2023–24

YEAR IN REVIEW

Building sustainable prosperity in a changing global environment through rigorous, policy-relevant, interdisciplinary research and training of the next generation of leaders

FLETCHER
CENTER FOR INTERNATIONAL
ENVIRONMENT & RESOURCE POLICY

The graduate school of global affairs at Tufts University

CLIMATE POLICY LAB

SWL

18 EVENTS

21 ACTIVE GRANTS

$3M ANNUAL BUDGET

22 AFFILIATED FACULTY

OVER **30K** WEBSITE VISITS

40 SUPERVISED CAPSTONES

8 FUNDED INTERNS

45 BLOG POSTS

$178K IN NEW GIFTS

62 NEWS AND MEDIA HITS

16 STUDENT TRAVEL AWARDS

51 PUBLICATIONS

27 STUDENT EMPLOYEES

INSIDE:

CIERP 2023–24 Year In Review

DIRECTORS' NOTE

The 2023–2024 academic year was an exciting period of growth and engagement for the Center for International Environment and Resource Policy (CIERP) at The Fletcher School. It marked our busiest travel year yet for research, conferences, and internships around the world. It was also highly productive in terms of our research progress and outputs, as you will see in the following pages.

Policy-relevant research in pursuit of a more sustainable world remains our key focus, and our researchers strive to ask the right questions, collect accurate data, evaluate the impacts of interventions, model scenarios, and analyze the evidence to produce and share new knowledge. This work is crucial for broadening our outreach, informing policymakers, and training current and future leaders.

We are proud to share with this report updates from across CIERP's programs. These include both of our respective research programs—Jenny's on economic development in Africa and Kelly's Climate Policy Lab—as well as Professor Melissa McCracken's Shared Waters Lab, Professor Maulik Jagnani's work on environmental health and human capital, Professor Barbara Kates-Garnick's focus on offshore wind, and more. This fall we look forward to welcoming Professor Sally Zhang, an economist who studies intrahousehold allocation, child development, and gender inequality in developing countries.

The new academic year also brings a bittersweet highlight: after co-directing CIERP since 2017, Jenny is stepping back to focus on her new position as the inaugural Daniel G. Sisler Professor of Development Economics at Cornell University. She retains a research professorship at Fletcher and will continue to conduct research within the Center. We are pleased to announce that Professor Melissa McCracken has stepped in as new co-director with Kelly effective July 1, 2024.

We celebrated another wonderful group of graduating students at our annual luncheon this May and look forward to their contributions to climate and environmental work as they join an illustrious group of alums around the world,

Kelly Sims Gallagher and incoming co-director Melissa McCracken, William R. Moomaw Assistant Professor of International Energy and Resource Policy.

which includes not only former students, but also postdocs, visiting scholars, and participants of our annual Climate Policy Lab Academy. If you are an alum reading this, we would love to hear from you!

As always, we gratefully acknowledge the support of our funders and individual donors who supported the work and accomplishments highlighted in this report. We also thank CIERP's administrators Mieke van der Wansem, Jillian DeStone, Sara Rosales Laverty, and Maxwell Zandi, who keep everything running smoothly.

Sincerely,

Jenny C. Aker,
Research Professor,
The Fletcher School, Daniel G. Sisler
Professor of Development Economics,
Cornell University

Kelly Sims Gallagher,
Director of Climate Policy Lab,
and Co-Director of CIERP,
Dean *ad interim*, Professor of
Energy & Environmental Policy

NEWS AND PEOPLE NOTES

Kelly Sims Gallagher's April 2024 *Foreign Affairs* article, "Climate Policy is Working," and August 2023 article, "The Right Way for America and China to Cooperate on Climate," each had a readership of over 1 million and were shared directly with senior government officials seeking to better understand international cooperation and opportunities for the U.S., the EU, China, India, and Brazil.

In summer and fall 2023, we welcomed two new Junior Research Fellows who entered the PhD program, **Kate Chi** and **Kwame Ababio**; two new postdoctoral scholars, **Saidou Abdoulaye Sy** and **Nora Hampl**; a new Assistant Researcher, **Siddharth Jain** (who will transition into the PhD program this fall); and a new Program Coordinator, **Maxwell Zandi.** We also benefitted greatly from having two Visiting Scholars in residence from China during the past academic year, **Sufang Zhang** and **Baihe Gu.** Kelly Sims Gallagher became Fletcher's Dean ad interim in July 2023, and although this role has shifted many of her responsibilities as a faculty member, she continues to devote intensive time to the management and research of the Climate Policy Lab within CIERP.

Many CIERP researchers, past and present, participated in the Tufts Energy Conference this year, a student-run annual event covering topics ranging from climate risk and big data to accelerating climate innovation. **Seth Owusu-Mante, Melissa McCracken, Qi Qi, Barbara Kates-Garnick, Amy Myers Jaffe, Rebecca Pearl-Martinez, John Harper,** and **Kevin Knobloch** all spoke at the conference and Climate Policy Lab had a table at the Energy Employer Showcase. MALD student **Courtney Foster** wrote an insightful blog post reflecting on the conference.

In August 2023 and March 2024, members of CPL contributed to a Fletcher School Executive Education program, which hosted dozens of top leaders from the Asian Development Bank (ADB) interested in driving strategic and organizational changes at ADB so as to

Woochong Um, Managing Director General of the Asian Development Bank and incoming CEO of the Global Energy Alliance for People and Planet, presented at a research seminar on the sidelines of the ADB Executive Education program.

enhance climate action collaboration and innovation. ADB is also interested in using **CPL's Policy Gap Analysis** to undertake studies for their Asia and Pacific countries. We are currently discussing capacity building of their key staff members to undertake such studies collaboratively with their country partners.

Jenny Aker gave a keynote at the Nordic Conference in Development Economics in Copenhagen in June 2024. She spoke on the adoption of rainwater harvesting techniques in the Sahel, a project she is leading to support farmers in adapting to climate change, which she expanded to 400 villages and over 6,000 farmers in Niger this year.

Predoctoral Fellow **Bethany Tietjen** presented work from her co-authored paper, "Climate Change and Urban Migration in Sub-Saharan African Cities: Impacts and Governance Challenges," at the Tufts Women in International Relations Conference.

Over the past year, CPL organized a series of 10 internal workshops on topics aimed at building proficiencies across a variety of areas including social media, GIS, modeling, journalism, cultural communication, writing, and AI tools.

We are delighted to welcome **Sally Zhang**, Assistant Professor in Economics, to CIERP in August 2024. Her research areas include intrahousehold allocation, child development, and gender inequality in developing countries.

Erin Coughlan de Perez gives a tour of artifacts at the Boston Museum of Fine Arts providing insights about climate change with CPL Academy participants.

- **Melissa McCracken** gave a keynote address for World Water Day Events hosted by Global Institute for Water Security at the University of Saskatchewan discussing the challenges and opportunities for transboundary water conflict and cooperation globally. She also spoke on allocation mechanisms in transboundary water agreements as part of a contribution to the Workshop on Transboundary Water Allocation, WEFE Nexus, and Development of Agreements and Other Arrangements hosted by UNECE Water Convention and Partners.

- Postdoctoral Scholar **Saidou Abdoulaye Sy** presented at the Tufts Environmental Modeling Summit, where he discussed the ongoing work of the CPL, specifically focusing on the Raising Ambition project and Energy Policy Simulator model, as well as the nexus model that he is currently building. Selena Wallace, MALD '24, also presented at the summit.

- **Erin Coughlan de Perez** was appointed to the Massachusetts Climate Science Advisory Panel under Governor Maura Healey. This panel was launched through the new Massachusetts Office of Climate Science (OCS) and consists of experts from the region who will advise on state and local climate adaptation planning and projects related to hazards such as extreme heat, flooding, sea level rise, and health impacts.

- Former White House National Climate Advisor and Climate Policy Lab Senior Fellow **Gina McCarthy** received the lifetime achievement award from C3E for her dedication to advancing clean energy. She later sat down with Kelly Sims Gallagher for a fireside chat about energy and climate policy at the state and national levels and around the world.

Gina McCarthy meets with Fletcher students ahead of a public fireside chat with Kelly Sims Gallagher, where they discussed U.S. energy policy.

Climate Policy Lab Predoctoral Fellow Bethany Tietjen and Junior Research Fellow Kate Chi speak with students at CIERP's September 2023 Open House.
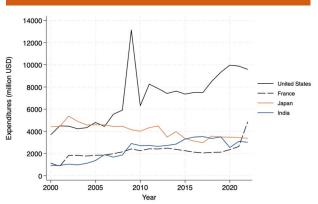
RESEARCH UPDATES

Database on global investments in clean energy RD&D

Over the past year, Climate Policy Lab has updated our global data set with interactive graphic visualization on global public investments in energy research, development, and demonstration (RD&D) since 2000. This is the first comprehensive database (including non-IEA/OECD countries) covering public expenditures in RD&D for countries that have declared an interest in and commitment to innovation in clean energy technologies. Kate Chi recently wrote blog posts on topics such as government investment patterns and country-specific data to help elucidate the release of additional data. Users can search the database by country, technology, currency type, and timespan, allowing for targeted exploration of specific areas of interest. While China stopped reporting its data in 2021, we have recently found new sources of data that will allow us to continue to report on China starting with the next scheduled update. This database has been viewed over 4,600 times.

Total public energy RD&D expenditures (2000–2022)

Offshore wind and the U.S. energy transition

One of the challenges of the U.S. energy transition is the development of Offshore Wind (OSW) as a generation resource for states committed to achieving Net Zero targets by 2050 and the US goal of deploying 30 gigawatts (GW) by 2030. For the United States, OSW is a nascent industry. The development goals are lofty in terms of supply chain, job growth, permitting and transmission. As with much energy infrastructure, both the states and the federal government play a critical role. Professor **Barbara Kates-Garnick's** research, in collaboration with Professor Eric Hines of the Tufts School of Engineering (SOE), has focused on the intersection of state and federal energy policy in the areas of infrastructure, transmission and the potential for an offshore grid.

Raising ambition in emerging economies

Climate Policy Lab researchers continue to work on policy gap analyses for key emerging economies as part of our "Raising Ambition" project to help policymakers in these countries become better informed about their options for how to reform or create new and additional policies that could enable them to reach more ambitious mitigation targets, with a particular emphasis on how to avoid growth in emissions while still growing economically.

Raising Ambition Project: Partner Countries				
China	Mexico	Indonesia	Türkiye	Ethiopia
India	Brazil	South Africa	Vietnam	Colombia

CHINA: We have and will continue to brief government and non-government stakeholders on the results of the China study. Three types of policy gaps were identified: stringency gaps, specific policy gaps, and implementation gaps. The stringency gap highlights that China should strengthen its current policies on energy consumption, energy efficiency, and carbon intensity. The specific policy gaps relate to addressing non-CO_2 emissions, economic structural changes, and the shipping and aviation sectors. The implementation gaps focus on the effectiveness and efficiency of China's climate policy during the implementation stage, and we are discussing follow-up research on the expansion of renewable energy and growth of green industrialization in China.

INDIA: NITI Aayog, India's government think tank for public policy and planning, recently established six working groups on how to achieve net zero, and

research partner and former postdoc Easwaran Narassimhan was appointed to the working group on "macroeconomic implications of the net-zero transition." This working group has been seeking input from various modelling studies, including CPL's. Our research on India likely had a direct impact on this progress by NITI Aayog. We also have multiple follow-on research projects in discussion with other Indian partner organizations, including CEEW and Sustainable Futures Collaborative.

ADDITIONAL COUNTRIES: Modeling is nearly complete for Mexico and Indonesia and we will be issuing policy briefs in summer 2024 for these countries. The expert elicitation process is complete for South Africa and Ethiopia, where we are now gathering additional data, and the expert elicitation is in process in Brazil, Colombia, Türkiye, and Vietnam.

CPL travel to Asia

Kelly Sims Gallagher traveled to India in fall 2023 and met with government leaders at NITI Aayog and the G20 Sherpa's office. She discussed NITI Aayog's progress in establishing a modeling division (for which CPL provided technical assistance) as well as climate and development policy. She also met with India's G20 Sherpa and debriefed on the climate-related outcomes of the G20 process, for which she had provided technical support. Gallagher then hosted Amitabh Kant at Fletcher in May 2024 for a discussion about climate-related multilateral development bank (MDB) reform and the G20 process.

Kelly Sims Gallagher met with the Cabinet Secretary of Japan in Tokyo to discuss Japan's green industrialization strategy in January 2024.

Amitabh Kant and Kelly Sims Gallagher during a visit in India.

Conflict resolution mechanisms in transboundary waters

Professor **Melissa McCracken** has been working in collaboration with researchers at Oregon State University and IHE Delft to study the role dispute resolution mechanisms (DRMs) play in ensuring the peaceful and cooperative governance of shared transboundary freshwater, as well as the multiscalar factors of disputes and dispute resolution processes that impact their potential to resolve conflicts. This work has resulted in two forthcoming publications through the United States Institute of Peace. The first report establishes a three-part framework that 1) builds a foundation of the core concepts of dispute, conflict, and cooperation, 2) maps the breadth of dispute resolution mechanisms available within transboundary water agreements, and 3) evaluates the dispute resolution processes, the intervening factors that shape their application and outcomes, and ultimately, their effectiveness. The other report offers a new multiscalar lens to explore the complexities of transboundary water conflict and cooperation by providing a more nuanced consideration of the cross-cutting role of water across three scales — spatial, temporal, and governance.

Evaluating a flood early warning system

Professor **Maulik Jagnani** is collaborating with Google and researchers at Yale University to evaluate a flood early warning system (EWS) that combines grassroots community outreach with Google's advanced flood forecasting technology to help rural households in India adapt to climate change-induced flooding. Preliminary findings show that communities with access to this system received frequent and reliable flood warnings. This improved trust in the alerts, leading to better preparation and health benefits. Households in these communities are healthier, more adaptable, and spend 30% less on medical costs compared to households without access to the system.

Addressing persistent air pollution

[Research by Maulik Jagnani](#) is uncovering a paradox around the use of air purifiers in South Asia. Preliminary results of one study showed that factories equipped with air purifiers saw a 37% reduction in air pollution and an increase in factory output of 27%. Yet they remain underutilized in both households and workplaces in Bangladesh despite their potential to mitigate suffocating air quality.

Green growth in Brazil

In September 2023, **Kelly Sims Gallagher, Travis Franck,** and **Siddharth Jain** were invited by the Brazilian government to meet with various government officials to discuss green growth policy and strategies, including the Ministry of Industry, Embrapa, Ministry of Science and Technology, and Petrobras.

Kelly Sims Gallagher, Travis Franck, and Siddharth Jain in Brasilia with Gustavo Fontenele, General-Coordinator of Decarbonization, Secretariat of Green Economy at Brazil's Ministry of Industry.

Karen Jacobsen asking residents and local political leaders about the climate hazards in an informal settlement in Kampala.

Climate change and urban migration in sub-Saharan African cities

While there is extensive research of the problem of flooding in the (mainly coastal) cities of South Asia and elsewhere, relatively little research has been conducted in African cities, particularly inland cities. To build on existing knowledge and address knowledge gaps, Professors Karen Jacobsen and Justin Hollander, along with Predoctoral Fellow Bethany Tietjen and Postdoc Abay Yimere worked with the Woodwell Climate Research Center to conduct climate risk analysis and policy analysis on climate impacts and responses in two African inland cities: Addis Ababa (Ethiopia) and [Kampala (Uganda).](#) We focused on three climate change variables:

precipitation, flooding and extreme heat. One of our strongest findings, [as outlined in a recent journal article](#), is that existing city climate adaptation plans do not incorporate the needs and experiences of migrants and informal settlement dwellers, who are particularly vulnerable to climate change and who also play a role in exacerbating environmental challenges in cities. The few city plans that have been developed are narrow with a focus on engineering-based solutions rather than more holistic approaches including nature- and behavioral change-based solutions. Others have not gone beyond the planning stage, with little in terms of actual implementation.

Abay Yimere and Linus Mofor, Senior Environmental Affairs Officer at the UN Economic Commission for Africa, attend the Africa Climate Summit in Kenya.

Energy transition in Indonesia

Agus Sari is leading research on the regional socio-economic implications of phasing out coal in Indonesia and the country's prospects for a just energy transition. He is also working with CPL researchers on another paper investigating critical minerals in global supply chains. Indonesia houses the largest known nickel reserves in the world, and with increased demand from abroad, the country needs to respond to global energy transitions as well as social and environmental challenges.

Agus Sari, CEO of Landscape Indonesia, a CPL research partner institution, with Kelly Sims Gallagher.

Climate finance in Africa

Postdoctoral Scholar (now research consultant) **Abay Yimere** delivered a speech at the workshop, "Towards a Green and Integrated Battery and Electric Vehicle Value Chain: Partnerships and Innovative Financing," with DRC-Zambia and UNECA (November 2023). Abay has also been working to establish one of Africa's first think tanks on climate policy, tentatively called the African Climate Group.

Luisa Sierra, Sara Rosales Laverty, Erika Ortiz, and Marisol Rivera in Mexico City at the Iniciativa Climática de México.
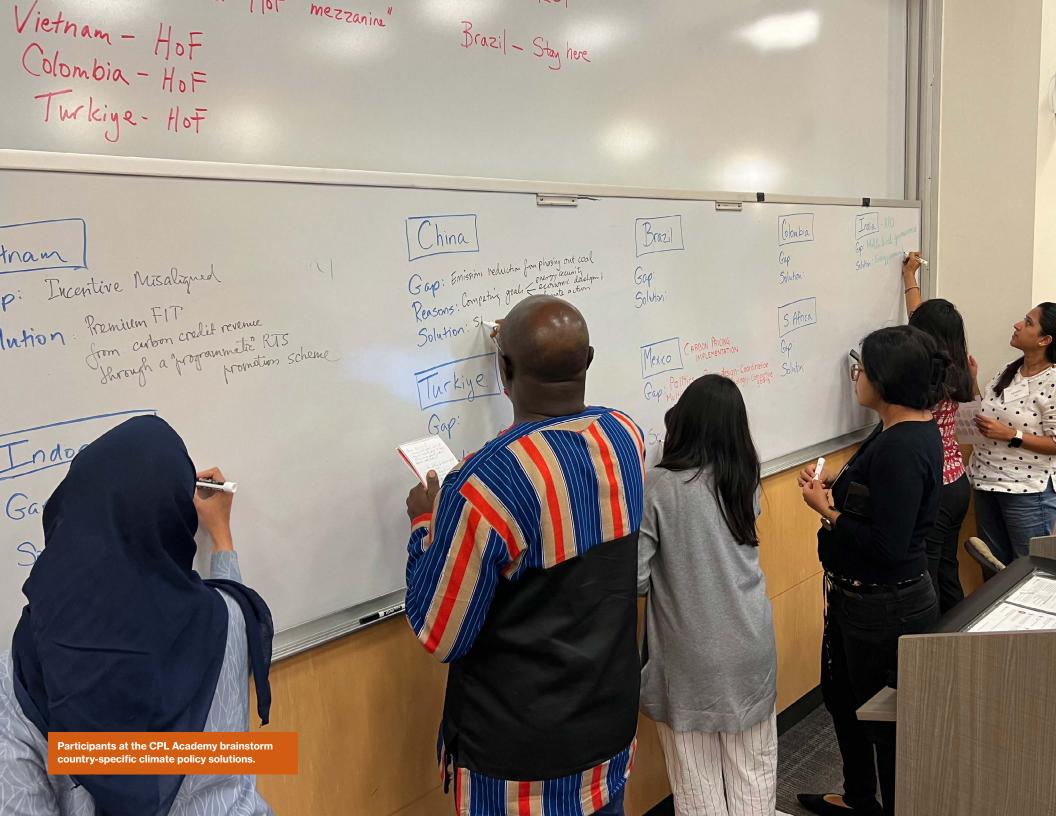
Climate and energy in Mexico

In April 2024, **Kelly Sims Gallagher** met with government officials at the Ministry of Foreign Affairs in Mexico as well as with the energy advisor of Mexico's president-elect. She provided insights from our Raising Ambition project, conducted jointly with research partner Iniciativa Climática de México.

| Directors' Note | News and People Notes | **Research Updates** | COP28 in Dubai | Climate Policy Lab Academy | Publication Highlights | Student Success | Finances in Review | CIERP 2023–24 Year In Review |

PAGE 9

Participants at the CPL Academy brainstorm country-specific climate policy solutions.

COP28 IN DUBAI

COP28 was an important opportunity for the CPL team to work directly with research collaborators, meet with policymakers, and present our research.

Thanks to generous gifts from friends of CIERP, the Center helped a number of students fund their travel to COP28.

MALD students Alyssa Scheiner and Selena Wallace with U.S. Senator Ed Markey.

This past year at COP28, faculty, staff, and researchers participated in more than a dozen events and met with government officials from Brazil, Colombia, China, Ethiopia, the United States, the European Union, India, and Indonesia, and research partners from all of these places plus Mexico and Türkiye.

Our team members were quoted in numerous high profile news outlets. Gallagher was interviewed by NPR, BBC, Politico, The Guardian, and Axios. Climate Policy Lab doctoral and postdoctoral fellows published pre-COP op-eds around the world in Animal Politico (Zdenka Myslikova), Joy Online (Kwame Ababio), Diplomatic Times (Seth Owusu-Mante), Rapler (faculty affiliate Alvin Camba), adp LIVE (Tarun Gopalakrishnan), and The Conversation (Kate Chi and Fletcher faculty Maulik Jagnani). CPL Senior Fellow and former White House Climate Advisor Gina McCarthy was interviewed by CNN and The Financial

Times. Gallagher spoke on eight panels, where she presented recent research and insights, including new papers on jobs and decarbonization (with Soyoung Oh, in Oxford Review of Economic Policy) and green industrialization policy (with Easwaran Narassimhan and Zdenka Myslikova in Environmental Research Letters). One of these panels was an official UNFCCC side event co-organized with the Potsdam Institute (PIK) and Centre for Policy Research.

In preparation for COP28, Mieke van der Wansem and Melissa McCracken each provided four lectures for the Global Environment Facility (GEF) virtual executive education program — Mieke on the mutual gains approach to negotiation and Melissa on conflict resolution theory and application.

A full round-up of events, media, and photos is available on our COP28 information page.

Ümit Sahin, Amy Myers Jaffe, and Saidou Abdoulaye Sy evaluate Türkiye's climate action plan at the Climate Policy Lab Academy.

CLIMATE POLICY LAB ACADEMY

Our Climate Policy Lab Academy continues to be an important venue for shared learning and informed discussions and comparisons on climate policy gaps, implementation gaps, carbon pricing, adaptation, industrial policy, and many other topics top of mind for climate policy experts and policymakers in our partner countries. We gather senior policymakers and researchers from our ten major emerging economy partner countries annually to allow them to share knowledge and experience about how to reconcile climate policy and development in their countries. We also introduce new analytical tools and do topical deep-dives each year. We bring back the best of the best as alumni mentors, and over time have cultivated a number of highly productive relationships. Participants from over ten countries (and in particular our strategic Raising Ambition countries) attended our third annual Climate Policy Lab Academy in June 2024. This year, we introduced a new focus on identifying and addressing implementation gaps as well as focusing on alignment and misalignment of policy. The curriculum included a combination of lectures, case studies, exercises, and group discussions to provide lessons learned from recent climate policy successes and failures. Returning participants from 2023 shared lessons learned and everyone explored ways to further develop plans to support their governments on national climate policy analysis. Participants will be reaching out to each other for mutual support and collaboration on current and new research projects going forward.

Directors' Note	News and People Notes	Research Updates	COP28 in Dubai	**Climate Policy Lab Academy**	Publication Highlights	Student Success	Finances in Review	CIERP 2023–24 Year In Review

PAGE 13

PUBLICATION HIGHLIGHTS: LOW CARBON TRANSITION

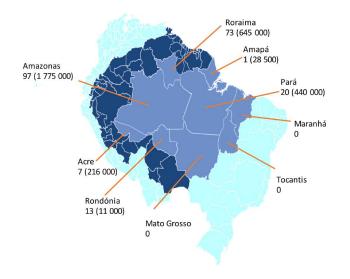A recent paper on **job creation and decarbonization** by Kelly Sims Gallagher and Soyoung Oh explores whether economic viability is the key to achieve deep decarbonization or net zero emissions. The hypothesis tested is that popular support for decarbonization policies is conditional upon most people's belief that their economic well-being will improve, or at least not suffer with these policies. While GDP growth is the typical metric for economic health, a more useful socio-economic indicator for gauging the political viability of climate policies may be job creation. Specifically, the paper reviews the existing evidence about whether climate policies are more successful in achieving deep decarbonization in the long run if policymakers include job creation as well as emissions reductions when designing and implementing climate policies, because, to date, climate policymakers have often focused on emissions reductions as the primary criterion for policy choice. While empirical evidence remains thin, we find that job creation in low-carbon industries appears to lead to greater political support for the climate policies that contribute to decarbonization, but employment factors are not always the most salient factor in a voter's decision. The review points to several policy implications, including the need to assess competitive advantage, develop plans, design and execute industrial policy, and develop a low-carbon workforce.

The choice of energy systems and their design in and around the Amazon biome implicate the future status of all of the following – climate, the ecological systems, and the cultural diversity which Amerindian cultures represent. A recent paper by Nora Hampl on **energy systems for Brazil's Amazon** elaborates on a conceptual link between the broadly-agreed upon commitment to conserve the Amazon and renewable energy as a tool helping to achieve it. Relevant policies and regulatory provisions were evaluated against the proposed policy solutions and universal energy access programs. This research context was chosen to expound upon the potential benefits of distributed generation using renewable energy, and to link them to the following objectives – to (i) improve health and prospects for self-determined wellbeing at the community level, (ii) re-think the ecological footprint of local and regional energy infrastructure, and (iii) support climate and sustainability agendas primarily at local and regional levels.

▲ **Brazil's states that contain the Amazon, with the number of isolated energy systems, and populations served (in parentheses).**

We set out to investigate whether **U.S. clean energy deployment policies** are reaching geographically diverse localities and supporting firms led by women as well as men. In a discussion paper, we share and analyze a unique data set that considers the criteria of diversity and inclusion to evaluate the level of success of the U.S. DOE loan guarantee program and the SBIR-STTR program. We find that there appears to be observational-level data showing a discrepancy between DOE's equity and inclusion goals and its success in achieving a diverse recipient community. Evidence supports that policies that promote a higher level of diversity

in innovation loans and grants to businesses could be material to achieving an internationally competitive U.S. clean ETIS. We shared this and accompanying figures directly with Tony Reames and Michael Reiner at the U.S. Department of Energy and Amy Jaffe briefed them on the paper. The work of the paper led us to propose a practicum class with Tony Reames's office at DOE. Fletcher Master in Global Affairs (MGA) students completed this practicum and went on to work in the field.

Narassimhan, E., Myslikova, Z., and Gallagher, K. S. (2023). "Strategies for green industrial and innovation policy – an analysis of policy alignment, misalignment, and realignment around dominant designs in the EV sector," *Environmental Research Letters*.

Gallagher, K. S. (May/June 2024). "Climate Policy is Working: Double Down on What's Succeeding Instead of Despairing Over What's Not." *Foreign Affairs*.

Gallagher, K. S. (July/August 2023). "The Right Way for America and China to Cooperate on Climate: How the Two Powers Can Jointly Aid Poorer Countries." *Foreign Affairs*.

A consensus study was published by the National Academies committee on which Kelly Sims Gallagher served: "Accelerating Decarbonization in the United States: Technology, Policy, and Societal Dimensions," (2023).

Tietjen, B. and Gopalakrishnan, T. (2023). Loss and Damage Funding in the UN Climate Negotiations: From Dialogue to Reality. *Environment: Science and Policy for Sustainable Development,* 65(3), 18–28.

PHOTO: BANGOLAND / SHUTTERSTOCK.COM

"Preparing for Novel Extreme Weather Events in the U.S." explores local adaptation and disaster preparedness policies in the United States. In a policy brief and research article, CPL researchers identified critical policy gaps and created an inventory of 508 local adaptation and resilience policies in five U.S. communities participating in the Red Cross' Community Adaptation Program. Going forward, the methods developed in this research will be used to identify adaptation policy gaps in other national and local contexts.

INTERNATIONAL COOPERATION

DEVELOPMENT ECONOMICS

Shared Waters Lab

Turgul, A., McCracken, M., Schmeier, S., Rosenblum, Z. H., de Silva, L., and Wolf, A. T. (2024). Reflections on transboundary water conflict and cooperation trends. *Water International,* 49(3–4), 274–288.

Turgul, A., Rosenblum, Z. H., McCracken, M., Schmeier, S., and Wolf, A. T. (2023). Can Water Help Quench the Flames of Hostility? How Shared Waters Can Promote Dialogue During Conflict. *SAIS Review of International Affairs,* 43(2), 69–94.

BRICS and Rising Power Alliances

The Rising Power Alliances Project under the direction of Dr. Mihaela Papa, which received federal funding from the Minerva Research Initiative from 2018 to 2022, continues to produce well-received outputs, including 3 peer-reviewed journal articles, 20+ interviews with media, 6 talks, and 4 policy pieces in the past year. A few are highlighted below:

Han, Z. and Papa, M. (2024). Leadership and performance in informal institutions: the internal dynamics of BRICS. *Contemporary Politics, 30*(1), 87-107.

Papa, M., Han, Z., and O'Donnell, F. (2023). The dynamics of informal institutions and counter-hegemony: introducing a BRICS Convergence Index. *European Journal of International Relations, 29*(4), 960-989.

Papa, M. and Shankar Chaturvedi, R. (2023). "BRICS and questions about the global order," *East Asia Forum Quarterly,* Volume 15, Issue 4.

Technology and Development

Aker, J., Sawyer, M., and Berry, J. (June 2024). "Making sense of the shapes: What do we know about literacy learning in adulthood?" *Economics of Education Review,* Volume 100.

Aker, J. and Cariolle, J. (2023). "Mobile Phones and Development in Africa: Does the Evidence Meet the Hype?" *Palgrave Studies in Agricultural Economics and Food Policy.*

Harvesting the Rain in the Sahel

Many agricultural and environmental technologies require upfront investments. This may deter adoption, particularly in settings characterized by information liquidity and credit constraints. Professor Jenny Aker's research tests for these barriers to the adoption of an agricultural technique that helps address land degradation in Niger. She co-authored a recent paper finding little evidence that liquidity or credit constraints deter adoption: instead, providing farmers with training increases the share of adopters by over 90 percentage points. Conditional or unconditional cash transfers have no additional effect. Adoption increases agricultural output and reduces land turnover in the longer term. In the study setting, training provides both specific technical knowledge and addresses behavioral constraints.

Children's Use of Time

In a recently published article on "[Children's Sleep and Human Capital Production](#)," Maulik Jagnani uses exogenous variation in sleep induced by sunset time to present the first human capital estimates of (i) the effects of child sleep from the developing world and (ii) the long-run effects of child sleep in any context. Some of the findings were that: (1) Later sunset reduces children's sleep: when the sun sets later, children go to bed later but fail to compensate by waking up later; (2) Sleep-deprived children study less and increase nap time and indoor leisure activities; (3) Short-run sleep loss decreases children's test scores; and (4) Chronic sleep deficits translate into fewer years of education and lower primary and middle school completion rates among school-age children.

Another study uses the two waves of the India Time Use Survey to document a 30% increase in daily learning time for children:

Gibson, M., Jagnani, M. and Pullabhotla, H.K. (2023), "[Changes in Children's Time Use, India 1998–2019](#)", Hamermesh, D.S. and Polachek, S.W. (Ed.) Time Use in Economics (*Research in Labor Economics*, Vol. 51), Emerald Publishing Limited, Leeds, pp. 55-88.
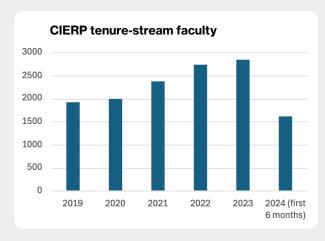

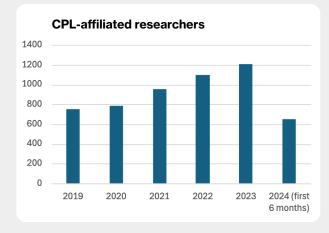We are proud that the reach of our scholarly output continues to grow year by year.

Together, CIERP tenure-stream faculty accumulated a record high of 2,844 new citations of their scholarly publications in 2023. The dissemination of the Climate Policy Lab's published articles has grown by 10–20% each year, with over 1,200 citations in 2023.

The number of citations is just one way to measure impact, but an increasing number of citations reflects both our productivity and the usefulness of our research to promoting further knowledge development in the field.

Check out our [publication page](#), subscribe to our [mailing list](#), or follow us on social media to get all of our publication updates

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Combined citations per year

CIERP tenure-stream faculty

(Bar chart showing citations by year: 2019 ≈ 1,900; 2020 ≈ 2,000; 2021 ≈ 2,375; 2022 ≈ 2,725; 2023 ≈ 2,844; 2024 (first 6 months) ≈ 1,600. Y-axis from 0 to 3000.)

CPL-affiliated researchers

(Bar chart showing researchers by year: 2019 ≈ 750; 2020 ≈ 790; 2021 ≈ 950; 2022 ≈ 1,100; 2023 ≈ 1,200; 2024 (first 6 months) ≈ 650. Y-axis from 0 to 1400.)

Participants discuss their respective countries' policy implementation gaps at the Climate Policy Lab Academy.

STUDENT SUCCESS

Aarushi Aggarwal, MALD 2024, Climate Policy Lab Scholar

While at Fletcher, Aarushi Aggarwal worked as a Research Assistant for a CPL project on the risk of extreme events and climate adaptation preparedness in the United States. She attended the 2023 UN Water Conference and the COP28 climate negotiation conference and served as Editor-in-Chief for the Winter 2024 edition of The Fletcher Forum of World Affairs.

"CIERP has supported me through my Fletcher journey since before I arrived in Medford in the fall of 2022, helping me make seemingly difficult choices about which courses to take and how to navigate the climate and environment field as a young professional. Through CIERP's support, opportunities became tangible for me, at Fletcher and beyond. A research assistantship with the Center fostered my growing interest in climate adaptation. CIERP's sponsorship enabled me to undertake a summer internship with the African Wildlife Foundation in Kenya, a UNFCCC internship through the school year, and attend the 2023 UN Water Conference in New York and COP28 in Dubai. In addition to shaping my capstone, these experiences allowed me to experience the complexities of developing climate policies, at the local and international level. As I look to build a career in climate finance, I am grateful to CIERP staff and faculty for their consistent support of my academic and professional choices."

Hengrui Liu, PhD 2024

As part of his dissertation, Hengrui Liu conducted an analysis of how private Chinese EV firms became so successful in leapfrogging other firms (both Chinese state-owned and global) to dominate the global marketplace. Through in-depth interviews at the firm level in China, Dr. Liu found that the private firms focused relentlessly on creating strong value chains, building for the domestic and global market, and partnering with local governments to support their growth. This is the first major study on the development of the Chinese EV industry. He is now a Postdoctoral Scholar with Climate Policy Lab.

"As a PhD student in economics and public policy focusing on energy technology innovation, energy transition, and climate policy, CIERP has always been a home to me. I have been fortunate to be a part of CIERP since I enrolled as a PhD student. Over the past few years, I have benefited tremendously from CIERP's faculty, friends, events, and research resources. CIERP has been vital in shaping my research interests and broadening my knowledge by offering invaluable opportunities to engage in timely research, participate in discussions, and attend international conferences and events like the UNFCCC Conference of Parties. CIERP has been instrumental in bridging my economic training with urgent climate issues, which is essential for developing practical skills to solve emerging climate challenges."
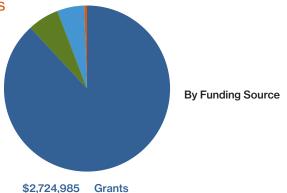
Expenditures

By Funding Source

$2,724,985	Grants
$186,327	Gifts
$165,541	Fletcher School Support
$11,991	University Support
$3,088,844	**Total**

By Category

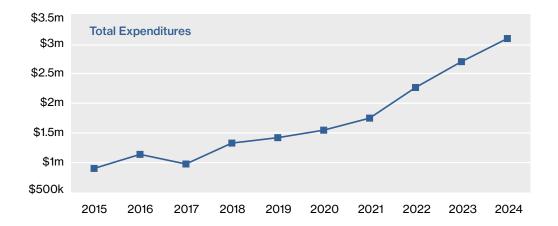|	
$1,344,188	Faculty, Postdoc & Staff Compensation
$262,223	Student Compensation
$253,990	Student Scholarships
$481,837	Purchased Services
$262,110	Travel
$49,869	Materials & Supplies
$5,000	Faculty Seed Funding
$429,627	Overhead
$3,088,844	**Total**

Annual Center Growth (2015–2024)

Total Expenditures

Active Grants

▶ We gratefully acknowledge our <u>current grant funders on our website.</u>

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Center for International Environment and Resource Policy

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