



**CIERP**  
Center for International  
Environment & Resource Policy



# Year in Review

July 2018-June 2019



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



THE FLETCHER SCHOOL  
OF LAW AND DIPLOMACY

TUFTS UNIVERSITY

Directors' Note

Over the past 12 months, CIERP has continued to forge new partnerships, embark on new research, and see the impact of our work. We said a fond farewell at the beginning of this year to our Associate Director Penny Storey, who relocated from Boston to Ireland. In the meantime, we are pleased to announce Jillian DeMair's promotion to Assistant Director for Research Administration, as well as to welcome Sara Rosales, who joined the team as CIERP's able new Program Coordinator in the fall.

The CIERP team secured 4 new grants this year, and welcomed renewals from 3 existing funders. The renewed funding for Kelly's Climate Policy Lab provides both general support for the lab, as well as support for the continuation of our research on China's overseas investments via the Belt and Road Initiative. Jenny secured a new grant to fund research into the adoption of hermetically-sealed PICS storage bags, which could allow farmers to sell crops that spoil easily, such as cowpeas, months after the harvest in Niger. Another one of our new grants is from the federally-funded Minerva Initiative, supporting research led by Prof. Mihaela Papa into the nature and the reach of rising power alliances strategically seeking to reform the present global order. The Climate Policy Lab received its first unsolicited grant this year, an encouraging result of our growing engagement. This funding has allowed us to begin a new project on the measurement and verification of greenhouse gas emissions in collaboration with Woods Hole Research Center (WHRC). The partnership with WHRC promises to be the basis for several research and capacity-building training programs to help developing economies identify ways to inventory and thereby reduce their emissions. We were able to begin planning this work in India and Ethiopia with scoping trips in spring 2019 to both countries.

We are delighted with the success our students have achieved through their studies here at Fletcher and beyond. This year marked the launch of a new student publication series on Innovation in Energy, edited by Prof. Barbara Kates-Garnick, and we continue to support students in securing and funding internships as well as conference and research travel. This year, thanks to alumni support and research grants, CIERP was able to



support 35 students through research assistantships and teaching assistantships, as well as for internships, professional development, and research travel. We are always happy to hear how our alums have translated their time at Fletcher into career growth, as highlighted towards the end of this report.

These successes and the many more that you will read about in this report exemplify the ways in which we continue translating our research into policy impact for a low-carbon future.

*Kelly Sims Gallagher*

Kelly Sims Gallagher  
CIERP Co-Director  
Professor of Energy & Environmental Policy

*Jenny C. Aker*

Jenny C. Aker  
CIERP Co-Director  
Professor of Development Economics

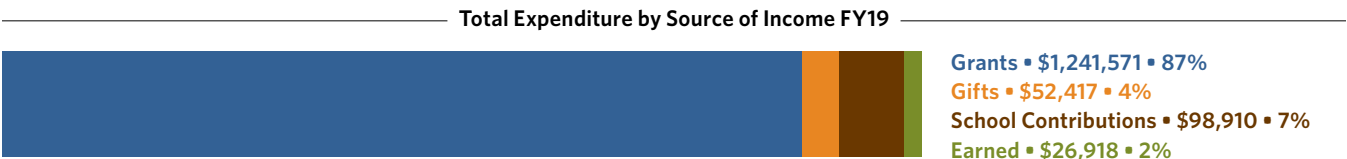
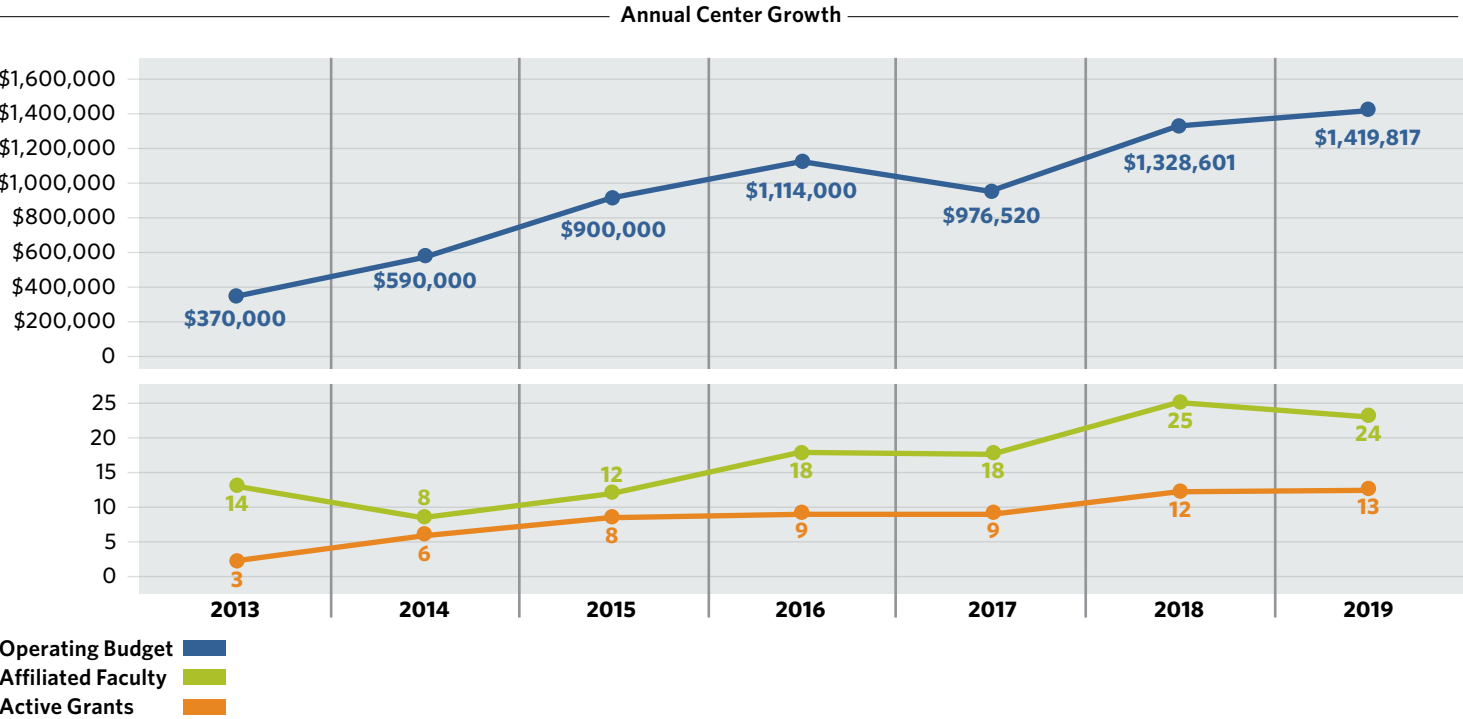
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Financial Update

CIERP's operating budget grew to \$1,419,817 in fiscal year 2019, and the Center's grant-funded activities also reached a new high, representing 87% of that budget. We again generated Executive Education income this year through an in-house training program customized to the needs of the Chinese Ministry of Ecology and

Environment. For the second year in a row, we were able to secure significant gift funding specifically designated for Climate Policy Lab research. Other generous gifts to CIERP went towards supporting our students in three main areas: internships, student-run events, and travel scholarships for experiential learning.

34 individual donors made gifts totaling \$24,465 to CIERP this year. We would like to extend a special thanks to these donors, many of whom are IERP alums, for the generous support that allows us to continue to grow CIERP's activities and offerings.



Grant funders in 2018-2019:

BP International, Ltd., William and Flora Hewlett Foundation, Minerva Research Initiative: U.S. Department of Defense, Breakthrough Energy Coalition, Agricultural Technology Adoption Initiative (ATAI), Economic & Social Research Council (ESRC), Bill and Melinda Gates Foundation, ClimateWorks, Rockefeller Brothers Fund, United Nations Development Programme, Casey & Family Foundation

Research-dedicated individual gifts in 2018-2019:

Chris Kaneb

Unrestricted gifts in 2018-2019:

Michael S. Baskin, Melisa Lai-Becker, Sean M. Becker, Douglas R. Carpenter, Charles C. Chester, Christi E. Electris, Hannah T. Fairbank, Anthony Fitzpatrick, Amanda J. Formica, Kelly Sims Gallagher, Kevin P. Gallagher, Marc B. Garnick, John P. Harper, Jonathan A. Hempton, Edward L. Hoyt, Sarnia H. Hoyt, Eric. B. Katz, Barbara A. Kates-Garnick, Allen B. Macomber, Geraldine Macomber, Lesley J. Pories, Qi Qi, Julia P. Radice, Sara Rosales, Allison R. Siegel, Jonathan R. Siegel, Brandon Smithwood, Shinsuke Tanaka, Lisa Tessier, Sebastian Uribe Correa, Mieke J. van der Wansem, Igor Veytskin, Robin G. White

To support a CIERP research program, contribute to student-centered activities, or to fund a summer internship, please contact Kate Ryan, Senior Director of Development and Alumni Relations, at 617.627.2720 or kathleen.ryan@tufts.edu or Jillian DeMair, CIERP Assistant Director, at 617.627.2778 or jillian.demair@tufts.edu



# CIERP's Reach in 2018-2019



## Research

We have continued our engagement in regions around the world, as displayed on the map below.



## Research

- **\$3,414,224** in new or renewed research funding secured for the next 3 years
- **4** new research grants
- **3** grant renewals from existing funders

## Students

- **173** students took IERP classes
- **40** first- and second-year Master's students with IERP as their field of study
- **35** students received financial support from CIERP as RAs (12), TAs (5), doctoral fellowships (4), for travel (14), or for internships (6)
- **20** Master's theses supervised by CIERP faculty
- **16** post-graduation jobs secured with CIERP's assistance
- **14** additional students were helped to secure internships

## Outreach

- **4,089** visitors to the CIERP website
- **2,020** visitors to the Climate Policy Lab website
- **1,012** Twitter followers
- **770** Facebook likes
- **44** media mentions and appearances
- **31** events

- **Field Research**
- **Government Engagement**
- **Both**





## Research Focus: Climate Policy Lab Update



The Climate Policy Lab remains committed to using empirical data and analytical rigor to determine which climate policies work, which don't, and why. We have recently completed a new strategy and will be concentrating our work in 3 countries (China, Ethiopia, and India) and 7 climate policy areas:

**1. Climate policy design and implementation:** CPL has worked with the governments of China, Mexico, Haiti, Ethiopia, Papua New Guinea, Uganda, Chile, and Samoa. In addition, CPL has conducted research in Indonesia, India, Bangladesh, Vietnam, Brazil, South Africa, the US, and Germany.

**2. Carbon pricing:** There are two main types of carbon pricing: emissions trading systems (ETS) and carbon taxes. CPL researchers have evaluated both types of policies (and hybrids of the two) in several publications.

**3. Clean energy innovation:** CPL is tracking investments in energy innovation in the United States and most of the major emerging economies, including China, India, Mexico, and Brazil, to determine what factors are key in motivating energy technology innovation.

**4. Measurement, baselines, and verification of GHG emissions:** CPL is constructing a basket of indicators that can be used by any government that wishes to know their baseline, where they need to improve, or to demonstrate how well their policies worked.

**5. Mobilization of green finance:** We have examined domestic policies, flows in international climate finance, and also how countries can best attract climate finance through institutions such as national climate funds. We also examine how international development finance affects climate outcomes.

**6. Green industrialization policy:** In India, Ethiopia, South Africa, and China, we study the role of government in transitioning to a low-carbon future in developing countries.

**7. Synergies among mitigation, adaptation, disaster risk reduction, and development:** We are identifying effective policies to promote synergies and to also clarify tradeoffs.

## Research Focus: Niger, Jordan, Liberia, and Malawi

### Niger

In 2018/2019, with support from a grant from DFID-ESRC, Professor Jenny Aker's research team collaborated with the Ministry of Education to implement research on the use of mobile phone technology and learning in Niger. This involved a series of meetings with the Ministry, working with local school directors and the Ministry to develop registries, working with a research firm partner (Sahel Consulting) to arrange for calls to teachers, and data collection. Initial results showed that the calls did indeed improve teacher and school director attendance. Additional research is planned with an international NGO (Catholic Relief Services) in 2019/2020.

In 2018/2019, with support from ATAI, the research team (Jenny Aker and Kelsey Jack, now at UCSB) worked with the Ministry of Environment in Zinder to implement research on the adoption of rainwater

harvesting techniques (demi-lunes) in Niger. The bulk of the interventions were conducted in early 2018 (January – May), with data collection in May. In December/January and again in May 2019, the team conducted household surveys, finding that simple training was effective in increasing adoption and improving production. The results were disseminated with our research partner in Niger, and future dissemination events are planned for 2019/2020.

In 2018/2019, with support from ATAI, the research team (Jenny Aker and Brian Dillon of Cornell) worked with Sahel Consulting group to plan for research on the adoption of cowpea storage bags in Niger.

### Jordan

In 2018/2019, in collaboration with researchers at UNICEF-Innocenti, the research team assessed the impact of the withdrawal of a cash transfer program that

supports Syrian refugees in Jordan, with the primary objective of sending children to school. After significant design work with UNICEF/Jordan, household and child surveys were conducted in February 2019, and initial results were presented to UNICEF and other governmental agencies and NGOs in June 2019.

### Liberia and Malawi

In 2018/2019, Jenny Aker collaborated with researchers at UC-Santa Cruz and other affiliated institutions on the evaluation of a cash transfer program on household well-being in Liberia and Malawi. Initial design visits were conducted in Liberia in August 2018, and design and data collection activities occurred over the course of December 2018, with cash transfers being disbursed between May and July. This is part of a multi-year program.

## Research Focus: China



CIERP Fellows Qi Qi, Easwaran Narassimhan, and Hengrui (Henry) Liu in Beijing.

CPL has a strong track record of work in China and continues to conduct research, inform policy, foster capacity building in China and host Chinese scholars at The Fletcher School.

- Kelly Sims Gallagher completed her book manuscript, *Titans of the Climate: Explaining Policy Process in the United States and China*, co-authored with Xiaowei Xuan, which was released in early 2019.
- Motivated by concerns about the climate implications of China's overseas investments, we completed a paper in 2018 that identifies and evaluates Chinese policies governing China's foreign direct investment and focuses particularly on how those policies influence environmental outcomes in recipient countries.
- We completed case studies in four recipient countries of China's overseas finance in South and Southeast Asia. Bringing researchers in this field together on October 4th and 5th, 2018, the Climate Policy Lab, jointly with the Global Development Policy Center at Boston University, hosted a workshop titled "Chinese Overseas Energy Investments: Implications for Climate and Development Policy." The workshop drew

international participants and was a great success in synthesizing policy-oriented research. It promises to serve as the impetus for further collaboration on related research. We are currently preparing to submit a paper consolidating the results of our case studies for peer-reviewed publication.

- We collaborated with Tsinghua University, with support from Breakthrough Energy Coalition, to convene a workshop on energy innovation in China in Beijing in October 2018.
- Building on previous research, we studied the empirical effectiveness of different policies to mobilize finance for climate-related objectives, examining the empirical performance of seven types of green finance policies through country cases studies. The results have been compiled into a report on "Green Finance Policy in Practice: A Review of the Evidence," which will be released as part of the CPL working paper series in the coming months.
- Postdoctoral Scholar Ping Huang worked with Kelly Sims Gallagher on a project undertaken with support from the Breakthrough Energy Coalition and in collaboration with Tsinghua University. The study used quantitative data and



Predoctoral Fellow Zdenka Myslikova, Professor Kelly Sims Gallagher, incoming Fletcher Dean Rachel Kyte, and Postdoctoral Scholar Ping Huang at Mission Innovation in Vancouver, May 2019.



Kelly Sims Gallagher presenting on Chinese overseas investments at COP24.

in-depth interviews on China's energy innovation investments to shed light on China's innovation priorities and capabilities in energy storage, smart grids, electric vehicles, and advanced building materials. The results were presented to the Breakthrough Energy Coalition and the Chinese government delegation at Mission Innovation in May 2019 and will be compiled into a scholarly journal article for peer-reviewed publication.

- Kelly Sims Gallagher attended the 4th Annual Mission Innovation Ministerial in Vancouver in May 2019 with Postdoctoral Scholar Ping Huang and Predoctoral Research Fellow Zdenka Myslikova, where they presented on research conducted on China's energy innovation landscape to the Breakthrough Energy team, and met with the new Deputy Secretary of Energy for the U.S. and representatives from the International Energy Agency, World Resources Institute, Regulatory Assistance Project, and others.
- Kelly Sims Gallagher was a co-author on a 2019 CCICED (China Council for International Cooperation on Environment and Development) Special Policy Study, "Global Climate Governance and China's Role."



## Research Focus: India



- In March 2019, CPL travelled to Delhi and Andhra Pradesh, India, together with scientists from our partner institution Woods Hole Research Center. The goals of the trip were to begin establishing research partnerships focused on green growth strategies, green finance, and climate policy, as well as planning potential training and exchange programs. We were able to begin planning collaboration with institutions such as the Centre for Policy Research (CPR) and the Council on Energy, Environment, and Water (CEEW). A site visit allowed us to learn about the Zero Budget Natural Farming (ZBNF) experiment in Andhra Pradesh and to begin planning research around measuring the benefits of this experiment.



Professor Kelly Sims Gallagher and predoctoral students Rishikesh Bhandary and Easwaran Narassimhan visit with Nagesh Kumar, Director and Head of the South and South-West Asia office at United Nations ESCAP in India.



Woods Hole Research Center Vice President for Strategy and Advancement, Alison Smart, and Professor Kelly Sims Gallagher pose with local farmers for International Women's Day.

## Research Focus: Haiti

Haiti received funding from the Green Climate Fund (GCF) for Readiness and Preparatory Support that has allowed them to engage in a process of identifying their climate priorities and developing a country programme of climate investments. As part of a partnership between UNDP and the Climate Policy Lab, CPL provided analytical support to Haiti in the identification of its climate investment priorities, focusing on alignment with the Sustainable Development Goals (SDGs) and government policies and plans from across different ministries, as well as synergies between mitigation and adaptation. Our key findings were:

- Current financial assistance for energy and climate-related projects is concentrated in just three of Haiti's

twenty-three articulated priorities for combatting climate change: food security, renewables, and integrated water resource management. In addition, disaster risk reduction receives significant funding, which is indirectly related to climate change. The concentration of resources and projects in these four categories means that other priorities appear to be relatively neglected.

- There are many opportunities for Haiti to achieve its targets for the SDGs and its climate goals at the same time. A strong case can be made that investments in climate action will help to achieve many of the SDGs, as investing in climate action also means investing

directly in the implementation of many SDGs.

- CPL helped to develop Haiti's Country Programme to the GCF, which is considered to be a living document. Thus, this first version of the Country Programme (CP) is intended to provide strategic guidance for upcoming project proposals to the GCF, but it should be updated periodically. This will allow an adjustment of the CP to changes in new developments in economic circumstances; new information on adaptation and mitigation needs, priorities and targets; and new information on changing viability or costs of various adaptation and mitigation measures and options.

## Other Research Highlights

- As policy impact can be difficult to measure, we were especially delighted to receive the good news that our paper, "Carbon pricing in practice: a review of existing emissions trading systems," was the most downloaded paper published by *Climate Policy* in 2018 by a wide margin, with over 7,575 views and counting as of June 2019. A broader paper reviewing taxes and ETS systems was recently published in the *Duke Environmental Law & Policy Forum*.
- Kelly Sims Gallagher was listed in the top 10% of authors on the open-access publishing site SSRN by total new downloads within the last 12 months.
- CPL's research was used as background material for J.P. Morgan's Energy Outlook 2019: "Mountains and Molehills: Achievements and Distractions on the Road to Decarbonization."
- In May 2019, Kelly Sims Gallagher gave a briefing on Chinese investment in Asia to the staff of Senator Edward Markey, who is a ranking member of the Subcommittee on East Asia, The Pacific, and International Cybersecurity Policy, one of

the seven subcommittees of the United States Senate Committee on Foreign Relations.

- Jonathan Greenacre, CIERP Research Associate and Hitachi Faculty Fellow, has been studying the safeguarding of customer's funds placed at non-bank payment providers. These providers include phone companies providing mobile money, such as Safaricom in Kenya, and other non-bank firms, such as Zoono in Sub-Saharan Africa. The research is funded by the Bill and Melinda Gates Foundation with the goal of supporting financial inclusion in eight key countries. To date, draft country studies on Indonesia, Nigeria, Bangladesh, Kenya, and Tanzania have been completed.
- CIERP received funding for the U.S. Rising Power Alliances Project from the U.S. Department of Defense's Minerva Initiative. It is a multi-year project, analyzing the changing nature and definition of all alliances and coalitions, with a particular emphasis on the BRICS countries (Brazil, Russia, India, China, and

South Africa), and their efforts to reform the system of global governance. The core research team includes CIERP co-director Kelly Sims Gallagher, Adjunct Assistant Professor Mihaela Papa, postdoctoral scholar Zhen (Arc) Han, and researcher Christopher Williams, Ph.D.

- In 2018-2019, the Climate Policy Lab took the lead on running a university-wide "Climate and Energy Working Group," which is part of Tufts University's Research and Scholarship Strategic Plan. The working group hosted meetings, guest lectures, and faculty dinners with 4 prominent researchers in the field from across the United States; held a retreat for the working group's professors, who work on climate and energy in areas such as engineering, economics, biology, agriculture, and nutrition; and submitted a proposal for an additional 3 years of funding. The recently confirmed funding will help grow this new Tufts-wide climate initiative, foster transdisciplinary research collaboration, and create new funding streams for interdisciplinary research.



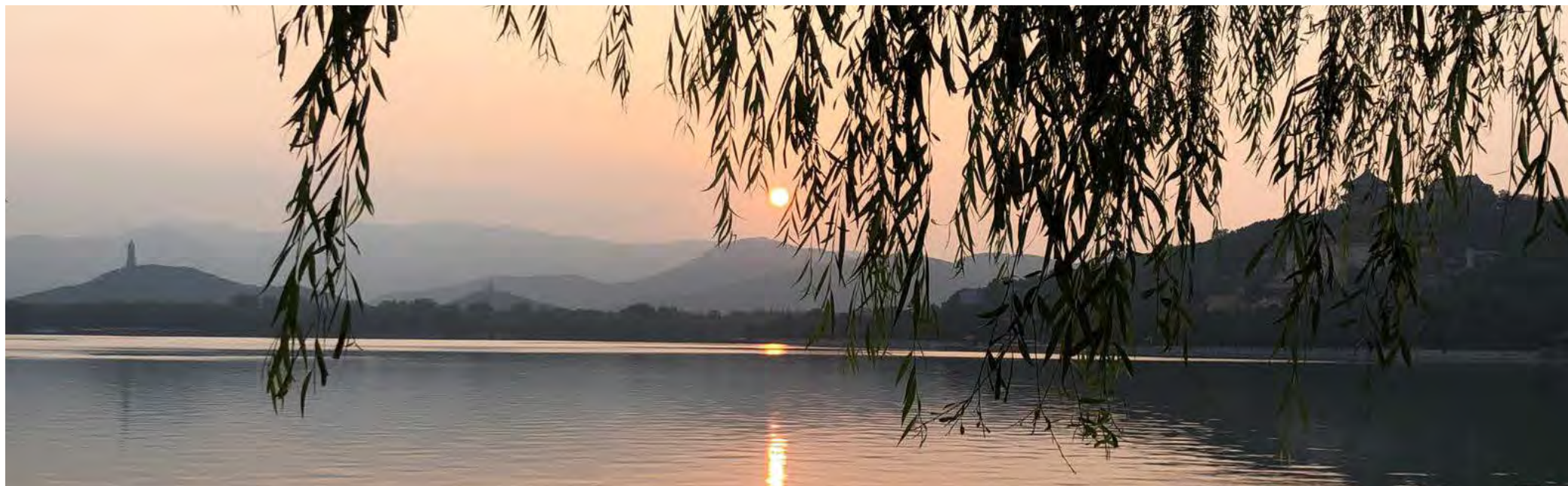
CIERP collaborator Dr. Arunabha Ghosh of the Council on Energy, Environment, and Water (CEEW) holding a pomelo while visiting a farm in India.



Professor Kelly Sims Gallagher with Usha, an organic produce entrepreneur in India.



# CIERP Engagement at Home and Abroad



Elin Lerum Boasson, Associate Professor at the Department for Political Science, University of Oslo, discussing renewable energy policy in Europe.



Rishikesh Bhandary, Predoctoral Fellow, presenting his research at a CIERP research seminar.



Kelly Sims Gallagher moderating the 2019 Tyler Prize Laureate Lecture in San Francisco, California.



Kelly Sims Gallagher with U.S. Rep. Bradley Byrne (R-AL) at the Aspen Institute Congressional Program, August 2018.

- Over 2018–2019, we hosted a total of 8 lunchtime CIERP Research Seminars in our ongoing series, with guests from various external organizations as well as our own faculty and fellows.
- We hosted or co-sponsored talks at The Fletcher School by a number of other guests, including Robin Chase, Peter Corkeron, Gillian Davies, Gary Dirks, Bill McKibben, Granger Morgan, Todd Moss, Paul O’Connell, Rebecca Ray, Marcy Reed, Satya Tripathi, and Catherine Wolfram.
- Kelly Sims Gallagher continued to serve on the Executive Committee of The Tyler Prize for Environmental Achievement, and

she was selected to introduce the 2018 laureates Dr. Paul Falkowski and Dr. James J. McCarthy. In 2019, Kelly was selected to moderate the lecture panel with the laureates, Dr. Warren Washington and Dr. Michael Mann. Kelly was also featured on the Sea Change radio show with Dr. Washington.

- In August 2018, Kelly Sims Gallagher participated in the Aspen Institute Congressional Program on Energy Policy Challenges for a Secure North America where she engaged in intensive discussions with both Republican and Democratic members of Congress (see photo on p. 11).

- Kelly Sims Gallagher attended the California Global Climate Action Summit in September 2018, where she moderated a roundtable on China’s Green and Low Carbon Development hosted by Energy Foundation China, shared our research with policymakers, and met with current and prospective funders. Professor Gallagher had the opportunity to engage in direct dialogue with China’s top climate envoy Xie Zhenhua. Subsequently, Xie Zhenhua gave a speech acknowledging that China needs to do better to green the BRI, and that China’s domestic policies are inconsistent with its international

policies, which was the main finding from our recent discussion paper entitled “Policies Governing China’s Overseas Development Finance.” Xie Zhenhua’s remarks in his press conference mirrored some of Professor Gallagher’s own language about avoiding “carbon lock-in” along the BRI, so we may have positively influenced his thinking.

- Because our international engagement involves frequent travel, the Climate Policy Lab began a practice this year of purchasing carbon offsets for all flights.



Tufts University students Grace Tamble, Helen Mizrach, Allison Meyer, and Eliot Martin at COP24 in Katowice, Poland, December 2018.



Grace Tamble, MALD '19, at the Tufts University booth at COP24.



CIERP Fellow Fang Zhang with Minister Xie Zhenhua at COP24.

## Engagement Highlight: COP24

In December 2018, members of the CPL team attended COP24 in Poland, where they participated in conversations on global climate change policy and action at side events and on panels. Kelly Sims Gallagher spoke at the EU Energy Day Thematic Session on “What Works in Innovation Policy,” as well as on the Greenovation Hub (GHUB) panel on “Promoting Green Investment of the BRI through Green Finance in line with the Paris Agreement,” where she discussed Chinese investment in coal. Predoctoral Fellow, Rishikesh Bhandary, spoke on the Japanese Pavilion panel “Building Resilient Economies by Improving Climate Risk Financing and Investments.” His talk focused on “Policies that Require Climate-Related Disclosures as a Means to Drive Climate Finance.” The team also met with numerous policymakers and collaborators, including Ethiopian Commissioner of Environment, Forest, and Climate Change, Professor Fekadu Beyene, and his delegation, and Patrick Verkooijen, CIERP Professor of Practice and CEO of the new Global Center on Adaptation. CIERP also provided support for two MALD students to attend the COP: Grace Tamble and Joshua Boyce.



## Events

### 31 Events

- 12 CIERP or Co-Sponsored Guest Speakers
- 8 CIERP Research Seminars
- 3 Student-focused events (Open House, WHRC Meet and Greet, Graduating Student Luncheon)
- 3 Executive Education Programs (Leadership Program in Advanced Diplomacy, Dutch Executives, Chinese Ministry)
- 2 Workshops (Chinese Overseas Investments Workshop with Boston University, Energy Innovation Workshop with Tsinghua University)
- 2 Ginn Library Book Talks (Kelly Sims Gallagher, Sulmaan Khan)
- 1 Launch Event (MOU signing with Ethiopian Ministry of Forest, Environment, and Climate Change)

### Event Spotlights



Dr. Catherine Wolfram, Cora Jane Flood Professor of Business Administration at the Haas School of Business, University of California, Berkeley, presented on energy poverty in Kenya and Ghana as a guest of the working group on Climate and Energy of Tufts University's Research and Scholarship Strategic Plan.



Dr. Granger Morgan, Hamerschlag University Professor of Engineering at Carnegie Mellon University, discussed the need for action to combat climate change as a guest of the working group on Climate and Energy of Tufts University's Research and Scholarship Strategic Plan. Professor Morgan outlined what can be done to limit future emissions and damages technically, if not politically.



Bill McKibben, environmentalist and founder of 350.org, visited Tufts University as part of the Tisch College Distinguished Speaker Series to discuss his career, for which he has been recognized as one of Foreign Policy's 100 most important global thinkers. Here he is with Professor Kelly Sims Gallagher and predoctoral fellows Rishikesh Bhandary and Easwaran Narassimhan after the event.



Dr. Gary Dirks, Director of the Julie Ann Wrigley Global Institute of Sustainability at Arizona State University, spoke with predoctoral fellow Zdenka Myslikova after his presentation on transitioning the energy system.



Marcy Reed, President of National Grid in Massachusetts, discussed her experience with the company and the future of the energy landscape at an Institute for Business in the Global Context (IBGC) and CIERP-sponsored lunchtime event.

## In the Media

The CIERP team has frequently been invited to give expert commentary on energy and environmental policy and was quoted this year by media outlets that included:

**EARTHER**

**VICE**

**sea change**  
covering the shift to sustainability  
SeaChangeRadio.com

**ENERGY REPORTERS**  
JOIN THE COMMUNITY

**FRANCE 24**

**CLEANTECH**  
Investing News

**POPULAR SCIENCE**

**THE CONVERSATION**

**The Washington Post**

**CHICAGO POLICY REVIEW**

**Caixin**

**E&E**

**REUTERS**

**TuftsNow**

**Bloomberg**

**The MIT Press**

**FT**

See our CIERP in the Media page for more:  
<https://sites.tufts.edu/cierp/about/in-the-media>

## Executive Education

We conducted several training programs for policymakers this year:

- **International Climate Policy**, a session taught by Kelly Sims Gallagher as part of The Fletcher School's Leadership Program in Advanced Diplomacy (LPAD), for 40 senior-level diplomats from the Indian Ministry of External Affairs, through the Indian Foreign Service Institute (September 2018, Medford, MA).
- **Stakeholder Engagement and Facilitative Leadership Workshop**, coordinated and co-taught by Mieke van der Wansem for Dutch executives working in large public-private organizations (October 2018, Medford, MA).
- **Training in Market-based Instruments for Pollution Control**, a two-day program including training sessions at The Fletcher School and local field trips to state government, organized by CIERP via the Environmental Defense Fund for a group of 12 members from the Ministry of Ecology and Environment of the People's Republic of China (June 2019, Medford, MA).



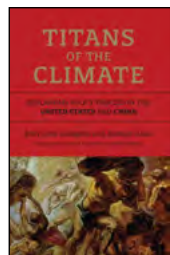
The MEE delegates meeting with Massachusetts State Senator Michael Barrett.



# Publications

## Books

### Book highlight:

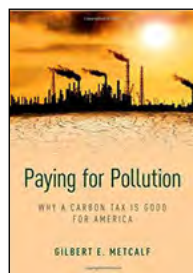


Gallagher, K.S., and Xuan, X. (2019). *Titans of the Climate: Explaining Policy Process in the United States and China*. MIT Press.



Kelly Sims Gallagher and co-author Xuan Xiaowei, from the Development Research Center of the State Council of China, in Washington, DC for briefings on their new book.

- *Titans of the Climate*, by Kelly Sims Gallagher and Xiaowei Xuan, explores how the planet's two largest greenhouse gas emitters navigate climate policy. The United States and China together account for a disproportionate 45 percent of global carbon dioxide emissions. In 2014, then-President Obama and Chinese President Xi Jinping announced complementary efforts to limit emissions, paving the way for the Paris Agreement. And yet, with President Trump's planned withdrawal from the Paris accords and Xi's consolidation of power—as well as mutual mistrust fueled by misunderstanding—the climate future is uncertain. This book examines how the planet's two largest greenhouse gas emitters develop and implement climate policy. Through dispassionate analysis, the authors aim to help readers understand the challenges, constraints, and opportunities in each country.
- Gallagher gave book talks at COP24 in Poland, the Centre for Policy Research in New Delhi, the University of Southern California, Occidental College's McKinnon Center for Global Affairs, and the National Committee on United States-China Relations (NCU-SCR) in New York City. On a trip to Washington, DC, she was joined by her co-author, Xiaowei Xuan. There, both presented at the Center for Strategic Studies and discussed the book and their professional experiences on the Center's podcast. Gallagher also attended briefings with House and Senate staffers alongside The Aspen Institute.
- The Fletcher School's Academic Council unanimously agreed to award Professor Gallagher this year's Faculty Research Prize for the book, and she will speak on behalf of the faculty at The Fletcher School's Convocation this September.



Metcalf, G.E. (2019). *Paying for Pollution: Why a Carbon Tax is Good for America*. Oxford University Press.

## Academic Papers



Kuhl, L. (2019). "Synergies between Climate Policies and the Sustainable Development Goals in Haiti." SSRN.



Huang, P. (2019). "The verticality of policy mixes for sustainability transitions: A case study of solar water heating in China." *Research Policy*.



Huang, P., and Li, P. (2019). "Politics of urban energy transitions: new energy vehicle (NEV) development in Shenzhen, China." *Environmental Politics*.



Gallagher, K.S., Perry, K., van der Wansem, M., Kuhl, L., and Frapaise, L. (2019). "Analysis of International Funding for Haiti's Climate Change Priorities" (Analyse des Fonds Internationaux pour les Priorités Relatives aux Changements Climatiques Haïtiennes). Available in French and English.

### Featured Academic Paper

Gallagher, K.S., Zhang, F., et.al. (2019). "Assessing the Policy gaps for achieving China's climate targets in the Paris Agreement." *Nature Communications*.



Under the Paris Agreement, China committed to a peak in emissions around 2030 and to increase the share of non-fossil fuels in primary energy consumption to 20% by 2030. To determine if current climate policies are sufficient to enable China to meet these targets, the researchers combined survey results from expert elicitation on China's energy and climate policies with a modelling approach to investigate their effectiveness. They found that China is likely to peak its emissions well in advance of 2030 and achieve its non-fossil target based on current policies, conditional on full and effective implementation of all current policies, successful conclusion of power-sector reform, and full implementation of a national emissions-trading system (ETS) for the power and additional major industrial sectors after 2020.

### Featured Academic Paper

Bhandary, R.R. (2018). "Opportunities and Challenges in International Cooperative Approaches of the Paris Agreement." *Carbon & Climate Law Review*, Volume 12, Issue 3.



In implementing their pledges under the Paris Agreement, countries may collaborate through international cooperative approaches identified in the Paris Agreement (Article 6). This article discusses the design features of Article 6 and identifies the key issues on the agenda as countries finalize the rulebook for the Paris Agreement in COP24 in Poland. Article 6 presents countries with an opportunity to learn from their experience in implementing the Kyoto Protocol's carbon markets. This article argues that, if designed carefully, Article 6 provisions can drive cost-effective mitigation, expand the scope of regulated emissions, and breathe new life into reducing emissions from deforestation and forest degradation (REDD+).

### Featured Academic Paper:

Narassimhan, E., and Johnson, C. (2018). "The role of demand-side incentives and charging infrastructure on plug-in electric vehicle adoption: analysis of US States." *Environmental Research Letters* 13(7)."



This article quantifies the influence of key policy incentives and enabling factors like charging infrastructure and receptive demographics on PEV adoption. The study focuses on three central questions. First, do consumers respond to certain types of state level vehicle purchase incentives? Second, does the density of public charging infrastructure increase PEV purchases? Third, does the impact of various factors differ for plug-in hybrid electric vehicles (PHEV), battery electric vehicles (BEV) and vehicle attributes within each category? The study found that tax incentives and charging infrastructure significantly influence per capita PEV purchases, particularly BEVs. Results indicate that early investments in charging infrastructure, particularly along highways; tax incentives targeting affordable BEVs and PHEVs with higher battery only range, and better reflection of the environmental cost of owning gasoline vehicles are likely to increase PEV adoption in the US.



Metcalf, G. E. (2019). "The distributional impacts of U.S. energy policy." *Energy Policy*, vol. 129: 926–29.



Haïtes, E., Gallagher, K.S., Narassimhan, E., et al. (2018). "Experience with Carbon Taxes and Greenhouse Gas Emissions Trading Systems." *Duke Environmental Law & Policy Forum*, pp. 109–18.

- A working version of this paper was recently listed on SSRN's top ten download list in the subcategory of energy policy, and has been downloaded over 200 times.



Mazzucato, M., Semieniuk, G., Gallagher, K.S., Huang, P. et al. (2018). "Bridging the gap: The role of innovation policy and market creation." *UN Environment Programme Emissions Gap Report 2018*, pp. 52–60.



Khan, S.W. (October 4, 2018). "Planning for Apocalypse: Environmental Change, Islamism, and China." *Hoover Institution*, Issue 1819.



### New Student Publication

Formica, A., Semeraro, M., and Menz, M. (2019). "Why the time is right to invest in non-(traditional) lithium ion grid-scale battery storage: An analysis of the U.S. battery storage market through a technological, financial, and political lens." *CIERP Innovation in Energy*, Issue 001.



# Partnerships



Goat market in Addis Ababa.



CPL team with Ethiopian Commissioner for Environment, Forest, and Climate Change Professor Fekadu along with Michael Northrop of Rockefeller Brothers Fund and Muluneh Hedeto of the Environment, Forest, and Climate Change Commission.

## Ethiopia

Following an MOU signed in October 2018, we are in discussions with the Environment, Forest, and Climate Change Commission of Ethiopia to continue our collaboration on climate policy implementation, related research, and training of professionals in Least Developed Countries (LDCs). We view Ethiopia as a strategic country engagement, and one that can help us reach the wider LDC group of countries. Ethiopia is a forerunner in Africa with its Climate Resilient Green Economy Strategy, its relatively progressive Nationally Determined



Ethiopian Minister Dr. Gemedo Dalle Tussie took the opportunity to speak with Fletcher students over lunch on the occasion of the MOU signing.



The Climate Policy Lab team meets with USAID and US Embassy officials for lunch in Addis Ababa.



Discussing MRV techniques with Environment, Forest, and Climate Change Commission staff.



Signing MOU with Ethiopia's Minister Gemedo Dalle. Dr. Steven Block, Academic Dean, Professor of International Economics, and Director of the Program on International Development, signed the MOU on behalf of The Fletcher School. Dr. Philip Duffy (far right) is President and Executive Director of Woods Hole Research Center, which will be an implementing partner of this partnership.

Contribution (NDC), and its determination to find a green growth economic model. Together with the Commission, we will focus on measurement of impact, with first steps being the development of metrics to measure climate policy and green growth performance.

Shortly after signing the MOU, we had the opportunity to share a booth with Ethiopia at COP24. Subsequently, CPL faculty, fellows, and staff traveled to Addis Ababa, Ethiopia in June 2019 to scope out a specific work

plan for supporting the implementation of Ethiopia's NDC, for clarifying research opportunities, and to plan the continuation of training programs CPL has already conducted in Ethiopia for the Climate Vulnerability Forum (CVF) and LDCs on topics including climate diplomacy and negotiation; measurement, reporting, and verification (MRV); and policy gap analysis. The CPL team was able to expand our understanding of Ethiopia's climate priorities through meetings with ministers, government officials, and researchers. We

met with Ethiopia's Foreign Minister, the State Minister of Energy together with staff from the Ministry of Water, Irrigation, and Energy, two State Ministers of Agriculture, as well as officials and staff from the following: the Ministry of Industry and Trade, the Ministry of Finance, the Ethiopian Environment and Forest Research Institute (EEFRI), the Ethiopian Investment Commission, Addis Ababa University, the World Resources Institute, the U.S. Embassy, and USAID.

## Other Collaborations

In addition to the formal partnerships discussed, we have recently collaborated on specific projects with the following international organizations, universities, research institutes, and not-for-profits:



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### WOODS HOLE RESEARCH CENTER

In February 2018, we signed a Memorandum of Understanding (MOU) with Woods Hole Research Center (WHRC) committing to work together on the design and study of climate policies that support the Paris agreement. We have subsequently collaborated by supporting WHRC research with Fletcher student interns, and we are in the process of planning future collaborative work in India. A scoping trip to India together with WHRC in March 2019 began to set research plans into motion.

At our October 2018 Meet-and-Greet with Woods Hole Research Center, Fletcher



Fletcher students hear from WHRC Research Scientist Brendan Rogers (far left) about his latest work.

students had the opportunity to rotate among different stations to meet WHRC scientists and learn about their research projects. Students also gathered information about research assistantships, capstone advising, and internships.



Through our partnership with CDP North America, Fletcher students have the opportunity to complete summer internships as Fellows at CDP's New York office, gaining practical knowledge of how to support investors, companies, and cities in building a sustainable economy.



Our partnership with the United Nations Development Programme has allowed us to engage in climate policy research projects, most recently with UNDP Haiti (see page 9), and to place Fletcher students in internships at UNDP offices around the world.



Through a partnership with the Dutch Ministry of Economic Affairs and Wageningen University and Research (WUR), we again hosted two visiting scholars from WUR this year.

Collaborations, continued from previous page



## Board



**Andy Darrell (F88-MALD)**, Chief of Strategy, Global Energy & Finance, Environmental Defense Fund



**John Harper (F85-MALD)**, Principal and Founder, Birch Tree Capital



**John Holdren**  
Teresa and John Heinz Professor of Environmental Policy, Harvard Kennedy School



**Ed Hoyt (F62-MALD, F64-PhD)**, Former director of Morgan Guaranty Trust in Central and South America and Singapore



**Barbara Kates-Garnick (F73-MA, F78-MALD, F85-PhD)**, Professor of Practice and Senior Research Fellow, Fletcher School



**Chris Wendell (F93-MALD)**, President, Volta Industries

## Faculty: Appointments are at The Fletcher School unless otherwise noted (continued on next page)



**Jenny Aker**, Center Co-Director, Associate Professor of Development Economics



**Steve Block**, Professor of International Economics & Academic Dean



**Ujjayant Chakravorty**, Professor of Economics, Tufts University



**Charles Chester**, Lecturer in Environmental Studies, Brandeis University



**Kyle Emerick**, Assistant Professor of Economics, Tufts University



**Kelly Sims Gallagher**, Center Co-Director, Director: Climate Policy Lab, Professor of Energy and Environmental Policy



**Jonathan Greenacre**, CIERP Research Associate, Hitachi Center Faculty Fellow.



**Timothy Griffin**, Associate Professor, Friedman School of Nutrition Science and Policy



**Eric Hines**, Professor of Practice, Tufts University Department of Civil and Environmental Engineering



**Faculty: Appointments are at The Fletcher School unless otherwise noted** *(continued from previous page)*


**Barbara Kates-Garnick**, Professor of Practice and Senior Research Fellow



**Sulmaan Khan**, Assistant Professor of International History and Chinese Foreign Relations



**Kevin Knobloch**, Senior Research Affiliate



**Laura Kuhl**, Assistant Professor of Public Policy and Urban Affairs and International Affairs, Northeastern University



**Rachel Kyte**, Professor of Practice



**Gilbert Metcalf**, Professor of Economics, Tufts University



**William Moomaw**, Professor Emeritus, Founder of CIERP, Center Director 1992-2013



**Colin Orians**, Professor of Biology, Tufts University



**Mihaela Papa**, Adjunct Assistant Professor of Sustainable Development and Global Governance



**Ann Rappaport** Senior Lecturer, Department of Urban and Environmental Policy, Tufts University



**Shinsuke Tanaka**, Assistant Professor of Economics



**Joel Trachtman**, Professor of International Law



**Patrick Verkooijen**, Non-Resident Professor of Practice of Sustainable Development Diplomacy



**Rocky Weitz**, Professor of Practice, Director of Fletcher Maritime Studies Program



**David Wirth**, Visiting Professor of International Law

**Fellows**


**Rishikesh Bhandary**, Predoctoral Fellow



**Hengrui Liu**, Junior Fellow



**Zdenka Myslikova**, Predoctoral Fellow



**Easwaran Narassimhan**, Predoctoral Fellow



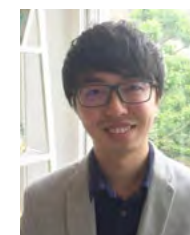
**Qi Qi**, Junior Fellow



**Fang Zhang**, Predoctoral Fellow & China Research Coordinator

**Postdoctoral Fellows**


**Zhen (Arc) Han**, China's role in rising global power alliances



**Ping Huang**, China's energy innovation landscape (through June 2019)



**Keston Perry**, Climate investments in Haiti (through November 2018)



**Jinliang Zhang**, Energy economics and forecasting in China (through July 2019)

**Staff**


**Mieke van der Wansem**, Associate Director, Educational Programs



**Jillian DeMair**, Assistant Director, Research Administration



**Sara Rosales**, Program Coordinator





The co-chairs of the CIERP Advisory Board hosted a graduation luncheon for students, May 2019.

Research Assistants

- Maria Burakovsky

Nicholas Cicchinelli

Scott Hoag

Zihao Liu

Maisa Mendonca Pereira Ferreira

Haylee Piao
- Neeraj Prasad

Aishwarya Ramani

Arthur Sanders Montadon

Devang Shah

Danny Tobin

John Zeleznak

Teaching Assistants

- Rishikesh Bhandary

Jonathan Gillis

Marina Ngoma

Megan Rounseville

Fang Zhang
- Sanne Kruid

Machteld Vergouw

Travel Scholarships

- Mark Benedetti

Joshua Boyce

Grace Tamble

Vanessa DiDomenico

Madhuri Mukherjee, Tommy Good, Frances Aderhold, Zikai Guo, Anya Jia

Iain Addleton

Juliette Devillard, Mara Menz, Ana Orians

Mohammad Uzair Akram
- Arctic Circle Assembly and CDP Green Infrastructure Investment Workshop

- UNFCCC Conference of the Parties (COP24)

- UNFCCC Conference of the Parties (COP24)

- Empowering Women in the Maritime Community Conference

- MBA Impact Investing Network & Training (MIINT) Competition

- Scottish Renewable Energy Conference

- New England Women in Energy and the Environment Awards Gala

- Research on sustainable growth of small and medium enterprises in Pakistan



Professor Gallagher's students in the midst of a climate negotiation simulation.

Internship Highlight



Limoto Wetlands in Uganda.

Summer 2018 Spotlight

- Danny Tobin served as a wetland data analyst intern during summer 2018 in the UNDP Project Management Unit for the Green Climate Fund project titled "Building Resilient Communities, Wetlands Ecosystems and Associated Catchments in Uganda." In that role, Danny split his time between the UNDP and Ministry of Water and Environment offices in Kampala. He supported setting up data management systems using ArcGIS and Python to enable monitoring and evaluation of ongoing and project-related interventions and to automate routine Ministry work flows, such as

visualization of the extent of degraded and intact wetlands in all of Uganda's districts. Throughout that time, Danny also interviewed 31 policymakers across 6 government agencies for his Master's thesis entitled "Climate Policy Integration: The Case of Uganda," which looked at Uganda's post-Paris Convention (2015) policies and institutional frameworks to fight climate change. Danny received the Edmund A. Gullion Prize at Fletcher's 2019 commencement ceremony, which is awarded to an outstanding second-year Fletcher student.

Alum Updates

**Zerin Osho, MALD '18:** After graduation I became the Special Advisor to the Executive Director of the UN Environment Programme, Erik Solheim. In April 2019, I helped launch the UN Environment 'Cool Coalition,' a program aimed at reducing climate pollutants, such as refrigerant gas used in ACs and refrigerators, while improving energy efficiency of cooling technologies. My everyday work of science-based policy making is a skill that I honed at The Fletcher School. A lot of my learning about how to stop climate change was thanks to Fletcher's encouragement of peer-based learning and access to professors of practice, particularly Professor Kates-Garnick.

I have also been developing a project on solar powered clean cold chains with the International Solar Alliance, set to launch by the Honorable Vice President of India, Shri Venkaiah Naidu this August. None of this would have been possible without CIERP; they funded my internships in Delhi and gave me access to a world-class network of professionals.

**Matthew Arnold, MALD '18:** I was initially based in Bangladesh and Papua New Guinea, working as a technical expert and project designer for climate change and biodiversity conservation projects funded by USAID. This was a great experience leveraging what I learned through my CPL internship with UNDP. The cross-cutting nature of my project design work also reminded me of lessons from Professor Khan's Historian's Art class - that human impacts on the natural world can lead to cascade effects that reverberate across continents.

Currently, I work at Enel Green power as an Innovation and Sustainability Analyst. To use terminology from Professor Gallagher's Innovation and Prosperity class: my job involves helping startup companies get through the valley of death by providing them with a platform to demonstrate and scale up their renewable energy technologies. I caught the innovation bug from Professor Gallagher and appreciate how her class attuned me to the barriers that new ideas often face, and how to overcome them.







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### Center for International Environment and Resource Policy

The Fletcher School, Tufts University  
160 Packard Avenue, Suite 509  
Medford, MA 02155

CIERP@tufts.edu  
+1.617.627.3079  
sites.tufts.edu/cierp  
@CIERP\_Fletcher