# GEOGRAPHY

2020 Fall Newsletter

University of Colorado Boulder

GEOGRAPHY

Building classroom-to-community connections in the time of COVID-19

Table of Contents

Thanks for reading our Departmental Newsletter. Since we revived it several years ago, we have used it as a vehicle to communicate ongoing activity in the Department. **If you prefer to read an accessible, online version of the newsletter with identical content, click here.**

If you have any updates, please let us know using our alumni update form or send an email with your information to cugeography@colorado.edu. We would love to hear from you and how your career has progressed since attending CU. Please also see the Chair's Message for an additional way to get more involved with current students, through a new platform we are developing.

Besides your updates and participation, we always appreciate any donations to help us keep our support of scholarships for undergraduate and graduate students, providing them with much-needed financial awards to continue or finish their studies, or allowing them valuable research opportunities. Please see Donor Support for more details on each of our programs, which would not be possible without your continued support.

On behalf of the students, faculty, and staff of CU – Boulder Geography, thank you for your involvement and patronage.

## Table of Contents

**Message from the Department Chair**

## Emily Yeh: Message from the Department Chair

We've arrived at the end of a difficult year. As Professor Bill Travis wrote in the Spring newsletter, the campus shut down in March, causing all classes to go remote. This Fall Semester has been equally tumultuous. We opened with a mix of in-person, remote, online, and hybrid classes. When COVID19 infection rates became too high in late September, all classes went remote for several weeks. Many classes returned to hybrid and in-person teaching until mid-November, when we went back to an all-virtual campus. Adapting and switching classes to different and sometimes multiple modalities has meant a significantly increased workload for instructors – both faculty and graduate students. In the meantime, learning mostly through a Zoom screen and public health restrictions on most other activities also posed significant challenges to students, not least of which is social isolation. The global pandemic has also had severe economic consequences. Loss of state funding and lower enrollments across the university have resulted in salary and budget cuts from which a recovery will not be immediate.

Emily Yeh

Against all of these odds, our students, staff, and faculty have continued with their learning, research, and work. We congratulate the students who have graduated – as well as all of their friends and family members who have supported them in their efforts. Although we will not have in-person commencement ceremonies this academic year, we hope that they will be able to return later on to celebrate. We also hope that, once we return to in-person interactions, other alumni will also come back to visit!

The global pandemic has not been the only crisis of 2020. Unprecedented wildfires have scorched the U.S. West; indeed, three of the largest wildfires in Colorado history occurred in 2020. Professor Jennifer Balch has been highly sought after by the media, to help the public understand why conventional firefighting alone cannot address the growing crisis. As she has pointed out, the devastating losses are due to global warming, human ignition (84% of fires in the US are started by people), and the continued building (and rebuilding) of millions of houses in the highly flammable wildland-urban interface. Similarly, Professor Colleen Reid was recently interviewed by Ira Flatow for NPR's Science Friday about the health impacts of wildfire smoke. Anthropogenic climate change is also related to a very sad event, the untimely passing of Professor Emeritus Koni Steffen, at a field station he established thirty years ago on the Greenland ice sheet, when he fell into one of many crevasses that have appeared due to melting ice.
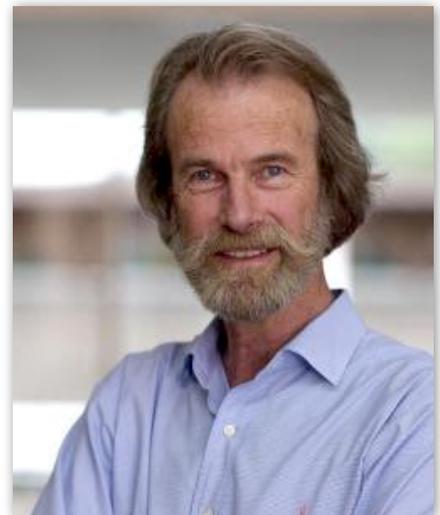
In less solemn news, we welcomed two new faculty members to our department this semester – Assistant

Konrad Steffen

Guofeng Cao

Professor Guofeng Cao, a geographical information scientist who joins us from Texas Tech University, and Dr. Rachel Isaacs, a physical geographer whose Ph.D. is from the Pennsylvania State University. Rachel's teaching as an instructor spans Geography classes on our main campus as well as those offered through Continuing Education.

In another transition, Professor Barbara ("Babs") Buttenfield joins the ranks of Professor Emerita at the end of this semester. Professor Buttenfield has been a highly productive scholar, mentor, and teacher since she arrived at CU Boulder Geography in 1996. She is widely recognized as an international leader in the fields of Cartography and GIS and has published extensively on the impacts of scale and resolution on data modeling, representing uncertainty, designing visualization tools for environmental modeling, and generalization of geospatial data. She is a Past President of the American Cartographic Association and a Fellow of the University Consortium for Geographic Information Science. Many of her former students have become professionals in cartography and GIScience at leading research programs in universities, in government, and in industry. In recognition of these and other contributions, she has just been awarded the 2021 AAG Distinguished Teaching Honors from the American Association of Geographers. She plans to remain active in research in retirement.

Finally, our graduate students are spearheading an initiative to build a platform to better connect interested alumni with current graduate and undergraduate students. Although we are able to contact you all through the CU Boulder Alumni Association to send out this newsletter twice a year, we have never had a systematic way to communicate with those alumni who might be interested in other forms of involvement, such as mentoring, career advice, announcing internship or job opportunities, or general exchange of information with current students. To this end, we invite those who are interested to please subscribe to our "geog-alumni-connect" email list. Join by sending an email to "sympa@lists.colorado.edu". Leave the "Subject" field blank. The body of your email should contain only "SUBSCRIBE geog-alumni-connect Your Name". For example: "SUBSCRIBE geog-alumni-connect John Doe" (don't include the quotation marks). After you send, an email response will be sent to you notifying you of your inclusion in the list. Your email can be mostly composed for you by using this link.

The graduate students would also like to ask those interested to complete this brief survey to tell us a bit more about yourself, including what capacities you are interested in engaging with current students. This new CU GEOG Platform can also serve as a way for alumni to connect with each other, beyond the occasional stories and updates that we receive and post in the newsletter. If you have any questions about this, please email our graduate student representative Xiaoling Chen. Of course, you can also contact me directly, and we always welcome your news, input and involvement, in any way.

## NSF award will support Karimzadeh and team in fusing heterogeneous large earth data for sea ice mapping

Dr. Morteza Karimzadeh, assistant professor of Geography at CU Boulder and his collaborators at the National Snow and Ice Data Center (NSIDC) and CU Denver's Department of Computer Science were recently awarded a three-year $1.2M grant by the National Science Foundation[1] to support their project **'Harmonized Earth'**. Harmonized Earth is a collaborative research and capabilities development effort for creating algorithms, models, software systems, and cyber-infrastructure for harmonizing heterogeneous big data products (including satellite imagery and in situ observations) in a cloud environment for various downstream tasks. The technologies developed are expected to be extendable to a variety of applications, but for this project, the focus will be on classification and mapping of sea ice.
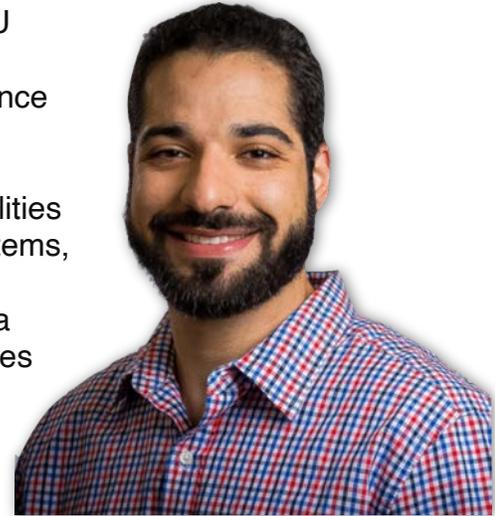
Morteza Karimzadeh.

Sea ice is an important component of the climate system and a key indicator of climate change. Sea ice is spatiotemporally dynamic, exhibiting a variety of evolving ice types that need classification for scientific analysis or operational planning. The mapping of sea ice at high spatial and temporal resolutions remains a scientific challenge. With the increasing availability of high-resolution remote sensing products such as synthetic-aperture radar and lidar, there is a renewed desire for tackling this challenge. However, bridging data science and geoscience is key in successfully harnessing these large heterogeneous data for sea ice mapping. This project brings geospatial data scientists, geoscientists, and computer scientists together to tackle this challenge using the state-of-the-art in machine learning and earth observations for seamless data fusion, machine learning and analysis. **Harmonized Earth** will be integrated into the interoperable environment of NSF EarthCube for maximum adoption and ease of use.

Earthcube is a growing community of scientists across all geoscience domains, as well as geoinformatics researchers and data scientists. EarthCube started as a joint effort between the NSF Directorate for Geosciences and the Division of Advanced Cyberinfrastructure, and has attracted an evolving, dynamic virtual community of more than 2,500 contributors, including earth, ocean, polar, planetary, atmospheric, geospace, computer and social scientists, educators, and data and information professionals. Through this community-driven development, many successful open-source projects have been made available to researchers and practitioners alike, and Harmonized Earth will add earth data fusion and sea ice mapping to the capabilities of EarthCube.

Harmonized Earth is a collaboration between the Principal Investigator Dr. Morteza Karimzadeh (CU Boulder Geography), Andrew Barrett (NSIDC), Walt Meir (NSIDC), Siri Jodha Khalsa (NSIDC) and Farnoush Banaei-Kashani (CU Denver Computer Science).

[1]Data Capabilities: Enabling Analysis of Heterogeneous, Multi-source Cryospheric Data, Award #2026962 and Award #2026865

## Mark Serreze: Arctic Specialization

Interested in learning about the rapidly changing Arctic and its implications on ecosystems, climate, and the global economy? Polar scientist and CU Distinguished Professor Mark Serreze has just released a three-course specialization on Coursera that will walk you through all of this and more. As described by Serreze, "No matter where you live in the world, no matter what your educational background, this specialization and its courses will help you understand the importance of the Arctic and better prepare you for the changes we will see in the next 20 years and into the next century." It is free to everyone, and the certificate of completion is free to all CU students, faculty, and staff through CU on Coursera. The specialization is titled, "Arctic Climate, Environment and the Geographies of the Changing North."



Mark Serreze, arctic research expedition

What will you learn in this specialization? Think different definitions of geographic boundaries of the Arctic, characteristics of the Arctic lands and ocean water, how rising temperatures, declining sea ice, and thawing permafrost are affecting the landscape and its people, and how economies and geopolitics are impacted. For example, did you know that many parts of the Arctic are actually forest? Or that the Greenland Ice Sheet contains about 20 feet of potential sea level rise? Or that Russia has the largest icebreaker fleet in the world, which includes nuclear-powered ships? All this and more is discussed within the specialization!

- Course 1 - The Arctic as a System
- Course 2 - The Changing Arctic: Present, Past, & Future
- Course 3 - Arctic Change & the Nexus of Governance, Economics & Culture
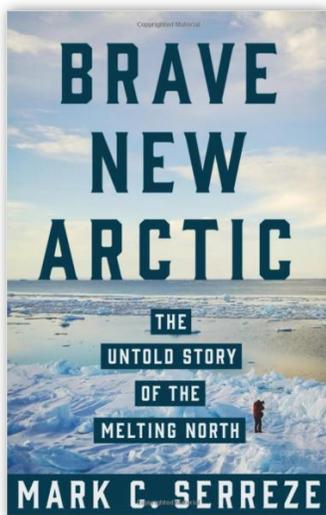


Professor Serreze serves as director of the National Snow and Ice Data Center, which is part of the University of Colorado's Cooperative Institute for Research in Environmental Sciences (CIRES). He has taught courses in Arctic climate and environment in the Geography department for well over a decade. He first visited the Arctic in the spring of 1982 as a young graduate student, and since then, has made many trips to the region to research snow, ice caps, glaciers, tundra and sea ice. Over the years, he has personally witnessed the Arctic warming twice as fast as the rest of the globe, as it has transformed from the Arctic of old (that the explorers of the 19th century would have been very familiar with), to a very different place as it rapidly loses snow and ice. Serreze is also the author of, "Brave New Arctic: The Untold Story of the Melting North," which describes how his experience as a scientist gave him a front row seat to climate change.

## *Heide Bruckner: Building classroom-community connections in the time of COVID-19*

Teaching, and learning remotely during the pandemic is not easy—from dropped zoom calls and spotty internet, to feeling disconnected from classmates and course material. But this fall, one class managed to combat feelings of isolation and social distance through a community-based project on hunger. Funded by a Community Impact Grant from CU Boulder's Office of Outreach and Engagement, undergraduate students in "Food Geographies" partnered with Boulder Food Rescue (BFR), a food redistribution non-profit, to conduct a project evaluation of its No Cost Grocery Program.



After learning about root causes of food insecurity in the United States, and the limitations of charitable food assistance, the class met with speakers from BFR to discuss their work of "redistributing produce and power" through community-led free food sites around town. Then, CU students worked in groups to conduct virtual zoom interviews with participants in BFR's programs-- focusing their conversations on program evaluation and how the pandemic has impacted individuals' food access. With a few class sessions of qualitative data analysis to lean on, students dived into transcription and collaborative analysis to present key findings back to BFR partners.

"I found this project to be very inspiring at a personal level, as it allowed me to learn about organizations making a positive impact on communities by hearing first-hand from participant experiences," reflected student Jaqueline De Carrera.

Many of her classmates also reported that they really enjoyed meeting others in the community through interviews, and that the outreach project helped them feel a sense of responsibility and belonging to the broader community (including the many senior citizens they interviewed).

Building classroom-community connections in the time of COVID-19



"In a time of social isolation, it is more important than ever to reach out to the more marginalized members of our community," remarked Elizabeth Gilbert.

What were students most surprised to learn?

"This project challenged my notion of the progressiveness of Boulder, reinforcing that food justice is a crucial element of any community no matter its average levels of wealth," wrote Solomon Guttmann.

They were also impressed with the mutual support and generosity that characterized how community leaders in BFR's programs help each other through the pandemic.

"In one interview, the senior participant described how she ended up with extra food and distributed it to her college-age neighbors who were out of grocery money. This anecdote warmed my heart because it shows how interconnected we are," related Joey Kessler.

Connection was the resounding theme of the project, and what we all could use more of these days. Community-engaged work builds connections to course concepts and to each other.

"Working outside of the classroom is really important because it helps us, university students, connect with the communities that we are a part of, and also because it gives a real-world grounding to everything we learn inside the classroom," summarized Esmé Fahnestock.

## Barbara "Babs" Buttenfield: What a Long, Strange Trip It's Been



Barbara "Babs" Buttenfield

I've been asked to reflect on my efforts to build a GIS curriculum here at CU-Boulder. When I arrived on campus in January 1996, there wasn't an actual curriculum in place, just a single GIS class offered intermittently by part-time lecturers. One was Loey Knapp, a full-time employee at the IBM facility in town, and another was Ed Delaney, who left Colorado to work as a GIS analyst on Type 1 Incident Fire Teams up and down the Rocky Mountain corridor. Classes at the time were taught on a small number of Unix workstations running ARC/INFO, an early version of the suite of software that now includes ArcGIS Desktop and ArcPro. The department controlled a few Apple Macintosh machines that could run ArcView. All machines were housed in the basement of Guggenheim in the room that became KESDA (the Ken Erickson Spatial Data Analysis lab), named in 1996 for the CU Geography professor who published research on conservation and who taught cartography for 28 years.

The department was and continues to be supportive of my intention to create a world-class GIS program. I began to develop and teach GIS, Cartography and Information Design, Cartographic Animation, and GIS modeling. The campus computing center (then called Information and Technology Services, or ITS) was opposed to supporting any software that could not find wide use in every computer lab on campus, in spite of our classes enrolling students from all across campus. ITS informed me in 1997 they would cancel the ARC/INFO site license because it was "too costly", even though they were charging $395 per seat and using those funds to pay for the campus site license. At that time, a working knowledge of ESRI software was a basic qualification for any student entering the GIS job market, so without the license, our fledgling curriculum would cease to provide marketable skills to students. I contacted the GIS professors Lynn Johnston (CU Denver Civil Engineering) and John Harner (CU Colorado Springs Geography), and the three of us negotiated with ESRI for a joint CU system-wide site license at a reduced cost for all three campuses. In following years, the use of ESRI software increased so fast across campus that the cost per seat dropped steadily and today is free to all campus users, including students, faculty, College technology services such as ASSETT, campus planning offices and FACMAN, who have hired several graduates directly from our program.

Over time, the department has added three tenure-track faculty lines and a full-time instructor to the curriculum. Course emphasis has shifted from teaching just the basic use of commercial software to emphasizing Python programming and production of open-source software tools on Jupyter and similar platforms. The curriculum now spans a dozen regularly offered courses in GIS Quantitative Methods and Spatial Analysis, with more currently under development. We regularly place students completing degrees at software companies such as MAXAR (formerly DigitalGlobe), ESRI, SUN Microsystems; at federal,

state and local agencies; and in research and faculty positions at other universities. The department has a vital internship program and roughly 2/3 of the positions offered in any year request GIS and geospatial analytic skills. We receive applications from all over the world from highly qualified students wishing to pursue graduate work. GIS and geospatial data science methods are utilized by many faculty and students studying geographic applications in climate change, fire science, population growth, hydrology, biogeography, habitat degradation, war and conflict, and public health. Our GIS faculty are working to develop new tools and advanced methods to support uncertainty assessment, to build multi-scale databases, and to integrate data over space and time.



Ken Erickson Spatial Data Analysis lab (KESDA) in 2004. Named in 1996 for the CU Geography professor who published research on conservation and who taught cartography for 28 years. Photo by Jim Robb.
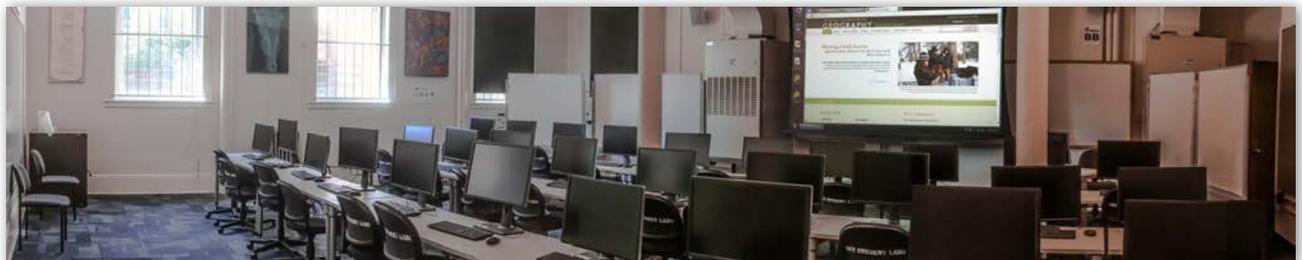


KESDA in 2020. Photo by Jeff Nicholson.

Looking back, it's taken a quarter of a century to establish a vital curriculum. That may seem a long time, but not to anyone who has built a university-level curriculum from an essentially blank slate. Importantly, I could not have accomplished this alone. Along the way, a few valued GIS colleagues left the program, and equally valued new colleagues joined. Without the help of all of these people, the curriculum would not be, indeed could not be what it is today. As I retire at the end of this year, I am leaving much unfinished, and that's the best way to foster future growth and advance. I hope that I have catalyzed a critical momentum that will carry our GIS program forward in productive and likely unforeseen ways in coming years.

*Also see the news item in this newsletter about Babs receiving the American Association of Geographers (AAG) Distinguished Teaching honors for her career-long devotion to GIScience education. -- Editor*

*Introducing Guofeng Cao, Assistant Professor of Geography*



Guofeng Cao

I am a geographic information scientist with broad training in geography, statistics, computer science and earth sciences. Prior to joining CU, I spent several years teaching in the Department of Geosciences at Texas Tech University where I also served as the director of the Center for Geospatial Technology. I have a PhD in Geography and a Master's degree in Applied Probability and Statistics from the University of California, Santa Barbara. I did my postdoc training at the University of Illinois Urbana-Champaign (Geography Department and National Center for Supercomputing Applications). I did my undergraduate (Earth Sciences and Computer Science) in Zhejiang University back in China, and before moving back to academia I also spent several years in industry.

My research is characterized by an interdisciplinary perspective on geographic information science driven by the advances of spatial Big Data (e.g., social media and remote sensing), machine learning/artificial intelligence, and computational sciences. The overarching goal is deep learning of heterogeneous geographic information to support uncertainty-aware geographic knowledge discovery and decision making. Particularly, I focus on the development of statistical/machine learning and computational methodologies to integrate heterogeneous sources of geographic information for complex spatiotemporal patterns. I am particularly interested in characterizing and modeling geospatial biases and uncertainty of geographic information and the associated impacts in scientific applications and practical decision making. I also develop methods and tools to address the computing challenges that arise when the data scales and computation complexity are not manageable with regular computers. I work closely with domain scientists to build geospatial cyberinfrastructure to tackle domain challenges, with a particular focus on natural hazards, environmental sciences, public health and global changes. My research has been supported by several funding agencies, including NSF, USGS, NIST, USAID, USDA and NIH.



Guofeng Cao, Geographic Information Scientist

I am very fortunate and excited to join the family of the CU Geography, the world-renowned geography program, and very excited to explore collaborative opportunities with colleagues within the department and across the CU campus. After spending several years in the Texas high plains, I am also very excited about the wonderful geography, landscape and weather variations in the Rockies.

## Introducing Dr. Rachel Isaacs, Instructor

My love of travel and the environment led me to seek out opportunities to learn new skills and leverage these to travel around the world. This desire transitioned into a degree in Geography. In fact, I am one of the rare few who has received degrees in Geography throughout my academic career, first for my Bachelor's degree at the University of Hawai'i -Hilo, then for my Master's degree at Texas A&M University, and lastly for my Ph.D at the Pennsylvania State University.



Rachel Isaacs conducting field research in Preserve, Alaska

As an undergraduate at the University of Hawai'i – Hilo, I had the opportunity to participate in research examining the succession of vegetation after lava flows. During my Master's at Texas A&M University, I used a combination of field and GIScience skills to explore the impacts of ice storms in Virginia and Arkansas. This research and improving my technical skills helped me get a full-time position in GIS environmental compliance before I even graduated. While working full-time, I missed academic research and the opportunity to learn new skills. I leapt at opportunities when invited to join research expeditions examining the roles of fire and climate change in Mount Rainier National Park, WA and Denali National Park, AK. My career and these expeditions helped solidify how valued physical geography and technical skills were across private, government, and academic industries.

I completed my Ph.D. work at Pennsylvania State University in the Department of Geography. My doctoral work examined the spatial and temporal impacts of climate change on treeline in Denali National Park and Preserve, Alaska. At Penn State, I was also given the opportunity to teach my first courses and discovered how much fun I had communicating my passions to others. My research interests in biogeography, climate change, GIScience, remote sensing, and spatial statistics have led me to conduct research in several international and domestic locations including Scotland, Nicaragua, Alaska, Arkansas, Hawai'i, Washington, and California.

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Rachel Isaacs conducting field research in Denali National Park

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## Department News

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## Babs Buttenfield Awarded Distinguished Teaching Honors


Babs Buttenfield

Congratulations to Babs Buttenfield on receiving the American Association of Geographers (AAG) Distinguished Teaching Honors for her career-long devotion to GIScience education. It is a well-deserved honor and a fitting conclusion to her teaching career. She is retiring at the end of December 2020. Buttenfield, who established one of the first campus curricula in GIScience, is renowned for her engaging teaching style, remarkable ability to explain complex concepts through example and metaphor, and skill at blending theory with technical skills. In a rapidly evolving field, she delivers courses that are at the cutting edge of GIScience.

Since 1951, AAG Honors have been offered annually to recognize outstanding accomplishments by members in research and scholarship, teaching, education, service to the discipline, public service outside academe, and for lifetime achievement. The AAG Honors Committee is elected by the AAG membership and charged with making award recommendations for each category, with no more than two awards given in any one category. For more than 100 years, The American Association of Geographers (AAG) has contributed to the advancement of geography. Our members from nearly 100 countries share interests in the theory, methods, and practice of geography, which they cultivate through the AAG's Annual Meeting, scholarly journals (Annals of the American Association of Geographers, The Professional Geographer, the AAG Review of Books and GeoHumanities), and the online AAG Newsletter. The AAG is a 501(c)3 nonprofit organization founded in 1904.

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## Economic Aftermath of the Virus in Colorado

The Boulder Affordable Housing Research Initiative (BAHRA) co-directed by Jennifer Fluri, Abby Hickcox (PhD in Geography from CU Boulder and currently Associate Director of the Honor Program), and Sabrina Sideris (Program Director of INVST Community Studies Program at CU Boulder), will focus their ongoing research efforts on the impacts of COVID-19 on


Boulder Affordable Housing

housing affordability and housing insecurity in Boulder County and the Denver Metro area.

## Emily Yeh Elected Vice President of AAG

Emily Yeh, Geography Department Chair, was elected Vice President of the American Association of Geographers (AAG) earlier this year. Her term started July 1, 2020 and will be followed by a year as president of the association and a year as immediate past-president.

## Holly Barnard, Katherine Lininger NSF Grant



Holly Barnard

Geography professor Holly Barnard is the Principal Investigator and Geography Professor Katherine Lininger, with Eve-Lyn Hinckley, are the Co-Principle Investigators on a new 5-year $6.9M NSF grant to study the Critical Zone in the American West. Critical Zone Observatories have done a lot of work discovering and quantifying fundamental critical zone processes. But how do those processes integrate and affect each other? That's the next frontier for critical zone research, and this project jumps right in. The researchers will look at how water, trees, soils, and rocks interact and change each other in the fire- and drought-prone landscapes of the American West. Their discoveries will uncover links between how water is stored in the landscape and how that affects key processes in forest ecology, rock chemistry, and soil chemistry. Further, they will help predict how climate change will modify these interactions and change water and therefore life in the West.

## Colleen Reid Emerging Scholar Award

Professor Colleen Reid was awarded the Emerging Scholar Award from the Health and Medical Geography Section of the American Association of Geographers.

## Yaffa Truelove CU Research and Innovation Seed Grant

Professor Yaffa Truelove received a CU Research and Innovation Seed Grant, together with co-PIs Geography Professors Katherine Lininger and Azita Ranjbar, "Adapting to the 'Waterless' City: The Production of Extreme Water Scarcity in Shimla, India." The project will be a comparative study of waterless cities across South Asia, including Chennai, Latur, and Bangalore. It will assess feedback loops between socio-political and biophysical mechanisms that produce extreme forms of urban water scarcity and insecurity.

**Department News**

## Deep Learning in Geospatial Uncertainty Modeling

Dr. Guofeng Cao received $265,058 in funding from National Science Foundation for the project "Deep Learning in Geospatial Uncertainty Modeling'. With this support, Guofeng will develop a new deep learning-based spatial statistical framework to address long-standing problems in geospatial analysis, including complex geospatial patterns, geospatial heterogeneity and geospatial uncertainty. This project will offer novel solutions to fundamental analysis, modeling, and integration problems involving geospatial data, and advance the understanding of the nature of geospatial uncertainty. This project will enhance the proper and cost-effective utilization of geospatial data, and will have broader impacts on disciplines in which geospatial data are involved. Furthermore, with a public outreach component on uncertainty-aware spatial thinking, this project will advance the public good by increasing the public awareness of geospatial uncertainty and critical map reading and usage. The performance of the developed methods will be evaluated in two domain applications: spatiotemporal disease mapping in public health and modeling uncertainty of land cover changes and the impact on atmospheric models.

## Seth Spielman

Seth Spielman served on the National Academy of Science's Committee on National Statistics working group on privacy and the US Census.

Dr. Spielman also joined the Scientific Advisory Committee for Oak Ridge National Labs Geospatial Science and Human Security Division; Georgia Tech's External Data Advisory Committee; and was appointed to CU Boulder's Idea Council which is charged with implementing strategies to transform the CU Boulder community to make it more equitable, diverse, and inclusive.

## Former CU Geography Professor Konrad Steffen Passed Away in Greenland

Konrad Steffen, former CU Geography Professor and Director of the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), died following an accident on the Greenland ice sheet this past August (August 8 2020). Konrad ("Koni") Steffen was a professor in the CU Geography department from 1990-2012, as well as Director of the Cooperative Institute for Research in Environmental Sciences (CIRES) from 2005-2012. He had been conducting reserach into climate change - notably in the Arctic and Antarctic - for over 40 years and was regarded as one of the world's leading authoirities in the field. At the time of the accident he was at research station called "Swiss Camp" that he had founded thirty years ago.

With Koni Steffen's death, the world's climate research community lost an extremely prominent researcher who was also a uniquely kind and committed man. Geography Professor and CIRES Director Waleed Abdalati, who earned his PhD under Steffen, noted, "For those who knew Koni, you will appreciate that he was in a place he loved, doing

exactly what he loved. The first time I went to Greenland with him as a graduate student, I remember when the helicopter landed and he got out. He leaned back with arms outstretched, smiling up at the sky, as if he was just drinking and savoring the cold Greenland air. He will be missed."



Konrad Steffen

Born in 1952, Konrad Steffen was a dual Swiss and American citizen. Having studied natural sciences, he gained a doctorate from ETH Zurich in 1984. After serving as a professor in the Department of Geography from 1990-2012, he returned to Switzerland, where he was Director of WSL as well as Professor for Climate and Cryosphere at ETH Zurich and at EPFL in Lausanne. The Geography department expresses our heartfelt condolences to his family and friends.

Also see:
WSL Director Konrad Steffen fatally injured in Greenland accident (Original article )
Former CIRES Director Konrad Steffen Dies in Greenland Accident (CIRES tribute)

## Waleed Abdalati Elected American Association for the Advancement of Science (AAAS) Fellow

At the end of last year, Professor Waleed Abdalati was elected as an American Association for the Advancement of Science (AAAS) Fellow, a lifetime distinction honoring invaluable contributions to science and technology.

## Jennifer Balch NSF CAREER Award

Also in 2019, Professor Jennifer Balch received a prestigious, five-year National Science Foundation CAREER award, "Fire impacts on forest carbon recovery in a warming world: Training the next generation of Earth analysts by exploring a missing scale of observations." The project addresses the fact that forests in the western U.S., which are important in regulating the amount of carbon in the atmosphere, are burning more rapidly with the increased extent and number of wildfires. As a result, the amount of carbon stored in these forests has decreased significantly.  The project uses innovative remote sensing and ecosystem carbon measuring techniques to advance understanding of when forests shift from carbon sinks to carbon sources under changing fire regimes.

*Alumni Updates*

### Update from Steven Drake, BA 2010

I am living in Kentucky, and working for the Kentucky Transportation Cabinet. I am currently the Lead Cartographer for the Official Highway Map of the Commonwealth of Kentucky. I took this position in early 2019 and finished the 2020-2021 Official Highway Map.
An elective class in Geography opened my eyes and mind to how people relate to their surroundings, and the ways that can be visually represented. While my degree allowed me to begin a career progression that has taken me to where I am now, it was my education in Geography, and the passion shared with the people around me, that has truly impacted me.

### Joe Tucillo, PhD 2020

Joe Tuccillo, who recently received his PhD from the department, has joined Oak Ridge National Lab as an R&D Associate Research Scientist in the Geospatial Science and Human Security Division. Joe completed a dissertation on generating high resolution synthetic populations for measuring hazard vulnerability, exposure, and response.

### Sarah Tynen, PhD 2019

Sarah Tynen completed over two years of fieldwork in Xinjiang, China. After working for over a year for CU Boulder's Graduate School and helping other graduate students in writing their dissertations and grant applications, she joins the Czech Academy of Sciences in Prague as a post-doc in the Oriental Institute's Chinese ethnic policy research group. Sarah is involved in advocating for an end to the Uyghur human rights crisis in China, where Uyghur Muslims--including cultural and intellectual leaders--are being detained in large numbers. Sarah's research, reported in the CU Arts and Sciences Magazine explores how authoritarian actions can trickle down to shape peoples' everyday lives, and how human beings push back in small but sometimes powerful ways.

### Carol Harden, PhD 1983

Professor Emerita Carol Harden of the University of Tennessee, an alumnus of this department was recently awarded the AAG Lifetime Achievement Honors for her career of research, teaching, and service to the discipline of Geography. She was also named an AAG Fellow last year.

### Michelle Olsgard Stewart, PhD 2014

Michelle Olsgard Stewart, recently became the Executive Director of the Yampa Valley Sustainability Council in Steamboat Springs, CO. In this position she will develop and lead climate action programs in the community.

**Donor Support**

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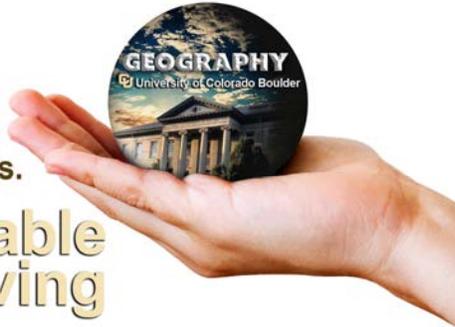
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This fund is for academic support in the broad sense. If giving online and you want your gift to go to a specific scholarship, please provide scholarship name in the "Comments" section.

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### 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. Preference for those with interests in the environment-society relationship. Award is based on merit and demonstrated financial eligibility.

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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.

**GIVE NOW**  Go online to: giving.cu.edu/fund/albert-w-smith-geography-scholarship-fund
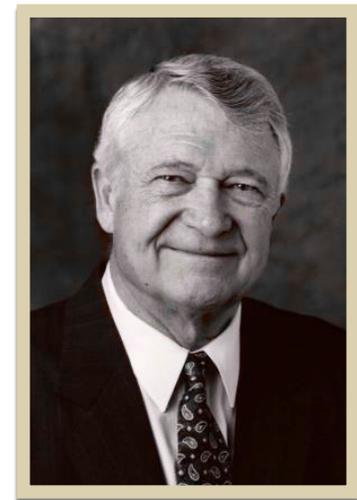
#### *Karl and Barbara von Dreden Stacey Scholarship*
Established by Katherine and Frank Baxter in honor of Katherine's parents, Barbara von Dreden (CU class of 1940) and Karl Stacey (CU class of 1936).

**GIVE NOW**  Go online to: 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.

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## Graduate Scholarship Programs

### Mable B. Duncan Scholarship Fund

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

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

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

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

This fund provides invaluable support for graduate student research.

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### Gilbert F. White Dissertation Fellowship

Named in honor of Professor Emeritus Gilbert F. White, this fellowship provides funding to outstanding PhD. students in the final year of dissertation preparation.

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

### Geography Graduate Student Support Fund

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

Jenn was passionate about geography in many forms: through the environment, the outdoors, and through learning about China. After studying Chinese language and literature at Connecticut College, she traveled and worked extensively on the Tibetan Plateau. After a degree in environmental studies at Prescott College, her journey brought her to the Geography 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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*Please specify "In Memory of Jennifer Dinaburg" in the Comments field.*

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