

DEPARTMENT OF GEOGRAPHY & GEOGRAPHIC INFORMATION SCIENCE

Breaking New Ground in Geospatial Data Science

Our department, in conjunction with the School of Earth, Society, & Environment, and the campus CyberGIS Center for Advanced Digital & Spatial Studies, founded and directed by Professor Shaowen Wang, are thrilled to announce a new online master of science degree program with an expected launch date of Fall 2022!

A proposal for this program was selected for funding by the Office of the Provost, whose Investment for Growth Initiative encourages departments to develop new sources of sustained revenue and increased student enrollments in high-demand fields of study. The School of Earth, Society, & Environment will receive approximately \$1.5 million over a three-year period to recruit new faculty and staff and build an online instructional and collaboration platform.

Our graduate program will be the first to offer a specialized curriculum in cyberGIS and geospatial data science. CyberGIS represents a growing interdisciplinary field that combines advanced computing and cyberinfrastructure, GIS, and spatial analysis and modeling to tackle our most pressing global issues, such as climate change, population growth, and public health. Graduates will be prepared for careers in sectors including agriculture, data science, analytics, urban and regional planning, and health care. This program will also benefit working professionals who seek to add to

their geospatial data science skillsets.

Professor Wang's lab is the birthplace of cyberGIS, which is recognized internationally for its innovative research and education, spatial problem-solving tools, and outreach programs. This past summer, the CyberGIS Center, in collaboration with the American Association of Geographers (AAG) and the University Consortium for Geographic Information Science (UCGIS), hosted a one-week summer school here at the Natural History Building.

Over 30 students from across the country attended, working together to solve complex geospatial problems and provided feedback about the educational materials. The program's high attendance and student engagement illustrated the rapidly growing demand for educational programs in geospatial data science, and several lectures and labs presented during this summer school will be incorporated into our new online master's program curriculum. ✨



Shaowen Wang welcomes participants to the 2019 Summer School at NHB.

2019 Early Career Distinguished Alumnus: Kory Konsoer (PhD, 2014)

We proudly present the 2019 Early Career Alumni Achievement Award to Kory Konsoer (PhD, 2014), assistant professor in the Department of Geography and Anthropology at Louisiana State University. Kory began teaching at LSU the same year he graduated from Illinois and has already garnered considerable scholarly recognition in the field of river science.

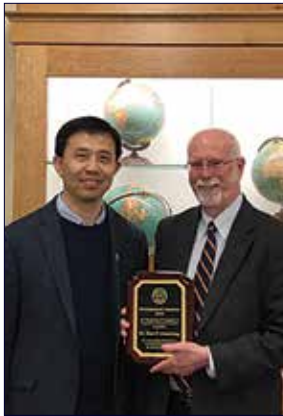
Kory has published in major journals, including *Geomorphology* and the American Geophysical Union's (AGU) *Water Resources Research*; and has presented at conferences in the U.S. and abroad. His new research program examines interactions among flow, vegetation, and bank morphology and how these interactions cause meandering rivers to migrate across floodplains over time – a fundamental mechanism by which these rivers shape and reshape Earth's landscapes.

As a PhD student, Kory studied the dynamics of meandering rivers with advisor **Bruce Rhoads**. Together they participated in a National Science Foundation (NSF) project led by Professor **Jim Best**, for which Kory received an additional NSF doctoral dissertation research award. Kory also started looking beyond Earth's surface, studying river confluences and channel form in reduced-gravity environments, including Mars. He has since published articles based on this research.



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ALUMNI AWARDS AND HONORS



2018 Distinguished Alumnus visits campus

Marc Armstrong (PhD, '87) returned to campus this spring to officially accept his Geography & GIS Distinguished Alumnus Award and present his research during our Friday afternoon colloquium series. His talk was entitled *The Multiple Dimensions of Extensive (Big) Geospatial Data: Retrospect and Prospect*. Dr. Armstrong is professor of Geographical and Sustainability Sciences, Collegiate

Fellow, and associate dean for research and infrastructure at the University of Iowa. ✨



2017 Distinguished Alumna receives AAG Creativity Award

Janice Monk (MA, '63; PhD, '72) received the 2019 AAG Stanley Brunn Award for Creativity in Geography, given annually to a geographer who has demonstrated originality, creativity, and significant intellectual breakthroughs in the discipline of geography.

Dr. Monk is renowned for her advocacy and research related to women's employment, education, and health. She has also contributed to the improvement of graduate-level education and mentorship in geography through the AAG's Geography Faculty Development Alliance. Jan is currently research professor in the School of Geography and Development and Research Social Scientist Emerita at the Southwest Institute for Research on Women (SIROW), University of Arizona. ✨

Bier Honored for Japan House Gardens Design

By Cynthia Voelkl



James Bier (MS, '57) received a 2018 Illinois Arts Legacy Award from the College of Fine & Applied Arts to recognize his design and dedicated stewardship of the grounds, gardens, and ponds at Japan House on our south campus. Bier has been integral to the development of the grounds since its inception as a permanent facility in 1998, designing and planning the ponds and creating the traditional tea and *karesansui* (dry) gardens.

Credit: Justine Bursoni

A native of Cleveland, Bier graduated from Western Reserve University with a degree in geology and was then drafted into the U.S. Army, stationed in Tokyo with the 29th Engineer Mapping Battalion. After completing his master's degree, James served as staff cartographer and lecturer in our department until his retirement in 1989.

Bier produced nearly 3,000 maps and atlases for publishers and authors throughout the United States during his career. His interest in Hawaii and the Pacific island nations began as designer and cartographer for the *Atlas of Hawaii*, followed by the *Reference Maps of the Islands of Hawaii* (University of Hawaii Press).

In retirement, Bier continues to maintain the Japan House grounds two days a week and pursue his interests in the cartography of Hawaii and the study of Japanese gardens. ✨

Konsoer, continued

"I am deeply honored to receive this award, and certain that without the excellent education, training, and scientific research opportunities I received from Dr. Rhoads, Dr. Best, and other great geography faculty, my career path would be much different than what it is right now.

"At Illinois, I was taught how to think critically about Earth's dynamic surface processes and trained in state-of-the-art field surveying techniques, which opened my eyes to new research possibilities that drive my curiosity about rivers to this day.

I am also very thankful that my experiences at Illinois allowed for interdisciplinary collaborations with faculty in geology and civil engineering, especially Drs. Gary Parker and Marcelo Garcia," said Konsoer.

Dr. Kory Konsoer is an emerging scholar producing work of exceptional creativity and we are excited to welcome him back to campus to accept this award and present during our Friday colloquium series. ✨

ALUMNI PROFILE



Illinois native **Ivan Gamboa** (BA, '02) has a passion for strengthening neighborhoods. He is senior vice president of Tri City National Bank in Oak Creek, Wisconsin, where he focuses on business and community development. Ivan has taken on multiple roles over his 13 years with the bank and has always appreciated how his work and civic duty are intertwined.

Ivan also serves as Board President for Harbor District Inc., which is leading revitalization efforts in Milwaukee's inner harbor. In May 2016, Governor Scott Walker appointed Ivan as chairman of the board of directors for the Wisconsin Housing and Economic Development Authority (WHEDA), whose mission is to stimulate the state's economy and improve its residents' quality of life by providing affordable housing and business financing products. He was reappointed by newly-elected Governor Tony Evers in March 2019.

What attracted you to the field of geography and what is your favorite geographic concept?

I have been attracted to neighborhoods my entire life. I remember as a child my parents driving us into the south side of Chicago every Sunday to visit my grandparents. I would just stare out the car window watching the neighborhoods change. Back then, I was enamored with the physical place of neighborhoods but as I got older I realized the human aspect was more beautiful. I transferred into geography in the middle of my college life and just tried to absorb everything. I was especially drawn to GIS and started to understand how we can learn more about cities by layering data over the neighborhoods we are studying.

What role does geography play in your current work?

Geography is vital to everything I do, and my foundation for understanding what makes neighborhoods tick was laid during my time in the department. As a commercial real estate lender for a community bank, I have helped finance the wave of redevelopment that has arrived in Milwaukee. A lot of times we are redeveloping older buildings that were past their useful life, which I believe preserves and strengthens a neighborhood's character.

Geography also plays a big role in my board work, especially as chair of WHEDA. Geography is key as we set

policy for the Low-Income Housing Tax Credit and New Market Tax Credit programs. Tri City National Bank is also one of the state's largest multi-family and first-time home buyer lenders. Looking ahead, we are faced with the changing dynamics of rural Wisconsin and the challenge of bringing in new investment. Downtown Milwaukee has seen the city's most significant change over the past decade with new office towers, hotels, a sports arena, and multi-family developments. That development has not yet spilled over into the surrounding neighborhoods, so we must understand which public investments can be made in neighborhoods that can attract more private investment.

What is your fondest memory of your time in the department and on the Illinois campus?

I have many fond memories of my time at Illinois and just as many good friends. I grew up so much between my freshman and senior year, which I financed as a pizza delivery driver for Bonnie Jean's Pizza above the Illini Inn. My roommates loved me! I didn't know anything about the geography department until stumbling upon "Earth's Physical Systems," an intro level class taught by Professor (Bruce) Rhoads that included a field trip to a nearby stream. I quickly realized that I wanted to switch my studies and dive deep into every aspect. It has been a blessing. ✨



Harbor District, Inc. constructed and partially funded the newly-opened Harbor View Plaza to provide public park space and water access along Milwaukee's inner harbor. (credit: Bobby Tanzilo - OnMilwaukee.com)

FACULTY AWARDS AND HONORS



Julie Cidell was awarded a Campus Research Board grant for her project entitled “Student Mobilities: Learning Independent Mobility and Navigation at the University of Illinois.” Part of the Institute for Sustainability, Energy, & Environment’s (iSEE) Campus as a Living Laboratory program, the project will explore how domestic and international students learn to be independently mobile on and around campus. Data from this project will contribute to campus initiatives on reducing carbon emissions and research on the travel behavior of young people. The seed grant funding is designated for research equipment and a graduate assistant to help develop an NSF proposal.



Piotr Cienciala received a Campus Research Board grant to support his research project entitled “Biogeomorphic Controls on Storage of Particulate Organic Carbon in River Corridors and its Transfer at the Terrestrial-marine Interface.” This project examines how inorganic sediment and organic matter are transported downstream in rivers, how these materials are deposited and stored within the channel and on the floodplain, and how vegetation cover can influence these phenomena. This

grant award will enable the collection of pilot field data and support a graduate research assistant to help with data analysis.



Chunyuan Diao is principal investigator on an NSF-funded project entitled “Real-time Computational Modeling of Crop Phenological Progress towards Scalable Satellite Precision Farming.” Dr. Diao and her graduate research assistants will use project funds to develop a real-time parallel computational framework capable of modeling seasonal crop variations and life cycle events.



The International Association of Hydrological Sciences (IAHS) has launched the Sivapalan Young Scientists Travel Award (SYSTA), named in honor of **Murugesu Sivapalan**. This new annual €30,000 travel award will provide travel support for 15 young scientists from developing countries to attend international IAHS-related conferences. The first featured conference was the International Union of Geodesy and Geophysics (IUGG) Congress, held this past July in Montreal. ✨

FACULTY PROMOTION



Brian Jefferson has been promoted to associate professor with tenure. He was also named a 2019-2022 O’Connell Scholar by the College of Liberal Arts and Sciences. Brian joined the department in 2014 and has taught a wide range of courses in urban and social geography, the geography of incarceration, and international conflicts.

He has made many strong connections across the Illinois campus in his role as our department’s Colloquium Coordinator and as a member of the Organizing Committee for *Racial Capitalism*, a March 2019 conference hosted by the Unit for Criticism and Interpretive Theory. Brian’s first book *Digitize and Punish: Racial Criminalization in the Digital Age* will be published this fall by the University of Minnesota Press. ✨

NEW FACULTY PROFILE



Mark Lara began this fall as a tenure-track assistant professor with a joint faculty appointment in the Departments of Plant biology (75%) and Geography & GIS (25%). He teaches courses in environmental GIS and is researching how arctic and boreal ecosystems respond to climate change and disturbances such as permafrost degradation and wildfires. ✨

Thermokarst pit formation in northern Alaska’s Arctic polygonal tundra. Mark is circled.



GRADUATE STUDENT SPOTLIGHT

By Daniel Gonzalez

When people learn that I am a geography doctoral student, they often ask: “Where is your case study?” To keep things simple, I usually reply “I study the U.S.-Mexico border.” But if they are familiar with geography or fieldwork in general, they often expect my research to be geographically situated in “the borderlands,” in proximity to the 2,000-mile southern border. However, I study places not normally associated with the U.S.-Mexico border, including rural Nebraska, big Midwestern cities, and Silicon Valley.

My research focuses on immigration law and the political economy of information and technology. More specifically, I take on issues related to the surveillance of the U.S.-Mexico border, border spaces, the history of immigration enforcement, data and information infrastructures, and the management of migrant labor. Ultimately, as a political geographer I am interested in how U.S. border enforcement agencies employ technologically-centered practices and how these practices change the nature of border spaces. These state policies directly influence notions and practices of social inclusion for non-citizens and citizens alike.

I earned bachelor’s degrees in human geography and environmental engineering from the University of California, Berkeley, and a master’s in geography here at Illinois as part of our department’s accelerated PhD program. At Berkeley, I researched how California’s water mitigation policies affected migrant farm workers in the Central Valley and how these same policies assigned responsibility of water conservation to California households, despite their accounting for a minor percentage of the state’s water usage.

Moving away from California—both in terms of physical location and intellectual curiosity—my master’s research here focused on urban governance in the city of Chicago. I analyzed the use of multicultural planning interventions in the city’s redevelopment policies and examined how city officials, real-estate developers, and residents negotiated their interlocking concerns for diversity and economic development.

I was drawn to the discipline of geography because it allows me to connect the dots among space, history, politics, and, most importantly, people’s livelihoods. Contrary to the common view of academic geography in the U.S. as simply mapmaking and locating capital cities or mountain ranges, I find that the discipline also provides a crucial interdisciplinary and spatial approach necessary to understanding and developing solutions to our most pressing problems.

Outside of my departmental research and classroom duties, I have had great opportunities to work with historically underprivileged students in several units across the Illinois campus. I worked during my first year in the Office of Minority Student Affairs (OMSA) as graduate student mentor



for the TRIO Student Support Services program; and served last year as a graduate assistant at La Casa Cultural Latina. In both programs, I helped undergraduate students negotiate academic and personal resources provided by the university.

As I work toward a tenure-track professorship, these experiences outside of the classroom have been important to my development as both a teacher and researcher. I have learned that mentorship is never one-way – in many ways the students I worked with have taught me more than I could ever teach them. ✨

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Last fall, the College of Fine and Applied Arts presented James Bier with an Illinois Arts Legacy Award to recognize his design and stewardship of the grounds, gardens, and ponds at Japan House. (Photo by Matt Cohn)

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