

SPARTAN GEOGRAPHER



View west along the banks of the Red Cedar River near the Administration Building on the MSU campus.

MICHIGAN STATE
UNIVERSITY

Department of Geography,
Environment, and Spatial Sciences
College of Social Science

Hello Spartan Geographers!

It's newsletter time! Just like that, another year has flown by. As I write this introduction, the ground is covered with about 4" of snow and the outside temperature is a chilly 22°. That's a massive improvement,



however, from the single-digit highs we've had the past few days and subzero lows the first week of the year. Today marks the beginning of a big warmup, at least by Michigan standards, with an expected high today of.....gasp, 38° and maybe even a little sun. In my mind's eye, I can see Jay Harman slowly nodding his head as he contemplates the annual "January thaw". I miss Jay for many reasons, one of which being that he waxed so philosophically to me about a brief warmish spell in January every year. This year's thaw is projected to continue into the beginning of next week with a potential high of 45° on Monday. 45°! After 22 years of living in Michigan – I'm from Kansas originally - I've learned that one can play golf in such balmy air, even with a little snow on the ground.

The positive weather forecast is a nice analogy for the ongoing department fortunes. We continue to warm up; in fact, we're cooking! Just a lot of great things going on at MSU GEO these days. Although this newsletter doesn't have the space to cover all of them, it will provide a nice feel for the pace of things. I invite you to have a look. Our faculty continue to be very productive and are routinely recognized for their great work. Dr. Jeff Andresen, for example, is the first geographer to win Outstanding Specialist Award by the Michigan Association of Extension Agents. We made a great hire last spring of Dr. Erin Bunting to be the new Director of RS&GIS, which is the outreach arm of the Department. She is already bringing a new energy and organizational vibe to that group. Dr. Guo Chen won a prestigious fellowship at the Woodrow Wilson Center in Washington, D.C. to further her work on inequality and slums in China. Dr. Joe Darden was

named a Fellow in the inaugural class by the Association of American Geographers, our flagship institution. Dr. Lifeng Luo scored a large grant from the National Oceanic and Atmospheric Administration for research to better predict droughts in the U.S. Finally, Amber Pearson easily obtained reappointment this past year as an Assistant Professor. The list goes on and on. To top it all off, we remain ranked in the Top 10 within the discipline at a national level.

On the grad student front, our current cohort is doing great work. We brought in a strong new cohort of thirteen students in 2017 and they attended our annual GeoCamp in August at Camp Wa Wa Sum on the AuSable River east of Grayling. This century-old fishing camp (now an MSU property) is a beautiful place to get to know one another before the semester



2017 graduate cohort at Sleeping Bear Dunes during GEOcamp.

begins. We awarded PhD degrees to three students in 2017: Xue (Michelle) Li, Ishara Rijal, and Yahn-Jauh Su. Four students graduated with an MS: Sam Arcand, Caitlin Clark, Nick Ronnei, and Toni Walkowiak. Congratulations to all! In other representative news, April Frake was the recipient of a 2017-2018 P.E.O. Scholar Award. This award is a nationally competitive, merit-based award for women in the United States and Canada pursuing a doctoral degree. Dee Jordan

recently won the Excellence in Diversity Award (EIDA) at MSU. This award recognizes outstanding efforts of faculty, students and staff at MSU that are committed to the principles of diversity and inclusion and who actively engage in activities that demonstrate a sustained commitment to these principles. Nafiseh Haghtalab won the Owen Gregg Global Climate Change Research Award at our spring reception. In a similar vein, Kelsey Nyland won an NSF Doctoral Dissertation Research Improvement award for her ongoing work in Alaska. In addition, Jonah White was elected as Vice President of Regional Development and Planning specialty group of the AAG.

On the undergraduate front we had 104 students majoring in our program last fall. Although ~ 10 graduated at the end of the term, we're already approaching

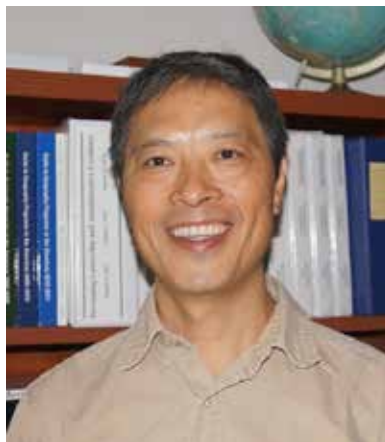
100 again this semester. This number is more than double the number we had in 2012 and is a testament to the hard work of many in the department. One such person is Gary Schnakenberg, our fantastic undergraduate advisor, who enthusiastically walks the walk and talks the talk. Gary is so good, in fact, that he was named MSU's Outstanding Faculty Advisor in 2017. It helps that our relatively new majors in Economic Geography and Environmental Geography

are gaining traction. Another angle that appears to be working is our ongoing work to better promote the Department across campus. These efforts are highlighted every year by the presentation we sponsor during Geography Awareness Week each November. This past year we hosted Ms. Krista Schlyer, who is an environmental photographer and writer who has worked in the borderlands areas between the SW U.S. and Mexico. She spoke about the character of this region and the unanticipated consequences (e.g., species migration, impact on families) of a proposed wall along the international border. Given current political realities, her presentation was very timely. It was also very well attended, with about 500 people in the audience. We have also enhanced our Career and Internship Fair in late February so that companies and students are talking about actual jobs that are available. Good stuff!

So, as you look things over keep in mind that the newsletter is a representative slice of life in the department. It leaves out a lot of things, such as the great work that our energized Advisory Board is doing on our behalf, the fantastic work our OnGEO group is doing with our online courses, and the success we've had marketing our Professional Development Certificate in GIS. We currently have over 90 students in that program from all over the world. On a personal note, I was reappointed last spring for another five-year term as Department Chair and am proud to continue in this role. It was a simple decision, actually, because the department is awesome and the job is fun. We also have a fantastic staff that works well together. Claudia Brown, our Office Manager, ably leads this group. Although Judy (Reginek) indeed retired last spring, leaving big shoes to fill, Becky Young is doing a great job in that critical role and we're in good hands on that front. Ana O'Donnell joined us last fall to take Becky's old job and is a great fit. Sharon Ruggles continues her awesome work holding the grad program together and Tamsyn Mihalus keeps our contracts and grants well organized. Our technical staff (Jim, Matt, Sean, and Wilson) is great. In short, although these are some difficult times on campus, our Department is just a wonderful place to work!

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Jiquan Chen

Professor of Geography

The students, visitors, postdocs and faculty at the Landscape Ecology & Ecosystem Science (LEES) Lab have completed our third year at MSU, with many more exciting news and achievements (<http://lees.geo.msu.edu/>). Three research projects were successfully completed upon graduation of multiple graduate students and dozens journal publications, including the Sustainable Energy Pathways (SEP) program of NSF, the Land-Cover and Land-Use Change (LCLUC) Program of NASA, and the Great Lakes Bioenergy Research Center (GLBRC) of DOE. At the same time, we are excited to begin two new projects. The first one aims at the socioeconomic contributions to ecosystem and landscape carbon fluxes. In collaboration with Dr. Kyla Dahlin, RS&GIS, the Department of Forestry, Kellogg Biological Station (KBS) and Planetek, this three-year project will be the first to quantify the landscape-scale carbon fluxes of managed agricultural-forest landscapes and its people by using the Kalamazoo watershed in southwestern Michigan as our testbed. We thank the Carbon Cycle & Ecosystems Program of NASA for the opportunity to be involved in this challenging new scientific frontier. The second project expounds upon climatic mitigation of biofuel crops through the new GLBRC at KBS. Near the end of 2017, DOE announced their final selections for new Bioenergy Research Centers (BRC) to operate over the next 5 years. LEES has been a proud member within GLBRC since 2008 and looks forward to continuing our endeavors in exploring renewable bioenergy. Albedo

will remain a key word within the LEES Lab for many years to come.

A great deal of wonderful news was also received for current LEES members and alumni. In April, Dr. Janet Silbernagel, the first graduate of LEES Lab and a current professor at the University of Wisconsin, was elected as the president of US-IALE (International Association of Landscape Ecology). During the summer, Vincenzo Giannico—a visiting PhD student from the University Bari, Italy—received the 2017 Hexagon Education Contest Winner award for his innovative publication on the application of LiDAR in modeling forest biomass. Last fall, Dr. Changliang Shao accepted a position as professor at the Chinese Academy of Agricultural Sciences, while Dr. Asko Noormets accepted an associate professor position at Texas A&M. We congratulate them all and send them our best wishes for their future.

LEES is also well-known for our international collaborations. We teamed up with a large number of European colleagues to compete for the Horizon 2020 program on Nature-Based Solutions (NBS) for future urban landscapes. A special issue with this focus was recently published in Environmental Research. The journal of Ecological Processes, with Dr. Chen as the Editor-in-Chief, doubled its submissions and publications in 2017. In addition, Dr. Jiquan Chen continued his service as the chief scientist for the US-China Carbon Consortium (USCCC). The 14th annual meeting, held in Taiyuan, had the highest number of participants yet. He also delivered the keynote address at the 60th annual meeting of the International Association for Vegetation Science (IAVS) in Sicily, June, 2017, where he challenged the fundamental concept of “vegetation science”, proposing to replace it with land cover science.

Our educational endeavor was also marked by a new hands-on teaching approach through Micrometeorological Instrumentation & Measurements (GEO 892). For the first time, we designed the class so that students teamed up to enhance their learning by completing the installation of a complicated eddy-covariance tower. In addition to learning fundamental concepts in boundary-layer meteorology, the students spent much

time learning about sensors and their construction and, eventually, used their new knowledge and skills to erect an



advanced urban flux tower on the roof of Baker Hall on MSU's campus. The tower (see photo) has been functioning since November 2017. Data from the tower can be accessed through MSU's Internet and be used as an open-access platform for other classes within MSU. We thank the class for their long-term contribution to Spartan research and education!



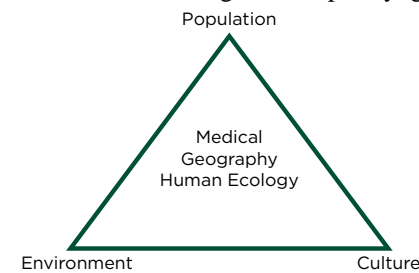
Sue Grady

Associate Professor

Greetings Spartan Geographers!

What excites me the most about Geography are the rich lives of geographers and their wide range of experiences in the world. Many geographers begin their career in another discipline only to find their way ‘home’ along the way. I myself started out as a registered nurse working in the cardiovascular surgical intensive care unit at Abbott Northwestern Hospital in Minneapolis. I also volunteered with the Children's Heart Fund a non-profit devoted to the care of children's hearts in countries around the world. My life changed when I was called to Honduras during a rheumatic fever outbreak to train nurses in the post-op care of chil-

dren following heart valve replacement from damage due to the fever. After a few visits and working in challenging conditions, I decided to pursue a Masters of Public Health (MPH) degree in International Health. It was during this time that I stumbled upon medical geography—a discipline I had never heard of before but was immediately intrigued. I contacted Connie Weil a medical geographer at the University of Minnesota who worked in Bolivia on children's health and shortly afterwards I was enrolled—studying geography during the day and nursing in the evenings. No one at the time had any idea what I was doing..., but I knew I was following my dreams! After the BA-degree, and six months in Colombia, I completed my MPH and was sent to Zimbabwe and Uganda on a project called Public Health Schools without Borders funded by the Rockefeller Foundation. Geography was always in the forefront of my work as I learned to view health and disease from a medical geography –i.e., human ecology perspective—the interactions between people, culture and the environment. Having had a pretty good



understanding of people—I decided to pursue a MA degree in Anthropology at Hunter College where faculty managed the Journal of Human Ecology. I then completed my PhD in Earth and Environmental Science with Sara McLafferty at the City University of New York. This degree program followed the merger of the Geography and Geology Departments and to my benefit I was able to contextualize my medical geography training in earth science.

Today, my medical geography research continues to focus on children—including mothers and infants. I conduct health disparity research to visualize the spatial patterns of adverse birth outcomes, including infant mortality and I utilize spatial epidemiological methods to understand their underlying processes –i.e., why there are high and low areas of poor

health in certain places and not others? Most of my own research is in Michigan after developing important relationships with the Michigan Department of Health and Human Services. I am particularly dedicated to investigating levels of pollution in highly segregated and poor communities in inner-city urban areas of Michigan and how these untoward exposures impact vulnerability, population susceptibility and maternal and child health.

What I am very proud of also, are the serious and dedicated students who have in the past, and currently are working with me on medical geography projects. Each one of these students has or is addressing a really important societal question and making a timely contribution in the world. Currently working in my **Global Health and Medical Geography** lab are students focusing on research projects in Africa: Fatoumata (Fatima) Barry, PhD Candidate—Niger Delta oil extractive industry and maternal and child health and Matlhogonolo (Mattie) Kelepile, PhD Candidate, Botswana HIV treatment adherence among the population with emphasis on pregnant women and mothers; China: Peiling Zhou, PhD Candidate, Huainan City, Anhui Province therapeutic public spaces and elderly's self-care activities and chronic disease prevention and Qiong Zhang, PhD Student, Xianyang City, Shaanxi Province, air pollution and infant health; and Michigan: Heather Moody, Post-doc, Detroit and hazardous lead exposures in children, Libbey Kutch, PhD Candidate, Michigan Vitamin D and infant health, Amanda Krueze, PhD Student, Michigan birth defects clusters, and Lonnie Barnes, MA Student, Detroit asthma hospitalizations. There are also many students who have graduated who continue to carry the Spartan spirit into their medical geography work—please watch for their reports in upcoming Spartan Geography Newsletters!

This student research however, wouldn't be possible without the outstanding teachers in our department. Our medical geography students are trained in a variety of areas including but not limited to the natural and built environments, geospatial technologies, nature-society and urban and regional geography. There is also a strong emphasis in the medical geography program on training in epide-

miology, spatial epidemiology, biostatistics and spatial and statistical software programs and field methods. The courses that I have taught over the last couple of years are the Geography of Health and Disease (GEO435), Spatial Analysis of Populations (GEO462), Spatial Epidemiology and Medical Geography (EPI/GEO819), Human-Environment Seminar (GEO880) and Research Design in Geography (GEO886). Importantly, as a mentor, the students and I tailor their MA and PhD programs according to their specific learning needs.

Finally, our legacy in medical geography at Michigan State University really began with Dr. John Hunter. Since many of you knew John, I want to assure you that his legacy lives on. We have archived Dr. Hunter's work—in particular his hundreds of photos on rare African diseases and more, in our MSU library. When you are visiting campus or want to access his archives remotely, please feel free to contact a librarian and they will help you explore John's rich set of medical geography work.

“Thank you, and best wishes in 2018!”
-Sue



Dave Lusch
Fixed Term Professor
MA 1975; PhD 1983

After 37 years on staff at Michigan State University, I officially retired at the end of June 2016. As part of my transition plan, I continued to teach as a temporary faculty member - GEO 324 (Remote Sensing of Environment) in the Fall 2016 semester and ISS 310 (People and Environment) in the Spring 2017 semester. I'm teaching my GEO 411 (Stream Systems and Landforms) this Spring semester for the last time.

Since I've been around the department for a long time (I began my Masters program in the Fall of 1973), Alan Arbogast asked me to write a few musings about

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the “old days.” The department of the 1970s was dramatically different from our department of today. Back then the department was housed in the Natural Science Building. While the administrative hub of the unit was on the third floor, faculty and graduate TAs offices were widely dispersed on the first, third and fourth floors. The cohort of physical geography TAs were housed in room 343 on the far west end of Nat Sci. I have many fond memories of “talking shop”

until Professor Judy Olson was hired in 1983. Today, nearly half of the regular faculty are women (11/26) and four of our nine adjunct faculty members are women.

During my Masters Program I had the great good fortune to work as a research cartographer on the Atlas of Michigan (Lawrence M. Sommers, ed., 1977). In those days, pen-and-ink, zip-a-tone and press type were still the cartographic norm in the department. The Atlas Project broke new ground by employing



Alan with Dave Lusch and Bruce Pigozzi at their retirement reception in spring, 2017.

with my student colleagues in that office.

Until the late 1980s, there were only two “labs” in the department, the air-photo lab and the cartography lab – both devoted primarily to instruction. When Randy Schaeztl joined the faculty in 1987, he built the first research lab, which was devoted to soil and sediment analyses. Prior to this, all of the physical geography grad students who needed to analyze sediments in their research (and there were several of us) did so in the facilities of the Department of Crop and Soil Sciences through the collegial generosity of Professors Mokma, Schneider and White-side. Today, our department has two “wet bench” labs, one for soil/sediment analyses, and the other for pollen analyses. In addition, there are computer labs to support climate, medical geography, and spatial analysis research.

Another stark difference between our current department and that of the 1970s was the all-male faculty that persisted

scribe coat and peel coat technologies. Many of the choropleth maps in the Atlas were compiled using the SYMAP program on the MSU mainframe computer – the earliest use of production digital mapping at MSU. In support of the Atlas Project, a large-format process camera was installed in the old “kitchen” on the fourth floor of Nat Sci. All of these technologies have long since been replaced by digital cartography and GIS – areas of emphasis in the department today.

The Department of Geography, Environment, and Spatial Sciences has evolved into a highly productive research unit, while still maintaining both high-quality teaching and a real family atmosphere. Few departments can boast of such a growth curve. Our alumni should be very proud of the department. I’m quite sure the best is yet to come.



Frederick ('Fritz') Nelson Adjunct Professor

Frederick ('Fritz') Nelson has been an Adjunct Professor in the department since 2014. After spending 25 years as a professor in universities on and near the east coast (Rutgers, Cornell, SUNY, Delaware), Fritz retired from undergraduate teaching and moved back to his native upper Midwest. This isn't his first affiliation with our department—he earned his MS degree in MSU's geography program in the 1970s.

Nelson's main research interests—in place since his “old days” at MSU—are in permafrost and periglacial (cold climate, non-glacial) geomorphology. Since the early 1990s he has co-managed the Circumpolar Active Layer Monitoring (CALM) program, the first coordinated international global-change program focused on permafrost. CALM has been funded continuously by the U.S. National Science Foundation since 1998 and operates as the umbrella organization for well over 200 permafrost observatories in both Polar Regions and several mid-latitude mountain ranges. Fritz spends several weeks each summer on Alaska's North Slope and Seward Peninsula, working at CALM data collection sites. Information about CALM can be found at: <https://www2.gwu.edu/~calm/>.

Nelson's MS thesis at MSU, supervised by Dieter Brunnschweiler, was concerned with small periglacial landforms near the Juneau Icefield in southeast Alaska and adjacent parts of Yukon and British Columbia. The Juneau Icefield Research Program (JIRP) was then administered through MSU's geology department. Fritz spent the better part of two summers working out of Camp 29, a hut at high elevation near Atlin, BC. After landing his first academic job, at Rutgers, Fritz's research focus changed to the

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effects of climate change on permafrost. He's worked closely with scientists from Russia, Canada, China, and several European countries on that topic since the late 1980s.

After taking early retirement from undergrad teaching at Delaware in 2013, Fritz returned to MSU to work with grad students. Kelsey Nyland and Clayton Queen enrolled in our PhD and MS programs in 2015 and 2016, respectively, and spent the past three summers working on projects in Alaska with Fritz. Besides working on the CALM program, Kelsey and Clayton are pursuing thesis projects involving periglacial landforms in interior and western Alaska.

Cryoplanation terraces (CTs) look much like giant staircases ascending ridges and hills—one scientific article described



Cryoplanation terraces near Eagle Summit, northeast of Fairbanks, Alaska.

them as “Cyclopean stairways”! They are very common in the uplands of Beringia, the mostly unglaciated region extending from eastern Siberia to northwestern Canada. Although much has been written about these striking landforms, little is known about how they form and how old they are. Kelsey and Clayton have obtained funding for their work on CTs from several sources, including the Arctic Institute of North America, the US Permafrost Association, the Geological Society of America, and several MSU units. Kelsey recently received a dissertation improvement award from the National Science Foundation to support her research on determining the ages and rates of development of these landforms.

Last summer Fritz “completed the circle” when the MSU group returned to JIRP's Camp 29. The hut in which he spent the summers of 1975 and 1976 had been abandoned for more than a decade, but was still in usable condition. Tremendous environmental changes have occurred since Nelson's last visit in 1976—the nearby Cathedral Glacier has thinned and retreated significantly. Many of the periglacial landforms Nelson studied in the 1970s have been affected by thaw-induced subsidence. The group installed instrumentation at several sites near C29 and began a new project concerned with establishing long-term rates of erosion in this changing environment. The group plans to return to C29 in the summer of 2018, and in subsequent years.

With colleague Ken Hinkel (Michigan

vals. To date, the climate network has collected several million data points.

Fritz works intermittently on publications about the history of Arctic exploration and science. He recently published articles about the American Geographical Society's contributions to polar exploration and about the influence of permafrost on the construction of the Alcan (Alaska) Highway. He's now working on a project concerned with the history of permafrost mapping in different countries.



The MSU group at JIRP's Camp 29 near Atlin, BC in early August 2017. The Cathedral Glacier is in the background. Left to right: Nelson, Nyland, Queen.

Over the past decade Nelson has served as President of the U.S. Permafrost Association, Vice-President and Councilor of the American Geographical Society, as a member of the Board of Governors of the Arctic Institute of North America, and on the Council of the International Permafrost Association. He was part of the subgroup of scientists in the Intergovernmental Panel on Climate Change awarded (collectively, with former U.S. Vice-President Al Gore) the Nobel Peace Prize. He is a recipient of the François Emile Mathes Award for Lifetime Achievement in the Cryospheric Sciences from the Association of American Geographers, and the Distinguished Alumni Award from Northern Michigan University.

Fritz is very happy to be affiliated with his old home department again, and hopes to recruit new graduate students for thesis research on any of the projects described here.



Ashton Shortridge
Professor of Geography

Let's start with some Geography Trivia! Travel by bike or car from Halifax, Nova Scotia to Seattle, Washington, passing only through US States and Canadian Provinces that start with a letter in the word WOMAN. What's your route?

While you puzzle that out, I'll fill you in on some happenings from 2017. I continued to work as Graduate Program Director, and will cover that. I'll also briefly mention my own work in the classroom, with my graduate students, and a family update.

This was a busy year for me and the students I work with. In the Spring I taught Advanced GIS (GEO 425) and a fairly new course called Geoprocessing (GEO 429). I've taught GEO 425 at least 15 times since 2001, so I've gotten to know most of our GIS-oriented students through that course. Geoprocessing is all about using code (mostly Python) to think about and solve spatial problems. I had an especially strong group of students in that course. In the Fall I taught Digital Terrain Analysis (GEO 428) and Spatial Data Analysis (GEO 866), my favorite courses. GEO 428 was back after several years of not being in my rotation, while GEO 866, a spatial statistics course, is an old standby. I had over thirty students in that course, including six geographers, one of whom was an undergraduate!

I advised just three students this year. Nick Ronnei produced an outstanding masters thesis. Among other things he developed a slick web-based map interface and system architecture to download global elevation data. Ameen Kadhim passed his comps exams and is busily analyzing the effects of environmental change on southeastern Iraq. And Jonnel

Sanciango joined me this fall to research geospatial health.

As for my own research, I spent significant time in 2017 working on uncertainty models for digital terrain data, facilitating applied health research for the State of Michigan, and working with many people on a range of interesting projects, from business site location to panda habitats, from characterizing classification accuracy of land cover in coastal dunes to using social media data to understand dynamic traffic patterns in New York City.

On the personal side, while I got to go to France (and Andorra!) in 2016, this past year was less adventurous. I did travel to Carbondale, Illinois with my family to see the eclipse. It was fantastic, and very, very hot and humid. I do love Michigan summers! My three girls are all teens, with the oldest, Ayley, starting her sophomore year here at Michigan State. My wife Anastasia and I often attend events at the high school and wonder where the time went.



Julie Winkler
Professor of Geography

Since I last contributed to the departmental newsletter, I completed my term as AAG vice president, president, and past president, and published my presidential address (finally – whew!). It was an intense several years, but a memorable experience. The highlight, by far, was the opportunity to meet geographers from all over the country and the world, particularly geography students at the beginning of their careers. Another recent career highlight was an invitation to serve for the past two years on a jury for the BBVA Foundation Frontiers of Knowledge Awards. The BBVA Foundation is located in Madrid, Spain, and the awards, which

are patterned after the Nobel prizes, recognize world-class research and artistic creations, including contributions to climate change science. The jury for the climate change prize is a great group of scientists, Madrid is a beautiful and fun city, and it has been an honor to suggest leaders in climate change science for the award. All in all, a wonderful experience.

Recent research has focused on a number of diverse topics. I am currently a co-PI with Jack Liu and Andrés Viña from the Department of Fisheries and Wildlife on a project funded by the National Science Foundation Macrosystems Biology Program to study the potential connectivity of nature reserves under climate change, using the panda habitat in southwest China as an example. For someone whose prior research focused almost exclusively on the U.S. Midwest, southwest China is an exciting new adventure, and I was captivated by the beautiful mountainous landscapes of Sichuan. This is also my first venture into ecological modeling. Ying Tang, a research associate on the project, and I have been exploring approaches to improve the use of climate information in species distribution modeling, and the first paper from this work was recently published with more to come. Closer to home, I have enjoyed collaborating on a new project with MSU plant scientists on the potential impacts of climate change on Michigan's potato industry, including how overwinter storage conditions may change in the future, and more generally on global change and agroecosystems. In addition, colleague Sharon Zhong and I continue to study the low-level jet in the U.S. central plains, an atmospheric circulation feature which transfers heat and moisture from the Gulf of Mexico and is partly responsible for the summertime nocturnal precipitation maximum of the central U.S. With our students (current and past) and postdocs, we have published a suite of papers over the last few years on the representation of the jet in atmospheric reanalysis datasets, the natural variability of the jet, the ability of regional climate models to simulate jet features for the current climate, and potential changes in the low-level jet by the mid twenty-first century.

Spring semester 2018 marks the move of what was formerly called the Meteorology and Atmospheric Science Concentration

in the Earth Sciences Interdisciplinary Degree Program to the Environmental Geography Degree as the Atmospheric and Climate Sciences Concentration. This concentration was initially developed to prepare MSU undergraduate students for graduate education in atmospheric science, but with the move to Geography the goals of the Atmospheric and Climate Sciences Concentration will extend beyond graduate school preparation to also prepare students for employment in the growing areas of applied atmospheric science and climatology and weather and climate services. I continue to teach two courses – Weather and Forecasting (GEO 405) and Global Climate Change and Variability (GEO 409) that are electives for the concentration and for the Environmental Geography degree more broadly. I am also teaching, for the first time in 17 years, Advanced Quantitative Methods (GEO 865). I am taking over from Bruce Pigozzi who recently retired – big shoes to fill!

I am now in my fourth year as an associate editor for Science Advances, the online journal published by the American Association for the Advancement of Science. On the personal front, I continue to pursue dressage and gardening, and local and international travel with my wonderful husband.

“Bob Thomas”

As everyone knows, the esteemed Bob Thomas passed away a couple of years ago. Nevertheless, we unexpectedly received a contribution from Bob for this year's years newsletter, one that was “ghost written” by his son, Scott.

Glad to see everyone is doing well and that MSU won their bowl game.

Sorry I haven't been able to email but the cloud email service here has had some issues.

It is also a little weird here because the food seems all white and fluffy.

They don't let you have anything unhealthy or fried, including olga's snackers.

That all being said, things are pretty nice and I can see fine up here. Tell Dorothy and the gang hello.

I will work on finding a way to signal in a bet or two during the basketball tournament! Go Green!



Along with other MSU geographers, Sharon Ruggles experienced the excitement of the great solar eclipse in 2017 from the south parking lot. The sun was about 80% covered in the East Lansing area.



SUPPORTING WOMEN IN GEOGRAPHY

The **Supporting Women in Geography (SWIG)** group provides a forum for women in Geography and their supporters to come together for intellectual, professional, and personal support. In addition to organizing a series of breakfasts to connect students with visiting female geographers, SWIG organizes a weekly writing group, hosts a graduate-to-undergraduate mentoring program, and contributes to Department and community events such as Geography Awareness Week, Girls in Math and Science Day, and more. SWIG is also working with the GEO Alumni Network to facilitate an alumni-to-graduate mentoring program. At the beginning of 2018, SWIG launched its first scholarship program. The scholarship is intended to encourage geography students who are dedicated to furthering their academic and professional goals to seek graduate opportunities. Recipients receive \$75, i.e. the cost of applying to graduate school at MSU.



SWIG and GEOclub teamed up at Hiawatha Elementary School to have students ‘map their lunches’ and to talk about the many things they could do from studying geography. Participants were (from left in the group photo): Gary Schnakenberg (GEOclub advisor), Hannah Klein (undergrad), April Frake (grad, SWIG co-president), Victoria Breeze (grad, SWIG co-president), Kaitlynn Burkhard (undergrad, GEOclub president), Cadi Fung (grad), Xiaomeng Li (grad), and Libbey Kutch (grad).

Inaugural Class of AAG Fellows



Joe T. Darden
Professor of Geography

The American Association of Geographers recognized Dr. Joe T. Darden in the inaugural class of AAG Fellows in December, 2017. This group of distinguished individuals serve the AAG by facilitating strategic directions as well as mentoring early and mid-career faculty. Conferred for life, this prestigious award honors geographers who have made significant contributions toward advancing geography over the course of their careers. In addition to his longstanding role as a faculty member in the Department of Geography, Environment, and Spatial Sciences, Dr. Darden is the former Dean of Urban Affairs at MSU. He has received numerous awards for his scholarship and service, including a Fulbright Fellowship, the Distinguished Scholar of Ethnic Geography Award (AAG), the Diversity Award (AAG) and the AAG's Harold Rose Award for Antiracism Research and Practice in 2016. Dr. Darden is the author or editor of many influential books in the areas of urban geography and social justice, such as *The Significance of White Supremacy in the Canadian Metropolis of Toronto* (2004) and *Detroit: Race Riots, Racial Conflicts and Efforts to Bridge the Racial Divide* (2013). Dr. Darden is committed to issues related to equality and anti-racism and has served organizations such as the Chicago Board of Education, the State of Michigan Task Force on Minority Health Affairs, and the NAACP in that capacity. In a related vein, he has served as Chair of the Enhancing Diversity committee, which focuses on equity practices and the goal of increasing diversity of graduate Geography enrollments in North America.

Outstanding Faculty Advisor Award



Gary Schnakenberg
Undergraduate Advisor

This year, the Office of the Provost for Undergraduate Education and the Dean of Undergraduate Advising established the first University-wide recognition of Academic Advisors at MSU. Four different categories of awards were presented: **Outstanding New Academic Advisor**, **Outstanding Established Advisor**, **Outstanding Advising Administrator**, and for Advisors who also fulfill teaching duties for at least half of their assignments, **Outstanding Faculty Advisor**. Our own Department's Gary Schnakenberg won this latter award.

In her nomination letter on Gary's behalf, Geography Department alumna Paige Gebhardt said, "I found Gary, and the Geography Department, at the Marathon of Majors in 2014...I am grateful to Gary for...showing me that degree in Geography could be both fulfilling and rewarding," adding that the Geography Department came to feel "like my own family." Referring to educational research that shows that in middle and high school, overall student success is linked to each student being known well by at least one person working at the school, Gary said, "The job of the academic advisor is a way to bring that into higher education. Students need to feel connected, which in turn leads to their continuing to develop and cultivate further relationship-building. I am both humbled and honored by receiving this award, and by the great support I have received from the students, Alan, and the rest of the Department faculty and staff."

Alan's note: It was very easy for me to nominate Gary for the Outstanding Faculty Advisor Award because he perfectly exemplifies the honor. He totally deserved it because 1) he is an excellent instructor of our Human Geography class and now Senior Seminar, which is our capstone course, and 2) he is an outstanding advisor, one who really cares about his students. Writing his nomination letter was a simple task because it was filled with sentences like this: *Gary has done a fantastic job, one that has absolutely revitalized our undergraduate program. We have more than doubled our majors in four years.*

Prestigious Fellowship at the Woodrow Wilson Center



Guo Chen
Associate Professor

Dr. Guo Chen has been awarded a prestigious fellowship by the Woodrow Wilson Center in Washington, D.C. for the 2017-18 academic year. This fellowship allows Dr. Chen to work full-time at the Wilson Center with research support to complete her writings on inequality and slums and engage with the Washington policy community. The Wilson Center is the nation's key nonpartisan policy forum for tackling global issues. Congratulations, Guo!

Undergraduate Research Faculty Mentor of the Year Award



Amber Pearson
Assistant Professor

Dr. Amber Pearson was honored with an Undergraduate Research Faculty Mentor of the Year Award in 2017. Two such awards are given each year at MSU and are designed to honor faculty members who have demonstrated an outstanding commitment to mentoring undergraduate students who are conducting research. One of the awards is given to a faculty member associated with science and engineering, whereas the other is for a faculty member in the social sciences and humanities. Dr. Pearson represents the latter group with this honor. The award is distinctive at MSU because it is entirely driven by student nominations and a subsequent review by undergraduate research ambassadors. One of our seniors, Ross Bottomley, nominated Dr. Pearson for this award and had this to say about her: "I am not only proud to be engaged in Dr. Pearson's research, but also to be able to call her my mentor. She is a highly qualified, highly disciplined, and highly passionate professional intent on instilling in her students the widest breadth of skills with the finest attention to detail. All of us, under her mentorship, have had our lives changed for the better and will be able to covet more competitive positions in the future as a result of our experiences with her."

Outstanding Specialist Award



Jeff Andresen
Professor of Geography

Dr. Jeff Andresen received the Outstanding Specialist Award for 2016 from the Michigan Association of Extension Agents. In addition to being a Professor in Geography, he is also the Michigan State Climatologist. He is the first geographer to win this award.



Study Abroad in Italy with Dr. Assefa Mehretu

According to the Institute of International Education (IIE) 2017 report, Michigan State University ranks in the top ten Universities for study abroad participation. Close to 3,000 students participate in study abroad every year. MSU's goal has been to have over a third of its students participate in study abroad programs before they graduate. The current participation rate is one in four seniors. MSU students may choose from about 270 programs in over 60 countries in all continents including Antarctica. The Social Science in Rome, Italy program which I have been directing since 1992 is a faculty-directed summer program sponsored by the Department of Geography, Environment and Spatial Sciences in the College of Social Science. The focus of the five-week program has been anchored by courses from Integrated Studies in Social Science (ISS) combined with other departmental offerings depending upon the disciplinary interest of the lead professor. When I took over the program in 1992, I offered ISS 315 (Global Diversity and Interdependence) from the Center for Integrative Studies, and added two Geography courses, GEO 113 (Introduction to Economic Geography), and GEO 336 (Geography of Europe). I also added variable credit independent courses from Geography and the College of Social Science that students may elect if they did not need the fixed credit GEO or ISS courses.

The Social Science in Rome program is open to all majors in all colleges at MSU. The program's focus is on current global dynamics in economic, urban, political and cultural globalization with a special focus on factors of international interdependence, competition, cooperation, and conflict. The program also includes introduction to Italian culture, history, art and architecture, and contemporary challenges within the European Union. In addition to my lectures, students are also exposed to about ten guest speakers from Italian universities and think tanks to offer European perspectives on the European culture area and critical issues of international affairs, development, trade and finance, geopolitics, international aid, and immigration. Students are required to enroll for a minimum of seven credits from a list of courses in ISS and Geography.

The Rome program serves as a vehicle for students to acquire an extramural active learning opportunity by placing students in one of the most vibrant global cities in the world which manifests opportunities and challenges that exemplify current dynamics of globalization. To this end, the program mimics an internship experience by introducing students to major aspects of the Italian culture, the organization of the European economic domain and European politics by using local Italian partners and guest lecturers from Italian universities and think tanks to lecture and provide field experience. Students that show interest in being involved in active civic engagement on issues centered on community problems, environmental stewardship, economic disparities, urban development, and international relations maybe assigned to local collaborating professors or public professionals to pursue their particular interests. However, what most students experience is an exposure to intellectual civics of global citizenship encompassing qualities of an informed and critical thinking individual with knowledge of places and peoples of the world and the challenges they face to achieve democracy, the rule of law, development, and multi-lateralism.

Ability to speak Italian is not required. All lectures, including guest presentations, are in English. Italy is a tourist Mecca and many of those tourists are American. Therefore, most places that come in contact with tourists often speak English. The program includes a 15-hour Italian short course to enable MSU students to say greetings and thanks, ask for directions, order food, make simple conversations, etc. A Program Assistant (PA) or two are hired from past Rome students to help new students get acclimated to the city of Rome and the neighborhood where the student accommodation and classroom are located. The PA(s) reside in the same hotel as students and are on call for any help that may be needed. The PA's responsibility includes helping the professor(s) insure the safety and wellbeing of students in the program and to let him/them or MSU safety officials know if there are problems that require their immediate attention. The PA(s) also serve as an information source for Rome students for a variety of matters including shopping, touring, banking, dining, etc.



Fontana de Trevi, Rome.



View of the Piazza Navona, Rome.



Assefa with a group of his students in Rome.

After directing the Social Science in Rome program for twenty six years, I plan to phase out following the completion of the 2019 summer program. It is gratifying to know that the program will remain in Geography in the able hands of my Geography colleague, Professor Igor Vojnovic, who will be shadowing in Rome with a three-week overlap with me during the 2018 and 2019 programs. Professor Vojnovic will begin directing the program in summer 2020. I took 31 students and two Program Assistants to Rome last summer. There are now 27 enrolled so far. I have been fortunate to have had a good run with the program with 100 percent completion rate and safety record for students who went with me to Rome since I started directing the program in 1992. I also received pretty good assessments from students about their experience in Rome.

I will end this report with a mention of a sample of direct quotations from letters I have received over the years.

"Thank you for contributing to one of the greatest experiences of my life."

"First and foremost thank you endlessly for allowing [me] to accompany you and the Michigan State University students to Rome. It was without a doubt the best trip that I have taken in my 20 years of existence."

"I had such a wonderful time and nothing but good memories to share with my friends and family. Thanks for everything; it was a pleasure to be in your class and to take the trip."

"Before I went to Rome, I was deadset into going into the medical field. But your teaching and enthusiasm, as well as my own exploration of Rome and Europe, convinced me that I was making the wrong decision. I had to do what I loved, and what I love is history."

2016 International Loess Fest

Schaetzl organizes international meeting on loess. Yes, Loess.



Randy Schaetzl

The world was once a very dusty place. Very dusty. That was the overwhelming opinion of the 75 participants - from 10 different nations - that attended the annual meeting of the INQUA Loess Focus Group in fall, 2016, in western Wisconsin. (INQUA is the International Union for Quaternary Research, and loess is wind-blown sediment, mostly silt.) Randy Schaetzl was the conference and trip organizer, with help from graduate student Chase Kasmerchak, and with generous financial assistance from a number of sources - MSU Geography, NSF and INQUA, among others. All in all, the 4-day meeting was a rousing success, and put MSU on the dusty map of places where loess research is alive and well. To give you an idea of how "into it" Loess Focus Group members are, we often sign our emails "Your dusty friend". Not kidding.

Meetings of the Loess Focus Group are referred to as "LoessFests", because there are both loess exposures to view, and plenty of festing to be done. The 2016 LoessFest marked the first such meeting ever held on American soil. In all, 75 participants from 10 different nations were represented. The conference featured two days of paper presentations and posters, followed by two, full-day field trips. Faculty from the University of



Conversation and observation around one of the loess pits. Notice the American who is texting an image back to his wife and kids.

Editor's note: The "American" was taking a photo :)

Wisconsin, both the Eau Claire and Madison campuses, participated in field trip planning and presentation. Participants got to see the beautiful, rolling landscapes of western Wisconsin, which are covered in places with up to 5 m of loess, and got to meet several of the farmers who make their living off the wonderful loess soils.

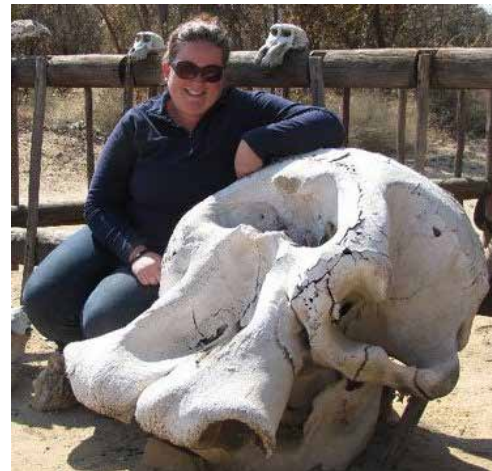
FYI, the 2017 LoessFest was held in northern Iran, and the 2018 meeting is in Volgograd, Russia. Who's in?



Yes, that's water in the pit. Many parts of the field trip route received between 8 and 11" of rain two days prior to the trip. That's not a typo. Eleven inches. Although this impacted our ability to see loess in a few of the pits, we nonetheless got to see more frogs.

Meet Erin Bunting New Director

In the Fall of 2017, Dr. Erin Leigh Bunting joined the Department as both Assistant Professor and Director of RS&GIS. Throughout graduate school and her career, Erin has focused her research on time series remote sensing applications, especially in semi-arid to arid systems. Erin received both her MS and PhD from the University of Florida Department of Geography where she focused the majority of her research in the fields of climatology, ecology, and remote sensing. For her PhD, Erin worked across five countries (Botswana, Namibia, Zambia, Zimbabwe, and Angola) in southern Africa studying the spatiotemporal pattern of vegetation change under increased climate variability and people's perceptions of climate change. Prior to joining the faculty at MSU, Dr. Bunting worked for the United States Geological Survey (USGS) at the Southwest Biological Science Center in Flagstaff, Arizona. At the USGS, Erin worked with researchers from the National Park Service and Bureau of Land Management using her skills as a remote sensing ecologist to develop drought vulnerability assessments for the major deserts of the southwestern United States. Such work spanned multiple spatial and temporal scales and involved landscape level remote sensing work to highlight critical climate thresholds of key plant species and field-based experiments studying drought tolerances across differing desert systems. Erin's experience as an analyst, teacher, and researcher within the academic and governmental realms will be put to good use in her new position at RS&GIS. Erin looks to make RS&GIS a valuable source of knowledge and assistance for researchers, both on and off campus. To achieve such goals, Erin looks to broaden the group's on-campus research collaborations, develop an RS&GIS Affiliates programs to better partner with faculty, and work more closely with students via trainings, jobs, and collaborative research activities. Erin strives to keep her research at the forefront of the remote sensing field and will push RS&GIS staff to be equally advanced in their research and development skills in order to assist academics, government bodies, and non-government organizations in an applied nature.



RS&GIS experienced big changes and growth this past year as we expanded our staff and broadened our research and outreach network. With our new director, and in many ways new direction, we look to expand and grow RS&GIS to build stronger connections across campus and other academic institutions. As part of this initiative, RS&GIS is developing an Affiliates program that will strengthen our research network, better assist faculty in both research and grant development, and provide critical services to students and faculty. A primary service of our Affiliates program is open source mapping services to assist with data management and distribution as well as spatial data archiving. Another change coming to RS&GIS in 2018 is a move to a larger facility in the Nisbet Building on campus. This new space, paired with changes in programs and a renewed focus on research, will better situate RS&GIS to serve the needs of faculty at MSU and other institutions, continue our outreach to state and local government, and provide quality geospatial training opportunities for students, faculty and professionals.

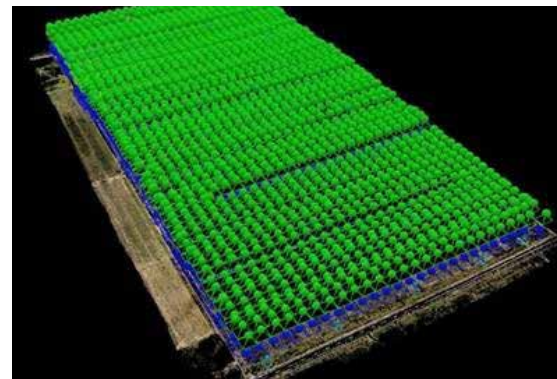


Robert Goodwin - lead of analyst team.

The analyst team, led by Robert Goodwin, took on new projects here on campus with Geography and many other groups including, MSU Extension, FRIB, Plant Soil and Microbial Science, Horticulture, and the School of Planning, Design and Construction. Work with such groups ranged from grant development to field data collection and analysis. Off campus, our analysts have partnered with a number of organizations such as the State of Michigan, The Gun Lake Tribe, the Natural Resource Conservation Service, Michigan Nursery and Landscape Association, Dutchman Tree Farm, and Iosco, Macomb, and Ingham counties.

While our analysts take on a wide variety of projects, an important part of their work is in geospatial training and outreach. This past year RS&GIS ran more than a dozen Esri software training events covering both introductory and advanced topics. Training also included custom courses for the Michigan Department of Transportation. Cumulatively, these

training events were attended by upwards of 100 people from a wide range of fields and differing backgrounds in the geospatial sciences. Additionally, this past year, RS&GIS partnered with Northwestern Michigan College to offer a three-day workshop titled: Hands-on Drone-to-GIS Workflows. These successful workshops, which ran from April-September of 2017, were attended by 40+ precision agricultural specialists, GIS managers, MSU Extension agents, real-estate professionals, research faculty, and others. Participants



Camera stations for a drone flight at a Christmas tree farm.

learned the entire process from flight planning to hands-on operation to autonomous data collection to image processing and GIS analysis. For 2018, the training material has been divided into 1-day short courses focused on different levels of UAV flight training and data processing. Additionally, over the next year we are looking to develop training courses focused on Python coding, statistical analysis in R, and potentially Google Earth Engine. Information about our 2018 training events is available on our website.

During the summer of 2017, the RS&GIS analysts completed a project to accurately inventory evergreens, extract tree heights, and quantify tree health information using low-cost drones and geospatial modeling. This project, which was funded by the Michigan Nursery and Landscape Association, MSU Extension, and Dutchman Tree Farms, resulted in custom geo-processing models and standardized workflows. RS&GIS analysts first collected drone imagery over several sites, including fields of Arborvitae and Christmas trees. Analysts then processed the data to create image mosaics and digital surface models. Geo-processing models were then created that utilized differences in topographic and spectral information to identify individual trees, extract heights and output tree-specific health information. Geo-referenced tree locations with associated heights and health information were then posted to the internet via a mobile web application. RS&GIS plans to offer a service to growers in 2018 that allows them to collect



Joel Lenz - lead of developer team.

and submit their own drone imagery and receive location and height information. This project was highlighted on Fox 66 News in March of 2018 and the full story can still be found on their website.

The developer team, led by Joel Lenz, partnered with multiple MSU departments such as Veterinary Medicine, AgBioResearch, the Department of Biosystems and Agricultural Engineering, School of Social Work, the Environmental Sciences and Policy Programs, MSU extension, the Vice President of Governmental Affairs Office, and the Spartan Impact Project on a wide range of application development projects. Our developer team, currently made up of three full time staff, have a wide variety of projects currently being worked on or upcoming for the next year including, excitingly, the development of an open source online mapping service which will support the development of our Affiliates programs. Such a software independent application has great potential to help

state and local governments, NGOs, and academics in the distribution of their data to the public.

Within Geography, the RS&GIS developer team has active projects in both the day-to-day management and growth of the department and in the research realm. Currently, we are working closely with the faculty and staff of the onGeo program to develop applications related to course management and enrollment. The onGeo program, which oversees all online courses (credited and professional certificate) for the department, is looking to grow and RS&GIS is providing support to assist in this goal. In 2018, the RS&GIS developer group also has several research projects in the works with faculty in the department including mobile application development for field data collection.

Over the last year, two of our developers have been working closely with researchers in Veterinary Medicine at MSU in the development of a mobile application that will give herd health managers real-time information on changes in metabolic stress biomarkers. TracMiCow (or MiCOW) will collect, parse, and collage herd data. RS&GIS is working with researchers at the College of Veterinary Medicine on database design, the web application development, and in application deployment and testing. Currently, we are in the testing stage and RS&GIS has been working closely with researchers to further refine the mobile app so it works to its fullest potential.



Screenshot of TracMiCow web application.

Off campus, the developers have working partnerships with USAID, the Michigan Fitness Foundation, Michigan Sea Grant, Ingham County, and the State of Michigan including the Department of Natural Resources, Department of Environmental Quality, and Department of Insurance and Financial Services. In one such project, currently in its fourth year, the RS&GIS developer team has been working on a large-scale application development project for USAID, particularly for the region of Bosnia and Herzegovina. For this project, RS&GIS is contributing to the support, development, implementation, and testing of a system called BiHPerform (BiHP). BiHP is an application that collects and provides information, through a web mapping service, on in country activities (funding, staff, etc.). This system is linked to an internal geographic information system (GIS) that uses the BiHP data to create geographic visualizations of program results. Throughout this project RS&GIS has been tasked with assisting in the development of BiHP, managing / working with the GIS data, and providing in-country GIS trainings.

RS&GIS is excited to work more closely with research faculty and continuing our success in the areas of outreach and training. Information about our staff, projects, and trainings can be found on our website: <http://www.rsgis.msu.edu>.

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Reviews of Our Program

"This is the best online instruction vehicle I have ever encountered. Online instruction has distinct strengths and distinct weaknesses, but the onGEO crew at MSU have maximized the strengths and minimized the weaknesses into a truly noteworthy product"

Dr. James Padfield
Truman State University

"Last Spring semester I took GIS 325...I am now being recognized by multiple teams at the corporation for my knowledge in ArcGIS. Teams are hounding my boss to allow me to do work for them!"

Abbey Neerken
Michigan Economic Development Corporation

"Thank you so much for offering such a wonderful class. I have never learned so much in one class, and actually gained so many new things, skills in Geospatial technology, it's an amazing field."

Cheikh Sidi Elmoctar
Consultant Geologist



Undergraduate researchers have reached incredible achievements working in Dr. Amber Pearson's laboratory. Last year, alumnus Ross Bottomley was the 2017 recipient of the department's Undergraduate of the Year Award. Ross studied children's exposure to 'blue' space (e.g., water bodies) as part of the larger study conducted in Wellington, New Zealand. Ross presented his work at the 2017 AAG conference.

This year, Amber DeJohn, a major in Political Theory & Constitutional Democracy in James Madison College, as well as Economic Geography in the College of Social Science, and minor in Geographic Information Sciences, has developed her research profile. Over the past year, she studied why some communities have high levels of Twitter usage about depression. This interdisciplinary collaboration with the Human Development and Family Studies Department was funded by the Provost Undergraduate Research Initiative. DeJohn prepared and submitted this work as an academic publication. Now, she is studying the effects of neighborhood decline on homicides in Flint (to be presented in New Orleans at the annual American Association of Geographers (AAG) conference). She was recently awarded the Beinecke Scholarship, which will fund her upcoming graduate studies.

Ben Dougherty is an environmental geography major and has been a student researcher in Dr. Pearson's lab since September 2016. Originally a microbiology major, he decided to make the jump to geography after witnessing firsthand the wide applicability of the discipline to a variety of his research interests. To date, Ben has presented at UURAF, Mid-SURE, and is presenting at AAG in Spring 2018. Mid-SURE and UURAF are opportunities for undergraduates at MSU to display their work with other students, faculty, and general audiences. Largely funded by the Provost Undergraduate Research Initiative, Ben has embarked on a variety of research projects, including modeling mosquito habitat related to Kaposi sarcoma prevalence in rural Uganda, and using Google Street View (GSV) to quantify urban green space. Recently, he co-authored a systematic review that explores the use of GSV in health-related research, submitted to Health & Place. Ben has also facilitated community workshops and bio-measurements, as part of federal grant preparations.

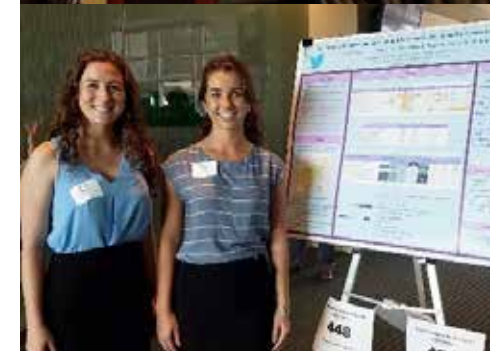
Claudia Allou, a recent addition to the lab, is double-majoring in human biology and comparative cultures and politics. Her research interests include health inequalities related to food access. We welcome Claudia and are excited to see where her research leads her!



Mack Lab Conducts Research about Entrepreneurship and Water Affordability

This spring fourteen students (four PhD and ten undergraduates) are working on research about entrepreneurship and water affordability. The entrepreneurship work is sponsored by a grant from the Ewing Marion Kauffman Foundation and the water work is funded by the National Science Foundation. The students are working on primary and secondary data collection and statistical analyses of these data. Research results will be presented in April at the Association of American Geographers (AAG) Annual Meeting in New Orleans and the University Undergraduate Research and Arts Forum (UURAF).

Aside from providing experiential opportunities in research, the lab is also dedicated to helping students advance professionally. This spring students will be designing and participating in professional development workshops. We also try to have a bit of fun via group activities. The photo (to the right) is from a breakout room outing where the students tried to gather supplies to survive a zombie apocalypse. Thank you to all of the students working in the lab! They make the research possible.



Geography Awareness Week 2017

Like many geography departments in the nation, we celebrate Geography Awareness Week each November. The purpose of this celebration is to raise awareness about the discipline and its high relevance to society as a whole. We do so through a variety of academic, social, and service activities that typically involve the Undergraduate Geography Club, SWIG, and the Geography Graduate Group (TripleG). TripleG and SWIG kicked off the week in 2017 with a colloquium discussion, hosted a trivia night at Tin Can in East Lansing, represented the department at an information table at the MSU Union, and organized a roundtable discussion linking social justice to research, practice, and outreach. The keynote event was the excellent presentation that Ms. Krista Schlyer gave on Wednesday evening about the borderlands between the U.S. and Mexico.



Members of the Alumni Advisory Board during Geography Awareness Week. We appreciate their hard work on our behalf!
L to R: Ruth Collard-Sotak, Sarah Hession, Josh Bocks, Michelle Lee, Alan Arbogast, Melissa Faustich, and Beth Weisenborn. Not pictured: Steve Aldrich and Beth Myers-Graham.

The topic of the border wall between the United States and Mexico continues to be broadly and hotly debated. By now, broad segments of the population have heard widely varying opinions about the wall's effect on undocumented immigration, international politics, and the drug war.

KRISTA SCHLYER
Award winning writer and photographer



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Jonah White and Kesley Nyland raised Sparty's awareness of geography at the MSU student union.



About 500 people filled a lecture room in the Business Complex to hear Krista Schlyer's presentation about the borderlands between the U.S. and Mexico.

Commencement

UNDERGRADUATE DEGREES 2017



We had a fantastic graduating class in May, 2017. They were clearly thrilled about majoring in Geography.

SPRING

- Jacob R. Baghera
BS Economic Geography
- Brendan L. Conway
BS Economic Geography
- John L. DelTufo ^
BS Geographic Information Science
BS Environmental Geography
- Ross A. DiFalco
BS Environmental Geography
- Jeffrey M. Evans
BS Geographic Information Science
- Sharon A. Fighter
BS Environmental Geography
- Quercus F. Hamlin
BS Geographic Information Science
- John D. Lynch
BS Geographic Information Science
- Derek R. W. McNamara ^^
BS Environmental Geography
- Evan M. Newton
BS Environmental Geography
- Emily G. Setlock
BS Environmental Geography
- Erica N. Shadwell
BA Human Geography
- Samantha P. Wells
BA Human Geography
- Emily E. Zelenak
BS Environmental Geography
- Yatong Zhang
BS Environmental Geography

FALL

- Breaunte J. Brown
BA Human Geography
- Bryan D. Brown
BA Human Geography
- Antoine L. Hearn
BA Human Geography
- Peter A. Huyberts
BA Human Geography
- Rachel A. Knighton
BS Environmental Geography
- Meg L. Reesor
BS Environmental Geography
- Larrissa X. Zhao
BS Environmental Geography
- Kyle P. Devine
BS Geographic Information Science

SUMMER

- Ross E. Bottomley
BS Environmental Geography
- Michael M. Fennell
BS Environmental Geography
- Lindsay R. Steffen
BS Environmental Geography

^ Additional Major
^^ Second Degree

GRADUATE STUDENT DEGREES COMPLETED IN 2017

- **Arcand, Samuel, MS (Lifeng Luo)**
"The Effects of Realistic Irrigation on the Great Plains Low-Level Jet."
- **Li, Xue, PhD (Joseph Messina)**
"Sustainable urban development under a coupled Human-Land-Atmospheric modeling framework: the case study of Urumqi, China."
- **Ronnei, Nicholas, MS (Ashton Shortridge)**
"A Minimalistic Data Distribution System to Support Uncertainty-aware GIS."
- **Walkowiak, Toni, MS (Raechel White)**
"Freshwater Resources: An Evaluation of Michigan Residents' Perception of Wetland Ecosystem Services."
- **Clark, Caitlin, MS (Catherine Yansa)**
"Pollen-Based Landscape Reconstruction of an Upper Mississippian Agricultural Site at Hovey Lake, IN"
- **Rijal, Ishara, PhD (Jeffrey Andresen)**
"Use of Water Mist to Protect Tree Fruits from Spring Frost Damage."
- **Su, Yahn-Jauh, PhD (Jiquan Chen)**
"The Carbon Sequestration and Soil Respiration after Land Use Conversion in Biofuel Cropping Ecosystems."

Gamma Theta Upsilon Spring Reception



Initiates
L to R: Haley Keefer, Judith Namanya, Lisa-Marie Pierre, and Jonah White. Not pictured: Chelsie Thomas, Yatong Zhong.



Undergraduate Student of the Year
Ross Bottomley with award presented by Assistant Professor Amber Pearson.



Graduate Student of the Year PhD
Victoria Breeze with award presented by Associate Professor Nathan Moore.



Recipient of Lawrence Sommers Award - Rajiv Paudel with his field assistant by the Niger River.



Graduate Research Presentation Winners
L to R: PhD students Sara Torres (3rd place), Joshua Vertalka (2nd place), and MS student Amanda Rzotkiewicz (1st place).



Nafiseh Haghtalab was the winner of the Owen Gregg Global Climate Change Research Award (with Professor Jeff Andresen).

Annual Geography Career Day & Job Fair



Please Join Us in 2019
for the Geography Career Day and Job Fair!



Dee Jordan

2017 was a great year for 4th year doctoral student **Dee Jordan**, though retired from student government; Dee was still actively engaged and involved in student life at MSU and the Greater Lansing Community.

Dee served on the Diversity Panel for the Graduate Student Life and Wellness Leadership Fellows and contributed to important conversations about navigating MSU as a student of color. She was the Graduate Student Representative on the College of Social Science's Steering Committee and the Graduate School Dean's Search Committee.

Over the summer Dee served as a Graduate Student Facilitator for the Summer Research Opportunity Program (SROP) and journeyed to the Southern Hemisphere, specifically Botswana for the wedding of fellow Geo Grad Mattie Bene in Gaborone, cruised on the Okavango Delta and went on Safari in Maun.

Dee was the Lansing Area Ambassador for the Black Doll Affair Self-Esteem Movement headquartered in Atlanta, Georgia and this year hosted the 1st Black Doll Affair Self-Esteem Party and Toy giveaway for girls 10 years and under from underserved elementary schools in the Lansing Area.

During the fall semester, Dee served as the Graduate Student Representative for the College of Social Science Dean's Advisory Board for Diversity and Inclusion. She is an active member of the Alliance for Graduate Education and the Professoriate learning community. She was one of the Judges for the Alpha Phi Alpha Fraternity's scholarship pageant. And on October 30th Dee met civil rights icon, Congressman John Lewis of Georgia's 5th Congressional District!

Dee is Co-Leading the Department's underrepresented minority recruitment initiative with Dr. Ashton Shortridge, contributed to the Geo Blog for the 2017 Geography Awareness Week activities and became a proud member of Alpha Kappa Alpha Sorority Incorporated.

Dee passed her Comprehensive Exams in December and was selected as the 2018 recipient of the *Excellence in Diversity Award* in the Individual Emerging Progress category!!



Victoria Breeze

2017 marked off two big milestones for me as a grad student. First, I am officially a PhD candidate now, courtesy of passing both my comp exams and proposal defense. Second, I became a published author with a research update on African students in China with "China tops US and UK as destination for anglophone African students" in The Conversation and the article "Agent-Based Modeling of Temporal and Spatial Dynamics in Life Cycle Sustainability Assessment" in Journal of Industrial Ecology where I helped fellow MSU Geographers on an agent-based modeling project. I also presented "A Systematic Review of Chinese-Language Research on Investment in African Agriculture" at AAG last spring in Boston and look forward to this year in New Orleans. I had so much fun meeting geographers from all over as an AAG volunteer last year that I'll be volunteering again this year. If you see me in the halls, stop by and say "hi!"

Ameen Kadhim

My research interests are using geospatial to measuring and monitoring Sea-level Rise. There is growing debate among scientists on how sea level rise will impact coastal environments, particularly in countries where economic activities are sustained along these coasts. An essential factor in this debate is how best to characterize coastal environmental impacts over time. This study will investigate the measurement and modeling of sea level rise and has implications on near-coastal riverine regions. The study will use a variety of data sources, including satellite imagery from 1975 to 2017, digital elevation data and Previous studies for the river regions.

The main objectives of the study are:

- Examine influences of sea level rise from the geospatial perspective by using a different resolution/accuracy of data.
- Determine sea level rise on near-coastal riverine regions by using (Bathtub Inundation Model) to estimate and predict the sea level rise risk in both regions.
- Determine influences of sea level rise on near-coastal riverine regions since 1975 until present.

This research will focus on two regions with important coastal lands: southern Iraq along the Shatt Al-Arab River and the south of United States in Louisiana along the Mississippi River. These sites are important for both their extensive low-lying land and for the significant coastal economic activities in these regions. This study investigates connections between the historic sea level rise and vegetation change in two critical near-coastal riverine regions.

Finally, The global warming represents perhaps the single most significant environmental challenge of our time. There are many consequences, the magnitude of impact will be different in different parts of the planet. This study will discuss the problem of sea level rise by using remote sensing and reaching back 40 years to understand how these regions are already changing. Also, will apply error propagation to create spatially autocorrelated surfaces in both regions. This modeling is reducing the effects of digital elevation model (DEM) error on Bathtub Inundation Model



Thomas Bilintoh

My name is Thomas Bilintoh. I am from Ghana and currently a first year graduate (Masters) student in the department of Geography, Environment and Spatial Sciences at Michigan State University. Having a background in Geomatic Engineering gave me a sense of what is happens in the world of geospatial science. Right after my Bachelor's degree I spent about 3 years in the industry to gain some experience. These experiences finally informed my decision to get an MSc in a program that had a substantial amount of GIS and Remote Sensing concentration. Although I do consider myself a GIS and Remote Sensing analyst, my main concentration is how users and experts of geospatial data handle uncertainty. My approach basically revolves around using probability and Fuzzy set theory to depict how uncertainty can be handled in geospatial data in the field of GIS and Remote Sensing. Below is a picture of me carrying out some survey work back in Ghana

Mattie Bene Kelepile

My name is Mattie Kelepile (I got married in the summer of 2017, and changed my last name from Bene!). I am an international student from Botswana in Southern Africa and so happy to have a chance to experience both the scorching heat of the Kalahari Desert and the prolong colds of the Midwest. I am in my third year of PhD program here at MSU Geography department. My research interests are on HIV/AIDS incidence and prevalence as well as its treatment adherence in Botswana and my advisor is Dr. Grady. I got my first degree in Environmental Science from the University of Botswana and a master's degree in Geography from SUNY Binghamton in Upstate New York. The year 2017 has been a great one for me both academically and socially. I passed my comprehensive exams and advanced to the candidacy status in the spring. In August 2017, I got married to my soulmate Kabelo Kelepile under the beautiful skies of Africa. I look forward to an even better 2018 because I am so close to finishing up my program. Our department is a great place to be, diversity and professionalism are held high. I am so proud to be a Spartan that all my family members have MSU logo t-shirts! Go Green!





Dan Wanyama

Dan Wanyama is a PhD student with research interests in; GIS, agriculture, sustainability and land use and land cover change, mostly in developing countries. He holds an MS in Geospatial Science degree from the University of North Alabama, Florence, Alabama and a BS in Environmental Science degree from Kenyatta University, Nairobi, Kenya. He has previously conducted research on climate change effects on maize productivity in Kenya, urban heat island effect in Nairobi, spatial analysis of maize yield patterns in Central Malawi among other projects.

Dan is currently studying the relationship between land use land cover change and crop yields in two counties in western Kenya. He believes that a better understanding of interactions among people and their environment is handy in both the improvement of people's livelihoods through improved crop production and the sustainability of the environment. It is hypothesized that both goals can be achieved simultaneously with the use of geospatial technologies and spatial modelling. This project is threefold;

Year 1: Understanding land use and land cover change in Bungoma and Trans Nzoia counties

Year 2: Modeling Bungoma and Trans Nzoia farmers' decision making: an agent-based modeling approach

Year 3: Predicting Bungoma and Trans Nzoia crop yield changes under different scenarios

In his first year, he is using remotely sensed imagery from Landsat to analyze land use and land cover changes and their implications to crop yields. His imagery grant application to DigitalGlobe has recently been approved and he believes the finer resolution data will greatly improve project outcomes. Field work is planned for the summer of 2019 both for ground truthing of Year 1 results and collecting data for subsequent analyses.

B.J. Baule

Since starting my doctoral program at MSU in 2016 I've had the opportunity to work on developing both my research program and outreach skills working with the Great Lakes Integrated Sciences and Assessments (GLISA) and the Michigan State Climate Office. My own research has focused quantifying the characteristics and changes in precipitation across the Midwest and how these changes have affected nitrogen management and prevalence of tree fruit diseases. I've had the opportunity to present preliminary results at the American Meteorological Society Applied Climatology Conference and the American Association of State Climatologists Annual Meeting in Asheville, NC. I am also planning on presenting more results at the upcoming Annual Meeting of the American Association of Geographers in New Orleans, LA. My plans for the upcoming summer include field work at multiple locations around Michigan to collect data on nitrogen loss in corn agro-ecosystems. In addition to my own research, I've also had the opportunity to help with the construction of instrumentation towers to observe atmospheric temperature inversions over fruit orchards with Dr. Jeff Andresen.

I've also had the opportunity to further develop my scientific communication and outreach skills. Over the past year, I've delivered presentations on climate change and adaptation to Michigan Green Cities, the National Environmental Health Association, and extension educators from across the Upper Midwest, and Kalamazoo Public Schools. I am also coordinating a group of climate scientists in the development of quarterly and annual climate summaries for stakeholders and decision makers in the Great Lakes region. This group involves scientists from Michigan State University, the University of Michigan, National Oceanic and Atmospheric Administration, Environment and Climate Change Canada, and the Great Lakes Water Quality Agreement.



Clayton Queen

Clayton Queen, a physical geography Masters student, spent the summer working on his thesis research in Alaska and British Columbia. His thesis focuses on a periglacial landform called cryoplanation terraces. The project focuses on large-scale mapping and geomorphometry to determine whether the features are formed through climatic processes associated with late-lying snow. Field work for this project took him to several sites across Alaska and into British Columbia. In addition to his own research, Clayton is also involved with Dr. Fritz Nelson's NSF-funded Circumpolar Active Layer Monitoring Program (CALM) on Alaska's North Slope. Back in Michigan, he spent the last year working for Dr. Arbogast on a project mapping Michigan's Coastal Dunes.



A twenty meter inversion tower installed in an apple orchard near Sparta, MI (left). This station is part of MSU's Enviroweather network (<https://www.enviroweather.msu.edu/>).

Ryan Nagelkirk

I am in the third year of my PhD program, advised by Dr. Kyla Dahlin. My research centers on a bizarre ecological phenomenon: in Africa, savanna elephants push over mature trees, some taller than 30 feet. Growing evidence suggests that elephants are the primary disturbance in African savannas, creating the iconic, sparsely wooded landscapes. To test that hypothesis, I am doing a regional analysis of the dominant disturbances of woody cover in protected ecosystems across eastern and southern Africa.

My work heavily relies on scripting and remote sensing, and I work mostly in R and Google Earth Engine (JavaScript). I get a kick out of the scripting side of my work, and as a part of that, also co-designed a scripting workshop for Department graduate students. Finally, I also passed my comprehensive exams and coursework this year. The proposal beckons.



Kelsey Nyland

Kelsey Nyland is a third year PhD student and recent recipient of a NSF Doctoral Dissertation Research Improvement grant. For her dissertation Kelsey is testing a more than century-old hypothesis that late-lying snowbanks in periglacial regions can lead to the formation of large elevated terraces known as cryoplanation landscapes. In addition to her own research she is an active participant in the NSF-funded Circumpolar Active Layer Monitoring (CALM) Program monitoring permafrost change in northern Alaska. In conjunction with data collection for the CALM program, Kelsey is the United States Young National Correspondent in the Global Terrestrial Network on Permafrost (GTN-P) where she assists in maintaining their open-access database for permafrost related data from around the world.



Nafiseh Haghtalab

My name is Nafiseh Haghtalab. I am in the third year of my PhD in Geography, Environment and Spatial Science. My main research focuses on land use/land cover change interactions with climate. I have focused on east Africa, as that region is very vulnerable to any changes in climate. Most people rely on rain-fed agriculture for feeding. When there is a slight change in precipitation amount, intensity, distribution, or timing, they may lose their yield. Theoretically, there is a strong coupling between LULC change and climate through energy and water budget. When any of those parameters of energy and water budget like soil moisture or sensible and latent heat fluxes change, there would be a significant feedback to the climate and change the climate features dramatically. Actually, there is a strong coupling loop between atmosphere and land, in which any changes in any part of the loop can propagate throughout the whole system. As soil moisture and precipitation are two essential factors in success or failure of the farming season, any perturbation in any of them will change the productivity. Considering food security in Africa, having productive agriculture would assure that. Therefore, in my research I am going to investigate the land-atmosphere coupling and interactions in east Africa to address food security in that region. I am doing this research under supervision of Dr. Nathan Moore who is an associate professor in the Department of Geography, Environment, and Spatial Science.

Recently, Nathan and I have submitted an interesting paper entitled "Precipitation Pattern Analysis and Rainy Season Change Detection over Malawi". In this paper we talked about inter-annual variability of rainy season indices over Malawi. All previous studies found no significant changes in rainfall season using station data. However, using gridded dataset, we found that there is a robust change in the onset, cessation, and length of growing season, as well as drought and flood events, which is consistent with the farmers' claim of changing the climate.

As this work can be very beneficial to many people especially in poor countries, I am planning to continue my research in this field after graduating from this degree, looking at the impacts of those changes on farmers and productivity of farms. Also, I am interested in academic environment and will try to continue this research as a faculty in a credible university. However, in short time after graduation, I prefer to improve my research experience as a research associate under a postdoc position before applying for a faculty position.



Chase Kasmerchak

This past fall semester, I spent a lot of time in the ground, or rather in soil pits. Dr. Phil Robertson, the director of the Great Lakes Bioenergy Research Center at MSU, asked me to characterize soils at each of their research stations. There are currently 6 sites in total – 3 in Wisconsin and 3 in Michigan. These research stations are part of a long-term study on utilizing “non-arable” lands for bioenergy crop production. Until now, the soils at most of these sites had not been described. With the help of an undergraduate student, Jeremy Rapp, and my advisor, Randy Schaetzl, I was able to describe, characterize, and sample all 6 sites this past fall. Side note, I did this while taking two of Dr. Schaetzl’s courses, which were also very field intensive. All in all, I spent 13 days in the field this past fall semester.



(Left) Jeremy Rapp digging a soil pit on the last day of a four-day field work stint around lake Michigan. Notice the bandages around his hands- digging soil pits indeed builds character. (Right) Chase describing a soil pedon.

A few years ago, Randy Schaetzl and David Rothstein, a professor in the Forestry Department, researched seasonal variations in aluminum, iron, and dissolved organic carbon fluxes in forest soils in Michigan’s Upper Peninsula. I plan to use some of these same sites for one of my dissertation chapters. Specifically, I will be collecting water samples from O, E, and B horizons daily during 2019 spring snowmelt in. In preparation for this high temporal resolution sampling next spring, Dr. Schaetzl and I traveled up to the UP to empty the water collection bottles and determine which sites I should use for my dissertation. This was long, but very productive day in the field, and was a terrific way to end my 2017 field season. We traveled up there on December 1st, and to both of our surprises, there was no snow on the ground! We will be returning after the spring 2018 snowmelt to empty the collection bottles. Hopefully we will have nice weather again.



Dr. Schaetzl enjoying some soil leachate in the woods. He claims, “this is the best water you’ve ever tasted.” I think I will have to take his word on this one.

Aaron Kamoske

Aaron Kamoske is a second year PhD student in Dr. Kyla Dahlin’s Environmental Remote Sensing and Modeling Lab (ERSAM). Aaron received his Bachelor’s degree in Natural Resource Conservation and a certificate in GIS Science and Technologies from the University of Montana’s College of Forestry. During and following his undergraduate work, he worked on vegetation monitoring projects in the Northern Rockies and as a cartographer for an international NGO. Aaron’s current research examines the influences of environmental and anthropogenic variables on closed-canopy forests through the use of hyperspectral and LiDAR remote sensing, spatial statistics, ecological modeling, and field sampling. This past summer he traveled to the Smithsonian Environmental Research Center in Maryland and Harvard Forest in Massachusetts to collect foliar samples for chemical and spectral analysis. He is looking forward to collecting more samples this summer at other sites throughout the Midwest and East Coast.



Cheyenne Lei

In Fall 2017, as part of a class focused on Micrometeorological Instrumentation taught by Dr. Jiquan Chen, an eddy covariance flux tower was constructed on Baker Hall, next to the Geography building. This flux tower was constructed to measure surface-atmosphere fluxes of energy, meteorological data, and trace gas over the urban ecosystem of Michigan State University. Variables measured included temperature from a sonic anemometer, density of water vapor, CO₂, and CH₄ from gas analyzers, precipitation, incoming and outgoing radiation from a net radiometer, and 3-dimensional wind components from a sonic anemometer. These data are subsequently were then processed using flux computational software.



Of the four students in the class, each was given a specific task to complete in the process of collaborating the design and construction of the flux tower which included computer coding, inventory, physical design, troubleshooting and equipment testing. The final product was demonstrated in front of the geography department for one week during October 2017, where interested students and faculty

could interact with the class on development. The completed flux tower can still be seen the north west roof of Baker Hall, and persons interested in current data can contact Dr. Jiquan Chen, Cheyenne Lei, William Baule, Gabriela Shirkey or Chase Brooke.

Pouyan Hatami

Pouyan Hatami joined the Department of Geography in Spring 2017 as a PhD student. He earned his bachelor’s degree in Civil Engineering at Shiraz University, Iran. He has two Master’s degrees in Engineering; one in Civil and Environmental Engineering from University of Tehran, Iran and another in Biosystems Engineering from Michigan State University. His research area lies in the application of data mining and machine learning in Geography. He is currently working on developing a real-time crime prediction framework in large cities with the intent of making it publicly available as an application on cell-phones. Field work is planned for the summer of 2019 both for ground truthing of Year 1 results and collecting data for subsequent analyses.



April Frake

Looking back over 2017, it can best be described as the year of getting things done. I started the year as a newly minted ABD. With my coursework, proposal defense, and comprehensive exams behind me it was time to return to Malawi for my third and final trip to finish collecting data. In March, my lab mate Leah Mungai and I made the journey to Malawi together. I’d previously always traveled alone, so having Leah with me for part of the trip was a real treat. Together we shared several meals and late evenings swapping stories from the field that day. I recall our time fondly, remembering how patient Leah was with me as she assisted me in keeping up with Swahili studies while we were away!

Since returning from the field my attention has been directed at preparing various manuscripts, processing, analyzing, and writing up my findings. I recently presented a portion of my work at the American Society of Tropical Medicine and Hygiene (ASTMH) conference in Baltimore and now am in the final push towards completing my dissertation and defending later this year. As such, I’ve been winding down my service commitments to the department. Looking back, I’m most encouraged by my work as Co-President of Supporting Women in Geography (SWG). Our chapter has seen tremendous outcomes over the past year: a thriving, weekly writing support group, an established undergraduate-graduate mentorship program that through partnership with the Alumni Advisory Board is expanding (be on the lookout for details on getting involved!), and the development of the SWIG Scholarship Fund. This Spring, we’re excited to represent our chapter and department at AAG on a SWIG-sponsored panel.

Even with all the research-related excitement 2018 is sure to bring, on a more personal note my Husband and I are most excited about our family growing again. We’ll be welcoming another son (our first, Ezra is two years old) in late January.



April Frake performing a land cover survey at the Bwanje Valley Irrigation Scheme in Malawi.

A Geographer's Career Perspective



Reflecting on my career in regional planning and public service administration in Michigan, Florida and Virginia; I find it interesting how geography's broad perspective on man-land relationships and systematic analytical approach proved so relevant as background to my diverse regional planning and public administration career. I summarize below how some geography (and other social science) classes contributed substantively to projects and work responsibilities throughout my planning career.

Population Geography & Demography: Several positions challenged me to produce population estimates and projections for many units of local government to provide either a specific project or larger regional policy framework. Regional planning jobs in Lansing, Miami, Richmond and Fredericksburg all drew on a broad understanding of demographic methodology. Local and regional comprehensive planning is rooted in serving a community's current and future population. A position as "Aging Demographer" for the Virginia Dept. for the Aging gave me the platform to work with State demographers to forecast the impact of an aging population for local and regional social workers, gerontologists and long-term care providers.

Transportation Geography: This class gave me a systematic understanding of transportation networks, and the rudiments of transportation system planning. This background proved useful when thrust into the role of working with local and regional transportation planners and traffic engineers in assessing the transportation impacts of large-scale land development in the process of reviewing "Developments of Regional Impact (DRI)". Also this background helped me support regional long-range transportation planning done by the metropolitan planning organizations in Miami, Ft. Lauderdale, Richmond, Fredericksburg and Washington D.C. Moreover, these positions also drew heavily on an understanding of secondary data sources to help develop and refine small area socio-economic estimates and projections important to the modelling of future transportation network needs and performance.

Physical Geography and Ecology: The understanding of the forces that shaped the Earth's form and the influence of the land's physical characteristics (e.g. soil, slope, land cover, hydrology, etc.) helped tremendously when evaluating sites and landscapes for their suitability for development or retention value to sustain natural ecological systems. This understanding proved relevant to reviewing development impacts in South Florida and advocating the retention of forest cover in Virginia and Pennsylvania to mitigate the long-term impact of urban impervious surface development so highly correlated with population and economic growth and help clean up the Chesapeake Bay watershed.

Economic Geography & Basic Economics: Exposure in these courses to regional input-output models, shift-share and fiscal impact models, economic base theory and other topics were all helpful to understanding the regional economic impact of major public infrastructure and private land developments. With governments' focus on sustaining a growing economy to generate tax revenues to meet the expanding cost of government services, it was very useful to understand how to analyze the differential impacts of economic sector growth and influence economic development practitioners.

Cartography, Computer Mapping & GIS: The ability to construct a map to illustrate spatial information has been a fundamental and invaluable skill throughout my career. Much of this skill has been gained through on-the-job training to keep up with the rapid evolution of GIS technology. Related project experiences included (to name only a few):

- updating regional geographic base files for the Census Bureau for the 1980 Census,
- hand-drawing transportation network maps for a regional transportation policy plan in South Florida,
- producing thematic maps of small area population, housing and business growth and demographic and economic characteristics using desktop GIS software,
- analyzing raster map images to identify temporal changes in land cover,
- mapping university solid waste and recyclable generation and designing collection routes to efficiently recover recyclable materials, and
- working with GIS consultants to build a regional land use scenario modelling system.

For all of these (and many, many more), the ability to use GIS software (or work closely with a GIS analyst) proved fundamentally important to work with spatial data to recognize trends and data inter-relationships and explain these patterns (and their implications) to the general public, as well as policy makers faced with making public resource allocation and regulatory decisions.

Declaring Geography as my undergraduate major was largely an unexpected outcome of being able to waive a language requirement at MSU, thanks to living abroad and picking up fluent Spanish. Thus I had the freedom to explore many Geography classes as elective courses and "back-in" to a Geography major. By the time I entered the planning community workforce while writing my Masters' thesis, I (and my employers) realized the relevance of a geographer's skillset in the planning arena and embraced my academic background. Of course, along the way, I picked up other skills and certifications relevant to an urban and regional planner. Knowing of my diverse planning career, some planning colleagues refer to me as a "Renaissance Planner" without realizing the important contribution of my Geography background. To all my past professors...many thanks for giving me such a practical and relevant way of trying to make the world a better place!



Ellis Adjei Adams
PhD 2016

I currently live in Atlanta with my wife Joyce and our 17-month old daughter Eden who left Lansing when she was just 3 weeks old. I have enjoyed life in Atlanta except the insane traffic. After graduating in 2016, I moved to Atlanta, GA to begin a tenure-track assistant professor position at the Georgia State University. I currently hold a joint appointment in the Global Studies Institute and the Department of Geosciences. I also hold official affiliations in the Urban Studies Institute and the Partnership for Urban Health Research, both at the Georgia State University. Life as an assistant professor has been simultaneously challenging and rewarding. I have continued to build a research portfolio that broadly focuses on cities in Africa, human environment interactions, and water security. I continue to work mainly on the policy and governance dimensions of water insecurity. I have also established new collaborations, both national and international, that have been critical to my development as a scholar. To share a few specifics of my ongoing projects, I am currently investigating temporal and intra-seasonal changes in water quality in the slums of Blantyre, Malawi with collaborators from the University of Sterling, UK and with funding from the Royal Geographical Society in the UK. I have developed another project looking at preferences and attitudes toward household taps in the slums of Accra, Ghana. A third project looks at coupled land-water grabs in the northern Savannah of Ghana. In collaboration with colleagues from GSU and Ghana, I have currently been awarded a seed grant for a comparative urban project investigating "Urban Growth, Neoliberal Failures, and Water Scarcity in Accra and Atlanta". I

have also developed and taught Introduction to Human Geography, Environment and Society, Geography of Africa, and Global Water Policy and Governance, a graduate seminar. While I remain enthusiastic about my teaching and research, I have also developed new friendships at GSU. Most importantly, I am enjoying a cosmopolitan city with vibrant Ghanaian and African communities. I am always thankful for the experiences and training I enjoyed in the department and have fond memories that will never go away with time. I look forward to meeting as many of you that can make it to New Orleans.



Le Roy Barnett
PhD 1979

This autumn received a Lifetime Achievement Award from the Historical Society of Michigan, the tenth person to be recognized in this fashion.

Eric Bauman
BA Geo 1972
MA Geo & Resource
Development 1976

Has been appointed Senior Technical Leader and Program Manager of Occupational Health and Safety, Electric Power Research Institute. Eric is responsible for research and development for developing in innovative technology and new learn-

ings to enhance worker safety and health in the electric sector. This work includes areas of ergonomic interventions, occupational health risks (for example, heat stress, noise/hearing loss, exposure assessment, blue light), driving safety, predictive analytics, human performance, and use of advanced sensors and augmented reality. Eric is now living in Walnut Creek CA, having moved recently from the Baltimore/Washington area. Eric is a long time environment, health and safety practitioner in the energy sector in private industry, government, and research. Eric also was a charter member of the GEO Alumni Board and hopes to rejoin the board in the near future. Students and alumni are invited to contact him for any career mentoring at greensparten51@gmail.com (and yes, he knows "spartan" is misspelled, because "greenspartan" was already taken!)



Meghan Burns

I have served as a GIS Analyst and the Administrative Boundary Coordinator for the State of Montana employed within the Montana State Library since 2015. I was a recipient of the Governor's Awards for Excellence in Performance in 2016 for my contributions as part of the Water Supply Mapping Team. I have twice been elected to the Board of the Montana Association of Geographic Information Professionals (MAGIP). I am the former President of MAGIP from 2014 - 2015, and currently serves as the Web Subcommittee Chair. Since moving to Montana in 2007, I have become an avid downhill skier and mountain biker. I graduated from Michigan State University in 2004 with a Master's degree in GIScience. I earned my Bachelor of Science degree in Biology from Michigan State University in 2002 from Lyman Briggs School and The Honors College.



**Marianne Cardwell
(Van Kerckhove)**

After graduating from MSU in '98, I moved to the Washington, DC area where I lived for 8 years. During that time, I obtained my Masters in Geographic and Cartographic Sciences from George Mason University and worked for Parsons and then SAIC as a GIS Analyst and a GIS Programmer. In 2007, my husband, sons, and I moved to the Indianapolis area to be closer to family. I've been working for Woolpert since as a GIS Programmer and Team Lead. I recently moved into a Project Manager role specializing in the aviation market. Airports are like small cities and malls combined, with FAA regulations thrown in for good measure. It's a fascinating field and there's never a dull moment!

In my free time, my family enjoys karate and traveling. We try to visit Belgium every other year to visit my family. Last summer, I crossed a trip off my bucket list as we visited a number of national parks including Badlands, Yellowstone, and Grand Teton. It was an amazing trip that I won't soon forget! We are already thinking about our next trip, maybe exploring the southwestern United States. The above picture shows us in Badlands NP.

Dan Cole

During 2017, I presented talks at the following academic conferences: "A Cartographic History and Analyses of Indian-White Relations in the Great Plains" at the 2017 Great Plains Symposium, Lincoln, Nebraska; "Exhibiting the Interconnections between Inuit, Narwhals, and Climate Change" at the AAG conference in Boston; and "The Outbreak of Epidemics in a Connected World: Exhibiting Maps of Contagious Diseases

– The Spanish Flu to the Zika Virus" at the International Cartographic Conference (ICC2017), in Washington, DC. While at the AAG, I transitioned from vice-president to president-elect of the Cartography and Geographic Information Society (CaGIS). Meanwhile, I was involved in research and map design for exhibits at the Natural History museum dealing with Narwhals, Inuit and Climate Change; and at the Sackler Asian Art museum on Buddhist cultures in Asia. And on the side, I serve as a judge for the annual CaGIS Map Design competition.

Harry Colestock, III

After retiring from the military in 1991 and the Virginia Department of Emergency Management in 2011, my wife and I have retired to a life of community and other volunteer involvement along with enjoying sunsets on the York River in Gloucester, Virginia.



Accomplishments this past year include contributions by my wife and me to Audubon eBird databases by identifying over 500 bird species around the world and to the Center for Archaeology, Restoration, and Education (CAPE) in our home county by helping restore a historic building for the CAPE operations. I have been lucky to have been able to use my geographic education extensively in my military and civilian careers as well as my avocations in retirement.

Mike Cousins

Greetings MSU GEO, 2017 has been a hell of a ride. On January 26th, my wife and I welcomed to this world Olivia Morgan Cousins. This little Sparty is the best thing that has happened to me since going to Michigan State over a decade ago.

Work is great, the GIS team at OHM Advisors is now up to 6 dedicated GIS members. In the last year, I have become a regional expert in Augmented Reality. We have adopted the technology & hard-

ware and it has been awesome to watch it evolve. AR allows us to do several things, whether it is to view utilities underground or proposed buildings/designs before they are built. I have spoken at numerous conferences and meetings around the region this past year showing off the AR tech & HoloLens.

Cheers to a great 2018! Go Green.

David Kromm

All 14 of us together in Manhattan for six days over Holidays. Got to know seven grandchildren, aged 2 to 22, much better. Oldest graduating from Harvard in May.

Fun following football and basketball Spartans!



Hannah Deindorfer

I graduated MSU Geo Department in Spring 2015 and since then have been working full time at Esri in Redlands, CA. I was originally hired as an intern and went full time after 3 months. The past few years I've been working specifically on ArcGIS Pro, helping build their external facing websites, write blogs, test the software, perform usability research, and more. 2017 was a great year for me.

This year, my blog was featured in the Esri news magazines ArcWatch and ArcUser, and the Esri Facebook page. In 2018, I'll be transitioning to a lead position on a new product (which I'll be happy to share with you when it's not "top secret").

In 2017, I also started my own side business creating websites and logos for small businesses. Here's my business website: <http://hannahdeindorfer.com/>

I've been spending free time exploring SoCal, with hikes almost every weekend and lots of beach time. Photo from a recent hike above. I also competed in a number of CrossFit competitions and in my first olympic weightlifting meet in October this year and won my weight class. It's been a great year!



Paige Gebhardt

It's been an exciting year for me! I was hired into the Michigan Department of Natural Resources in January 2017. I work on all kinds of GIS projects in the DNR, including static maps, story maps, data management, and training others in GIS. I was lucky enough to go to the ESRI User Conference in San Diego, California in July, where I smiled all week amidst my fellow map lovers. I continue to meet amazing people and learn as much as I can.

Cheers to a new year! The photo above is of me with Smokey Bear while I was volunteering this past summer at Detroit River Days with the DNR Forest Resources Division.

Owen Gregg BA-Geography (1964)

Hello to everyone in the Department of Geography, Environment, and Spatial Sciences. Sometimes I feel like I'm probably the oldest Geography grad (BA, 1964) to still be contributing to the newsletter; maybe not. I distinctly remember being in the cartography lab on the top floor of the Nat Sci Building, when Kennedy was shot in Dallas. We had the radio on, and we all stood around shell-shocked at the news.

I continue my keen interest in the understanding of climate change, and its effect on us. When Jeff Orłowski showed his film, "Chasing Ice" at MSU a few years ago, I became intrigued with his film-making talent. Earlier in 2017, Jeff released his second film, "Chasing Coral." He entered it in the Sundance Film Festival, where it received the Audience Award - Documentaries. As I had mentioned to Dr. Arbogast a few months ago, I would be happy to help investigate

setting-up a small environmentally-orientated film festival at MSU in the near future.

Secondly, I have been involved with Dr. Joseph Long of the St. Petersburg, FL Coastal & Marine Science Center (US Geological Survey), in setting up cameras to monitor erosion and water incursion on the Barrier Islands of Pinellas County, Florida. This is a challenging project, but a necessary one as Hurricane Irma did significant damage to our beaches here, but we had a good idea as to where the damage would be the worst so early evacuation of residents could take place.

My wife Kay and I continue to make our permanent home here in Clearwater, but also have a home on Lake Minnetonka, Minnesota. Best of both worlds, I guess, although as we get older, harder and harder to maintain. I love MSU-GEO, and hope to become involved with the Alumni Relations Committee in the near future.

John Harrington, Jr. BS 1972 PhD 1980

For the past 24 years, I have been teaching and contributing scholarship from the geography program at Kansas State University. I am now working with my last 2 PhD students to get them finished in 2018. K-State has been a good place to wrap up a lengthy career. It was a huge honor last year to receive the Lifetime Achievement Award from the AAG Climate Specialty Group. My wife Lisa and I have plans to relocate to NW Oregon or SW Washington during the second half of 2018

Dennis K Hausker Class of 1969

My status really hasn't changed. My wife and I retired in 2003. She was a teacher and I was a medical adjuster.

Our significant current event is we're joining the MSU Alumni tour going to Australia/New Zealand on Jan 21st. It's to celebrate our 70th birthdays and 50th wedding anniversary.

Jen Holmstadt MA 2008

I work for an engineering firm called WSB and Associates based out of Minneapolis. I'm responsible for building a new geohazard risk assessment business line for WSB. My group uses geomor-

phic methods to assess the risk of natural hazards to infrastructure, primarily transportation infrastructure and oil/gas assets. Currently, we are designing a model for Minnesota DOT that will rank slope vulnerability along trunk highways, allowing them to objectively prioritize mitigation actions and capital expenses. For oil/gas clients, we help them manage risks to pipeline integrity--flooding, slope failures, freeze/thaw cycles, etc. Most of my time is spent managing my group, securing new clients, serving on industry committees, teaching classes, and giving presentations.



**Laura Johnson and
Nick Perdue**

Nick Perdue ('12) and Laura Johnson ('16) are faculty members in the Department of Geography at Humboldt State University. Nick obtained a tenure-track position in 2016 and has been teaching cartography and topical courses such as Urban Geography and Geography of the American West. He is working on place-based cartographies on local experiences of sea level rise. Laura, now faculty in the Department of Geography, has also taught courses in departments of Sociology, Anthropology, and Environmental Studies at HSU, including a capstone Community Action Research course and several topical courses centered on power/privilege and environment. On a personal note, Laura and Nick are getting married this June on the summer solstice and are grateful to MSU's Department of Geography, Environment, and Spatial Sciences for bringing them together!



Karen Johnson-Webb, PhD
BA 1989; MA 1994
Associate Professor of
Geography
Bowling Green State
University

I am in my 18th year at Bowling Green State University in the Geography Department. I have just returned from a semester-long Faculty Improvement Leave during which I designed and began conducting an intersectional study of the effects of structural racism on black women of child-bearing age in Lucas County, OH. Stress on the body, which is one of the impacts of structural racism may be a factor in the high rates of black infant mortality in Ohio. This is a qualitative study and I am currently interviewing women about their life experiences.

I have developed two new courses: Global Pestilence and Plagues which looks at the geographical factors associated with infectious disease epidemics and pandemics, both past and present. I also will teach a course called the Geography of Health and Climate Change which will be offered as part of one of the department's new specializations: Specialization in Human Dimensions of Climate Change.

My husband Tanya Webb and I live in Toledo, OH where he teaches in Toledo Public Schools. Our daughter Danielle (I don't know how many faculty are left that remember me carrying her around Nat Sci in her car seat!) and her long-time partner Zakia were married in September 2016 in a beautiful wedding and they reside in Durham, NC.

Fatimat Adebisi

I am currently doing an MA (Educational Studies) program at the University of Michigan, Ann Arbor, MI. I plan to integrate GIS in my work as a curriculum designer in the future. My knowledge and skills in GIS are very relevant to my future career goals as far as location and education are concerned.

Jim Root

I'm a 1970 graduate of your department as well as a Masters at Western Michigan and a PhD at the University of Cincinnati. I've spent my career as an applied geographer doing location research. Shortly after retiring out of MapInfo who had bought Thompson Associates, I started another location based company called Competitive Analytics, my current company. We develop retail, restaurant and shopping center location databases in the USA and Canada and develop tools to process MMD-massive mobile data (location surveys compiled from cell phone usage). To do this, we have developed a virtual company with associates in Canada, Cyprus, Vietnam and Russia to help manage the continuous updating process. One area in which we constantly need help is the review function, insuring that the contractors are doing a thorough, complete and professional job. We therefore need to recruit geographic professionals to work part time. Our work these days is largely done in our cloud-based systems, so the work can be done anywhere there is an internet connection and at any time. This may be an outstanding part time position that is both rewarding and professionally relevant. I myself didn't discover that there was a world of applied geography outside of academia and government until I was working on my PhD. If you think your students might have an interest in such employment, I would like to talk with you further and could be available for an on-campus visit after the holidays.

Bill Ryerson MA 1981

After graduating from MSU, Bill went to work for a contractor working at the NASA Goddard Space Flight Center on the development of Landsat IV. After that he used his geographic and cartographic skills working for defense contractors supporting US mapping and intelligence communities. However, while semi-retired, he has been working during the

summer in Grand Teton National Park. The first two years was as an Interpretive Specialist (nature, history, culture) with the Grand Teton Lodge Company. Last year, Bill achieved his dream job and was hired by the National Park Service as a seasonal Ranger in the Tetons (Yahoo!). He fully expects to be back this year. He originally applied for such a position in 1981 and it only took 36 years to have it happen!!

P.S. Bill would be happy to answer queries about working for the NPS.

Thor Sawin

I graduated in Dec 2000 with a BS in geography. It was actually though doing some linguistic maps of Michigan for Dr. Dennis Preston, a linguistics professor at MSU, while I was an undergrad that I ended up getting a MA in Linguistics and TESOL from Michigan State. I taught languages and linguistics in Lithuania, China, and South Korea for six years, before earning a doctorate in Linguistics from the University of South Carolina. Since 2013 I have been a professor of Applied Linguistics at Middlebury Institute of International Studies (a graduate school of Middlebury College) which is located in Monterey, California. Some of my research relates to spatial dimensions of language use and meaning, and I even presented at the American Association of Geographers conference in 2016 in the session on linguistic geography.



Steve Schultze

I'm a tenure-track professor at the University of South Alabama. Currently my research focuses on the effects of micro-climates on specialty crop production in the South. I'm working with colleagues from Auburn to look at the effects of frost and extreme cold on the region's citrus, blueberry, kiwi, and peach production. Should all go according to plan, we are looking to develop a real-time, in-field, frost warning phone app for growers

in our region based. But that's kind of boring, so I started development on a variety trial for beer hops in our region which saw success in Year 1. I've also accepted the position of Program Director for the University's GIS program.

This May, I'll be taking 11 students up to Michigan for 2.5 weeks. We'll be stopping in Berrien Springs, Ludington, Sleeping Bear Dunes, Old Mission Peninsula, Mackinac Island, Pictured Rocks, Tahquamenon Falls, Downtown Detroit, and even East Lansing. See you in NOLA, Steve.

Heidi Streeter (Dosdall)

I graduated from MSU in the Spring of 2006 with a BA in Geography. After graduating from MSU I worked for many years in compliance with a company that handled Section 8 and Tax Credit properties. In the years since, I found a passion for health and wellness and recently graduated from chiropractic school. I am now living and working in Minneapolis as a chiropractor!

Nick Swartz

After six years with an environmental consulting company, in March 2017 I started a new position as a Resource Analyst with the Michigan Department of Natural Resources. I mainly provide GIS support for our state forest inventory program, where we manage 4 million acres of state forest to get the most out of Michigan's natural resources. I have also started using new GIS technologies such as ArcGIS Online, Collector, and ArcGIS Pro. It's a great gig!

Michael R. Talbot Tucson, Arizona MSU Geography 1992 WMU Geography 1994

Greetings Friends, Faculty, and Alumni of MSU Geography.

Since graduating in 1992, I moved on to Western Michigan to pursue my MA in Geography while working for a short time with GIS. I also got my feet wet teaching a course in GeoStatistics for WMU before relocating back to Arizona where my wife is from. Not long after arriving in Tucson, I was brought on as an adjunct at the University of Arizona to teach GIS and Computer Cartography. In 1998 an opening to teach Geography full time opened up at Pima Community College here in Tucson and that is where I've been ever

since. Technology has made a tremendous improvement in our discipline and I try to enlighten all students who come my way on the possibilities of Geography as a major and career choice. I truly enjoy teaching much more than I ever thought was possible and have no plans to ever stop doing something that doesn't seem like WORK. Good luck to all who opt for MSU Geography, I left a piece of heart on the banks of the Red Cedar, and I'm sure many others have as well.

Josh Watkins

It has been a very eventful year! I completed my PhD from the University of California, Davis and started a new position at Texas A&M University as a Visiting Assistant Professor of Geography. Most importantly, in January 2018, my wife and I welcomed a newborn into our family. I want to thank everyone at MSU Geography for their help along the way and wish everyone a great 2018.

Richard Welch

Merry Christmas and Happy New Year, everyone in Geography at MSU. I got my Master's in Historical Geography under Dr. Daniel Jacobson in 1972/1973 and spent 35+ years in the history museum field. I retired in 2007 and immediately started a new career as a screenwriter in the movie and TV industry. I am now Consulting producer and Screenwriter of a feature film titled "Baby Harry's Hollywood" that should go into production early in 2018 and with any kind of good luck, I'll be on location in the People's Republic of China writing and producing "Chongqing Days, Tucson Knights".



Thomas A Wilczek, '83.

I have continued to advance the growth of the drone and UAS system industry both in Nevada, the US and globally. Along with my current title of Defense and Aerospace Liaison for the Nevada Governor's Office, I am also the Interim Executive Director for the Nevada Insti-

tute for Autonomous Systems. This year I also become a Distinguished Professor of Practice - Autonomous Systems Law and Policy at the Greenspun School of Urban Affairs at UNLV. At UNLV I teach graduate level classes in drone and autonomous systems law and policy. I am also the Principal Investigator for the State's two contracts with NASA-Ames Laboratory, where we are assisting NASA in the development of the UAS Air Traffic Mgmt (UTM) system. Lastly, I had the pleasure of accompanying NV Governor Brian Sandoval on an Oct '17 trade mission to Poland, where I executed an MOU with the Polish Institute of Aviation on joint drone technology development, and was a speaker at the Warsaw School of Economics. I will be traveling frequently to Poland in 2018 to advance the goals and objectives of the MOU.



Charles Gichana Manyara PhD, 2000

I am currently stationed at Radford University, Radford Virginia. I am the Chair of the Department of Geospatial Science. When I moved down here in southwest Virginia like any young faculty, I taught a whole range of courses. Presently I teach technical courses mainly geospatial data, applied GIS, remote sensing and surveying techniques (LiDAR and Surveying). About ten years ago, together with three colleagues from Ohio, Alabama and Washington State we formed the Kenya Scholars and Studies Association (KESSA) (see, www.kessa.org). The association's strength has been its annual conferences, the publication of an online journal and edited books. Last year we published two book volumes. I have a chapter in one of the books (Kenya After 50: Reconfiguring Education, Gender, and Policy (African Histories and Modernities), ISBN: 978-1137574626) on road traffic accidents (RTAs) in Kenya. This will be my last year as treasurer and web-manager for KESSA.

Things are looking good. I am forever grateful for the education I received at MSU.

Marvel Lang PhD 1979

MARVEL LANG who graduated in 1979 with a PhD in geography retired from MSU's College of Social Science in 2011. He is now living in North Haven, CT and spends his time researching and writing spiritual books. His latest is titled:

"The Secrets of the Lord." He is currently working on one titled:

"The Fruits of the Spirit and More" which will be published in 2019.

Brandon Lambrix PhD 1979

I currently am a Transportation Planner within the GIS Unit at the Michigan Department of Transportation. My responsibilities include:

Creation of static maps displaying MDOT assets for different regions of the state.

Utilizing ArcGIS Online for the creation of story maps, web applications, and collector applications to display and capture information about MDOT assets.

I work with RS&GIS at MSU to get MDOT employees training with GIS and maintain Esri e-Learning for online training for MDOT employees.

I conduct public outreach for the GIS Unit that allows us to maintain visibility at various job fairs and GIS events.

I also maintain GIS related pages within the departments SharePoint system.

Merle Johnson MA 1981 Debbie (Sadler) Johnson MA 1982

Merle Johnson, MA 1981, and Debbie (Sadler) Johnson, MA 1982 and MLIS Wayne State 1999, recently retired and are now residing in Kearney, NE. We both worked in federal, state and local government GIS and cartographic positions in Salt Lake City, Tucson and Ann Arbor. Merle retired from the City of Ann Arbor after nearly 25 years with a total of about 34 years in GIS. Debbie retired following nearly 20 years as a public librarian. Please contact us at a3johnsons@gmail.com.

Julia Flagg Affolder MA 1996

Currently living in the Chicago suburbs with my husband Ryan. I work as a Senior Technical Instructor for Videojet Technologies, Inc. working with industrial lasers. Also involved in the research and development of our products. Teaching a remote sensing lab section while at MSU was what really led me go my current career as I discovered a love of both teaching and technology.

Get to travel both domestically and internationally for work and for fun. Heading to New Zealand later this spring after travelling to Singapore, Cambodia, Peru, and Germany in the past two years.

Emily Hoppel

I passed the US Customs Broker License Exam in April 2017 and my Customs Broker License application is pending (Houston office has been taking a loooooong time to get through them). Still working in Global Trade Compliance for Chevron Phillips Chemical focusing on auditing and continuous improvement.



Jenifer Fisher

I don't have much to say...still work for Consumers Energy in their GIS department doing specialty maps for internal departments. I did get to go to the ESRI UC this past year though and ran into Jay (Strahan)!

George Dynnik

I am a recent retiree. I graduated from MSU in 1980 with a Bachelor of Science degree in Geography. After that I worked in the IT field for 35 years and just recently retired. I had lived in Michigan since 1966 but became a "Winter Texan" in 2014, living part of the year in Texas and the other part in Michigan, since I was able to work from home. I left my job in 2016 (actually my job left me) and decided to retire. I live in a retirement community in Mission, Texas for most of the year but do come up to Michigan for part of the summer to escape the Texas heat. I got a job as a substitute teacher recently, so I guess that makes me semi-

retired but that's ok. I really enjoy doing it.

I visit the MSU campus as often as I can. I still consider it the most beautiful campus that I have ever seen and still enjoy walking around on it. I always make a point to visit the Geography department and see what is going on there. When I was a student, the Geography department did not have its own building, so you current Geography students should feel fortunate that you now do.

Wishing everyone the best from Texas!

Timothy Ned Caywood

Nothing to share. My career path took me in a different direction but still think fondly of my time in the department. Several professors left a lasting impact on me, Dr. Winters, Dr. Harmon and Dr. Sommers. With my education and experiences at MSU I have gone on to a satisfying life. Thanks for staying in touch.



Peter Busalacchi

Just a day before receiving the most recent communication in my inbox, I was telling my girlfriend the story of our field trip to Kansas when our tour was derailed by patch of tornadoes, leading to the flooding of our camp site. GREAT timing =)

After graduating from MSU in 2003 with a degree in Geography (Specializing in GIS), I began my career as a Real Estate Strategy Consultant with Thompson & Associates in Ann Arbor. There, I primarily worked on the Home Depot account; evaluating the net impact of adding or subtracting stores from a market, preparing overall market strat-

Robert L. Brown Class of 1973 & 1975

Graduated with a Geography/Secondary Degree in 1973. Jobs were scarce so I was a substitute teacher in Jackson County for a year then went back to State for 16 months and got my a second degree in Elementary Education. Worked as a high school teacher for one year on the Standing Rock Native American Reservation in McLaughlin, South Dakota then moved to Watertown South Dakota where I taught fifth grade for six years. I received my Master's Degree in Elementary Supervision to become a principal, but never used it, I enjoyed being in the classroom too much. After my six years in Watertown I moved to Baltimore, Maryland where I taught fourth and fifth grades for 7 years then taught reading and science in sixth grade in a middle school in Catonsville, Maryland outside of Baltimore for 13 years. I moved to Gulf Shores, Alabama where my parents from Jackson had retired so I could be near the beach and not see any more snow. I taught middle school Math and Science for four years at a Catholic school before retiring for good. I meet a lot "snow birds" down here during the winter months, most from Michigan. Always chat wanting to know where they are from. One couple has a son that is teaching Math at the same high school I went to in Michigan Center, Michigan outside of Jackson. Still a big

"Sparty" fan and have my alumni license plate frame and a large Spartan head on my back windshield. Get some catcalls from those people who went to that other school in Michigan in Ann Arbor and I just remind them about the past ten years of football games. I loved my Geography classes and I was on scholarship from my high school when before my senior year I received a letter over the summer stating that my scholarship had run out of funds but because I was so close to graduating, State was going to pay the last year of my schooling. Will always be grateful for that.

Darren Grafius

Darren Grafius (graduated 2005) has been continuing his postdoctoral research in the United Kingdom, and is now working at the University of Sheffield. He is contributing his mapping and modeling expertise to a project focused on understanding the potential of urban green infrastructure to produce food and biofuels, and hopes that this work will help contribute to sustainability goals and help make cities more liveable and self-sufficient

Donna Batch

After graduating from the MSU Geography Department in 1975, I earned an MS degree in Geography from Oregon State University. During my tenure at OSU, I was fortunate to have an assistantship and managed a cartographic lab under the direction of my major professor. Over the course of the next 35 plus years, I worked in the field of Community and Economic Development for a variety of organizations at the local, state and federal levels. The last nearly 18 years of my career were spent at the U.S. Department of Housing and Urban Development (HUD). My final year HUD, I served in the Obama Administration as the HUD Regional Administrator for the Northwest Region, overseeing work in a four state region with over 250 employees. I retired from HUD on Jan 20, 2017 but continue to work part time as a consultant. I reside in Seattle, WA with my husband. Our son is soon to become a graduate of the University of Washington. I have fond memories of my time in Geography at MSU, particularly the field trips taken under the director of Dr. Harold Winters and Dr. Jay Harman. I am grateful for the foundation the Geography Department provided, which led me to a rewarding and exciting professional career.

The MSU (1) – MSU (2) Connection By David Castillon

The Michigan State (MSU-1) – Missouri State (MSU-2) connection involves The Departments of Geography at each university. It started in 1973 when the graduates from MSU (1) moved to MSU (2) Southwest Missouri State University (name changed to Missouri State University in 2005). Five MSU(1) graduates began Teaching and Research at MSU(2).

Name	MSU(1)	MSU(2)	Retired Emeritus Professors
David A. Castillon	PhD 1972	1973	2000
William H. Cheek	PhD 1976	1973	2007
John C. Catau	PhD 1973	1978	2012
William T. Corcoran	PhD 1981	1984	2010
Debbie B. Corcora	PhD 1980	1995	Still Active Teaching Senior Instructor

Administrative Positions in MSU(2)

David A. Castillon	Geography Department Head 1997-2000
William H. Cheek	Assistant Dean CNAS 2003-2007
John C. Catau	Assistant Director of Assessment 2000-2012

Many Books, Research Articles and Lab Manuals were authored by this group of Michigan State graduates. We were all blessed with an outstanding graduate education at Michigan State (Department of Geography).

THANK YOU!

To all who contributed to the various Geography Department funds and scholarships. We are making continued efforts to increase our departmental contributions to enhance our programs and benefit students. Please consider donating to one of the Geography Department funds listed.

Please specify desired fund and make checks payable to:
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East Lansing MI 48824

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Geography at MSU Fund

Established in 2001 to promote the MSU Department of Geography, including related advertising, fundraising, travel, and similar expenses.

Geographic Field Experience Fund

Established in 2001 to fund student field experiences, including field trips, primary data collection, course related field experience, and transportation and lodging expenses.

Geographic Literacy Fund

Established by Harm de Blij, this fund promotes the field of Geography to students.

Michael A. Graff Dissertation Completion Award

Established by Michael Graff to provide doctoral students with additional resources for travel, data collection, materials, supplies and equipment to complete research for dissertation projects.

• **The de Blij Geography Scholars Endowment**
Established in 2013 as a scholarship to be awarded to incoming freshmen who choose to major in Geography.

Ian Matley Memorial Fund

Established to bring guest speakers to campus to enrich the geographic education of students and faculty.

GTU/Geography Endowment Fund

Established in 1999 by Robert and Dorothy Thomas to fund geography-related student activities.

E. James Potchen Awards in Geography for Graduate and Undergraduate Students

Established in 2008 by Harm de Blij to fund yearly cash awards for outstanding graduate and undergraduate students based on GPA, progress towards degrees, and other quality indicators such as field work and research.

Harold A. "Duke" Winters Scholarship

To support graduate study in Geography at MSU.

Jay R. Harman Undergraduate Scholarship in Geography

To support undergraduate study in Geography at MSU.

Marjorie & Lawrence Sommers Geography Graduate Fellowship for International Research & Travel

A graduate fellowship to be awarded yearly for Masters or PhD students to support international research and travel.

Owen Gregg Endowment for Global Climate Change Research

Established in 2012 to support global climate change science research in the Department of Geography.

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\$ _____ GTU/Geography Endowment Fund

\$ _____ Geographic Field Experience

\$ _____ E. James Potchen Awards

\$ _____ Geographic Literacy Fund

\$ _____ Harold A. "Duke" Winters Scholarship

\$ _____ Michael A. Graff Award

\$ _____ Jay R. Harman Undergrad Scholarship

\$ _____ de Blij Geography Scholars

\$ _____ Marjorie & Lawrence Sommers Int'l Rsch

\$ _____ Ian Matley Memorial Fund

\$ _____ Owen Gregg Endowment-Global Climate Chg

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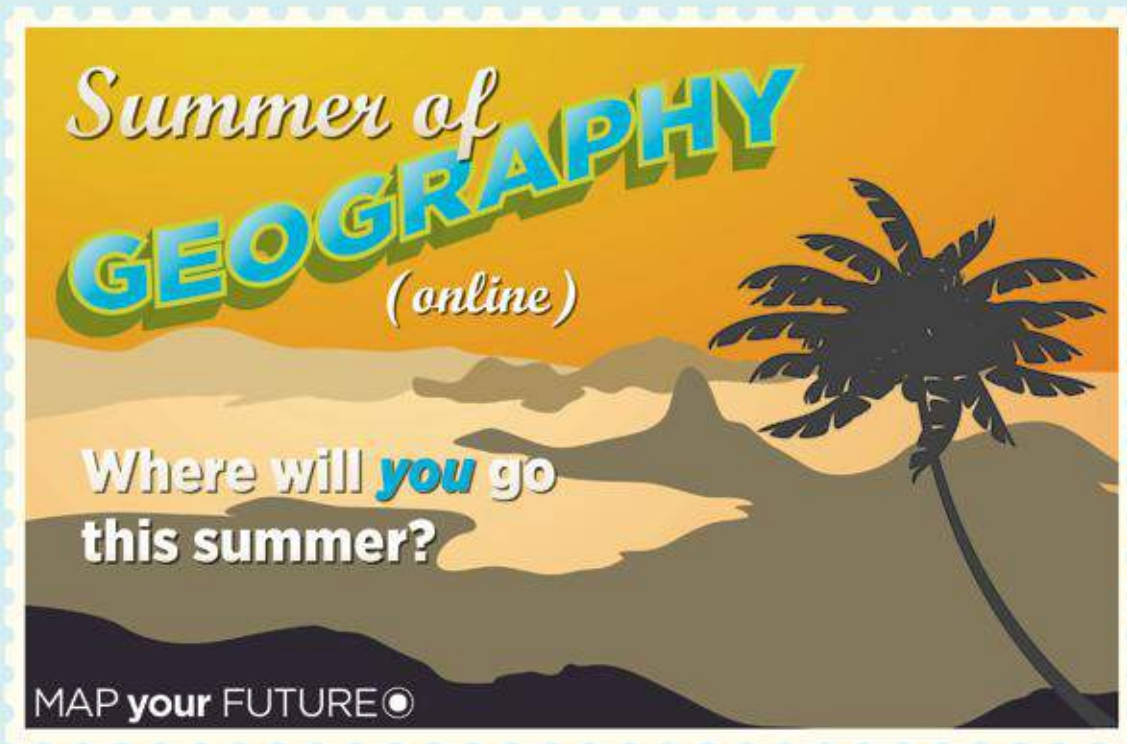


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We hope you find this newsletter informative and interesting. One way you can help keep it that way is to send us news about yourself. Share news about your career, family, or other things with your fellow alumni. Send an e-mail or letter and we will insert it into the next issue of the newsletter. Thanks for helping make the newsletter even better.

We also encourage you to keep in touch and provide your contact information. We have been working very hard to update and correct our e-mail and mailing lists. Please notify us whenever you have a change of mailing or e-mail address. This and past newsletters can be viewed on-line at our website, <http://www.geo.msu.edu/aboutus/category/newsletters/>

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