MARCH 2023 FALL 2022

GEOGRAPHY

THE GRADUATE SCHOOL OF GEOGRAPHY AT CLARK UNIVERSITY

WHERE'S YOUR WORLD? | FALL 2022

CLARK UNIVERSITY

GRADUATE SCHOOL OF GEOGRAPHY

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GRADUATE SCHOOL OF GEOGRAPHY CENTENNIAL CELEBRATION

Please join us as the Clark University Graduate School of Geography proudly celebrates its 100-year legacy, and the transformative impact our scholars, students, and alumni continue to make around the world.

WHEN: April 13-15, 2023

WHERE: Clark University campus

WHAT: The celebration includes a series of panel discussions on timely topics, featured speakers, food, and conversation.

Visit clarku.edu/geo100 for the full schedule of events and to RSVP for the dinner, luncheon, and receptions.

For questions, please contact geography@clarku.edu.

GEOG

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Cover Photo taken from ClarkNow Article on Chris Williams

WELCOME

A Note from GSG Director James McCarthy

Dear Geography Friends,

I hope that 2023 is off to an excellent start for all of you in our extended GSG community. I am delighted to be able to open this column with two pieces of excellent news. The first is that plans are nearly finalized for the for the celebration of the GSG Centennial on April 13-15 of this year, just a month or so from when you will be reading this. Details of the panels, talks, and other events are available here, and we have roughly 150 registered participants at this point. More about that below. The second is that visitors will find themselves in a normal university campus environment: this academic year has been the first since the start of the pandemic in which Clark has been able to operate wholly in person, including welcoming visitors to campus for events. It is a relief to be able to teach, learn, and meet in person again, and to have the campus feel fully populated and active. My only bad news as I write this at the very end of February is that we only just received our first real snowstorm of the year this week – and it was a small one that melted quickly. Following a winter with many days in the 40s, 50s, and even 60s in Worcester, it is ever clearer not just in statistical data, but in our everyday experiences, that profound climate change is well underway. The climate that those of us who grew up in, or have long lived in, New England knew is gone. We have much to do to as a society and as a university to adapt to this urgent reality, and Geography has a great deal to offer at both scales.

The GSG will be hosting two major events for alumni and other friends of the department this spring. The first is the annual Clark reception at the AAG, which will be held from 7-10 pm on Saturday, March 24, at Earl's Kitchen and Bar, 1600 Glenarm Place, in Denver, Colorado, during the annual AAG meeting. This will be the first time in four years that we have been able to host an in-person reception at the annual meeting, so we hope to see many of you there, including those that cannot make it to the Centennial. We will be sure to toast the GSG's hundredth birthday in Denver as well. The second event is of course the Centennial celebration here on campus in April. That will kick off on April 13 with the annual Atwood Lecture, delivered this year by Professor Kendra McSweeney of Ohio State University, and continue through Friday and Saturday with a series of panels reflecting on the past, present, and future of the GSG; a keynote address by Mona Domosh ('79, M.A. '83, Ph.D. '85, Joan P. and Edward J. Foley Jr. Professor, Department of Geography, Dartmouth College, and Clark University Trustee); remarks by President David Fithian and Provost Sebastián Royo; field trips, meals, and social events; and static and dynamic displays. We look forward to celebrating and reflecting on the work done by Clark geographers in the GSG's first century, honoring the many people who have contributed to Clark Geography's global reputation, and thinking ahead to the future of the GSG at Clark and in the world.

As we celebrate the past, we are also actively building the future of Clark and the GSG. To that end, we are delighted to welcome a new faculty member to the GSG and to Clark: Dr. Hamed Alemohammad joined us in January, 2023 as an Associate Professor of Geography and as the Director of the new Center for Geospatial Analytics. Hamed comes to us from his most recent position as the Executive Director and Chief Data Scientist of the Radiant Earth Foundation, with interests and expertise in using remote sensing to better understand the changing Earth system. He holds a Ph.D. in Civil and Environmental Engineering from MIT, and an M.Sc. in Water Resources Engineering and a B.Sc. in Civil Engineering from Sharing University of Technology. We are tremendously excited to have Dr. Alemohammad joining Clark and the GSG to launch the new Center for Geospatial Analytics. The cutting edge research at the interface of geographic information science, remote sensing, and environmental science he plans for the center will substantially expand Clark's capacity to contribute to the resolution of urgent socio-environmental problems in the context of climate change at a critical moment, and contribute to Clark's growing strategic focus in the area of climate change.

Finally, I want to congratulate the graduate students at Clark, who – with, it must be said, significant leadership and participation from doctoral students in Geography in particular – unionized and secured a collective bargaining agreement with the university this past year. The students will receive greatly improved health coverage and substantially higher stipends as a result. We plan to admit a larger Ph.D. cohort this year to somewhat balance out the two smaller cohorts we admitted during the pandemic, and we are pleased that those students will be coming into dramatically improved circumstances.

—James McCarthy, Director

Faculty News

Fieldwork during summer 2022 in the Plum Island Ecosystems in Massachusetts. (L-R) Zainab Farid, Zeyu Zhang, Aiyin Zhang, and Thomas Bilintoh. Photo credit: Prof. R.G. Pontius Jr.

Farm or conserve? Professor's research helps decisionmakers

New study uses Lyndon Estes' land-use model to create possible scenarios

From ClarkNow, by Meredith Woodward King

A recent BioScience article, "Can Countries Expand Agriculture without Losing Biodiversity? Weighing the Options for Feeding a Growing World," explores how farmers and researchers are seeking to overcome this confluence of challenges by using sophisticated models to determine which lands to farm and which to preserve — and comparing and selecting from various scenarios.

One of those approaches entails models, such as a land-use model called *agroEcoTradeoff*, which was developed at Princeton University by Lyndon Estes, now associate professor of geography at Clark University, and his colleagues. He first published his model in a 2016 article in Philosophical Transactions of the Royal Society B, "Reconciling agriculture, carbon and biodiversity in a savannah transformation frontier," using the example of Zambia — where food needs are expected to triple by 2050 and tough decisions will need to be made between expanding agriculture to meet that demand while minimizing ecological losses as well as the impact that agriculture has on climate change.

"The model is designed to find tradeoffs between agriculture and conservation, including total converted land area, carbon loss, biodiversity loss, and transportation costs, to help you determine where you can develop new agricultural land with the lowest possible cost in terms of biodiversity and carbon loss, with minimal sacrifice to agricultural potential," Estes explains. "This type of model allows conservation
organizations, government agencies, and land use planners to balance the costs and benefits of agricultural expansion by varying the weights (an indicator of preference) they place on each of the four land use objectives." Estes' Agricultural Impacts Research Group focuses on understanding the drivers and impacts of agricultural change, using the tools of geospatial analysis, remote sensing, and simulation modeling to develop the supporting data and analyses. The work described in the BioScience paper was supported by grants from the National Science Foundation, NASA, and the Norwegian Aid Agency.

Professor Receives US NSF Grant for Plum Island Ecosystems Research

Professor Pontius received a $336,128 grant from the United States National Science Foundation to continue for another six years his research with the Plum Island Ecosystems site of the Long Term Ecological Research (LTER) network. The title of the grant is "LTER: Plum Island Ecosystems, the impact of changing landscapes and climate on interconnected coastal ecosystems" https://pie-lter.ecosystems.mbl.edu/welcome-plum-island-ecosystems-lter

Indonesia, Brazil biggest culprits in tropical forest loss linked to industrial mining -study

From Daily Mail, By Gloria Dickie

Industrial-scale mining for materials such as coal, gold, and iron ore is spurring tropical deforestation, with once-impenetrable forest cleared for mines and access roads, new research shows.

In the first study to quantify the impact of industrial mining on tropical forest loss, an international team of scientists found that just four countries are largely to blame: Brazil, Indonesia, Ghana and Suriname.

Together, the four forest-rich nations accounted for roughly 80% of tropical deforestation caused by large-scale mining operations from 2000 to 2019, according to the study published in the journal Proceedings of the National Academy of Sciences.

While at least 70% of deforestation is done to clear land for agriculture, the scientists called out industrial mining as an emerging concern due to the growing global appetite for minerals used in clean-energy technologies to combat climate change.

"The energy transition is going to require very large amounts of minerals - copper, lithium, cobalt - for decarbonized technologies," said coauthor Anthony Bebbington, a geographer at Clark University in Massachusetts. "We need more planning tools on the parts of governments and companies to mitigate the impacts of mining on forest loss."

For the study, the researchers studied global satellite images and data tracking forest loss alongside location information for industrial-scale mining operations from the past two decades. The study did not measure the impacts from small-scale and artisanal mining, which can also be a challenge as pollution goes unregulated.

Overall, there were 26 countries responsible for most of the world's tropical deforestation since 2000.

But around industrial mining sites, the four countries dominated. The biggest losses were in Indonesia, where coal mines on the island of Borneo have expanded to meet fuel demand from China and India.

Ghana and Suriname also showed high deforestation rates around gold and bauxite mines delivering material used in aluminum and other products. In Brazil, gold and iron ore extraction drove mining deforestation.

Mining operations often clear forests to make room for expanding extraction sites and tailing storage facilities, as well as to build access roads and settlements for miners.

Faculty News

The GSG Welcomes the Inaugural Director of the New Center for Geospatial Analytics and Tenure-Track Associate Professor, Dr. Hamed Alemohammad

Hamed Alemohammad is a remote sensing scientist with expertise in multispectral and microwave satellite observations. His research interest lies at the intersection of GISciences and geography to use observations and analytical methods to better understand the changing Earth system. In particular, he focuses on 1) uncertainty quantification of satellite observations to enable fusion of multiple observations for improved characterization of the Earth system, 2) adapting machine learning techniques to advance data-driven analytics in Earth sciences, and 3) soil moisture retrieval from synthetic aperture radar (SAR) observations. Throughout the last several years, he has served on multiple technical advisory boards including the Enabling Crop Analytics at Scale, an initiative of the Bill and Melinda Gates Foundation, and Lacuna Fund.

Hamed joins Clark from Radiant Earth Foundation where he was the Chief Data Scientist and Executive Director. At Radiant Earth, he established and led the development of Radiant MLHub - the open-access repository for geospatial training data and models. He holds a B.Sc. in Civil Engineering and M.Sc. in Water Resources Engineering from Sharing University of Technology in Iran. He received his Ph.D. in Civil and Environmental Engineering from MIT.

The Sounds of Science

Professor Florencia Sangermano uses acoustics to evaluate human impact on biodiversity

From ClarkNow, by Melissa Hanson

Clark geography Professor Florencia Sangermano has spent the last few years strapping audio recorders onto trees in forests across Central Massachusetts, recording everything from chirping birds to traffic to rainfall. She's monitoring the soundscapes of these areas to gauge the health of the ecosystem and determine the impact that humans and climate change are having on it. On this episode of Challenge. Change., Sangermano explains this research, which was recently published in the journal *Landscape and Urban Planning*.

"I found that forest areas with higher connectivity and high vegetation productivity have more sounds from animals and also more frequencies that come from animal sources. In this case, the majority of sounds are from birds," Sangermano says. "On the other hand, the areas with more lights or traffic, or more human edges — for example, near backyards or agriculture — presented lower sounds from animals. The main takeaway is that, through the sounds, we can evaluate the impact of humans on biodiversity."

Dr. Sangermano was awarded fellowships by the National Academy of Sciences and the University Consortium of GIS

Dr. Flor Sangermano was selected a 2022 Kavli Fellow, Nominated by the National Academy of Sciences. As part of the fellowship, she was part of the US delegation to the 5th Israel-American Kavli Frontiers of Science Symposium in Irvine, CA, from October 19-21. As part of the symposium, she was one of the 21 speakers, presenting her work on Ecoacoustics to monitor ecosystem's health within the session Emptied Ecosystems. Participants in the symposium are selected by the National Academy of Sciences from outstanding young researchers who have made recognized contributions to science, including recipients of major national fellowships and awards, and who have been identified as future leaders in science. Established in 1989, the Kavli Frontiers of Science alumni network contains more than 6,100 past participants, including 17 alumni who have won Nobel Prizes and 277 who have been elected to the National Academy of Sciences.

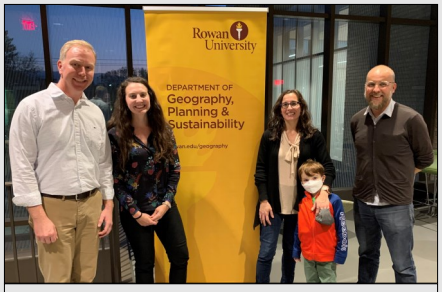
Dr. Flor Sangermano was also awarded a 2022 UCGIS-TRELIS fellowship for participating in a leadership-training workshop for women in STEM and Geospatial Sciences. The NSF-funded Training and Retaining Leaders in STEM-Geospatial Sciences program (Award #1660400), provides professional development for academic women in the geospatial sciences. She joined 15 other fellows selected from across the United States for a workshop that addressed career development, communication, conflict resolution, and work-life integration. The 2022 TRELIS fellows were joined by the 2020 cohort, including Geography alumnus Dr. Ashley York (pictured on the right). As part of this fellowship, Dr. Flor Sangermano together with two other 2022 TRELIS Fellows (Dr. Seda Salap-Ayca from UMASS-Amherst, and Dr. Marcela Suarez from Penn State) received the UCGIS Carolyn Merry Mini-Grant to implement the workshop "How to Navigate and Chart a Course Forward for Women+ Graduate Students in Geospatial Science". The three days workshop is oriented to BIPOC and foreign-born women Ph.D. students and will cover strategies for coping with graduate life career trajectories and will convene in person at the AAG in Colorado for in-person support and networking.

Dr. Flor Sangermano received a collaborative NSF grant

With Ecohealth Alliance New York, and Universidade Federal do ABC in Sao Paulo, Brazil, to study the effect of deforestation and forest regeneration on pathogen spillover. This grant is for $236,162 for project, "BoCP-Design US-Sao Paulo: Land use change, ecosystem

resilience and zoonotic spillover risk."

Biodiversity loss is one of the most severe global environmental problems caused by habitat loss, leading to functional diversity changes and profound cascading effects on the abundance, composition, and ecology of fauna and flora. These changes affect species interactions and ecological function and services, with impacts that can reach human health and well-being, primarily through changes in disease regulation services. The Brazilian Atlantic Forest is a hotspot for biodiversity and rodent diversity, with most rodent species considered pathogen reservoirs or hyper reservoir species, making the area a hotspot for future emerging infectious diseases. Marsh Institute Researcher Florencia Sangermano (Geography) recently received funding from the National Science Foundation for the project Land Use Change, Ecosystem Resilience and Zoonotic Spillover Risk, which will: (1) evaluate the effects of habitat loss on small mammals' functional diversity (i.e., community composition and interaction network structure), and assess their effect on pathogen spillover risk throughout the Brazilian Atlantic Forest; and (2) evaluate the effects of forest restoration on the recovery of small mammals' functional diversity and the associated reduction of spillover risk.



(L-R) Dr. Keenan, Dr. York, Dr. Sangermano, Oliver (Flor's son), and Dr. Christman.

GIS Day

Dr. Flor Sangermano was invited by the department of Geography, Planning, and Sustainability at Rowan University as the GIS Day Keynote speaker. In her presentation, she showed examples of the use of GIS, Remote Sensing, and Ecoacoustics to monitor ecosystems. At Rowan, she met fellow Clarkies Dr. Kevin Keenan, Dr. Zach Christman, and Dr. Ashley York.

Williams co-authors report providing road map for the science of nature-based climate solutions

Despite growing support from lawmakers, tools to guide implementation and monitor outcomes are not adequately developed

From Clarkow, by Melissa Lynch, '95, MSPC '15

Nature-based climate solutions like reforestation, climate-smart agriculture, and wetland restoration harness natural processes to reduce greenhouse gas concentrations in the atmosphere and slow climate change. A new report, "The science needed for robust, scalable, and credible nature-based climate solutions in the United States," reviews the current state of knowledge in this field and describes the necessary research and technology investments to support effective mitigation policy.

Co-authored by Christopher Williams, professor of geography and director of environmental science at Clark, the report is the result of a workshop in Washington, D.C., where several dozen scientists and policy experts gathered to evaluate the science, data, and information necessary to support nature-based climate solutions (NbCS).

Williams, an expert on the global climate impacts of forests — how they can serve as a climate solution, as well as when and where they can't — was an invited keynote speaker in the June 2022 workshop, presenting "Biophysics of Nature-based Climate Solutions: Sorting Mitigation and Adaptation at Local and Global Scales."

NbCS approaches have substantial and growing support from bipartisan lawmakers, the private sector, and conservation-minded NGOs, but scientific tools to guide implementation and to accurately monitor outcomes are not adequately developed.

The authors identify critical gaps in the science needed to support large-scale implementations of nature-based climate solutions and lay out a research agenda to fill these gaps. They also outline a set of principles that should guide future assessments of the effectiveness and viability of nature-based climate solutions.

The report provides a road map for producing and using actionable, cross-sectoral information to foster programs and policies that work — while avoiding energy wasted on those that do not. It includes strategies that can be useful for public agencies, nongovernmental organizations, and private sector staff working to implement nature-based solutions on the ground, as well as agencies seeking to fund investment in nature-based climate solution research and development.

In addition to their potential to stave off climate change, nature-based solutions can improve air and water quality, promote biodiversity, and provide economic opportunities. Many also can help communities adapt to a changing climate and improve the resilience of agricultural and food systems.

The June 2022 workshop was co-sponsored and funded by Indiana University's Paul H. O'Neill School, the U.S. Department of Energy's AmeriFlux network, and the U.S. Carbon Cycle Science Program. The report features nearly 30 authors representing a diverse range of academic, governmental, and nonprofit institutions.

A deep dig into the extractives industry

Geography professor researches impact on people, environment, and climate

From ClarkNow, by Meredith Woodward King

Extractives. To many people, the word might elicit a wide range of connotations. But in the world of environmental science and international development, extractives — typically referring to the oil, gas, and minerals removed from the earth — signify an industry with significant, often irreversible, impacts across the world.

Depending on your perspective, the extractive industry might provide many opportunities — to produce energy, drive economies, employ people, and enrich communities, according to Anthony Bebbington, international program director for natural resources and climate change at the Ford Foundation, a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and Higgins Professor of Environment and Society in Clark's Graduate School of Geography.

A large coal export terminal in Richards Bay, on the east coast of South Africa.

But on the other side, Bebbington explains, you might see negative impacts to the environment, human health, and economies that once benefited from mining and other extractive activities.

"Extractive activity runs the risk of serious forms of pollution. Activists might say [there is a] risk that this extraction of these minerals from this mountaintop is going to permanently deplete and contaminate our water supply. … We do not want that on our back doorstep," he says. "The company would say, 'But we can manage that risk. With the benefits that will be generated from this extraction, we can compensate any adverse impacts there might be.'"

Bebbington can point to his hometown of Stoke-on-Trent, Staffordshire, England, as an example of a community that has flourished and then slumped, part of the boom-and-bust cycle of coal and ore mining, and steel production. Wedgwood and other iconic potteries — part of an industry historically linked to coal, which fires the kilns — sprang up there in the 18th century.

"For a period of time, mining there really did foster economic development of sorts," he explains. "But that link between mining and potteries meant there were periods when Stoke had the dirtiest air in the UK. … People tolerated these costs because it also generated lots of jobs." Yet, "the mines then all closed, and the steel mill closed, and now most of the potteries have gone as well."

In his earlier research, Bebbington, who holds a Ph.D. from Clark's Graduate School of Geography, studied rural development and small-scale agriculture in South America's Andean countries. He credits his life partner, Denise Humphreys Bebbington, research associate professor in International Development, Community, and Environment (IDCE), for introducing him to issues arising from mining and other extractive activities when both were working in Peru in the early 1990s. Since then, the Bebbingtons have explored and published on the topic; they are co-authors — with Abdul-Gafaru Abdulai, Marja Hinfelaar, and Cynthia Sanborn — of the book "Governing Extractive Industries."

With colleagues in the Graduate School of Geography — Professor John Rogan; Nick Cuba, M.A. GIS '16, Ph.D. '11; and Laura Sauls, Ph.D. '19 — they have collaborated on research through the Center for the Study of Natural Resource Extraction and Society at Clark.

Climate experts report on COP27 progress

Nations grappling with impact of human-induced climate change

From ClarkNow, by Meredith Woodward King

Undergraduate students in a first-year class, Navigating the Global Climate Crisis, recently got the chance to hear from two experts about the workings of the annual U.N. Climate Change Conferences, known as COPs.

Justin Sylvester, a senior program officer in the Ford Foundation's Southern Africa Office, provided insight on COP27, held in Sharm El-Sheikh, Egypt, in November. Anthony Bebbington, Ford's international program director for natural resources and climate change and a member of the National Academy of Sciences and American Academy of Arts and Sciences, attended last year's COP26, in Glasgow, Scotland. The COPs — Conferences of the Parties — are annual meetings of signatories to U.N. agreements.

In the Nov. 29 class, Bebbington — who is on leave as Higgins Professor of Environment and Society and professor of geography at Clark — provided an overview of the COPs, starting with the 1992 United Nations Conference on Environment and Development, also known as the Earth Summit, in Rio de Janeiro, where countries pledged to collaborate on sustainability issues and meet annually to address climate change.

The COPs, he pointed out, include three parts: negotiations by a small, privileged group of countries and interested parties — like the 600 oil and gas lobbyists in Egypt; the general conference; and "a venue for street politics — the public sphere," which often draws protesters.

The Egyptian government, Sylvester said, held COP27 in a tourist area far from Cairo, which is home to a larger population and potential protesters. However, he noted, the conference resulted in the announcement of developed nations' commitment to pay for loss and damages incurred by smaller countries due to human-induced climate change.

Civil society organizations, with support from the Ford Foundation, have worked behind the scenes for years with governments to secure agreements, according to Sylvester. At COP27, the United States, the United Kingdom, and the European Union announced the Just Energy Transition Partnership, an agreement to pay $8.5 billion to help with South Africa's just-energy transition, replacing coal with renewable energy.

Justin Sylvester, a senior program officer in the Ford Foundation's Southern Africa Office

Sylvester and Bebbington were just two of the climate scholars who spoke in the semester-long First-Year Intensive class, taught by Denise Humphreys Bebbington, research associate professor in International Development, Community, and Environment, and James McCarthy, Leo L. and Joan Kraft Laskoff Professor of Economics and director of the Graduate School of Geography. Scholars from other colleges and nonprofit organizations also visited the class.

Faculty News

Climate Change Experts Are Taking Lessons From Indigenous Knowledge

The updated report will also discuss climate change's impacts on human health, including mental health.
From Honolulu Civil Beat, by Marcel Honore

As the effects of climate change intensify, researchers and leaders in the Pacific say they're increasingly looking to Indigenous knowledge to help face the growing crisis.

A climate-related training for a United Nations delegation this week at Chaminade University will largely focus on such Indigenous-based approaches, said university provost Lance Askildson.

It's the first time in 20 years or so that this gathering — the U.N.'s annual training for its global hubs on sustainable development — is occurring in the Pacific Islands, Askildson said.
Meanwhile, the upcoming Fifth National Climate Assessment — a congressionally mandated update from experts on how climate change is affecting the U.S. — will also include a new focus on Indigenous knowledge to combat the crisis' growing challenges, its authors say.

The report includes a chapter devoted to Hawaii and U.S.-affiliated Pacific Islands, co-authored by 16 Pacific-region experts who specialize in science, culture and the economy.

"We want to hear from people and make sure we're accurately representing the science," said Abby Frazier, a climatologist at Clark University in Worcester, Mass., and the Pacific chapter's lead author.
Frazier previously was a fellow at the East-West Center in Manoa, and she specializes in drought and how rainfall levels have changed over time.
The first NCA was issued in 2001, and it's been about four years since the previous version came out.

For this latest version, which has been in the works for more than a year, Frazier and her fellow authors strove to put Indigenous knowledge and practices that might develop more resiliency against climate change at the center of their regional chapter, she said.
The report's Pacific Island chapter will for the first time focus on the impacts of climate change on human health, including its effects on mental health, Frazier said. That includes the growing instances of heat-related and vector-borne diseases, such as Dengue and Zika, she said.

The regional chapter will put stronger emphasis on food security, Frazier said. It will discuss traditional methods of agroforestry, which is the practice of growing trees next to crops and livestock so that they all mutually benefit, and aquaculture as ways to develop resilience against the effects of climate change.

The chapter, according to Frazier, will feature the Melai Mai Breadfruit Project — an effort to replant breadfruit trees in the outer islands of Yap after Super Typhoon Maysak struck in 2016. Those trees are essential to the traditional diet and culture of that island chain, part of the Federated States of Micronesia.

Hawaii's prolonged drought is pushing native species to the brink

Protecting native forests is crucial for bringing in water, but the drought—and invasive hoofed mammals—aren't making it easy.
From Popular Science, by Miyo McGinn

One of the wettest places in the United States is Mount Waialeale on the Hawaiian island Kaua'i. The 5,148-foot peak receives an average of 374 inches of rainfall every year, but even with that annual deluge on deluge, the island state as a whole is in a period of prolonged drought.

"Globally, we're seeing more novel kinds of drought," says Abby Frazier, an assistant professor of geography at Clark University in Worcester, Massachusetts, who studies climate change and Hawaiian habitats. "A concern is that we don't know the potential for drought to have transformational impacts on our ecosystems." Since droughts are becoming longer, more severe, and more frequent, researchers like Frazier are concerned about the possibility that ecosystems will be irreparably changed and unable to bounce back even if it starts to rain regularly again.

Despite the threat droughts pose to forest health, biologists know that maintaining it is one of the best ways to lessen the impacts of the drought and keep as much water as possible in the ecosystem. Hawaii's forests have adapted to capture moisture that's in the air in the form of fog or low-hanging clouds. "The collection of cloud water is as important as rainfall," says Emma Yuen, a program manager at the state's Department of Land and Natural Resources. "But if you don't have the native vegetation there to collect moisture, you're going to have a huge decrease in water entering the groundwater supply."
But a lack of water isn't the only threat to forests: Invasive animals, primarily hoofed ones like deer and pigs, damage native vegetation. Unchecked without natural predators, wild deer, pigs, and goats can do serious damage—particularly during a drought, when herds have been seen aggressively grazing on integral native plants. When patches of earth are left bare, it enables dry, invasive grasses to move into the cleared dirt—serving as fuel and driving up the risk of forest wildfires.

Local organizations are working on conservation efforts to preserve native wildlife from the recent dry spells. Frazier is part of the Pacific Drought Knowledge Exchange, a network of regional ecological researchers, natural resource managers, and other experts who share information about the drought's impacts and how to mitigate them. She says that there's a lot of conservation managers looking for creative solutions, like replacing lost native species with different native plants that might be better suited to a region's changing climate. However, she adds that there's a dearth of future climate information needed to inform good planning, and a lack of awareness of Hawaii's particular challenges in the mainland US. The islands might be known for waterfalls and lush rainforests, says Frazier, but "we need people to know we have drought, too."

Ground operations tackle the Leilani fire, which burned tens of thousands of acres in and around the US military's Pohakuloa Training Area on the island of Hawai'i in August 2022. Wildfires like these are fueled by Hawaii's recent drought. Hawaii Department of Land and Natural Resources

Graduate Student News

Welcome to Our First Year (2022) Doctoral Cohort!

(L-R) Ali Mert, Fatemeh, Rahebeh, Hemant, Kwabena, Shan-yu, Jewon. Photo by Yaa Poku

Rahebeh Abedi
M.Sc. GIS Engineering, K.N. Toosi University of Technology, Iran
B.Sc. Geomatics Engineering, Iran University of Science & Technology, Arak Branch, Iran
Research Interests: Environmental studies; LULC and environmental changes; remote sensing; spatial analysis, spatial statistics, and spatial modeling; data mining and machine learning

Kwabena Antwi
MPhil Environmental Science, Kwame Nkrumah University of Science and Technology, Ghana
B.Sc. Environmental Science, Kwame Nkrumah University of Science and Technology, Ghana
Research Interests: Ecosystem-climate interactions; climate change and adaptation; conservation and ecosystem ecology

Hemant Raj Ghimire
M.Sc. Environmental Science Tribhuvan University, Nepal
B.Sc. Environment Science, Tribhuvan University, Nepal
Research Interests: Environmental and social implications of renewable energy transition; sustainable renewable energy development; hydropower; solar project; human dimension of environmental conservation; environmental impact assessment; spatial analysis for environmental assessment

Ali Mert Ipek
M.Sc. Political Science and Public Administration, Middle East Technical University, Turkey
M.Sc. Globalisation and Development, SOAS, University of London
B.Sc. International Relations, Middle East Technical University, Turkey
Research Interests: Nature-society relationship; political economy of development; state-society/economy relations in the Global South; financialisation; rural development; critical geographies of tourism

Fatemeh Kordi
M.Sc. Remote Sensing and GIS, University of Tehran, Iran
B.A. Natural Resource Engineering, Lorestan University, Iran
Research Interests: Forests and climate change; land use change modeling; crop classification; assessment of NCS opportunities in order to reduce carbon emission; Hydrology modeling; evapotranspiration

The First Year Cohort at Prof. Deb Martin's house.

Jewon Ryu
M.Sc. Geography, Kyung Hee University, Seoul, Republic of Korea
B.Sc. Geography, Kyung Hee University, Seoul, Republic of Korea
Research Interests: Nature and society; human and environment; urban political ecology; environmental politics/policies; urban green infrastructure; net-zero by 2050, environment and development

Shan-yu Samuel Wang
M.S. Geography, National Taiwan University
B.S. Geography, National Taiwan University
Research Interests: State projects; geopolitics; industrial studies; political economy; zones (SEZ, EPZ, FTA); economic geography; development geography; Taiwanese firms; India

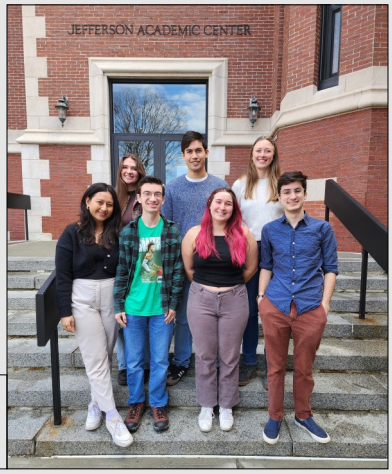
Lei Song Wins Best Poster Award

At the 4th International Electronic Conference on Remote Sensing, Lei Song won the Best Poster Award for her poster titled, "A super-ensemble approach to map land cover types with high resolution over data-sparse African savanna landscapes".

Congrats Lei!

Introducing the MS-GIS ADP 2022-2023 Cohort

Alek Fraser (GEOG '22)
Ryan Freed (GEOG '22)
Emily Heltzel (ES '22)
David Henriques (ES '22)
Caleigh McLaren (ES '22)
Madeline (Regs) Regenye (ES '22)
Ashna Siddhi (ES, ECON '22)



L-R Back Row: Caleigh, Alek, Emily
Front Row: Ashna, David, Regs, Ryan
Photo by Yaa Poku

PhD students volunteering during Practicing Geography Week's "PhD Conversations over Dessert". Photo: Yaa Poku

Undergraduate Student News

HERO 2022-2023 Cohort

Shradha Birdika (GEOG '25)
Nicole Buckley (ES '23)
Lucy Fleming (GEOG/GES '23)
Danielle Hall (GEOG '23)
Charlotte Zieselman (GES '24)

L-R Lucy Fleming, Nicole Buckley, Danielle Hall, Shradha Birdika, Charlotte Zieselman at NESTVAL 2022. The NESTVAL Awards Committee awarded Lucy, Nicole, and Danielle the NESTVAL Undergraduate Student Research Poster award for their research poster "*Assessing Tree Canopy, Temperature and Air Quality in Rhode Island".*

'Everything a Geographer Should Know'

HERO fellows study trees outside of Massachusetts for first time

From ClarkNow, by Melissa Hanson

Shradha Birdika '24 was searching for colleges online, determined to study geography, when she came across Clark University's website and discovered the Human-Environment Regional Observatory (HERO) summer research program.

"I was almost mesmerized reading about it," she says. "It seemed like a once-in-a-lifetime experience — and was one of the major reasons I applied to Clark."

Birdika is now among five HERO fellows working under the supervision of program co-directors John Rogan and Deborah Martin, professors of geography. HERO research has always centered on tree health with a blend of research, advocacy, and policy. This summer, the program is bringing students outside of Massachusetts for the first time in its 23-year history. HERO is coordinating with Groundwork Rhode Island, a local branch of a national organization that transforms communities at the intersection of environment, equity, and civic engagement.

Many fellows have their first experience collecting and analyzing data during the eight-week program, which is supported by the John T. O'Connor '78 Endowed Fund for Environmental Studies. Fellows also engage in social geography activities, such as door-knocking and interviewing residents.

"The model of engagement with stakeholders helps students understand the broader work world beyond research. It's about the policy, the communities, and how to help people answer questions," Martin says.

This summer, students are working in Rhode Island — particularly Providence, Central Falls, and Cumberland — studying the health of trees previously planted by Groundwork and looking for areas where more trees can be planted in the future.

Nick Geron, HERO's Ph.D. student advisor, says the partnership with Groundwork will mean more trees planted in the fall, helping to reduce air pollution and extreme heat.

HERO Fellow Danielle Hall '23 has been intrigued by the social geography part of the program. She's heard from residents who love trees and do whatever they can to keep them around their property. But others have told her trees damaged their sidewalks and drains, and they don't want any new ones planted near their homes.

Birdika has also enjoyed interviewing residents about their neighborhoods.

In addition to Rhode Island, fellows have been working in Worcester's Broad Meadow Brook neighborhood, complementing research by geography Professor Rinku Roy Chowdhury, who received support for the students' efforts through Clark's Academic Innovation Fund.

Students are door-knocking to ask residents how they engage with nature in the area.

Both Birdika and Hall plan to continue the research they started this summer. Hall is considering a project focused on environmental justice and climate change, looking for a correlation between the unequal distribution of pollutants and the prevalence of people with asthma. Birdika may take a social geography approach and interview residents who live near Clark's Hadwen Arboretum, asking about their experience with the trees and plants on the property.

"You can't put one label on the HERO program," Birdika says. "It's not just about trees. It encapsulates everything a geographer should know."

Worcester's Iconic Three-Deckers Endure, Enchant Across Centuries

From Telegram & Gazette, by Toni Caushi

When Finn Wertz looked for an apartment in late 2020, he was looking for something that was practical for the life of a student.
He wanted something cheap and close to Clark University, where the 21-year-old studied geography.
After some research, he turned his future roommates' attention toward the first-floor apartment at 913 Main St., only a three-minute walk from school, where rent would be split four ways, at $475 each. But what was most attractive to Wertz was the character of the building — an 1888 three-decker that also had a name.

The Frank Reed Three-Decker.

"The most striking thing was the outside facing of it, what I assume to be Victorian (style), with the framing on the roof peaks, and the details that give the building a little bit more elegance," Wertz said. "I was kind of amazed that we found such a beautiful house for so cheap. I'm from Pennsylvania; we don't really have quite the same architecture."

From the time the first one was built in 1858, the three-decker has been Worcester's sweetheart for the housing it provides, and the uniqueness of the architecture.

Whether the first one was found on John Street or Endicott Street, historians agree that the goal was to make housing for factory worker immigrants of Swedish, French Canadian, English Canadian, Irish, Polish and Lithuanian origin who flocked to the city by the tens of thousands from 1890 to 1910.

They were built with two and three bedrooms and were spacious enough, so they would not only be practical but would also have the style and feeling of a home with eight-foot ceilings, separate living and dining room spaces with a total living space that ranged from 800 to 1,500 square feet per unit.

Named after 18th century battleships for their similarity to three-level vessels, more than 13,000 three-deckers were built mostly in the Vernon Hill and Grafton Hill neighborhoods.

Accounts differ, but the last one is thought to have been built no later than 1936.

In the 1980s, Clark University researchers narrowed down the architectural styles to seven — Italianate, Mansard, Early Queen Anne, Late Queen Anne, Early Classical Revival, Gambrel and Late Classical Revival.

A TRIAL RUN BEFORE PURSUING LAW SCHOOL

Courthouse internship gives Kieran Babra insight into a potential legal career

FROM CLARKNOW, BY MELISSA HANSON

Kieran Babra '23 outside the Worcester courthouse

Kieran Babra '23 started his mornings this summer by settling into the wooden seats at the Worcester courthouse and watching trials. He became fascinated by the legal dance that unfolds in the courtroom, glued to every word as prosecutors questioned witnesses on the stand.

"It's like what you see on TV, just much less dramatic," says Babra, a double major in geography and political science who just completed an internship in the office of Worcester District Attorney Joseph Early Jr. He worked in the domestic violence unit under Assistant District Attorney Molly Madaio.

Babra spent many afternoons handling witness summonses and reviewing video evidence in search of details that could be important in a case. If a defendant was accused of drunken driving, he'd scan booking videos recorded at the police station, looking for signs of slurred words or lack of coordination. Babra would forward his findings to a supervisor.

Observing courtroom proceedings exposed Babra to the extensive research, strategizing, and charisma that go into being a trial attorney. He started his internship by watching the latter part of a murder trial, in which a jury found the defendant guilty of voluntary manslaughter in the 2014 fatal stabbing of her fiancé. Then, Babra tracked another trial from opening statements to verdict. In that case, a man was found guilty of murder in the stabbing death of his former girlfriend. Babra studied the way prosecutors framed questions for people on the witness stand.

Babra had been curious about law school but wasn't ready to commit. Now he feels a step closer to planning a legal career.

Babra plans to further explore his interests before applying to law school to determine what area of the law seems like the best fit. His courthouse mentors have urged him to be methodical with his choices.

Babra found that the critical thinking and writing skills he developed at Clark were essential to completing work inside the courthouse. He's benefitted from the way political science professors draw on current events to teach their courses and has enjoyed urban geography classes with professors Asha Best and Mark Davidson.

The Washington, D.C. native grew up internationally, graduating from high school at the International School Bangkok in Thailand. He chose Clark because he was looking for a smaller school in an urban area. Spending his summer downtown at the courthouse made Worcester seem more like home.

FIRST-YEAR STUDENTS LEARN FROM RENOWNED SCHOLARS HOW TO NAVIGATE THE GLOBAL CLIMATE CRISIS

'This class was exactly what I was looking for when I came to college'

FROM CLARKNOW, BY MEREDITH WOODWARD KING

Aedan Derrick '26 came to Clark this fall, intent on studying environmental science. He wasn't sure what to expect when he signed up for Navigating the Global Climate Crisis, one of more than 35 First-Year Intensive courses offered to incoming students.

With the first guest speaker, Geography Professor Karen Frey, an internationally renowned polar scientist and author of a chapter for the National Oceanic and Atmospheric Administration's (NOAA) annual Arctic Report Card, Derrick quickly discovered that he and his classmates were not taking a typical first-year class. They would rub shoulders with well-known climate scholars from Clark, other colleges, and nonprofit organizations.

"Little did I know that this class was exactly what I was looking for when I came to college," says Derrick. "I wanted to learn more from the experts in the field, learn more about what it takes to be a scientist, about networking and writing proposals, and about climate policy. And that's exactly what the class delivered."

As part of the class's culminating project, Derrick collaborated with Matt Shea '26 to present research on "Climate Change Adaptations of Major American Waterways" to those same experts at a group poster salon on Dec. 9 at the Graduate School of Geography.

"That was the coolest thing about the class — that you were getting access to the professionals in the field," Derrick says.

As part of a culminating poster salon in the class, Kaylene Criollo '26 talks to Ed Carr, director and professor of International Development, Community, and Environment, about her research with Brody Fish '26 on "The Distinction Between the Challenges Faced by SIDS and Continental Low-Lying Coastal Communities." Throughout the semester, Criollo and her classmates met renowned scholars like Carr, who was a lead author of a chapter in the Intergovernmental Panel on Climate Change Working Group 2's Sixth Assessment Report.

The class was taught by Denise Humphreys Bebbington, research associate professor in International Development, Community, and Environment, and James McCarthy, Leo L. and Joan Kraft Laskoff Professor of Economics and director of the Graduate School of Geography.

As a Collaborative Course of the New Earth Conversation (NEC), a campus-wide climate education initiative, students also attended NEC events and Council, facilitated by the

Council on the Uncertain Human Future, which first began at Clark in 2014 as a national group of climate leaders and now is an international network.

"We designed this as a Clark Commons course, which allows students to explore all sides of a significant global issue and brings in speakers from multiple disciplines, from the humanities to international development to the physical sciences," Humphreys Bebbington said. "It was an ideal format for exploring what is arguably one of the most pressing issues facing life on Earth today."

The guest speakers led discussions on everything from global change observed via satellite to geoengineering, indigenous knowledge, global politics and governance, and climate change in fictional literature.

Young alumni return to discuss climate work

The last class featured a panel of young alumni and scholars, all of whom have applied their activism to professional careers:

Risha Narayanan '17, a multimedia science communicator with the Conservation Law Foundation in Boston.

Hannah Silverfine '16, M.S. ES&P '17, a senior associate with Kearns & West in Washington, D.C.

Lizzie Lloyd '19, who writes for the U.S. Environmental Protection Agency about PFAS chemicals. Found in many products, PFAS break down slowly, linger in air, water, fish, and soil, and have been linked to cancer and other health issues. (Read what she learned about environmental politics during two undergraduate internships in Germany.)

John Hite '17, an associate with Clear Strategy Inc. (Read about how he conducted research as an undergraduate with three Clark faculty on mitigating deforestation.)

William Westgard-Cruice, a doctoral candidate in geography and a teaching assistant for the class.

A co-founder of Professionals of Color in the Environment in Massachusetts, Narayanan encouraged students "to think critically about the organizations you are working for. Do they match with your values and are they bold enough to tackle the hard questions? I never again want to work for a place again that says something to me like, 'Climate change doesn't warrant emotions' or 'What does social justice have to do with environment?'"

"We don't just want you to learn about climate change. We titled this class 'Navigating the Global Climate Crisis' for a reason," Professor McCarthy said when introducing the alumni. "We have tried to emphasize throughout the semester that there are paths forward. There are things that can be done, there are things that should be done, and there are people doing them."

Practicing Geography Week fall 2022: All Hands on Deck!

This fall, the Graduate School of Geography partnered with the Career Connections Center to host the Fall 2022 Practicing Geography Week. Faculty, Graduate Students, undergraduate students and Alumni came together to create a series of events. Many thanks to Angela Harris, Associate Director of Employer Engagement, and Jennifer Durecut, Assistant Director of Career Development, from the Career Connections Center.

We kicked off the week by asking students to share their favorite parts of the GSG via email. Words shared ranged from 'stimulating' to 'resourceful' and 'ethnography'. John Rogan led a Geocaching quest at the Hadwen Arboretum that drew both undergraduate and graduate students. They had a lot of fun locating sweet treats hidden at the highest point of the arboretum and in the fire pit within the outdoor classroom.

Current PhD students joined us for a sweet event, "PhD Conversations Over Dessert". Gisselle Vila Benites, third year, Hemant Ghimire, first year, and Arman Bajracharya, third year, shared their experiences with applying to the Geography program, their current research plans, and their hopes for future research experiences. In attendance were a number of students that majored in geography, global environmental studies, and environmental science. We also had the MS-GIS students join the conversation. Picture located on page 9.

In a student poster session, pictured on the left, Esha Bharadwaj GEOG '23, Apple Gould-Schultz ES '23, Ruthanne Ward GEOG '23, and Lily Attias-Inzano '26 shared their projects and research interests with students and faculty.

NASA DEVELOP Fellows joined us for an internship information session, moderated by Angela Harris, where they highlighted opportunities with NASA DEVELOP to apply earth observations and data to real-world environmental issues. This was held on Zoom with a 'live stream' for any students that preferred to sit together in the Geography Commons. Caroline Williams, ES '20 MS-GIS '21 is a fellow for the NASA DEVELOP Pop-Up Project Offices. She was joined by Tyler Pantle, a fellow in the Boston location. There were so many interesting internship opportunities shared to the students, as well as tips and tricks on how and when to apply.

Another virtual session was led by alumna Melanie Vanderhoof Ph.D. '14 and moderated by Jennifer Durecut. Melanie discussed her job as a Research Geographer with the USGS, Geosciences and Environmental Change Science Center in Denver, CO. This session was titled "Remote Sensing Industry Insight" and gave the students an insider look at the projects and research that Melanie was part of.

The final session of Practicing Geography Week was the Alumni Connections Panel: Applying Geographical Knowledge & Learning about Life After Clark. The panelists were Meyru Bhanti GEOG '18, MS-GIS '19, GIS Specialist at Winrock International, who joined via Zoom, Rebecca Dickson PhD '09, SR. Manager, Geospatial Analysis at TerraCarbon LLC and Professor at Wake Forest University, Suzie Birdsell GEOG '15 MS-GIS '16, Senior Associate at Nelson/Nygaard Consulting Associates, and Jared Fijalkowski GEOG '04, Community Planner at the Volpe Center. Sharon Hanna, Director of Career Development and External Relations in IDCE, and Prof. Robert Pontius moderated the lively panel, pictured on the right. There was a light social at the end for students to network with the panelists.

Alumni News

John Lauermann, PhD 2014, Moved to the Pratt Institute

Where he is an associate professor in the School of Information and director of the Spatial Analysis and Visualization Initiative.

Faculty, Stephen Young, PhD '97, and Graduate Student Run Mapping Workshop in Guatemala

From Salem State News

Stephen Young is still an active member in the NESTVAL organization and region and very active with drones for conservation issues. This fall, he traveled with a graduate student to Guatemala for a week (November 7-14) to run a "Participatory Mapping" workshop for 15 conservation organizations from Mexico, Belize, Guatemala, Honduras, and Nicaragua. After the three-day workshop in Antigua they traveled to the mountainous Mayan indigenous region of Totonicapan, Guatemala to teach organizations from Mexico, Honduras, and Guatemala how to use drones for forest monitoring. In February, he will be going to Honduras to work on a reforestation drone mapping plan for the Yoro Biological Corridor Initiative in Honduras. After the spring semester, he will be retiring from Salem State University, mostly just retiring from teaching but will be active in projects. He is looking forward to seeing colleagues in Denver. Dr. Young is pictured with his group in Central America at his mapping workshop. He is on one knee and his graduate student is standing on his left side.

Clark Alum is Co-Editor of Bridging Worlds—Building Feminist Geographies in Honor of Janice Monk

Ann M. Oberhauser, Ph. D. '88, Iowa State University, Anindita Datta, Delhi University, and Janet Momsen, UC Davis—Emerita (pictured on the left, from top to bottom), are pleased to announce the recent publication of the co-edited book Bridging Worlds—Building Feminist Geographies in honor of their friend, Janice Monk, to mark the 30th anniversary of the IGU Commission on Gender and Geography. It is an excellent collection of work from scholars around the world that was inspired by their friend and colleague, Jan Monk.

There is a discount through Routledge that you can utilize in purchasing the book on the book's website: Bridging Worlds—Building Feminist Geographies.

USM Names Temple University's Dr. Michele Masucci, M.A. '86, Ph.D '87, as Vice Chancellor for Research and Economic Development

From the University System of Maryland Newsroom

University System of Maryland (USM) Chancellor Jay A. Perman has appointed Dr. Michele Masucci to the position of USM vice chancellor for research and economic development. Masucci joins the USM from Temple University, where she has served as both a faculty member and vice president for research.

Reporting directly to Chancellor Perman, Masucci will be responsible for promoting and developing strategic research and business partnerships among the USM campuses, state and federal government, laboratories and agencies, corporations and industry, and other public and private higher education institutions. A major focus of these efforts will be areas of science and technology that impact the economic and workforce development of Maryland such as life sciences, clean energy, "big data," cyber security, and advanced manufacturing.
She will join the USM on Sept. 6, 2022.

In addition to her vice chancellor position, Masucci has an appointment in the Department of Geography & Environmental Systems at the University of Maryland, Baltimore County (UMBC).

Masucci first joined Temple in 1997 as a faculty member in the Department of Geography and Urban Studies. At Temple University, she has served as department chair, center director, and research enterprise leader.

Masucci received both her M.A. and Ph.D. in Geography from Clark University in 1986 and 1987, respectively. She also holds a B.S. in Geography and Regional Planning from a USM institution, Salisbury University (1982). She held tenure-track appointments at West Georgia University and Auburn University before joining the Temple faculty.

Clarkie Representation at Geo for Good Summit

The 2022 Geo for Good Summit, held in October in California, was back in person after years of virtual conferencing. At a conference that was limited to 300 people, with 100 of them being Google employees, three Clark alumni were in attendance! Ryan Frazier, '06, MS-GIS '07 stuck up a conversation with Jess Strzempko, '20, MS-GIS '21 and Eli Simonson, '17, MS-GIS '18. Imagine Ryan's surprise at connecting with not one, but two Clarkies at an invite-only event! Pictured from left to right, Eli Simonson, Jess Strzempko, and Ryan Frazier, photo credit: Ryan Frazier.

Department News

Graduate School of Geography to celebrate its centennial with April event

Panels will honor 100-year legacy, and look with urgency to the future

From ClarkNow, by Clark News and Media Relations

Clark University's Graduate School of Geography will proudly celebrate its 100-year legacy as a transformational force in geography with a special centennial event to be held April 13–15 on the Clark campus.

The celebration will kick off on April 13 with the Atwood Lecture, presented by Kendra McSweeney, professor and distinguished scholar of geography at The Ohio State University. McSweeney, whose research is centered on human-environment interactions and cultural and political ecology, has made influential analytical contributions to understanding the socio-ecological dynamics and impacts of drug trafficking through Central America.

The centennial event will feature multiple sessions on April 14 and 15 that are open to the campus community and public, including panels and talks that will examine the significance and leadership of the Graduate School of Geography in society and in the discipline, take stock of where the GSG is today, and look toward its future and its role in addressing many of the most urgent issues facing the world.

Samuel Van Valkenburg and Geography Graduate Students. Marvin Richmond Photo. From "Clark University, 1887-1987: A Narrative History" by William Koelsch

Panelists will discuss the study of Black geographies, an area pioneered by Clark alum Bobby Wilson, Ph.D. '74. They will examine the GSG's long and influential history in understanding human-environment interactions, including field-defining contributions to the analysis of environmental risks and hazards, human transformations of the Earth, and the connections between development and the environment central to the field now known as political ecology. Other panels will delve into the GSG's signal contributions, leadership, and ongoing work in the areas of feminist geography, urban geography, and GIScience and earth systems science, particularly in an era of accelerating climate change. Another panel will examine the contributions of GSG faculty, students, and alumni to public policy. The schedule will also include ample opportunities for informal discussions among alumni, former and current faculty and students, and other friends of the GSG.

A tribute to the late Roger Kasperson, longtime professor and researcher with the Graduate School of Geography and the George Perkins Marsh Institute, will be held on April 15 as part of the centennial program.

James McCarthy, director of the Graduate School of Geography, noted that the GSG's 100th birthday took place in 2021, but the celebration was delayed because of COVID. "We look forward to welcoming alumni, trustees, former faculty, and other friends of the department back to campus this spring," he said.

"The issues at the heart of geography — helping to create understandings of how we can live together, sustainably and justly, on a dynamic, heterogenous planet — have never been more relevant and urgent than they are right now," McCarthy said. "Many of us were drawn to the field precisely because geography allows us to work from and through questions about real, specific places in ways that recognize all of their complexities and interconnections. Doing so requires us to integrate perspectives and approaches from multiple fields of knowledge, which generates far richer understandings: Within steps of my office, I have experts in carbon cycling, economic geographies of innovation, polar science, Black and indigenous geographies, GIScience and remote sensing, urban geographies, landscape ecology, development studies, and so much more.

"That richness is what distinguishes geography as the original integrative and holistic discipline. The Graduate School of Geography at Clark is and has been a globally significant exemplar and leader in that tremendously generative approach. It is what has drawn so many incredibly impressive faculty and extraordinary doctoral students from around the world to the department over time, and it is why I am proud to be a faculty member in the GSG."

The Graduate School of Geography was launched in 1921 by President Wallace Atwood and quickly became a leader in a wide range of geographic scholarship. The school draws students from all over the world and trains them to do important and innovative research across the globe. Among its many achievements, the GSG has been one of the top Ph.D.-granting geography departments in the United States for the past 100 years, is consistently ranked among the top 10 geography graduate programs by the National Research Council, and has had numerous faculty members inducted into the National Academy of Sciences, the American Academy of Arts and Sciences, and the American Association for the Advancement of Science.

Department News

Global Conference on Economic Geography coming to Clark in 2025!

I am delighted to let you know that Clark will be hosting the 7th Global Conference on Economic Geography in June 2025!!!

This is the most important conference for economic geographers from around the world with 25 years of history. With the Centennial of the Clark-owned journal Economic Geography coming up, this would promise to be a great history-making event to showcase Clark GSG and bring researchers internationally to our campus. This year's event in Dublin which just took place last week brought 1,000 participants from 70 countries. Clark will be the first ever to host this conference in the Americas.

http://www.gceg.org/
June 2025 is a long way off, but we will be forming a Local Organizing Committee soon. If you are interested and willing to volunteer, please let me know!
Notice the GCEG mascot elephant in my office – this has been passed on from previous conveners (heavy and bulky surprise luggage!).

Yuko

Introducing the Work Study Students

This year, we are proud to announce the two new GIS Help Desk workers and the two new additions to the Office Assistants!

Apple Gould-Shutlz, ES '23

Hi all! My name is Apple Gould-Schultz (she/her) and I am a senior majoring in Environmental Science (Earth Systems Science track) and minoring in Biology. I will be completing a 5th-year Accelerated Masters' in GIS graduating in 2024. I was a HERO fellow in the summer of 2021 and have been managing the program since. I love using my GIS skills on environmental issues and am so excited to be working with y'all.

David Henriques, ES '22, MS-GIS '24

Hello everyone! My name is David (he/him), and I am a GIS master's student in the 5th year program here at Clark. Last May, I graduated with my B.A. in Environmental Science (ESS track) with a minor in Geography. I have over three years of experience in GIS at Clark. My research interest involves using historical maps and aerial imagery to find patterns in urban ecological issues. This past year, I mapped urban tree canopy change in a neighborhood in Worcester from the 1950s to present day using a historical aerial photograph. I am very excited to work with all of you this year!

Zoe Newman, CYES '25

Hi everyone! I'm Zoë (she/her) and I am a sophomore at Clark. I'm majoring in Community, Youth, and Education Studies and am interested in minoring in Sociology. I am especially interested in learning about food systems, food justice and specifically food and water sovereignty in communities impacted by environmental racism and capitalism. This is my second year working with the Graduate School of Geography as a work study; I began working with the department in the second semester of my freshman year. I have really enjoyed working with the GSG and having the opportunity to connect with staff and faculty, especially over the office candy bowl! :) On campus, I am an E-Board member of Choices, Clarks confidential peer sexual health education and wellness resource. I am also a member of the Peapod Squad, one of Clark's improv teams!

Tokiyo Machida, '26

Hi! I am a freshman at Clark, and I am planning to double major in Studio Arts and Management. I am a performer for Gala Japan '23, and I am so excited to share my Japanese culture with people. I enjoy working in the geography department because I love starting off my days in the cozy office, being savvy about how to navigate the building, and gaining work experience.

Department News

The GSG Mourns the Passing of former Faculty William Koelsch and Robert Cameron Mitchell

On November 5, 2022, two retired GSG faculty, Robert Mitchell, 87, and William (Bill) Koelsch, 89, passed away.

Geography scholar, historian, and activist William Koelsch has died

Was passionate about Clark University's past and LGBTQ+ rights

From ClarkNow, by Jim Keogh

William "Bill" Koelsch, 89, professor emeritus of geography, retired University historian, and a longtime activist for LBGTQ rights, died on Nov. 5, 2022.

Koelsch, who established the modern Clark Archives, was well known on campus as the author of the highly regarded "Clark University, 1887-1987: A Narrative History," a chronicle of Clark's first 100 years, researched and written over five years and published to coincide with the University's centennial celebration in 1987. The volume graces bookshelves across campus and remains an invaluable repository of Clark's early history.

In a 2012 story in Clark magazine, Koelsch recalled that he convinced then-President Mortimer Appley to grant him some time off from teaching to craft the book, which he insisted would be a robust, accurate, and honest accounting of Clark's past.
"Non-Clark people are more interested in the University's early years, and Clark people tend not to know about them," he said. "I tried to get the record reasonably straight about those years. It wasn't a public relations piece — I attempted to call the shots as I saw them."

Koelsch scoured the academic landscape for sources. According to the story, in the 1970s, he'd crossed the country looking for original manuscripts related to early Clark, conducted interviews with former faculty and administrators, and culled from the unpublished memoirs of former presidents Howard Jefferson and Appley.
"By the time I wrote, I was in a secure position against anyone who might want to squawk about something," he remembered. "I can defend every sentence using the backup material."

He earned a bachelor's degree from Bucknell University (1955), a master's from Clark (1959), and a Ph.D. from the University of Chicago (1966), and served several years in the U.S. Army Transportation Corps. He joined Clark as an assistant professor of geography in 1967 and later became a tenured professor known for his incisiveness, erudition, and wit.
"Bill was my first adviser when I entered Clark. He was a walking encyclopedia, but not in an intimidating manner," recalled Jeremy Trasch, Ph.D. '06, professor in the Department of Geography and Environmental Planning at Towson University. "My classmates and I valued his long list of chronological reference lists he shared in his class on the history of geographic thought — he introduced all of us to Clarence Glacken. Because of Bill, I went into Cambridge to find 'Traces on the Rhodian Shore' — we weren't using Amazon in those days. He was kind and gracious, quietly knowledgeable, and ready to give his time."
Clark Geography Professor Rinku Roy Chowdhury told the Worcester Telegram & Gazette that when she was pursuing her doctorate at Clark, she took a course with Professor Koelsch, who created a "welcoming and fun space in a really, really intense Ph.D. program and department," allowing the students to "establish rapport and camaraderie, not just with the professor, but with each other."

Koelsch, who retired in 1998, moved to San Diego, where he wrote more than 20 scholarly articles and essays, including articles about G. Stanley Hall and about the influence that Jonas Clark's strong abolitionist beliefs had on the formation of Clark University. His book "Geography and the Classical World: Unearthing Historical Geography's Forgotten Past" was published in 2012.
He also crafted many longhand, meticulously worded letters to friends and Clark associates over the years, often alerting them to his latest work or to approaching Clark-related milestones.

Koelsch made a memorable return to Clark in 2019 to speak at the invitation of the late Professor Robert Tobin, who had organized an exhibition titled "Queering Clark." The retired professor recounted his personal experience as a member of the "silent generation" of gay men who came out later in life, recalling that he wrote columns for Boston's Gay Community News under the pseudonym "A. Nolder Gay."
In 1975, Koelsch began teaching a course at Clark on the gay liberation movement. In 1982, when the HIV/AIDS crisis was dawning, he incorporated information on the disease into the syllabus of his course Health and Disease in the American Habitat and spoke about HIV/AIDS to church groups.

In his return visit, Koelsch cited reasons for optimism about the future of gay rights in the U.S., noting with satisfaction that same-sex couples can now marry and an openly gay soldier can serve in the U.S. military. "I never expected to see either of those things in my lifetime," he marveled. Koelsch's papers regarding his activism are in the ONE Archives at the USC Libraries. An oral history of his Army service is online at the Library of Congress.

He is survived by his partner of over 50 years, William Dennison.

William Koelsch, M.A. '59, returned to campus in 2019 to help celebrate the history of the LGBTQ+ community at Clark.

Save the Date!

Clark Graduate School of Geography's Annual Wallace W. Atwood Speaker – April 13, 2023

Centennial Celebration – April 14-15, 2023

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