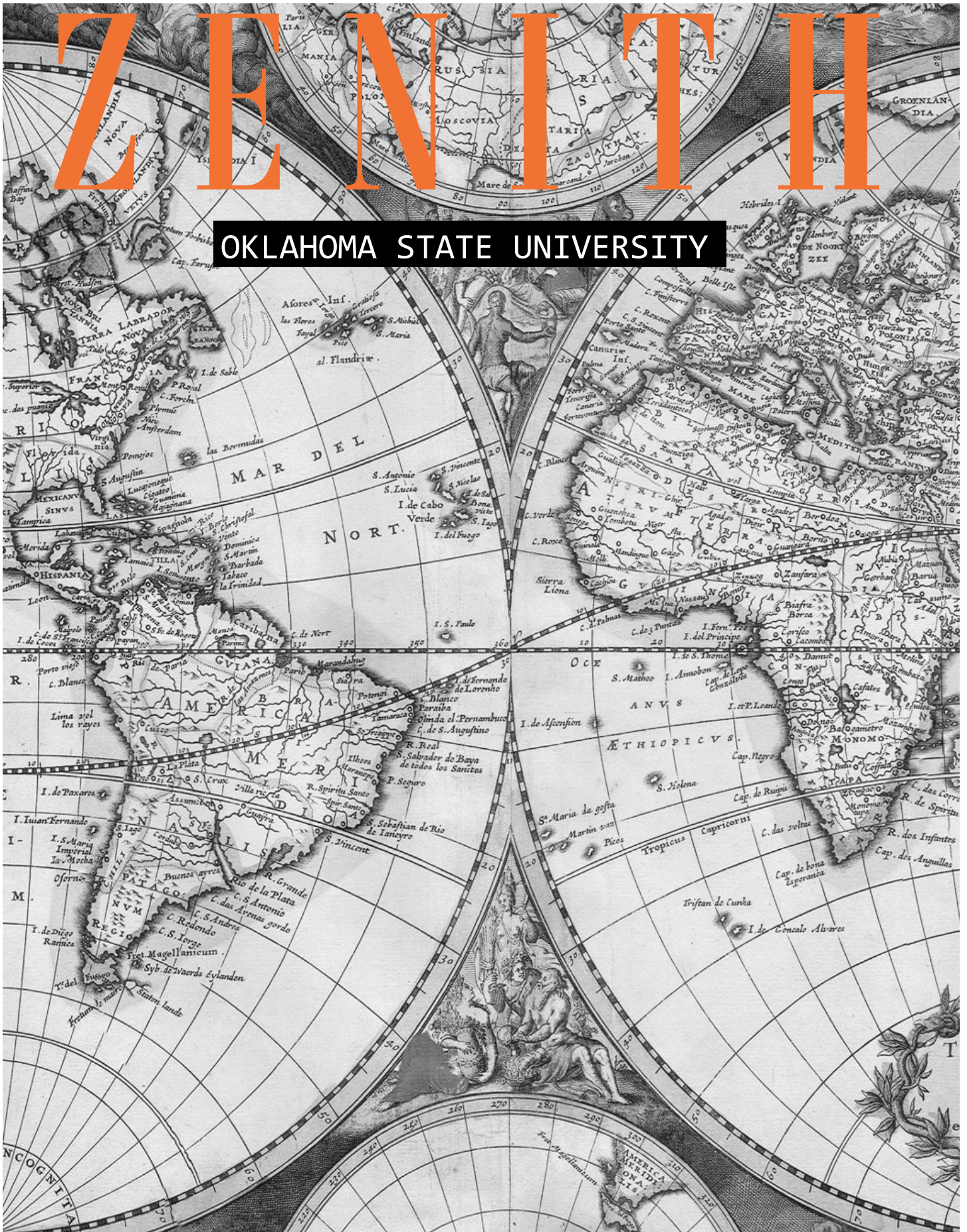


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OKLAHOMA STATE UNIVERSITY





Department of Geography

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Letter from the Department Head

Dear Alumni and Friends of Geography,

For the Department of Geography, 2018 brought a number of noteworthy changes. After dutifully serving more than 17 years as Department Head, Dr. Dale Lightfoot stepped down. We appreciate Dr. Lightfoot's dedicated leadership and service to the department, and wish him well as he readjusts to life as a faculty member without an administrative appointment.

We have said a number of "goodbyes" and "hellos" this year. Among our office staff, Sharon (Elliott) Edmonds relocated to Newcastle, Oklahoma—just too far away to commute, and Emily Williams retired. We also bid farewell to Drs. Amy Frazier, Peter Kedron, and Adam Mathews, whose careers have taken them to other universities. Meanwhile, we welcomed several new faculty as well. Dr. Sara Alian, a new Teaching Assistant Professor in Biosystems and Agricultural Engineering now teaches two courses a year for us. We also hailed the arrival of three new visiting assistant professors, Drs. Michael Acheampong, Ranjeet John, and Siewe Siewe. Ever so critical to the day-to-day functioning of our department, we also welcomed Logan Stephenson, Administrative Support Assistant, and Mayra Plascencia, Administrative Assistant, to our main office.

Our alumni and students continue to reap many awards for their outstanding work. Mark Miller (MS 1972) was recognized with a distinguished alumni award for his many accomplishments. Among our current majors, Harrison Muegge was awarded a Humphrey's Travel Grant, Stephen Stumpf was accepted into the Freshman Research Scholars Program, and Racine Swick was awarded the SST Software Scholarship. Our students who attended the AAG-Great Plains/Rocky Mountain Division Conference at Kansas State University this fall swept the graduate student poster competition, with 1st place going to Amanda (Thomas) Lind, 2nd place to Tessa Cook, and 3rd place to Puja Jana. Ben Hemingway won a NSF-Doctoral Dissertation Research Improvement grant. Doctoral student Colton Flynn was honored with the Walter Kolb Graduate Studies Scholarship and named a Fulbright Alumni Ambassador.

Our faculty also gained recognition this year for their accomplishments. After an extremely rigorous interview process with the National Science Foundation, Dr. Jacqueline Vadunec was invited to serve as a Program Director for the Geography and Spatial Sciences Program. This year the National Geographic Society launched a new initiative to focus on improving K-12 geography education, the National Geographic State Geography Steward Program. Dr. Steve Stadler was selected to serve as the Geography Steward of Oklahoma. Dr. Jon Comer received the College of Arts and Sciences Award for Excellence in Program Assessment. Dr. Rebecca Sheehan participated in the presidential plenary at the AAG meeting in New Orleans. In an impressive showing, members of our department chaired, organized, and/or participated in more than 30 paper, poster, or panel sessions at the AAG meeting.

We have much more news to share in the pages that follow. We may be biased, but we think that geographers have the best stories to share. We hope you will share your stories, experiences, adventures, and more. You can visit our website at: <http://geog.okstate.edu/> or email us at geog@okstate.edu. We look forward to hearing from you.



Alyson Greiner

Alyson Greiner, PhD
Department Head

Awards and Scholarships

THANK YOU to the many donors who contributed to our Excellence and Scholarship funds over the past year. Your contribution is helpful, needed, and has a direct impact on the faculty and students in our Department of Geography.

Past alumni support has been a key to the progress of our department. With growth in the number of faculty and new program developments, it's an exciting time for the Department. We hope you can help us maintain this momentum by making a generous contribution to our programs.

Your gift of \$25, \$50, \$100 or more will assist us in making improvements that will benefit current students and enhance the department and your degree in geography. Please make checks payable to the OSU Foundation and designate the fund to which you are donating on the memo line. Every dollar sent to one of these Geography funds benefits the Geography Department. Your support will help the Department achieve its goals of enriching the academic experience of current and future students.

We hope to receive funding in the future to:

- Establish an annual scholarship for the Outstanding Senior in Geography
- Establish an Endowed Professorship in the Department of Geography
- Establish a scholarship for Incoming Freshmen
- Establish an annual scholarship for Geography Study Abroad
- Enhance the Geography Lectureship Fund (complete the endowment) to support an annual Lecture
- Support the Shaull Medal for Teaching Excellence
- Support the Geography Excellence Fund which provides many activities for students and faculty

◆ ◆ ◆ ◆ Congratulations to Our Recent Awardees!! ◆ ◆ ◆ ◆

John F. Rooney Scholarship for Outstanding Junior
2018: Katherine Henry
2019: Harrison Muegge

Shaull Medal for Teaching Excellence
2018: Thomas Craig
2019: Tom Cox; Honorable Mention: Tessa Cook

Outstanding Senior
2018: Brook Bastie
2019: Racine Swick

Croft Family Award in Geographic Education
2018: Colton Flynn
2019: Mark Mahar

Norris Conference Travel Award
2018: Brian Gilson, Amanda Weber
2019: Jesse Andrews, Maria Ramirez Sáenz

Tweedie Travel Scholarship
2018: Emily Clause
2019: Madahi Lozano, Monique Walker

Norris Scholarship for 1st Year's Master's Student
2018: Lindsay King
2019: Austin Boardman

Greiner Travel Scholarship
2018: Emily Clause, Racine Swick

Fite Scholarship for 1st Year Ph.D. Student
2018: Maria Ramirez Sáenz

GTU Travel Scholarship
2018: Amanda Weber

ConocoPhillips GIS Certificate Enhancement Scholarship
2019: Diane Johnson



Graduates of the 2018-2019 school year

Spring 2018

Brooke L. Bastie— B.A. Geography
 Austin C. Fessler— B.A. Geography
 Andrew C. Price—B.A. Geography
 Matthew Dunn—B.S. Geography
 Hayden Harrison— B.S. Geography
 Kayla King— B.S. Geography
 Giovanni F. Penna— B.S. Geography
 Chi Cheng Yip— B.S. Geospatial Information Science
 Matthew Haffner— Ph.D. Geography
 Stephanie Heald— Ph.D. Geography
 Yun Zhao— Ph.D. Geography

Summer 2018

Emily R. Clause— B.A. Geography
 Lauren Wood— M.S. Geography
 Thomas Craig— Ph.D. Geography

Fall 2018

John R. Hall— B.S. Geography
 Kayla A. King— B.S. Geography
 Amanda Cheyenne Lahue— B.S. Geography
 Curtis William Rich— B.S. Geography
 Joel Daniel Bjornen— B.S. Geography
 Amanda (Thomas) Lind— M.S. Geography

Spring 2019

Haley Best— B.A. Geography
 Sam Brander— B.S. Geography
 Josh Grundy— B.S. Geography
 Katherine Henry— B.S. Geography
 Nolan Malloy— B.S. Geography
 Racine Swick— B.S. Geography
 Tessa Cook— M.S. Geography
 Shelby Rider— M.S. Geography
 Colton Flynn— Ph.D. Geography

Projected Summer 2019

MS: Avonlea Keenen, Catherine Shropshire
 PhD: Robert Garrett, Puja Jana, Gustavo Ovando

Congratulations to our GIS Certificate earners:

Fall 2017	Spring 2018	Summer 2018	Fall 2018	Spring 2019
Jessica Gay	Corey Riding	Avonlea Keenen	Sirena Lao	Austin Boardman
James Hollan	Yanxia Wu			Racine Swick
Amanda Thomas				Anthony Hernandez Rivera



Alumni News & Memories

2018 Geography Distinguished Alumnus: Mark Miller 2018 Geography

Mark Miller grew up in Dallas, Texas, later graduating from Denton High School in 1966. After receiving his B.S. degree from the University of North Texas in 1970 he enrolled in the M.S. program in geography at OSU studying cultural and sports geography under Dr. John Rooney. After completing his M.S. in 1972, he was commissioned through OSU's AFROTC program into the U.S. Air Force. While serving as a nuclear missile launch officer, Mark earned a second M.S. degree from the University of Central Missouri. Upon completing his military service, Mark entered the financial services industry, ultimately serving as President of Allied Bank-Bedford, Texas. While pursuing his career Mark completed his third Master's Degree, an MBA in Banking and Finance in 1980 from the University of North Texas in Denton, Texas.

During his long banking and finance career, Mark often drew upon his knowledge of geography while evaluating large scale development projects and bank expansion opportunities.

Upon retirement, Mark has embarked on a second "career" in volunteerism serving on numerous boards and committees within his local community.

Mark and his wife, Susan, have three grown children, five grandchildren and recently celebrated their fortieth anniversary.



Alumni News & Memories



...from Former Faculty

Jerry Croft, Professor Emeritus, who taught in the department from 1966 until 1991 when he retired as the youngest professor emeritus at age 51 in the history of the state. Jerry's big news relates to other members of his family as he is now retired from his part-time job at the University of Iowa where he taught international studies for 17 years. His wife, Laurie, is now a full professor of gifted education at the University of Iowa and was elected to an international gifted education board of directors. Jerry's son, Jay, is now entering his 25th year as a teacher at the Stillwater Junior High School and is a retired Major in the U.S. Army Reserve. His daughter, Anne Marie, is working on a Master's degree in rehabilitation and a former Make-A-Wish child and, by the way, she is the bravest person I have ever known. Daughter, Jennifer, has the biggest news in the family as she is the co-winner of the Man Booker International Prize in London, which is the biggest literary prize in the world this year because there is no Nobel Prize in Literature. Jennifer has been invited by the Royal Family to a brunch and also received an invitation to meet the First Minister of Scotland. Jerry feels like Jennifer inherited most of her talent from him as it is clear his wife still has intact her amazing talent! I would also like you to know that Brad Bays was in several of my classes and thought he showed a lot of talent and should go somewhere and earn a Ph.D. in geography. Tom Wikle was a young assistant professor and I told John Rooney that I thought Tom was way too nice to be a geographer and that I thought he should be a minister. I also told George Carney that Dale Lightfoot was way too tall to be a geographer and I thought he should go out for the basketball team, so I was only correct on one of my three predictions!

...from Former Students

Yun Zhao, a 2018 PhD Graduate of the department, and his advisor Dr. Hongbo Yu have published an article in the *Journal of Transport Geography* based on Yun's dissertation. The article (and dissertation) proposes a more realistic evaluation of travel time between cities by developing a door-to-door approach. Most studies of air and rail travel focus only on that portion of the journey, omitting the travel time to/from airports and rail stations. This study models the total travel time, which consists of five components: access time (getting to the station), waiting time (inevitable!), on-board time, transfer time, and egress time. After developing the model, they undertake an applied study of both the Houston and Dallas metropolitan areas, computing the most effective means of traveling between the cities via personal automobile, air travel, and a proposed high-speed rail (HSR) between the two based on specific origins and destinations within each city. Yun is an Assistant Professor in the Department of Environmental Studies at the University of Illinois, Springfield.

Alumni News & Memories



...from Former Students

Susan Carlile Taylor graduated in 2002 and dreamed of being a park ranger, which I did just out of college at Mt. St. Helens, then at the John Day Fossil Beds in Oregon. I also spent a year as an AmeriCorps member in Portland, Oregon teaching field ecology to inner city youth, then traveled to Florence, Italy to study art history for a semester.



When I returned, I somehow ended up as the executive director of a Boys & Girls Club in rural eastern Oregon in 2004 (I was 24). It was very challenging, but I brought the financially incapacitated organization back to life in two years. I got married (to Erik Taylor, another park ranger I met at Mt. St. Helens) and then moved to Roseburg, Oregon in 2006.

I spent the next 12 years in Roseburg working for Umpqua Community College. Most of my time was spent as the Director of Grants and Planned Giving (8 years), then I became the Executive Director for Advancement and the Foundation. I raised \$26MM for the organization, leading it through the worst mass shooting in the history of the state of Oregon (Oct. 1, 2015) and raising funds for multiple new endeavors such as launching the Southern Oregon Wine Institute and the Ford Health, Nursing, and Science Center. While working at Umpqua, I had two kids, Aubrey and Jameson, finished my Masters in Public Administration, restored and renovated a historic home, and did a few other professional things (traveled to Germany on a Fulbright, wrote a journal article, gave several conference presentations, earned an international certification in fundraising, and became a senior fellow for the American Leadership Forum).

This year, my husband and I made a difficult decision to leave our home in Oregon (I had been in Oregon for 16 years, he for 27 years) and move to Blacksburg, Virginia. Roseburg is a small town and we had both topped out professionally and were looking for new challenges - we thought it would be something totally different and interesting to try the east coast! My family has also all relocated to the southeastern US. Erik has stayed in federal service in recreation, and is the Lead Outdoor Recreation Planner for the Blacksburg District of the Forest Service, and manages 120 miles of the Appalachian Trail, 10 wilderness areas, and lots of campgrounds and other trails. In August I began a position at Radford University as the Director for University Advancement.

Joe Easley (M.S. 1991) is approaching 7 years at Kobie Marketing, I have changed roles from leading sales and product to now leading corporate strategy and partnerships as Senior Vice President of Corporate Strategy. In that role, I define the direction that Kobie will take in regard to our technology and services offering (i.e. Consulting, Analytics/Al/ Machine Learning, Loyalty Platform, and Agency Services), establish commercial and operating models with partners (i.e. Collinson Group, Acxiom, Synchrony, etc.) and lead corporate development initiatives.

My wife Lucy and I will be celebrating 20 years together soon and our 2 children, Collin (17) and Isabel (15), are still in High School. Collin went to OSU's Sport Media Camp this past summer and really enjoyed getting to experience Stillwater and the campus. Regards to all!



What you need to succeed if you want a career in GIS: Advice for the aspiring GIS'er from someone who has been a GIS Professional for over 25 years

By: Tim Hayes, M.S.

GIS is a fast-growing field, and you can easily get overwhelmed in the number of sites/articles espousing the benefits of GIS. But what exactly does all this mean for the aspiring GIS professional? I started my GIS career in the early 1990's, anyone remember ArcInfo 7, UNIX, and ArcView 1.0? At that time most people had no idea what GIS was. GIS certificate programs did not exist. A change occurred in the mid-1990's when universities started GIS certificate programs and degrees specializing in GIS. This was also the time that GIS started to be recognized on a broader scale in government and in the private sector as the realm of the specialist. Thus, was born the GIS Specialist, GIS Analyst, and GIS Technician. Many cities and other government agencies along with consulting firms began hiring such geospatial specialists. In the early 2000's, more and more people were graduating university with GIS Certificates and non-Geography college degrees and were employed in jobs that used GIS, but not to the level where a specialist was required. Then, in the mid-2000's, Cloud-computing began, which led to a paradigm shift in the world of GIS. Basic map-making and spatial analysis are now in the hands of anyone regardless if they have GIS skills. ESRI's ArcGIS Online led the Cloud-based GIS revolution. "Anyone can do GIS" appears to be the mantra in current times. As an aspiring GIS Professional, do not let this discourage you. There are more opportunities for a career in GIS now than there ever was before. The difference between now and then is the soft skills required to be a successful GIS Professional are much broader. At their most fundamental level, soft skills are defined as: personal attributes that enable someone to interact effectively and harmoniously with other people.

I consider these the top three soft skills that will prepare you for a rewarding career as a GIS Professional:

Public Speaking and Communication Skills: Mastering the art of speaking in front of groups is the most critical skill of the GIS Professional. In most situations where you work, you will be the only GIS Professional. If you are lucky, you may be part of a team of GIS Professionals. In either case, you will be placed in situations where people ask you to solve a problem and present the outcomes to a non-GIS audience. This will require you to be articulate, patient, and empathetic. Of course, putting together a great PowerPoint presentation also helps. Here is a typical example of where good communication skills are beneficial: Using ArcGIS Online or ArcGIS Web AppBuilder Developer Edition, you have built a series of Web Maps for the organization you work for, or for a client. You are then required to explain why you made the Web Maps this way or that way, how they can be of benefit to the organization, and/or engage your audience in determining the most suitable widgets (tools) to be used in the Web Maps.

Customer Service and Attentiveness: GIS is all about customers. As the GIS Professional, you will find yourself as the "go to" person from a variety of customers who always have a problem they need solved or a request that needs to be fulfilled. Customers could include Engineers,

Planners, Wastewater Treatment Operators, and many more. The better you understand what your customer does for their job, the better you can provide them with what they need. To excel at customer service, you must be approachable, have a positive attitude, exhibit good listening skills, and have endless patience. My philosophy is this: You will learn better customer service by getting out to see what your customers do day in and day out". Mastering the art of customer service will provide dividends throughout your career. You may soon find that you are one of the most important people in an organization.

Project Management and Leadership: As a GIS Professional, you will be handed many projects to work on, and having the skills to properly manage projects is essential. A typical day brings a lot of different requests...a Heavy Equipment Operator stops by your office and says "I will be digging a trench to install a pipeline at this location, can you show me what utilities are buried there?", at the same time an Engineering Manager requests that you convert a "GIS file" to Auto-CAD format and send it to a consultant, then a Senior Planner stops by asking if you can "add more data to the Burrowing Owl GIS", and on and on. What you had planned to do that day is now tossed out the window. All the elements of Project Management and Leadership such as time management, negotiation, prioritization, and ensuring you produce results are key skills you need to learn and understand if you want your career as a GIS Professional to be a success.

As you can see, fundamentally, GIS is about data. If you can ensure your data is of the highest quality and combine this with the skillsets mentioned in this article, your career as a GIS Professional will be made a little easier. Remember this: Geographers think differently. In your GIS career you will see that some may know how to "do GIS", but few have been trained to think spatially. Whatever the job title, that is why there will always be a need for the geographically-trained GIS Professional.

For more information on career pathways for the GIS Professional, please look at the GIS Career Pathway Trilogy I wrote for GIS Professional Magazine: <https://www.gis-professional.com/content/author/tim-hayes>

Tim Hayes received his M.S. in Geography and Certificate in GIS from Oklahoma State University in 1998. He is the GIS Manager for the City of San Jose Environmental Services Department. The City of San Jose is in the heart of the Silicon Valley in California. Tim manages a team of 3 GIS Specialists. This team is responsible for the GIS at the City's Wastewater Treatment Facility, Recycled Water Utility, and Municipal Water Utility. Tim can be contacted at timothy.hayes@sanjoseca.gov or you can connect with him on LinkedIn.



Student Snapshots: Meet Some of Our Students



Fernanda Ramirez Sáenz

I am a third year Ph.D. student from Chihuahua, Mexico. My research interests include human dimensions of global change, cultural and political ecology, gender, vulnerability, and resilience. I am currently a research assistant working for my advisor, Dr. Vadjunec in the ARID (Agroecosystem Resilience In times of Drought) project. This year we have been traveling through rural Oklahoma, New Mexico, and Colorado collecting data from farmers and ranchers to better understand how agricultural communities adapt to climate variability in the Southern Great Plains. I am specifically interested in looking at the differentials in access to funds, information and resources by gender among agriculturalists, and how this may affect their vulnerability and resilience in dealing with drought. I use a mixed methods approach that combines statistical analysis, content analysis, participant observation and interviews conducted in the study area. I am currently working on a paper about diversity in agriculture that I will present at the AAG Annual Meeting in 2019, and I am putting together my proposal hoping to have it ready by the end of the semester (fingers crossed!).



Kimberly Johnson

I am a fifth year PhD student. My interests lie broadly within the realm of cultural and historical geography. I am currently working on my dissertation which focuses on tourist sites associated with and influenced by Laura Ingalls Wilder's "Little House on the Prairie" book series. Additionally, my research focuses on how Laura Ingalls Wilder's tourist sites shape and influence the ways in which tourists understand and remember the American West, including ideas of gender and race. During the fall semester, I presented a portion of my research at the Great Plains/Rocky Mountains Regional AAG Meeting in Manhattan, Kansas. I also teach GEOG 1713/GLST 1713: World Regional Geography.



Austin Boardman

Austin is a 2nd year master's student working with Jackie Vadjunec studying spatial patterns of woody plant encroachment in the Oklahoma Panhandle and Northeastern New Mexico. His Spring 2018 semester was very eventful, with a poster presentation in collaboration with fellow graduate student Fernanda Ramirez Saenz, examining gender differences in agricultural subsidies at the Oklahoma Natural Resources Conferences in Tulsa. He also presented a poster at the AAG Annual Meeting in New Orleans discussing how ag subsidies have become less proactive and more reactive in the face of natural disasters such as drought. This spring, Austin also obtained his FAA Part 107 license to fly UAS. This summer, he spent over two months in the field flying UAS, recruiting study participants, and conducting household surveys with farmers and ranchers. He was also able to sneak away to Yosemite National Park for the rest of the summer to save the frogs. This fall, Austin is continuing fieldwork and maniacally getting his thesis proposal ready. In his free time, he enjoys riding his bike, running, and eating.



3D image of the Grandfield tusk.

Geographers in the Field



The Mammoth Journey by Tom Cox

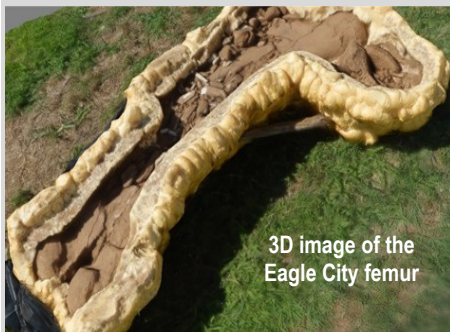


Tom Cox

First Stop—Buffalo, Eagle City, Grandfield, and Helena mammoth localities. The summer started out pretty slow and very uneventful. However, everything ramped up in to overdrive once I had acquired my DJI quadcopter along with my FAA drone license. The first stop was Grandfield, Ok where the temperature was a beautiful 89° F. Along with a lot of help from the city of Grandfield employees we were able to successfully create a 3D image of the tusk that is still in the ground along with a digital elevation model of the area surrounding the mammoth site, although it was a little touch and go for a moment. We laid out the ground control points the night before conducting the flight. However, nobody informed the farmer that our work was taking an extra day due to some delays because of rain. So we laid out the ground control points (GCPs) and the next morning I flew the mission with the quadcopter. Once I was done with the flight I began to retrieve my ground control points only to find that the farmer had run over them with his disk. I thought I was going to cry, but as I continued retrieving my points I realized that once he saw we were still working in the area he did his best to avoid the markers.



22,000 year old paleosol.

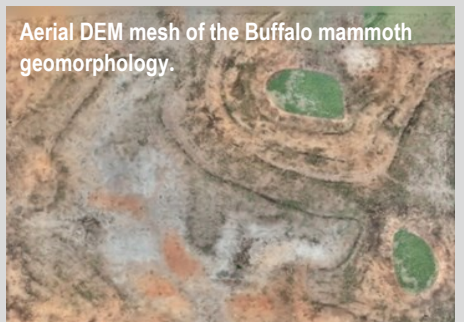


3D image of the Eagle City femur

Second Stop—Eagle City mammoth locality. The temperature was on the rise, in the low 90s, but it was still bearable. As far as the work went I was totally on my own. However, I did have a herd of very curious cows watching my every move.

I had no idea just how curious cows were until I was preparing the quadcopter for its flight. I turned around and about a dozen of them were standing right behind me. I also found out that they have the senses of

a hound dog. I was able to lay out all of my ground control points before bad weather moved in causing me to have to abandon the site for a few days. Once I returned, finished my work, and began the process of retrieving my GCPs, I found that many of them had been pulled up and even chewed on. I guess the cows had decided that they wanted to make my research a little more difficult than it already was.



Aerial DEM mesh of the Buffalo mammoth geomorphology.



Uncovering a mammoth tusk with a little help from the town of Grandfield.

Third Stop—Buffalo mammoth locality. Needless to say the temperature was on the rise, close to a 100° F. By this point I had learned a lot: (1) make sure the land owner knows exactly where you are working, this is a busy time of year for them and they're trying to get the fields ready for planting; and (2) make sure the cattle are removed from the area. Buffalo was also nice because unlike Grandfield and Eagle City, I could drive the entire area that I was mapping. Although due to some interesting finds I will have to return to Buffalo over Fall Break to finish things up.

Meet Our New Faculty



Michael Acheampong, PhD

Michael's primary interest research is in the area of human-environment interactions and sustainability. His research particularly engages political ecology of resource use and extraction in developing countries. In his current research, he has been examining the socio-ecological impacts of Ghana's nascent oil and gas industry. As an interdisciplinary researcher, Michael embarked on this research by combining multiple techniques from different fields of study including qualitative and quantitative research methods as well as laboratory and geospatial techniques. Michael also has research interests in global health inequities and renewable energy development and policies.



Sara Alian, PhD

Dr. Sara Alian joined OSU in Fall 2018 as a teaching assistant professor in the Biosystems and Agricultural Engineering Department. At OSU, she has taught Geographic Information Systems: Resource Management Applications (GEOG 4343/5323), Advanced GIS: Resource Management Applications (GEOG 5343), Principles of Landscape Analysis for Site Design (LA 4453), Geospatial Technologies for Natural Resources (NREM 3083) at three different departments. The primary objective of Dr. Alian's classes is to have the students finish the course with sufficient confidence about the concepts and materials to gain motivation for continuing their studies and/or joining the professional workforce as competent practitioners. Dr. Alian's research advances geospatial science applications in natural resource management and geospatial science education. Prior to joining OSU, she was a research assistant professor at the University of Texas at El Paso.



Siewe Siewe, Ph.D.

Siewe Siewe joined the department as a visiting Assistant professor in the fall of 2018. He enjoys every minute working in the department he graduated from a couple of years ago. His researches interest include; human environment interaction, indigenous people and resources, CAPE, GIS, remote sensing, Africa, and business.

Meet Our New Faculty



Ranjeet John, PhD

Ranjeet John was previously a Research Associate/Fixed Term Faculty (2014-2018) in the Landscape Ecology and Ecosystem Science lab in the Center for Global Change and Earth Observation, Michigan State University before joining the Department as a Visiting Assistant Professor. His research uses remote sensing and GIS applications to study land cover/use change, carbon, water/energy fluxes, human-environment interactions, and global environmental change at ecosystem/regional levels. He is the Co-PI of a NSF-funded project entitled "Ecosystems and Societies of Outer and Inner Mongolia: Divergent Trajectories and Coevolution". The research objective is to find out how changing trends in human-induced land cover/use change will modify land surface processes across these vast, water-limited and fragile grasslands with similar biogeography, but with contrasting political systems and land use policy regimes (Mongolia and Inner Mongolia, China). His research utilizes the Coupled Human and Natural systems framework to study the effects of extreme climate events and natural hazards (e.g. drought and severe winters) with grazing pressure on grassland degradation and on vulnerable pastoral communities across precipitation and elevation gradients. He is also the Co-PI of a NASA LCLUC-USDA project titled, "Socioecological carbon production in managed agricultural-forest landscapes." His role is to develop remote sensing products and conduct geospatial analysis in this ongoing study of biophysical regulations, resource limitations and land management of dominant land over types including biofuel crops with different land use histories, at the Great Lakes Bioenergy Center, Kellogg's Biological Center LTER, Battle creek, MI and across the Kalamazoo River Watershed. He obtained his Masters degree in Geography at Michigan State University (Dr. Jianguo Qi) and his Ph.D. in Biology (Ecology) at the University of Toledo (Dr. Jiquan Chen).

He was a Post-Doc and, later, a Research Assistant Professor in the University of Toledo (2011-2014) before moving to MSU.

GTU IN THE NEWS:



This year, the OSU Chi Chapter of the Gamma Theta Upsilon (GTU) International Geographical Society was proud to receive recognition of being selected as an honors chapter of GTU based on the criteria of campus service and the commitment to recognize outstanding student scholarship.

Congratulations to the members and outgoing chapter advisor, Dr. Rebecca Sheehan for being one of 8 selected from over 1390 chapters!. Returning from his Fulbright time in Ethiopia, Colton Flynn is current chapter president, with Kimberly Johnson Maier as vice president. Dr. Steve Stadler and Don Colley are now serving as co-advisors to the group.

GTU invites excellent students to join at any time. To be inducted into GTU, initiates must have completed a minimum of 3 geography courses, have a GPA of at least 3.3 in those courses, rank in the top 35% of their class, and have completed at least 3 semesters or 5 quarters of college work.



Undergraduate Geography

Once again, club members were very active this year and organized a Welcome Back Bowling Night, a Movie Night, a geocaching activity, Trivia Night, and a reception for our graduating seniors and their guests.



Geography Club Officers (left to right): Haley Best, President; Colby Thompson, Vice-President; Audrey Ward, Treasurer; and Sam Brander, Secretary.

Departmental Colloquia



02/02/2018

Meredith DeBoom (University of Colorado – Boulder)
Addressing Inequality at Multiple Scales: From Chinese Investment in Namibia to Inclusivity in Higher Education

02/16/2018

Brian Gilson (Oklahoma State University)
Postsecularity in Azerbaijan: A Reconnaissance

04/04/2018

Jody Walker and David LaGorce (ConocoPhillips)
An Inside Look at ConocoPhillips GIS

04/27/2018

Pinliang Dong (University of North Texas)
A Review of LiDAR applications in urban environments

11/28/2018

Dr. Thomas LaVanchy (University of Denver)
Coupled Perspectives on Water Security

1/29/2018

Dr. Michael Acheampong (Oklahoma State University)
Pursuing Sustainable Development Goal Number One: Has the Ship Sailed for Farmers in Ghana's Oil City?

11/30/2018

Dr. Ranjeet John (Oklahoma State University)
Canopy cover and herbaceous above ground biomass in Mongolia and Inner Mongolia: spatiotemporal estimates and controlling factors

12/04/2018

Dr. Hamed Gholizadeh (University of Nebraska-Lincoln)
A Bird's-eye View of Grassland Biodiversity

12/10/2018

Dr. Kunwar Singh (University of North Carolina)
More, more, more: Monitoring and modeling humanity's growing demand for land, food, and water

12/12/2018

Dr. Gehendra Kharel (University of North Dakota)
Managing a billion dollar flooding disaster along the U.S.-Canada border: The case of Devils Lake flooding, North Dakota

4/17/2019

Dr. Leonid Vyazov, (Kazan Federal University & Tartarstan Academy of Sciences)
Early human-environment interactions in small river sediment archives in the forest-steppe region of Eurasia

4/19/2019

Chris Krieger (Oklahoma State University)
Stillwater's gated communities: Triangulating a landscape approach

4/26/2019

Dr. Jim Thatcher (University of Washington-Tacoma)
ConocoPhillips Geography Career Spotlight Speaker
Computation and Hydropower: Mapping the contours of a digital political ecology of the Pacific Northwest

OSU GEOGRAPHY UNDERGRADUATE MENTORS PROGRAM

A Life-Changing Experience

By Racine Swick, B.S. Geography and GIS Certificate May 2019

The topic of undergraduate research is not one that is normally looked at when viewing departments. However, my experience changed my life. The OSU Geography Department created a program entitled “Geography Undergraduate Mentors Program” or GUMP for short. This program enables undergraduate students, passionate about research, to work closely with a faculty member and gain hands-on experience in a field they are excited about.

Through the weeks of July 16th through the 21st, 2018, I was a part of this program with Dr. Amy Frazier. This internship involved me in an organization called CLOUD-MAP that was in conjunction with multiple universities such as The University of Oklahoma, University of Kentucky and University of Nebraska. CLOUD-MAP utilizes atmospheric data collected from unmanned aerial vehicles, or UAV's, to better predict the weather.

This internship took place in the San Luis Valley of Colorado. We stayed in Alamosa and got to sample the local cuisine. With mountain range in every direction, no location was the same. The small towns in the area have a great need to know where and when to allocate resources for when storms hit. (Much like Oklahoma!) A diverse climate and terrain make the place ideal for gathering data for multiple researchers. I gained many lifelong friendships. With these friendships, we climbed the dunes at the National Sand Dunes Park as well as drove up to Pikes Peak.



On the first day we went to a local air field to show our UAV's to the locals and other universities. It was interesting to learn about the different sensors, equations and UAV's that each group used to collect and implement their data. The following days we flew all morning in intervals. Most of our flights were profiles taken at different altitudes with many UAV's for comparison and calibration. The few transects that we flew were to have a data contrast with satellites, for example the Sentinel 2. The entire trip was a great learning experience. Dr. Frazier and her colleagues opened my eyes to field practices, data collection, and technical expertise I could not have gotten with any other group. Being hands on and collecting the data, created a want to expand my physical geography knowledge. After the trip, I was able to look at the data and begin to understand the difference in the atmospheric layers.

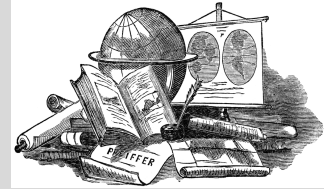
I have two favorite attributes that I take away from this program: the first is that through this experience I was able to better understand a subject that I, regretfully, didn't understand in the classroom. Through my research we utilized NDVI as a comparison to our atmospheric variables. In the classroom, I was unable to wrap my head around the concepts; however, through perseverance and a lot of research, I now understand it better than I ever thought possible. The second take-away is that, this experience has opened so many doors for me. I am now a research assistant to a fellow CLOUD-MAP team member, I was able to attend the AGU conference in Washington DC as a co-author on her poster, and I have

made many life long friends along my journey.

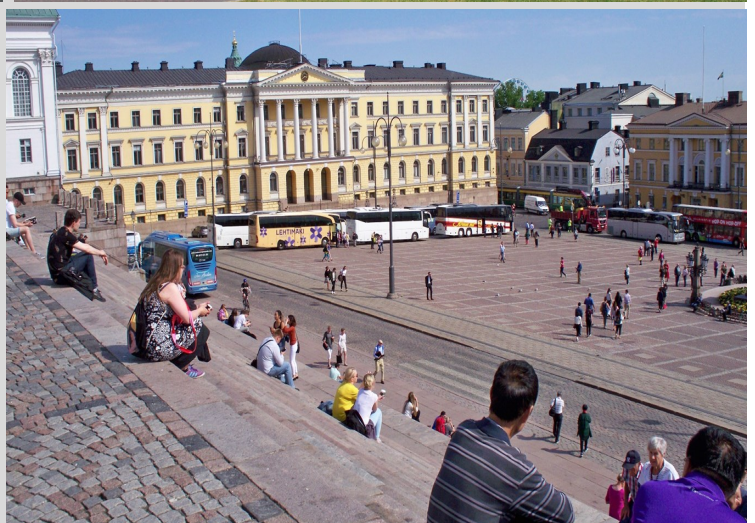
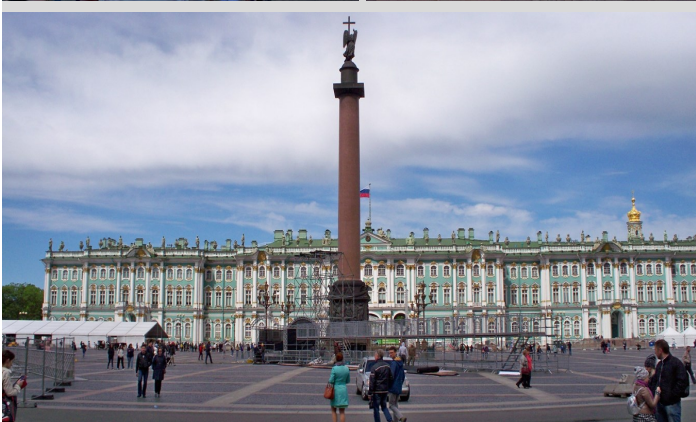
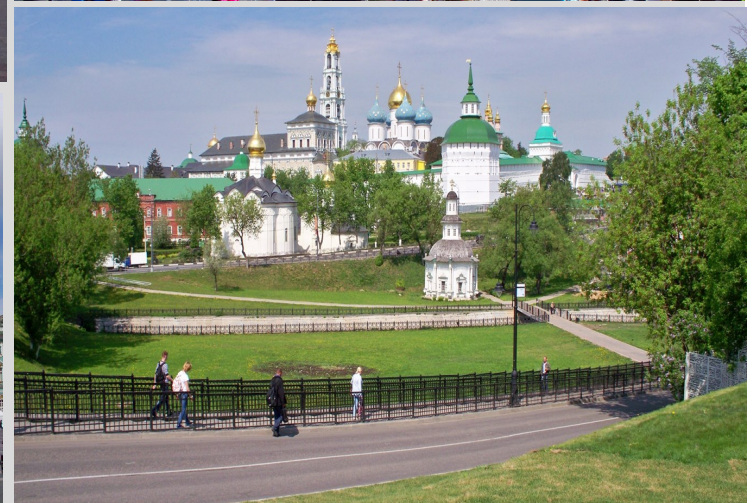
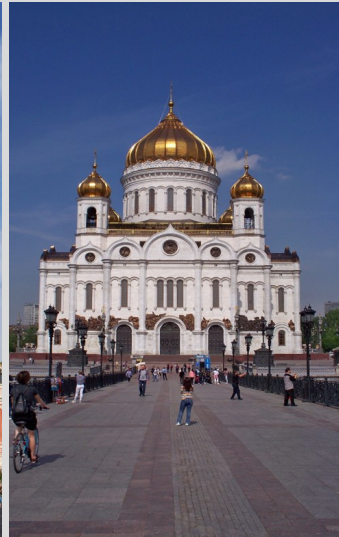
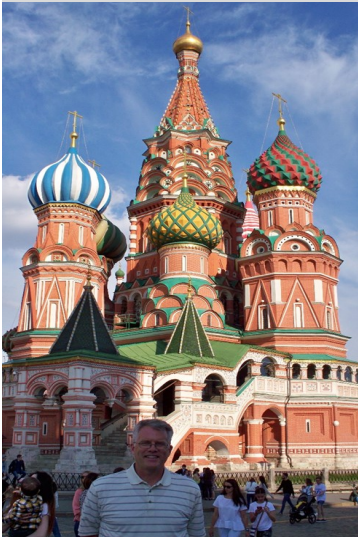
In conclusion, I will be presenting my findings at the American Meteorological Society Student GIS Poster session in Phoenix, Arizona in January 2019. GUMP has taught me to push my limits as a scientist, to have patient endurance when it comes to research, and to never limit my ability to break my own boundaries. I intend to apply to many graduate schools and continue my education into the field of Planetary Science.



Geographers in the Field: Study Abroad; Geography of Russia



Jon Comer and Tom Wikle co-led a Study Abroad trip on the Geography of Russia and the Baltics in May 2018. The group arrived in Moscow, then traveled via high speed rail to St. Petersburg. Next, they visited Tallinn, Estonia, via very slow speed rail and an hour-long border crossing on both sides in which documents had to be checked. They took a ferry from Tallinn to Helsinki, the final stop.



Clockwise from top left:
Saint Basil's Cathedral; Christ the Saviour
Cathedral; Peterhof Palace and water gar-
dens, outside St. Petersburg; The Holy Trinity
-St. Sergius Lavra; Senate Square, Helsinki,
Finland; Palace Square, with Hermitage Pal-
ace, St. Petersburg.



Logan Stephenson joined the department as Administrative Support Assistant in March of 2018. He was subsequently hired into the Administrative Assistant position. He has 3+ years of experience on campus between working in Facilities Management under Special Moves & Events, and also working at Fire Protection Publications. In addition to starting a new professional chapter of his life with the OSU Geography Department, he got married on December 8th, 2018. He and Anna have 2 cats, 1 dog, and a turtle and hope to grow that family with time.

Logan Stephenson

Amanda is our new Administrative Support Assistant. She is a spring 2019 OSU graduate who received her BFA in studio art and a minor in art history. During her four years as a student, she worked at the Colvin Recreation Center and competed in many exhibition opportunities. Amanda has completed numerous art commissions, exhibited her work at the Modella Art Gallery, the Prairie Arts Center, the annual Oklahoma State Juried Exhibition and is currently showcasing her senior artwork in the Willham house. She is also working on another degree in graphic design online through the Savannah College of Art and Design based in Savannah, Georgia. She is excited to join the department that holds her favorite class as a student—Physical Geography taught by Ph.D. student Thomas Cox.



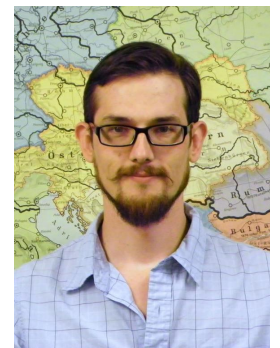
Amanda Zimmerman



Michael Larson

November 2018 started Michael's twenty-third year with the Department of Geography and after a recent restructuring, Michael is now the Geospatial Systems Manager for OSU Cartography Services. While Michael performs extraordinary work for the faculty members and students of the Department of Geography, he also continues to support faculty, staff and students from other departments on campus as well as work for various entities, large and small, public and private, off campus. Michael's focus encompasses several major project areas, his work for the Association of American Petroleum Geologists, his work and role assisting on Dr. Vadjunec's *Land System Vulnerability and Resilience to Drought* grant, his role as Co-PI directing the data update and cleaning for the State Historic Preservation Office, Oklahoma Landmark Inventory (OLI) database update and his newest role as Co-PI on the RMP-GIS grant. Continuing his role as an educator, Spring 2018 was Michael's sixteenth year teaching the Computer Cartography course. In addition to teaching, he continues to be involved with assisting a number of the Geography faculty with their field courses. At the 2018 Mid America GIS Conference and again at the 2018 OKSCAUG Conference, Michael taught a workshop titled "*Introduction to Data Types and Basic Cartographic Symbolology*". Additionally, he taught another workshop for the Juntos Se Puede program titled "*Digital Mapping Technologies for a Changing World*". When he is not involved in Departmental business, Michael enjoys spending time with his wife and family and, time permitting, putting in his garden.

Clay is working on his fourth year as the GIS Specialist for OSU Cartography Services, and the project work has become more diverse over the last year. Work with the American Association of Petroleum Geologists slowed down as no new projects were funded. While overseeing student work on their remaining maps, new projects with faculty were undertaken. Dr. Mathew's Resource Management Plan-GIS project requested support in the form of processing lidar and aerial imagery in bulk for each state park. At the start of the calendar year Dr. Kedron began funding time on his EPSCoR project investigating Social Vulnerability and Hazardous Weather Events in Oklahoma.



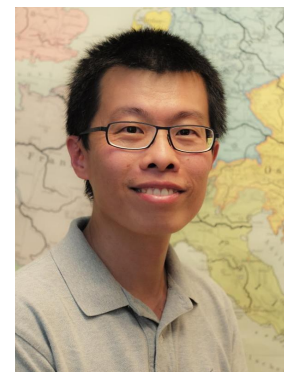
Clay Barrett



Jing Wang

Jing is starting her fifth year as the coordinator of the Center for Applications of Remote Sensing. She is part of two research teams that are funded by NSF and is a co-author of a journal article published recently in Landscape Ecology. As the two research projects are close to completion, Jean started to work on putting together the website for CARS as well as a brochure and a pull-up sign that will be used in outreach events and conferences. Last year Jing represented OSU as the academic sector to participate in the USGS 3D Nation elevation survey. Besides research, Jing continues to serve the department by coordinating activities in the computer labs in the department, managing software and equipment, as well as taking care of technical issues for the department. She joins regional professional meetings regularly and also has participated in OSU FIRST2Go program.

Yang has been working in the Resource Management Project-GIS project as GIS Specialist for two years. He gained his Master Degree in GIS at North Carolina State University (NCSU) and meanwhile had an internship in a construction company in South Carolina during 2011 - 2013. After graduation from NCSU, he worked in the New Mexico Bureau of Geology and Mineral Resources (a division of New Mexico Tech) for three years, performing spatial analysis in the hydrologic assessment project and creating a New Mexico interactive geological map. Currently, He has managed and maintained in-house web mapping applications for the staff in the State Park Division to view state park features and make planning necessary. I usually spend my spare time with my two daughters and wife either in biking or partaking of different cuisines.



Changheng Yang

Blast From The Past

Can you help us with the names of the unidentified people?



Faculty, staff and students in the Department of Geography, 1987: (front row, from left) Colin Hegarty, Karen Allen (Morgan), ??, ??, Peggy Crumbie (Simone), Chris Head, Michael Connor; (middle row): David Waits, Steve Tweedie, Bob Norris, Russell Hays, Frances Hays, George Carney, Gayle Maxwell, Susan Shaull, Lou Seig, John Rooney, Bud Kopp, Andrew Snook; (back row): Steve Stadler, Dick Hackett, Dick Hecock, John Colbert.

Cartography Services

By: Michael Larson

This past year has once again been very busy for all of us at Cartography Services. As usual, we have spent most of our time split between several key working areas, including the major cartographic projects, and map design and compilation work.

Cartography Services is in its ninth year working with Dr. Allen Finchum on the SHPO/OLI project. This project funded by the Oklahoma State Historic Preservation Office has moved from field collecting property data to cleaning and updating the Oklahoma Landmark Inventory (OLI) database. Undergraduate student, John Hall continues to work on this project along with Colby Thompson and Haley Best.

Under the guidance of GIS Specialist Clay Barrett, it's been another productive year for the American Association of Petroleum Geologists Foundation-OSU GIS consortium at OSU Cartography Services. Work continues on the Geological Highway Map Series with the Northern Great Plains, Northern Rocky Mountains, Southern Rocky Mountains, and the Pacific Northwest regions expecting to all be completed by the summer. A number of students worked on these maps, including Nick Rose, Lindsay King, Kellen Bullock and Catherine Shropshire.

This past year, Cartography Services assisted Dr. Peter Kedron with his EPSCoR funded Climate Variability Research program which examines whether "socio-ecological systems can adapt sustainably to climate variability". The work was headed up and supervised by Cartography Services GIS Specialist, Clay Barrett. What began as a data collection and processing task to answer a simple statistical question about social vulnerability and hazardous weather blossomed into a much larger project. Repetitive data scrubbing and mapping tasks led to investigation into Python-based geoprocessing tools. The challenges of working on a data intensive, collaborative research project led to investigating spatial databases as a better organizational container for the various geographical outputs. These side tasks congealed into a series of vignettes regarding proper research framework organization, including guides on getting started with the open source software recommended. Students involved in this project included John Hall, Kayla King, Brooke Bastie, Kellen Bullock, and Matthew Burton. Last spring, Cartography Services once again took the lead and with the help of a number of students and staff sponsored an exhibit at the 2018 GIS Day at the Capitol.



Participating in this event were: Anthony Hernandez, Chi Cheng (Finn) Yip, Colby Thompson, Kayla King, Giovanni Penna, Katy Hites, Haley Best, OSU Cartography Services Manager Michael Larson, Kellen Bullock, Nick Rose, Lauren Wood, Samuel Brander, Amanda Thomas (behind) Catherine Shropshire, Racine Swick, John Hall, and Dr. Hongbo Yu. Not pictured are Dr. Adam Mathews, Changheng (Hank) Yang, and Diane Johnson.

Lastly, Cartography Services has assisted a number of faculty in the Geography department with their various projects including working with Dr. Dale Lightfoot, Dr. Tom Wikle, and Dr. Jacqueline Vadjunec's grant *Land System Vulnerability and Resilience to Drought*.

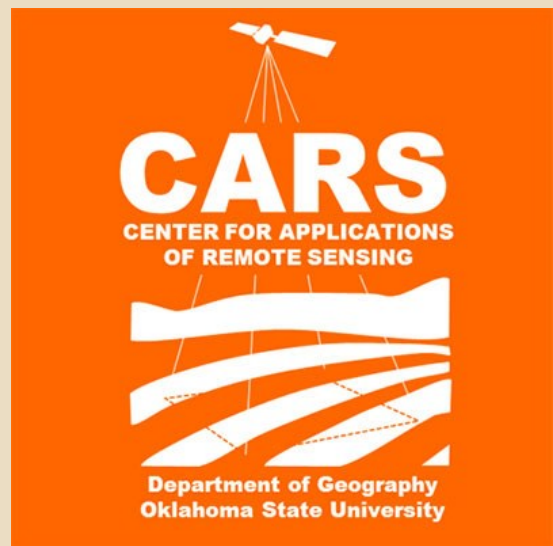
Center for Applications of Remote Sensing (CARS)

By: Jing Wang

CARS continued its work in research, technical support and participating in professional and outreach activities. For research, CARS completed its involvement in two projects funded by the National Science Foundation (NSF). The first project, led by Dr. Amy Frazier, studies data complexity in remote sensing derived datasets on downscaling accuracy. The study has resulted in a publication in Landscape Ecology and several presentations and posters that were well received at AAG and SWAAG. The second project is related to socio-ecological adaptation to climate change (PI: Peter Kedron). CARS has compiled hundreds of high resolution images of major U.S. cities from the National Agricultural Imagery Program (NAIP).

In regard to technical support, CARS coordinated the lab computer replacement undergone throughout the summer. On a daily basis, the center oversees technical requests, such as software updates, licensing issues, labs supports and equipment inquiries within the department and throughout the OSU campus.

For outreach, CARS continues to attend Oklahoma GIS Council meetings and regional conferences related to GIS and remote sensing. Last year, Jing Wang, the coordinator of CARS participated in the 3D Nation Survey conducted by USGS. The study builds on the 2012 National Enhanced Elevation Assessment and calls for inputs from various sectors regarding to the utilization of terrestrial and bathymetric elevations in their workflow.



Faculty News

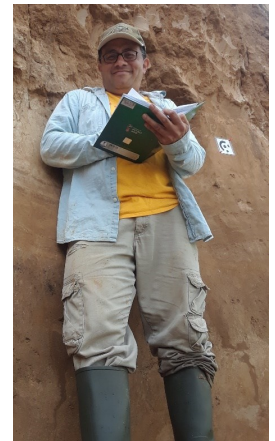
Brad Bays Is interested in questions relating to historical processes of agricultural geography, especially topics involving Oklahoma and the Great Plains, such as migrations of farm families to agricultural frontiers prior to mechanization, the emergence of centers of crop and livestock specialization, and land use changes and environmental effects associated with twentieth century agricultural mechanization. Brad is involved with campus initiatives supporting online learning and serves as a Faculty Teaching Fellow in the OSU Institute for Teaching and Learning Excellence. He teaches introduction to cultural geography, historical geography, the legal geography of federal Indian policy, and conservation of natural resources. Brad enjoys all types of hunting and fishing with his son, Luke, and tries to stay outdoors, as far from cell towers as time and space allow.



Jon Comer Has begun year 25 at OSU as of August 2018 – halfway to retirement! He co-drove a university van to Huntsville, TX for the Southwest AAG division meetings in late October, taking along a good contingent of graduate and undergraduate students, and also attended the Applied Geography Conference in mid-November 2017 in Nassau, Bahamas. The conference actually took place on a Royal Caribbean cruise ship, a first and (likely last) for him and the conference. He continues to teach quantitative methods courses to geographers, had his summer free of teaching for the first time ever since arriving at OSU, and is working on various projects both research related and instructional. Jon had two trips to Europe in May, 2018. He and Tom Wikle led a 10-day study

abroad trip to Russia, Estonia, and Finland with personal add-on week of travel to Norway, Sweden, and Denmark, and Jon and Shannon spent two weeks touring Ireland by car in late June-early July, doing a complete counter-clockwise circuit of many major cities and sites. Jon and Tom plan a study abroad trip to Italy, Albania, Montenegro, and Croatia in May 2019.

Carlos Cordova Spent most of the summer 2018 out in the field or in conferences in the US, Mexico, Canada, Kenya, and Russia. In Russia, he did research with colleagues of Kazan Federal University and taught a Geoarchaeology course in an International Archaeological School in Tatarstan (Figure). He participated in various meetings, including the OKPAN (Oklahoma Public Archaeology Network) with his PhD student Tom Cox. He attended a meeting of the Society of Africanist Archaeologists in Toronto, Canada, and the African Quaternary Association Meeting in Nairobi, Kenya. At the latter he presented archival research on Karl W. Butzer's participation in the Omo Delta Expedition 1968-1971, which studied *Homo sapiens* environments in the millennia previous to the passage to Eurasia. This fall Carlos's new book *Geoarchaeology: The Human-Environmental Approach* was published by I.B. Tauris in London. Two other articles of his appeared in *Quaternary Science Reviews*. Carlos is also advisor to Thornton Raskevitz (M.S.), and during the past year he mentored undergraduate student Kayla King. Carlos continues writing fiction short stories. This year his stories included: *The Coffee Shop Queue*, *The YBBKNY*, *The Halloween Party*, *An Unexplained Kafkaesque Situation*, *Don't Shoot the Messenger*, *A Serious Existential Crisis*, and *The Hobo Rapper*. His novels *Hobo Sapiens*, *Corpse*, *1974*, *Dr. Homer*, and *Non-Person* have been postponed until more quiet times.



Allen Finchum Continued his longstanding work with the Oklahoma State Historic Preservation Office as well as working on some other small research projects of personal interest. Allen is still grateful for the support that Mike Larson gives to the SHPO project and its ongoing success. Allen has expanded his analysis of cell phone usage by operating systems for select US cities in relation to other demographic patterns after working with a small startup in San Francisco to get new data that significantly improves the location information on where the phone calls "home". He presented a new poster at the AAG Meeting in New Orleans based on comparing the use of cell-based Twitter vs calculated home location in an effort to gauge the viability of using Twitter data taken from cell phones as an alternative source for easily obtainable location data. During 2018 Allen and Tanya's son Curtis welcomed a new addition to their growing family – a girl named Juliet. Her older brother Harper is unsure what he

thinks of his new sister at this point in time...



Alyson Greiner Welcomed the opportunity to serve as department head. She also took on a new course prep in order to teach the department's new introductory-level "Global Perspectives" course. This year she enjoyed trips to conferences in Salt Lake City, New Orleans, and Nashville. She also collaborated with a number of former students on some publications. She and Dr. Adam Payne published an article on the gentrification of Oklahoma City's Deep Deuce neighborhood. She, Dr. Shireen Hyrapiet, Vere Calzadillas, and Jaryd Hinch also collaborated on a book chapter that examines the representations of people and places in *National Geographic*. She and life partner, Luis made a brief get-away to the cooler climes in Wisconsin this summer where they enjoyed a wide variety of farm-to-table restaurants.



Dale Lightfoot This past year, the first since 2000 that I did not serve as Department Head, allowed me to focus on non-administrative things, including a new Honors course, serving as Fulbright Program Advisor at OSU, a sabbatical semester in the fall directed at writing my book on the global story of qanats (under contract with I.B. Taurus/London) and planning for and completing a fieldwork project in central Europe. I published two articles in *Water History* and the *Journal of Sustainable Rural Development*, in addition to completing several chapters for the qanat book. Travel included AAG in New Orleans in April, a week of exploring southern plantations and NOLA cuisine in May, historic sites along the Oregon Trail in Nebraska in July, Minnesota county rambling in August (>98% of U.S. counties now visited), a week in Iceland and Greenland, a family vacation to Florence, Venice, Trieste and Lake Bled, and a few weeks of field research in Bavaria-Bohemia working with colleagues and spelunkers in Germany and the Czech Republic to

explore the enigmatic qanats of that region. When free time could be found I was in my garage or the PNC hangar working on my Sopwith Camel, a full-scale WWI replica airplane. After four years of construction it now looks and sounds like an airplane (see photo). The engine runs well and I am working to complete fabric covering of wings and fuselage. It will fly when I am done whittling on pieces and parts. Writing a book and building an airplane loom large on the annual time card. Both are all-consuming and enjoyable projects but keeping them both moving kept me very busy, since the year also involved the daily work of teaching, academic minutiae, and the needs of home and family. On the family front, Tory continued her work as Manager of Research Support Services in the College of Arts and Sciences at OSU, and creatively cooking up a healthy foodie paradise at home. Adam completed dual degrees in accounting and finance at OSU in December 2017 and has, since January 2018, been preparing for his CPA exams while employed in OKC at Grant Thornton, an international audit and financial services firm.

Rebecca Sheehan Over the last year, I have continued research concerning the Confederate controversy in New Orleans. I was invited and participated as a panelist in the Presidential Plenary session, "When the Big Easy Isn't So Easy" at the annual American Association of Geographers meeting in New Orleans. Additionally, my book chapter, "Rethinking Memorial Public Spaces as Regenerative through a Dynamic Landscape Assessment Plan Approach," for the Routledge book *Regenerative Development: Urbanization, Climate Change & the Common Good*, will be published in 2019. I recently have begun to embark on a new research project, "Making Meaning in the Spaces of Incarceration: Women in the Poetic Justice Program in Oklahoma." I aim to understand the lives of incarcerated women who participate in the Poetic Justice program – the program relies upon reading literature as well as writing for transformation. To facilitate this research I have been awarded an Oklahoma Humanities grant. I am also exploring using composite narrative to write about my research with all-female marching krewes in New Orleans. Composite narrative uses data from multiple interviews to tell one story, aimed to get to the "emotional truth" of data and provide a more generally representative account of krewe experience.





Steve Stadler Is working in his 39th year in the department. It is still a great place with no end of work to be behind in. Steve is still coordinating the physical geography course with attendant labs and 5 teaching assistants to straighten him out. Climatology and meteorology are also part of his teaching responsibilities. His main research focus wraps around Oklahoma wind power but he has dipped his fingers into a study of weather-events-related usage of the Oklahoma Mesonet's Web site. Seventeen million observations over 7 years has yielded some interesting results. He remains on the Steering Committee of the Oklahoma Mesonet, helping to marshal its technology and wrangle its \$2+ million budget. Steve's service now includes an appointment of National Geographic's Geog-

raphy Steward of Oklahoma; duties include anything deemed to foster K-12 geographic education in the state. In May, Barb Stadler retired from her Math position at Northern Oklahoma College. She misses her student and her colleagues but not the meetings and frustrations of a bureaucracy. She has begun to sort out her office materials at home and started taking up more volunteer activities. Steve and Barb took another epic summer trip, cruising from the Black Sea to Budapest. Romania, Bulgaria, Serbia, and Hungary are great places to view beautiful landscapes slathered by rich layers of culture. The Stadlers make frequent trips to Jenks to visit with their son John, his wife Audrey, and their 2.5 year old personable (and handsome and smart) child, Jacob.

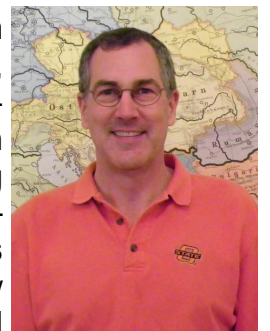
Jacqueline Vadjunec As part of our ongoing research with NMSU and OU on adaptation to drought in the Southern Great Plains, I was lucky to spend the summer in the field with graduate students Fernanda Ramirez, Maria Ramirez, Austin Boardman, and OU colleague Todd Fagin. I enjoyed getting to know Los Animas County, CO (a new field site) better, as well as many wonderful group prepared dinners and sunsets. This academic year I am on leave to serve as a program officer for Geography and Spatial Sciences and the National Science Foundation. I am enjoying my time in Alexandria, VA, and appreciate serving the broader geographic research community. I look forward to seeing everyone at the AAG this year which will be held in DC.

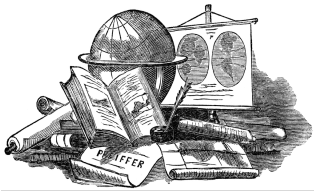


Hongbo Yu Started his fourteenth year in the department this fall and continued to serve as the Coordinator of the GIS Certificate program. In the past spring, Hongbo was happy to see Yun Zhao, one of his Ph.D. students, successfully defend his dissertation titled "Exploring the Relationship between Urban Form and Door-to-door Travel Time: a Focus on High-speed Rail in the United States" and complete his degree program. Dr. Zhao now is a tenure-track assistant professor in the Department of Environmental Studies at the University of Illinois Springfield. In the summer, Yun and Hongbo had a research paper "A door-to-door travel time approach for evaluating modal competition of intercity travel: A focus on the proposed Dallas-Houston HSR route" accepted and published in the Journal of Transport Geography. In this paper, they proposed a door-to-door travel time framework that integrates trip segments at both the inter- and intra-city levels simultaneously to provide a more

realistic travel time estimation for intercity travel accessibility studies. A new city-pair-specific catchment area delineation method based on the framework was developed to offer better theoretical support for high-speed rail (HSR) accessibility analysis in the United States where HSR development usually follows a corridor pattern.

Tom Wikle Now in his 19th year as Associate Dean in the College of Arts and Sciences, Tom Wikle continues to teach introductory physical geography and his summer field course. In 2018, Tom published papers on geospatial topics in the GIS&T Body of Knowledge, Cartography and Geographic Information Science, and Transactions in GIS. Following his longstanding interest in aviation history, Tom also completed a paper about Douglas aircraft plants in Midwest City and Tulsa during WWII, his fourth article on an aviation topic published in Chronicles of Oklahoma. Tom also completed work on a paper about his travels with Dale Lightfoot through Zimbabwe on a portion of what was once known as the Cape-to-Cairo Railroad. In May 2018, Tom and colleague Jon Comer led a study abroad course to Russia, Estonia and Finland with stops in Moscow, St. Petersburg, Tallinn, and Helsinki. Afterwards, Tom and Jon traveled to Oslo for a driving trek through Norway and Denmark with a brief stop in Malmo, Sweden. On weekends, Tom teaches first-time pilots and more advanced instrument students at Stillwater Regional Airport, mostly in Cessna 172s. Tom and Missy are excited about becoming grandparents in January 2019! Both of their children (Paige and Garrett) live and work in the Dallas area.





Geographers in the Field

The Qanats of Bavaria and Bohemia

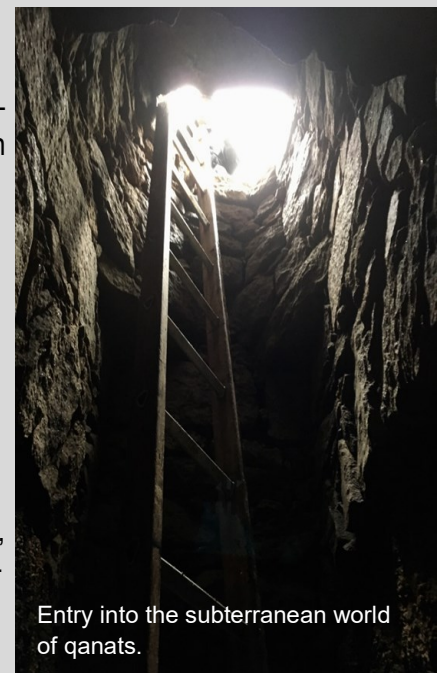
By
Dale Lightfoot

More than 25 years ago, after my first exploration of subterranean aqueducts in Saharan Morocco, I became fascinated by the story of people and water expressed through the history and ecology of qanats. After extensive surveys of qanats in a dozen countries since then, I completed (in October 2018) this last in a series of field projects that I first laid out in the early 1990s; a series of regional and country-wide surveys that help to fill the gaps in the literature in the global story of qanat water supply. Qanats are most often found in drylands of the eastern hemisphere but have been constructed in parts of Europe since the 6th century BCE. Most European qanats were built and used by Etruscans, Greeks, Romans, and Arab peoples around the Mediterranean periphery and a few Romanized locales in Western Europe. One area of qanats in the border region between southern Germany and the Czech Republic appear enigmatic because they are (1) found in a moist climate outside the dryland or summer dry areas commonly associated with qanats, (2) excavated almost entirely in igneous and metamorphic rock, a geology avoided by qanat builders elsewhere, and (3) not associated with any known group that constructed qanats elsewhere. More than 80 qanats in Bavaria and at least 60 in Bohemia have been found. These include spring tunnel qanats and true, Persian-style qanats. In Bavaria, qanats are known as *wasserstollen*

(water tunnel) and in Bohemia they are known as *horizontální štola* (horizontal tunnel), a term recently adopted by the Czechs as all of these infiltration galleries—on both sides of the border—were constructed and used by Germans over the past 300 years. Older still, and more numerous, are the mine adits and beer cellar tunnels excavated by German miners since the mid-1400s. Each of these tunnels, found in the highly fractured



Spelunking inside a qanat near Selb, Bavaria, Germany.



Entry into the subterranean world of qanats.

metamorphic and igneous geology of the Fichtel Mountains, experience seepage from groundwater so drainage adits were built into the mines and beer cellars to carry away unwanted water through tunnels that look and function like qanats. Experience with drainage tunnels in the mines and bierkellers eventually led to purpose-built water supply tunnels. Documents in local town archives and museums record the construction of dozens of qanats in the early 1700s, continuing through the latter 1800s, built by German engineers and miners on both sides of the border. The qanats of Bavaria-Bohemia were indigenously-invented, German-built features that grew out of their earlier experience with mining in the region. More than a dozen historic qanats were still in use in 2018 for augmenting water supplies in towns and farms.

The mission of the Department of Geography is:

- to provide an exceptional educational experience in a student-centered departmental community that emphasizes the value of lifelong learning, employs engaging instructional activities, and prepares students for careers in an increasingly globalized world;
- to conduct innovative theoretical and applied research that promotes discovery, cultivates interdisciplinary and collaborative partnerships, fosters socioeconomic development, and responds to the needs of society;
- to promote the importance and relevance of geography to the public and to provide geographic expertise to the university, community, and state.

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