

# DEPARTMENT OF GEOGRAPHY & GEOGRAPHIC INFORMATION SCIENCE

## CyberGIS Center Creates COVID-19 Tracking Platform

By Therese Pokorney, College of LAS

The CyberGIS Center for Advanced Digital and Spatial Studies (CyberGIS Center) at U of I has teamed with the state of Illinois to produce a system of interactive maps, charts, and animations to better help understand and prevent the spread of COVID-19.

Called WhereCOVID-19, the project aims to support decision-making in regards to COVID-19 by answering critical “where” questions: where cases are and will likely be; where vulnerable populations live; where containment measures should be applied; where health care services might be overwhelmed; and where additional testing and other health care resources should be deployed.

By relying on a variety of data sources, including COVID-19 case counts from the Illinois Department of Public Health (IDPH) and analyses of population characteristics and the availability of health care resources, the makers of WhereCOVID-19 have created an interactive online platform with mobile device support that allows users to obtain information about the spread of the coronavirus around the state, nation, and world. The WhereCOVID-19 platform is made available to a broad range of stakeholders, research and education communities, policymakers, and the general public.

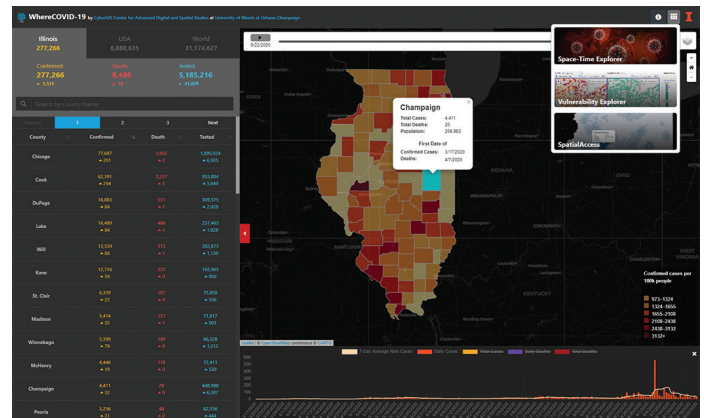
The project was created by request from the U of I President’s Office and the Illinois Governor’s Office. It is being led by **Shaowen Wang**, professor and CyberGIS Center founding director; professor **Sara McLafferty**; Vincent Freeman, professor of biostatistics and epidemiology at the University of Illinois at Chicago; and Bill Jackson, director of the Discovery Partner Institute (DPI).

“WhereCOVID-19 supports rapid measurement of spatial accessibility to healthcare resources, which provides an improved understanding of how well healthcare infrastructure is equipped to

save people’s lives during the COVID-19 pandemic,” Wang said. “Such spatial accessibility knowledge enables policymakers and public health practitioners to allocate existing healthcare resources or distribute new resources for maximum access to health services.”

Many factors have been integrated to make WhereCOVID-19 easy to use and understand – even for people with no background in geographic information science and systems (GIS), Wang said. Leveraging support from the National Science Foundation and National Institutes for Health, WhereCOVID-19 integrates big data analytics, computationally intensive geospatial analysis and modeling, and computationally reproducible cyberGIS notebooks that enable scalable integration of heterogeneous cyberGIS and cyberinfrastructure capabilities.

*(Continues on next page)*



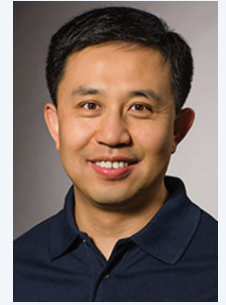
Screenshot of the WhereCOVID-19 online portal.  
Courtesy of CyberGIS Center.

## Alexander Graduate Fellowship Fund Established

The Department of Geography & GIS is pleased to announce the creation of the **Charles S. Alexander Geography Graduate Student Support Fund** in honor of Dr. Alexander’s gracious mentorship during his distinguished 33-year career on our faculty (1953-1986). The long-term goal of this fund is to create an endowment for the Alexander fellowship and provide generous financial support to geography graduate students who are underrepresented in the discipline. Professor **Sara McLafferty** and professor emerita Janice Monk (MA, ’63, PhD, ’72) at the University of Arizona led the effort to establish the fund.

*(Continues on page 11)*

# From the Department Head



Greetings:

The trees of Champaign-Urbana are changing colors as I write this, providing a lovely backdrop to reflect on the past year. I hope your fall scenery is equally pleasant and that this newsletter finds you happy and healthy in these challenging times.

Our department continues to develop new initiatives and build on our innovative undergraduate programs, with leadership from professor [Sara McLafferty](#). Student enrollment in the major has nearly doubled over the past three years thanks in part to our new collaborative bachelor of science degree in Computer Science + Geography & GIS (CS+GGIS). These students will be well-prepared to join the rapidly growing geospatial workforce in the era of AI, big data, and cyberGIS. We are also proud of our strong master's and doctoral programs, directed by professor [Brian Jefferson](#). Our graduate students continue to thrive as they conduct research, publish papers, and present at (virtual) conferences.

Earlier this fall, we welcomed six new faculty members to the department including [Michael Minn \(PhD, 2014\)](#) who has taken over as our Professional Science Master's (PSM) program advisor. We are thrilled and energized by this growth and I am pleased to introduce them to you in this issue. You can visit our department's new and improved website to find information on each of our faculty members' research, teaching, and accomplishments: [ggis.illinois.edu/directory/faculty](https://ggis.illinois.edu/directory/faculty).

My sincere thanks to those of you who have donated to our programs and funds – such generous gifts allow us to expand and move forward in new and creative ways. Please see the back cover of this issue or visit [ggis.illinois.edu/giving](https://ggis.illinois.edu/giving) for details.

Please enjoy reading about the activities and achievements of our faculty, students, and alumni and remember that we always appreciate hearing from you!

With best regards,  
**Shaowen Wang**

## FALL 2020

### Department of Geography & Geographic Information Science School of Earth, Society and Environment

College of Liberal Arts &  
Sciences, University of Illinois  
at Urbana-Champaign

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## WhereCOVID-19 *(continued from cover)*

McLafferty is one of the earliest researchers to use GIS to map and analyze health issues. For more than three decades, she has examined issues such as cancer, access to health care, infectious diseases, infant and maternal health, and now COVID-19. She has also taught an undergraduate-level spatial analysis class that covers methods for analyzing locational data on people, places, and environments.

Some students in her Spring 2020 course used spatial analysis to map and analyze COVID-19 prevalence with published data from state hospitals and testing centers.

"Mapping and spatial analyses are really important," McLafferty said. "We can use these maps and try to predict where the disease will spread next."

Wang said that although the work has been intensive, it has been going well.

"We have rapidly established the online WhereCOVID-19 platform designed to provide spatial decision support based on exploration

and discovery of spatiotemporal patterns of the pandemic and its impacts," Wang said. "The user interface of WhereCOVID-19 is friendly for presenting multi-scale geospatial information and thus no in-depth technical knowledge of cyberGIS or cyberinfrastructure is required of end users."

WhereCOVID-19 has required vast amounts of data and collaboration. For example, McLafferty said that when a physician reports a case of COVID-19 to IDPH, the data can be made available to the WhereCOVID-19 team for integration on the platform.

"The overall goal is to leverage the knowledge and skills of the University to help the state improve its response to pandemic," McLafferty said. "We're a crucial state entity and this is an unprecedented time. It's to help Illinois and all of us."

Explore online at: [WhereCOVID19.cigi.illinois.edu](https://WhereCOVID19.cigi.illinois.edu) ✨

# Geography & GIS Class of 2019-2020

## Congratulations to our newest alumni!

### Bachelor of Arts / Bachelor of Science (BA/BS)

Adeniyi Adeleye  
Romeo Basa-Denis  
Andrea Bautista  
Tyler Blackwell  
Samuel Caputo  
McKenzie Colyer  
Eric Czarnota  
Jarod Fox  
Naina Gupta  
Anthony Haloulos  
Deja Jackson  
Justin Jones  
Artyom Knurenko  
Paul Lastra  
Yuchieh Lou  
Timothy Manning  
Hannah Million  
Jullyssa Morales  
Samantha Myers Miller  
Nihar Nanavat  
Samah Quadri  
Michael Rogalski  
Leah Rogers  
Andres Ruiz  
Anthony Scarborough  
Collin Schuricht  
James Sensenbrenner  
Nicholas Shapland  
Brandon Smith  
William Webb  
Russell Wilson  
Yanbing Yi  
Yuchen Zou

### Professional Science Master's in GIS (MS)

Busranur Cakal  
Tianshun Deng  
Zizhao Ge  
Wenhao Gu  
Aaron King  
Hyun Seok Moon  
Malik Moulton  
Yang Qiu  
Nurmakhan Ziyadin

### Master of Science (MS)

**Alexander Fojtik** began working this spring as a geospatial analyst with ManTech International. Thesis: *"Short-Term Response of a Mountain Stream to a Sediment Pulse and Major Flood"*  
Advisor: Piotr Cienciala

**Evan Lindroth** is a hydrologist with the U.S. Geological Survey in Champaign. *"Objectively Identifying Spatial Variability in Bankfull Stage"*  
Advisor: Bruce Rhoads

**Dong Liu** is continuing in our doctoral degree program. *"Measuring Spatial Mismatch and Job Access Inequity Based on Transit-Based Job Accessibility for Poor Job Seekers"*  
Advisor: Mei-Po Kwan

### Doctor of Philosophy (PhD)

**Yaping Cai** is a postdoctoral research associate in the Department of Natural Resources and Environmental Sciences at Illinois. Dissertation: *"Data-intensive Crop Knowledge Discovery in the Era of CyberGIS and Machine Intelligence"*  
Advisor: Shaowen Wang

**Zhuo Chen** is teaching tourism geography at Cambrian College in Ontario, Canada. *"Airport Surrounding Area Development in China"*  
Advisor: Julie Cidell

**Melissa Heil** started this fall as a tenure-track assistant professor in the Department of Geography, Geology, and the Environment at Illinois State University. *"How Much are our Lives Worth?: Water, Reproduction, and Geographies of American Austerity"*  
Advisor: David Wilson

**Lirong Kou** started this fall as an assistant professor in the School of Tourism at Sun Yat-Sen University in Guangzhou, China. *"Listening to Urban Sound: Understanding Human Mobility, Sound Exposure, and Well-Being"*  
Advisor: Mei-Po Kwan

**Luis Escobedo Paredes** is lead data scientist at REEF in Miami, Florida. *"Three Papers in Economic Geography"*  
Advisor: Geoffrey Hewings

**Arrianna Planey** started this fall as a tenure-track assistant professor in the Department of Health Policy and Management at the University of North Carolina at Chapel Hill Gillings School of Global Public Health. She is also a fellow with the Cecil G. Sheps Center for Health Services Research. *"Hearing Health Care in the United States: A Multi-Scale Spatial & Political Economic Analysis of Health Care Policy And Access to Audiology Services"*  
Advisor: Sara McLafferty

**Donald Planey** began this fall as a postdoctoral fellow in the Department of City & Regional Planning at the University of North Carolina at Chapel Hill. *"Growth, Prosperity, and Inequality After the Great Recession: A Regionalist Cultural Political Economy of Chicagoland"*  
Advisor: Julie Cidell

**Li Xu** is a data scientist at Amazon in New York City. *"Advanced Space-Time Integration for Knowledge Discovery in Human Mobility Studies"*  
Advisor: Mei-Po Kwan

**Zewei Xu** is a data scientist at Microsoft in Bellevue, Washington. *"CyberGIS-Enabled Remote Sensing Data Analytics for Deep Learning of Landscape Patterns and Dynamics"*  
Advisor: Shaowen Wang

**Dandong Yin** began working as a software engineer at Google last fall. *"CyberGIS-enabled Reproducible Agent-based Modeling for Scalable Emergency Evacuation"*  
Advisor: Shaowen Wang



# ALUMNA Perspective



*Dr. Janey Messina (MS, 2008) is associate professor of social science research methods at the University of Oxford (UK) School of Global and Area Studies, with a joint appointment in the School of Geography and the Environment. She earned her BA from UCLA in 2005, MS from Illinois in 2008, and PhD from UNC-Chapel Hill in 2011, all in geography. Janey specializes in mapping the spread of vector-borne and other infectious diseases including dengue fever, Hepatitis C, and Zika. Last year, she published a comprehensive study in the journal Nature Microbiology that projects the global distribution of dengue through the year 2080.*

## *What first attracted you to the field of geography?*

In my first term as an undergraduate at UCLA, I signed up for an introductory biogeography class taught by Tom Gillespie. His enthusiasm for the topic was infectious and it inspired me to sign up for more classes in the geography department and eventually choose it as a major, with a focus on environmental studies. I loved the broad scope of the discipline and the fact that almost any problem or phenomenon could be seen through a geographic lens. When I really got hooked was in Michael Shin's advanced GIS class, which I remember him saying "only for people who like torture." I guess that was true for me because a year after graduating and working odd internships, I missed advancing my skills in GIS so much that it led me to apply for the master's program in geography at Illinois.

## *What geographic concepts and techniques did you study at Illinois?*

When I first arrived at Illinois, I thought I would mainly be interested in GIS methodology, but things took a turn after my first semester of classes, when **Sara McLafferty** taught us introductory statistics for geographers and I also signed up for a public health GIS class taught by **Marilyn O'Hara Ruiz (1959-2018)**. Together, Marilyn and Sara's classes and mentorship made me realize that I was much more interested in applying GIS and statistical methods to the study of diseases than in the methodology of GIS itself. Professor Ruiz invited me to work on a project about a West Nile virus outbreak in Chicago and that ended up being the topic of my master's thesis. Links between people and their environment are inherent to vector-borne disease research, and the ability to apply spatial analytical and statistical methods to understand these links was the perfect fit for my interests and skills.

## *How can maps help us control the spread of infectious diseases?*

Maps have long been used to understand the location and spread of infectious diseases as well as for guiding public health control efforts. Disease distribution maps provide a visual representation of the geographic extents and scale of these public health problems. They can support decision makers whose job it is to weigh the advantages and disadvantages of various prevention and intervention measures, ranging from providing advice to individuals regarding vaccination or travel, to national and regional intervention strategies and global research funding decisions. Maps of the current distribution of infectious diseases can also serve as baselines for measuring the success or failure of prevention and intervention strategies, including vector control efforts and vaccine roll-out. Maps of reservoirs and vectors in relation to disease occurrence can also inform our understanding of the sources of outbreaks and novel disease emergence.

## *What observations or challenges can you share from your own research on viruses as we learn to live with COVID-19?*

COVID-19 is the most important public health crisis of our generation, having been able to spread rapidly across the world because it is infectious before it is symptomatic. Geographers from all sub-disciplines have a great deal to contribute in terms of not only the patterns of its emergence and spread, but also inequalities in illness and healthcare access and the societal changes that will result from the pandemic. Perhaps more than any other virus or infectious disease I have studied, we as geographers can only make meaningful contributions to COVID-19 research if we avoid working within our separate bubbles and collaborate across the sub-disciplines and with those in other health, environmental, and social sciences. ✨



# Supporting Geography Teachers and Nabbing Aquatic Invaders

by Robin (Graff) Goettel (BA, '78; EdM, '03)



I am so grateful to have received my geography degree from the University of Illinois! It truly has shaped my life in so many meaningful ways. I thank **Dr. Janice Monk (MA, '63, PhD, '72)** for creating the undergraduate geography student internship where, during my senior year (1977-78), I gained experience in GIS at the U.S. Army Construction Engineering Research Lab (CERL).

My 37-year geography career included positions at CERL and the University of Illinois. I worked for five years in CERL's Environmental Division on

projects to protect natural resources on Army bases. The highlight of my job as a natural resource specialist was flying in a U.S. Army chinook helicopter over the Mojave Desert. My boss Hal Balbach and I took aerial photos of the Ft. Irwin military base and then wrote a narrative to accompany those photos for a manual on protecting natural resources while training on army installations. Another benefit of working at CERL was meeting my husband Bruce. I am now the proud mom of three wonderful children and three special granddaughters.

Next, I was employed at the University of Illinois for 32 years with the Illinois-Indiana Sea Grant College Program, funded by the National Oceanic and Atmospheric Administration in coordination with Illinois and Purdue University. My colleagues and I integrated research, outreach, and education to bring the latest science to Great Lakes communities and their residents. My work in Sea Grant helped connect decision-makers with geography and science, with the ultimate goal of strengthening and preserving ecosystems and communities in southern Lake Michigan and beyond.

I served as communication coordinator for 22 years and as director of education for 10 years (earned EdM at UIUC in 2003). Being a geographer gave me an invaluable perspective as I conducted environmental education work with teachers, and through collaborations with prominent education venues in Chicago (Shedd Aquarium, Lincoln Park and Brookfield Zoos, Field Museum, Peggy Notebaert Nature Museum, etc). I also developed two costumed characters to enhance geographic learning—Lady Quagga (formerly Zelda, the Zebra Mussel) and Jumpin' Jack, the Asian carp.

My career highlight was being featured in the Smithsonian National Museum of Natural History! Our award-winning aquatic invasive species education website, "Nab the Aquatic Invader!" was showcased on an interactive kiosk in the Sant Ocean Hall. I incorporated much of what I learned from my zoogeography course with professor **Don Johnson** into my work in invasive species education.

I was very gratified to be a member of the National Council for Geographic Education (NCGE) where I gave presentations at many national conferences on our community stewardship programs and environmental education curricula teaching about aquatic invasive species and the safe disposal of prescription meds. Even in my retirement, I continued to attend NCGE conferences and developed a presentation connecting geography with my hobby of collecting hand fans. My talk revealed how fans can be used as geography learning tools through a global view of their materials and uses.

In retirement, I continue to connect with and support geography as a member of the Teacher Education Steering Committee in our state's Illinois Geographic Alliance (IGA) coordinated by Illinois State University. The alliance participates in educational reform at the district, state, and national levels. I have presented several times at IGA pre-service and in-service teacher workshops, in addition to providing Sea Grant-developed curriculum materials based on the National Geography Standards, which foster public awareness of the importance of geography in our society. From my college days through my retirement, the theme "Geography is everywhere!" has truly been a major focus and a total joy. ✨



*Jumpin' Jack the Asian Carp (left) and Lady Quagga (right). Photos courtesy of Illinois-Indiana Sea Grant.*

# THE GARDENS OF A LIFETIME

## At 92, James Bier still pursues perfection at Japan House

By David Evensen, College of LAS



Photo by Jesse Wallace

All gardens start with a vision, but even a backyard pepper patch requires a certain level of planning and grit that thwarts most from ever becoming more than a morning coffee musing. How powerful does the vision have to be, then, to design and build a full-blown Japanese garden in east-central Illinois?

For James Bier (MS, '57), creator and designer of the gardens at U of I's Japan House, it started with war. As a young man, Bier was drafted to serve in the Korean War and was stationed in Tokyo as part of the U.S. Army's 29th Engineer Mapping Battalion. He fell in love with Japanese art and culture.

"I lived in Japan for a year compliments of the army," he said. "As a result, I said, 'I've got to have something that reminded me of Japan, and the houses, and the gardens that I saw.'"

That's the kind of powerful draw that Japanese gardens, with their careful designs reflecting certain philosophies and principles, can have on people. Visitors drive for hours to see Japan House and its gardens. How hard was it to build them? Let's start with this story about finding the perfect rocks, as told by Bier.

Rocks are critical elements in Japanese gardens—they can be even more important than plants. Rocks with the right texture and color for a Japanese garden can also be rare as hen's teeth, depending on where you are, and it turns out that most of the glacial till that blankets east-central Illinois like bowling balls is totally unbecoming of a Japanese garden. Back in 2016, when then-retired Shozo Sato, founder of U of I's original Japan House discovered a perfect rock in California, he considered it so noteworthy that he hauled it across the country himself to donate to the Japan House gardens. It weighed 2,000 lbs.

Bier discovered east-central Illinois' rock problem in the late 1990s, when he was assembling materials to create the Japan House gardens in their present location in the Arboretum. The right rocks weren't readily available and were too expensive to ship in, so Bier got in his car and drove, and drove, and drove.

"Fortunately for me I had an undergraduate degree in geology," he said, and he found a field near Mahomet that had become a dumping ground for rocks. Some of them were perfect and became the core of the Japan House gardens.

Indeed, creating the gardens around Japan House has been a pursuit of perfection for Bier. At age 92, he still has unrealized visions for what the gardens can become but many are of the opinion that he's already created a work of art. In 2018, he received an Illinois Arts Legacy Award from the College of Fine & Applied Arts for his design and dedicated stewardship of the gardens and ponds near Japan House.

The gardens benefit from an artistic flair that Bier has possessed for a long time. Born in 1927, the Cleveland native began college at Western Reserve University as a music major, but as he told the Champaign-Urbana News-Gazette in a recent profile, he discovered cartography during his junior year and became enthralled with the art, drawing, and design required to draw maps.

Today, in the age of GPS and map apps, he proudly calls himself one of the last cartographers (he ended his mapping career just last year), having published nearly 3,000 hand-drawn maps and atlases. His "Reference Maps of the Islands of Hawai'i" (University of Hawai'i Press) has sold more than 2.6 million copies. Some of



his original drawings are in the U of I's Map Library and others will soon be part of the University of Hawai'i Map Library.

His love of maps and Japanese gardens developed side by side. After the Korean War, Bier earned a master's degree in geography from U of I and became a staff cartographer and lecturer in geography. He traveled back and forth to Japan six times, studying a great many gardens, examining color slides, and reading literature.

He and his wife, Lorene, built a house on the south side of Champaign that was designed by the late John Replinger, a professor of architecture at U of I, as half-American and half-Japanese. Bier also designed their 0.6-acre lot into a Japanese garden which over the years has been visited by literally thousands of people, some arriving by the busload.

Bier retired from U of I in 1989 but his involvement with Japan House grew about a decade later, when the university tore down the original Japan House in Urbana. They launched plans to rebuild in the Arboretum and Bier presented the director, Kimiko Gunji, a plan for a tea garden.

She loved the idea but they didn't have the money to build it. Undeterred, Bier donated his own time and money for the project. He continues to work, design, and fund development of the gardens to this day.

The grounds around Japan House include ponds, a tea garden consisting of a water basin, stone paths, redbuds, maples, and other

elements reflecting a path to enlightenment, and a dry garden, consisting of a careful assortment of raked gravel, rocks, and shrubs to reflect a mountainous landscape.

To maintain and develop the gardens, Bier relies upon a team of about 10 devoted volunteers who help him with the labor, including everything from clipping to moving rocks and tearing out plants that have outgrown their purpose. When you're shaping nature into an artistic vision, details—colors, the spacing between stones, the width and height of plants, and so on—all matter.

Bier sat in the shade of a gazebo outside Japan House one warm day last fall, before the Halloween snow and sub-zero November windchills. There are many challenges to building an ideal Japanese garden in east-central Illinois, he explained. Rocks are just one. The dramatic changes in weather wreak havoc on plants, and university policies and procedures weren't necessarily written to keep in accord with ancient Far Eastern philosophy.

It takes persistence, negotiation, funding, time, and planning. Bier has had a plan for 20 years to add a traditional-style stroll garden around the nearby ponds. Doing so, he speculated, would help make the Japan House and its gardens an even better-known destination.

Realizing this next vision for the gardens is a matter of raising money, he said. The grit? He's got that covered. Time? At his age, he holds no illusions, but he knows what's possible. ✨



*Photo courtesy of Japan House*



# MEET OUR NEW FACULTY

## NIKOLAI ALVARADO ASSISTANT PROFESSOR

### *How did you decide to become a geographer?*

I am a human geographer. Part of why I became one had to do unquestionably with my personal experience. I grew up in Ecuador and Costa Rica before moving to the U.S., thus I have always been a migrant and an outsider everywhere I lived. I also have had the opportunity (privilege?) to travel extensively in Latin America, where I have witnessed the injustices that are now the focus of my research. My journey to the discipline was not straightforward, however. I started as a marine biology major before eventually switching to Latin American studies for my bachelor's. As an undergrad, I would often write papers on land conflicts and racism in Chile, Brazil, Costa Rica, etc. I eventually presented one of these papers at a student conference where a geography grad student from Brazil told me that my work was squarely within the concerns of political ecology. She encouraged me to look into geography as I moved forward in my education and I am happy to have taken her advice seriously.

### *What is your most memorable field research experience?*

Back in 2011, soon after starting grad school, I conducted exploratory fieldwork on the conflict between Mapuche-Huilliche communities and the salmon aquaculture industry over sea spaces in southern Chile. After a 15-hour drive from Santiago, I was now on the dirt roads of a remote area of the island of Chiloé, and on my way to speaking to the head of one of the communities. I recall finding my way through these back roads using a map that I had grabbed from an information kiosk in downtown Ancud. When I finally arrived in the small village, I walked by a circular hut (called a *ruka*) which was expelling large clouds of smoke through its grass roof: surely a sight of ancestral tradition. I entered a small convenience store to talk to a community member who informed me that the head of the community was teaching children traditional medicine in a nearby village. I promptly took out my tourism map, hoping to be able to orient this person spatially and to be pointed, at least, in the right cardinal direction. "We are here", I said. "Which way do I go?" "Up, down?" He looked at the map lying on the counter, then looked at me and said "Here, I'll just show you the driving directions on Google Maps," as he took his BlackBerry out of his back pocket! Lesson one: colonial biases can be humiliating.



### *What are your current research interests and directions?*

My research lies at the intersection of urban politics, racism, and South-South migration. It is empirically rooted in urbanization processes taking place in one of the fastest urbanizing regions in the world (Central America). Over the past few years, I have engaged in research focusing on the struggles to obtain urban rights of Nicaraguan migrants living in the largest migrant informal settlement in Central America, located in San José, Costa Rica. Through my focus on the everyday political work of migrants in this settlement, I have set out to answer broader questions on the role of international migrants in emerging spatial configurations in Global South cities and on the ways in which urban spaces enable migrant politics that contest and expand the limits of formal citizenship. My future research will continue to look at urban processes arising from more recent post-uprisings and post-pandemic migration waves from Nicaragua. I also intend to expand my work to urban Nicaragua where I seek to understand the processes and politics of urban informality in a socialist/Sandinista context. \*



**SIÂN BUTCHER**  
**ASSISTANT PROFESSOR**

*How did you decide to become a geographer?*

While getting my degree in development studies at the University of Cape Town (UCT), South Africa, I took an elective during my 4th year of study called “Geography

of Development” with professor Sophie Oldfield. That class introduced me to geography’s relational approach to the political, social, economic, spatial, and environmental. The class also featured a strong emphasis on Global South scholarship, particularly scholarship around the state, race, citizenship, and land and housing struggles. Through that class, and the way geography grappled with theoretical concerns as well as the lived urgencies and contradictions of my local context, Southern Africa, in global perspective, I was inspired to become a human geographer. I went on to do my master’s in geography at UCT, and then my PhD in geography at the University of Minnesota.

*What is your most memorable field research experience?*

Getting to know the megacity of Johannesburg through my PhD field research (2012-13) was a memorable, daunting, and rewarding experience. Growing up in the small mining towns of Zimbabwe, I had only encountered its skyscrapers and spaghetti highways from a distance. My dissertation focused on entry-level mortgaged housing in suburban Johannesburg,

and how banks and developers powerfully shape this market’s terms of inclusion and exclusion. This research afforded me the opportunity to engage with homeowners, landowners, developers, bankers, housing experts and activists, government officials and a dynamic community of urban researchers. Eventually, ‘the field’ also became home. But even after years of getting to know Johannesburg by living in different neighborhoods and working as a lecturer at the University of the Witwatersrand from 2017, the city’s tapestry continues to inspire a certain awe and I consider myself lucky anytime I’m able to pull at one of its innumerable threads.

*What are your current research interests and directions?*

My research sits at the intersection of critical human geography, critical development studies and southern urbanism. I am particularly interested in what the production of ordinary, mundane places in the Global South’s “city of extremes” – the places between elite gated communities and informal settlements – has to teach us about the forces that build our cities, how power relations in urban development unfold, and which old and new mid-level concepts we can draw on to provide a deeper understanding of it all. Building on my past research, I’m focusing on how land development, the state, and residents shape “affordable suburbanization” in developer-driven housing for a growing Black middle class, and how that in turn impacts post-apartheid socio-spatial change in greater Johannesburg. I am excited to contribute to a worldly and critical urban geographic scholarship on property and real estate projects and processes through this work. ✨

**ANAND PADMANABHAN**  
**RESEARCH ASSOCIATE PROFESSOR**



I earned my PhD in computer science from the University of Iowa and my research bridges advanced cyberinfrastructure and geographic information sciences. I joined the department as a research scientist in 2007 and am excited to begin serving as a faculty member and advisor for our forthcoming online master’s and certificate programs. ✨

**XUANTONG “TONY” WANG**  
**TEACHING ASSISTANT PROFESSOR**



I obtained my PhD in geography from the University of Denver in 2020. My research interests are in the general areas of sustainability science, economics, and geographic information science. I teach GIS courses at both the graduate and undergraduate level and enjoy working with students to explore our planet with GIS techniques. ✨



# FACULTY NEWS AND AWARDS



Professor **Julie Cidell** received the 2020 Edward L. Ullman Award from the Transportation Geography Specialty Group (TGSG) of AAG. She will formally accept the award and present the Douglas Fleming Lecture at the 2021 AAG Annual Meeting in Seattle. Cidell was a TGSG board member from 2001-2006, chair from 2010-2012, and has served on the *Journal of*

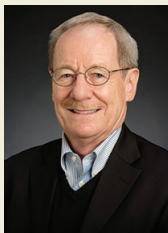
*Transport Geography* editorial board since 2011.

Cidell recently completed a textbook entitled *An Introduction to Transportation Geography: Transport, Mobility, and Place* (Rowman and Littlefield, 2020). During a spring 2020 “Mobility Justice” graduate seminar, Cidell and her students examined the 21st century’s three major mobility challenges: climate change, migration, and urbanization.

Cidell was also selected as a 2020-21 associate by the Center for Advanced Study (CAS), a campus initiative that provides tenured faculty with a one-semester teaching release to complete an individual project. As a CAS associate, Cidell will work on her next book entitled *The Sedimentation of Flows: The Des Plaines-Kankakee Confluence as a Space of Distribution*.



Assistant professor **Chunyuan Diao** is principal investigator on a National Science Foundation (NSF) grant entitled *Contrasting Saltcedar Dynamics in Its Native and Non-Native Habitats through Integration of Remote Sensing and Population Modeling*.



Professor emeritus **Geoffrey J.D. Hewings** received the 2020 Founder’s Medal from the Regional Science Association International (RSAI). This quadrennial award honors lifelong contributions to the discipline of regional science and to the association itself. It was first presented in 1978 to RSAI founder Walter Isard, father of former Illinois Geography professor Scott Isard.



Associate professor **Brian Jordan Jefferson** published his first monograph entitled *Digitize and Punish: Racial Criminalization in the Digital Age*, with the University of Minnesota Press.



Assistant professor **Mark Lara** and colleagues were awarded a Department of Energy (DOE) grant from the Biological and Environmental Research program for their project entitled “Remote sensing of plant functional traits for modeling Arctic tundra carbon dynamics.”



Professor **Sara McLafferty** was named to the 2020 Class of American Association of Geographers (AAG) Fellows in recognition of her outstanding contributions to the field of geography. As a fellow, she will contribute to AAG initiatives, advise on strategic directions and grand challenges, and mentor early and mid-career faculty. McLafferty also received the 2020 Carolyn Merry Mentoring Award, established by the University Consortium for Geographic Information Science in 2015 to recognize an individual who demonstrates exceptional mentoring abilities and practices.



Professor **Murugesu Sivapalan** was named a Satish Dhawan Visiting Professor/Scientist at the Indian Institute of Science (IISc) and a distinguished visiting professor at Tsinghua University in Beijing, China.



Professor **Bruce Rhoads** published a new textbook with the University of Cambridge Press entitled *River Dynamics: Geomorphology to Support Management*.



Professor **Shaowen Wang** was selected as a 2020-2021 fellow of the Big Ten Academic Alliance Academic Leadership Program.



# Ezekiel Kalipeni, 1954-2020

Remembrance and photo courtesy of the Kalipeni Family



Professor emeritus **Ezekiel Kalipeni** passed away on April 11 in his home country of Malawi, where he had been busy after retirement laying the groundwork for his family and community to succeed. Kalipeni was born on February 4, 1954 in Mchinji, Malawi. Growing up wasn't easy but he knew from a young age that if he was going to support his people, he'd have to persevere in life and strive for an education.

After earning his BA in social sciences from the University of Malawi, Kalipeni went on to receive his MA and PhD from the University of North Carolina at Chapel Hill Department of Geography, where he also taught. Through his vast career, he also held positions at the University of Malawi at Chancellor College,

the University of Illinois at Urbana-Champaign, Colgate University in Hamilton, New York, and at the National Science Foundation in Arlington, Virginia. He educated thousands, sponsored hundreds of PhD students, and mentored many more.

Kalipeni's work in human geography and the state of how pandemics spread through poverty was recognized by numerous national and international research awards. He was also a published author of numerous books and academic articles.

Ezekiel was proud, jovial, funny, humble, and a storyteller. He had a photographic memory, genius level IQ, a sarcastic sense of humor, and a love for travel. Ezekiel's main goal in life was serving his community, speaking for those who didn't have a voice, and spreading his vast knowledge by educating others. It is because of him and his wife's service that the Kalipeni Foundation was conceptualized. His legacy will be carried forward by his wife Fattima and their children – Natalia, Josephine, Jacqueline, Juliana, Joshua, Melissa, and Jacob.

Please visit [theKalipeniFoundation.org](http://theKalipeniFoundation.org) to learn about and contribute to their ongoing water resource projects in Malawi. ✨

## ALEXANDER *(continued from cover)*

Alexander was renowned for his work in coastal and fluvial geomorphology, with field sites across southern Illinois and along the Lower Ohio River. He was particularly interested in Quaternary terraces, Holocene sedimentation rates, and stream channel stability. Alexander was a tireless advocate and mentor for his students including Dag Nummedal (PhD, '74), Lanny Powell (PhD, '71), Larry Price (MS, '65; PhD, '70), Joseph Schiel (PhD, '71), and our 2018 Distinguished Alumna Janice Monk (MA, '63, PhD, '72).

Alexander and Monk went on to collaborate extensively, publishing papers on the human impacts on rural landscapes in Latin America and the textbook *Experiences in Physical Geography* (with John Oliver) in 1980. Dr. Alexander passed away in 1987, just one year after his retirement from Illinois.

Please see the back cover of this issue or visit our website for more information on how to make a gift. [ggis.illinois.edu/giving/give](http://ggis.illinois.edu/giving/give)

## PROFESSIONAL SCIENCE MASTER'S PROGRAM

Geography & GIS is pleased to welcome two new teaching faculty to the department who will also serve as PSM student advisors.



**Ziqi Li**  
Visiting Assistant Professor

My research interests are spatial statistical and computing methods, spatial data science, and the application of these techniques in multidisciplinary fields. I received my PhD from Arizona State University and my dissertation focused on the Multi-scale Geographically Weighted

Regression (MGWR) model. In addition, I advocate for open and reproducible science. I'm the developer of the MGWR python package and several other open-source software projects. ✨



**Michael Minn**  
Teaching Assistant Professor

One of the major joys of teaching for me is seeing "the light come on" - watching a student suddenly gain an insight into a vexing technique or concept that enables them to accomplish their objectives.

Likewise, I enjoy developing courses and course materials that help students from a variety of disciplines and backgrounds integrate quantitative and qualitative analysis into their work in ways that will benefit both their professional development and their own personal understanding of our world. ✨

# GRADUATE STUDENT SPOTLIGHT



*Aida Gublincozzi is a fifth-year MA/PhD student working with professor Sara McLafferty. She completed her master's in 2018 on a two-year Graduate College Fellowship and was selected in 2018 for a prestigious National Science Foundation Graduate Research Fellowship to support her doctoral studies. Aida earned her BS in geography from Texas A&M University in 2016.*

## *What personal experiences drew you to the field of geography?*

I took a human geography survey course during my second semester of freshman year at Texas A&M, taught by Dr. Wendy Patzewitsch. On the first day of class, I remember her saying, "I love geography because you can study anything through geography." I was hooked. By the end of the semester, I had switched my major and started reading all I could about the discipline. I even borrowed a copy of the book *Practicing Geography* from the AAG which had a profile of Dr. Sonia Arbona, a Latina geographer at the Texas Department of State Health Services. Reading about her work was a revelation – I finally had a name for the work I had long hoped to do!

I later took a course on diseases, in which the head of the CDC Bioterrorism Unit gave a guest lecture. After class, I asked if she thought a geography student could work at the CDC. She heard "geography" and immediately told me: "Learn GIS. They're the most important people on my team." I was floored. After that, I began an email conversation with Dr. Arbona, who was kind enough to advise me over the years. She encouraged me to pursue research opportunities and I eventually found myself here at Illinois.

It was my first time living far away from Texas, where I grew up surrounded by a vibrant Latinx community. Being away from that, and not knowing where to look for it here on campus left me feeling unmoored. As I continued my studies and began attending regional and national conferences, I realized the lack of diversity in geography and the geosciences wasn't unique to Illinois – this is a field-wide issue. Thankfully, I found geology PhD student and fellow TAMU geosciences alumna Julia Cisneros. She had also noticed the diversity issue and we began reflecting on how we had first gotten interested in the geosciences. It turns out we had both attended free summer science camps! The path was clear: the School of Earth, Society, and Environment (SESE) needed to host a camp.

The folks at Franklin STEAM Academy, especially instructional coordinators Zanne Newman and Christopher Brunson, are incredibly passionate, forward-thinking, and committed to educational and racial justice. Working with them to organize a camp for 30 girls was a dream. We were able to make multiple classroom visits and hold learning events for students. Each time, I saw the campers excitedly imagine what would happen at camp and reflect on what they learned.

## *What is your primary research interest and data collection strategy?*

I am studying health geographies of Latina women, particularly their access to Spanish-speaking physicians in Chicago suburbs. Latina women are often marginalized by the healthcare system in ways specific to their connection to the immigrant community and the United States' rigid policies surrounding immigrants and healthcare. They also experience gendered, racial, and linguistic bias when seeking healthcare which can exacerbate the geographic barriers of living in Chicago suburbs, with a lack of transportation and financial support networks. This summer, I conducted fieldwork with surveys, interviews, and activity diaries of Latina women and their health care experiences to get a sense of the barriers they encounter when seeking linguistically-appropriate health care. My ongoing research will examine these barriers from an economic, geographic, temporal, identity, and legislative perspective. \*



*(front right) Aida and Julia Cisneros (front left) with the 2019 Geoscience Summer Camp trainees.*



# NEW GRADUATE STUDENTS



**José Miguel Acosta-Córdova** has a BA in urban and public affairs and a master's in urban planning and policy from the University of Illinois at Chicago. His research interests include global supply chain and transportation issues related to environment and labor, Latino communities in Chicago, mapping as a tool for social justice, and environmental impacts of globalization. *Advisor: Julie Cidell*



**Sadiul "Saadi" Chyon** has a passion for rivers and mountains with specific interests in river morphodynamics and remote sensing applications. He earned a BS in water resources engineering from Bangladesh University of Engineering & Technology. *Advisor: Jim Best*



**Emma Hall** has a BS in environmental geology from Beloit College. She will utilize remote sensing to investigate the changing landscapes in the Alaskan tundra. *Advisor: Mark Lara*



**Colt Pierce** received his BA in history and geography at Emory & Henry College. After spending a summer in Norway conducting research, Colt wrote his thesis on metal music in urban spaces. His current research interests include musical, emotional, and spatial geographies. *Advisor: David Wilson*



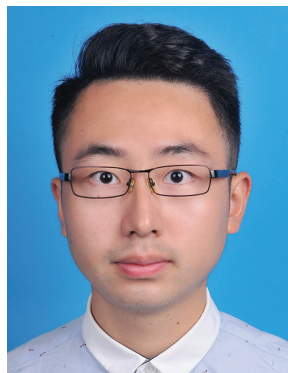
**Andrea Pimentel Rivera** is a joint master's degree student in the Departments of Urban & Regional Planning and Geography & GIS. Her research will focus on the mobility practices and infrastructures of Puerto Rico and the Caribbean as a region. She earned a bachelor's degree in psychology from the University of Puerto Rico, minoring in linguistics and communication studies. *Advisor: Julie Cidell*



**Chelsy Salas** has a BS in geology from the University of Nevada, Las Vegas, and an MS in environmental science from California State University, Los Angeles. She is interested in GIS, fluvial geomorphology, and river management and policy. *Advisor: Bruce Rhoads*



**Ricardo Zapata** has a BA in economics from the University of Illinois where he also studied urban and regional planning and Latino/a Studies. He is interested in examining urban transportation infrastructure and culture as a manifestation of capitalist, colonial thought. *Advisor: Julie Cidell*



**Chishan Zhang** has a BE in surveying and mapping engineering from Central South University and an ME in cartography and geographic information engineering from Beijing Normal University. His research focuses on the agricultural applications of GIS and remote sensing. *Advisor: Chunyuan Diao*



# ILLINOIS GIS DAY 2019 AT THE ILLINI UNION

Our department, in collaboration with the Office of the Provost, CyberGIS Center, Prairie Research Institute, and University Library Scholarly Commons hosted Illinois GIS Day on Tuesday, November 12<sup>th</sup>. Over 100 students, faculty, alumni, and community members braved the single-digit temperatures to gather at the Illini Union for the student poster session, GIS career panel, and conversation with local companies and organizations who utilize GIS in their daily operations. Dr. Kumar Navulur, senior director of business development at DigitalGlobe (a Maxar company) delivered the keynote address, sharing how his company provides high-resolution satellite imagery for industrial planning and humanitarian efforts across the globe. ✨



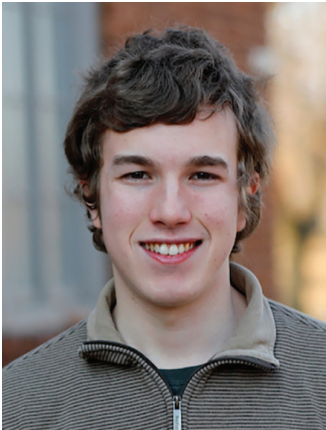
1. (center) **Matt Blaser** (BA, '18) and (right) **Austin Handler** (BS, ESE/GGIS, '19) discuss their jobs at the U.S. Environmental Protection Agency Superfund Division with Illinois PSM student **Aidos Makhanov**.
2. PSM graduate **Edmond Lai** (MS, 2018) discusses his role at the Champaign County Regional Planning Commission with attendees, including vice provost for undergraduate education Dr. Kevin Pitts (right).
3. Dr. Kumar Navulur of DigitalGlobe delivers the GIS Day keynote (remotely).
4. GIS professionals take student questions during the Career Panel. (From left: Matthew Yoder, Champaign County Regional Planning Commission; Blake Giles, Bayer Crop Science; Matt Blaser (BA, '18), U.S. EPA Superfund Division; Matthew Hiett, Construction Engineering Research Lab (CERL); Dr. Shakil Kashem, moderator).



*Photos by  
Della Perrone.*

# HOWARD ROEPKE UNDERGRADUATE SCHOLARSHIP RECIPIENTS

Professor Howard Roepke was a Geography faculty member from 1955-1985. His estate provided a generous gift to the University of Illinois Foundation that supports and enhances our undergraduate majors' academic and research experiences.



## Ben Keats

As part of my Roepke Research Scholarship project, I helped professor **Julie Cidell** analyze data she collected about the various municipalities of Sydney, Australia, to see how government entities, non-profits, and citizen groups cooperated on urban sustainability projects.

We are also analyzing data from Brisbane to catalog the entities with urban sustainability plans

and use social network analysis to gauge the level of cooperation between their respective entities and the public. Some specific tasks include searching for the organizations and acquiring plans they have published and utilizing social network analysis software.

The project piqued my interest for several reasons. First, in Summer 2019 I worked as an intern for Michele Smith, alderman of Chicago's 43<sup>rd</sup> Ward, which gave me firsthand experience in the dealings between the alderman and neighborhood organizations. Each ward depends on its neighboring wards and outside non-profits to achieve their sustainability goals and I valued the opportunity to attend meetings between numerous organizations and actors, as well as participate in writing plans for a new designated bike path and a public school gardening program.

Second, I've always cared deeply about improving my community and about urban sustainability. The research project on Australian cities has provided an excellent parallel and opportunity to examine the best ways to go about achieving these goals. Academically, my research interests are in the areas of transportation, urban politics, development, and growth, which aligned well with the aims of the project.

The Roepke Research Scholarship has given me a broader view of the field of geography both academically and professionally. This experience will help lead me to further research projects, internships, and hopefully a career with a municipal agency or nonprofit focused on meeting our society's urban sustainability goals. \*



## Jackie Shon

Geography has always been a part of my life in one way or another. Growing up, I spent a lot of time in my mom's Korean travel agency office. The walls were covered in world maps and my mom would give me U.S. state capital card games and map puzzles to solve. I would look through her stack of Apple Vacation magazines identifying resorts in different countries and

find where they were on the wall maps. I may not have recognized the impact my mom's maps had when I was younger, but simply being exposed to the maps made me love learning about geography.

Several Geography & GIS courses ignited my interest and encouraged me to declare the major. *GEOG 106: Geographies of Globalization* broadened my perspective on globalization and exposed the imperfections of what seems to be a working system in the Global North, usually at the expense of the Global South. *GEOG 105: The Digital Earth* revealed a plethora of opportunities GIS can deliver into the ever-changing world and what ethical questions GIS technology can raise.

I spent July 2019 in Hawai'i on a work-exchange program to reinvigorate my curiosity about new environments and geographic concepts. My host was a civil engineer at Honolulu's wastewater treatment plant, who had a background in sustainability. When I told her about my pursuit of a GIS major, she assured me of the significance of GIS analysts and technology in her career and in many other fields of work, which further encouraged me to pursue a GIS major. Our conversations made me realize how vital an understanding of human geography is to global sustainability, as many nations are often disproportionately affected by climate change and pollution in an increasingly globalized world.

The Roepke Academic Scholarship eased my financial burden and has been a huge encouragement as I pursue my research interests and professional goals. \*



# ILLINOIS

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