

# Geography

SUMMER 2016 NEWSLETTER



THE UNIVERSITY OF GEORGIA

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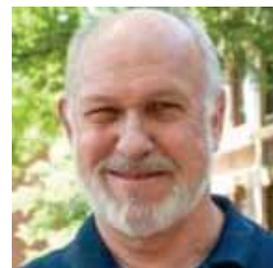
## WELCOME FROM DEPARTMENT HEAD THOMAS MOTE



Welcome to a belated spring 2016 installment of the Geography Department newsletter. I hope you enjoy reading about the events and accolades in the department over the past year. We are particularly proud of all of the impressive honors earned by our undergraduate and graduate students!

We had a number of transitions in the department during the past year, including a new addition to our staff, **Barbara “Bobbi” Snodgrass**. Bobbi is a native of Muncie, Indiana, but she raised her family on a farm in northeast Georgia. She joined the university from the private sector this May with an appointment split between the departments of geography and geology. Bobbi assists with accounting tasks in the department, among other responsibilities.

In another transition, **Robert Phares**, web developer for the departments of geography and geology, retired in December 2015 after working in the departments since 2005. In addition to his work maintaining the Geography website, Robert was the “go to” person on many types of computer issues around the department, and he could



Robert Phares

Continued on next page

always be counted on to provide a sweet treat for the staff. Congratulations to Robert, and we wish him the best in his retirement.

**Kavita Pandit**, who had been a member of the University of Georgia and Department of Geography since 1987, except for a brief detour north to New York, accepted a position as the associate provost for faculty affairs at Georgia State University in Atlanta. Kavita is the former head of geography and former associate dean for the Franklin College of Arts and Sciences. Kavita was serving as the associate provost for international education at UGA before she accepted the position at Georgia State in March. While we will miss seeing Kavita on campus, she will continue to maintain a residence in Athens. We wish her the best in her new position in Atlanta.

**Dylan Tracy** of the Franklin College Office of Information Technology rejoined the department in June 2016. Dylan had been the FOIT representative working in geography until moving to North Campus in 2014. We were delighted to welcome Dylan back to the department this summer.

We learned in late spring that **Hilda Kurtz** and **Xiaobai Yao** will be promoted to the rank of professor effective in fall 2016. Xiaobai also serves as the graduate coordinator of geography, following five years of outstanding service by **Steve Holloway** in that capacity. Steve accepted a new role as the associate head last summer, after four years of excellent work by **David Leigh** in that role. Thanks to Steve and David for their service, and congratulations to Hilda and Xiaobai on their promotions!

Last, but not least, **Jane Worley** has moved into a new position in the department as grant coordinator. Jane will continue handling some accounting responsibilities, but she will now have a greater focus on managing the growing portfolio of external funding in the department.

Outside of the department, many of our faculty and students have been actively involved in the local community. **John Knox** was elected to the Clarke County Board of Education, and **Andy Herod** was reelected to the Athens-Clarke County Commission. Congratulations to Andy and John!

In other news, the department has been active in updating our curriculum during the past two years. We updated our GIScience certificates to streamline the requirements and open the coursework to other departments. Inside this newsletter, we share news about exciting new undergraduate and graduate certificates in Urban and Metropolitan Studies. Finally, we submitted a proposal for a new Bachelor of Science major in Atmospheric Sciences, which has been approved by the university and is awaiting consideration by the Board of Regents. The major would replace our successful undergraduate certificate in Atmospheric Sciences. We hope to share good news on the major in our next newsletter.

We also have great news to share about important scholarship and engaged learning activities ongoing in the department. You will see several examples in this newsletter; in particular, please take time to read about our preparations to build and launch a small satellite.

Thank you for taking time to follow the happenings in UGA Geography. We want to reach out to as many of our alumni and friends as possible, and we hope you enjoy learning about the success and achievements of our students, staff, and faculty. We encourage you to visit the department if you are on campus. Please contact me if you plan a visit.

*--Thomas Mote, Department Head*



UGA undergraduates Caleb Adams, Khoa Ngo, and Megan Le Corre.

## Research Spotlight: Geography-led team to build and launch “CubeSat”

A University of Georgia project led by a team of undergraduate students and including faculty from the Franklin College of Arts and Sciences and the College of Engineering was recently selected for funding by NASA’s CubeSat Launch Initiative.

The UGA proposal, “CubeSat for GA Water Resources,” to NASA’s Undergraduate Student Instrument Project will receive \$200,000 in funding to prepare for a launch date 18 months from the project start date this month.

The spectrographic observatory of coastal regions, or SPOC satellite playfully known as DAWGSat, will be designed to perform the first moderate resolution multispectral analysis of vegetation health, ocean productivity, near-coastal sediment, organic matter and production of shelf waters and salt marshes from low Earth orbit, in this case an altitude of 400 kilometers.

A second CubeSat project also won \$200,000 in funding—one of 10 selected by the U.S. Air Force Research Laboratory—to build the mapping and ocean color imager, or MOCI, to perform a photogrammetric analysis, known as “structure-from-motion,” in low Earth orbit to generate 3-D point clouds of broad scale structures on the Earth’s surface.

The UGA proposal to NASA was one of 43 selected for funding by its Office of Education and the Science Mission

Directorate. The student-faculty collaboration will support the Small Satellite Research Laboratory to build both cube satellites.

“It’s two parallel ideas running at the same time—one from the students’ side and one from the faculty side,” said the project’s principal investigator **Deepak Mishra**, associate professor in the Department of Geography.

UGA undergraduate students were planning to kick-start their own CubeSat for \$10,000 until they realized that they could join forces with the university’s faculty and do something even better.

“Everyone was really excited when we realized this. The students had the manpower and motivation to actually build the craft, but we had absolutely no idea what it was going to do,” said Caleb Adams of Powder Springs, an astrophysics and computer science double major and chief manager of the satellite research lab. “We have a very diverse team—engineering, physics, computer science, mathematics—and all of the puzzle pieces clicked in a really perfect way.”

Other key student members include Nicholas Neel, mathematics; Khoa Ngo, mechanical engineering; Megan Le Corre, mechanical engineering; Kenny Chochran, marketing and finance; Jaicob Stewart, computer science; Juweek Adolphe, computer science; Paige Copenhaver, astronomy; and **Nirav Ilango**, geography and computer science.

“It’s been an amazing and humbling experience to be able to work with everyone on the team and to be a part of this project,” said Le Corre, mechanical team lead and a fourth-year student from Peachtree City. “It’s really exciting to see how much we’ve done in such a short amount of time and to imagine how much further we’ll be in just a few more months.”

Other geography members of the faculty team include **Marguerite Madden**, professor of geography and director of the Center for Geospatial Research (CGR); **Sergio Bernardes**, associate director of CGR and formerly a researcher at NASA; and **Marshall Shepherd**, Georgia Athletic Association Distinguished Professor and former NASA scientist. The team also included faculty from the Department of Mathematics and Department of Marine Sciences, and drew on experience from UGA alumnus Roger Hunter, current small spacecraft lead for the NASA Ames Research Center.



David Cotton, Caleb Adams, Deepak Mishra, and Megan Le Corre in the Small Satellite Research Lab.

The student-faculty team met weekly, and the undergraduate team developed both proposals by piecing together ideas discussed in the meetings.

“It was an intensive exercise and we got a lot out of that process,” said Neel, a third-year student from Chickamauga. “The functionality idea is to allow a small satellite to perform like a large satellite, a commercial satellite or a satellite that would be built by NASA,” Bernardes said. “It reflects the direction of the remote sensing community more broadly, toward more cost-efficient technologies that still allow us to have images covering the entire planet daily.”

The Small Satellite Research Lab will be the first space program at UGA. “The opportunity for students to design, test and build a satellite system is very unique, one that few universities offer. I think the implications will be far reaching for UGA,” said David Cotten, a research scientist at CGR and supervisor of SSRL.

“UGA has no space program, and ours was among the few proposals accepted from a university without a space or aerospace program,” Caleb Adams said. “We want to build a future in low Earth orbit and space for UGA.”

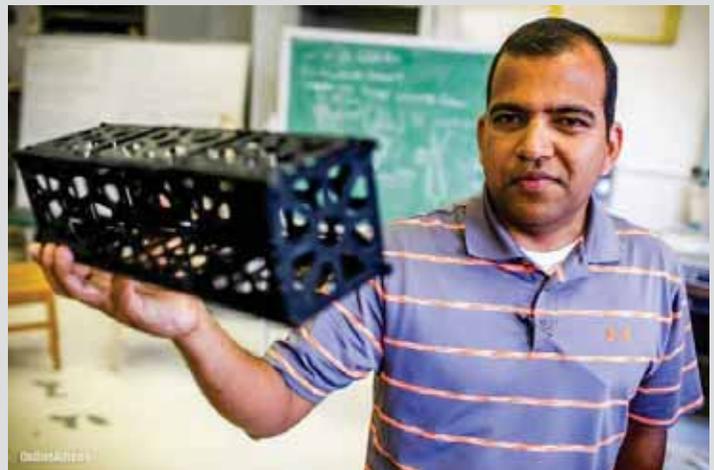
One route to that goal is building a space-rated ground station at the university, a facility at very few universities, but one that would allow for communication between campus and objects in low Earth orbit.

“One of the really nice things with the NASA component of this is that the students get to go to NASA, so a lot of

vibration testing and heat testing will be done in partnership with NASA,” said Associate Professor Adrian Burd of the UGA Department of Marine Sciences. “The students get to go and work with those scientists, engineers and their equipment.”

The faculty team members put the success of the UGA CubeSat program thus far squarely on the shoulders of the undergraduate student team.

“What this team of talented and enthusiastic students is doing shows us a pathway for what we can be doing here at UGA in 10 years time,” Burd said. “By then we could have a well-developed, cutting-edge small satellite development program involving students and faculty in the design and development of novel technologies and uses for these satellites.”



Deepak Mishra holds a 3-D printed model of the CubeSat.

“The university has shown tremendous support for the projects,” Mishra said. The Small Satellite Research Lab has received pledged financial support from President’s Venture Fund, Office of the Vice President for Research, Center for Undergraduate Research Opportunities, UGA College of Engineering, Georgia Sea Grant and the Departments of Physics and Astronomy, Mathematics and Geography. A full list of the student and faculty team members, as well as more information on each of the projects, is available at <http://www.smallsat.uga.edu>. To raise additional funding for the Small Satellite Research Lab, a UGA crowdfunding project has been launched. For more information on giving to this project, please contact **Emily Coffee** in the Department of Geography.

– By Alan Flurry, Franklin College



## Student Profile: Mathew Hauer

A new study by University of Georgia researchers could help protect more than 13 million American homes that will be threatened by rising sea levels by the end of the century.

It is the first major study to assess the risk from rising seas using year 2100 population forecasts for all 319 coastal counties in the continental U.S. Previous impact assessments use current population figures to assess long-term effects of coastal flooding.

The study is based on analyses by Mathew Hauer for his doctoral work in the Department of Geography; Deepak Mishra of the Department of Geography; and Jason Evans, a former UGA faculty member now with Stetson University. It was published in the journal *Nature Climate Change*.

Based on year 2100 population forecasts, the authors report that a six-foot sea level rise will expose more than 13 million people to flooding and other hazards from rising seas. Florida faces the most risk, where up to six million residents could be affected. One million people each in California and Louisiana also could be impacted. Scientists believe worldwide sea levels could rise by three to six feet by 2100. Even with a three-foot rise, population trends indicate that more than 4.2 million coastal residents in the continental U.S. would be at risk, according to Hauer.

“The impact projections are up to three times larger than current estimates, which significantly underestimate the effect of sea level rise in the United States,” Hauer said. “In fact, there are 31 counties where more than 100,000 residents could be affected by six feet of sea level rise.”

The data can help policymakers develop practical adaptation strategies for protecting land threatened by frequent and repeated inundation, according to Mishra. “This research merges population forecasts with sea level rise. It gives policymakers more detailed information to help them assess how sea level rise will affect people and infrastructure,” he said.

By employing year 2100 population projections, the data also provide a more accurate measure of potential flooding risks in some of the nation’s fastest-growing communities, Hauer said. For example, more than 25 percent of the people living in major urban centers like Miami and New Orleans could face coastal flooding by the end of the century if adaptive measures aren’t taken. “Adaptation strategies are costly, and these are areas of especially rapid population growth, so the longer we wait to implement adaptation measures the more expensive they become,” Hauer said.

With a six-foot rise in sea level, flooding could impact more than 80 percent of the people living in America’s three most vulnerable communities: Monroe County, which is the site of the Florida Keys, and two lightly populated counties on the North Carolina coast, Hyde and Tyrrell.

More than 10 percent of the population in Georgia’s coastal counties would be impacted by coastal flooding, including 18 percent of the people who live in Chatham County (Savannah) and 29 percent in Glynn County (Brunswick).

Outside of the Southeast, a six-foot rise in sea level would put at risk more than 16 percent of the population in San Mateo County, California, just south of San Francisco, and over 10 percent of the population in Nassau County, New York, which is on Long Island just east of New York City.

– By Alan Flurry, *Franklin College*



## Student Profile: Jonah Driggers

Geography major Jonah Driggers spent last summer interning for the Office of Climate Preparedness and Resilience at the White House Council on Environmental Quality. Most of his time was spent working on issues including response to climate change-driven disasters, disaster readiness, and community and ecological resilience to climate change.

“I also got to enjoy a variety of very cool ‘perks’ – I sat in on meetings of high-level government officials, gave tours of the East Wing, toured the West Wing, waved to Vice President Joe Biden on several occasions, watched Marine One take off from the South Lawn, and bowled in the Truman Bowling Alley. It was a fantastic experience, and one that I will forever be appreciative of,” Driggers said.

Driggers was also named a 2016 Morris K. Udall and Stewart L. Udall Foundation Scholar. The scholarships of up to \$5,000 are awarded annually to outstanding sophomores and juniors pursuing careers related to environmental or Native American public policy. Driggers is the ninth UGA student to be awarded the scholarship in the past six years. He is one of 60 Udall Scholars nationwide chosen from nearly 500 nominees.

Driggers, a third-year student from St. Simons, is a recipient of the Foundation Fellowship, UGA’s premier

undergraduate scholarship. He is pursuing a bachelor’s degree in the Department of Geography and a combined master’s degree in conservation ecology from the Odum School of Ecology. Following his graduation, Driggers plans to pursue a Juris Doctor to fulfill his career aspiration of working as a policy leader to help the U.S. transition to clean energy.

“The University of Georgia is proud of Jonah and his outstanding accomplishment,” said President Jere W. Morehead. “The impressive academic and professional experiences he has gained as a UGA student prepared him well for this national competition and will continue to serve him as his career progresses. We look forward to great things from Jonah.”

An avid outdoorsman and Eagle Scout, Driggers has explored his passion for environmental policy as director of the Center for Energy and the Environment, which is part of the UGA chapter of the Roosevelt Institute, a student-run think tank. He is a founder and co-executive director of The Energy Concept, an organization that stimulates discussion of interdisciplinary energy strategies, and he served as an intern in the Office of Climate Preparedness at the White House Council on Environmental Quality.

“Jonah is a most deserving Udall recipient, and I congratulate him on earning this prestigious award,” said David S. Williams, associate provost and director of UGA’s Honors Program. “He has a strong record of service and achievement across the board—exploring and promoting innovative energy solutions at national, state and local levels. He is truly dedicated.”

The Udall Foundation was established in 1992 to honor U.S. Rep. Morris K. Udall for his 30 years of service to Congress, and 2009 legislation incorporated the name of his brother, former U.S. Secretary of the Interior Stewart Udall. The independent agency conducts programs that promote leadership, education, collaboration and conflict resolution in the areas of the environment, public lands and natural resources.

— Includes material from Camie Williams, UGA News Service

## News and Events



### Heynen named editor for Annals of the AAG

The flagship journal of the AAG, the Annals of the American Association of Geographers, began the year with a change of editorship. Bruce Braun and Richard Wright

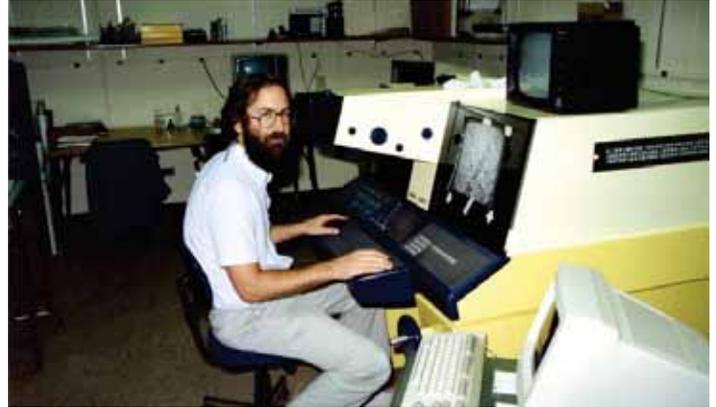
completed their four year terms as editors of the Nature and Society, and People, Place and Region sections respectively. Their successors are James McCarthy and Nik Heynen.

Nik Heynen is a professor in the Department of Geography. He has diverse interests including urban geography, urban political ecology, environmental justice, politics of race, urban social movements, and science and technology studies, which are well-suited to managing the breadth of manuscripts received in the People, Place and Region section of the Annals.

Heynen has considerable editorial experience including seven years in various editorial capacities at Antipode and was founding editor of the Geographies of Justice and Social Transformation Book Series at the University of Georgia Press, which to date has published 25 books with another 20 in process.

Heynen is particularly excited about his new role: “At this point in my career, because of active research I have underway, I do not think there are many journals I would be as interested in editing as the Annals due to both the important disciplinary role it plays but also because of the diverse range of research results it publishes at such a high-quality.”

– From AAG media release



Retired Associate Director Tommy Jordan, working with the cutting-edge technology of an earlier era.

### Geography's Center for Geospatial Research celebrates 30 years

The Center for Geospatial Research (CGR) is celebrating 30 years of excellence in the development of geospatial technologies for interdisciplinary research, education, and public service. The center was founded in 1985 by Dr. Roy Welch as the Laboratory for Remote Sensing and Mapping Science.

CGR Director and Professor Marguerite Madden and now retired Associate Director Tommy Jordan have been associated with the center since its founding.

The center is committed to promoting geographic thinking and the application of geospatial technology in interdisciplinary research, education, and public service.

Members of CGR apply their history of expertise in remote sensing, photogrammetry, GIS, geovisualization, and field surveys to uncover the spatial aspect of projects and research. Their internationally recognized work in natural and cultural resources, terrain analysis, and spatiotemporal modeling addresses critical and contemporary issues in human and environment relationships.



CGR Director Marguerite Madden prepares for flight.

## News and Events continued

### Geography creates new certificate in Urban and Metropolitan Studies

The Department of Geography has created a new certificate program in Urban and Metropolitan Studies that will be available beginning in the fall 2016 semester. The certificate follows in the department's long tradition of scholarship and instruction in urban geography, including such luminaries as the late James O. Wheeler.

The certificate programs initially will be led by Steve Holloway, but also include several other geography faculty members, including Nik Heynen, Hilda Kurtz and Jerry Shannon.

"We have been talking about it for several years. We started serious work in the spring of 2015, and completed the proposals this past fall," Holloway told the Red & Black student newspaper. "This certificate is providing a place for scholars and students from any of those disciplines or programs that have these kinds of interests to synergize together."

The Department of Sociology, College of Environment and Design, College of Family and Consumer Sciences, Terry College of Business, and School of Public and International Affairs will also offer courses included in the certificate program.

The core class is Geography 3630: Introduction to Urban Geography, and it must be accompanied by one other upper division geography course. The other remaining classes must be electives from outside geography. The electives can come from any of the supporting departments including sociology, history, real estate, economics, political science and landscape architecture.

"What we found is that there are a number of departments across campus who've been teaching courses that have to do with urbanization as a process and with urban places, cities, metropolitan areas and suburbs," Holloway said.

"Unfortunately, the certificate will not be instated before I graduate in May. I will be graduating with an urban and community studies emphasis for my geography degree, but would definitely have taken advantage of this program if possible," Rachel "Ray" Paleg, a graduating senior and geography major, told the Red & Black in April.

"The establishment of this certificate perfectly demonstrates the university's dedication to staying relevant in today's global society," Paleg said. "This certificate allows students to examine their interests from an interdisciplinary perspective, focusing on issues in urban contexts."

"Understanding the dynamic urban environment and society's engagement with urban places will benefit any academic major," Paleg said. "The certificate offers an opportunity for students to specialize in an interesting, relevant and continuously expanding discipline."

***"The establishment of this certificate perfectly demonstrates the university's dedication to staying relevant in today's global society," Paleg said.***



Summer 2016 NASA DEVELOP team volunteer project with Trees Atlanta.

## NASA DEVELOP team aids water conservation efforts in Atlanta

The NASA DEVELOP Atlanta Water Resources Team was invited to the Cities Retreat in Atlanta, Georgia to present their project contributing to the development of a conservation program for the metropolitan Atlanta area. Several environmental organizations, non-profit groups, and stakeholders were in attendance.

UGA's Georgia Water Resources project was featured in a NASA Earthzine article on Groundwater Storage Change and Contamination Risks in southwest Georgia. <http://earthzine.org/2016/02/22/georgia-water-resources-groundwater-storage-change-and-contamination-risks/>

UGA's Lead Science advisor, Marguerite Madden and Center Lead, Caren Remillard were invited to present about the NASA DEVELOP National Program at the International Society for Photogrammetry and Remote Sensing Congress in Prague, Czech Republic this July. Their oral presentation will be featured in the Technology Transfer and Capacity Development session.

DEVELOP, part of NASA's Applied Sciences Program, addresses environmental and public policy issues through interdisciplinary research projects that apply the lens of NASA Earth observations to community concerns around the globe. The University of Georgia, Department of Geography and Center for Geospatial Research host the only academic node in the DEVELOP program.

## Pandit receives AAG and SEDAAG honors

Kavita Pandit, associate provost for International Education and professor in the Department of Geography until February 2016, was recognized by regional and national geography associations. She received the 2015 Lifetime Achievement Award from the Southeastern Division of the Association of American Geographers (SEDAAG), at its annual meeting in November 2015.

The award, SEDAAG's highest honor, recognizes geographers who possess an extensive record of research and publication in scholarly journals and books as well as a record of excellence in teaching and advising, a record of service contributions to the individual's educational institution and a record of support to the geography profession.

Pandit also was selected to receive one of the highest honors from the American Association of Geographers: the Ronald F. Abler Distinguished Service Honors. Presented annually, this national award recognizes outstanding accomplishments by members in service to the discipline. It was presented to Pandit at the AAG national meeting in San Francisco in March 2016.

– *UGA Columns*





Georgiana Nedelcu repainting the globe in fall 2014.

## Geography receives Preservation Award for globe restoration

The Department of Geography received a 2016 Historic Preservation Award from the Athens-Clarke Heritage Foundation for the restoration work on the Geophysical Globe. Department Head Thomas Mote, Professor Hilda Kurtz, and alumna Elaine Collier Neal accepted on behalf of the department.

The globe has long been a focal point on campus and has often served as a backdrop for photographs and television interviews. Many generations of geography students have arranged to “meet at the globe.” Unfortunately, over the decades, the globe slowly lost its original color. The surface of the globe had become faded, oxidized, chipped and splattered. The mechanics that rotate the globe worked only intermittently during the previous two decades. The globe was in desperate need of restoration.

In fall 2014, UGA Facilities Management repeatedly adjusted gears, replaced belts and properly lubricated the system. For the first time in decades, the globe is again rotating several hours each weekday. Meanwhile, Hilda Kurtz identified an art restoration firm that could tackle such a large and unusual object. Through the generous support of our alumni, with special thanks to alumna Elaine Collier Neal, work on the surface of the globe was ready to begin. Georgiana and Dimitiri Nedelcu

of Universal Fine Art Conservation in Estill, SC, made repeated trips to campus. They first cleaned the surface of the globe, then re-painted as necessary to match the original colors, and finally applied a clear-coat finish. Facilities Management mounted a higher railing to offer more protection for the globe. Additional work remains, as plans are in development for new lighting around the globe.

Restoration of the globe was done in memory of Evelyn Bird (M.A., 1953), the first woman to earn a graduate degree in geography from UGA. A plaque recognizing her achievement was added to the globe during an unveiling reception in September 2015.



Recognition of the Historic Preservation Award hangs from the railing around the globe.

## Geography alum wins WxChallenge weather forecast contest



Jordan McLeod

Jordan McLeod, a Department of Geography graduate, recently took home top prize in the 2014-2015 WxChallenge, a yearly national collegiate weather forecasting competition.

McLeod, who was earning his master's degree at UGA when the forecasting competition began in fall 2014, beat out nearly 2,000 participants ranging

from undergraduates to tenured professors from over 100 colleges and universities.

"I was definitely surprised to make it so deep into the tournament," McLeod said. "A UGA alumnus, Matt Daniel, and professor, John Knox, have made it to the Final Four round of the tournament in previous years, but no one from UGA had ever won the tournament. While it was surreal in some respects, I think my performance in the tournament is a testament to the quality of training I received as a graduate student in the UGA department of geography and atmospheric sciences program."

To compete, participants forecasted the weather conditions-daily maximum and minimum temperature, daily maximum sustained wind speed, daily precipitation total for 10 selected cities across the U.S. Participants forecasted each city for two weeks and then submitted each city's forecast on the WxChallenge website.

The competitors with the top 64 cumulative scores at the end of the fall and spring semesters were then placed in a four-week forecasting tournament structured similarly to the NCAA basketball finals. McLeod began this year's tournament as a No. 7 seed and won every round to win the entire tournament.

"There is always something special about 'winning it all.' That's exactly what Jordan did this year," said Knox, an associate professor who serves as the team manager. "It is one more sign that UGA has one of the up-and-coming atmospheric sciences programs in the nation."

UGA had a total of 13 team members who participated. This included six graduate students, five undergraduates and two alumni. Two other students (now alumni) – Alan Black and Jared Rackley – qualified for the post-season tournament as well.

"There's nothing like contests to inspire people to excel," Knox said. "We know this is true in sports. But it's also true in academics. By participating in a national forecasting contest and matching wits not only with Mother Nature but also more than 2,000 people around the country, UGA students learn more about forecasting than they would just from traditional classroom instruction. It's sort of the meteorological equivalent of fantasy baseball or football but with a clear academic focus."

McLeod graduated from UGA in December with a master's degree in geography with a concentration in atmospheric sciences. He is now a climatologist with the Southeast Regional Climate Center in Chapel Hill, North Carolina, an affiliate of the University of North Carolina at Chapel Hill.

"I want to emphasize that this was not just a personal achievement but instead reflects a much larger victory for the UGA department of geography and atmospheric sciences program," McLeod said.

– Jessica Luton, Franklin College

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## Departmental News and Honors

The following is a list of just some of the more important honors, awards and other recognition of geography faculty and students in the last year. We don't try to list everything, but be assured there are many more honors than shown here.

*Our undergraduate and graduate students have received numerous, deserved honors...*

Congratulations to graduating senior **David Nevius** for being selected by Dean Dorsey to receive the Presidential Award of Excellence, which was presented to him at the Presidential Honors Week Luncheon at the President's House. Less than 1% of the graduating class from each college was honored at this event.



Ray Paleg

Graduating senior **Rachel "Ray" Paleg**, who was featured on the UGA website as an "Amazing Student," was a NASA Environmental Studies Education intern working with their Earth Science Watershed Teacher Summer Institutes. Ray has also been an intern making our rooftop even greener. She recently began a job as a recruiting coordinator at Google.

**David Harshbarger** has been named one of twenty Public Service and Outreach Scholars for the 2015-2016 academic year.

**Jessica Wolfe** was invited to Phi Beta Kappa in December. Castle Williams received a National Science Foundation Graduate Research Fellowship last spring. Castle also

won Third Place Oral Presentation at the AMS 11th Symposium on Societal Applications: Policy, Research, and an Oral Presentation Award at the AMS Board on Environment and Health Conference.

**Kyle Mattingly** received a NASA Earth and Space Science Fellowship beginning in fall 2016 for his project "Connecting Changes in Poleward Energy Flux to Greenland Ice Sheet Energy Budget and Mass Balance: The Role of Moisture Transport by Atmospheric Rivers." He also received second place in the AAG Climate Specialty Group student paper competition at this year's AAG annual meeting in San Francisco.

**Xuan Zhang** received the Environmental Perception and Behavioral Geography Specialty Group Student Travel Award for the 2016 AAG Annual Meeting, and Neil Debbage won second place in the AAG GIS Specialty Group competition at the same meeting.

**Pete Akers** received the best paper award for a doctoral student at the 2015 SEDAAG Fall Meeting.

**Craig Ramseyer** won First Place Poster Presentation at the American Meteorological Society (AMS) 28th Conference on Climate Variability and Change, and **Paul Miller** won First Place Oral Presentation at the AMS 11th Symposium on Societal Applications: Policy, Research, and Practice in 2016.



Danielle Haskett in the Environmental Change Lab.

**Danielle Haskett, Gloria Howerton, and Brian Williams** received NSF DDRI grants beginning in 2016. Brian's project is titled "Bioaccumulating Agrarian Racism: The Environmental Politics of Pesticides in the Yazoo-

## Departmental News and Honors continued

Mississippi Delta,” and Gloria’s project is “Borderland Classrooms: Student Subjectivities and the Arizona Ethnic Studies Ban.” Danielle’s DDRI project is titled “Climate and Environmental Change in the Colorado Rocky Mountains during the Late Quaternary: A Paleolimnological Approach.” Danielle also received a grant from the National Park Service to support her doctoral work in Rocky Mountain National Park.

**Dean Hardy** and **Claire Bolton** received National Science Foundation (NSF) Doctoral Dissertation Research Improvement (DDRI) grants beginning in 2015. Claire’s project is titled “Faith-Based Organizations, Race and Community Development,” and Dean’s project is “Mapping Socioeconomic Vulnerabilities to Coastal Hazards.” Dean also received the Jeanne X. Kasperson Student Paper Award from the Hazards, Risks, and Disasters Specialty Group of AAG. Finally, he also received a grant from the Center for Research and Engagement in Diversity at UGA.

**Matt Hauer** was named a Florida State University “Notable Nole.” He also won best poster at the Southeastern Climate Consortium.

**Shuvankar Ghosh** received a Graduate School Dean’s Award for his doctoral research.

**Emily Castellucci** won the National Association of Geoscience Teachers Outstanding Teaching Assistant Award.

**Mingshu Wang** and **Brian Williams** were selected for the UGA-Liverpool graduate exchange program beginning in fall 2016.

**Genevieve Holdridge** received an Office of Service Learning mini-grant for her innovative curriculum in our Introduction to Physical Geography labs. **Madeleine Breza** received an Office of Service Learning grant for her work on the rooftop garden with **Amy Trauger**, and **Xuan Zhang** received a Campus Sustainability grant for her work on “A More Walkable UGA.”

**Gretchen Sneegas** received an Interdisciplinary and Innovative Research Grant from the Graduate School. Jill Gambill and Mariana Alfonso received the 2016 Four for the Future Award from Georgia Trend magazine for their St. Marys Flood Resiliency Plan.

**Christian Pettersen** received Tinker funding for his dissertation research in Guatemala.

**Richard Milligan** received a 2016 Diversity Research Scholarship for Graduate Studies from the Graduate School.

*Our faculty and staff have been making an impact at the university, in the discipline, and around the world...*

**Emily Duggar** received the Excellence in Staff Service Award by Franklin College for her many contributions as a member of the Department of Geography staff for the past 25 years. **Loretta Scott** received the 30-year service award from Franklin College.

**Andy Herod** was reappointed as a Distinguished Research Professor; **Thomas Mote** was appointed as a Distinguished Research Professor beginning in 2016, and **Marshall Shepherd** was “elevated” from a Georgia Athletic Association Professor to a Georgia Athletic Association Distinguished Professor.

**Deepak Mishra** received the Research Honors Award at the SEDAAG Fall Meeting in 2015.

**Amy Trauger** received a Study in a Second Discipline in the College of Public Health in 2016–17 for her project “Agricultural Chemicals and Human Health: Exposure and Risk in North-Central Minnesota.” **Amy Ross** received a Willson Center Fellowship in 2016–17 for her project “Civilian Casualties in Battle: Identifying Innocents in Contemporary Conflicts.”

**Hilda Kurtz** was named an inaugural Special Collection Libraries Fellow in 2015–16 and was elected to the AAG Nominating Committee. **Fausto Sarmiento** was selected for the Faculty Development Workshop on Integrating Sustainability in the Curriculum, and **Jerry Shannon** was named a Service-Learning Fellow. **Suzie Birch** received

funding through the Sarah H. Moss Scholarship for her many travels.

The Center for Geospatial Research, and the Wormsloe Institute for Environmental History received the ESRI Special Achievement in GIS Award at the ESRI User Conference in San Diego in 2015. **Tommy Jordan** accepted the award on behalf of CGR.



Marshall Shepherd takes wind readings from the Climatology Research Lab on the roof of the Geography-Geology Building (photo by Nancy Evelyn).

**Marshall Shepherd** has had several invitations to Washington, including to the White House for “Champions of Change” in climate education. He was named a 2015 Grad Made Good by Florida State University and was one of their commencement speakers this year! Marshall was also part of a team that received the NASA Agency Group Achievement Award for the Global Precipitation Mission. He was an invited participant by the AAAS as the keynote speaker on their symposium on climate change. He has been serving on the National Academies of Science Committee on Extreme Weather Events and Climate Change Attribution. Marshall joined Forbes magazine as a regular contributor, appeared on CBS Face the Nation, was part of an NBC Learn program on natural hazards, and continues to host his weekly WxGeeks program each Sunday on the Weather Channel.

## Alumni News

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*We enjoy hearing from you and would like to share your news with your former classmates. Please contact Emily Coffee at [ecoffee@uga.edu](mailto:ecoffee@uga.edu) if you have news to share for future newsletters.*

### Jennifer Bell

On November 18, 2015, Monica Taylor, a teacher at Central Middle School in Riverside, California, stood in front of scores of impressionable young minds hoping her guest for the day would spark their interest in geography and mapping on a very special day—GIS Day.

“Who knows what a cartographer does?” Taylor asked the students at the assembly. The group included the seventh and eighth graders enrolled in the life sciences and physical science classes that she teaches. “A cartographer is a mapmaker. It’s not old school, where you are drawing [maps] on paper. They make them on computers,” she said.

### *A Passion for Geography*

Taylor then introduced a real, live cartographer to her classes: UGA Geography alumna Jennifer Bell. The talented, upbeat 26-year-old is a cartographic product engineer at Esri in Redlands, California. Bell often smiled as she told stories about working at what she describes as her “dream job” at Esri.

Her work focuses on urban systems and transportation. These areas are of special interest to her because she is concerned about poverty; social inequality; and issues related to food, transportation, and health accessibility. Bell has created beautiful web maps with bold colors that highlight everything from global poverty to job accessibility. She often says she likes to “put the art back into cartography.”

Bell was born in Saudi Arabia, where her father worked for the Saudi Aramco Oil company, and she traveled extensively as a child. This made her more spatially aware of the world than most young Americans.

*(Continued on next page)*

## Alumni News continued

Bell said her father, who died in 2005, loved to travel. She credits him with exposing her to maps and spatial concepts at an early age. “We had a huge atlas. Before a road trip, he would set it down on the table and say, ‘This is where we are, and this is where we are going.’ And he would ask me, ‘Which way should we go?’ And I would guess and we would highlight the route. And then we would get in the car and I would have the map and I was the navigator. I was in charge of telling him what road we were on and where to turn.”

### *The Importance of Geography*

She went on to obtain bachelor’s and master’s degrees in the Department of Geography from the University of Georgia. Passionate about her career as a geographer, Bell also hoped to elevate the kids’ sense of geographic awareness. She brought her show-and-tell presentation of online maps and videos to Central Middle School to demonstrate how maps relate to students’ lives and their future careers. She also wanted to give them a taste of what she does at work.

Taylor sees geography as an avenue for students to better understand the world around them. She said that some children do not know where California is located on a map.

Her concerns are well-founded. A recent report issued by the United States Government Accountability Office entitled “Most Eighth Grade Students Are Not Proficient in Geography” states that 75 percent of eighth graders in the United States did not demonstrate competence in the subject.

While underscoring the importance of geography in a world where people use maps on their cell phones to find places and mapping is used to track diseases like Ebola, the report says that misconceptions within the education community continue to exist about what geography studies involve.

The report cites additional problems that include a lack of professional development in geography among



Jennifer Bell’s father nurtured her love of maps, which led her to a career as a cartographer.

teachers, poor instructional materials, and “limited use of geographic technology in the classroom.”

### *Telling Stories with Maps*

“Do you know what today is?” Bell asked the middle schoolers. Some were attentive; others were squirming in their seats. Hands shot up and shouts rang out.

“Thanksgiving!” “Earth Day!” “Veterans Day!”

“No,” Bell said, laughing. “Today is GIS Day.” “What?” a student said. “GIS stands for geographic information systems, technology used to create maps that can be viewed online and on your cell phones,” Bell said.

GIS Day, held annually in November, celebrates GIS technology. “GIS is like geography on a computer,” Bell told the students, who do their lessons on Chromebooks issued by the Riverside Unified School District.

Cartographers, scientists, and others, she said, use GIS mapping software created by Esri to turn information collected about practically anything imaginable—birds, diseases, earthquakes, crime, sports, and weather—into maps that tell stories.

Bell showed the students a series of Esri Story Map apps. These mapping applications tell stories using a

mix of maps; imagery; text; and multimedia such as photographs, videos, and music.

The Discovering Liquid Water on Mars story map (<http://storymaps.esri.com/stories/2015/water-on-mars/>) included NASA imagery that contained an element of mystery: strange-looking marks running down steep Martian slopes.

“What do you think those dark streaks are?” Bell asked. “Water!” several children said in unison. “They look like water, but they are hydrated salts, proof that [salt]water is on the planet,” Bell said.

The children’s eyes really popped when they viewed a map of Kathmandu, Nepal, which was devastated by a magnitude 7.8 earthquake in April 2015. The map contained before-and-after satellite imagery. Bell used a slider feature in the map to show them what the city looked like before the quake and afterward, when many buildings had turned to rubble.

Some of Taylor’s students are studying earthquakes, which gave Bell an opportunity to talk about maps they can make using their Chromebooks and ArcGIS Online, free online mapping software that Esri is providing to all the K-12 schools in the United States as part of the ConnectED initiative.

“Mrs. Taylor got all of you guys ArcGIS Online accounts,” said Bell. “[Now] you have the resources to make maps.” Taylor plans to take advantage of these accounts. Students can start out by creating story maps about topics they find interesting, such as sports, trucks, and vacations.

Bell will return to Central Middle School to teach the instructors how to use ArcGIS Online and work with their school accounts. By summer 2016, Taylor and other teachers will have access to instructor resources for The ArcGIS Book, which introduces web GIS.

### *Instilling a Love of Maps*

While teachers play a role in geography, Bell also thinks parents could do a better job introducing their children to



In a GIS Day presentation, Esri cartographer Jennifer Bell shared her passion for geography with schoolchildren at Central Middle School in Riverside, California.

spatial concepts, even if it is just quizzing them about how to get to the grocery store.

If there was one thing Bell wanted to leave with the children at Central Middle School, it was that “Geography helps you understand the world around us.”

She did a pop quiz to help the young people understand that maps can relate to anything in life. “What do you want to be when you grow up?” Bell asked the students.

“A neurosurgeon,” said one student. “A neurosurgeon can map the human brain,” said Bell. “A veterinarian!” said another. “We can map the spread of diseases and predict where they will go next,” said Bell. “A lawyer,” said a third.

“You can track where your client has been and provide an alibi,” Bell said. Bell spoke to more than 500 students over four hours. Before she left Central Middle School on GIS Day, she learned that three of them had expressed an interest after the assembly to join the science club. That made her smile.

— *Carla Wheeler, ArcWatch Editor (reprinted with permission from Esri ArcUser Winter 2016)*

## In Memorium

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### **Eva Brooks**

Eva Barfield Brooks died January 8, 2015, in Columbia, Tennessee. She was a geography major at UGA and graduated in 1967. She was married to Ave Edwin “Ed” Brooks, also a geography major in 1965 and geography post-graduate from 1965–67.



### **Harry Franklin Lane**

Harry Franklin Lane was born July 27, 1936, in Lyons, Georgia. He graduated from the University of Georgia with a B.S. in geology in 1959, and a master’s in geography in 1963. He did further graduate work in geography at the University of Kansas from 1961–64, and taught geography at Tennessee Tech for 34 years before his retirement in 1998.

He was an artist, enjoying working with oils, pastels and acrylics, and was well known in Cookeville during his retirement years for sketching fellow coffee drinkers at the donut shop. He had many other interests and hobbies, including stone masonry, wood working, photography and traveling with his wife and family. His travels took him to 49 of the 50 states, to Canada, Mexico, Morocco, Russia and many European countries. Among his favorite destinations were Vienna, Austria; Venice, Italy; and the Grand Canyon in Arizona. He will be remembered for his dedication to his wife and sons, his many creative talents and his strength of character.



### **Elizabeth J. Leppman**

Elizabeth J. Leppman, 71, of Lexington, Kentucky, died September 21, 2015. She was born December 6, 1943 in Chicago, Illinois, the daughter of Ulrich and Ruth (Armstrong) Leppman, and lived during most of her childhood in Moorestown, New Jersey. She

received her B.A. from Middlebury College and later earned an M.A. from York University in Toronto, Ontario, and a Ph.D. from the University of Georgia. Her advanced academic degrees were in the field of geography, and she had special interests in cultural geography, the geography of food and diet, and the geography of religion, in all of which fields she wrote scholarly articles. She had teaching appointments at Millersville University in Pennsylvania, Miami University of Ohio, St. Cloud State University in Minnesota, the University of Kentucky, Eastern Kentucky University, and Walden University. She was a skilled book editor and had a key role in the preparation of a number of textbooks.



### **James Woodruff**

James Woodruff was born February 11, 1920, in Detroit, Michigan. His father, J. Fred Woodruff, of Petoskey, was a prominent member of the Detroit automobile economy, and his mother was Esther B. Kilborn. He had four siblings. In 1928 the family was divorced; his mother moved the family to Ann Arbor and James enrolled in Ann Arbor public schools. Upon graduation he entered the University of Michigan, but very shortly, caught by the patriotism of the war effort he volunteered for the Army Air Corp. After service in the Army as a pilot instructor and as pilot in the North Atlantic Wing of the Air Transport Command Mr. Woodruff returned to his academic studies at the university and graduated with a Ph.D. in 1952.

Dr. Woodruff accepted a position as assistant professor in the Department of Geography and Geology at the University of Georgia. In 1956, he went to San Diego State College where he spent four years before returning to UGA. Dr. Woodruff remained in Athens for the next 25 years retiring as professor emeritus in 1980. During his tenure at UGA, he served as president of the SEDAAG and contributed to numerous professional publications in the fields of geography and geology. He was also a member of the Athens Country Club. Toward the end of his academic career he engaged in a hobby of building houses which became a second career as a developer and builder of numerous Athens houses.

## Thank You!

*We want to express our gratitude to these individuals who have donated to the department during May 2015 to June 2016. If we missed any names, please let us know and we will include in a future newsletter.*

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