

geography NEWSLETTER

SPRING 2018

 COLLEGE OF ARTS AND SCIENCES
Geography



PHOTO CREDITS: XIAODONG CHEN, AGRICULTURAL LANDSCAPE WITH
CROPLAND ABANDONMENT IN THE TIANJIN NATURAL RESERVE, ANHUI PROVINCE, CHINA

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This newsletter is produced by the Information Committee,
which consists of faculty members Elizabeth Havice
(Co-chair and Editor), Jun Liang (Co-Chair), Xiaodong Chen,
Scott Kirsch, Christian Lentz, graduate student Lily Herbert,
and undergraduate student Emma Hennen.

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FROM *the* CHAIR

I'm pleased to bring you the 2018 newsletter highlighting the work of undergraduate and graduate students and faculty as well as an update on the work of an impressive recent alumnus. Our research and educational programs at the UNC Galapagos Science Center continue to flourish. We are building on our long-running expertise in health geography with existing and new faculty expertise and students working around the globe and in connection with centers on campus. We are expanding our cutting-edge work on geovisualization and research collaborations on coupled natural and human systems. We also showcase undergraduate research and learning experiences in the fields of urban geography, political ecology and spatial analytics. We are happy to share

the professional path of alumnus Sean Langberg since he graduated in 2014; he has been doing amazing work on preventing genocide and political violence. Lastly, we feature an example of the big impact that giving can have for our programs: recently retired professor Dr. Steven Birdsall has funded an exciting summer graduate research fellowship.

Please visit our department website (geography.unc.edu) regularly and follow us on twitter (@geographyunc) to learn about the most recent happenings in the department. The Department of Geography is grateful to its alumni and friends for their financial support. We depend on alumni and friends like you to help meet our ever-increasing needs. Your gift to

the Department can help us meet many goals. Online giving is easy and secure: log onto geography.unc.edu/give for information and links. You can also use the envelope attached to this newsletter. Feel free to email or call me to talk about our programs.

And please visit us the next time you are in Chapel Hill.

Michael Emch
Professor and Chair,
UNC-CH Department of Geography



TEACHING GEOGRAPHY IN A “NATURAL LABORATORY”

Dr. Riveros-Iregui Returns to Galápagos in 2018 to Lead Geographical Field Course

After spring classes ended in Chapel Hill in 2015 and 2016, UNC Geography assistant professor Diego Riveros-Iregui wasn't finished teaching. Instead, he headed south to the Galápagos Islands to teach a field course on tropical ecohydrology at UNC's Galápagos Science Center (GSC) on San Cristóbal Island, Ecuador. Carolina undergraduates traveled to the Galápagos to take this three-week course as part of UNC's Summer Study Abroad Program. The class focuses on the hydrologic cycle and the interactions between water and ecological processes, with an emphasis on sustainability of environments where freshwater resources are limited. Dr. Riveros-Iregui draws course content from his active research program in Galápagos, with teaching materials built around key themes from the work and guest appearances from visiting scientists and experts who make up his research team.

For Dr. Riveros-Iregui, the tropical island setting for the course is crucial to its learning outcomes: “The course provides rigorous scientific training on hypothesis testing, experimental design, and data analysis. During the three-week course, we integrate direct observations and new knowledge of earth systems with a dynamic field experience. The course combines formal lectures with daily field excursions, taking advantage of the natural laboratory offered by the Galápagos Islands. Through hands-on activities, students learn how real hydrologic and ecological data are collected.”

Greetings from THE GALÁPAGOS!

DR. RIVEROS-IREGUI
(far left) with students in
his tropical ecohydrology
field course



Dr. Riveros-Iregui works closely with students to design short research projects. Students formulate scientific questions, objectives, and hypotheses, and implement methods they have recently learned in the field. Students hold two conference-style presentations at the GSC auditorium, summarizing their project findings. In addition to scientific advice, Dr. Riveros-Iregui found he was also able to offer students advice in their study abroad experiences based on his own background in the region. “I grew up in neighboring Colombia, so I can provide insight into situations students may face while in Galápagos, including differences in weather, culture, food, or language, compared to what students are used to in North Carolina.”

After returning home, some have taken the opportunity to continue to work with Dr. Riveros-Iregui on independent study assignments. Already, three undergraduates have returned to Galápagos the following year to conduct their own research projects. Dr. Riveros-Iregui hopes that the Galápagos field course encourages students to pursue careers

in science after they graduate, noting that “they are not simply going to another country for general education courses—theirs is a unique experience that should enhance their skillset and employment options.”

Students have enjoyed collecting data and bringing their own knowledge, such as computer programming or graphic design or even photography, into their research. They are excited by the applicability of course concepts and techniques to real-world problems like water shortages, resource sustainability, and population growth. What is the best comment that Dr. Riveros-Iregui has received from students after the course? “I wish I could take it again.” A new group will have the chance when he offers the Galápagos field course in June 2018.

NEWS & HIGHLIGHTS

SHARE YOUR NEWS! Please visit geography.unc.edu for more news and profiles of geography faculty, graduate students, undergraduate students and alumni and send us an email at geography@unc.edu to share your news.

department news

DR. CLARK GRAY is developing a new research-based course on vulnerability to climate change.

The Atlantic ran a feature story called “The Map Hidden in the Pacific Northwest’s Tree Rings” about **DR. ERIKA WISE’S** research.

Geography major **SOFIA MCCARTHY** presented research at the Summer Undergraduate Pipeline Research Symposium.

DR. MIKE EMCH received \$4.8m grant from the National Science Foundation and \$3.6m grant from National Institute of Health.

DR. ELIZABETH OLSON gave the keynote address at the annual Public Health Aging Conference at the Gillings School of Global Public Health.

The Wenner Gren Foundation is supporting **DR. ANDREW CURLEY’S** research project titled “The End of Navajo Coal.”

DR. CHRISTIAN LENTZ Co-directed the National Endowment for the Humanities-funded Summer Institute on “Contested Territory” at the National Humanities Center.

DR. BANU GÖKARIKSEL received the American Association of Geographers 2018 Enhancing Diversity Award.

Graduate Student **RACHEL COTTERMAN’S** work with the Back Ways Project was featured in North Carolina News outlets.

Graduate student **AMY BRAUN** was selected for the spring 2018 Future Faculty Fellowship Program at the UNC Center for Faculty Excellence.

Graduate Student **MARK ORTIZ** was named a Druscilla French Graduate Fellow, and a Graduate Public Scholar by the Humanities for the Public Good Initiative.

HEALTH GEOGRAPHY EXPERTISE CONTINUES TO BLOOM FROM HISTORICAL ROOTS

HEALTH GEOGRAPHY IS A SUB-FIELD of our discipline with strong historical roots at UNC. Health geographers use a holistic perspective to explore how the natural and built environment; demographic, social, and economic factors; and cultural systems (among others) interact to affect health and well-being. Now a thriving area of study, the field first got off the ground in 1974 when a meeting at UNC led to the publication of the foundational text *The Geography of Health and Disease*. In 1976, Professor Melinda Meade joined the UNC geography department and became a foundational thinker in the field by explaining how people move through environments and a wide range of disease ecologies. She came to develop a theoretical framework for studying health problems using a geographic perspective known as the “Triangle of Human Ecology” that is still a foundation of the field and went on, literally, to write the book on Medical Geography. From these deep roots, Health Geography continues to thrive at UNC.

DR. ASHLEY WARD

CLIMATE INTEGRATION AND OUTREACH ASSOCIATE,
CAROLINAS INTEGRATED SCIENCES AND ASSESSMENTS

“I work on how community-science relationships can improve both the science and the ability of the community to make decisions and build resilience to improve health outcomes. Ultimately, health is a product of place. Where you are dictates the services you have available to you, exposures and risk, cultural practices of protection, and a host of other factors that impact health and well-being.”

Study sites and topics:

- **The Carolinas:** heat-health vulnerability, extreme hazard mitigation and resilience, climate-health impacts in indigenous communities and on maternal health.

On teaching: “I enjoy teaching courses in which I can encourage undergraduate research, allowing students to participate in a hands-on learning environment. In these situations, I feel I am both teacher and student.”

Upcoming research plans? “I am most excited about my work with the tribal community in North Carolina and participating in an upcoming Talking Circle during the Unity Conference. Integrating scientific and indigenous knowledge is an important part of what I do and, I believe, will contribute to building communications between native and non-native communities.”



RACHEL WOODUL (left) pictured with Dr. Rachel Willis on a field excursion to the North Carolina Coast for a seminar called “Rising Waters”

RACHEL WOODUL

UNDERGRADUATE STUDENT,
GEOGRAPHY MAJOR

Senior thesis research: Using an epidemiological model to simulate an influenza pandemic, and then applying an allocation model to simulate access and utilization of health care facilities by infected individuals.

Study sites and topics:

- **North Carolina:** pandemic influenza, vulnerability to health impacts of extreme weather.

On her future in health geography:

“Hopefully, I’ll be doing research that can positively influence the ways that we think about health and access to health care. I just learned how to scuba dive, so I’ve been daydreaming about how to incorporate scuba diving into health geography research. The oceans are an integral part of our environment and we know that our environment influences our health; there are exciting possibilities for integrating these areas of research. I read a study last year linking tumors on sea turtles to water pollution and toxic algal blooms, which we already know can have serious impacts for human health. Is it possible that health problems in sea turtles could be early indicators of potential health problems in humans?”



DR. PAUL DELAMETER

ASSISTANT PROFESSOR OF GEOGRAPHY

“The questions that interest me most revolve around understanding the spatial and temporal processes that lead to the spatial patterns we observe. For example, in my vaccination work, I have found that parents that exempt their children from vaccination requirements for personal or philosophical reasons tend to be located in geographic clusters. I study how and why such clusters form and how they might impact the risk of disease outbreaks.”

Study sites and topics:

- **Michigan:** health care access
- **California:** childhood vaccination

On teaching courses including the Geography of Health Care Delivery and GIS

in Public Health: “Because more people outside of geography are starting to understand how important geography is in health-related topics, I have many non-geographers in my courses. I get a lot of enjoyment from watching non-geographers begin to start thinking geographically about health-related issues.”



CORY KEELER

PHD STUDENT IN GEOGRAPHY

Research question: How do environmental, social and political context contribute to higher risk or higher transmission of a certain disease in Place A but not Place B?

Study sites and topics:

- **Southeastern US:** Tick-borne diseases
- **Democratic Republic of Congo:** drug-resistance malaria, yellow fever virus, dengue, zika

On why she began working in the US as well as abroad: “Emerging diseases are an issue in the United States and not limited to places far away from UNC. For example, the Triangle region is one of the epicenters for alpha-gal allergy, a tick-borne condition that causes people to develop an intolerance of red meat. Suburbanization and changing weather patterns like warmer winters have led to increased exposure to tick bites and therefore increased risk of tick-borne diseases like alpha-gal allergy! Health geography is everywhere.”



DR. MIKE EMCH

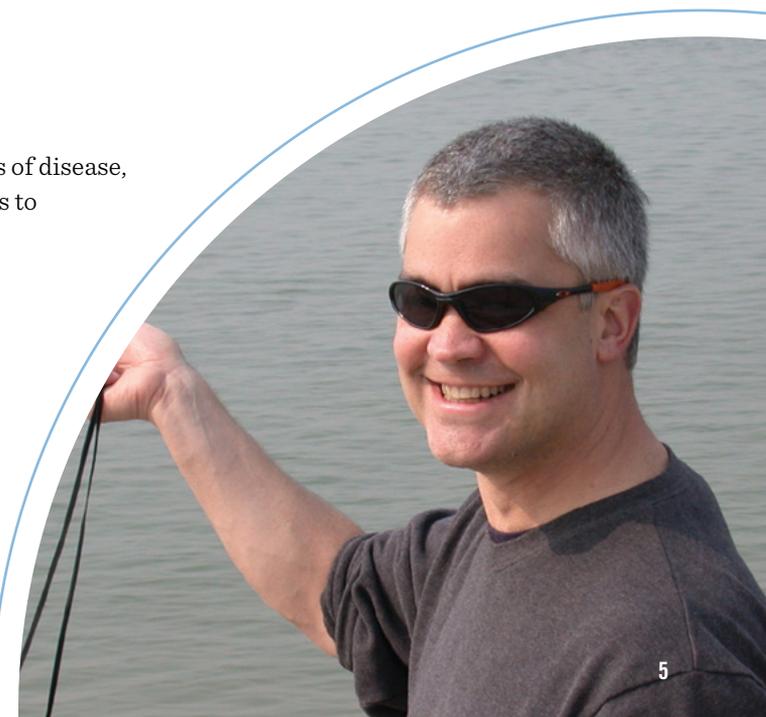
W.R. KENAN, JR. DISTINGUISHED PROFESSOR
OF GEOGRAPHY AND EPIDEMIOLOGY

“My group, the Spatial Health Research Group, focuses on exploring the spatio-temporal patterns of disease, primarily infectious diseases of the developing world. We use GIS and spatial statistical methods to understand the spatial components of disease”

Study sites and topics:

- **Democratic Republic of Congo:** Drug Resistant Malaria
- **Malawi, Ghana, and Gabon:** Malaria vaccine trial
- **Bangladesh:** Diarrheal diseases

Connections to UNC roots: “All of my work has been inspired by Melinda Meade. When I moved to UNC in 2005 Melinda became my colleague and I spent countless hours running ideas by her. She had an incredible geographic theoretical mind.”



Associate Professor Javier Arce-Nazario curates geo/visual/ island exhibit in Puerto Rico



← **DR. ARCE-NAZARIO**
(left) dons 3D glasses
to enjoy the full
exhibit with student-
collaborators

HOW AND WHY do natural and built spaces change over time? And how can visualizations of these changes enhance the way we think about space and drivers of environmental change? Dr. Javier Arce-Nazario has recently taken a novel approach to answering these questions to inform his ongoing interests in understanding how people interact with the landscapes around them and how these interactions affect ecosystems services in his homeland of Puerto Rico. Puerto Rico has a large set of historical remote sensing data, but upon encountering the data, Dr. Arce-Nazario discovered that much of it had not been “orthorectified” — processed to provide a constant scale so that features can be presented in their “true” positions. Linking his expertise in geospatial information analysis and processing and his passion for educational outreach, he began experimenting with ways to visualize and display landscape transformation to the public.

In collaboration with the Environmental Cartography Collective of the University of Puerto Rico at Cayey, the resulting exhibit, entitled geo/visual/island, is a stunning and innovative exhibition that uses a mixture of maps, aerial images and environmental information from Puerto Rico to present landscape change in an engaging and artistic format. “Geo/visual/island presents new ways to visualize and understand the environmental changes that have occurred in Puerto Rico. Through the appreciation of the patterns in the landscape, visitors develop their ability to interpret geovisualizations and thus have a better understanding of the environmental changes that have occurred,” explains Arce-Nazario. The theme connects with Arce-Nazario’s research into how past events affect biophysical and social dynamics in tropical landscapes, and his interest in new ways of translating scientific information into artistic and educational experiences. More than 600 public school students visited the exhibit, completing surveys that will help inform future exhibitions and efforts to successfully communicate



DR. BIRDSALL,
with graduate student grant
recipients (from left): Mark
Ortiz, Michelle Padley, and
Karly Schmidt-Simard.

FOCUS ON GIVING

Dr. Steve Birdsall has officially retired, but Geographers have been delighted that he remains active, teaching and mentoring students and keeping his office door open for visitors to stop in to say hello. After learning about funding gaps that left students unable to meet their basic living needs and focus on their research, he decided to take action. He generously funded what has now been minted the “Birdsall Graduate Student Summer Award”, a boost to three fantastic students in the summer of 2017.

Says recipient Mark Ortiz, “Although I applied diligently for summer funding from numerous external and internal sources throughout the year, I found myself entering the summer with no funding and was preparing to find a job that would have distracted from my research, a situation I know many of my graduate student colleagues have also faced. The department’s summer award was a lifeline that allowed me to travel to Oregon for intensive fieldwork and deepen my partnership with Our Children’s Trust,

STUDENTS OBSERVING

a polyptych of the Puerto Rican coast at the exhibit

spatial and environmental concepts to wide audiences. Arce-Nazario is also interested in how the pieces read as art, and hopes that displaying these maps in a gallery context can help them reach a wider audience. Two of the works from geo/visual/island have subsequently been displayed at the Lowe Art museum in Miami, where one received the jury grand prize in the show *Antillean Visions*.

“

GEO/VISUAL/ISLAND PRESENTS NEW WAYS TO VISUALIZE AND UNDERSTAND THE ENVIRONMENTAL CHANGES THAT HAVE OCCURRED IN PUERTO RICO.

—Javier Arce-Nazario



one of the organizations that is the focus of my PhD project. Since receiving the summer award, I have been named a Druscilla French Graduate Fellow and a Graduate Public Scholar by the Humanities for the Public Good Initiative at UNC. I attribute this recent success directly to Dr. Birdsall's generosity."

Recipient Karly Schmidt-Simard attributed the award to her ability to complete a pilot study on moisture source patterns in the Pacific Northwest when a teaching opportunity that she had been counting on fell through at the last minute due to low enrollment. The award also helped Michelle Padley do her work in Durham, where she studies the Low Income Housing Tax Credit program. She used the support to pay rent, utilities, and even buy a couple weeks of groceries while she attended community events and meetings related to local housing issues to inform her unfolding project. "As a graduate student early in her studies, there was very little funding that I qualified for," said Padley.

Faculty and students alike are thrilled to hear that the award will be available again this year. For his part, Prof. Birdsall is happy to be able to help fill a need for students doing important and valuable work in the department to which he has committed his career.

"MY LIFE IN THE DEPARTMENT HAS BEEN GREATLY ENRICHED FOR DECADES THROUGH INTERACTIONS WITH MANY BRIGHT AND DEDICATED GRADUATE STUDENTS. I AM VERY PLEASED TO HELP THEM IN THIS WAY NOW. I ONLY WISH I'D BEEN ABLE TO START EARLIER AND DO EVEN MORE."

—Dr. Steve Birdsall

Graduate student **SERTANYA REDDY** was awarded a Dean's Graduate Fellowship for 2018-2019.

Graduate student **SARAH SCHMITT** was selected to the inaugural class of Kenan Graduate Fellows in the College of Arts and Sciences.

The UNC Center for the Study of the American South is funding graduate student **TREY MURPHY'S** research on "Negotiated Landscapes of Subsurface Property" in the oil and gas sector in Texas.

Geography majors **SIERRA HOUCK, HALEY MOSER** and **LAURA ROBERSON** presented research at the UNC Celebration of Undergraduate Research.

alumni news

STEPHEN P. PEDONE, LT. COL., USAF, RET. (STEVE) (BA, '66) After a 25-year US Air Force career in Mapping and Intelligence, and a 14-year second career in developing advanced national intelligence reconnaissance systems, my wife, Ximena, and I are enjoying our retirement splitting time between Naples, Florida, and Santiago, Chile.

LARRY MARKHAM (BA, '67) and DIANNE (BA SOCIOLOGY '68) MARKHAM recently celebrated our 50th wedding anniversary and were treated to a surprise family reunion by their four children, spouses and 17 grandchildren.

DOUG ORR (PHD, '68) I received the 2018 Sam Ragan Fine Arts Award for Literacy Achievement for *New York Times* best-seller, *Wayfaring Strangers: The Musical Voyage from Scotland and Ulster to Appalachia* (co-authored with NPR's Thistle & Shamrock host Fiona Ritchie); and, *The North Carolina Atlas: Portrait for a New Century* (co-authored with fellow UNC Geography PhD Jim Clay).

DENISE E. JONES (MA, '72) I retired in 2011 after almost forty years with the Onslow County School System and Campbell University's Camp Lejeune extension, where I taught geography courses. I volunteer at the Onslow County Museum and give historical geography programs on migration and settlement patterns of eastern North Carolina.

WILLIAM CARLTON HARRISON (BA, '77) I received my MSW from ECU in 1992. Retired as a clinical social worker in 2015. Worked for US Army & USAF as a civilian LCSW. I migrate between Biloxi, MS and Linville, NC as the seasons change!

Spotlight on URBAN GEOGRAPHY

FAR FROM THE BRIGHT LIGHTS of big city life, the University of North Carolina in the bucolic town of Chapel Hill may seem like an odd place for strength in urban geography. But, notes Associate Professor Nina Martin, the Department of Geography has skillfully leveraged its geographic and institutional location to offer her—and her students—a unique vantage point for studying the constantly changing nature of cities.

Fast-paced population growth and housing development make the Triangle region “a fascinating place to study urban development,” according to Prof. Martin. She knows her subject personally and professionally. Born in Dublin, raised in Halifax, and trained in Montreal, London, and Chicago, Prof. Martin investigates the same built environments in which she lives and works. Upon moving to Carolina in 2008, she has applied her expertise in labor markets, nonprofit management, and immigrant neighborhoods to the fascinating city of Durham. In a little over a decade, downtown Durham has gone from struggles with deindustrialization, poverty, and decay to a destination full of small businesses, apartment blocks, and towering commercial buildings. Always curious and observant, Prof. Martin asks, “How has this transformation occurred? Who is involved? What do these changes mean for the everyday lives of residents? Do low-income citizens and minorities participate in the benefits?”

Finding answers to these kinds of questions has led Prof. Martin to build bridges on campus and across cities to close the gap between the “real world” and the classroom. She collaborates with UNC’s Center for Urban and Regional Studies and the Department of City and Regional Planning (CRP).

With courses by Prof. Martin under their belts, geography majors Emily Goldstein and Aja Saylor first met while taking a required course in research methods. Taught by Assistant Professor Christian C. Lentz, the course introduced quantitative and qualitative methods, imparting skills that Emily and Aja immediately applied to their own work in urban geography. In a study of the historically African-American neighborhood of Northside, located off of East Rosemary St., Aja developed a concept of “studentification” to analyze the processes of gentrification led by undergraduates renting property there. Using interviews, surveys, and archived documents from Wilson Library, Aja analyzed how Northside residents pushed back against the new influx of students and preserved an old community and an historic neighborhood.

Emily, too, has worked to understand local perspectives on and struggles with rapid economic development, population growth, and residential displacement. A prestigious Robertson Scholar (meaning she is a student



EMILY GOLDSTEIN in Crest Street Park, Durham, fall 2017

at both UNC and Duke), Emily is writing an honors thesis with Prof. Martin on community organizing in Durham. She has focused on Crest St., an African-American neighborhood threatened with wholesale demolition half a century ago. At that time, the East-West Expressway was making its way through the heart of Durham—and Crest St. was directly in its path. Through oral histories, interviews, and archival research, Emily investigates how a community mobilized in response to this challenge and remained intact as a result. An intern with the UNC Center for Community Capital, she also works with Carolina’s Southern Oral History Project to archive all the oral histories collected as part of her research.

For these students, UNC Geography offers much more than lectures and readings on urban geography. Aja understands urban studies as a “crossroads where many issues intersect.” Because geography is interdisciplinary in nature, the discipline and the department are “uniquely positioned to study the wide range of issues that converge in an urban landscape.” Her interests in urbanism have found a “natural home.” For years now, Prof. Martin has built sturdy foundations for urban geography at Carolina. By immersing her students in the Triangle’s urban environments, she has also exposed them to new ideas and research skills as well as community partners and career opportunities.



STUDENTS in Prof. Nina Martin’s class on urban geography during a field trip to Durham, fall 2016





SIERRA HOUCK

Geography Major, Class of 2018, (left)
conducting research in Puerto Maldonado, Peru

“

Geography offers a way of viewing and understanding the world in the most comprehensive sense. In today's world, our actions at every level (individual, community, national) have impacts far beyond our immediate surroundings. Humans and the spaces we inhabit—both physical and imagined—are inseparable, and understanding the connections between humans and their surroundings is key to discovering ways to live in harmony with each other and with the natural environment.

STEVE KILLIAN (BA, '77) I am retired as of Dec. 2016. My 37 year career covered regional, county, and municipal planning with the bulk of it in small NC cities. Retirement pursuits include a small farm.

BOB YEHL (MA, '78; MSLS, '78) I retired in Dec. 2015 as Director of Huie Library, Henderson State University, Arkadelphia, Arkansas, after 30 years at Henderson, but continue as a geography instructor.

EDWARD H. DAVIS (BA, '81) I am Professor and Chair, Dept. of Geography & Earth & Environmental Sciences, Emory & Henry College in Virginia. In 2016, I published (with co-author John T. Morgan) *Collards: A Southern Tradition from Seed to Table*, perhaps the first food geography book to focus on one particular food.

JAMES JOSLIN (BA '85) I am on the board of NC Botanical Garden Foundation and help the Triangle Land Conservancy through volunteering.

JAMES (JIM) WILSON (MA, '86; PHD, '91) I am an associate professor in the Department of Geographic and Atmospheric Sciences (GAS!) at Northern Illinois University where I do research in environmental and public health in Southeast Asia, hazards, health disparities, and vital statistics geography.

CURTIS HINTON (BA GEOGRAPHY AND PSYCHOLOGY, '87; MA GEOGRAPHY, '91) I hiked up Mt. Kilimanjaro in October of 2017 to raise funds to support an orphanage in West Africa (Ghana).

TOM BRAZELTON (BA, '88) I'm the founding Medical Director for both the Telehealth Program at UWHealth in Madison, WI, and for the Neonatal & Pediatric Critical Care Transport Program for UWHealth's American Family Children's Hospital: trying to overcome geography to get our specialists to ill and injured children as quickly as possible... Go Heels!

DAN BROWN (MA, '89; PHD, '92) I have started a new job as director of the School of Environmental and Forest Sciences in the College of the Environment at the University of Washington. I'm enjoying getting to know new colleagues and a beautiful new city and region.

ANDREW REECE (MA, '94) I am the President of Winbourne Consulting, a DC Public Safety and Emergency Response Consulting Firm. We utilize our GIS skills in developing location-based services to assist in routing to events, and determine closest available and appropriate units.

Collaborative Research on Coupled Human-Natural Systems Thrives in Geography

THE NATURAL ENVIRONMENT provides vital goods and services upon which human welfare depends. Human activities have drastically modified the environment, compromising sustainable use of these goods and services. This dilemma is one of the most pressing challenges today and addressing it requires interdisciplinary research and thinking of exactly the kinds readily available in the UNC Geography Department. In one such case, Dr. Song and Dr. Chen have capitalized on the complementary strengths of their respective expertise ever since they went to a rural township in China in the summer of 2012 to explore the potential for a research collaboration. Dr. Song specializes in understanding how terrestrial ecosystem goods and services change with space and time as a consequence of climate and land-cover/land-use changes. Dr. Chen's research focuses on human livelihoods and behavior, and conservation policies. Through the preliminary field visit, they identified a set of research questions regarding how the dynamics of the coupled human and natural systems (CHANS) are shaped by China's Grain-for-Green Program (GFGP).



DR. XIAODONG CHEN (left) and **DR. CONGHE SONG** (right) visiting Tianma Nature Reserve study area in 2012 in Anhui, China



ALUMNI STORY

SEAN LANGBERG

By the time Sean Langberg graduated Carolina in Spring 2014 with degrees in Geography and Global Studies, he had already developed a keen interest in addressing some of the world's more challenging problems, including genocide and other kinds of political violence against civilians. In his honors thesis in Geography, and his leadership of the Chapel Hill chapter of STAND, a group which aims to build awareness and means to prevent and respond meaningfully to genocide and mass atrocities, Sean sought to better understand the dynamics of these troubling events. Since graduating, he has built a career in peacebuilding non-government organizations, and embarked on a journey that has lead him, so far, from Washington, D.C. to Iraqi Kurdistan to Brooklyn, New York, which Sean now calls home.



Sean landed a fellowship in Washington at the Friends Committee on National Legislation, an organization that lobbies Congress on issues including atrocity prevention, immigration, climate change, and nonproliferation. There he served as Program Assistant for Peacebuilding Policy focused on the protection of civilians living in the midst of war in settings including Iraq, Syria, Burundi, South Sudan, and Burma. The next year, Sean moved on to the US Holocaust Memorial Museum's Center for the Prevention of Genocide, where he continued to advocate for funding and policies to protect civilians in areas of severe conflict. He met with members of Congress and staff at the State Department, and in 2016 traveled to Iraqi Kurdistan to investigate crimes committed by



AGRICULTURAL LANDSCAPE

with cropland abandonment in the Tianma Nature Reserve, Anhui province, China.

Song and Chen hit the ground running. They expanded the collaboration to include Dr. Dick Bilsborrow (Carolina Population Center), Dr. Pam Jagger (Public Policy) and Dr. Larry Band (University of Virginia Departments of Environmental and Science and Civil and Environmental Engineering) and secured a prestigious NSF grant on “Dynamics of Coupled Natural and Human Systems”. Through the GFGP, rural households that convert cropland on steep slopes to forests receive compensation from the government. Consequently, their interactions with the environment are also substantially affected. Song, Chen and their team of collaborators and graduate students began to explore a series of questions: how has the GFGP influenced farmers’ livelihood options? How have changes in forest cover due to the GFGP resulted in changes in key ecosystem services such as carbon storage and fresh water supply? What are the reciprocal feedbacks between the human and natural systems? How will the Coupled Human and Natural System evolve under various policy interventions? In order to address these questions, the project takes a

holistic systems approach to integrate data and methods from both social and natural sciences.

This project epitomizes multi-institutional and international collaborations. In addition to UNC-CH’s role as lead institution, researchers from the USDA Forest Service, Anhui Agricultural University, Wuhan Botanical Garden, Chinese Academy of Sciences, and Beijing Forestry University have also contributed to the project. In the past five years, the project has trained dozens of students and scholars both in the US and China for conducting interdisciplinary research. One key finding is that the GFGP has not only substantially increased forest cover in China, but also led rural residents to look to new livelihood options such as turning to rural-urban migration and participating in developing a tourism industry. As similar kinds of programs are replicated around the globe, the team’s interdisciplinary findings stand to inform efforts to use environmental conservation and restoration investments to protect the environment and alleviate poverty.



SEAN,

pictured at an Internally Displaced Persons camp in Iraqi Kurdistan

ISIS against religious minorities. The trip led to a report that contributed to the US State Department’s decision to declare the crimes a genocide.

Sean is currently working in New York City at the Institute for International Education’s Scholar Rescue Fund (IIE-SRF). The program selects professors, researchers, and public intellectuals who are experiencing threats to their expression and their lives in their home countries and offers them fellowship support and visiting academic positions in partnership with institutions of higher learning. He enjoys living in Brooklyn for its vibrancy and diversity, but also misses “the intellectual curiosity of being at UNC. Every day, everywhere you go there are people learning new things and the camaraderie between students is something I will never forget.”

“

THE ISSUE THAT COMPELS ME IS COMPLICATING HOW WE THINK ABOUT CONFLICT, GOOD GUYS AND BAD GUYS, WINNERS AND LOSERS. I AIM TO KEEP EXPLORING WHAT DRIVES PEOPLE TO COMMIT VIOLENT ACTS, EITHER INDIVIDUALLY OR COLLECTIVELY. MY TIME IN THE GEOGRAPHY DEPARTMENT AT UNC AND MY WORK AFTER IS AIMED AT TRYING TO UNDERSTAND THAT QUESTION. HOW DO “ORDINARY” PEOPLE DO EXTRAORDINARILY VIOLENT THINGS? I THINK THAT THE MORE WE TRY TO UNDERSTAND THIS THE MORE COMPASSIONATE OUR RESPONSES WILL BE AT ALL LEVELS.

—Sean Langberg

DIANA B. LYS (BA, '94, EDD, '07) In 2015, I returned to UNC as Assistant Dean for Educator Preparation and Accreditation in the School of Education.

JESSICA BOHN (BA, '98) I am currently serving on the Board of Directors for the NC Science & Engineering Fair Foundation, was named an ASCD Emerging Leader in 2012 and am pursuing a doctoral degree from High Point University.

KAI MONAST (BA '99) I have achieved ‘All But Dissertation’ status in my pursuit of a Doctorate in City and Regional Planning at UNC while continuing to work full time as the Director of the Public Transportation Group at the Institute for Transportation Research and Education at NC State University.

GREG ARCHER (BA, '03) I have worked in Durham as a financial advisor with Edward Jones since 2004. My wife and I just had our first child. His name is Ford Archer and he was born December 13th, 2017.

TIMOTHY BAIRD (PHD, '12) I was promoted to associate professor with tenure in the Department of Geography at Virginia Tech, 2018.

ASHLEY OWNBEY (BA GEOGRAPHY AND PUBLIC POLICY, '14) I am currently finishing my first year in a dual degree program at UNC-Chapel Hill. I am studying public administration and city and regional planning.

ANDREA STEWART (MINOR IN GEOGRAPHY AND COMPUTER SCIENCE, BS ENVIRONMENTAL SCIENCE, '16) I am currently pursuing an M.S. at North Carolina State University in the Ecohydrology and Watershed Science lab. I study tree water use in the southern Appalachian mountains at Coweeta Hydrologic Laboratory!

MOLLY BRUCE (BA GEOGRAPHY AND GLOBAL STUDIES, MINOR IN HISPANIC STUDIES, '16) I started law school at Duke this past Fall, 2017 and will start a Masters of Environmental Management at Duke this coming Fall, 2018 to get a dual JD/MEM. In my free time, I remind all my classmates that UNC basketball is better than Dook basketball.

TONY LIU (BA, '17) After working at NPR’s TED Radio Hour and Morning Edition, I have started working as a producer position with the Peabody Award-winning public radio program, *On Being with Krista Tippett*. The show explores questions of human meaning-making. My background as a human geographer informs my work as a producer.



“I CHOSE GEOGRAPHY BECAUSE, MORE THAN JUST A CAREER OR TECHNICAL SKILLS, IT OFFERED ME A NEW AND CRITICAL WAY TO THINK ABOUT AND UNDERSTAND THE WORLD.”



CHRIS BENNETT

writing computer code for a research project with Prof. Elizabeth Havice

UNDERGRADUATE PROFILE

CHRIS BENNETT

Among other universities you applied to, why did you choose UNC-CH?

I knew that I wanted to attend UNC-CH the first time I stepped on its campus. It felt so full of history and the faculty and researchers were so passionate about being here. Discovering that UNC offered significant opportunities for low-income students like myself sealed the deal. Here, I saw a world of opportunity.

Among other majors at UNC, why did you choose Geography?

I took my first course in geography, GEOG 130 “Development and Inequality,” just because it sounded interesting and satisfied a requirement. Unlike any other class I had ever taken, though, that course gave me conceptual frameworks that helped me to better understand my own experiences, who I am, and the places I come from. I chose Geography because, more than just a career or technical skills, it offered me a new and critical way to think about and understand the world.

What do you bring to geography at UNC? How has studying geography here influenced you?

In addition to Geography, I am also majoring in Computer Science (CS). CS has given me powerful technical skills that I can apply to questions posed

in Geography. Since summer 2017, I have worked with Dr. Elizabeth Havice with support from the National Science Foundation’s IDEA (Increasing Diversity and Enhancing Academia) and REU (Research Experience for Undergraduates) programs. I have been using my computational skills to explore the science-policy relationship in the governance of highly migratory marine resources, including Atlantic Bluefin Tuna and Marine Turtles.

Where does a UNC geography major take you, now and in the future?

My current interest lies in inequalities structuring access to health care. I am planning an honor’s thesis to study access to contraceptive care for adolescents here in North Carolina. I come from a county where a significant proportion of the adolescent female population experience unintended pregnancy. I hope to pursue a

career that might make some policy impact on this and other issues in health geography.

Is there anything else you’d like to tell us about yourself and your experiences as a geographer?

I have a bit of an embarrassing secret: when I came to university, I still thought Geography was just about making maps. Fortunately, no one here ever held that against me, and now I know that Geography is so much more than that. I often field the question “what does it mean to study geography?” For me, Geography is the study of our world and the space that we occupy, something utterly innate to our human experience. Geography has been much more than just a major. Through geography I have grown personally and in terms of my future career. Geography here at UNC has taught me to think carefully about the world around me and given me new insight into the problems I face in my work and studies.