

FEBRUARY 2024

SUMMER/FALL 2023

GEOGRAPHY

THE GRADUATE SCHOOL OF GEOGRAPHY
AT CLARK UNIVERSITY



WHERE'S YOUR WORLD? | SUMMER/FALL 2023

GEOG

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COVER PHOTO: EL TATIO GEYSERS
IN CHILE. CREDIT: JIM MURPHY



WELCOME

A NOTE FROM GSG DIRECTOR JAMES MURPHY

Dear Geography Friends,

Welcome to 2024 GSG friends and family! Time for our latest newsletter, fantastically assembled and designed by Yaa Poku and student-workers in the Geography main office. As new Director (since June 2023) this is my first welcome note, one that brings with it news of our latest and many successes, faculty and staff transitions and additions, alumni updates, and a welcome to new cohorts of graduate students (ADP, MS, and PhD).

Before I begin I want to sincerely acknowledge and thank my predecessor, James McCarthy, who served as Director from mid-2020 until mid-2023. Among many other contributions, James led us successfully through the turbulence/disruptions of the COVID pandemic and helped to ensure that the GSG weathered the storm as effectively and constructively as possible. Thank you James.

Since our last newsletter there have been big changes in the main office in the GSG. In July, Aidan Giasson, formerly a work study and, for two years, Office Coordinator and Assistant to the Department Administrator in Geography, left Clark to take a position in the Worcester Department of Public Health. Aidan was superb in her administrative roles and always a wonderful, caring, and fun colleague to work with. Thank you, Aidan.

A second big loss came in late August when Brenda Nikas-Hayes retired from her role as Departmental Administrator and Assistant to the Director. Brenda had two stints in the GSG, the first of nine+ years as the Graduate Program Administrator (2008 - 2017), the second as the Department Administrator and Assistant to the Director (2020 -2023). Brenda was the life-force of the GSG in so many ways - performing essential/vital (oft painful) administrative tasks, managing faculty and graduate students (aka herding cats), and tirelessly advocating/fighting for the School and its people and programs. We wish Brenda and John the best of everything as they retire to Richmond, VA.

Fortunately, reinforcements have arrived and the main office is now fully staffed once again. In late August, Frances Wychorski came on

board as the new Departmental Administrator and Assistant to the Director. Frances joined us after a stint at the Worcester public schools in addition to prior work at Assumption, Anna Maria, and Clark, no less (introduction below). In late November we were very fortunate to hire and onboard Marjorie Miller who joined us as our new Office Coordinator and Assistant to the Departmental Administrator (introduction below). Welcome aboard Frances and Marjorie! We are also pleased to welcome back our returning and new student workers who assist in the main office - Tokiyo, Sydney, and Ariana (who started in the fall term).

On the faculty front, we welcomed Dr. Siobhán McGrath to the GSG in August 2023. Siobhán joined us as an Associate Professor following positions at Manchester University, Lancaster University and, most recently, Durham University in the UK. Siobhán is an economic and development geographer with a particular focus on labor issues including: worker (social) movements, unregulated labor, unfree labor, "modern slavery", and worker rights in global production networks. Siobhán will teach (has taught) courses on economic geography, labor geography, unfree labor, and political economy (see her introduction below). Welcome to Siobhán.

As you will see below, there is lots of news related to faculty research achievements, public/community relations, news stories, collaborations, and speaking engagements. As ever, these accomplishments are made in addition to the usual (superb) work of teaching, advising, and mentoring undergraduate and graduate students at Clark, a testament to the commitment and dedication of GSG faculty to scholarship, public policy, activism, and a better planet for all. Moreover, such achievements are made in the face of highly significant service loads within and beyond the GSG and Clark University. Inspiring, in a word.

Our student body continues to grow, diversify, and excel at all levels. Our PhD program welcomed back ten continuing, new for 2023-2024, students in the Spring term, our largest class since the COVID disruptions. This year's cohort boasts a strong international contingent representing Brazil, Nepal, and Pakistan, in addition to three domestic students. As ever, these students bring with them a diverse and substantive range of expertise and experiences as summarized below. Our MS GIS program - ADP (5th year, 8 students) and non-ADP students (12) - continues to thrive and I

am pleased to announce that plans are well under way to formally shift the program's administration into the GSG beginning in the fall 2024. IDCE (now Sustainability and Social Justice [SSJ]) faculty will still contribute to the program through courses but it will now be managed/administered by Geography.

As importantly, our commitment to undergraduate education and programming remains strong as ever and we continue to serve Clark students through courses and advising in the geography, global environmental studies, and earth systems science majors. Moreover, the HERO program remains a model program linking applied, undergraduate research to public policy, sustainability, and community development concerns. Thanks to Deb Martin, John Rogan, and HERO support staff for ensuring the program's success year in, year out. A warm welcome all new and continuing students.

This academic year has already featured several events and numerous visitors/speakers to the GSG. In the Fall, Professor Jennifer Robinson from University College London (UCL) gave the annual Atwood lecture and spent quality time interacting with faculty and students during a two-day visit. Professor Robinson's visit overlapped with both Practicing Geography and GIS weeks, the combination leading to some significant "geo-buzz" around campus in mid-November. Our colloquium series continues to excel thanks to Deb Martin's leadership and by this academic year's end the GSG will have sponsored/welcomed twelve (12) speakers in addition to other more informal and co-sponsored events within and beyond the School. Most of these have been in-person engagements and it is wonderful to see the more regular return to non-virtual programming and the vibrancy it adds to everyday life at Clark.

Many more details below on the continued, diverse scholarly, pedagogical, and service contributions the GSG is making to the advancement of geography, earth systems science, and GIScience globally.

—James Murphy, Director

FACULTY NEWS



CLARK FACULTY IN MEXICO CITY AS PART OF AN NSF FUNDED PROJECT

CLARK UNIVERSITY FACULTY AND STUDENTS VISITING THE NATIONAL AUTONOMOUS UNIVERSITY OF MEXICO (UNAM) CAMPUS IN MEXICO CITY. FROM LEFT TO RIGHT: HAMED ALEMOHAMMAD (GEOGRAPHY), ABBY FRAZIER (GEOGRAPHY), RAVI HANUMANTHA (SSJ), RINKU ROY CHOWDHURY (GEOGRAPHY), TIM DOWNS (SSJ), AND YELENA OGNEVA-HIMMELBERGER (SSJ).



Geography Professors Abby Frazier, Rinku Roy Chowdhury, and Hamed Alemohammad joined the Clark University Provost Sebastián Royo and other Clark faculty in Mexico City in June 2023 as part of a National Science Foundation (NSF) funded project. The project, titled *“Co-Creating Research and Education Capacities to Understand, Visualize and Mitigate Climate-Change Impact Cascades and Inequities in Central Mexico”*, is led by IDCE (now SSJ) Professor Tim Downs, and also includes Geography Professor Karen Frey.



During the trip, project members met with collaborators at The National Autonomous University of Mexico (UNAM) and Provost Royo signed a [5-year agreement with UNAM](#) to allow further collaborations on this project, including student exchanges.

CLARK UNIVERSITY PROVOST SEBASTIÁN ROYO IN THE TEAM VEHICLE IN MEXICO CITY, WITH THE VISIBLE PROJECT TITLE: “CO-CREATIVE RESEARCH & EDUCATION: CLIMATE CHANGE, WATER & HEALTH.”

Professor Frazier presented to the UNAM team on the 3D-printed weather stations and education components of the project.

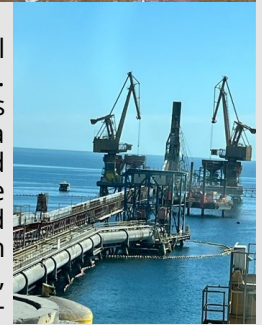
The team also toured a water treatment facility and visited several field sites to evaluate possible locations for pilot communities in the first year of the project. In Spring 2024, the project’s first cohort of master’s students will be living in Mexico to work directly with collaborators to advance project objectives.



CLARK UNIVERSITY TEAM AND MEXICO PARTNERS VISITING THE AUTONOMOUS UNIVERSITY OF MEXICO STATE (UAEM) IN TOLUCA TO DISCUSS ONGOING WATER RESOURCES PROJECTS IN THE REGION. PHOTO INCLUDES CLARK UNIVERSITY PROVOST SEBASTIÁN ROYO AND GEOGRAPHY PROFESSORS RINKU ROY CHOWDHURY, HAMED ALEMOHAMMAD, AND ABBY FRAZIER.

JIM MURPHY IN CHILE

In July 2023, Jim Murphy was appointed as an Associate Researcher for a new initiative based in Chile – ICLAC: Impacts of China in Latin America and the Caribbean (see <https://iclac.cl/en/>). ICLAC is funded by the Millennium Science Initiative, a program of the National Agency of Research and Development (ANID) at the Chilean Ministry of Science, Technology, Knowledge and Innovation. The main project leaders are based at the Pontificia Universidad Católica de Chile, Universidad de Chile, Universidad Católica del Norte, and Universidad de Tarapacá. This opportunity emerged after Jim’s May 2023 visit to Antofagasta, Chile as a visiting researcher at the Universidad Católica del Norte. During that visit he was able to explore the economic and development geographies of Northern Chile, particularly its port communities, mines, and settlements in the Antofagasta region.



‘THERE’S LIKELY A CLIMATE CHANGE SIGNAL IN EVERYTHING WE SEE’

Climatologist Abby Frazier describes the perfect storm of conditions that led to Maui wildfires

FROM [CLARKNOW](#), BY MEREDITH WOODWARD KING

As Clark University Geography Professor Abby Frazier flew back to Boston from Honolulu after six weeks of climate research in the Hawai’ian islands, deadly wildfires swept through Maui. Landing at Logan the morning of Aug. 10, she and other passengers were met by local TV crews seeking to interview witnesses to the fire that [killed over 100 people](#), left 1,000 missing, and wiped out the historic town of Lahaina.

Although Frazier didn’t experience the fires or talk to the media at the airport, she did weigh in with [CNN](#) and [Anderson Cooper 360](#), the [New York Times](#), the [Los Angeles Times](#), [Washington Post](#), BBC Radio, and others about a topic she knows well: the changing climate conditions — notably, variable rainfall patterns and drought — that are contributing to devastating events like those in Maui.

A seasoned climatologist, Frazier is leading the Hawai’i and Pacific Islands chapter of the [Fifth National Climate Assessment](#), mandated every four years by Congress and set to be released by the end of 2023.

This summer, she traveled to Hawai’i to conduct [National Science Foundation-supported research](#), working on a project with the [Pacific Drought Knowledge Exchange](#), which is supported by the [Pacific Islands Climate Adaptation Science Center](#) (PICASC) and [NOAA’s National Integrated Drought Information System](#) (NIDIS).

FACULTY NEWS



THE FIRE THAT SWEEPED THROUGH LAHAINA IN MAUI ON AUG. 8 DESTROYED THE HISTORIC TOWN AND KILLED MORE THAN 80 PEOPLE. (PHOTO BY THE U.S. COAST GUARD HAWAII PACIFIC DISTRICT 14)

Frazier has more than a decade of conducting research and living in Hawai'i, first as a graduate student at the [University of Hawai'i at Mānoa](#) and then as a postdoctoral research geographer at the U.S. Department of Agriculture Forest Service Institute of Pacific Islands Forestry and research fellow at the East-West Center in Honolulu.

Yet even she was struck by the intensity of the fires in Maui, where she has worked over the years with other researchers, national park officials, and land managers on drought issues. The Lahaina fire [has been deemed the deadliest fire](#) in the U.S. in more than a century.

"Seeing such a historic town completely burnt to the ground is so overwhelmingly sad and heartbreaking," she says. "A lot of these fires have been happening up on the hillside and not so close to town and to people. But not this one. It was really hard to watch. My heart goes out to all these communities affected by it."



DANIELLE HALL, '23, M.S.-GIS '24, RIGHT, CONDUCTED RESEARCH ALONGSIDE GEOGRAPHY PROFESSOR ABBY FRAZIER FOR 10 DAYS IN HAWAII THIS SUMMER. AN EDNA BAILEY SUSSMAN FUND GRADUATE RESEARCH FELLOWSHIP FUNDED HER RESEARCH.

CLARK IS FIRST ACADEMIC INSTITUTION TO BECOME FOUNDING MEMBER OF PLACE

FROM [CLARKNOW](#), BY CLARK NEWS AND MEDIA RELATIONS

[Clark University](#) is the first academic institution in the world to become a founding member of [PLACE](#), a non-profit data trust that works with governments across the world to develop hyperlocal image data to serve the public interest. By joining the PLACE Community, Clark will support the technology organization's commitment to ethically map urban areas by collecting ultra high-resolution imagery, and to make the imagery open, dependable, secure, and accessible to governments and members.

Lyndon Estes, associate professor in the Graduate School of Geography (GSG) who has supported PLACE as an advisor since its inception, noted that Clark researchers have a long history of creating and using remote sensing imagery to closely examine the relationships between people and their environments and develop solutions to global challenges, including those that will be worsened by climate change.

"Clark's partnership with PLACE will offer our researchers new opportunities to study the processes underlying global change, particularly urbanization, improving our ability to identify solutions to some of our most pressing challenges," Estes said.

Students and scholars at Clark — including faculty who focus on human-environment interaction, urban-economic geography, geographic information science, and earth system science — can benefit from working with PLACE's growing library of imagery, learning materials, training resources, and case studies, he added.

For instance, Estes, an environmental scientist who investigates the drivers and impacts of agricultural change in Africa, including how rural agricultural change is connected to urban food demand, sees great potential for using the imagery in ongoing work that examines how urban food markets shape agricultural systems and contribute to food security.

PLACE is a technology organization formed from Omidyar Network (ON) in

early 2020. The organization solves for inefficiencies of modern-day mapping by creating a trusted intermediary between the public and private good providers through a membership model that creates a club good, and which follows Locus Charter principles.

THE GSG WELCOMES NEW TENURE-TRACK FACULTY, SIOBHÁN MCGRATH, PH.D., ASSOCIATE PROFESSOR



Working within labor geography, economic geography and development geography, Siobhán McGrath takes a political economy approach to labor. Her scholarship to date has focused on 1) 'unregulated work' including wage theft and other violations; 2) how to understand freedoms and unfreedoms within labor relations; 3) how labor unfreedoms are represented and acted upon through categories such as 'modern slavery'; and 4) how conditions of work are determined through the dynamics of Global Production Networks (GPNs). She has taught at Manchester University, Lancaster University and Durham University in the UK and has also worked within, and alongside, the labor movement. She holds a BA from the School for International Training, an MA in Economics from the New School for Social Research, and a PhD in International Development from the University of Manchester.

FACULTY NEWS

CLARK GEOSPATIAL TEAM PARTNERS WITH NASA, IBM TO HARNESS AI TECHNOLOGY NEW MODEL TO AID RESEARCHERS, POLICY-MAKERS IN ADDRESSING CLIMATE IMPACTS FROM [CLARKNOW](#), BY MEREDITH WOODWARD KING

The summer of 2023 is headed for the record books, with increasing heat waves, wildfires, tropical storms, and flooding. July was declared the hottest month on earth since records began in 1880. To better understand how the earth is changing, the impact of extreme climate events, and how humans might adapt, researchers use satellite images to extrapolate data.

Earth and data scientists face a monumental challenge, however: By 2024, new satellite missions will produce 250,000 terabytes of data, NASA estimates. How much data is that? If you were snapping 100 photos a day with an iPhone, it would take you 1.7 million years to accumulate that many terabytes of data.

Hamed Alemohammad, director of Clark's new Center for Geospatial Analytics, and six graduate students — working with NASA and IBM — are hoping artificial intelligence (AI) can answer these questions. Together, they have produced the world's first geospatial AI foundation model, a milestone that will allow climate and earth scientists to access and study data more quickly and efficiently.

How can researchers mine all this satellite data, along with the information contained in millions of published scientific papers? And how can they effectively share data with policymakers and the public?

CLARK'S ROLE IN THE GEOSPATIAL AI PROJECT

The Clark team is refining and evaluating the geospatial AI foundation model for so-called downstream applications. For instance, they are examining whether the fine-tuned foundation model can predict the U.S. Department of Agriculture's data on the types of crops grown in the U.S.

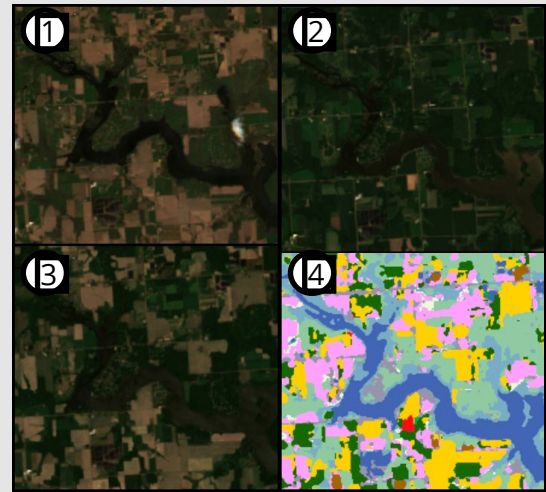
The [crop classification layer](#) — which helps identify crops in vast amounts of satellite data and has the potential to mitigate expensive ground data collections — was released with the foundation model in July.

Alemohammad, the principal investigator, and his graduate assistants - Mike Cecil, Sam Khallaghi, and Fatemeh Kordi, all doctoral students in [geography](#); Denys Godwin and Hanxi (Steve) Li, master's students in [geographic information science](#); and Maryam Ahmadi, a master's student in [business analytics](#) - are continuing work on the project via a grant from NASA IMPACT.

The Clark team is exploring three types of downstream applications:

- **Segmentation**, through which similarly colored and shaped pixels in satellite images are grouped together, allowing crops to be labeled and classified.
- **Multi-label image classification**, which would allow an AI model to pinpoint and classify what types of crops are grown or if water exists within a large area of land — a state or region, for example.
- **Cloud gap filling**, where the AI model uses prior days'

IMAGES 1 THROUGH 3, OF AN AREA SOUTHWEST OF WAUSAU, WISCONSIN, WERE TAKEN OVER TIME BY A NASA SATELLITE. RESEARCHERS INPUT THE SATELLITE IMAGES INTO THE GEOSPATIAL AI FOUNDATION MODEL, WHICH CREATED THE FOURTH IMAGE (BOTTOM) INDICATING THE TYPES OF CROPS AND LAND COVER, CODED BY COLOR: DARK GREEN INDICATES SOYBEANS; GOLD, CORN; RED, COTTON; BRIGHT PINK, ALFALFA; BROWN, WINTER WHEAT; DARK BLUE, OPEN WATER; LIGHT BLUE, WETLANDS; LIGHT GREEN, FOREST; AND GRAY, DEVELOPED OR BARREN LAND.



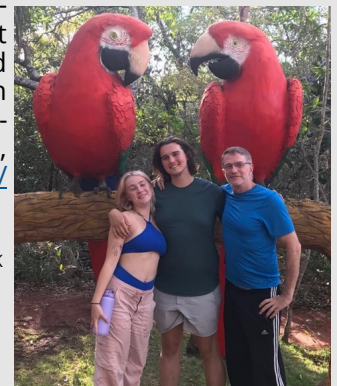
images, even months apart, to “fill in” an area of land that could not otherwise be captured by a satellite because of cloud coverage.

The Clark team and their NASA and IBM colleagues already are receiving feedback from researchers accessing the foundation model.

GIL PONTIUS AT THE MEETING OF SPACE WEEK NORDESTE 2023

Professor and Fulbright Fellow [Gil Pontius](#) presented a paper entitled “[Trajectories of losses and gains of soybean cultivation during multiple time intervals in western Bahia, Brazil](#)” at the meeting of Space Week Nordeste 2023 in Fortaleza, Brazil. Co-authors [Bilintoh](#), [Oliveira](#), and [Shimbo](#) are members of the team, which include [Fonseca and Barbosa](#), working on the NASA grant entitled [Irrigation as climate-change adaptation in the Cerrado biome of Brazil evaluated with new quantitative methods, socio-economic analysis, and scenario models](#). The Cerrado biodiversity hotspot is a hotspot also for land change due to growing pressures from agricultural development that cause conflicts over land and water. The paper describes a novel method to analyze change through a time series of maps using software that the doctoral research assistant Bilintoh is developing and making available for free via <https://github.com/bilintoh/timeseriesTrajectories>. Pontius presented the method also via invited lectures at the Earth Resources Observation and Science (EROS) Center, [South Dakota State University](#), and four Brazilian universities, e.g. [USP](#) and [UDESC](#). Shimbo and local partners produced an open-source time series of maps that show updated information on land change and irrigation along with information concerning the dynamics of irrigation pivots in Brazil, available for free at <https://mapbiomas.org>.

PROFESSOR GIL PONTIUS VISITED A PARROT PARK IN BRAZIL WITH GRADUATING CLARK STUDENT NICHOLAS PONTIUS AND INCOMING CLARK STUDENT OLIVIA PONTIUS. PHOTO CREDIT: A FRIENDLY BRAZILIAN PASSER-BY.



FACULTY NEWS

CLARK FACULTY AWARDED GRANT FROM NASA LAND COVER LAND USE CHANGE PROGRAM

Professor R. Gil Pontius Jr. and Assistant Professor Gustavo de L. T. Oliveira, in partnership with Dr. Julia Shimbo from IPAM and MapBiomas in Brazil, were awarded \$749,669 from the NASA Land Cover Land Use Change Program for a project titled "Irrigation as climate-change adaptation in the Cerrado biome of Brazil evaluated with new quantitative methods, socio-economic analysis, and scenario models." The three-year project began in May 2023 and will continue until 2026. In the first year of the project, Thomas Bilintoh and Antonio Fonseca are research assistants in GIS and remote sensing analysis, while Ricardo Barbosa Jr. is research assistant in the investigation of the political economy and political ecology of irrigation in Brazil. The PI and Co-PI faculty at Clark hope to integrate even more graduate students into the research project in the years ahead.

The research project has three goals. The first is to develop generally applicable methods with accompanying software to quantify and analyze land change and its associated socio-economic drivers and impacts. The second is to bring a political ecology perspective to critically examine the expansion of irrigated agriculture as a form of adaptation to climate change. The third is to develop spatially explicit

scenario models of conflicting irrigation regulation practices under different conditions of climate change. These models can inform social movements, civil society organizations, and policy makers concerning agrarian development, water regulations, and climate change adaptations for the Cerrado ecosystem of Brazil, with implications for other savannah and semi-arid biomes worldwide.

Irrigation accounts for about 70% of global freshwater withdrawals and about 90% of consumptive water use, and features prominently among water politics and conflicts around the world. Consequently, irrigation has been a major touchstone for analysis of power, politics, and human-environment relations. Climate change is now pushing irrigation even further into the spotlight through utopian visions of eco-

modernist resilience and adaptation and dystopian fears of escalating violence and conflict over increasingly scarce water resources, particularly in areas where rainfall patterns and groundwater resources have reduced, become less stable or less abundant, or subject to growing uncertainty. In these contexts, we often witness a conjunction of state, agribusiness, and technocratic scholarship promoting "more efficient" use of irrigation, even though it is evident that increased efficiency does not reduce overall water consumption, but rather drives its intensification through a "Jevons paradox" of water resource use. Meanwhile, open questions often remain about the science and technology, culture and politics, material evidence and discourses employed in the assessments of past, present, and future water availability, as well as its purpose and for whom, differentiated access and use rights, and the power and profits that flow from it.

The region examined by the Clark team's NASA-funded research project exemplifies all of this in spades. The Cerrado region of Bahia state in Brazil is one of the most active agricultural frontiers worldwide. It is experiencing extensive and often illegal deforestation, and a 150-fold increase in irrigation between 1985 and 2016. Meanwhile, rainfall has decreased by 12% since 1980, reducing the regional aquifer and river discharge. Consequently, regional agribusinesses planting monocultures of soy, maize, and cotton increasingly rely on irrigation. This combination of reduced availability and increased demand for water resources is triggering socio-ecological conflicts. In 2017, for example, eight hundred peasants broke into an agribusiness farm in western Bahia and destroyed irrigation pumps to protest the poorly regulated expansion of irrigation for monocultures in the region, forcing irrigation to the top of policy and social movement agendas. Yet, data are still insufficient concerning irrigation, its distribution on the landscape, its drivers, its socio-ecological impacts, its effectiveness as a climate change adaptation strategy, and alternative adaptation strategies for the Cerrado and similar areas worldwide.

The complexity of political ecology struggles over a fast

-paced expansion of irrigation needs to be examined through mixed methods that can incorporate multiple forms of data and theoretically robust analysis. The Clark geography team is examining political economic data of agribusiness operations and government regulations, systematizing ecological data from a broad secondary literature, and triangulating these findings with analysis of multiple time series of maps produced by satellite imagery since 1985. Satellite imagery will also inform two rounds of ethnographic fieldwork (during summer 2024 and summer 2025) with agribusinesses, government agents, and social movements that contest irrigation policy. The team is also developing new GIS methods for spatial analysis, and integrative scenario models.

This capacity to integrate qualitative research with new remote sensing and GIS methods places Clark University at the very cutting edge of scholarship in geospatial analysis and nature-society/human-environment geography. This is a rapidly growing field that takes seriously the science and politics of climate change, while denaturalizing oversimplified narratives of conflicts over water and other natural resource scarcity, problematizing socio-natures and socio-technical relations of production, such as irrigation, and exploring the material and discursive foundations as well as the political ecological repercussions of various forms of mitigation and adaptation practices being utilized, contested, and developed for a world in the thralls of climate change.

SAN JOSE AND THE REEMERGENCE OF THE DOWNTOWN CITY

FROM [THE CONVERSATION](#), BY MARK DAVIDSON

The specter of downtown decline is again haunting American cities.

After many decades of reinvestment and repopulation, some American downtowns are now [showing signs of hollowing out again](#).



A TIGHT BUDGET MEANS SAN JOSE HAS FEWER DOLLARS TO PUT TOWARD REINVESTMENT.

FACULTY NEWS

The COVID-19 pandemic certainly bears some of the blame.

The widespread adoption of remote and hybrid work schedules has drained commercial offices and caused tenants to terminate leases. In many downtowns, office occupancy is at [50% pre-pandemic levels](#). Ripple effects include [shrinking lunchtime crowds](#), slumping retail sales and a drop-off of public transit ridership. For example, New York City's subway is at [65% of pre-pandemic ridership](#) as of early 2023.

I study how [urban governance challenges shape city budgets](#), so I'm aware of how these pandemic-related changes are making long-term urban problems worse at a time many cities are [dealing with strained budgets](#).

PRE- AND POST-PANDEMIC URBANISM

Tightening city government finances and growing service demands are threatening to produce Donut City 2.0. A donut city is [defined by out-migration](#), with the city center losing residents and businesses to the suburbs.

This is not a rerun of hollowing out experienced in many [U.S. cities in the 1960s](#). The usual culprits of economic restructuring, racial tensions, shifting consumer preferences and government inefficiency are all still involved, but these forces are now manifest in new ways.

This post-Great Recession restructuring has now run headlong into the post-pandemic economy.

Exactly what this collision looks like varies from one municipality to the next, but some broad trends are emerging. Front and center is a growing demand for city services. Since 2020, this demand has been slaked by the federal government's pandemic relief money, but now these funds are [running out](#).

DONUT AMID SHIMMERING SILICON

San Jose, California, a city of [1 million](#), does not conjure archetypal images of urban decline. It is not home to redundant smokestacks and empty houses. It is a city that is home to thousands of [global technology firms](#) and suffers from [vastly inflated housing costs](#). And yet, despite its wealth, it is struggling with the pressures of Donut City 2.0.

As may seem fitting for the home of Zoom's headquarters, San Jose has seen some of the lowest rates of return to office working. The city's return rate is just 44% vs. national averages that are [at about 50%](#). PayPal, Roku, Western Digital and X – formerly known as Twitter – have also laid off what amounts to thousands of San Jose-based employees, putting further pressure on [commercial occupancy rates](#).

This does not make San Jose unique. What it does do is put more pressure on city revenues.

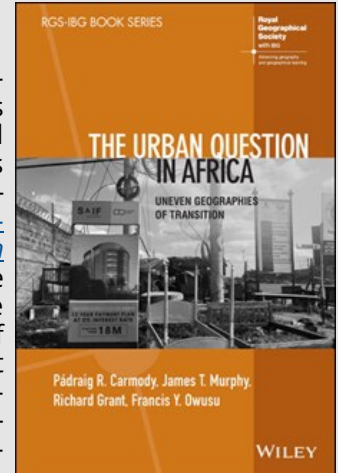
DROP-OFF IN INVESTMENT

San Jose has a US\$1.2B [general fund annual budget](#). Business taxes represent a relatively small slice – 6%, or \$70 million – of its total revenues. For comparison, property taxes are 32% and sales taxes are 23%. This means San Jose is less sensitive to commercial decline than other cities. And yet, small budget changes can have large consequences. San Jose entered the pandemic with significant, if not

unique, challenges. In 2011, San Jose acknowledged that it [owed retirees \\$3 billion more](#) than it held in assets. An acrimonious fight between the city and labor unions followed. The [eventual settlement](#) set San Jose on a path to make good on its pension promises, but correcting for years of skipped and inadequate payments will squeeze the city's budget for decades to come.

JIM MURPHY'S NEW BOOK

Co-authored with Pádraig Carmody (Trinity College Dublin), Francis Owusu (Iowa State), and Richard Grant (University of Miami), was published in September 2023 – [The Urban Question in Africa: Uneven Geographies of Transition](#) (Wiley). The book examines the imbalanced and contested nature of the ongoing urban transition of Africa through an approach that conceptualizes cities as sociotechnical systems constituted by production, consumption, and infrastructure regimes. Chapters address the impacts of current meta-trends— geopolitical shifts, economic changes, platform urbanism, the climate crisis, and others—on Africa's cities and assess the prospects for generative urbanism to produce and sustain long-term development in the region.



THE STATE OF SOLAR: IN SECOND OF FOUR FORUMS, EXPERTS DISCUSS CHALLENGES OF SITING SOLAR FACILITIES

FROM [THE RECORDER](#), BY MADDIE FABIAN



A FIELD OF SOLAR PANELS ALONG WEST BAY ROAD IN AMHERST.

AMHERST — At the site of the old Mount Tom Station coal-fired power plant stands around 17,000 solar panels generating enough electricity to power 1,800 homes.

For more than 50 years, the coal plant generated energy before closing in 2014 due to unprofitability and the petitioning of local groups that cited widespread health issues and environmental concerns.

As of August 2022, there were 1,000 solar installations covering a total of 7,000 acres across Massachusetts, according to geography professor John Rogan, who shared data compiled by Clark University.

Of that solar acreage, 50% was built on forested land and 24% impacted cropland, while only 12% and 8% respectively covered barren and already developed land, said Rogan.

And a 2020 Mass Audubon report found that if current land use trends continue, as much as 150,000 acres of undeveloped land could be lost to meet state renewable energy goals.

FACULTY NEWS

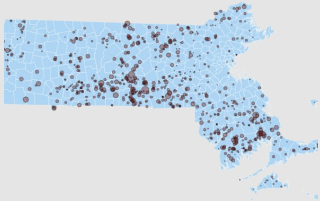
HAMED ALEMOHAMMAD
ADDRESSES THE GEOSPATIAL
ANALYTICS WORKSHOP.



MASS. CAN EXPAND SOLAR WITHOUT CHOPPING SO MUCH FOREST, REPORT SAYS

FROM [WBUR](#), BY BARBARA MORAN

If you look at it one way, Massachusetts is a solar-power success story. The amount of large-scale solar in Massachusetts has grown from nearly nothing in 2008 to [about 20%](#) of the electricity generated in-state today. Massachusetts now produces about 60% of New England's solar power, and [ranks 11th in the nation](#) for the amount of electricity generated from the sun.



THERE ARE NOW CLUSTERS OF SOLAR PANELS, CALLED ARRAYS, ACROSS MASSACHUSETTS. THE MAP ABOVE SHOWS THE LOCATIONS AND SIZE OF THESE ARRAYS.

But this boom has come at a cost: more than half of solar farms built in the state during the last decade required clear-cutting forest; another 16% covered workable farmland. The destruction of forests and farms has led to considerable opposition to solar farms in Massachusetts, with people in towns from [Amherst](#) to [Wareham](#) organizing against solar development.

CATCHING ARRAYS ACROSS MASSACHUSETTS

The [Harvard Forest-Mass Audubon] report authors suggest that the state could pay landowners more to keep land forested, or require developers to pay for lost carbon and biodiversity if they chop forest down.

The state has already tweaked its incentive program to push developers in this direction.

And the plan is working, to some extent. Clark University geographer John Rogan, who uses satellite images to [map solar placement in Massachusetts](#), found that solar developed after 2019 was predominantly along major roads, avoiding clearcutting forests.

"We have a both-and here. Let's just be thoughtful and intentional about how we can seize both opportunities," said Mass Audubon's Manion. "If we can do this in a state like Massachusetts, a lot

of other states and regions will look to our solution."

CONFERENCE AT CLARK PUTS NEW CENTER 'ON THE MAP'

Center for Geospatial Analytics brings academic, industry leaders to campus
FROM [CLARKNOW](#), BY JIM KEOGH

The windows of Room 202 in the Shaich Family Alumni and Student Engagement Center offer an unobstructed view of Jonas Clark Hall, a testament to Clark's treasured history.

But on Sept. 27, inside Room 202, the focus remained squarely on the future.

Clark's new Center for Geospatial Analytics made its debut with a conference that drew nearly 40 stakeholders from the U.S. and abroad to discuss the issues and advances in a field that is revolutionizing geography. And it was in geographic parlance that the center's director, Hamed Alemohammad, characterized the impact of the launch event: "It put us on the map."

Geospatial analytics leverages satellite imagery and other location-specific data to help researchers, policymakers, and the public study the Earth and visualize the impact of human activities on our environment. The workshop was designed to foster frank conversations about a range of subjects related to the geospatial analytics field, among them: technological breakthroughs and their use in addressing pressing problems; the need to encourage and cultivate widespread data literacy; training the next generation of scientists and

innovators; and building a more diverse geospatial community.

Alemohammad noted that the discussions among the participants, who were drawn from academia, science, and industry, were both lively and productive.

"One of the goals of the workshop, from a Clark perspective, was to learn how we can tap into technological advancements in a way that benefits Clark, but also in ways that allow us to be contributors," Alemohammad said.



In his keynote address to the workshop attendees, Dr. Budhendra "Budhu" Bhaduri, director of the Geospatial Science and Human Security Division and a Corporate Research Fellow at Oak Ridge National Laboratory, noted the

incredible advances in GeoAI technology in areas like disaster response, human security, energy security, and damage assessment.

The workforce of the future will still need a "foundational education" in areas like math, computer science, and geography, he said, but interdisciplinary teams will become increasingly important for solving problems with GeoAI. The integration of physical and social sciences with AI that is used ethically and responsibly will help drive solutions to imposing problems. "Data and computing technologies will become integral to our academic DNA," he said.

In his opening remarks to the workshop attendees, President David Fithian cited the enduring contributions of Clark Labs founder Ron Eastman and the "outsize impact" Clark has had in GIS and in other arenas of science, noting that Clark "actively and passionately draws on our historic strengths" to contribute to a better planet.



CENTER FOR GEOSPATIAL ANALYTICS WORKSHOP PARTICIPANTS ON THE CLARK CAMPUS.

FACULTY NEWS

PROFESSOR AOYAMA AT THE LEWIS & CLARK COLLEGE ENVX SYMPOSIUM

Professor Aoyama delivered a keynote speech at Lewis & Clark College, Portland, Oregon in October at their annual ENVX symposium with the theme, Life in Capitalism.



KEYNOTES AND FULL COMMITTEE AT THE LEWIS & CLARK SYMPOSIUM

PROFESSOR LYNDON ESTES AWARDED THE HAYDEN AWARD.

Exceptional work is taking place across the University in our classrooms, labs, offices, and departments, and it is essential that we pause to acknowledge and celebrate it.

The University has four specific awards to recognize faculty excellence: Angel, Hayden, Hodgkins, and Roberts. While each award has its own specific criteria, these are difficult to satisfy and, in general, require at least one or a combination of excellence in teaching, excellence in scholarship, and deep and sustained engagement with the Clark community in all its diversity.

UTOPIAN PROBLEMS PODCAST

Why designing 'perfect' cities spurs conflict

FROM [CLARK NOW](#), BY MELISSA HANSON

The word "utopia" comes from the Greek words for "no" and "place." So, [geography](#) Professor [Deborah Martin](#) is intrigued by the frequency with which urban planners use utopian thinking when such a place, by definition, does not exist.

In trying to create idyllic cities, planners overlook that urban areas have no singular use. Martin feels the best urban designs are the ones that don't prescribe how a space should be used.

"What's utopian for one person, what makes the world work well, might not work for everybody else. When we think we know what people need, such as green space, then we prescribe green space in a certain way," says Martin. "You end up having a lot of potential conflict over what people might think is good for everyone. It gets complicated pretty quickly."



DOWNTOWN WORCESTER



PROFESSOR DEBORAH MARTIN

In this episode, Martin explains how urban designs reflect our values, the challenges of building for the 21st century, and why one space can have different uses for different people.

5TH NATIONAL CLIMATE ASSESSMENT (NCA5) RELEASED IN NOVEMBER 2023

This congressionally-mandated report is the most comprehensive assessment on the state of climate change in the history of the US. Geography Professor Frazier was the Chapter Lead for the Hawaii and US Pacific Islands chapter (<https://nca2023.globalchange.gov/chapter/30/>), leading a team of 16 authors and 41 technical contributors over the past two years. She was invited to the White House for the launch event on November 14, 2023, and was quoted in many media articles (including [ClarkNow](#)). She was also featured in the NCA5 Companion Podcast episode titled "[Road Trip](#)."



PROFESSORS ABBY FRAZIER OF CLARK UNIVERSITY AND DAVE WHITE OF ARIZONA STATE UNIVERSITY WERE AMONG THE SCIENTISTS LEADING CHAPTERS FOR THE FIFTH NATIONAL CLIMATE ASSESSMENT, WHICH WAS PUBLICLY RELEASED AT THE WHITE HOUSE ON NOV. 14.



In addition to the publication of the 5th National Climate Assessment, Geography Professor Frazier had three additional peer-reviewed papers published in late 2023:

- "Examining current bias and future projection consistency of globally downscaled climate projections commonly used in climate impact studies", *Climatic Change*, <https://doi.org/10.1007/s10584-023-03623-z>
- "How people, rainfall and vegetation shape tropical island fire regimes across Micronesia", *Journal of Biogeography*, <https://doi.org/10.1111/jbi.14763>
- "Effects of Systematic Predictor Selection for Statistical Downscaling of Future Rainfall in Hawaii", *International Journal of Climatology*, <https://doi.org/10.1002/joc.8345>

GEOSPATIAL ENTREPRENEURS OFFER TIPS FOR SUCCESSFUL STARTUPS

'The more valuable the problem-solve is, the more valuable the business is going to be'

FROM [CLARK NOW](#), BY MEREDITH WOODWARD KING

Clark University's Center for Geospatial Analytics recently brought students face to face with five leaders in the geospatial industry who shared tips on launching, funding, and working at startup companies.

FACULTY NEWS

"A degree in GIS from Clark opens all kinds of career opportunities," said [Hamed Alemohammad](#), director of the University's [Center for Geospatial Analytics](#) and associate professor of [geography](#). "Many of our students are hired right out of school to work for geospatial technology companies but may not realize they also have the skills to start their own companies. We wanted them to meet some of the most successful entrepreneurs and investors in the fields of geospatial analytics and location intelligence to learn how they might do that."

Part of Clark's annual Practicing Geography and GIS Week, the Nov. 16 event featured a panel of experts: Andrew Schiller, Ph.D. '01, founder of Location Inc. and inventor of [neighborhoodscout.com](#), a relocation tool that serves 250 million users; Steve Schroeder, co-founder of CoreLogic, which acquired Location Inc. in 2020 and has expanded to develop risk-management tools for insurance companies and realtors; Jonathan Glick, principal data scientist for CoreLogic; Tim Curran, CEO of Building Engines, a software company that develops property management tools; and Andrew Berg, a venture capitalist for Companyon Ventures.

Before the panel, they met with David Chearo, vice president for planning and chief of staff to President David Fithian, and Jonathan Kappel '81, executive director of principal gifts.



FROM LEFT, JONATHAN KAPPEL '81, EXECUTIVE DIRECTOR OF PRINCIPAL GIFTS; HAMED ALEMOHAMMAD, DIRECTOR OF CLARK'S CENTER FOR GEOSPATIAL ANALYTICS; ANDREW BERG, VENTURE CAPITALIST FOR COMPANYON VENTURES; ANDREW SCHILLER, PH.D. '01, FOUNDER OF LOCATION INC.; JONATHAN GLICK, PRINCIPAL DATA SCIENTIST FOR CORELOGIC; TIM CURRAN, CEO OF BUILDING ENGINES; STEVE SCHROEDER, CO-FOUNDER OF CORELOGIC; AND DAVID CHEARO, VICE PRESIDENT FOR PLANNING AND CHIEF OF STAFF TO PRESIDENT DAVID FITHIAN.

Below are a few of the takeaways the panelists offered students.

- START WITH A PROBLEM THAT NEEDS TO BE SOLVED.
- FIND ONE CUSTOMER, SOLVE THEIR PROBLEM, AND BUILD ON THAT SUCCESS.
- HIRE THE BEST PEOPLE AND FIND ROLE MODELS.
- EXPAND YOUR SKILLS, BECOME A GENERALIST, AND LISTEN AND RESPOND TO CUSTOMERS.
- FIND YOUR SUPERPOWER, MAKE A PLAN, WIDEN YOUR NETWORK, AND ASK FOR FUNDING.

NEW REPORT: WARMEST ARCTIC SUMMER ON RECORD IS EVIDENCE OF CLIMATE CHANGE ACCELERATION

Clark polar scientist Karen Frey contributes to 2023 Arctic Report Card
FROM [CLARKNOW](#), BY CLARKNOW STAFF

A new report states that human-caused warming of the air, ocean, and land is affecting people, ecosystems, and communities across the Arctic region, which is heating up faster

than any other part of the world.

Clark University polar scientist Karen Frey, a professor in Clark's Graduate School of Geography, is a lead author of the Arctic Report Card, released this week by the National Oceanographic and Atmospheric Administration (NOAA) at the American Geophysical Union in San Francisco. The report details how more frequent extreme weather and climate events are transforming the Arctic and cites opportunities to form diverse partnerships to tackle challenges.

Frey is lead author of "Arctic Ocean Primary Productivity: The response of marine algae to climate warming and sea ice decline," a chapter she's led each time it has been included in the Arctic Report Card, dating back to 2011.

According to the report, summer surface air temperatures during 2023 were the warmest ever observed in the Arctic, while the highest point on Greenland's ice sheet experienced melting for only the fifth time in the 34 years it has been tracked. Overall, it was the Arctic's sixth warmest year on record. Sea ice extent continued to decline, with the last 17 Septembers now registering as the lowest on record.

Key findings from Frey's chapter include:

Satellite estimates of ocean primary productivity (i.e., the rate at which marine algae transform dissolved inorganic carbon into organic material) show higher values for 2023 (relative to the 2003–22 mean) for five of nine regions assessed across the Arctic.

Nearly all Arctic regions continue to show increased ocean phytoplankton blooms, with the largest percent changes in the Eurasian Arctic and Barents Sea.

Frey and her fellow researchers have reported that the algae growth is most pronounced during the late summer and early fall; they have been able to monitor these changes in ocean color over the past 18 years by using satellite imagery.

Professor Frey has spent more than 25 years studying sea ice, often during the summer months aboard the Canadian vessel Sir Wilfrid Laurier with both graduate and undergraduate students. During these expeditions, the researchers conduct scientific studies of seawater and seafloor samples recovered from numerous stations in the Bering and Chukchi seas.

The annual Arctic Report Card, now in its 18th year, is the work of 82 authors from 13 countries. It includes a section titled Vital Signs that updates eight measures of physical and biological changes, four chapters on emerging issues, and a special report on the 2023 summer of extreme wildfires. The Report Card is available online, as is a short video summary of highlights.



"The overriding message from this year's report card is that the time for action is now," said Rick Spinrad, NOAA administrator.

KAREN FREY HAS SPENT MORE THAN 25 YEARS STUDYING SEA ICE, OFTEN DURING THE SUMMER MONTHS ABOARD THE CANADIAN VESSEL SIR WILFRID LAURIER AND ACCOMPANIED BY UNDERGRADUATE AND GRADUATE STUDENTS.

GRADUATE STUDENT NEWS

WELCOME TO OUR 2023 DOCTORAL COHORT!

MOBEEN AKHTAR

M.Sc. Soil and Water Conservation and Desertification Combating, Beijing Forestry University, Beijing, China
M.Sc. GIS & Remote Sensing, University of the Punjab, Lahore, Pakistan
B.Sc. Computer Science, Govt Post Graduate College, Punjab, Pakistan
Research Interests: Land use/cover changes & modeling, Ecosystem services, Remote Sensing, Spatio-temporal analysis, Machine learning, Deep learning, Data mining.

RICARDO BARBOSA

M.Sc. International Relations, University of Brasília, Brasília, Brazil
B.A. Geography, University of Brasília, Brasília, Brazil
B.A. Law, Pontifical Catholic University of Goiás, Goiânia, Brazil
B.A. International Relations and Social Sciences, Federal University of Goiás, Goiânia, Brazil
Research Interests: agriculture irrigation development, food policy, environmental governance, critical agrarian studies, political geography, digital geographies, political ecology, the Cerrado biome

SERGIO CARVAJAL

M.A. Developmental Studies, International Institute of Social Science, Erasmus University, The Hague, Netherlands
B.A. Philosophy and Political Science, Universidad de Los Andes, Bogotá D.C., Colombia
Research Interests: Environmental studies, political economy, socio-ecological relations, climate changing capitalism and agrarian change, social movements.

ANTONIO VICTOR GALVÃO DA FONSECA

Post Graduate Diploma in Statistics, Federal University of Pará, Belém, Brazil
B.A. Environmental Engineering, State University of Pará, Belém, Brazil
Research Interests: GIS, Remote Sensing, Land use and land cover maps, Spatial Analysis, Uncertainty in spatial data.

CHRISTOPHER LAMB

M.A. English, University of Idaho, Moscow, Idaho
B.A. Philosophy and Environmental Science, Marlboro College, Marlboro, Vermont
Research Interests: political ecology, environmental justice, critical Indigenous studies, multispecies and extinction studies, oral history, critical cartography, and environmental humanities.

KHADIJA NISAR

M.Sc. Computer Sciences, University of Central Punjab, Lahore, Pakistan
B.Sc. Space Sciences, GIS, Remote Sensing, Climatology, Meteorology, University of the Punjab, Lahore, Punjab, Pakistan
Research Interests: Hydrology, Climate Change and Impact Assessment on Agriculture, Remote Sensing, GIS.



BACK (L-R) SERGIO CARVAJAL, RYAN LENNON, SUSHIL PAUDEL, WALTER POULSEN, ANTONIO GALVAO DA FONSECA, RICARDO BARBOSA
FRONT (L-R) MOBEEN AKHTAR, SUNITA PHUYAL, MIKAYLA SCHAPPERT, KHADIJA NISAR, CHRISTOPHER LAMB

SUSHIL PAUDEL

M.Sc. Geographic Information Science & System, Salzberg University, Austria
M.Sc. Forestry, Agriculture and Forestry University, Hetauda, Nepal
B.Sc. Forestry, Tribhuvan University, Hetauda, Nepal
Research Interests: GIS and Remote Sensing; Spatial Data Modelling and Spatial Statistics; Forest Carbon Assessment Methodology; LULC change analysis; Geo-Database Management for Big Data; Machine Learning and Deep Learning; UAVs and Drones for resource assessment in inaccessible areas.

SUNITA PHUYAL

M.Sc. Environmental Science, Tribhuvan University, Kathmandu, Nepal
B.Sc. Environmental Science, Tribhuvan University, Kathmandu, Nepal
Research Interests: Climate Change and Adaptation, Climate variability, Drought, Environmental conservation, GIS, Remote Sensing, Spatial analysis

WALTER POULSEN

M.Sc. Sustainable Science, University of Massachusetts, Amherst
B.A. Cultural Anthropology, China Studies, Hampshire College, Amherst, MA
Research Interests: commodification of natures; agricultural political ecology; sociopolitical dimensions of renewable energy transitions; critical sustainability studies.

MIKAYLA SCHAPPERT

M.A. Geography, Miami University, Oxford, OH
B.Sc. Biology, Lycoming College, Williamsport, PA
Research Interests: landscape ecology; landscape heterogeneity; landscape pattern; GISci; GIS; spatial analysis; spatial statistics; remote sensing; landscape change; conservation; human-environment interactions; habitat fragmentation

GRADUATE STUDENT NEWS

INTRODUCING THE MS-GIS ADP 2023-2024 COHORT

Kenneth Baird (GEOG '23) Esha Bharadwaj (GEOG '23)
Apple Gould-Schultz (ES '23) Danielle Hall (GEOG '23)
Sarah Hughes (EN '23) Lara Jordan (GEOG '23)
Ruthanne Ward (GEOG '23) Finnegan Wertz (GEOG '23)



L-R BACK ROW: RUTHANNE WARD, LARA JORDAN, ESHA BHARADWAJ, KENNETH BAIRD
FRONT ROW: DANIELLE HALL, APPLE GOULD-SCHULTZ, SARAH HUGHES, FINNEGAN WERTZ

INTERNSHIP SPOTLIGHT—FINNEGAN WERTZ

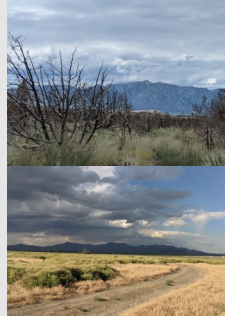
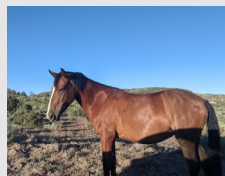
BY FINNEGAN WERTZ

As a part of the Accelerated Degree Program in GIS, Clark students are strongly encouraged to complete an internship in the summer between the 4th and 5th years. Finnegan Wertz (BA Geography '23, MS GIS '24) took advantage of this opportunity to travel across the country and join a federal internship program with the Bureau of Land Management (BLM) in Carson City, Nevada. Finnegan became an intern through the Pathways Program, a national initiative to recruit graduating students into full time positions in various sectors of the federal government.

The majority of Finnegan's work focused on assessing the success of post-wildfire revegetation treatments; driving crew trucks on dusty roads to remote locations in the heart of the American wild west to survey plant species and density to create yearly records of the recovering locations. In the office, his GIS skills were employed to repair, scan, and georeference historical survey maps from the 1950s and 60s for modern trend analysis. Besides land management, the office and bureau are heavily involved in combatting wildfires, and much of the staff were actively on call



FINNEGAN AT A HISTORIC SILVER MINE IN VIRGINIA CITY.



for firefighting duties and emphasized the current need for fire mapping and modelling.

Aside from the chance to experience living in the desert and enjoy the Lake Tahoe region, Finnegan especially enjoyed learning to identify native and invasive species in the high desert and applying what he'd learned as an undergrad about fire regimes that (fortunately) aren't as present on the east coast. He was encouraged to explore multiple aspects of the BLM's services, and a favorite memory of his was being recruited to corral a small herd of wild horses that had wandered towards a high-speed road. He enjoyed the field work and project-based work of the BLM and is considering returning to the BLM for a full time position in fire modelling.

NESTVAL AWARD SPOTLIGHT: MADDY KROOT

The New England-St. Lawrence Valley Geographical Society (NESTVAL) Awards Committee has awarded Maddy Kroot, a geography PhD student at Clark University, the AAG Council Awards for Outstanding Graduate Student Paper at a Regional Meeting for her graduate paper "*Public Deficits in the Backyard: Decarbonization vs. Democratization in Energy Infrastructure Conflicts*". Congratulations!

2023 TEACHING ASSISTANT AWARD RECIPIENT: ARMAN BAJRACHARYA

Arman Bajracharya, Ph.D. student in geography and teaching assistant, consistently goes above and beyond in the service of Clark students and faculty. Arman rises to a high level of excellence with his curricular and pedagogical contributions at such an early stage of his career. As Arman advances toward the completion of his Ph.D. studies, he will be sorely missed as a crucial pillar of support for lower and upper-level classes in the Graduate School of Geography.

STUDENTS IN ACTION—GEOG381—TECH IN CONSERVATION CLASS

Graduate students in the Tech in Conservation course, led by Professor Florencia Sangermano, retrieve recorders at Broad Meadow Brook Wildlife Sanctuary.



UNDERGRADUATE STUDENT NEWS

HERO STUDENTS DOCUMENT NEIGHBORHOODS' RECOVERY FROM TREE-KILLING BEETLES

Presentation sheds light on health of new plantings.

FROM [CLARKNOW](#), BY JIM KEOGH



THIS YEAR'S HERO TEAM POSES FOR A PHOTO FOLLOWING THE PRESENTATION. PICTURED ARE (L. TO R.) CO-DIRECTOR DEB MARTIN, RAMÓN COLÓN '24, AMRITHA PAI '24, AARON RICHMOND-CROSSET '25, ADLAI NELSON '24, KSENIA SMART '24, CALEB KLUCHMAN '24, TEAM MANAGER/GRADUATE MENTOR JASON ANDREWS, M.S. '24, TEAM MANAGER/GRADUATE MENTOR CLIO BATE, M.S. '24, TANNER HONNEF '24, TEAM MANAGER/GRADUATE MENTOR NICHOLAS GERON, PH.D. '23, AND CO-DIRECTOR JOHN ROGAN. HERO WILL CELEBRATE ITS 25-YEAR ANNIVERSARY IN 2024.

Fifteen years ago, the Asian Longhorned Beetle (ALB) made a dramatic and devastating entrance into Worcester, boring through the maple, birch, and poplar trees that for generations had provided a leafy and cooling canopy across the northern part of the city. The infestation led to the removal of some 19,000 trees, temporarily denuding entire neighborhoods.

The Massachusetts Department of Conservation and Recreation, and the Worcester Tree Initiative, in collaboration with the U.S. Department of Agriculture, restored much of the greenery, planting thousands of young trees. But years later, how have they fared? Are city residents again enjoying the shade and natural beauty that they lost to the beetle invasion?

Those were the questions that compelled the undergraduate students in the Human Environment Research Observatory (HERO) program to spend the early part of this summer assessing the health of thousands of trees in Worcester's Burncoat, Greendale, North Lincoln Street, and Great Brook Valley neighborhoods — designated as part of the Longhorned Beetle Regulation Zone. The students also interviewed 52 residents to gain their perspectives on the perceived successes and drawbacks of the planting program and the benefits and challenges of maintaining trees on their property.

In 2012, Clark [received a National Science Foundation grant](#) to examine the effects of the ALB invasion on Worcester. The [results of the three-year study](#) were presented by the 2014 class of HERO fellows at a community stakeholder summit.

At a July 20 presentation attended by DCR representatives, members of local environmental groups, Worcester resi-

dents, and Clark faculty, the students described their study, which included examinations of the neighborhoods' biophysical and socioeconomic characteristics, the types and condition of the trees, and the locations of plantings.

Of the 2,794 trees studied, students found that trees planted along city streets had a better rate of survival (88.6%) than trees planted on private property (66.9%). The students determined that property owners more readily removed private trees for a variety of reasons — to change the appearance of the landscaping or to make room for a pool or shed, for instance. Public trees were also watered more regularly than trees on private property in the first two years after their planting, they found.

In a [Worcester Telegram & Gazette story](#) about the HERO presentation, John Rogan, who co-directs the program with fellow professor of [geography](#) Deb Martin, noted that more tree surveys will be conducted in the future, which will help clarify the data surrounding survival rates. HERO participants will expand the analysis to include the full Longhorned Beetle Regulation Zone and address questions like "What can be done to reduce the likelihood of healthy tree removals in the future?" and "What is the impact of shifts in home ownership on tree survival rates and overall health?"

Until then, as Rogan told the *T&G*, the story told by the data is clear: "Watering and maintenance result in success."

MEET THE CUGA COUNCIL

In October, elections were held to create the CUGA Council, a group of students acting as the E-Board of CUGA, with roles pertaining to the clusters (as a CA or Chief Associate) within the Graduate School of Geography as well as the student-run club as a whole.

The results of the elections were as follows:

Kaylene Criollo, GEOG, ESS '26: Earth Systems Science CA

Noah Engvall, POLI SCI, GEOG (m) '26: Global Environmental Studies CA

Angela Ruan, GEOG, CYES (m), '25: Human Environment CA

Ryan McDowell, GEOG, '26: Urban Economic CA

Maire Geoghegan, GEOG, Marketing (m), '24: Marketing and Communications Rep

Kassandra Cornejo, GEOG, '27: DEI Representative

Finnegan Wertz, MS-GIS, '24: Grad Student Liaison

Follow CUGA on Instagram! [Instagram.com/clarkcuga](https://www.instagram.com/clarkcuga)

The inaugural CUGA field trip in December was to JMAC Worcester, Jean McDonough Arts Center, for the art show opening of "Woodlands of Woo, Natural Landscapes of Worcester" by Piya Samant.



CUGA AT THE JMAC ART SHOW WITH ARTIST PIYA SAMANT. PHOTO TAKEN FROM CUGA INSTAGRAM

UNDERGRADUATE STUDENT NEWS

CLARK STUDENTS BRING OUT THEIR BEST

ClarkFEST celebrates research excellence and creative spirit

FROM [CLARK NOW](#), BY CLARKNOW STAFF

ClarkFEST Fall 2023 celebrated the intellectual and creative energies of Clark students, and their collaboration with faculty mentors, through an exhibition of posters and creative works in Tilton Hall, interactive media exhibits in the Center for Media Arts, Computing, and Design, and paper presentations in ASEC. More than 90 students presented on over 60 wide-ranging topics. Below is a sampling of how our students contin-

ued the Clark tradition of challenging convention and changing our world.

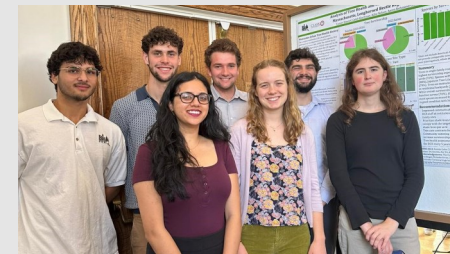
THE RISKY BUSINESS OF MUNICIPAL BONDS
Samuel Cooper '24 worked this past summer with Professor [Mark Davidson](#) to examine how cities are disclosing climate change-related risk when applying for municipal bond funding.

NESTVAL AWARD SPOTLIGHT—HERO STUDENTS

The New England-St. Lawrence Valley Geographical Society (NESTVAL) Awards Committee has awarded the [Human-Environment Regional Observatory \(HERO\) program](#), NESTVAL Undergraduate Student Research Poster Award for their undergraduate poster "*Analysis of Tree Health and Structure in the Worcester, Massachusetts, Longhorned Beetle Regulation Zone*". Congratulations!

NESTVAL AWARD SPOTLIGHT—AMRITHA PAI

The New England-St. Lawrence Valley Geographical Society (NESTVAL) Awards Committee has awarded the Amritha Pai, a [Human Environment Regional Observatory \(HERO\) Program](#) fellow, the David Frost Undergraduate Student Research Award for their undergraduate poster "*Resident Perceptions on Tree Planting Initiatives, Tree Stewardship, and Neighborhood Recovery following the 2008 Longhorned Beetle Outbreak*". Congratulations!



HERO FELLOWS AT CLARKFEST.

ALUMNI NEWS

CATHERINE JAMPEL, PHD '19, FREELANCE EDITOR

Catherine Jampel (PhD 2019) is now available as a freelance editor for academic writing and other serious nonfiction. Special rates for GSG community members until June 30, 2024. Her website is catherinejampel.com and you can reach her at catherinejampel@gmail.com.



STEPHEN YOUNG, PH.D. '97, VISITING EXPERT FELLOWSHIP

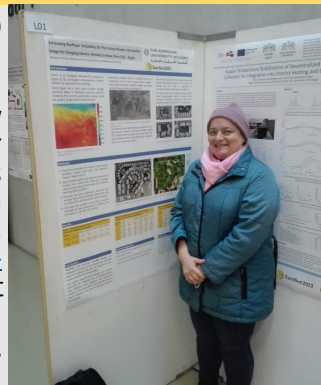
Stephen Young (Ph.D. '97) spent much of the fall in Central Asia where he had a "Visiting Expert" fellowship at Central Asia's #1 ranked university, the Kazakh National University in Almaty, Kazakhstan. When not lecturing, researching with Ph. D. students, or explaining TerrSet's Land Change Modeler, he was trekking yurt-to-yurt in the Western Tien Shan mountains.



STEPHEN YOUNG WITH COLLEAGUES AT THE KAZAKH NATIONAL UNIVERSITY

SHAIMAA AHMED IN THE 2022 EUROSUN CONFERENCE

Ms. Shaimaa Ahmed (GISDE-2008) completed her second master degree in Environmental Engineering from the American University in Cairo. Her thesis title is [Estimating solar energy production in urban areas for electric vehicles](#).



In addition, Ms. Shaimaa Ahmed participated in EuroSun 2022 conference. The title of her paper is "[Estimating Rooftops' Suitability for PVs Using Pleiades-1B Satellite Image for Charging Electric Vehicles in New Cairo, Egypt.](#)"

'IT'S TIME TO BRING THEM BACK'

Clark-based collaborative leads fish-restoration efforts in the Blackstone River

FROM [CLARKNOW](#), BY JIM KEOGH

For fish exiting the Blackstone River into Rhode Island's Narragansett Bay, the journey is one-way. Once they ride the current into the Atlantic, they never return.

In fact, they can't.

Beginning with the construction of the Slater Mill Dam in Pawtucket, Rhode Island, in 1793, a series of dams installed along the river have prevented countless shad, river herring, alewife, and even salmon — so-called anadromous fish that hatch in fresh water and migrate to the ocean — from

ALUMNI NEWS

SLATER MILL DAM



returning to spawn and feed within the river's marshy areas.

"The fish come back every year, but they hit up against the dam, turn around, and leave," says Stefanie Covino, M.S. '15, manager of the Blackstone Watershed Collaborative at the George Perkins Marsh Institute.



STEPHANIE COVINO, M.S. '15 (R.), MANAGER OF THE BLACKSTONE WATERSHED COLLABORATIVE, AND CALEIGH MCLAREN '22, M.S. '23, RESTORATION COORDINATOR FOR THE COLLABORATIVE, AT THE SLATER MILL DAM.

mental Management, the U.S. Fish and Wildlife Service, and the National Park Service, are united in their opposition and have asked the Federal Energy Regulatory Commission not to grant the license for the facility's construction, according to Covino.

If hydropower is added to this particular dam, the turbine would be located at the site where fish-passage proponents hope to install a fish ladder. Lowering the state-owned dam, she notes, would be an efficient and cost-effective method for allowing fish to travel downstream, and would help streamline the ability to build the ladder that would aid in upstream travel. Placing a hydro turbine there would delay the ladder's installation for years due to permitting challenges, she says.

Facilitating "fish passage" around the Blackstone dams has been a priority for Indigenous tribes and local agencies long involved with the historic waterway, but the scope of interest in the issue is widening. On June 16, U.S. Secretary of the Interior Deb Haaland visited the Blackstone Valley National Historical Park in Pawtucket, Rhode Island, where she met with members of several area tribes, as well as U.S. senators Sheldon Whitehouse and Jack Reed, Governor Daniel McKee, and representatives from the National Park Service and other agencies and community groups, to discuss the conservation of some of the country's most precious and vulnerable places, like the Blackstone.

According to the Blackstone River Watershed Council/Friends of the Blackstone, returning anadromous fish to the Blackstone would offer substantial ecological benefits to the river watershed and the Narragansett Bay ecosystem by providing a food source for commercial and recreational fish species such as bluefish, striped bass, and pickerel, as well as for predatory birds like waterfowl, wading birds, and osprey. There would be other advantages as well, the group says, including enhanced educational, recreational, and tourist opportunities in the Blackstone River Valley.

Restoring the migrating fish to the Blackstone requires finding ways to help them bypass four of the river's 19 existing dams that were erected during the Industrial Revolution, and which impede fish from accessing their native spawning grounds. According to Covino, fish ladders have been designed that would allow fish to travel over and around several of the dams. It's also hoped that one of the dams can be lowered.

Covino, who attended the June 16 meeting, says she and members of the Blackstone River Watershed Council have been working with four distinct Indigenous tribes — the Narragansett, the Hassanamisco band of Nipmuc, the Wampanoag tribe of Gay Head (Aquinnah), and the Mashpee Wampanoag — who have unanimously expressed their support for the fish passage initiatives along the Blackstone. Efforts to promote fish passage have been ongoing for 35 years, she says.

One looming complication involves the proposed siting of a small hydroelectric facility at one of the dams. The local tribes, as well as the Rhode Island Department of Environ-

"John Marsland, president of the Blackstone River Watershed Council, and Eric Breitreutz, superintendent at the Blackstone National Park, have brought the tribes together as partners on this," Covino says. "Everyone has agreed to the restoration efforts and said, 'We stand for fish passage.'"

The Narragansett Bay Estuary Program, which provided the seed money to create Covino's position as Collaborative manager, has asked her to facilitate the fish passage effort, which, in addition to the tribes, involves a host of federal, state, and local government agencies, nonprofits, and consultants.

"We're getting together a technical steering committee so we can get people into the same room, understand what's going on, receive updates from attorneys and consultants, and figure out the best way to move forward," she says. One particular goal is to encourage more public involvement with ongoing initiatives to preserve and improve the Blackstone as an ecological, recreational, and cultural resource.

In May, an intertribal gathering was held to promote the importance of fish passage on the Blackstone — recognizing the value of returning native fish to local waters while celebrating the region's rich Indigenous heritage. "The original stewards of the land are telling us that these fish have always been an important source of food and culture, and they've been absent from this watershed for 200 years," Covino says. "Now it's time to bring them back."



THE [ALUMNI SURVEY](#) IS A GREAT WAY TO KEEP IN TOUCH WITH US ABOUT YOUR CAREER UPDATES!

DEPARTMENT NEWS

PRACTICING GEOGRAPHY AND GIS WEEK 2023

This year, the Graduate School of Geography and the Department of Sustainability and Social Justice combined and co-sponsored Practicing Geography Week and GIS Week, typically two separate events, with support from the Career Connections Center. By partnering together, GIS and Practicing Geography Week, held from Monday, November 13 through Friday, November 17, full of various events, gave undergraduate and graduate students many opportunities to learn, connect, and network with peers, faculty, alumni and experts in the realm of Geography careers and research.

We kicked off the week with presentations by Profs. Hamed Alemohammad and Lyndon Estes on geospatial analytics and how it tied in with artificial intelligence.

The NASA DEVELOP internship info session, sponsored by the Career Connections Center, highlighted opportunities with NASA DEVELOP to apply NASA Earth observations and data to real-world environmental issues.

The annual Mapathon, held in the MS-GIS lab, was one of the highest attended events of the week! Students with varied levels of GIS skills all flocked to JF131 to contribute to maps from around the world.



The student insight panel and MSGIS student internship and research presentations provided a great space for all attendees to learn about opportunities and experiences in the summer and fall. Thoughtful questions were answered and many learned about their peers' research interests.

The Annual Alumni Connections event had to shift to a virtual platform, but that did not take away from the knowledge gained from the alumni about their life after Clark. The panelists were Caroline Williams, Virtual pop-up Fellow, Science Systems and Applications Inc. at NASA DEVELOP National Program, Greg Gould, Professional Land Surveyor at Hancock Associates, and Priscilla Baltezar, Remote Sensing and GIS Analyst at Space Enabled Research Group, MIT Media Lab. A special thanks to Angela Harris and the Career Connections Center for sponsoring this event.

The Geospatial Entrepreneurship Panel, sponsored by the Center for Geospatial Analytics at Clark Labs, brought to campus a Geography alum and experts in the entrepreneurship and geospatial fields! More can be read about this event in the [Faculty News on pages 10 and 11](#).

Jennifer Robinson from the University College London was

this year's Wallace W. Atwood Lecture Speaker. Her talk, titled, "Dimensions of Urban Development Politics: Transculturality, Circuits, Territories", covered the urban development politics spanning the experiences in Africa, but also in other continents, as well as the roles of international, sovereign, and developmental actors in cities.

All good things must come to an end, but that doesn't mean the final event has to be a bore! To wrap up the week, students from many different majors and programs took over the back section of Wan Wang Restaurant to host a Geography-based Trivia Night. Jason Andrews, MS-GIS '24, emceed the thought-provoking and fun evening.



A huge thank you to all that helped bring this week to life: MSGIS reps: Claudia Buszta, Andres Domingues de Oliveira; Student Panelists: Shradha Birdika, Abby Beilman, Apple Gould-Schultz, Lily Kaplan; Angela Harris and the Career Connections Center; faculty and staff: Hamed Alemohammad, Lyndon Estes, John Rogan, Frances Wychorski, Trish Champlin, and Michelle Johnson-Sargent.

CLARK GEOGRAPHY AT NESTVAL

The GSG was well-represented at the NESTVAL, New England—St. Lawrence Valley, Annual Fall Conference. Poster presentations were made by: undergraduate students Tanner Honnef, GEOG '24, and Amritha Pai, GES '24; doctoral students Antonio Victor Galvao da Fonseca, Vanchy Li, and Arman Bajracharya; master's students Naoya Morishita and Sai Vishal Muda. Paper session chairs included doctoral student Ricardo Barbosa and Nicholas Geron, Ph.D. '23. Serving on the panel discussion, Mentoring for JEDI: Justice-based perspectives on mentoring students and early career scholars, were Prof. Abby Frazier, Gisselle Vila Benites, and Lydia Savage, Ph.D. '96. Gisselle Vila Benites, Maddy Kroot, and Walter Poulsen, all current doctoral students, presented papers in the Energy Transitions and Aftermaths of Extraction session.

CLARK GEOGRAPHY AT AGU

In December 2023, several Clark Geography faculty and students traveled to San Francisco for the Annual Meeting of the American Geophysical Union (AGU), one of the largest geoscience conferences in the world. Geography Professors Abby Frazier and Hamed Alemohammad presented their research, as well as several Clark PhD and Master's students.



DEPARTMENT NEWS

WE WILL MISS YOU, BRENDA AND AIDAN!!



L-R: BETH NUGENT, PREVIOUS OFFICE COORD. RETIRED IN 2021, BRENDA NIKAS-HAYES, AND AIDAN GIASSON AT AIDAN'S GOODBYE PARTY IN JULY 2023

This summer, we said goodbye to two amazing staff members of the GSG, Brenda and Aidan.

Brenda Nikas-Hayes had returned to the GSG in 2020 as the Department Administrator and Assistant to the Director. Aidan joined the GSG as an Office Assistant when she was a student and eventually became the Office Coordinator and Assistant to the Department Administrator.

With Brenda's experience and institutional knowledge, having her back and in her role was

the best way to emerge from the pandemic. Aidan's experience as a student worker and a Geography major made her transition from student to full-time employee almost seamless. When Yaa Poku began her role as Admin. of Degree Programs, both Brenda and Aidan were instrumental in her onboarding. Showing her the ropes, explaining the many, many acronyms at Clark, and much more!

We celebrated Brenda's retirement in June, prior to her actual retirement in August, and Aidan's departure in July of 2023. Brenda and Aidan left big shoes to fill. They will be missed by the GSG and members of the greater Clark community.



BRENDA NIKAS-HAYES UNVEILING HER GIFTS AT HER RETIREMENT PARTY IN JUNE 2023

INTRODUCING THE NEW GSG STAFF MEMBERS: FRANCES AND MARJORIE

The GSG welcomes the new staff to the department! Please don't hesitate to stop by, or email, to welcome them!

FRANCES WYCHORSKI, DEPARTMENT ADMINISTRATOR AND ASSISTANT TO THE DIRECTOR



Frances Wychorski joined the Geography Department in August 2023 taking over the role of Department Administrator and Assistant to the Director. Frances graduated from Clark with a BA in International and Comparative Studies She also completed a Certificate in Journalism at U Mass Amherst. A former Clark employee, Frances is excited to be back on campus and be part

of the Clark Community. Frances was born and raised in Worcester. Home is now in West Brookfield. The small town provides wonderful opportunities to garden, hike and enjoy living in a rural community. A fan of mythology, future goals include travel to the UK, particularly Wales and Cornwall to satisfy a curiosity about places noted in the Arthurian legends. Previous travels include a trip to Sicily, exploring the

origins of many Greek myths and returning to Italy to visit Tuscany staying in the ancient old city of Lucca.

MARJORIE MILLER, OFFICE COORDINATOR AND ASSISTANT TO THE DEPARTMENT ADMINISTRATOR



Marjorie Miller is thrilled to join the GSG department as the new Office Coordinator. Prior to her start in November of 2023, she worked for Seven Hills Behavioral Health as the administrative assistant at a residential inpatient facility for adolescents. She earned her B.A. in Communications from Worcester State University with Honors in 2020.

INTRODUCING THE NEW STUDENT WORKERS

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

APPLE GOULD-SCHULTZ, ES '23, MS-GIS '24

Hi all! My name is Apple Gould-Schultz (she/her) and I am a 5th-year in the MS GIS program graduating in 2024. I have multiple years of experience with the HERO program and other GIS projects in Massachusetts focusing on conservation and urban planning. I love using my GIS skills on environmental issues and am so excited to be working with y'all.



LARA JORDAN, GEOG '23, MS-GIS '24

Hi everyone, my name is Lara and I am a 5th year MS-GIS student. I love learning about the applications of GIS to wildlife conservation, climate models, and environmental sciences. I also love to troubleshoot GIS and remote sensing technical problems, so stop by if you need help with anything!

ARIANA PILLITTERI, ES '26

Hi everyone! My name is Ariana Pillitteri and I am a second-year student majoring in Environmental Science and Policy. I especially interested in climate justice and food sovereignty. Outside of the office I love playing rec soccer and am part of environmental and plant clubs. I am so excited to be working at the Graduate School of Geography office. I enjoy doing tasks around the office and talking with people as they come in!



EXPLORE A LITTLE-KNOWN ARBORETUM NEAR THIS MASSACHUSETTS COLLEGE CAMPUS

FROM [ONLY IN YOUR STATE](#), BY KIM FALCHEK

Autumn is here and the green summer leaves are about to change to beautiful shades of yellow, orange, and red. What better time to get out and explore an arboretum? If you reside in Massachusetts, you may have visited the Arnold [Arboretum](#) in Boston and perhaps even

DEPARTMENT NEWS

JEREMY PAHL (SALTWATER HANK) PERFORMING ON IN THE CLARK UNIVERSITY GRIND FOR PROFESSOR RITTS' NATIVE AMERICANS, LAND, AND NATURAL RESOURCES CLASS.



the [Acton Arboretum](#) in Acton. But have you heard about the Hadwen Arboretum? I just discovered this fantastic hidden spot, and I can't wait to tell you all about it!

The Hadwen Arboretum is located in Worcester, Massachusetts, and is owned by Clark University. The university was gifted the land from local horticulturist Obadiah Hadwen.

The property is just a short walk from the university's main campus.

The Arboretum contains 26 acres of beautiful outdoor space. A walk along the scenic Appleton and Magnolia Trail is a beautiful hike any time of year.

This one-mile loop is an easy walk that should take under half an hour to complete.

The Arboretum can also be hiked as part of Worcester's 14-mile East-West Trail.

There are over 66 species of trees on the property, including some unusual varieties and others planted more than a century ago.

Many of the trees along the trail have markers that identify their species.

The property is also a great place to birdwatch. A local birdwatching group spotted almost a dozen different species of birds here during one visit.

You will definitely want to bring a good pair of binoculars and a handy [birdwatching guide](#) with you when you visit!

In addition to being a gorgeous hiking destination, the Hadwen Arboretum serves as a research and educational space. It is supported by the university and student volunteers as well as other environmental organizations.

Have you visited this hidden arboretum at Clark University? Please tell us about your experience. More information about the Hadwen Arboretum can be found on the [Clark University website](#) and [Clark's Hadwen Arboretum Facebook page](#).

GSG WELCOMED GUEST SPEAKER AND PERFORMER JEREMY PAHL

'HANK WAS A HIT'!

On October 7th, the GSG welcomed Jeremy Pahl (aka Saltwater Hank), a Ts'msyen musician and language preservationist from Gitga'at Territory, northern British Columbia. Jeremy spoke to Max Ritts' "Native Americans, Land, and Natural Resources" class about his ongoing work recovering and propagating [Sm'álg yax](#), an Indigenous language which has less than 80 speakers worldwide. While the issue of language revitalization does not seem inherently geographical on first blush, Pahl repeatedly observed [Sm'álg yax's](#) place-making affordances, and its ability to establish a web of ecological relationships through utterance and observation. For

instance, the word for one common coastal bird, the Swainson's Thrush, is Simiik'isk -- "to make ripe." In Pahl's home village of Hartley Bay, elders trace the ripeness of the salmonberry to the development of the Swainson's Thrush's spiraling springtime melody -- picking the fruit only when the sound is right. Widespread avian declines have given bird-song prominence in many "anxious ecologies" of the Anthropocene, but in Hartley Bay, [Sm'álg yax](#) is a way to connect language to ecology to people to place.

After the lecture, Pahl surprised Max's class with a musical performance at the Grind. Geography Faculty and grad students poured into the venue, and a dreary fall afternoon was enlivened with country tunes, throat singing, and inappropriate banter. In the words of one student, **'Hank was a hit'**! Jeremy extends special thanks to the GSG for supporting funds to make the show happen. His new album can be heard on [Bandcamp](#).



STUDENTS ENJOYING JEREMY PAHL'S MUSICAL PERFORMANCE IN THE GRIND.

THE 7TH GLOBAL CONFERENCE ON ECONOMIC GEOGRAPHY

Save the Date: June 4-8, 2025

Clark University, Worcester MA, USA

FROM [GCEG](#)

Through economic and geographical research, our goal is to develop research agenda that contribute to designing a more sustainable and inclusive world. With three key themes -- governance, sustainability and justice -- we hope to catalyze new research agenda for economic geographers through this conference.

Local Organizing Committee

- Yuko Aoyama (Clark), Convener
- Luis F. Alvarez Leon (Dartmouth)
- Asha Best (Clark)
- Mark Davidson (Clark)
- C. Patrick Heidkamp (Southern Connecticut State)
- Janelle Knox-Hayes (MIT)
- Deborah G. Martin (Clark)
- Siobhan McGrath (Clark)
- James T. Murphy (Clark)
- Gustavo Oliveira (Clark)
- Yu Zhou (Vassar)

Registration will begin in Fall 2024 (to be announced -- check back for updates in summer, 2024)



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