CHAIR’S MESSAGE

The big news for the Academic Year 2018-2019 was our move to Gardner Commons in August 2018. The move was a tremendous amount of work for our staff, so we have to give a big thank you to Lisa Clayton and Pam Mitchell! We have been here for about 6 months so most of the kinks have been worked out, and we are enjoying our beautiful new digs. We completed a search for a GIS scholar this spring and are excited to welcome Dr. Alex Hohl starting fall 2019. His arrival times perfectly with the launch of our new Bachelor of Science in GIS (BSGIS) degree that was recently approved. We are excited to continue to grow and improve our GIS program. We are sad to say goodbye to Dr. George Hepner. He ends his phased retirement this year, and is retiring full-time to Colorado. I am already planning my visit! We wish him the best and are deeply grateful for everything he has done for our department! This will be my last “chairs letter” as this year marks the end of my 2nd term as chair. I would like to thank Dean Berg and my faculty for their support. I look forward to seeing what direction we go next under our new leadership. 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! Come see us!

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Tom Cova was interviewed about the 2018 Camp Fire evacuations in Paradise, California by the New York Times, Los Angeles Times, San Francisco Chronicle and Wired Magazine. The Camp Fire was California’s most destructive wildfire in state history. It caused 85 civilian fatalities, destroyed over 18,000 structures, and covered an area of 240 square miles.

Geography MS student Patrick Sullivan and faculty member Phil Dennison are working on a project to measure firefighter travel rates using GPS trackers. As part of a Forest Service-funded project, multiple hot shot crews will be receiving devices that will log their movement as they go through training this spring. The resulting GPS data will be used to develop a model of firefighter travel rates based on terrain slope, load, and vegetation cover. The model will eventually be used in an app that will provide firefighters with estimated travel time to safety zones. This project builds on past work on firefighter safety by Geography graduates Greg Fryer (MS 2012) and Mickey Campbell (PhD 2018).

Richard Medina has been busy with projects focused on bias/hate and domestic extremism. This year he co-authored an article in the AAG Annals titled, “Geographies of Organized Hate in America, a Regional Analysis.” Another article on hate crimes is forthcoming. His Ph.D. student, Emily Nicolosi, will be graduating this spring.

McKenzie Skiles paper ‘Implications of a shrinking Great Salt Lake for dust on snow deposition in the Wasatch Mountains, UT, as informed by a source to sink case study from the 13–14 April 2017 dust event’ has received local media attention, and inspired a Salt Lake Tribune editorial. The study primarily focused on characterizing the processes and impacts of a single dust event, the largest in 2017, that advanced snow melt by one week. The dust originated in part from the dry lake bed of the Great Salt Lake, which has been in steady decline due to upstream water withdrawals. With no minimum lake level or water rights, dust emission from the lake bed is projected to become more frequent in the future, which could have implications for local snow hydrology and the ski economy. Dust, and deposition of other dark aerosols, impacts snow globally, and Skiles recently published an invited review of these impacts, ‘Radiative Forcing by Light Absorbing Particles in Snow’ in Nature Climate Change.

Andrew Linke led a group who published a 2018 Environmental Research Letters article studying environmental change, migration (both temporary and permanent) and conflict in Kenya. The original national survey data were gathered in 175 locations across the country. Respondents who relocated in response to droughts or water shortages have elevated risks of becoming victims of violence when compared with their sedentary peers.

Dennis Wei has been very productive in publications, and has recently been heavily involved in journal of Applied Geography as an Associate Editor. He is pleased to see the interests of funding agencies on his research on spatial inequality, including funding from NSF for a comparative study of regional inequality in China and USA. Ford Foundation has also renewed its funding for his study of the effects of urbanization on spatial inequality in China by focusing on land development and housing inequality. He has been increasingly involved in local research on urban development, transportation and health, and has received funding from National Institute for Transportation & Communities for a project titled Reducing VMT, Encouraging Walk Trips, and Facilitating Efficient Trip Chains through Polycentric Development, in collaboration with Reid Ewing in the Department of City and Metropolitan Planning. He was also involved in Utah Transit Authority’s Utah Transit Oriented Development System Plan.
George Hepner to Retire

George Hepner is retiring at the end of the 2019 academic year. Dr. Hepner’s research focused on environmental management, remote sensing, international terrorism, and GIS. During his time at the U, Dr. Hepner was Director of the Southwest Consortium for Environmental Research and Policy (SCERP), National President of the American Society for Photogrammetry and Remote Sensing (ASPRS), and Director of the National Geospatial Intelligence Agency (NGA) Academic Center of Excellence in Geospatial Sciences. In 2010 he was selected an ASPRS Fellow, a designation conferred on society members who have performed exceptional service in advancing mapping sciences and applications. During his 29 years at the U, he served as Department Chair twice (1990-96, 2010-2013), Director of Graduate Programs, Director of Undergraduate Programs, and numerous other department, college and university roles. He advised eight Ph.D. and nine M.S. students in addition to serving on more than 30 graduate committees. Dr. Hepner mentored numerous faculty and students over the years, and his absence will be deeply felt. Here are a few comments on George’s contributions:

“George’s list of accomplishments is long and impressive, but his generosity in service had the farthest reaching impacts. He helped many faculty on an individual level, providing support and guidance in their research with the ripples of these contributions to be seen for years to come.” –Andrea Brunelle, Department Chair

“George’s remote sensing research pioneered novel land cover classification techniques. His mentoring to students and faculty, including myself, has been thoughtful and continuous. The opportunities provided by this guidance to his mentees will be a lasting legacy of his career.” –Richard Forster, Associate Dean

“George has been the heart of the department throughout his years here and has given so much through his determined leadership and committed service.” –Phil Dennison, Professor

“I came to Utah an environmental geographer but changed my research focus due to George’s passion for terrorism and intelligence studies. It was this experience that sparked my research trajectory that still continues today. George’s advising on research and topics including time management, administration, and academic interactions is responsible for my continued impact in academia.” –Rich Medina, Assistant Professor

“When I came to the U, the Geography Department was in transition. Even as a newcomer it was obvious that George’s leadership was going to have a positive impact on the department and indeed our discipline. His welcoming but professionally exacting personality left an imprint that persists to this day and will continue long into the future. All Geography graduates, including myself, owe George a debt of gratitude for making our degrees more valuable because of his insights and hard work.” –Mark Finco, Principal and Contract Manager, RedCastle Resources

Dr. Hepner will be honored at the Department of Geography Spring Reception on April 26th at 6:30 pm at the Jewish Community Center in Salt Lake City. Please RSVP to Pam Mitchell by April 12th if you would like to attend (pam.mitchell@geog.utah.edu).

We would like to wish the best to our retiring faculty member, Dr. Bob Argenbright. Bob joined the Department in 2009 and has taught many classes for us including some in his “research backyard” like the “Geography of Russia” and the “History of the Soviet Union.” Bob is a prolific scholar with a 2016 book, 17 book chapters, and many other publications. Bob plans to continue his adventures in Russia and writing about his work. We are very grateful for Bob’s contributions to the department and look forward to hearing about his travels.
Kaylee Barkett Jones
My dissertation research focuses on paleo-environmental reconstruction in the Bonneville Basin for the past 30,000 years. My work is part of a five-year study led by Dr. Andrea Brunelle and funded by the Department of Defense. We work directly with Archaeologist at Dugway Proving Ground, a US Army base located in western Utah. One of the overarching goals is to better link changes in the paleoecological record to the archaeological record. The way we have approached this goal is to examine multiple wetland springs that are in close proximity to significant archaeological surface sites or caves with established archaeological records.

We are currently investigating 14 sites and hope to expand this study in the future. At each site, we are able to reconstruct paleoenvironmental changes by collecting sediment cores and conducting multi-proxy analyses. We conduct pollen analysis to reconstruct vegetation, charcoal analysis to reconstruct fire history, magnetic susceptibility to identify disturbance, loss on ignition to determine sediment components, and x-ray fluorescence for elemental analysis. By using all of these proxies we can better understand changes in climate and the environment, and how it would have affected paleohumans in the Bonneville Basin.

My poster at CSBS Research Day 2018 highlighted a paleoecological comparison between two of our sites, Simpson Spring and Barking Coyote Spring. My two main objectives were (1) describe vegetational changes through time in response to fluctuations in climate and lake level across the Bonneville Basin and (2) establish chronology for significant ecological changes (paleolake Bonneville, present day wetland or active spring, dry episodes, timing of disturbance, etc.).

Liz Looby
Last fall I had the opportunity to intern with the NASA DEVELOP Program. I was surprised to find out that this wasn’t an internship, but a real 10-week contract with NASA at the Ames research center! The NASA DEVELOP program is amazing. It’s part of NASA’s Applied Sciences division aimed at early career Earth scientists to get experience working with NASA satellite data on impactful projects. My project team consisted of 3 of the smartest women I’ve had the pleasure of working with. It was rare that our whole team was made up of women considering the imbalance in employees at NASA, but I think we were handed the most difficult project of all the national groups and we absolutely represented #womeninscience and crushed it. It actually be used to help. Our project was to work with a non-profit group to come up with a tool to help them detect and predict the washup of a green algae on the shores of Lake Michigan. We created a user-friendly ArcGIS tool that predicts where the algae is most likely to wash ashore. The tool utilized chlorophyll-a spectral signatures and the Floating Algae Index (FAI) as a proxy for Cladophora detection from Landsat 8 and Sentinel-2. Surface water currents were incorporated to predict algae transport. With the assistance of the Predictive Washup Tool, our partner organization will be able to more accurately predict the location of Cladophora washup and effectively manage their future cleanup efforts. Link to project page

Emily Nicolosi
Emily Nicolosi received the University of Utah Graduate Research Fellowship for the 2018-2019 academic year. Emily is grateful to have this opportunity to work full-time on her research, which is broadly concerned with the intersections of geography with environmental sustainability and social justice. Her dissertation project explores the geography of grassroots innovations for sustainability, civil society initiatives experimenting with alternative forms of production and consumption that aim to reduce dependence on fossil fuels. This research involves spatial analysis of the conditions contributing to the emergence of grassroots innovations in the US. It also is grounded in active collaboration with changemakers in Salt Lake City, for example with the co-creation of a digitally-mediated participatory map (utahresiliencemap.org). Emily has also been involved in several other research programs. A recent interdisciplinary project she led explored how relationships to place impact engagement with climate change. Emily and her advisor, Dr. Medina, are currently researching the geography of hate groups and crimes in the US.
Andrea Davis
How did you spend your summer of 2018? I spent mine collecting samples from community latrines in rural Ghana! I participated in the university’s learning abroad program, as a research assistant, focused on global public health. Our project was aimed at trying to identify antibiotic resistance in community latrines within the Barekese subdistrict. The opportunity for learning on this adventure was endless with tasks ranging from primary data collection (a fancy rock, string, and swab), processing our samples in a makeshift microbiology lab in our hotel room, and recording coordinates for each latrine sampled used to show the spatial pattern of our final results. Our preliminary results indicated there is the potential for antibiotic resistance to be present in some of the more rural communities, although further testing is needed to verify our results. The group members consisted of local medical students from Kwame Nkrumah University of Science and Technology and students from varying disciplines from the University of Utah. This collaboration has encouraged open, continuous engagement between the local communities in Ghana and the learning abroad groups focused on improving global public health.
INCOMING GRADUATE STUDENTS

NEW DEGREE - BS IN GEOGRAPHIC INFORMATION SCIENCE

This year the department is pleased to offer a new BS degree in one of the fastest growing areas of science and information technology. The BSGIS degree provides the foundation for a career in an emerging field that integrates computer science and information technology with geographic concepts and techniques to support management and resilience of earth’s natural environmental, urban and human systems.

The BS GIS is intended to immerse, educate and train students in GIS. It provides the mathematical and computer science/technology foundation upon which students develop expertise in geospatial programming, platforms for geospatial data acquisition (satellites, drones), geospatial analysis, and communication of data and information through digital cartography and visualization. As the leading instructional and research program in GIS in the State of Utah, we are proud to add this degree to our current courses and certificates in GIS, Remote Sensing and Geospatial Intelligence as well as the BS degree in Geography.

DEPARTMENT UPDATES

ALUMNI SPOTLIGHT

Adam Sobek
Current Role: Travelers Insurance
Title: Director of Geospatial Capabilities, Enterprise Business Intelligence and Analytics
Time in Role: 3 years
Years of Service: 7 Years
Current Location: Hartford, CT

Hello from Norman Rockwell country in New England! It’s hard to believe it has been over a decade since graduating with a PhD and leaving the Wasatch front. The thought processes, geospatial skills and the capabilities obtained during my time have proven invaluable throughout my career.

I extend a particular thanks to Dr. Harvey Miller for pushing the envelope of spatial delivery systems. After leaving U in 2008, I started a geospatial consulting business, GeolInnovative Solutions, which partnered with large corporations in an effort to integrate geospatial technologies into existing information flows. I had the opportunity to work with construction firms, mining corporations and government agencies providing both front-end geospatial application development, as well as back-end data integration.

In 2012 I started working with Travelers, which at that time was just beginning their geospatial journey. I often say I’m a geographer working for an insurance company; I’m not an insurance guy. My current role at Travelers is within an enterprise team (Enterprise Business Intelligence and Analytics) as the Director of Geospatial Capabilities. In this capacity I provide oversight and direction in the use of geospatial capabilities and technologies within the lines of business to ensure consistent and appropriate use, and to ensure optimal business decisions. Teaching geospatial concepts and principles is still a large part of my daily life in the corporate world. Prior to this role, I worked as the lead technical engineer implementing the Traveler’s Enterprise Geospatial Platform (TGP), but not before spending my first two years working within the information delivery services sector of our Claim Business Intelligence and Analytics (CBIA). Some might say that my biggest achievement while in graduate school was receiving my diploma. I might argue that it was having 4 kids while getting my master and doctorate degrees. Currently, my wife and I have seven children spanning 16 years.

We juggle between changing diapers, teaching children to read, and training teenagers how to drive. We love taking advantage of the benefits that small town life in rural New England offers, such as being able to walk to school, mountain biking in local preservation areas and participate in small town parades.
NEW COURSES FOR 2019!

GEOG 5160 / 6160 Spatial Modeling and Geocomputation (effective Spr-19)
Geographical datasets are increasingly large and complex, and may consist of observations in both space and time. These characteristics limit the use of classical statistical approaches, and a number of geocomputational methods have been proposed to supplement or replace these. This class will explore two key areas of geocomputation. The first part of the semester will examine the use of machine learning techniques with large spatial datasets. This will be followed by a look at methods used to analyze and model spatio-temporal data and dynamic spatial systems. Techniques to be covered will include: neural networks, tree-based methods, maximum entropy, grid-based and individual-based modeling. The class will consist of both a lecture component, to introduce the methods, and a lab component to allow hands-on experience. Students will be expected to complete a short research project, demonstrating the use of one or more of these methods.

GEOG 5293 / 6293 Advanced Snow and Ice (effective Spr-19)
This course focuses on the physical principles underlying the behavior of glaciers and ice sheets. The course stresses a physical understanding of the underlying processes.

GEOG 5435/6435 The Oceans and Us: Contemporary Marine Environmental Issues (effective Spr-19)
The oceans cover more than two-thirds of our planet. Their resources help feed human populations, they facilitate global trade, and they help regulate global climate. Despite their importance to global systems, both human and natural, their role in the environmental health of the planet, global economies, and political conflict are often overlooked. Effective management of marine systems and the development of human adaptation strategies to address climate change, rising sea levels, ocean acidification, and other marine environmental concerns requires a holistic look at causes and impacts these issues have on ecosystems and human populations over space and time. This course will examine contemporary issues in marine geography, including topics such as human impacts on marine environments, ocean-climate dynamics, as well as political and economic impacts of rising sea levels and opening of previously ice-restricted trade routes.

GEOG 1005 Earth Environments and Global Change Lab (effective Fall-19)
This lab class explores the four interconnected spheres of the Earth, the atmosphere, hydrosphere, lithosphere and biosphere. The course uses labs to complement the theories, research methods, and types of data that are fundamental to a responsible appreciation of the geographic and historical variation of Earth’s environments. Weekly labs provide the opportunity for students to investigate topics in Earth system science, including melting ice caps, ozone depletion, the overkill hypothesis, the impact of sea level rise, the greenhouse effect, and alternative energy sources.

GEOG 3385/5385: Federal Land Management (effective Sum-19)
The course explores the concept of federal public lands system, including its evolution, types and extents of public lands, and agency stewardship and develop an understanding of the ethical, socio-political, and scientific forces that continue to shape our management of public lands. Discussion of the principles of multiple-use, integrated resource management, and tools that agency professionals use to manage public lands and resources. Discuss and understand current key issues in the federal land management arena.

GEOG 6425 Archaeology and Paleoecology of the Arid West (effective Fall-19)
Course Description: During the late Pleistocene and Holocene, the Great Basin and Colorado Plateau experienced multiple periods of climate change and landscape evolution. Wetlands expanded and contracted, plant compositions and distributions changed, and range shifts and local extinctions in fauna occurred. For humans, these climate-driven environmental changes significantly impacted resource structure and availability. This class will use concepts drawn from evolutionary ecology to examine how people in the past interacted with the landscapes around them. This will allow us to understand why the archaeological record looks the way it does and to understand it in the context of the corresponding paleoecological record/s. This class will enable students to have a full appreciation of how complex the past can be and how it is worth understanding in terms of today.
Geography Week / GIS Day

With the opening of our new building, Gardner Commons, we were able to once again fully celebrate Geography Week Nov. 12th-16th, 2018. We kicked off the activities by hosting the Salt Lake User Group’s (SLUG) quarterly meeting on Tuesday in the Hinckley Caucus Room with a near capacity audience. Bert Granberg, MS 2000, presented work from his new role as Analytics Director at the Wasatch Front Regional Council and Dr. Phil Dennison and Ph.D. candidate Yangyi Wu presented their current research projects. Following the SLUG meeting the Geography Department hosted tours of the department and lab spaces for interested attendees. The tours were full and everyone enjoyed seeing the new space. On Wednesday, official GIS Day, we hosted two career panels. The first panel featured GIS managers from around Salt Lake County including: Nathan Kota, Utah Automated Geographic Reference Center, Vy Nguyen, Utah National Guard, Talsan Schulzke, Unified Fire Authority, and Bill Silva, USFS Geospatial Technology Application Center. The second career panel focused on recent (within the last 5 years) Geography department graduates and included James Leabman, sPower, Yingxie Li, Red Castle Resources, Inc., Michael Mason, Southern Utah Wilderness Alliance, and Sarah Rivera, National Park Service. On Thursday, the Geography Bowl returned with students showing off their geography trivia knowledge. Geography Week concluded with a Friday colloquium featuring renowned GIScientist Dr. Michael Goodchild, ASU/UCSB Geography, presenting “GIScience and Geography: An Evolving Relationship.” It was exciting to celebrate Geography Week in our new building and to showcase the facilities to all of our visitors. We look forward to next year’s celebration.

GEOGRAPHY CLUB

The geography club is seeking to expand its membership by fostering a community of like minded thinkers who become inspired by the world around them. The geography club hosted its annual geography bowl in the new Gardner Commons building. The club will be looking forward to hosting more events for the student population in the near future.
SCHOLARSHIPS / AWARDS 2018 - 2019

Don and Sue Lewon Graduate Fellowship
Steven Lizotte

Don and Sue Lewon Scholarship
Baylee Olds
Anthony Palumbo

Katherine W. and Ezekiel R. Dumke Scholarship
Britt Fiscus

Brian Haslam Scholarship
Bjorn Nicolaisen
Haley Segura
Shaylynn Trego

Merrill D. Ridd Scholarship
Paige Sidwell

T-53
William Roe
Heather Bottelberghe
David Jenkins
Emma McFee
Natalie Fillerup

GIFTS TO THE GEOGRAPHY DEPARTMENT

Your donations have a meaningful impact on our students and our programs. Your contributions truly make the difference between a good department and a great one!

We wish to thank the following individuals for their generous donations from January 2018 – December 2018.

Craig C. Baker
Michael L. Barnhardt
William H. Birch
Timothy E. Bryant
Gary E. Christenson
David G. and Caryn L. Clark
David Lee Elwood
Jennifer Azure Dee Hall
Brian Haslam, Azteca Systems, LLC
Karen Wells Higgins
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David and Margie Wilkins
Patricia M. Zenger
INVEST IN YOUR DEGREE FOR THE FUTURE!
You can help make your degree worth more. These are difficult times for a state university. Here are some ways you can 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

ALUMNI INFO UPDATE / 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!

ALUMNI INFO UPDATE
Name: ________________________________________________
Home Address: _________________________________________
City: ________________ State: _________ Zip:________________
Home Phone: __________________________________________
E-mail Address: _________________________________________
Year of Graduation (alumni): _______________________________
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SCHOLARSHIPS AND FUNDS
Department of Geography Development Fund
(Unrestricted Gifts) $ __________
Chung-Myun Lee Scholarship for Undergraduates $ __________
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Donald Currey Scholarship Fund for Graduate Students $ __________
Roger McCoy Student Assistance Endowment Fund $ __________
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