

department of **GEOGRAPHY**

SPRING 2022

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This newsletter is produced by the Information Committee, composed of faculty members Christian Lentz (chair), John Pickles, Aaron Moody, and Jun Liang; graduate student Hilary Sandborn; and undergraduate student Ana Zurita Posas

In photo: Kriddie Whitmore, current Ph.D. student, conducting fieldwork in Parque Nacional Cayambe-Coca, Ecuador

PHOTO CREDIT: EVAN PORTIER

LETTER *from the* CHAIR

DEAR CAROLINA GEOGRAPHY COMMUNITY,

We are so pleased to be reaching out to you again through our departmental newsletter. Although we had much news to share last year, we delayed publication because of the COVID-19 pandemic. Our newsletter is written and produced entirely by faculty and students. Some aspects of our job needed to take priority over others, and whereas news can wait, our core mission of teaching and research always takes priority.

For all of us, the last two and more years have been marked by experiences of irreplaceable loss. I've been left with a sense that the "new normal" has holes that are stubbornly resistant to being patched up and filled in. The circumstance calls upon us to find new ways of living while creating spaces in which we can reflect on what it has meant to support our loved ones and our communities through these extraordinary changes.

I am incredibly proud of our department. In the earliest days of the pandemic, a team of faculty and graduate students worked together to produce resources to support our shift to entirely remote learning (you can still see the resources at <https://teachgeography.web.unc.edu>). Our undergraduate committee supported a groundbreaking colloquium series centered on Black Geographies. It featured a lecture by Geography alum Omololu Refilwe Babatunde (B.A. 2015) about her leadership in confronting the white supremacy on our campus landscape, including that of our own building. Our two new minors in GISciences and Environmental Justice are in great demand, and we are central to UNC's new Data Science minor as well. In short, we never stopped learning and teaching, and these pages testify to the excellence that is built, not in contrast to, but through the challenges that we encounter.

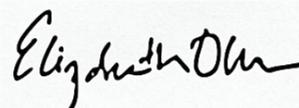
All this time, our phenomenal staff – Barbara Taylor, Nell Phillips, and Dan Warfield – has worked through evenings and weekends to meet the basic needs of the department. It would be difficult to overstate the difference their experience and institutional knowledge makes for us.

Our faculty, graduate, and undergraduate students have continued to garner awards, grants, and to share their findings with the academic community and the public. You will read about some of these accomplishments in this newsletter, but we also hope you will go to our website to see even more (geography.unc.edu). With the relaxation of travel restrictions, we are again seeing our faculty taking students across the U.S. and around the world to produce new geographic knowledge. Notably, UNC Geography had the highest number of National Science Foundation Graduate Research Fellowships awarded to our undergraduate and graduate students of any Geography department in the country.

Less evident in these pages are the growing contributions that our colleagues are beginning to make as leaders across the College and University. Banu Gökariksel is now Chair of the Curriculum in Global Studies; Gabriella Valdivia is Assistant Dean of Honors Carolina; and Diego Riveros-Iregui is Co-Director of the Center for Galapagos Studies. We look forward to sharing these stories and the many others that we couldn't include here in next year's newsletter.

As you read about individual accomplishments in these pages, I want to end by reminding you that they are achieved through the collective effort and support of our community. This includes many of you who donate what you can to our department. Your support during this time of careful budgetary management by UNC has made a tremendous difference in tangible ways – funding graduate and undergraduate research, supporting our newest faculty members with research and teaching, and allowing us to continue providing what we believe is the best Geography-education program in the country. You have helped us create something extraordinary that equates to much more than filling the holes, and we are very grateful.

ELIZABETH OLSON
Professor and Chair



STEVE WALSH

FACULTY PROFILE

[Click for the full interview](#)

THIS YEAR STEVE WALSH RETIRED AND BECAME PROFESSOR EMERITUS AND RESEARCH PROFESSOR. HE WILL REMAIN ACTIVE IN GEOGRAPHY AND THE CENTER FOR GALAPAGOS STUDIES.

Professor John Pickles interviewed Steve to explore how he came to be a geographer, how he brought various approaches to the discipline and to UNC, and how these have developed to the present with his commitment to the UNC Center for Galapagos Studies, where Steve has served as Director. He began by asking Steve about general reflections on retiring and achievements in his career. The full interview can be found at geography.unc.edu.

STEVE: For so much of what I've worked on over the years, the real sense of accomplishment has been about the doctoral students. Their graduation, their placement in high-profile universities, and their achievements. Now many of them are full professors or deans at various institutions. If I had to point toward one area of satisfaction, it would be that the grants come and go, the papers come and go, but there is a network of people that graduated with me, who helped me get smarter and moved on to outstanding careers.



JOHN: What was your experience like when coming to UNC Geography?

STEVE: Rich Kopeck was the chair who hired me in 1986. Back then the Department was much smaller, and it primarily focused on teaching. It didn't have a large focus on research or on external grant funding. I brought a series of grants with me from Oklahoma State University and soon I had funds from NSF, NASA, and other organizations within and outside North Carolina. The funding allowed me to jump into research and get the Spatial Analysis Lab up and running, normally staffed with 10-PhD students.

JOHN: For the past 15 years or so we have been privileged to watch you develop the Galapagos Initiative. Developing the center is one of the most impressive institutional achievements at the university, partly because of the scale of the Center's activities and the model of interdisciplinarity you were able to instill in it. Today, the Center for Galapagos Studies is located on the UNC campus and twinned with the University of San Francisco, Quito, with its own Galapagos Science Center on San Cristobal Island.

STEVE: Both Centers support student and faculty research and teaching programs through a suite of laboratories and professional staff in the islands as well as dedicated staff and a host of interdisciplinary scientists at UNC. It has been successful largely because the Galapagos Initiative was built around bigger questions linking disciplines, making the entire enterprise much richer. My challenge was how we could attract the best and the brightest to the Galapagos? Part of that answer was to reduce the level of uncertainty working in international places. Building a facility, creating social networks, as well as professional networks, building a staff and acquiring state of the art equipment in an international location was the way to reduce anxiety of scientists. The research and educational infrastructure we were able to develop really took off when we opened the Galapagos Science Center on the island.

JOHN: As you enter your retirement year, how are you reflecting on the discipline, department, and the university?

STEVE: Geography has been a perfect fit for me – exploiting and shaping the way I think and the things that I find interesting. I arrived in 1986 and the difference between then and now is utterly amazing, based on what we as a department do and the reach that our science and faculty have beyond campus. Only good times lie ahead for the Department. I've been thrilled to be part of it, to help where I can encourage and challenge students and colleagues whether it be through the Galapagos initiative or something else. But it is that welcoming attitude that geography has that makes it a strong unit. It welcomes diversity of thought and diversity of context and ethnicities and all sorts of things that keep us motivated and moving towards social and scientific action.



KRIDDIE WHITMORE

GRADUATE STUDENT PROFILE

THE SECOND-YEAR PH.D. STUDENT, LEADS CARBON RESEARCH IN THE PÁRAMO ECOSYSTEM OF THE ANDES MOUNTAINS IN ECUADOR



WHITMORE AND HER TEAM AT HER FIELD SITE IN ECUADOR



Interested in aquatic ecosystems, water quality, and biogeochemical cycling, Whitmore works as a research assistant in Dr. Diego Riveros-Iregui's Carbonshed Lab. This past summer, Whitmore was able to continue fieldwork in the Ecuadorian páramo where she is working to understand carbon storage within the soil and river systems. The páramo is a unique ecosystem situated between the forest line and snow line of the Andes Mountains. This region plays a critical role for carbon storage and sequestration. To date, there has not been much research about how much carbon is being released from the páramo's land and water. This is what Whitmore and her team aim to investigate.

? WHAT DOES THE PERSPECTIVE OF GEOGRAPHY BRING TO YOUR WORK?

Having previously earned her master's degree in forestry from Virginia Tech and worked as a research assistant for the Flathead Lake Biological Station in Montana, Whitmore was excited to broaden her horizons in the Department of Geography at UNC. Whitmore enjoys the interdisciplinary nature of geography. Interacting with human geographers in our department offers her the opportunity to incorporate qualitative methods in future research.

? WHAT WOULD YOU SAY IS YOUR BIGGEST ACCOMPLISHMENT FROM THE PAST YEAR?

According to Whitmore, working through the logistics of international fieldwork during the COVID-19 pandemic is one of her biggest accomplishments and challenges in the past year. Whitmore took on a leadership role in 2020, but it was challenging to manage scheduling in the laboratory with reduced capacity and the possibility of travel was unknown. However, she was able to adapt to and overcome these challenges and now continues to move her work forward.

Whitmore hopes to explore new ideas and methods as she continues her research in the páramo. She is excited about the possibility of using drones as a tool to capture data in this region. She has just received a Student Research Grant from the Society of Wetland Scientists for her proposal titled "Carbon Emissions from Small Wetlands in a High-Elevation Tropical System." This grant will provide funds for her field season in Ecuador this summer.

GABRIELA DUNCAN

UNDERGRADUATE STUDENT PROFILE



JUST ONE OF MANY AMAZING UNDERGRADUATE STUDENTS IN THE GEOGRAPHY DEPARTMENT, GABRIELA DUNCAN IS A JUNIOR MAJORING IN INTERDISCIPLINARY STUDIES: ENVIRONMENTAL JUSTICE AND MINORING IN GEOGRAPHY.

Professor Gabriela Valdivia serves as her major advisor, someone about whom Duncan states, "has enhanced my experience here at UNC." Not only has Duncan enjoyed learning from all her geography professors so far, but she also appreciates the field of geography for its interdisciplinary nature.

Duncan is currently researching mutual aid organizations during the COVID-19 lockdown in Ecuador alongside Dr. Valdivia. Her research on this topic dates to the fall of 2020 when she read an email on the department listserv asking for Research Assistants. Shortly after responding, she and two other undergraduate students got to work. The project was also a partnership with MUSAM, an Ecuador-based organization that conducts interviews with people living in urban Ecuador. Duncan's main role was to translate these interviews from Spanish to English. In 2021, she joined a team of undergraduate students who presented their findings during UNC's annual Celebration of Undergraduate Research. Continuing her work, she is conducting a literature review on the relationship of COVID-19 to public spaces, urbanization, and risk management.

Now that travel is becoming possible again, Duncan is enthusiastic about studying abroad in Quito, Ecuador in Fall 2022. In the interview she said she looks forward to "exploring Latin America and its diverse ecosystems, practicing my Spanish, learning more about my culture, and taking Geography classes." The opportunity will offer different avenues to explore her passion for Urban Studies and observe the innovations implemented in the city of Quito.

Duncan has a bit of advice for her fellow students at Carolina. She states that she has "never met anyone who has regretted taking a Geography class at UNC." She also believes that students should pursue Geographic Information System (GIS) courses in the department as this skill will distinguish themselves when applying for opportunities across campus.

After UNC, Duncan hopes to attend graduate school to pursue a degree in Urban Planning with an emphasis on Environmental Justice and Sustainability. Before Fall 2021, neither graduate school nor study abroad was on her radar. But two experiences changed her mind: first, studying with Valdivia and, second, taking GEOG 468: Environmental Justice in Urban Europe with UNC alum Dr. Jonathan Lepofsky (Ph.D. 2007), a course that opened new vistas onto sustainable cities and the wider world. Duncan now has teaching on her mind, stating that, "maybe one day in the future, I will be Dr. Duncan and could inspire students as a professor!"

"MAYBE ONE DAY IN THE FUTURE, I WILL BE DR. DUNCAN AND COULD INSPIRE STUDENTS AS A PROFESSOR."

TEACHING THE GEOGRAPHY

WHAT DO YOU EAT? WHERE DOES YOUR FOOD COME FROM? WHO PRODUCES IT UNDER WHAT CONDITIONS? HOW DO GLOBALIZED FOOD SYSTEMS AFFECT OUR DIET, HEALTH, AND ENVIRONMENT?

People have long shaped landscapes to produce food, just as the food we consume has changed our bodies, eating habits, and ecosystems. But over the last century or so, we have all entered into an era when industrial food production and the global commodities trade have eroded direct connections between us and the landscapes, farmers, ranchers, and others that sustain us. UNC geographers seek to educate students in much more than the basics of healthy living, good eating, and culinary cultures. Studying food and agriculture and thinking critically about such topics underlines lessons in geographic fundamentals, such as human-environment relations, hunger and spatial inequality, and understanding the world we inhabit and navigate everyday.

UNC Geography offers three courses on the geography of food and agriculture—with more on the way. “Beyond Sustainability” (GEOG 294) explores human earth relationships through the lens of sustenance. Taught by Professor Chérie Rivers Ndaliko, GEOG 294 trains students to understand sustenance through its political, physical, economic, and cultural dimensions. Ndaliko’s course takes place on a local farm where she teaches agriculture and sustenance through active participation, thereby fulfilling an APPLIES service-learning component as well. Another course currently taught by Ndaliko, “Freedom Farming” (GEOG 295) explores the relationship between farming, health, and social justice among Black communities throughout the African diaspora.

Complementing this hands-on approach, “Agriculture, Food, and Society” (GEOG 232) encourages students to think about what they eat by examining the longer historical and geographic processes that have made our meals what they are today. Taught by Professor Christian C. Lentz, GEOG 232 surveys the production,

OF FOOD & AGRICULTURE

consumption, and circulation of food from the American encounter with Europe half a millennium ago up to the present. The course features a visit to the Carolina Community Garden where volunteers, including many students, grow food for the benefit of UNC employees, especially recent immigrants from Myanmar who gain access to fresh, sustainably grown vegetables.

Students have responded to these courses with great interest and enthusiasm. “Professor Ndaliko made learning possible in so many ways that I had never thought of before,” raved one student, adding that GEOG 294 “offered a home and an escape from the way so many classes feel.” Other students praised her course’s comforting environment, appreciated the hands-on experience, and reflected that its lessons would carry with them far into the future. “Professor Lentz gives the best lectures I’ve seen yet at UNC,” wrote one student of GEOG 232, joining two seniors who approached him after the last day of classes in 2021 to tell him that the course was “the best course they had taken at UNC.” His students were particularly excited to meet Carolina authors Prof. Marcie Ferris (American Studies), author of *The Edible South: The Power of Food and the Making of an American Region* (UNC Press, 2016), and Prof. Angela Stuesse (Anthropology), author of *Scratching Out a Living: Latinos, Race, and Work in the Deep South* (University of California Press, 2016).

Even though some students might feel full after taking just one of these courses, their geography professors have begun to offer extra helpings to those with big intellectual stomachs. During Maymester 2022, Ndaliko will offer Agroecology (GEOG 390), which explores the intersection of food cultivation, and ecology and also includes a service-learning component on a local farm. Meanwhile, Lentz teaches a graduate seminar on Agrarian Studies, a course that has attracted advanced students from across campus. In short, UNC Geography offers a rich menu for students interested in learning more about what they eat, where it comes from, and why it’s so important to think about these questions.



CHÉRIE RIVERS NDALIKO

CHRISTIAN LENTZ



PROF. NDALIKO ON HER
“FREEDOM FARM,” UZURI
SANCTUARY

CONGHE SONG

FACULTY PROFILE

Professor Conghe Song and co-investigators have been awarded a \$1.6 million grant from the U.S. National Science Foundation (NSF) Dynamics of Integrated Socio-Environmental Systems Program for their project titled “Influence of Community Forestry on the Dynamics of the Integrated Socio-Environmental Systems.” An international interdisciplinary project, UNC is the lead institute collaborating with North Carolina State University, the University of Virginia, and the Institute of Forestry, Pokhara Campus, Tribhuvan University, Nepal. Dr. Song’s team will study how to better preserve the forests and support the lives of forest-dependent people in Nepal.

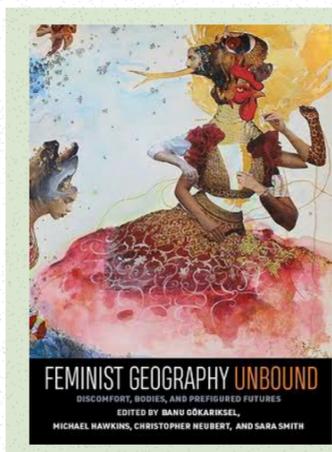
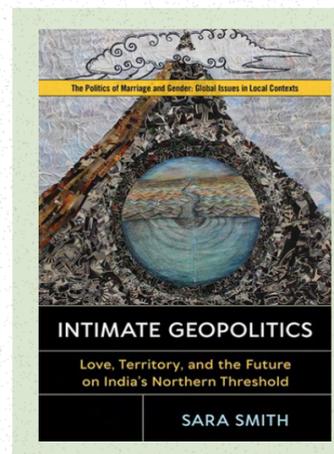
Their research will examine how community forestry practices affect peoples’ livelihoods and their social interactions, how these practices influence rural out-migration, and land-use. The project will also consider how COVID-19 influenced rural peoples’ livelihoods and their dependence on community forestry and how community forestry influences the provision of ecosystem goods and services. The researchers will interview households about their forest management practices, the origin of management rules, and the role of community members in making rules. Households will also be surveyed to determine detailed information about their agricultural practices, migration patterns, and if community forestry has helped buffer COVID-19 impacts. Remote sensing data collected by satellites, in situ hydrological data on the ground, and statistical, ecological and hydrological models will also be used to estimate how much water forests use, and how much carbon dioxide they absorb from the atmosphere.



FACULTY BOOKSHELF: FEMINISM

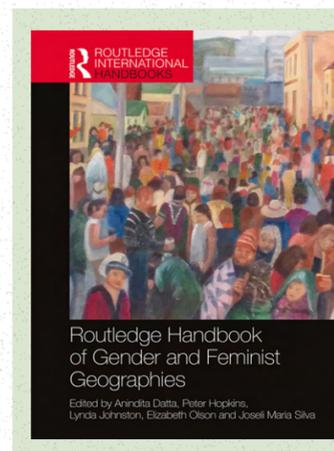
In the last two years, faculty and graduate students in the Geography Department have contributed greatly to scholarship in feminist geography. All three of these works push the boundaries of our discipline and demonstrate the vibrancy of feminist geography at UNC.

Beginning with a love story set in the region of Ladakh, in India’s Jammu and Kashmir State, *Intimate Geopolitics* (Rutgers University Press, 2020) is also a story about territory, and the ways that love, marriage, and young people are caught up in contemporary global processes. In Ladakh, children grow up to adopt a religious identity in part to be counted in the census, and to vote in elections. Religion, population, and voting blocs are implicitly tied to territorial sovereignty and marriage across religious boundaries becomes a geopolitical problem in an area that seeks to define insiders and outsiders in relation to borders and national identity. This book populates territory, a conventionally abstract rendering of space, with the stories of those who live through territorial struggle at marriage and birth ceremonies, in the kitchen and in the bazaar, in heartbreak and in joy. Winner of the 2021 Julian Minghi Distinguished Book Award from the American Association of Geographers, *Intimate Geopolitics* argues for the incorporation of the role of time-temporality- into our understanding of territory.



Featuring work by professors and graduate students in UNC Geography, *Feminist Geography Unbound* (West Virginia University Press, 2021) seeks to expand how we think about feminisms in geography by exploring Indigenous and decolonial feminisms, Black geographies, and trans geographies. The volume is organized around three themes: discomfort as a site where differences generate both productive and immobilizing frictions; gendered and racialized bodies as sites of political struggle; and the embodied work of building the future. It includes thirteen chapters and a concluding interlude with interviews with Feminist Geography Collectives.

Edited by Professor Betsy Olson and others, this handbook provides a comprehensive analysis of contemporary gender and feminist geographies in an international and multi-disciplinary context. It features 48 new contributions from both experienced and emerging scholars, artists and activists who critically review and appraise current spatial politics. Each chapter advances the future development of feminist geography and gender studies, as well as empirical evidence of changing relationships between gender, power, place, and space. Following an introduction by the editors, the handbook presents original work that engages relevant issues including violence, resistance, agency, and desire. *The Routledge Handbook of Gender and Feminist Geographies* (Routledge, 2020) will be an essential reference work for scholars interested in feminist geography, gender studies, and geographical thought.



FACULTY NEWS

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DIEGO RIVEROS-IREGUI received a Fulbright U.S. Scholar Award to study the effects of climate change on water, energy, and nutrients across watersheds of the Andes Mountains, Ecuador. He was also one of three recipients of the Faculty Award for Global Excellence from the Office of the Vice Provost for Global Affairs.

CHIP KONRAD received the Presidential Award from the NC Athletic Trainers Association.

DANIELLE PURIFOY received the #1 Essay Award from Southern Cultures and the 2021 AAG Political Geography Specialty Group Stanley D. Brunn Junior Scholar Award.

ELIZABETH HAVICE received the Tanner Award for Excellence in Undergraduate Teaching.

JAVIER ARCE-NAZARIO received a Faculty Fellowship from UNC’s Institute for the Arts and Humanities for his work on cartography and visualization of the Global South.

SARA SMITH received the Julian Minghi Distinguished Book Award from AAG for her book titled, “Intimate Geopolitics: Love, Territory, and the Future on India’s Northern Threshold.” She also received the Faculty Award for Excellence in Graduate Student and Academic Program Support.

CHRISTIAN LENTZ received the Benda Prize for his first book titled, “Contested Territory.”

CHERIE RIVERS NDALIKO received the APPLES Service-Learning Teaching Excellence Award.

SCOTT KIRSCH received the Schwab Academic Excellence Award.

CLARK GRAY and collaborators published the International Handbook on Population and Environment.

marking a milestone in THE GRADUATE PROGRAM

The Department of Geography welcomes its first-ever graduate cohort composed of all women and majority women of color! Admitted during the global COVID-19 pandemic and in the wake of a national movement for racial justice, these women mark a milestone in the department's pursuit of a diverse and talented student body. Earning a Ph.D. in UNC Geography's graduate program takes on average five years. Please stay tuned as this remarkable cohort continues to excel, exhibiting Carolina's tradition of excellence on their way to degrees!



The cohort's socially distanced first-year seminar taught by Dr. Erika Wise (front middle). From left, Leiha Edmonds, Hilary Sandborn, Michelle Lanier, Bryttani Wooten, and Sara Ghebremicael.

Leiha Edmonds' research focuses on intergenerational caregiving and the future of aging in cities. Edmonds is a research assistant for Prof. Betsy Olson on the Caregiving Kids project funded by the National Science Foundation. Before coming to Carolina, she led research on economic inequality at the Urban Institute in Washington D.C., worked as a planner for the City of Evanston, IL, and organized healthcare workers in Chicago and East St. Louis, IL.

Sara Ghebremicael, a predoctoral trainee at the Carolina Population Center, researches the intersection of climate change, migration, food security, and issues of environmental justice. Ghebremicael is focusing on Ethiopia using longitudinal, household-survey data and high-resolution climate data to understand patterns of vulnerability and resilience. Prior to UNC, she earned her B.A. in Environmental Sciences from the Univ. of San Diego.

Michelle Lanier is interested in developing the concept of "Womanist Cartographies" and experimenting with folkloric, vernacular, and restorative mapping of the Black South. Lanier is a faculty member at the Center for Documentary Studies at Duke University. Additionally, she is a filmmaker, museum professional, and folklorist, while serving as the first African-American director of North Carolina Historic Sites.

Hilary Sandborn is interested in health geography, infectious disease ecology, and spatial accessibility. Currently a research assistant for Dr. Ross Boyce, a faculty member in UNC's Department of Medicine, Sandborn is exploring environmental impacts on malaria transmission in East Africa. Prior to beginning her graduate studies, she earned her B.S. in Geographic Information Sciences and Anthropology from the Univ. of Maryland.

Bryttani Wooten's interests lie at the intersection of extreme weather and the health of Black communities in the Southern United States. A student of Prof. Chip Konrad, Wooten researches the relationship between extreme temperatures and the birth outcomes of Black mothers in North Carolina. A graduate of the Pennsylvania State University, she is a rising star in the field of meteorology and climatology.

supporting the NORTH CAROLINA GEOGRAPHICAL SOCIETY

The NCGS advances geographic knowledge in schools, colleges, and public life throughout North Carolina. Recognizing the importance of geography to national and international well-being, the NCGS represents the diverse range of geographers who work, teach, and learn across the state. Keeping us in touch with fellow geographers, the organization publishes both the academic journal *The North Carolina Geographer* and the biannual newsletter "Semester Update". It sponsors an annual conference—held in March 2022 at UNC-Greensboro—that showcases the geographic work of students, faculty, and professionals. The NCGS also reaches out to schools to encourage learning and teaching of geography at the K-12 level. For example, its Giant Map Project brings room-sized maps of South America and Africa to local schools, encouraging students to walk across them, learn about scale, and orient themselves in relation to our world. For more information, please visit their site at: <https://ncgeography.org>



news from the NATIONAL UNIVERSITY OF SINGAPORE

FOR NEARLY TWO DECADES, UNC GEOGRAPHY HAS ENJOYED A CLOSE RELATIONSHIP WITH FACULTY AND STUDENTS AT THE DEPARTMENT OF GEOGRAPHY AT THE NATIONAL UNIVERSITY OF SINGAPORE (NUS).

Our joint degree program has been a success and we have benefitted from both short and extended exchanges of faculty and students between both universities. Students have graduated with joint degrees from UNC and NUS, and several faculty members have joint research projects and close collaborations with colleagues at NUS.

Raffles Professor of Social Sciences, Brenda Yoh (right) has taught and carried out research in the Department of Geography at NUS for more than 30 years. She is also Director of Humanities and Social Science Research in the Office of the Deputy President and, leads the Asian Migration Cluster at the university's Asia Research Institute. Yoh has published 35 books and co-authored more than 230 journal articles. Only months after being elected to the British Academy in July 2021, she was awarded the prestigious Vautrin Lud Prize – colloquially known as the 'Nobel Prize' for Geography. Named after a 16th-century French scholar credited with calling the New World 'America' after Amerigo Vespucci, the award is given to geographers for outstanding achievement in the field. The award was presented in October at the International Geography Festival in Saint-des-Vosges, France.

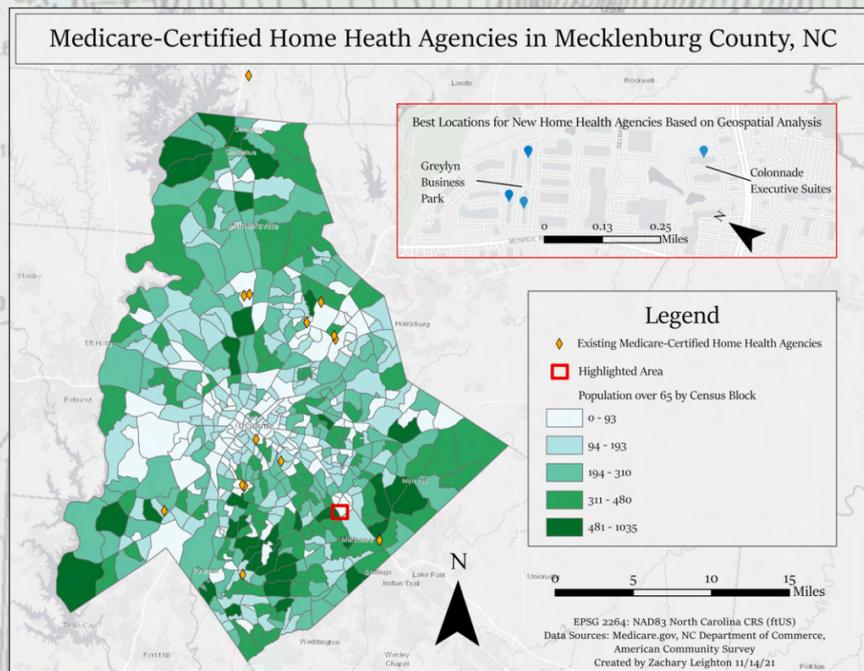


updates in GIScience

Over the past several years the UNC Geography Department has grown its faculty expertise and course offerings in geospatial sciences, including GIS, satellite remote sensing, data visualization, and data science.

These investments have led to a vibrant community of students in GIScience that is palpable in the hallways and lab spaces. Our students are gaining skills in programming, graphic visualization, spatial analysis, and big-data applications using state-of-the-art software in a diverse set of course offerings that are more synergistic than ever. Perhaps most importantly, our students are receiving much more rigorous training in programming, including Javascript, Python, and R. These software platforms are fundamental building blocks for careers in geospatial sciences as well as further study in graduate school. Our newest offerings include courses in Earth Science Data Analysis (GEOG 567), Geospatial Data Science (GEOG 215), and Geographic Data Visualization which, together with 10 other regularly offered courses, support the department's new minor in GIScience and the college's minor in Data Science. Our GIScience courses are routinely filled to capacity. Drs. Arce-Nazario, Delamater, Emch, Liang, Moody, Song, and Vina all contribute to our program offerings in Geospatial Sciences.

Zach Leighton, an undergraduate student in Geography, wins the GIS Day Map Competition!

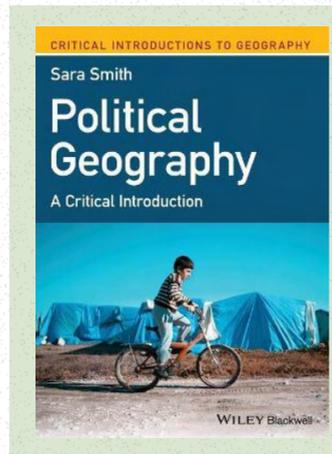


of 112 offices in the county where a home health agency could potentially be located. Each office was assigned a total number of potential customers based on the surrounding elderly population and the office's prospective distance from existing Medicare-certified home health agencies. The locations found to have the highest potential customer population were Colonnade Executive Suites and Greylyn Business Park in southeastern Charlotte.

Medicare-certified home health agencies provide home-based care to Medicare-eligible patients. Services like these are important resources for anyone over the age of 65, especially those suffering from diseases such as Alzheimer's and dementia. For example, the elderly population of Mecklenburg County, North Carolina is expected to increase rapidly over the coming decades, raising questions of how the county's medical infrastructure will keep up with the increased demand. This map (left) is part of a project to determine the best location for a new Medicare-certified home health agency in Mecklenburg County. To create the map, Zach wrote a script that analyzed a list

FACULTY BOOKSHELF

The Routledge Handbook of Critical Resource Geography (Routledge, 2022) provides an essential guide to the study of resources and their role in socio-environmental change. The volume includes 37 chapters with original contributions from more than 60 authors. It is organized into four sections: "(Un)knowing resources," focuses on various theoretical approaches to studying resources; "(Un)knowing resource systems," examines the relationship between capitalist systems and the making, consuming, and disposal of resources; "Doing critical resource geography" focuses on the practices of critical resource scholarship, particularly in the context of engaged research and teaching; and "Resource-making/world-making," which develops a series of case studies of how resource making affects socio-environmental life.



Political geography is the study of how power struggles both shape and are shaped by the places in which they occur—the spatial nature of political power. *Political Geography: A Critical Introduction* (Wiley-Blackwell, 2020) helps students understand how power is related to space, place, and territory, illustrating how everyday life and the world of global conflict and nation-states are inextricably intertwined.

A work of historical and political geography, *Contested Territory: Điện Biên Phủ and the Making of Northwest Vietnam* (Yale University Press, 2019) reframes the epic Battle of Điện Biên Phủ, the 1954 conflict that toppled France's empire in Indochina. Tracking anticolonial revolution and nation-state formation from 1945 to 1960, Lentz argues that Vietnamese revolutionaries and local elites constructed territory as a strategic form of rule. Engaging newly available archival sources from Vietnam and France, *Contested Territory* offers a novel conception of territory as a contingent outcome of spatial contests. It won the 2021 Harry J. Benda Prize, awarded by the Association of Asian Studies for outstanding first book on Southeast Asia in any discipline.



GRADUATE STUDENT NEWS

SUAD JABR received the NSF Graduate Research Fellowship Program Award in 2021.

CAIT MCMILLAN received the Winifred Cullis Fellowship from Graduate Women International.

LILY HERBERT received a Summer Research Fellowship.

MARY BIGGS received an AAG Research Grant and the NSF Graduate Research Fellowship Program Award in 2020.

RACHEL WOODUL received a UNC Impact Award and a Data Hero Award.

DEANNA CORIN received a Community Engagement Fellowship and UNC's Center for the Study of the American South Summer Research Award.

INGRID DIAZ-MORENO received the AAG Latin America Specialty Group PhD Fieldwork Award and the AAG Cultural Geography Specialty Group Denis E. Cosgrove Research Award.

MONTANA ECK received UNC's Graduate School Impact Award and a Summer Research Fellowship.

ANNIE ELLEDGE received UNC's Center for the Study of the American South Summer Research Award and was a 2022 NSF Graduate Research Fellowship Program honorable mention.

MICHAEL HAWKINS received a Mellon/ACLS Dissertation Completion Fellowship from the American Council of Learned Societies.

PALLAVI GUPTA received a Women's Studies Fellowship.

CARLOS SERRANO received an AAG Dissertation Research Grant and a Pre-Dissertation Field Research Award from the Institute for the Study of the Americas.

RAJESH BISTA received a UNC Dissertation Completion Fellowship.

KRIDDIE WHITMORE received a Dean's Graduate Fellowship and a Community Engagement Fellowship

ANDREINA MALKI received a CSAS Summer Research Grant and a Pre-Dissertation Prospectus Fellowship.

BETUL AYKAC received an Off-Campus Dissertation Fellowship.

We also congratulate all grads who have successfully passed their comprehensive exams, and defended their proposals, theses, or dissertations!

ELLA KOEZE

ALUMNI PROFILE



? HOW DID YOUR GEOGRAPHY STUDIES LEAD YOU TO JOURNALISM AND NEWS GRAPHICS?

“GIS was also my first introduction to the nuts and bolts of data analysis, another thing that I use nearly every day in my job at *The New York Times*. When I realized I could make a career out of mapping and visualizing data to explore topics I was interested in, I knew that was what I wanted to do. Beyond GIS, I think geography is a great field to study for anyone going into journalism. My classes in the geography department taught me to think about and question the systems and interactions that shape the world. Geography as an academic discipline, in my experience, is interested in not just describing things, but also explaining why the world is the way it is and how it came to be that way – questions that are also driving forces in journalism.”

UNC ALUM, ELLA KOEZE (BA GEOGRAPHY 2015) NOW WORKS AS A GRAPHICS EDITOR FOR THE NEW YORK TIMES

? WHAT CLASSES OR PROFESSORS STOOD OUT TO YOU DURING YOUR TIME AT UNC GEOGRAPHY?

“Besides GIS classes, I specifically recall courses I took with Betsy Olson, Altha Cravey, and Stephen Birdsall that really shaped how I thought about the world and encouraged me to lean into my curiosity about the places and people around me. I remember attending a huge craft fair in central North Carolina to learn about Hispanic migration to the Southeastern U.S. for Dr. Cravey’s class. And I still think about Dr. Birdsall’s class on North American landscapes any time I take a car trip anywhere.”

? WHAT RECENT WORK ARE YOU PARTICULARLY PROUD OF AND HOW DID THAT WORK COME ABOUT?

“Two recent pieces of work where I used my geography background are a piece about gerrymandering in Texas’ new congressional maps and another about the history of sanctions being used as a tool of foreign policy. The Texas piece is about the political geography of Texas and how lawmakers can exploit the physical location of voters to draw district boundaries that consolidate their own power. When the most recent proposed congressional maps were released, we did some basic analysis of the political and demographic makeup of the new districts vs. the old that helped shape the narrative of the piece. We then literally zoomed into different cities and zones to find examples of gerrymandering. In this instance, the evidence was apparent to the naked eye, which is why we decided to include inset maps of different areas so readers could see for themselves how districts were drawn. The piece about sanctions does not include maps, but it also exercised the geographic part of my brain. I had been looking for ways to put the current sanctions against Russia in a broader context and give readers some basis for thinking about what their likely impacts would be, when I came across a dataset of sanctions cases compiled by researchers at Drexel University. From that data and from speaking with experts, I learned that the effectiveness of any one sanction relies on many factors including the relative proximity, distribution of resources within and political alignments of different countries. Furthermore, I learned about how sanctions can reshape the cultural and political landscapes of nations profoundly after they are imposed.”

? DO YOU HAVE ANY ADVICE FOR GEOGRAPHERS INTERESTED IN JOURNALISM AND VISUAL COMMUNICATION?

“If you have an idea you want to explore, a question you want to answer, or a project in mind, go ahead and do it. You will learn so much in the process and then have a result that will help demonstrate your abilities to others, even if it doesn’t turn out exactly as you expected. Geography classes are a great place to take on projects like these! Don’t be afraid to try a new technology or investigate a topic you don’t have familiarity with. And lastly, don’t be afraid to ask for help from your professors, people in the industry, and especially your peers. Most of my job consists of diving into projects I’m not sure I have the skills to accomplish (at least in the beginning) and topics that I am not an expert in and asking for help along the way. It’s a field where there are constantly new things to learn and no shame in learning from others or learning how to do something together.”

“MY GIS CLASSES AT UNC WERE THE FIRST TIMES I EVER TRULY THOUGHT ABOUT THE POWER OF VISUALIZING DATA, WHICH IS NOW THE BASIS OF MOST OF MY WORK.”

PAUL DELAMATER

FACULTY PROFILE



Paul Delamater has been interviewed by several local news sources for his work on forecasting COVID-19 metrics across North Carolina.

Delamater is a health geographer with interests in childhood vaccination, herd immunity, and vaccine-preventable diseases. So, when the COVID-19 pandemic began, he naturally became the department’s resident COVID-19 expert. With a team of researchers, he has been tracking the risk of catching the virus in North Carolina throughout the course of the pandemic. He has contributed to the university’s COVID-19 dashboard and been interviewed for several local news outlets. With expertise in geographic information systems (GIS) and statistical/spatial analysis, he and his team have been consistently updating graphs, plots, and maps of COVID-19 metrics on their nc-covid.org website. In the department, Delamater regularly teaches health and medical geography, public health applications of GIS, and spatial data science courses. His population health research is invaluable to the department and the broader North Carolina community.

PHOTO COURTESY OF PAUL DELAMATER

KATE BRANDT

GRADUATE STUDENT PROFILE



Kate Brandt is the 2022 recipient of the Boka W. Hadzija Award for Distinguished University Service by a Graduate or Professional Student.

Awarded by UNC’s Chancellor, the award recognizes graduate and professional students who demonstrate exemplary character, scholarship, leadership, and service by giving above and beyond to the greater university community. For the past few years, Brandt has served as vice president of the Graduate and Professional Student Government where she advocates for graduate students needs. Specifically, she has worked to clarify policies and procedures related to COVID-19. Initially, Brandt was drawn to UNC when choosing a graduate school because of its strong sense of community and support between students, especially in the Geography Department. She now enjoys working with other graduate students to solve problems for her community while feeling called to give back to the university. She hopes to continue with advocacy and service work alongside Geography faculty and students while working on her dissertation. Continuing her outstanding work, Brandt’s dissertation research uses a disease ecology perspective to examine the factors contributing to high rates of gastric cancer in Western Honduras.

CLARK GRAY

FACULTY PROFILE

Clark Gray's research on livelihoods, population health, and climate change has been funded by the National Science Foundation (NSF) and the National Institutes of Health (NIH).

Gray is an international leader in analyzing the impacts of climate-induced livelihood changes on the migration and well-being of vulnerable people. For example, he is leading an inquiry on "The Resilience of Food Security to Climate Shocks" which received NIH support in May 2022. Over the next two years, this project will measure the vulnerability and resilience of household food security to climate shocks in Nigeria, Ethiopia, Tanzania, and Malawi. This research will represent the first multi-country investigation of vulnerability and resilience of food security to climate shocks, focusing on four countries where these concerns are paramount.



PHOTOS COURTESY OF CLARK GRAY

ASHLEY WARD

ALUMNI PROFILE

Ashley Ward is a UNC alum (BA (2003), MA (2005), Ph.D. (2012)), former lecturer, and health geographer.

Ward is currently running for election to the U.S. House to represent North Carolina's 6th Congressional District. Born in Durham, NC, Ward is a Tarheel through and through. After college, she worked as a Lecturer in the Department of Geography before moving to take up a lead role with the climate-health for the UNC Climate Center NOAA Regional Integrated Science Program for the Carolinas. She currently works as a Senior Policy Associate for Engagement and Outreach for the Internet of Water Coalition at the Nicholas Institute for Environmental Policy Solutions at Duke University. Ward is passionate about community issues, particularly issues relating to health care and climate change.



PHOTO COURTESY OF ASHLEY WARD

FACULTY PROMOTIONS

CLARK GRAY has been promoted to Full Professor. Gray is a population and human-environment geographer who develops survey and statistical methods to analyze interactions between livelihoods, human development, and environmental change.

ELIZABETH HAVICE has been promoted to Full Professor. Havice has made important international contributions in research, engaged scholarship, and outreach in the areas of fisheries and seafood governance, the role of mobile marine resources for concepts and practices of state sovereignty, and the co-productive relationships between environmental governance and new forms of knowledge production.

SARA SMITH has been promoted to Full Professor. Smith is a feminist political geographer interested in the relationship between territory, bodies, and the everyday.

ERIKA WISE has been promoted to Full Professor. Wise is a climate researcher, primarily focused on understanding water and climate through the use of dendrochronology.

PAUL DELAMATER has been promoted to Associate Professor with tenure. Delamater is a health geographer interested in the geographic aspects of health outcomes, behaviors, as well as health care access and utilization.

JAVIER ARCE NAZARIO

FACULTY PROFILE

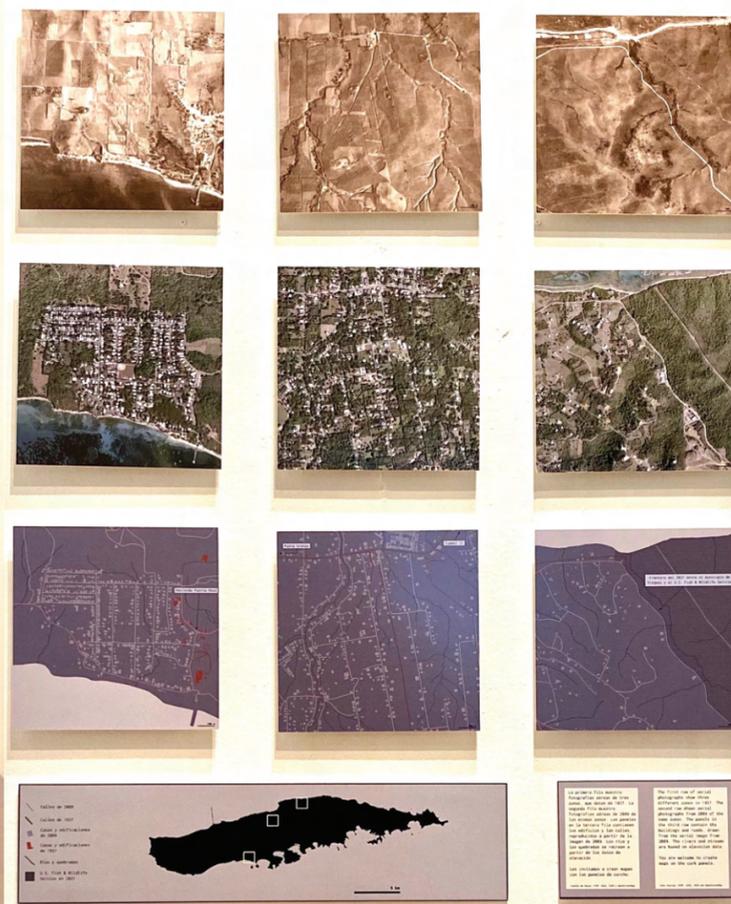
Javier Arce Nazario uses mapping designed with communities and for communities as part of his multidisciplinary research approach to landscapes and their dynamics.

Geovisualizing Vieques is an exhibit created by the Carolina Cartography Collective, that opened in Puerto Rico's Museo El Fortin Conde de Mirasol in December 2021. Featuring digital and print map installations, the exhibit was designed to create a space for conversation between Vieques residents, visitors, and map creators about the landscapes of an island profoundly shaped by decades of occupation by the U.S. Navy. Visitors to the exhibit can interact with maps from the island's early colonial history and with installations examining changes in land tenure and land use, different perspectives on the Naval bombardment of the island, and the marine

transportation that connects Vieques to services and workplaces on the larger island of Puerto Rico. These mappings are meant to help communities in Vieques to envision their future collaboratively. The exhibit runs until May 2022. More broadly, Arce Nazario's work in the Caribbean, Amazon and Galapagos focuses mostly on rural landscapes, water resources, and agriculture. It combines cartography with quantitative laboratory methods and remote sensing to uncover and share the stories of landscapes with broad audiences.



15 PHOTOS COURTESY OF JAVIER ARCE NAZARIO



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Please consider making a gift to the Geography Department to support our excellent undergraduate and graduate students as they become leaders on and off campus. Even a small gift can make a big difference.

geography.unc.edu/give

