

UC San Diego



Peter F. Cowhey
Center on Global Transformation
2021-22 ANNUAL REPORT

DIRECTOR'S MESSAGE

AUGUST 2022

Warm greetings from the Peter F. Cowhey Center on Global Transformation (CCGT) at the UC San Diego School of Global Policy and Strategy (GPS). Now in our 16th year of operation, we are happy to report that CCGT continues to be a vibrant forum for intellectual discourse and a launchpad for new and innovative research activities.

The COVID-19 pandemic continues to reshape our lives in ways we could not have imagined. At the same time, the crisis has served to underscore our efforts to understand and influence the myriad ways that science and technology transform economic and political fortunes and, conversely, how economic incentives and public policy shape scientific inquiry and the innovations it produces.

Challenges notwithstanding, this past year has been a productive one at CCGT.

We were able to welcome Pacific Leadership Fellows (PLFs) to campus again this year and look forward to a reenergized PLF program in 2022-23. We also expanded our visitor programs to further enrich policy dialogue and research engagement on campus.

This includes the recruitment of two renowned scholars to serve as PLFs in full-time residence – Robert Conn and Peter Cowhey – as well as the launch of a distinguished academic scholars program and the expansion of our CCGT postdoctoral program.

At the same time, we have continued to support research by a broad set of scholars that complements the mission of the center. This includes work being conducted by our flagship research centers: the Big Pixel Initiative (BPI), the Sustainable Development Goals Policy Initiative (SDGPI) and our new Frontiers in Science and Innovation Policy (FSIP) Initiative. The new initiative's first major project is examining the impact of philanthropy on the dynamics of the American discovery and innovation system, with an interim report expected in summer 2023.

We also continued our research venture efforts by providing seed funding for a host of new research projects at GPS and beyond. We supported innovative projects focused on economic issues that became particularly salient during the pandemic, such as the use of hardship funds as mutual aid and the construction of novel cost of living measurements. We also supported a range of projects on science policy issues that range from important work on the role of mentorship in scientific production to projects focused on government efforts to grow sustainably and address environmental justice around the globe.



GPS Robinson Building Complex

Student engagement remains a core pillar of the center. In addition to funding financial aid for incoming master's students with a technology policy interest, we awarded stipends to four GPS students through our summer fellowship program to apply their knowledge from the classroom in summer internships related to research on economic growth, equality and market change in the Pacific region.

We thank all of you for your continued generosity and engagement: our founding supporters Joan and Irwin Jacobs, our dedicated staff and colleagues, and our community of friends, scholars, collaborators and PLFs. I hope to see you in person at our many public events this coming year.

Joshua Graff Zivin



Joshua Graff Zivin

LAUNCH OF NEW ENTREPRENEURSHIP LAB

With support from CCGT, associate professor Liz Lyons is working to develop and launch a new lab designed to develop and support early-stage ventures with high-impact potential in the school's areas of expertise and to complement the entrepreneurship and innovation management training offered at GPS and across campus.

The Policy & Strategy Entrepreneurship Lab (PSE-Lab) will bring together the locational advantages GPS has in entrepreneurship and technology, the school's robust network of successful entrepreneurs and early-stage investors and its globally recognized expertise in energy and environmental policy, China, emerging markets, national security, governance and sustainability.

The PSE-Lab's mission will be to improve the speed and impact of technology commercialization in high-priority areas. During the first two years, the lab will focus on rolling out its venture program, a seven-month program designed for startups based primarily in the San Diego region. The program will offer mentorship from the PSE-Lab's board, access to scientific and industry experts, access to legal and financial advice, guest lectures and online courses on startup fundamentals and access to a pool of potential co-founders for startups that need to grow their teams. To participate in the program, ventures will need to apply, and selection will be based on potential for success and fit with the lab's priority areas. Over the medium term, the lab will build out educational experiences and support an entrepreneurship certificate for GPS students.



Inspired by her experience at the Creative Destruction Lab at the University of Toronto and by teaching an early-stage startups course at the school, Lyons said she is excited about working with CCGT to bring together GPS's intellectual horsepower and the vibrancy of the San Diego startup environment.

She is confident that over the next decade, the lab will have a reputation for developing some of California's most transformational companies and entrepreneurs and that GPS will be known as a national leader in policy-oriented entrepreneurship training.

Lyons is currently working on funding for the PSE-Lab and setting up its 10-member board. To learn more, please contact her at lizlyons@ucsd.edu.



ACKNOWLEDGMENTS

Joan and Irwin Jacobs' philanthropic support has had a significant impact on numerous cultural, medical, educational and civic organizations in San Diego. Since 2006, they have supported the vision and mission of CCGT. We are so grateful for their endowment gift to name the center in former GPS dean Peter Cowhey's honor. The Jacobs' continued support enables our campus and the Greater San Diego region to become a center for reflection and action by leaders from across the globe, as well as a catalyst for innovative research.

PACIFIC LEADERSHIP FELLOWS

CCGT's Pacific Leadership Fellows program brings leaders to UC San Diego from around the globe to engage in dialogue, research and instruction with students, alumni, faculty and the San Diego community. Fellows comprise remarkable scholars and policymakers who shape strategy in their own countries through government, the private sector and academia and provide valuable insight into how economic and political systems are evolving.

CCGT has hosted 103 fellows from 24 countries.

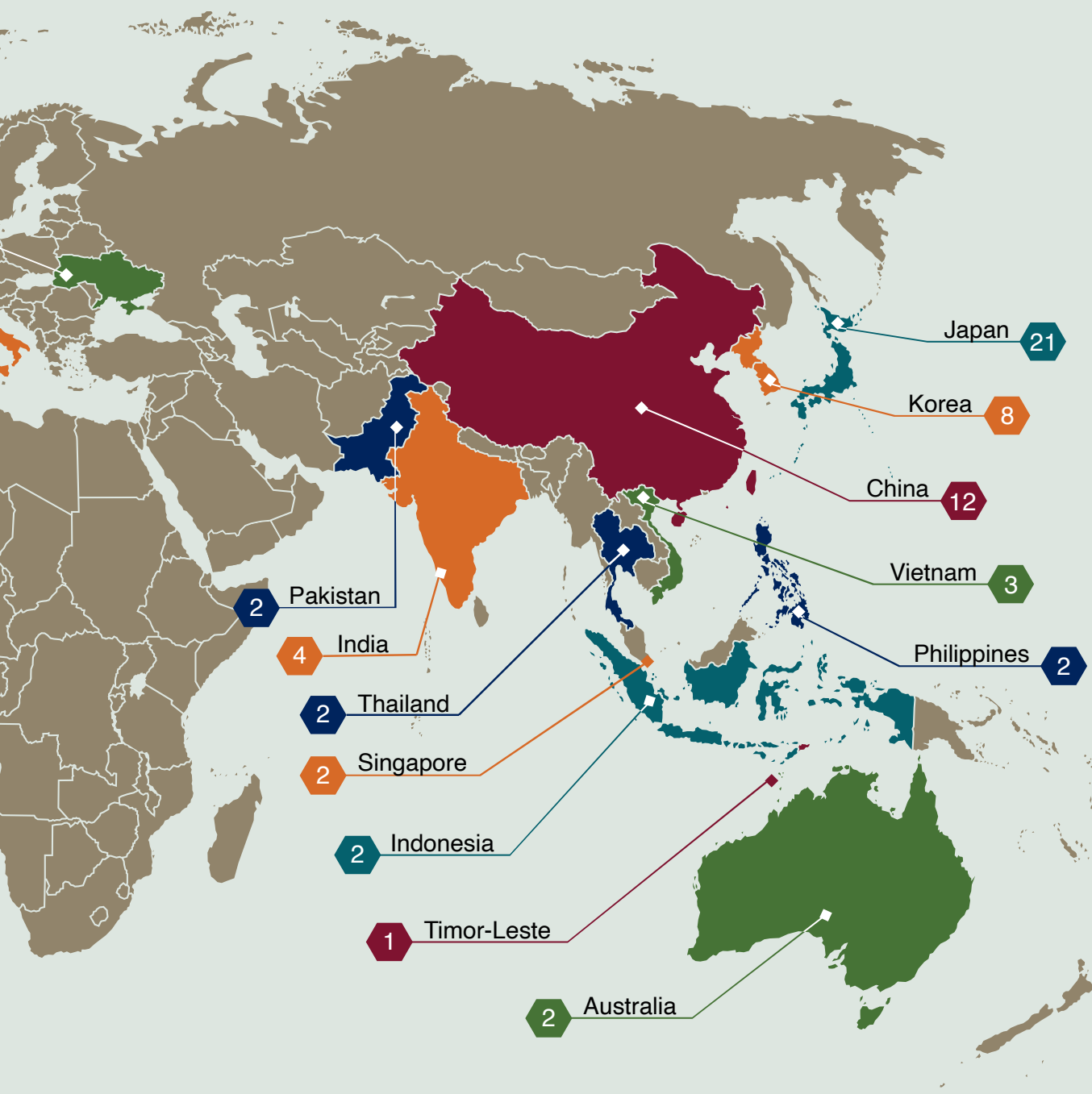
◆ Denotes number of past fellows from that country



FELLOWS ACTIVITIES

While in residence, each fellow fulfills a number of responsibilities. Though their events and interactions vary based on interests and length of stay, each fellow will:

- **COLLABORATE** with a faculty partner on a project or initiative
- **MENTOR** students informally and in a classroom setting
- **SPEAK** at a public program or guest lecture at community events
- **ENGAGE** with other UC San Diego departments
- **CONNECT** with the broader San Diego community and business, government or nonprofit leaders
- **INTERACT** with supporters and the local community



PACIFIC LEADERSHIP FELLOWS & GUESTS



KATE WILSON

FEB. 13-24, 2022

Faculty Hosts:

John Ahlquist and Peter Cowhey

DIGITAL DATA AND ITS IMPACT

Kate Wilson is the CEO of Digital Impact Alliance (DIAL), an NGO that advances digital inclusion to achieve the Sustainable Development Goals (SDGs) so that all people can benefit from life-enhancing, mobile-based digital services. Prior to DIAL, Wilson co-founded and led the Digital Health Solutions Group at PATH, the Seattle-based international health organization driving transformative innovation to save lives. She also held diverse senior roles in the commercial software sector and international trade. During her residency, Wilson presented a public talk on digital data and its impact. She met with students and faculty, including the new dean of GPS, Caroline Freund. She participated in a student event hosted by the Southeast Asia Link (SEAL). Wilson also met with San Diego County Supervisor Terra Lawson-Remer and representatives of the San Diego Association of Governments (SANDAG).



MAURIZIO VECCHIONE

APRIL 10-15, 2022

Faculty Host: Joshua Graff Zivin

SUSTAINABLE DEVELOPMENT

Maurizio Vecchione serves as the Chief Innovation Officer of the Terasaki Institute for Biomedical Innovation. He is moved by a vision that access to effective and quality healthcare is a human right and critical to equity and progress around the world. During his residency, Vecchione delivered a public talk addressing key moonshots as represented by the UN's Sustainable Development Goals and how we should fund innovation to encourage moonshot thinking to enhance social impact. He also met with students, faculty and senior administration officials at UC San Diego, including Chancellor Pradeep Khosla and Vice Chancellors Margaret Leinen and David Brenner. Vecchione also interacted with members of the GPS International Advisory Board and attended an event hosted by GPS students held on campus.



JOSÉ ÁNGEL GURRÍA

AUGUST 16-23, 2021

AND JUNE 10-12, 2022

Faculty Host: Rafael Fernández de Castro

GLOBAL ECONOMIC GOVERNANCE

José Ángel Gurría is the former Secretary-General (2006-21) of the Organization of Economic Co-operation and Development (OECD). Gurría firmly established the organization as a pillar of the global economic governance architecture, including the G7, G20 and APEC. During his visit to San Diego, he met with board members and visiting fellows of the Center for U.S.-Mexican Studies, where Director Rafael Fernández de Castro organized a lunch with San Diego community members. Gurría also visited Tijuana, where a dinner was hosted by its former mayor Kurt Honold. In June 2022, Gurría returned to campus to meet with faculty and gave the commencement address at the GPS graduation ceremony.

UPCOMING PACIFIC LEADERSHIP FELLOWS

UC San Diego continues to monitor the spread of COVID-19, working closely with local, state and national officials. We are busy planning the visits of the next outstanding cohort of fellows while working diligently to protect our campus community. Visit cgt.ucsd.edu for timely information about virtual events and future activities at the center.

[TOOMAS HENDRIK ILVES](#), Former President (Estonia)

[JONG-WHA LEE](#), Professor, Korea University (South Korea)

[DAVID MALONE](#), Under-Secretary-General, United Nations (Canada)

[CARLOS VIANA DE CARVALHO](#), Deputy Governor for Economic Policy, Brazil Central Bank (Brazil)

[MARITES VITUG](#), Editor at Large, Rappler (Philippines)

SPOTLIGHT ON POSTDOCTORAL FELLOW SANDRA AGUILAR-GOMEZ

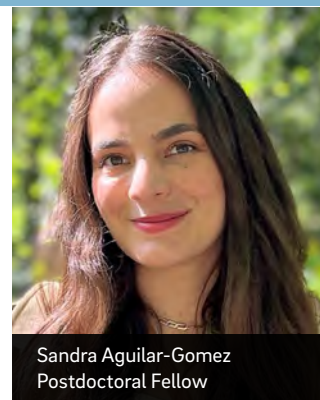
Sandra Aguilar-Gomez is a postdoctoral research affiliate (2021-22) and a visiting scholar at the center (2022-23). Her main fields are environmental, health and development economics, focusing on the intersections of these fields.

As part of her postdoctoral research, Aguilar-Gomez contributed to an overview paper with Holt Dwyer, Joshua Graff Zivin and Matthew Neidell on the non-health effects of air pollution. In this piece, the authors review existing work on the until-recently neglected consequences of pollution that range from performance and skills to decision making and crime. They develop a model of avoidance and remediation behavior with agents who understand some but not all of the causal impacts of pollution. In this model, agents who are unaware of some of pollution's impacts will in general pursue less avoidance than is optimal but will partly offset this with higher remediation later on. This underscores the important role for public policies around providing information to improve avoidance behaviors.

Aguilar-Gomez is currently working on another project with Joshua Graff Zivin and Matthew Neidell that examines hospital crowding driven by extreme temperatures, along with its implications for the quality of healthcare and capacity requirements in a warmer world. The project uses data from the universe of hospitals in the Mexican public health system to show that on warmer days, more people go to the emergency departments. However, the likelihood that they are admitted for care decreases as hospitals become more crowded, suggesting that, as we saw with COVID, climate change is likely to stress hospital systems and thereby threaten population health by decreasing the quality of care for all.

A different line of her current work explores gender disparities in labor markets and in the production of household goods both in the U.S. and in Mexico.

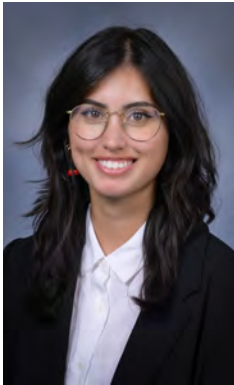
Aguilar-Gomez received her Ph.D. in sustainable development from Columbia University. She is an incoming assistant professor of economics at Universidad de Los Andes in Bogotá, Colombia. She has also been affiliated with the Arnhold Institute for Global Health at the Mount Sinai School of Medicine and worked as an economist at the Central Bank of Mexico, where she is from originally.



Sandra Aguilar-Gomez
Postdoctoral Fellow

2021 SUMMER FELLOWS

CCGT's summer fellowship program was established to assist GPS students in conducting high-caliber summer internships related to research on economic growth, equality and market change in the Pacific region.



MAURE GILDEA, MIA '22

Center for Asia Pacific Security (CAPS), Washington, D.C.

"I interned remotely at the D.C.-based nonprofit think tank, the Center for Asia Pacific Strategy (CAPS). CAPS aims to broaden the government's and the public's understanding of the Asia Pacific by conducting transparent, nonpartisan research on security and defense-related issues in the region and by facilitating active dialogue around these issues. As an intern at CAPS, I conducted an independent research project on Maritime Security in Southeast Asia. Over the course of eight weeks, I applied both quantitative and qualitative research and critical analysis skills gained during my first year at GPS to explore critical issues including defense, development and the environment, and to eventually present my own policy proposals to security practitioners in the public and private spheres. As an MIA student with a specialization in international development and nonprofit management, as well as a regional specialization in Southeast Asia, I am grateful for the opportunity to conduct research and work with experienced professionals in the field."



DANIELA HALL LAGUNES, MPP '22

International Rescue Committee, Salt Lake City, Utah

"I worked as a data and evaluation intern at the International Rescue Committee (IRC) located in Salt Lake City, Utah. For more than 80 years, the IRC has been providing emergency relief, protection, rehabilitation assistance, resettlement services and advocacy for refugees and victims of oppression or violent conflict. I supported the implementation of a survey on the barriers that refugees and other IRC clients face in accessing health care in Utah. I trained three survey enumerators on how to use the data collection tools and record responses. This internship has provided me with an excellent opportunity to apply the data analysis skills that I have acquired at GPS on a topic that I am deeply passionate about."



HARRISON TANG, BA/MIA '22

US-ASEAN Business Council, Washington, D.C.

"I interned with the US-ASEAN Business Council, an advocacy organization representing more than 160 major U.S. corporations operating in the Association of Southeast Asian Nations' (ASEAN) 10 member countries. I researched regional economic issues impacting the private sector in the following areas: food and agriculture, information and communications technology (ICT), and Vietnam. This involved drafting weekly industry updates on topics such as nutritional security and the deployment of 5G technology across Southeast Asia. I also helped organize leadership dialogues between ASEAN government officials and senior business executives, including a virtual workshop in preparation for the UN Food Systems Summit. This internship gave me a firsthand view of how the public and private sectors can collaborate to overcome shared challenges — such as the COVID-19 pandemic — and promote sustainable economic growth in the region."



ZHILING XU, BA/MIA '22

Emzingo, Peru

"My internship was with Emzingo, which focuses on responsible leadership lessons and consulting for local Peruvian organizations/companies. The remote internship is a six-week program that introduces students to various methods and practices of consulting while promoting positive social impact. Our team worked with the field partner La Fidelia, a Peru-based tea and herbal infusion company, to develop strategies that better help the firm succeed — especially in the areas of entering global markets and improving digital marketing strategies to increase e-commerce sales. We also sought to promote the values of La Fidelia with its approach to fair trade and embracing traditional Peruvian nature and culture through tea and herbal infusions. Our team communicated with the field partner on a weekly basis and used various toolkits like the Gantt Chart, business model canvas, stakeholder map and surveys to analyze the firm's operations and give customized recommendations. This was a great opportunity to have hands-on consulting experience and learn about business operations and strategies combined with a social impact approach."

EXPLORING FRONTIERS IN SCIENCE, INNOVATION

Since its inception, CCGT has served as a springboard for GPS into deeper integration of science, technology, engineering and innovation at the university. A healthy ecosystem of scientific research and development (R&D) in the U.S. – and importantly, its sources of funding – is critical to the U.S. maintaining competitiveness in a global environment. And two experts, GPS Dean Emeritus Peter Cowhey and Jacobs School of Engineering Dean Emeritus Robert Conn, are leading the efforts at CCGT to understand the workings of the American R&D ecosystem and its consequences for universities and private, nonprofit research institutes for vital public issues in a new initiative: Frontiers in Science and Innovation Policy (FSIP).

"Historically, philanthropy has played a strong role in supporting science, technology and innovation. But the relationship between philanthropy and innovation is not well understood, and when people discuss policy decisions about the future of the country's overall science enterprise, they don't really think about the role of philanthropy," Conn, who is also CEO emeritus of the Kavli Foundation, said. "In looking at the philanthropy in the 19th century Gilded Age, I realized we're now living in a second age of great individual wealth creation and large – and growing – philanthropic giving. With the amount of wealth that will be created in the next 20-30 years, who is going to make the case for philanthropic investment in science and technology?"

CCGT director Joshua Graff Zivin added that supporting innovative, rigorous research is a hallmark of the center. "We launched the FSIP initiative at the center in 2021 to take on the challenge of analyzing how best to reinvigorate the U.S. system of basic research and innovation," Graff Zivin said. "This first project looks at where science and social science meet to generate evidence and insights that will help guide policy."



In the U.S., roughly 4.4% of domestic GDP is spent on research annually, in a complicated mix of public, business and private philanthropic programs that reflect a wide range of incentives and priorities – with only a small share of the funding going to basic research.

"Our best analysis now indicates that the government provides about 68% for basic and applied research," Conn said. "Business adds about 18%, and all forms of philanthropy add another 14%."

And evaluating the nature of that complex ecosystem is no small task.

"We don't aspire to write a new master plan for the U.S. ecosystem but think it is possible to improve some key features of the country's policy mix," Cowhey said.

FSIP's first major project will be to examine the impact of philanthropy on the dynamics of the American discovery and innovation system.

"Discovery and innovation is all about human capital – the people who create the knowledge," Cowhey said.

In funding innovative projects, government grants can often be conservative in the selection process, thereby making it harder for fresh approaches – and fresh people – to get started early. Cowhey said the way the U.S. government evaluates research grant applications, for example, tends to be tilted toward older researchers with long track records, rather than younger investigators.

"But philanthropy appears to be much more supportive of junior researchers with new approaches," Cowhey said. "More generally, philanthropy has a much more varied set of priorities and strategies, often with a greater appetite for risky ideas in early stages of discovery than government or business funding. This is a vital 'bottom up' approach to exploring the unknown that stands in stark contrast to, for example, the centralized government priorities that dominate the Chinese system."

Conn said a report addressing these issues will be forthcoming over the two-and-a-half-year project, including a component that examines what the U.S. will be facing in the next 40-50 years from international competitors. An interim report is expected for summer 2023.

"Philanthropy has been the unspoken, unique American asset that helps us have diversity in the research we support, how we support that research and when and where that research is supported relative to government or industry," Conn said. "To summarize the role of the project, philanthropy has been the missing element in America's policymaking when it comes to science, technology and innovation, and yet it will play an even larger role in our future. Philanthropy cannot be ignored any longer."

And Conn and Cowhey will not tackle these issues alone. FSIP has put together an ad hoc group of advisers, some of whom will become the core of a permanent advisory board for the initiative. The advisers include two former directors of the National Science Foundation, the heads of three science foundations, leaders in other national science institutions, the current and former heads of some of the largest research universities and distinguished technology entrepreneurs.

"Their distinction as a group is a testament to the excitement over our undertaking," Cowhey said. "Our goal is to push the edge of policy thinking. We will count catalyzing smart alternative interpretations as a win, but we expect to do far better than that."

RESEARCH GRANTS

CCGT fosters academic inquiry by offering grants for innovative research for faculty and doctoral students. The following are a selection of major projects awarded and ongoing general support for the Big Pixel Initiative and SDG Policy Initiative.

EMPLOYEE HARDSHIP FUNDS AS MUTUAL AID

JOHN AHLQUIST, PROFESSOR

Dozens of major U.S. companies now maintain programs that combine monetary donations from their employees and (tax deductible) corporate contributions to offer emergency cash grant programs for their own workers in times of need. These programs are known as “employee hardship funds,” or EHF. There is no academic or policy research on EHF. Despite their apparently rapid growth, Ahlquist designed a novel survey of workers matched to their employers, and piloted the survey by using Facebook to target survey recruitment at employees of one large U.S. retailer of hardware and home improvement products. The survey found high but low awareness of the program. Randomly presenting subjects with information about the program using simple text as well as a corporate communications video showed interesting patterns. Although the corporate propaganda video failed to improve feelings of financial security, the video treatment did induce greater attachment to the employer and coworkers. The video also made workers more uncertain about unionization and more supportive of government support for the unemployed. The survey provides the first systematic evidence of employee awareness, experience and opinion about EHF. Ahlquist presented preliminary findings at the 2022 meetings of the Labor and Employment Relations Association and American Political Science Association. He plans to use these initial findings as the basis for further grant support.



SCIENCE INNOVATION AND MENTORSHIP

PROFESSORS JOSHUA GRAFF ZIVIN, GAURAV KHANNA AND ELIZABETH LYONS

With support from CCGT, Graff Zivin, Khanna and Lyons’ research is contributing to the advancement of science and innovation by investigating the circumstances under which researchers in academia are most productive. They are using 10 years of data on researchers across the entire University of California system, including faculty and postdoctoral scholars, paired with publication and patent data and industry information on pay norms across degree types and jobs. This data is allowing them to analyze how pay differentials between academia and industry across areas of specialty relate to basic and applied research output, and how departmental compositions – including diversity and whether senior faculty have reputations as generous mentors – relate to department-level productivity. The findings from this multidimensional project will have meaningful implications for management of academic science and subsequent innovation within the broader economy.

MEASURING THE COST OF LIVING IN MEXICO AND THE U.S.

MUNSEOB LEE, ASSISTANT PROFESSOR

The construction of cross-country price indexes is of crucial importance to compare living standards between countries and to measure global inequality. The ICP has taken on the important and heroic exercise of measuring these prices but faces severe data limitations. In this paper, Lee and coauthors David Argente and Chang-Tai Hsieh construct a data set for two countries that allows data limitations to be addressed, namely the fact that the ICP has incomplete information on items across countries, that they do not have expenditure information to weight items appropriately, that they cannot compare exactly the same item across countries, and that they do not have information on differences on the set of products available in each country. Using the alternative data, Lee estimates that Mexican real consumption is larger relative to the U.S. than previously estimated. Overall, the results show that the real non-durable consumption inequality across the U.S. and Mexico is 23% lower than that predicted by the ICP estimates. The paper will be published in a forthcoming issue of the American Economic Journal: Macroeconomics.



BIG PIXEL INITIATIVE SHOWS WIDESPREAD IMPACT OF AIR POLLUTION ON CROP PRODUCTIVITY AROUND THE WORLD AND ON ENVIRONMENTAL JUSTICE ACROSS CALIFORNIA

PROFESSORS JENNIFER BURNEY, MORGAN LEVY AND KATE RICKE, AND SUSANNE BENZ, FORMER BIG PIXEL POSTDOCTORAL SCHOLAR



Two recent studies have broadened our understanding of the widespread negative effects of pollution generated by human activity.

In one study, Burney and collaborators at Stanford University (David Lobell and Stefania diTomasso) linked satellite-derived measures of crop greenness to atmospheric measurements of nitrogen dioxide, a common byproduct of fossil fuel combustion. Using fine-grained measurements across five major “breadbaskets” of the world – India, China, Brazil, Europe and the U.S. – the team found that higher levels of this pollutant are strongly associated with lower crop yields. This remained the case even when controlling for local weather and other factors that contribute to yield differences. The study also provided some of the first large-scale evidence that nitrogen oxides impact crop yields through multiple pathways – directly, via formation of ozone (also toxic to plants), and also when converted to particulates in the atmosphere. Because these pollutants are so strongly associated with reduced yields, measures to clean up air pollution could have very strong economic and food security implications around the world.

A second study, conducted by the larger environment and policy group at GPS, used a broad range of particulate matter monitors around California, as well as high-resolution atmospheric and land surface measurements, to understand what happened to air quality during the early COVID-19 shutdowns in spring 2020. The team found that – as reported in popular media – California’s shelter-in-place orders brought with them major improvements in regional air quality; however, these improvements were not equal across California. During the shutdown, neighborhoods with higher shares of Hispanic and Asian residents saw bigger improvements in air quality compared to whiter (and wealthier) neighborhoods. This was true even when adjusting for income, road density, local movement and weather. In other words, air quality was more “fair” during the shutdown. This implies that the opposite is also true – during business-as-usual conditions, the state’s economy distributes pollution unfairly toward these neighborhoods. This study provided very strong evidence of a systematic bias in California’s regulation and control of air pollution. Although California has a strong record in environmental justice and policies aimed at rectifying these inequitable exposures, we still have a long way to go.

SDG POLICY INITIATIVE SUPPORTS GOVERNMENT OF PARAGUAY ON 2030 AGENDA

GORDON MCCORD ASSOCIATE TEACHING PROFESSOR & SDGPI DIRECTOR

On Nov. 8, 2021, the SDG Policy Initiative launched the very first Sustainable Development Report for Paraguay. The initiative supports Paraguay’s Finance Ministry with a team of experienced scholars, statisticians and economists from around the globe. The project brings data and policy analysis to inform domestic policy around the challenges of meeting the 17 Sustainable Development Goals and places Paraguay within a global community on a shared path toward the 2030 Agenda. SDGPI used novel techniques to prepare statistical indicators at subnational scale on issues ranging from poverty to air pollution to gender equity. Armed with these data and the clearly defined objectives of the SDGs, the current phase of the project supports the government with policy proposals and costing estimates that can lead to dramatic improvements in the well-being of all Paraguayans and their natural environment. Multiple students have developed data and spatial analysis projects around SDG topics in Paraguay and have showcased their work on the SDGPI Student Blog (<http://sdgpolicyinitiative.org/paraguay/>).



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9500 Gilman Drive, # 0519
La Jolla, CA 92093-0519