not easy work but I will try my best to finish it and graduate on time.

ALUMNI SPOTLIGHT

Andrew Vondrak: Greetings from Atlanta. After graduating from the U in 1998 my wife Lorie and I moved to North Carolina to be closer to her family. I was hired as Stokes County's first GIS professional as a GIS Specialist. I maintained the county's landbase and wrote several programs to automate data entry and provide public access to the GIS.



In 2001, I went to work for Piedmont Natural Gas in Charlotte, NC. Again, I was the first GIS professional hired. The complexity and size of the GIS was much greater than I experienced previously. The GIS at Piedmont contained over twenty thousand miles of pipe, over one million customers, and over 5 million parcels. While I worked on several projects to improve the accuracy of the GIS data, being an advocate for GIS, both the system and the profession gave me the most fulfillment. As GIS Manager, I had tremendous support from management to build a high performing team of geospatial professionals that was and continues to be dedicated to data integrity.

This past year I became the Director of GIS and Asset Data Services at AGL Resources in Atlanta, GA. AGL Resources is the county's largest natural gas distribution company, having approximately 4.5 million customers and over 80,000 miles of main in 12 states. I am responsible for setting strategic and technical direction for the Company's GIS and asset management system, which comprises all electronic and manual records and data for the enterprise. I am accountable for continually improving data integrity, quality and availability while developing and providing transparency into the performance of infrastructure assets, processes and procedures to ensure adherence to regulatory requirements across AGL Resources' operating companies.

While pipelines are the safest way to transport natural gas, several pipeline incidents over the last decade have resulted in an increased asset and risk management focus within the natural gas industry. To improve and maintain the integrity of the pipelines, companies have invested heavily in GIS as the foundation to build integrity and asset management programs. The importance of a highly trained and analytical geospatial workforce to ensure data integrity and accurate analysis is critical to pipeline safety. The Geography department at Utah taught me the analytical skills and fundamental concepts of GIS to be successful.

On a personal note, I am planning on taking a trip west this summer with my family including a visit to the U. My children have never been out west and it is difficult to put into words the vastness and beauty that only comes with experience.

MSGIS Students Fall 2014



Rear L-R: Curtis Olson, Ed Graves, Sam Hall, Brian Teats, Steve Arnold & Erich Rentz
Front L-R: Brendan Duffy, Deborah Traver, Emanuel Vasquez-Gomez & Xiaomin Jiao

MSGIS Graduates Fall 2014

Erich Rentz, Deborah Traver,
Curtis Olson & Brendan Duffy



Recent Graduates



Back L-R: Simon Brewer, George Hepner, Andrea Brunelle, Edward Conrad,
2nd L-R: Richard Forster, Jared Butler, Phil Dennison, Ryan Bares, Christopher Balzotti
Front L-R: Phoebe McNeally, Kaila McDonald, Hao Huang, Kaitlin Barklow, Brittney Gold, Haifeng Liao

Geography needs your support!
Please see form provided at the
end of this letter.
Thank you!

New Courses 2015

Geography 1350 (Spring), Geography of Tattoo: Marks of Distinction or Defamation? The inherent value of tattoo varies greatly depending on the social and cultural fabric in which they are examined. Some societies venerate tattooing as a historic staple or art form while others mark it as a brand of criminality or "baser" society. Much of these views vary depending on the time of their existence, but more importantly are the differences propagated by physical and cultural geography. The purpose of this course is to explore the phenomenon of tattooing and how it is valued according to differences in geographic location. Why is it respected in some cultures and reviled in others? What are the historic foundations behind these opinions? Most importantly, how do these opinions vary across geographic space?

Geography 1750 (Spring), The Greatest Snow on Earth: Geography of Skiing. Snow skiing (or snowboarding) can variously be described as a sport, a lifestyle, a career, or a passion. From its roots as a method for traversing the winter terrain of Scandinavia, human-powered snow sports have grown into a \$67 billion industry involving 24 million participants in this country alone. But at its core, skiing is about the unique interaction between mountainous landscapes, regional climate patterns, and technological innovation. This course studies the activity of skiing through the lens of geographic inquiry, as geography provides the tools to investigate all the critical aspects of the sport. The goal of this course is to introduce students to the science of geography, by investigating the physical processes and cultural dynamics of the wide variety of ski disciplines in use today.

Geography 2600 (Spring) The Power of Place: Intersections of Humanities and Geography. GEOG 2600 explores how and, to a limited extent, why disciplines of the humanities and sciences view the natural world differently, and consequences of this disconnect. Can place, the second great theme of geographers, be reconciled with humanities' sense of place? Is geographers' location that different from philosophy's space? How does a novel's setting achieve meaning beyond description? The subject matter of this course is broad (e.g., philosophy, literature, language, history, geology, hydrology, weather and climate change), but by focusing on the American West, this course provides an excellent proving ground for studying the intersection of the two fields since the West is both place and idea. Students analyze how specific elements of physical geography portrayed in settings of literature and films of the American West project values and how identities of areas are formed by geography and culture. GEOG 2600 prepares students to recognize how these intersections have consequences for the economy, policy, and physical environment

Geography 3290/5290 (Spring), Water in Utah. There is no better place to consider the topic of water than this desert. Where we live in the Great Basin of Utah is a thirsty place.

In the late 1990s, surveys demonstrated that the average person in the Greater Wasatch Front of Utah used 319 gallons of water per day. Since then, personal water consumption has been cut by 25%, saving trillions of gallons per year. However, Utah is the 2nd driest state in the USA, and presently has the highest *per capita* rate of water consumption. Dr. Nicoll's seminar class in Spring 2015 examines the technical foundations of hydrology in Utah, as well as resource and issue-specific topics in both the physical and social science realms. This blog will highlight some elements of the course, as we aim to reach the widest audience possible. We welcome your participation. The blog for the class is <https://waterinutah.wordpress.com>

Geography 3963 (Fall), Geography of Northern Eurasia This course takes a wide-ranging approach to eleven countries which emerged from the Soviet Union: Russia, Belarus, Ukraine, Armenia, Georgia, Azerbaijan, Turkmenistan, Kazakhstan, Uzbekistan, Tajikistan, and Kyrgyzstan. The course begins with the region's physical geography and history, and then covers the countries' political regimes and economies from a geographic perspective. Cultural and social themes, such as ethnic relations and the situation of women, will also be discussed. Finally, the relations among the northern Eurasian countries and their situation in the global context will be considered. No background in geography is required for this course.

Geomorphology & Quaternary Sediments Lab

This summer, Dr. Kathleen Nicoll delivered a keynote address to the International Society for Saline Lakes Research (ISSLR) in Beijing, China. This was a great opportunity to connect with several colleagues, and to relate share some of the findings of research done by Utah students, including Mike Freeman. Mike deserves special congrats, as he completed his master's degree in record time while working full-time at the USGS. We look forward to him publishing the research about reverse flow events at the causeway in the Great Salt Lake.

The Spring 2015 GEOG 3290/5290 "Water in Utah" class led by Dr Kathleen Nicoll is going global with its blog at <https://waterinutah.wordpress.com> -- !! Feel free to follow along and participate as we stream science and possible management solutions.

You may not know that the Geomorphology & Quaternary Sediments Lab has been rather active in the social media with a Facebook page. We started it for our class as a way to do outreach and drum up interest about our scientific discipline. At this time, our page Geomorphology Rules reaches more than 50,000 people with more than 9,000 likes worldwide. Feel free to like us, for some science behind the scenery.

URSA Lab

Graduate students in the Utah Remote Sensing Applications Lab had many notable achievements in the past year. Three students/recent alumni published first-authored papers. Ran Meng had one of his dissertation chapters on type conversion in Southern California published in *PLOS ONE*, and Yi Qi had one of his dissertation chapters on seasonal changes in lodgepole pine and sagebrush live fuel moisture published in *Remote Sensing of Environment*. Recent graduate James Arnold had his Master's thesis on climate and wildfire in the Great Basin published in *Fire Ecology*. URSA had a record number of students sign the lab wall following their defenses in 2014, including PhD students Chris Balzotti, Yi Qi, and Ran Meng, and Master's student Kenneth Dudley. URSA also welcomed two new PhD students at the beginning of fall semester: Mickey Campbell and Brent Lloyd.

Merrill Ridd Scholarship 2014-15

Marie Lenihan-Clarke: Marie is currently working on her Bachelor degree in Geography. Her goal upon graduation is to work in disaster relief, eventually as a project coordinator. After receiving her degree and work experience in her field outside of school she would like to return to continue her studies in a master program to understand the relationship between GIS and medical aid.

We would like to extend a big THANK YOU to Dr. Merrill K. Ridd and the many donors that have contributed to the Merrill K. Ridd Scholarship over the past several years. Your generosity has helped a deserving undergraduate student with a financial award of \$1,000 per year beginning fall semester, 2010. This scholarship is a wonderful way to honor Dr. Merrill K. Ridd's accomplishments as a professor and his passion for undergraduate student education.

If you would like to make a contribution, details are located on the last page of this newsletter.

Currey Scholarship 2015

Vanessa Chavez was awarded \$450: Vanessa, a Geography MS student, is studying the long-term responses of fire, vegetation shifts, and ciénega activity to help predict how ciénega activity in the Sierra de Juarez of northern Baja California, Mexico and how it may be affected by future climate change. Vanessa plans to use her Donald R. Currey Graduate

Currey Scholarship Continued



L-R Joshua Mueller, Melanie Cooke, Vanessa Chavez & Kate Magargal

Scholarship to pay for one radiocarbon date to use charcoal and pollen analysis to establish a chronological framework to better determine when changes in fire and vegetation throughout the length of the record have occurred and will assist with correlating these response to climate variations in the past in understanding how future shifts with climate change might affect the Sierra de Juarez and other arid regions.

Melanie Cooke was awarded \$950: Utah Lake has experienced many changes during the last 150 years. Melanie's MS Geography thesis study will focus on characterizing the natural variability of Utah Lake over thousands of years. Melanie plans to use her Donald R. Currey Scholarship to pay for two AMS dates for pollen and charcoal analysis for a sediment core collected at the center of Utah Lake to reconstruct vegetation and disturbances since the glacial period approximately 20,000 years ago. Melanie will use these findings to reconstruct past linkages among climate, vegetation and natural disturbance and historical changes to Utah Lake. The study will also provide a better understanding of decadal-to-millennial scale trends in fire activity that have influenced the landscape around Utah Lake and will assist in long-term care of Utah Lake.

Kate Magargal was awarded \$950: Kate will use her Donald R. Currey Scholarship to pay for two AMS dates for charcoal analysis for the Bramble Valley Fire History research project. The fire history will help her dissertation topic of how prehistoric anthropogenic fire use influenced prehistoric ecosystems and played a role in the formation of human landscapes. This will help Kate to advance to Ph.D. candidacy in the Anthropology Department.

Joshua Mueller was awarded \$950: Josh's Geography Ph.D. research project investigates the past 2,000 years of natural and anthropogenic disturbances through the analysis of a latitudinal transect of sediment records from coastal salt ponds in the British Virgin Islands. Josh will be using his Donald R. Currey Scholarship to pay for two AMS dates for pollen, charcoal, grain size, and isotope analysis to provide information into past frequency of cyclone activity in the Caribbean and look at landscape modification

and fire activity to better understand the mechanisms for evolving hurricane risk to densely populated coastal regions.

Brendon Quirk was awarded \$250:

Brendon plans to use his Donald R. Currey Scholarship to help cover field research expenses to perform field mapping of glacial deposits and features as well as samples for analysis in the Big Cottonwood Canyon, Wasatch Range area for his Geology MS project. This study will develop new refined glacial chronology for several key parts of Big Cottonwood Canyon.



We would like to extend a big THANK YOU to Stan Currey and the many donors that have contributed to the Donald R. Currey Graduate Research Scholarship over the past several years. Your generosity has helped many graduate students with field related expenses necessary to complete their thesis and dissertation research projects. This is a wonderful honor to Donald R. Currey's memory.

If you would like to make a contribution to this scholarship, details are located on the last page of this newsletter.

GIS Day/Geography Awareness Week



This year's Geography Awareness Week and GIS day were a great success. We held our annual photo contest. It is always a fun event with wonderful pictures. Tuesday was a brown bag lunch lecture with our new faculty

member Dr. Richard Medina, who is also a Geography Department former graduate student. His topic was "The Evolution of the Global Jihad and the Role of Geography in Counterterrorism". Wednesday we featured two career panels with presenters from 8 different locations. The presenters included: Brie Hurwitch, USR Corporation; Ahmad Salah, Stanley Consultants, Inc.; Tyler Larson, Azteca Systems Inc.—Cityworks; Craig Baker, RedCastle Resources, Inc.; Megan Southwick, State of Utah Trust Lands Administration; Kevin Sato, Cottonwood Heights City; Rick Nelson, Utah Automated Geographic Reference Center; and Damien Pitts, University of Utah Career Services. The first Geography Bowl concluded on Wednesday, as well. It was a great success and it looks like it might be a regular activity for GIS day in the future. Friday we closed the event with a colloquium featuring Dr. Edward Pultar. His topic was "Valarm—Monitoring Challenges". Edward is also a Utah Geography graduate. Everything was well attended and enjoyed by all.

Scholarships/Awards 2014-15

2014 CSBS Superior Research Award & University of Utah Honors Professorship— Phil Dennison

Donald R. Currey 2015— Melanie Cooke, Vanessa Chavez, Kate Magargal, Joshua Mueller & Brendon Quirk

Merrill Ridd Scholarship — Marie Lenhan Clarke

Brian Haslam Scholarship— Brent Lloyd

Continuing Student Scholarships— Kendal Black, Natalie de Montreux, Spencer Munson & Kolt Wright

Don and Sue Lewon Scholarship— Sean Casey Reid (undergraduate honor roll)
Laura McNerney (graduate honor roll)

David C. Williams Memorial Fellowship— Vachel Carter

Herbert W. Gustafson Memorial Fellowship— Han Li

Martin Harris Hiatt Memorial Graduate Scholarship— Josh Reynolds

Graduate Research Fellowship— Yoshi Maezumi

GCSC Graduate Fellowship— Danielle Ward

TGLL Fellowship— Emily Nicolosi

S.A.C./Geography Club/GTU News



This year the Geography Club/GTU has really taken off. Through social media and department promotion, we were able to get new members who had great ideas for events. We have participated in service - packing care packages for soldiers, had a brand new event - The Geography Bowl, gone bowling against faculty, and gone out to try food from around the world. SAC has been actively involved in attending and planning these events along with Geography Week Celebration. The Geography Club, SAC, and the department peer advisors were present and



helped promote the events to raise geography awareness. We hosted a table in the OSH hallway with games and prizes for attendees of the events and for students passing by in order to grab their attention and show them what geography is all about. Overall, this year we have been trying many new things and I feel that we have had great results so far and can't wait to continue to get more students involved! (Natalie de Montreux)

Gifts to the Department 2014-15

We wish to thank the following individuals for their generous donations!

Gary Christenson
David & Caryn Clark
Brian Haslam
George & Prudy Hepner
Phoebe McNeally
Merrill & Codele Ridd

Dave & Madge Ross
Derrick & Brande Thom
Albert Vogel
David & Margaret Wilkins
Andrea Wilson

Greenland Aquifer Expedition 2015 begins!

Excerpt from the blog March 24, 2015:

This season should be an exciting one. The National Science Foundation (NSF) and NASA are funding us to do a lot more work this season to better understand how much water is being stored in the Greenland Ice Sheet and what that ultimately means for all of you reading this. Note: If you are reading this while on spring break from a nice chair on the beach you should pay attention because over the next few decades the melt from Greenland will raise global sea levels. The only remaining questions are how much and how fast? Our team will play a small roll in answering these science questions by drilling, pounding, radiating, and penetrating into the aquifer in southeast Greenland.

Over the next five to six weeks, this blog will cover not only our science but also our adventures conducting science in one of the harshest regions on Earth. This year will be BIGGER. More measurements, more people, more time in the field, and more blogs. (More blogs assuming the satellite phone data link works. After all, this is field work so we never know.) Everyone on our team will contribute to the blogs so I will introduce them here quickly and you will hear more about each of them and their work in the weeks to come. [Enjoy the blogs!](http://earthobservatory.nasa.gov/blogs/fromthefield/tag/greenland-aquifer-expedition-2015/) <http://earthobservatory.nasa.gov/blogs/fromthefield/tag/greenland-aquifer-expedition-2015/> We take off for Greenland on March 27, so look for our next installment about our trip from New York to Kangerlussuaq, Greenland, soon.



The team getting on our C-130 flight to Greenland. From left to right: Clem, Josh, Lynn, Kip and Olivia.



Packing the gear into the second flight.



Lynn, Lora, and Olivia watching the northern lights. Photo by Clément Miège.

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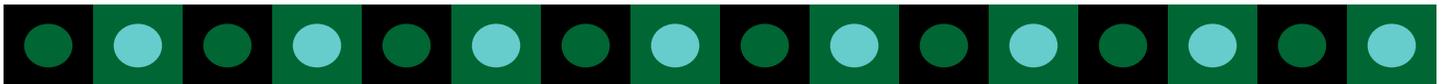
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These are difficult times for a state university.

We need all of our alumni to take a more active role in supporting our department.

- If you have specific knowledge of employment opportunities for our graduates;
- If you can use the department or DIGIT lab for funded research/service projects;
- If you have ideas and time to devote to improving our department;
- If you have a desire to support the department and the students financially;
- If you want to support financially and participate in our Fall picnic or Spring awards activities

Contact andrea.brunelle@geog.utah.edu if you have any questions about Geography Donations



We have appreciated your generous donations in the past. Please consider taking this opportunity to donate to our scholarship funds. Be sure to indicate which fund you would like your donation directed to.

All contributions are tax deductible.
We look forward to hearing from you!

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