

BOSTON UNIVERSITY

Institute for Global Sustainability

ANNUAL REPORT | 2025



ADVANCING A RESILIENT FUTURE

**BOSTON
UNIVERSITY**

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Report produced by Laura Hurley and Alison Gold. Photos below (left) by Benjamin Sovacool, (center) by Rooted in Light Media, and (right) by Alison Gold.

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Letter from IGS Executive Leadership



BU President Melissa Gilliam met with IGS leadership and staff in January 2025. Photo by Cassandra Kennedy.

Dear IGS Community,

In its third year, the Institute for Global Sustainability launched major interdisciplinary research projects and continued to build a robust community of now 105 faculty from 13 schools and colleges across Boston University. While federal administration changes impacted two of our federal projects, we persisted in delivering on our mission of advancing a resilient future and shifted strategically to strengthen an already diversified funding base. President Gilliam's arrival at Boston University, including a special visit to IGS, generated inspiration to double down on our values and build convergent research designed for national and global impact.

Highlights of the year include:

- ❖ The Healey-Driscoll administration awarded IGS and partners \$5.7M for the Clean Energy & Environment Legacy Transition (CELT) Initiative to advance an equitable energy transition in Massachusetts, empower communities, and train the next generation of climate leaders.
- ❖ The National Science Foundation (NSF) awarded BU a \$3M Training Grant (NRT) for the ENERGIZE Program, a collaborative effort between IGS and the Rafik B. Hariri Center for Computing and Computational Science & Engineering, to train PhD students across disciplines in sustainable energy conversion and storage.
- ❖ Ongoing research projects focused on topics such as energy justice in offshore wind development, funded by the U.S. Department of Energy; vulnerabilities in renewable energy supply chains, funded by the Sloan Foundation; stable and

safer batteries, partially funded by NSF; energy efficiency programs in Massachusetts, funded by Eversource; sustainable AI infrastructure, funded by the Research Council of Norway; and disaster response and coastal zone hazards, funded by NSF.

- ❖ We continued to deepen our partnership with Schneider Electric on building decarbonization and other topics.

And since our start, we have provided hundreds of BU students with the opportunity to lead research through our Graduate Student Summer Fellows program and BU's Campus Climate Lab.

We're proud of our growing national and international engagement with organizations such as the Intergovernmental Panel on Climate Change (IPCC), the National Renewable Energy Laboratory (NREL), the National Academies of Sciences, Engineering, and Medicine (NASEM), the Sandia National Laboratories, and the European Research Council.

We hope you enjoy reading about this work in the pages that follow and look forward to connecting with everyone in the IGS community during another exciting year ahead.

Dr. Benjamin K. Sovacool
Director, IGS
Professor, Earth & Environment

Dr. Rebecca Pearl-Martinez
Executive Director, IGS

Highlights of 2024 – 2025

IGS BY THE NUMBERS



FY25

153

peer-reviewed journal articles by IGS leadership & core faculty

105

faculty affiliates

\$156K+

allocated in student funding

\$24.4M

research funding to IGS & partners to date



\$12.2M

of which was earned in FY25



100%

increase in social media engagements



8.7K

YouTube video views



28.3%

increase in total website users



5.9K

newsletter subscribers

Mission & Research



MISSION

The Boston University Institute for Global Sustainability (IGS) pioneers research to advance a sustainable and equitable future. Our focus on climate governance and sustainability transitions, energy systems of the future, and planetary and environmental health is grounded in equity and justice, robust data science, and real-world impact.

RESEARCH AREAS

Climate Governance and Sustainability Transitions

Projects include building decarbonization, climate disinformation, and energy visualizations.

Energy Systems of the Future

Projects include energy efficiency, energy transitions, advanced batteries and energy storage, data centers, electric vehicles, renewable energy supply chains, and offshore wind development.

Planetary and Environmental Health

Projects include indoor air quality and climate resilience in schools, city responses to extreme heat, health impacts of energy infrastructure, and disaster preparedness.

DISTINCTIVE APPROACHES



Equity & Justice



Robust Data Science



Real-World Impact

Research Highlights



Pictured from left: Massachusetts Lieutenant Governor Kim Driscoll; BU Principal Investigator and IGS Associate Director Emily Ryan; UMass Lowell Principal Investigator and Rist Institute for Sustainability and Energy Executive Director Ruairi O'Mahony; Secretary of the Massachusetts Executive Office of Energy and Environmental Affairs Rebecca Tepper; Massachusetts Department of Energy Resources Commissioner Elizabeth Mahony; BU Provost Gloria Waters; UMass Lowell Chancellor Julie Chen; UMass Lowell students from the Rist Institute; and UMass President Marty Meehan. Photo by the Governor's Office.

IGS Partners with Healey-Driscoll Administration and UMass Lowell to Advance Equitable Clean Energy in Massachusetts

This past year, the Healey-Driscoll Administration, UMass Lowell (UML), and IGS launched the **Clean Energy and Environment Legacy Transition (CELT) Initiative** to advance an equitable energy transition in Massachusetts, empower communities, and train the next generation of climate leaders. The effort is backed by \$5.7 million in funding from the Department of Energy Resources.

“This Initiative is a big step toward making our state’s clean energy and climate solutions more equitable,” Lieutenant Governor Kim Driscoll said at the CELT launch event. “We’re going to tap into expertise at our exceptional universities and use that innovative sphere with our industry partners to make sure everyone in our community benefits from a sustainable future.”

IGS oversees data analysis for CELT, drawing on BU’s leadership in data science. The goal is to make essential data accessible and usable for decision-making about clean energy transitions, leading to more equitable outcomes.

Three BU faculty, all associate directors on IGS’s leadership team, are spearheading work on CELT: **Emily Ryan** (College of Engineering associate professor), **Cutler Cleveland** (College of Arts & Sciences professor), and **Patricia Fabian** (School of Public Health associate professor). They are supported by Program Manager **Natalia Escobar-Pemberthy** and a team of BU postdoctoral scholars, research analysts, GIS professionals, and students from multiple disciplines. The team combines expertise in clean energy infrastructure, data science and visualization,

public policy and local government, community-engaged clean energy and environmental policies, and public health.

In spring 2025, the BU team rolled out the CELT Energy Transition Atlas, a new spatial data tool that allows community leaders, advocates, and decision-makers to easily view integrated data related to energy infrastructure, energy costs, electric vehicles, emissions, population demographics, and other major factors—all in one place on interactive maps of Massachusetts. New data resources based on visualizations, storytelling, and case studies will be announced later in 2025.

“This initiative is a big step toward making our state’s clean energy and climate solutions more equitable.”

- Lieutenant Governor Kim Driscoll

In addition, CELT’s fellowship opportunities offer further support by placing undergraduate and graduate students in municipalities and the Executive Office of Energy and Environmental Affairs’ Office of Energy Transformation. Two BU graduate students and a recent alumna are currently serving as fellows, gaining valuable career experience, helping local leaders expand clean energy opportunities, and interpreting complex data for decision-making.

Research Highlights

Case Studies: A Just Clean Energy Transition for Communities

Groundbreaking IGS case studies on **community and ecosystem vulnerabilities** in U.S. renewable energy supply chains—supported by the Sloan Foundation—have been published in six journals to date and turned into policy briefs. Some key research insights include:

California’s Solar Market Faces Seven Forms of Corruption—including “Sex for Solar”

An IGS study in ***Energy Strategy Reviews*** has revealed a dark side to the breakneck pace for solar investment, deployment, and adoption in California, taking a first-time look at patterns of public and private sector corruption in the state’s solar market. The research implicates the solar energy sector in numerous corruption practices and risks—including “sex for solar” favoritism in unfairly allocating government contracts or permits to project developers—which have adversely affected communities, policymaking and regulation, and siting decisions and planning.

“In this groundbreaking study, we find that efforts to accelerate solar infrastructure deployment in California end up contributing to a sobering array of corruption practices and risks. These include shocking abuses of power in the approval and licensing phases as well as the displacement of Indigenous groups, and also nefarious patterns of tax evasion or the falsification of information about solar projects,” says lead author and IGS Director **Benjamin Sovacool** (College of Arts & Sciences professor). “It’s a wake-up call that the solar industry cannot continue on its current trajectory of bad governance and bad behavior.”

*A version of this article, authored by Laura Hurley, originally appeared on the **IGS website** on June 4, 2025.*

Community Input is Critical to a Just Clean Energy Transition

Utility-scale solar energy projects in California deserts have excluded and unexpectedly harmed nearby rural communities, as illustrated by two IGS case studies. These findings were published in ***Geoforum*** and the ***Journal of Peasant Studies***, leading human geography journals.

In these studies, IGS co-authors **Alexander Dunlap** and **Benjamin Sovacool** point to the critical role of community input in achieving a just clean energy transition. They offer recommendations to empower residents and preserve ecosystems, including installing solar on existing infrastructure rather than undeveloped landscapes, bringing residents into the planning process, providing financial incentives, and integrating solar as part of a comprehensive set of solutions.

Overall, the research highlights the deepening of existing social injustices within the studied communities.

“Residents did not feel included as part of the planning processes in these major projects, which have transformed their daily lives,” said **Alexander Dunlap**, a postdoctoral fellow at IGS and lead author on the studies. “So far, the people living near these massive solar developments have suffered many negative consequences and no tangible benefits. That has to change.”

*A version of this article, authored by Alison Gold, originally appeared on the **IGS website** on November 15, 2024.*



Anti-solar signage near Desert Center, California, solar enclosure. Photo courtesy of the authors.



Solar farm enclosure in the southeastern California desert. Photo courtesy of the authors.

Research Highlights



ENERGIZE programming kicked off this spring. Photo by Jesse Ross.

A Major NSF Training Grant Supports Convergent Sustainable Energy Research and Education at BU

The BU **ENERGIZE Program** welcomed its inaugural cohort of National Science Foundation Research Trainees this year—thanks to a \$3 million, five-year collaborative award between IGS and the Rafik B. Hariri Center for Computing and Computational Science & Engineering. The program trains PhD students to develop new ideas in sustainable energy conversion and storage. ENERGIZE brings together resources in engineering, chemistry, computer science, and data sciences to provide Trainees with a comprehensive, interdisciplinary education in energy research. ENERGIZE is led by a group of BU faculty and staff, including several IGS affiliates: **Malika Jeffries-EL** (College of Arts & Sciences professor and IGS core faculty), **Emily Ryan** (College of Engineering associate professor and IGS associate director), and **Jesse Ross** (IGS).

“The cutting-edge technology research at BU along with the diverse expertise of IGS will provide students a unique education that would not be possible elsewhere.”

- IGS Associate Director Emily Ryan told [*The Brink*](#)

Research Highlights

With New Energy Storage Solutions, a Cleaner, Greener, Future

More Stable, Safer Batteries

To develop strategies for improving stability in advanced battery technologies, **Emily Ryan** (College of Engineering associate professor and IGS associate director) is **studying electrodeposition** — and how it produces stable or unstable interfaces — under different material and operating conditions. Next-generation lithium batteries (based on lithium metal) take advantage of the high chemical potential of lithium to produce high energy density. However, they also struggle with interface instability and safety concerns due to the high reactivity of lithium. Ryan is collaborating with experimental researchers at The Hebrew University of Jerusalem to understand the fundamental physical phenomena occurring at the interface of metal electrodes. This multi-year project is funded by the National Science Foundation. **Elyssa Penson**, a BU PhD student in Mechanical Engineering who is part of this project, presented her research at this spring's Electrochemical Society Meeting and is now an ENERGIZE Program Trainee.

Faster Charging, Better Batteries

A **two-year project** to enhance battery performance has evolved into an ongoing collaborative effort between the Lubner Group and the Werner Lab, led by **Sean Lubner** and **Joerg Werner** (College of Engineering assistant professors). The BU researchers, both IGS core faculty members, are building on their earlier battery sensing studies in **Advanced Materials** and **Joule** to design and test novel battery electrode structures that can be fast-charged — without compromising efficiency or durability. To achieve this, they have developed and automated a custom, advanced thermal wave sensing (TWS) system, enabling non-invasive real-time monitoring of battery health and performance. The researchers are now using the system and data collected to understand how lithium ions move through their architected electrode structures and identify bottlenecks, providing insights that would be otherwise difficult or costly to obtain. This project was kickstarted in 2023 with a Dean's Catalyst Award in the College of Engineering, which was co-sponsored by IGS.



Emily Ryan (College of Engineering) presented her research to the IGS community at this year's annual gathering. Photo by Rooted in Light Media.

Research Highlights

Ongoing Research Projects Showcase Breadth of Expertise

Energy Justice in Offshore Wind Energy

U.S. coastal communities poised to serve as regional hubs for the offshore wind industry on the East Coast are providing researchers with important insights into energy justice. With funding from the U.S. Department of Energy's Wind Energy Technologies Office, IGS has partnered with the University of Rhode Island, the University of Delaware, and local organizations in several port areas, including New Bedford, Massachusetts; New London, Connecticut; and Turner Station, Maryland.

Through this **offshore wind project**, the IGS research team conducted a global review of energy justice metrics. In collaboration with community partners, including the NAACP New London Branch and the Old Bedford Village Development Corp. in New Bedford, IGS also designed and led community workshops to identify energy justice indicators that can be used to measure the community effects of offshore wind energy development. President Biden's Bipartisan Infrastructure Law supported the project, and it was among 15 wind energy projects nationwide chosen by the Department of Energy for federal funding. It was also part of the Biden administration's Justice 40 Initiative, which aimed to decrease energy burden, increase clean energy jobs and economic development, and build energy democracy in disadvantaged communities. The IGS team included Executive Director **Rebecca Pearl-Martinez**, Director **Benjamin Sovacool**, and Postdoctoral Associate **Nellie Amosi**.

Pioneering Sustainable AI Infrastructure

The explosive growth of artificial intelligence (AI) over the past two years has thrust a new sustainability challenge to the forefront. Through the **Limits to Digitalization (L2D)** project, a \$1.1 million international collaboration between NTNU Social Research and BU, researchers have advanced the understanding of sustainable digital infrastructure by investigating the environmental implications of AI workloads and the data centers supporting them.

Over the past year, the research team has developed open-source tools that estimate both operational and embodied carbon emissions, helping identify environmental hotspots and inform strategies for mitigation. These tools also enable evaluation of real-time, region-aware workload management approaches, aiming to align AI computation with cleaner, more resilient energy systems. Ongoing work also extends these methods to U.S.-based data centers, integrating signals from electricity markets to balance emissions, energy costs, and grid stability. This systems-level approach supports more intelligent and adaptive deployment of AI workloads.

In parallel, the project examined the carbon accounting practices of major technology firms, revealing the limitations of current self-reported sustainability claims.

Leading BU's efforts are **Ayşe Coskun** (College of Engineering professor and IGS core faculty), IGS Director **Benjamin Sovacool** (College of Arts & Sciences professor), and **Can Hankendi**, a sustainable computing postdoctoral researcher at IGS.



New Bedford, MA community workshop team, pictured from left: Ruth Akorli, Shannon Howley, David Bidwell (Principal Investigator), Scott Schur, and Simona Trandafir, all from the University of Rhode Island, and Rebecca Pearl-Martinez (IGS).



Green AI Summit 2025 co-host Ayşe Coskun (College of Engineering) delivered closing remarks. Photo courtesy of the organizers.

Research Highlights



Study co-authors Michelle Amazeen and Arunima Krishna (College of Communication) presented on “Managing Climate Misperceptions in an Era of Content Confusion” at BU’s 1839 Society Reception. Photo by Ejae Lee.

Fighting Climate Disinformation

In the battle against climate disinformation, native advertising is a fierce foe. A study published in [*npj Climate Action*](#) led by BU researchers, in collaboration with Cambridge University colleagues, evaluates two promising tools to fight misleading native advertising campaigns put forth by big oil companies.

Many major news organizations now offer corporations the opportunity to pay for articles that mimic in tone and format the publication’s regular reported content.

“Because these ads appear on reputable, trusted news platforms, and are formatted like reported pieces, they often come across to readers as genuine journalism,” said the study’s lead author **Michelle Amazeen** (College of Communication associate professor and IGS core faculty). Amazeen is also the director of the Communication Research Center at the College of Communication.

The new study is the first to investigate how two mitigation strategies — disclosures and inoculations — may reduce climate misperceptions caused by exposure to native advertising from the fossil fuel industry.

This study is part of the [**Boston University Climate Disinformation Initiative**](#). It was jointly funded by IGS and BU’s Rafik B. Hariri Institute for Computing and Computational Science & Engineering.

A version of this article, authored by Alison Gold, originally appeared on the [IGS website](#) on March 4, 2025.



Advanced Studies of Coastal Zone Hazards graduate students visited Indonesia in the summer of 2025. Photo by Anindya Wirasatriya.

Improving Disaster Response & Resilience

Remote sensing technologies have proven highly effective in rapidly assessing damage after natural disasters, enabling timely and efficient response efforts. Through a joint U.S.-Japan project, computer/data science researchers from the University of California, Irvine, remote sensing experts from BU, and disaster science researchers from Tohoku University are collaborating to improve the accuracy of building and road damage mapping in urban areas. To achieve this, the researchers are creating a **virtual disaster city** to run hazard simulations and test a novel approach that integrates remote sensing data with advanced machine learning. For its part, the BU team is developing a conceptual framework to assess damage and recovery using satellite-image-based proxies, an effort led by **Magaly Koch** (College of Arts & Sciences research associate professor and IGS core faculty). This three-year, \$1 million project is funded by the National Science Foundation and the Japan Science and Technology Agency.

Researching Coastal Zone Hazards

In June, graduate students and professors from the U.S. and Indonesia—including participants from BU, Northern Arizona University, Diponegoro University, and Universitas Gadjah Mada—took part in a unique workshop to receive multidisciplinary training and gain hands-on laboratory and field experience in **coastal zone hazards research**. During their time in Indonesia, they spoke with communities affected by recurrent tidal flooding and visited some of the world’s largest coastal infrastructure projects. This workshop, jointly organized by BU under the leadership of **Magaly Koch** (College of Arts & Sciences research associate professor and IGS core faculty) and partnering institutions, is part of the National Science Foundation’s International Research Experiences for Students program.

Research Highlights

Visualizing Energy

Through weekly data stories, **Visualizing Energy** explores the economic, social, and environmental connections to our energy system. In 2024, this IGS-led initiative published its 150th article, marking a major milestone in its growing influence as a trusted source for information on the clean energy transition. Its content library includes over 400 dynamic, interactive visualizations that are freely available for download and reuse.

Notable topics include global gasoline prices, bank financing of clean energy, historical emissions of key greenhouse gases, and a series of data stories on methane done in collaboration with Spark Climate Solutions. BU students from various schools and colleges continue to drive content development.

In 2025, Visualizing Energy will upgrade its website significantly, improving the diversity and accessibility of its content. This will include an expansive new resource on the clean energy transition in Massachusetts, backed by a grant from the Commonwealth's Department of Energy Resources.

The continuing success of Visualizing Energy is thanks to new support from IGS board members **Mukesh Prasad** and **Chandni Prasad** (College of Arts & Sciences '93), as well as the Arnhold Foundation.

Cutler Cleveland (College of Arts & Sciences professor and IGS associate director) is the founder and director of Visualizing Energy.

Impacts of Energy Efficiency Programs

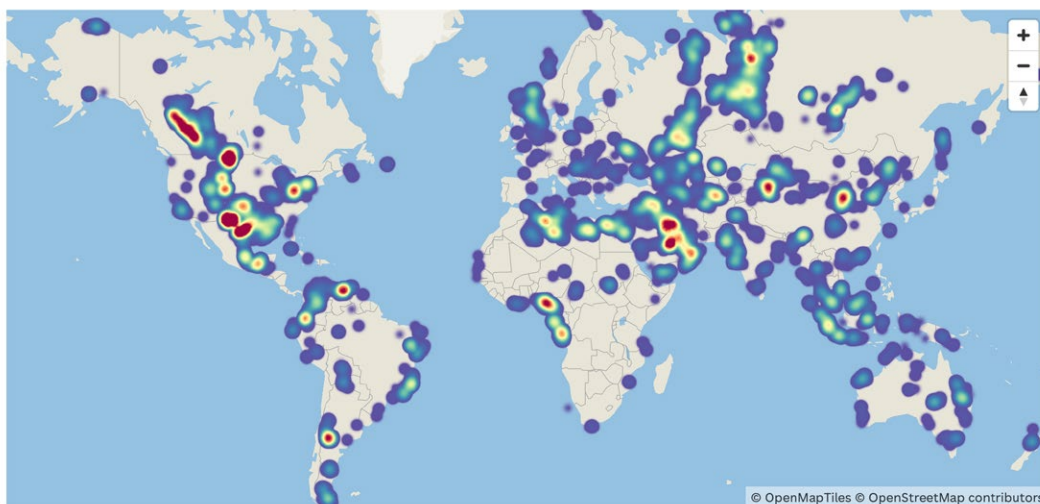
Understanding how well energy assistance programs provide affordable, efficient, and clean energy to everyone is essential to equitable energy transitions. The **Massachusetts Energy Equity Project** is IGS's data-driven assessment of benefits from three key programs: the Mass Save program, the federal Low Income Heating Assistance Program (LIHEAP), and the Weatherization Assistance Program. Preliminary results:

- ❖ The Mass Save gas and electric efficiency programs offer important health benefits by reducing harmful pollutants.
- ❖ These energy efficiency programs also provide significant economic benefits by lowering carbon dioxide emissions and helping to prevent climate change impacts, as shown by measuring the Social Cost of Carbon.
- ❖ A first-ever detailed analysis of LIHEAP participation rates across census tracts in Massachusetts reveals large discrepancies in the program's reach across the Commonwealth.

The project's faculty leaders are IGS Associate Directors **Cutler Cleveland** (College of Arts & Sciences professor) and **Patricia Fabian** (School of Public Health associate professor), working alongside **Robert Kaufmann** (College of Arts & Sciences professor and IGS core faculty). The research is supported by a grant from Eversource Energy, utilizing data from both Eversource and National Grid.

Cumulative global natural gas flaring, 2012-2023

This map is generated using 145,000 individual satellite observations. Warm colors (yellow, orange, red) indicate higher concentration of flares.



Source: World Bank
Boston University Institute for Global Sustainability | visualizingenergy.org | CC BY 4.0

visualizingEnergy

Sourced from the Visualizing Energy climate/emissions data story, ***Global natural gas flaring, 2012-2023***.

Research Highlights



Lucy Hutyra (College of Arts & Sciences) presents at the FRP symposium, *Climate, Biogeoscience, and Health*. Photo by Casey Demarsico.

Leading Climate and Health Research

Extreme heat events are becoming hotter, longer-lasting, more frequent, and increasingly dangerous for public health, as climate change intensifies. A multidisciplinary BU research team, led by **Gregory Wellenius** (School of Public Health professor) and **Lucy Hutyra** (College of Arts & Sciences distinguished professor), both IGS core faculty, has been working to advance BU's leadership in solution-oriented climate and health research while solidifying cross-campus collaboration. As part of this effort, which received **Focused Research Program** (FRP) funding, the team analyzed projections from more than 30 climate models to understand **the future impacts of extreme heat**. Their findings were presented at the American Geophysical Union Annual Meeting and published in ***Environmental Research: Health***. The FRP, which was cosponsored by IGS and BU's Rafik B. Hariri Institute for Computing and Computational Science & Engineering, has also served as a springboard for securing significant new funding.

Earlier this year, FRP researchers won a **\$3.2 million Climate Impacts Award** from Wellcome Trust to launch the Community Adaptations to City Heat (CATCH) Project. Led by **Patricia Fabian** (School of Public Health associate professor and IGS associate director), the interdisciplinary collaboration brings together researchers from across BU, including the Center for Climate and Health, the Initiative on Cities, the URBAN graduate studies program, and IGS, along with external collaborators. The team from BU includes School of Public Health faculty **Stephanie Ettinger de Cuba**, **Madeleine Scammell**, and **Gregory Wellenius**; College of Arts & Sciences faculty **Ian Sue Wing** and **Lucy Hutyra**; and IGS Executive Director **Rebecca Pearl-Martinez**, who is leading research translation for the project. The goals of the CATCH project are to map heat vulnerability of frontline communities in Boston, New Orleans, and Phoenix, as well as to connect actionable sustainability, housing, and energy burden programs and policies to mitigate heat health impacts across the U.S.



The Sustainable Schools Project research team led by Patricia Fabian (School of Public Health and IGS Associate Director).

Championing Clean Air and Comfortable Classrooms for Healthy Learning

A new study from researchers at the School of Public Health, conducted using data from Boston Public Schools' extensive network of air quality sensors, showed classroom air quality is often highly variable within school buildings, and even fluctuates greatly within the same classroom over the course of a year.

Educational infrastructure in the United States is aging. The average public-school building is nearly 50 years old. In Boston, the problem is even more pronounced—a quarter of the buildings in the Boston Public Schools (BPS) district are more than 100 years old. The condition of the city's aging classrooms attracted attention during the COVID-19 pandemic, when airborne transmission of the virus made effective ventilation a top priority for protecting the health of students and staff.

The absence of comprehensive heating, ventilation, and air conditioning (HVAC) systems in nearly a third of BPS buildings is not only an issue of comfort during the winter cold and summer heat, but also a matter of ensuring the circulation of safe, clean air. A growing body of research shows poor indoor air quality may negatively affect both the health and cognitive performance of students and staff.

In response to these concerns, researchers from the BU School of Public Health, led by **Patricia Fabian** (School of Public Health associate professor and an IGS associate director), have developed a novel, low-cost method for schools to measure ventilation efficiency in classrooms using real-time air quality data.

Their findings, part of the **Sustainable Schools Project**, were published in the journals ***Indoor Environments*** and ***The Lancet Regional Health: Americas***.

A version of this article, authored by Megan Jones, originally appeared in **SPH News** on April 25, 2025.

Sponsored Research

Over the past three years, IGS has led or contributed to **60** proposals; awarded projects and projects currently under review are listed below.

Project Leadership	Project Title	Funder	Status	Funding Period
Malika Jeffries-EL, Emily Ryan, David Coker, James Chapman, Brian Kulis	NRT: ENERGIZE: Interdisciplinary Graduate Program Integrating Data Science in Energy Materials Research	National Science Foundation	New in FY25	5 years
Emily Ryan, Cutler Cleveland, Patricia Fabian	Clean Energy & Environment Legacy Transition (CELT) Initiative	Commonwealth of Massachusetts	New in FY25	3 years
Benjamin Sovacool	Unveiling Perspectives for Next-Generation Industrial Automation Solutions	Schneider Electric USA, Inc.	New in FY25	1 year
Benjamin Sovacool	Beyond-Net-Zero Technologies: Exploring New Frontiers in Industrial Decarbonisation Research	American University of Sharjah	New in FY25	1 year
Benjamin Sovacool	Security, Resilience, and Justice Implications of Critical Materials for the Energy Transition	National Renewable Energy Laboratory	New in FY25	1 year
Patricia Fabian	Community Adaptations to City Heat (CATCH): Making Extreme Heat Impacts Visible in Frontline Communities in Boston, Phoenix, and New Orleans	Wellcome Trust	New in FY25	3 years
Ayse Coskun	REFLEX: A Twininfrastructure Resilience Pathway for Flexible Computing	Research Council of Norway	Under Review	3 years
Michelle Amazeen, Arunima Krishna	Recognizing and Responding to Climate Disinformation in the Global South	UNESCO	Under Review	2 years
Magaly Koch	Mapping Earthquake Damage and Ground Failure with Synthetic Aperture Radar and Optical Imagery Paired with Geospatial Data	Department of the Interior	Under Review	1 year
Rebecca Pearl-Martinez, Benjamin Sovacool	Energy Justice Indicators: Measuring Community Effects of Offshore Wind Energy Development	U.S. Department of Energy	Awarded	5 years
Cutler Cleveland	Access to Efficient, Affordable Household Energy Services in Massachusetts	Eversource Energy	Awarded	1 year
Benjamin Sovacool	Advancing Transformational Energy Justice Across the Renewable Energy Supply Chain	Sloan Foundation	Awarded	2 years
Benjamin Sovacool, Ayse Coskun	The Norwegian Data Center Sector as a Prism for Twin Transitions Challenges (L2D)	Research Council of Norway	Awarded	4 years
Emily Ryan	NSF:BSF: Physical-Chemical Stabilization of Electrodeposition through Fundamental Interfacial Studies	National Science Foundation	Awarded	3 years
Magaly Koch	NSF-JST: Enabling Human-Centered Digital Twins for Community Resilience	National Science Foundation	Awarded	3 years
Magaly Koch	IRES Track II: Multidisciplinary Coastal Zone Hazards Institutes - France, Japan, Indonesia	National Science Foundation	Awarded	3 years
Cutler Cleveland	Visualizing Energy	Gift-Funded	Awarded	Ongoing
Benjamin Sovacool	Accelerating Building Decarbonization: Addressing Non-Technical Barriers to Sustainable Building Transformations	Schneider Electric USA, Inc.	Awarded	2 years
Benjamin Sovacool, Ian Sue Wing	Low Carbon Buildings (Job and Labor Demand from Building Sector Decarbonization)	Schneider Electric USA, Inc.	Awarded	1 year
Ian Sue Wing	Global Energy Implications of the Ukraine Conflict (Ukraine Food and Energy Trade)	Schneider Electric USA, Inc.	Awarded	1 year
Gregory Wellenius	NIH Research Coordinating Center on Climate and Health (CAFE)	National Institutes of Health	Awarded	3 years

Leadership

Executive Leadership



Benjamin Sovacool
Director, IGS
Professor, Earth & Environment,
College of Arts & Sciences



Rebecca Pearl-Martinez
Executive Director, IGS

Faculty Associate Directors



Cutler Cleveland
Professor, Earth & Environment,
College of Arts & Sciences



M. Patricia Fabian
Associate Professor,
Environmental Health,
School of Public Health



Arunima Krishna
Associate Professor,
Mass Communication,
Advertising, and Public Relations
and Associate Dean, Faculty
Development, College of
Communication



Edward Riedl
John F. Smith Jr. Professor of
Management and Professor of
Accounting, Questrom School
of Business; Director, Business
IMPACT Lab

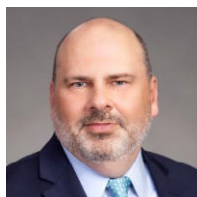


Emily Ryan
Associate Professor, Mechanical
Engineering and Materials
Science & Engineering,
College of Engineering



Henrik Selin
Professor, International
Relations, Frederick S. Pardee
School of Global Studies

Advisory Board



Ned Bartlett

Former Chief Compliance Officer,
Veolia North America



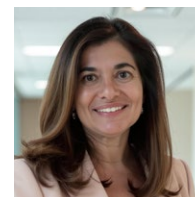
Megan Beauregard

General Counsel & Executive
Vice President, Triple Oak Power



Nathaniel Dalton

Co-Founder and CEO of Sora
Union
Co-Founder, Former President
and CEO of Affiliated Managers
Group



Julia Frayer

Partner, London Economics
International LLC



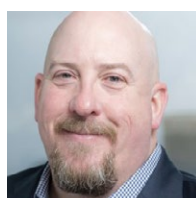
Cay Frehofer

Managing Partner, Emerald
Bridge Capital



Richard Golden

Founding Partner,
Venture Access Group



James Goudreau

Head of Global Environmental
Sustainability Operations, Takeda



Penni McLean-Conner

Executive Vice President,
Customer Experience and Energy
Strategy, Eversource Energy



Mukesh Prasad

Founder & Co-Managing Partner,
Innova Capital Partners;
Associate Professor of Clinical
Otorhinolaryngology, Weill
Cornell Medicine



Roberto Rosner

Head of Energy and Commodity
Management, Enel North
America, Inc.



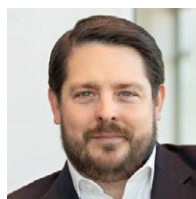
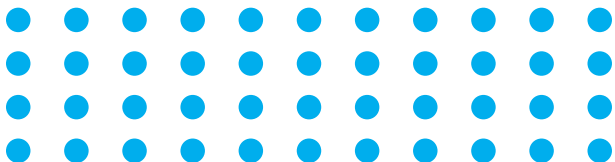
Sheldon Simon

Founder and CEO,
Third Gear Investments



Mayank Singhal

Vice Chairman and Managing
Director, PI Industries Ltd.



John Skrinar

Partner, Cresta Fund Management



James West

Senior Managing Director,
Evercore ISI

Staff



Nellie Amosi
Postdoctoral Associate



Serrie Anderson
Director of Finance and Administration



Alexander Dunlap
Research Scientist



Natalia Escobar-Pemberthy
CELT Program Manager



Alison Gold
Communications and Events Specialist



Can Hankendi
Postdoctoral Associate



Erin Heinz
Postdoctoral Associate



Laura Hurley
Marketing and Communications Director



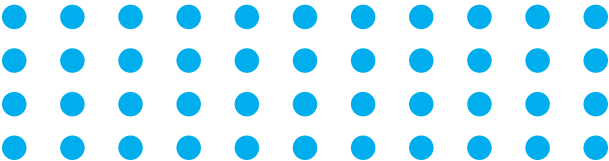
Jesse Ross
ENERGIZE Project Coordinator



Mariam Saadieh
Financial Administrator



IGS executive leadership and staff at the IGS office. Photo by Rooted in Light Media.



Visiting Researchers



Muhammad Asif

Visiting Researcher, IGS;
Professor of Architectural
Engineering & Construction
Management, King Fahd University
of Petroleum and Minerals,
Saudi Arabia



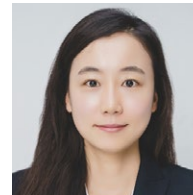
Thomas Kwan

Visiting Researcher, IGS;
Vice President Sustainability
Research, Schneider Electric



Johan Nordensvard

Visiting Researcher, IGS;
Associate Professor, INDEK, KTH
Royal Institute of Technology,
Sweden



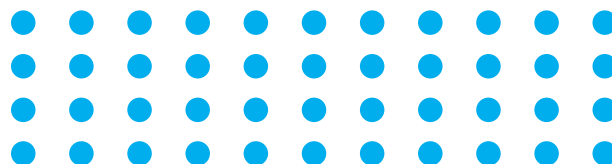
Hanees Ryu

Visiting Researcher, IGS
South Korea

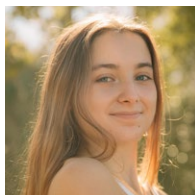


Adam Warren

Visiting Researcher, IGS;
Director, Accelerated
Deployment and Decision
Support Center, National
Renewable Energy Laboratory



Students



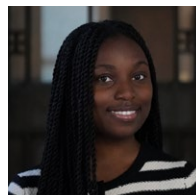
Hannah Connell

Communications Assistant



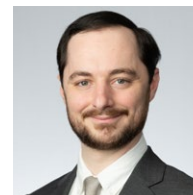
Susiena Choi

Office Assistant



Kennedy JeanPierre-Towa

Office Assistant



Ian Kieffer

Graduate Research Assistant



Elyssa Penson

Graduate Research Assistant



Chloe Rowen

Operations Assistant



Sofia Sanchez

Social Science Summer Writing
Intern



Emery Taylor

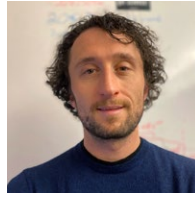
Campus Climate Lab
Program Coordinator

Core Faculty



Michelle Amazeen

Associate Professor of Mass Communication and Associate Dean of Research, College of Communication



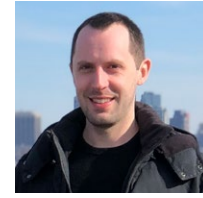
Jonathan Buonocore

Assistant Professor, Environmental Health, School of Public Health



Ayse Coskun

Professor, Electrical & Computer Engineering and interim Associate Dean of Research and Faculty Development, College of Engineering; Director, Center for Information and Systems Engineering



Jeffrey Geddes

Associate Professor, Earth & Environment, College of Arts & Sciences



Sucharita Gopal

Professor, Earth & Environment, College of Arts & Sciences



Lucy Hutyra

Distinguished Professor and Chair, Earth & Environment, College of Arts & Sciences



Malika Jeffries-EL

Professor, Chemistry, College of Arts & Sciences; Senior Associate Dean, Graduate School of Arts & Sciences



Mahesh Karra

Associate Professor, Global Development Policy, Frederick S. Pardee School of Global Studies



Les Kaufman

Professor, Biology, College of Arts & Sciences



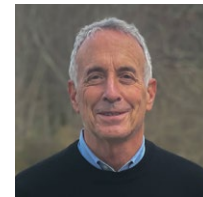
Robert Kaufmann

Professor, Earth & Environment, College of Arts & Sciences



Magaly Koch

Research Associate Professor, Earth & Environment, College of Arts & Sciences; Center for Remote Sensing



Laurence Kotlikoff

William Fairfield Warren Professor of Economics, College of Arts & Sciences



Jonathan Levy

Professor and Chair, Environmental Health, School of Public Health



Sean Lubner

Assistant Professor, Mechanical Engineering, College of Engineering



Nathan Phillips

Professor, Earth & Environment, College of Arts & Sciences



Justin Ren

Associate Professor and Chair, Operations & Technology Management, Questrom School of Business

Core Faculty



Madeleine Scammell
Professor, Environmental Health,
School of Public Health



Anne Short Gianotti
Associate Professor and
Associate Chair of Curriculum,
Earth & Environment,
College of Arts & Sciences



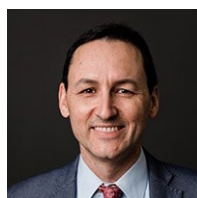
Ian Sue Wing
Professor, Earth & Environment,
College of Arts & Sciences



Pamela Templer
Distinguished Professor and
Chair of Biology,
College of Arts & Sciences



Remi Trudel
Associate Professor, Marketing,
Questrom School of Business



Gregory Wellenius
Professor, Environmental
Health, School of Public Health;
Director, Center for Climate &
Health



Joerg Werner
Assistant Professor,
Mechanical Engineering,
College of Engineering



Mary Willis
Assistant Professor,
Epidemiology,
School of Public Health



Pictured are (from left): Pamela Templer (College of Arts & Sciences), Emily Ryan (College of Engineering), and Malika Jeffries-EL (College of Arts & Sciences). Photo by Rooted in Light Media.



Pictured are (from left): Sucharita Gopal (College of Arts & Sciences), Rebecca Pearl-Martinez and Serrie Anderson (IGS), and Magaly Koch (College of Arts & Sciences). Photo by Laura Hurley.

Affiliated Faculty

COLLEGE OF ARTS & SCIENCES

Jennifer Bhatnagar, Associate Professor, Biology

Dennis Carlberg, Chief Sustainability Officer and Associate Vice President for Climate Action; Adjunct Assistant Professor, Earth & Environment

Deborah Carr, Distinguished Professor of Sociology; Director, Center for Innovation in Social Science

Eric Cueny, Assistant Professor, Chemistry

Sarah Davies, Associate Professor, Biology

David Demeritt, Professor, Earth & Environment

Ethan Deyle, Research Assistant Professor, Biology

Michael Dietze, Professor and Director of Undergraduate Studies, Earth & Environment

Bahar Erbas, Senior Lecturer, Economics

Sergio Fagherazzi, Professor, Earth & Environment

Mark Friedl, William Goodwin Aurelio Professor of Mathematics and Science, Earth & Environment; Director, Center for Remote Sensing

Robinson W. Fulweiler, Professor, Earth & Environment and Biology

Loretta Lees, Professor, Sociology; Faculty Director, Initiative on Cities

Dan Li, Associate Professor and Associate Chair of Faculty Actions, Earth & Environment

Christoph Nolte, Associate Professor, Earth & Environment

Richard Primack, Professor, Biology

Richard Reibstein, Senior Lecturer, Earth & Environment

Andrew Robichaud, Associate Professor and Director of Graduate Studies, History

Caterina Scaramelli, Senior Lecturer, Earth & Environment and Anthropology

Steven Schwartz, Assistant Professor, Anthropology

Benjamin Siegel, Associate Professor and Associate Department Chair, History

COLLEGE OF ENGINEERING

Soumendra Basu, Professor, Mechanical Engineering and Associate Division Head, Materials Science & Engineering

Michael Caramanis, Professor, Mechanical Engineering

Christos Cassandras, Distinguished Professor, Electrical & Computer Engineering and Head of the Division of Systems Engineering

Emiliano Dall'Anese, Associate Professor, Electrical & Computer Engineering

Chuanhua Duan, Associate Professor, Mechanical Engineering

Michael Gevelber, Research Associate Professor, Mechanical Engineering; Director, BU Campus Climate Lab

Srikanth Gopalan, Professor, Mechanical Engineering

Kenneth Lutchén, Professor, Biomedical Engineering; Senior Advisor to the President; Dean of Engineering, Emeritus

Malay Mazumder, Research Professor, Electrical & Computer Engineering

Uday Pal, Professor, Mechanical Engineering

Sahar Sharifzadeh, Associate Professor, Electrical & Computer Engineering

Andre Sharon, Professor, Materials Science & Engineering; Executive Director, Fraunhofer USA Center for Manufacturing Innovation

Muhammad Zaman, Howard Hughes Medical Institute Professor of Biomedical Engineering and Global Health and Vice Chair, Biomedical Engineering; Director, Center on Forced Displacement

SCHOOL OF PUBLIC HEALTH

Nina Brooks, Assistant Professor, Global Health

Stephanie Ettinger de Cuba, Research Associate Professor, Health Law, Policy & Management

Wendy Heiger-Bernays, Emerita Clinical Professor, Environmental Health

Patrick Kinney, Beverly Brown Professor of Urban Health, Environmental Health

Kipruto Kirwa, Assistant Professor, Environmental Health

Kevin Lane, Associate Professor, Environmental Health

Jessica Leibler, Associate Professor, Environmental Health

Amruta Nori-Sarma, Assistant Professor, Environmental Health

Marcia Pescador Jimenez, Associate Professor, Epidemiology

Monica Wang, Associate Professor, Community Health Sciences

Amelia Wesselink, Research Assistant Professor, Epidemiology

QUESTROM SCHOOL OF BUSINESS

Sarah Armitage, Assistant Professor, Markets, Public Policy, and Law

Marcus Bellamy, Associate Professor, Operations & Technology Management

Gordon Burtch, Allen and Kelli Questrom Professor, Information Systems

Jesse Chan, Assistant Professor, Accounting

Susan Fournier, Allen Questrom Professor, Marketing and Dean

Andrew King, Allen and Kelli Questrom Professor, Strategy & Innovation

Paul McManus, Master Lecturer, Strategy & Innovation

Maxime Sauzet, Assistant Professor, Finance

Richard Stuebi, Lecturer, Strategy & Innovation

FREDERICK S. PARDEE SCHOOL OF GLOBAL STUDIES

Rachel Brulé, Associate Professor, Global Development Policy

Kevin Gallagher, Professor, Global Development Policy; Director, Global Development Policy Center

Jonathan Greenacre, Assistant Professor, Global Development Policy

Tsitsi Musasike, Professor of the Practice, Global Development Policy Associate

COLLEGE OF COMMUNICATION

David Abel, Professor of the Practice, Journalism

Mariette DiChristina, Professor of the Practice and Dean

Eric Gordon, Professor of the Practice, Journalism; Director, Center on Media Innovation for Social Impact

Chris Wells, Professor, Emerging Media Studies

Brooke Williams, Associate Professor of the Practice, Computational Journalism

CHOBANIAN & AVEDISIAN SCHOOL OF MEDICINE

Anna Goldman, Assistant Professor, Medicine and Primary Care Physician

Davidson Hamer, Professor, Global Health and Medicine (Schools of Medicine and Public Health)

COLLEGE OF GENERAL STUDIES

Richard Deese, Master Lecturer, Social Sciences

Affiliated Faculty

METROPOLITAN COLLEGE

Canan Gunes Corlu, Associate Professor, Administrative Sciences

Kathleen Park, Assistant Professor, Administrative Sciences

Irena Vodenska, Professor of Finance, Director of Finance Programs, and Chair of Administrative Sciences, Metropolitan College

SCHOOL OF LAW

Madison Condon, Associate Professor, Law

Erika George, Professor, Law, Associate Dean for Equity, Justice, and Engagement and Ernest Haddad Faculty Scholar

Ronald Wheeler, Associate Dean for Fineman & Pappas Law Libraries and Associate Professor, Law and Legal Research

SCHOOL OF SOCIAL WORK

Darien Alexander Williams, Assistant Professor, Macro Practice

SCHOOL OF THEOLOGY

Rebecca Copeland, Associate Professor, Theology

COLLEGE OF FINE ARTS

Tawnya Smith, Associate Professor of Music, Music Education

Select IGS Faculty Accolades

❖ **Benjamin Sovacool** (IGS, College of Arts & Sciences) was invited for reappointment as a member of the National Academies' Board on Environmental Change and Society, recognized as a Web of Science Highly Cited Researcher in 2024, and named one of 20 climate science academics to know in 2024 by Climate Insider.

❖ **Benjamin Sovacool**, **Lucy Hutyra** (College of Arts & Sciences), **Jonathan Levy** (School of Public Health), **Deborah Carr** (College of Arts & Sciences), and **Kevin Gallagher** (Frederick S. Pardee School of Global Studies) et al. were selected for BU's Task Force on Convergent Research and Education. **Kenneth Lutchen**, Senior Advisor to the President for Strategy & Innovation (College of Engineering), is co-chair.

❖ **Patricia Fabian** (School of Public Health) was recognized with the School of Public Health's 2025 Excellence in Research Innovation Award. IGS faculty affiliates earned numerous other honors through SPH, including **Kevin Lane**: Excellence in Teaching Award for Dedication to Student Learning; **Amelia Wesselink**: Excellence in Research Early Career Award; **Gregory Wellenius**: Excellence in Research Mentoring Award; and **Marcia P. Jimenez**: Educational Innovation.

❖ **Ayşe Coskun** (College of Engineering) et al. received the best paper award for "Energy-efficient dataflow design for monolithic 3D systolic arrays with resistive RAM" at the 2024 IEEE International Green and Sustainable Computing Conference.

❖ **Anna Goldman** (Chobanian & Avedisian School of Medicine) won the Boston Bright Future Award in the Individual category at the 2025 Boston Climate Leader Awards. Additional honorees from IGS's affiliated faculty community included **Patricia Fabian** (School of Public Health and IGS Associate Director) for the Resilient Boston Award in the Individual Category and **Dennis Carlberg** (Chief Sustainability Officer) for the Boston Bright Future Award in the Individual category. Boston University won the Emerald Skyline Award in the Business and Institution Category.

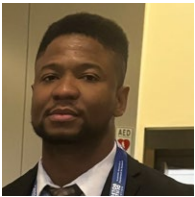


IGS honors BU's sustainability research superheroes—giving them green capes—at IGS's Research for Sustainability annual event. Pictured (from left): 2024 IGS Sustainability Champion Award recipient **Pamela Templer** (College of Arts & Sciences) with **James Goudreau**, IGS advisory board member. Photo by Rooted in Light Media.

Student Research

Summer Fellows Pursue Research in Interdisciplinary Cohort

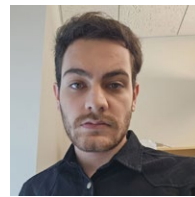
This summer's eight **2025 Graduate Student Summer Fellows**, the most academically varied cohort in the program's four-year history, advanced their sustainability and climate research, received financial support, joined an interdisciplinary peer network, and gained faculty mentorship and professional development opportunities.



Bamidele Aroboto
Mechanical Engineering,
College of Engineering
*Advancing Energy-Efficient High
Entropy Alloy Synthesis Through
Machine Learning and
Multi-Scale Simulations*



Tati Fontana
Accounting, Questrom School of
Business
*U.S. Capital Market
Consequences of the Brussels
Effect: Evidence from
Sustainability Reporting*



**Mohammadamin
Hajikhodaverdian**
Electrical & Computer
Engineering,
College of Engineering
*Energy Efficient Monolithic 3D
Transformer Accelerator*



Melissa Martin
Earth & Environment,
College of Arts & Sciences
*Assessing Urban Heat Island
Intensity on Building Energy
Demand, Grid Congestion, and
Negative Health Outcomes*



Naa Korkoi Tackie
Emerging Media Studies,
College of Communication
*Analyzing the Role of
Climate Emotions in Shaping
Engagement Patterns on Reddit*



Sophia Tigges
Earth & Environment,
College of Arts & Sciences
*Saltmarsh Microplastics:
Quantifying Accumulation and
Inferring Depositional Pathways
in the Great Marsh and Boston
Harbor, MA*



Breanna van Loenen
Earth & Environment,
College of Arts & Sciences
*Quantification and
Spatiotemporal Modeling
of VOCs from Satellite
Measurements*



Yikai Zhang
Operations & Technology
Management,
Questrom School of Business
*Optimizing Electric Vehicle
Charging Infrastructure on
University Campuses: A
Queueing-Theoretic Analysis of
Capacity and Congestion*



IGS Summer Fellows toured the Massachusetts State House with the Pardee Center Summer Fellows as part of an annual event to foster connections across disciplines. Photo by Alison Gold.

Student Research

Campus Climate Lab Projects Promote Sustainability at BU

Campus Climate Lab student-led research continues to make BU more sustainable by exploring ways to cut carbon pollution, waste, and indirect emissions while pursuing climate justice and equity. Since its launch in 2020, CCL has awarded **\$440,000** in funding to **240+** faculty, students, and staff across **50** projects. IGS leads this initiative in partnership with BU Sustainability and the Office of Research. This year's projects included:

BUILDINGS AND OPERATIONS

- ❖ Deploying newly redesigned, low-cost sensors to monitor classroom air quality and inform improvements in BU buildings
- ❖ Analyzing thermal and electric storage solutions for all-electric buildings and their impact on energy demand and costs
- ❖ Evaluating sustainable landscaping strategies on campus and developing land management recommendations

CLIMATE AND HEALTH

- ❖ Using geospatial analysis of Nature-Based Solutions to support campus climate resilience
- ❖ Designing and implementing an algae bioreactor on campus to explore carbon-negative renewable energy solutions
- ❖ Developing low-cost mobile sensor packs designed to measure local pollution levels within urban environments

REDUCING WASTE

- ❖ Evaluating filtration solutions to develop a plan for eliminating microplastics from BU laundry wastewater
- ❖ Demonstrating the climate benefits of electric demand response by engaging campus residents to participate
- ❖ Improving the management of research lab chemicals at BU to identify sustainability improvements
- ❖ Developing education strategies and operational improvements to reduce art studio waste at BU's School of Visual Arts

ADVOCACY & ACTIVISM

- ❖ Installing aeroponic towers at BU to address local food insecurity and identify innovations for a more sustainable agricultural industry
- ❖ Gathering input from underrepresented student groups on improving the University's environmental justice efforts

2025 Anthony Janetos Climate Action Prize Winners

A team of students from BU's College of Engineering won this year's **Anthony Janetos Climate Action Prize** for their project assessing indoor air quality, with the support of CCL funding. Using low-cost sensors, their project set out to more quickly and economically identify which BU rooms would benefit from improved heating, cooling, and ventilation systems. The **2025 winners**, mentored by Professor **Thomas Little**, include: **Celine Chen** (Electrical and Computer Engineering), **Primah Muwanga** (Computing and Data Science), and **Ellen Zheng** (Electrical and Computer Engineering).



Winning project team with CCL leadership. Photo by Sarah Cruz.



CAMPUS CLIMATE LAB teams presented their research to the BU community at the spring symposium. Photo by Sarah Cruz.



IGS SUMMER FELLOW Naa Korkoi Tackie (College of Communication), pictured right, presented her research on climate emotions. Pictured left: Dean Mariette DiChristina and Arunima Krishna, both from COM. Photo by Sofia Sanchez.



IGS SUSTAINABILITY RESEARCH AWARDS honored students Leticia Castillo Brache (Philosophy, center), Alicia Zhang (Earth & Environment, left) and Jessica Schwarz (Environmental Analysis & Policy, right). Photo by Rooted in Light Media.



IGS SUMMER FELLOW Breanna van Loenen (College of Arts & Sciences), pictured center, presented her research on using remote sensing data to monitor VOC emissions from fossil fuel infrastructure. Photo by Sofia Sanchez.



CLEAN ENERGY AND ENVIRONMENT LEGACY TRANSITION INITIATIVE team, including student fellows from BU and UMass Lowell, support the state and local municipalities in partnership with the Healey-Driscoll Administration. Photo by Laura Hurley.

Published Research Highlights

IGS leadership and core faculty published **153** sustainability and climate articles from July 2024 through June 2025, including the following select research highlights in high-impact and specialized journals across disciplines:

CLIMATE GOVERNANCE & SUSTAINABILITY TRANSITIONS

npj Climate Action. The “Future of Energy”? Building resilience to ExxonMobil’s disinformation through disclosures and inoculation, **Michelle Amazeen**, **Arunima Krishna**, and **Chris Wells** (College of Communication), **Benjamin Sovacool** (IGS, College of Arts & Sciences) et al.

Energy and Buildings. Critically reviewing the 50 sociotechnical risks of building sector decarbonization: Conceptualizing risk as a proximity spiral, **Erin Heinz** (IGS), **Benjamin Sovacool** (IGS, College of Arts & Sciences), and **Thomas Kwan** (IGS and Schneider Electric) et al.

The Journal of Peasant Studies. ‘A Dead Sea of solar panels’: Solar enclosure, extractivism and the progressive degradation of the California desert, **Alexander Dunlap** (IGS), **Benjamin Sovacool** (IGS, College of Arts & Sciences) et al.

Geoforum. “Our town is dying:” Exploring utility-scale and rooftop solar energy injustices in Southeastern California, **Alexander Dunlap** (IGS), **Benjamin Sovacool** (IGS, College of Arts & Sciences) et al.

Applied Energy. Does electric mobility display racial or income disparities? Quantifying inequality in the distribution of electric vehicle adoption and charging infrastructure in the United States, **Benjamin Sovacool** (IGS, College of Arts & Sciences), **Robert Kaufmann**, and **Cutler Cleveland** (College of Arts & Sciences) et al.

Energy and Climate Change. Toward just and equitable mobility: Socioeconomic and perceptual barriers for electric vehicles and charging infrastructure in the United States, **Benjamin Sovacool** (IGS, College of Arts & Sciences) et al.

Nature Energy. Compounding injustices can impede a just energy transition, **Benjamin Sovacool** (IGS, College of Arts & Sciences) et al.

Nature Cities. Operationalizing climate justice in the implementation of Boston’s Building Performance Standard, **Benjamin Sovacool** (IGS, College of Arts & Sciences), **Anne Short Gianotti** (College of Arts & Sciences) et al.

Energy Research & Social Science. Conflicted climate futures: Climate justice imaginaries as tools for policy evaluation in cities, **Benjamin Sovacool** (IGS, College of Arts & Sciences), **Anne Short Gianotti** (College of Arts & Sciences) et al.

PLANETARY & ENVIRONMENTAL HEALTH

The Lancet Regional Health: Americas. Decision tools for schools using continuous indoor air quality monitors: A case study of CO₂ in Boston Public Schools, **Patricia Fabian** (School of Public Health) et al.

Nature Communications. Inequalities in global residential cooling energy use to 2050, **Ian Sue Wing** (College of Arts & Sciences) et al.

Science of The Total Environment. Diurnal and seasonal dynamics of regional CO₂ drawdown at Harvard Forest: Integrating remote sensing and modeling perspectives, **Lucy Hutyra** (College of Arts & Sciences) et al.

Science of The Total Environment. A high resolution multipollutant assessment of health damages due to the onroad sector in Boston, Massachusetts, **Mary Willis**, **Patrick Kinney**, **Jonathan Levy**, and **Jonathan Buonocore** (School of Public Health) et al.

Biogeochemistry. Shallow snowpack and early snowmelt reduce nitrogen availability in the northern hardwood forest, **Pamela Templer** (College of Arts & Sciences) et al.

Oxford Open Climate Change. Scientists’ warning on fossil fuels, **Jonathan Buonocore** and **Mary Willis** (School of Public Health) et al.

Environmental Research Letters. The role of sensors and community engagement in the mission toward equitable, healthy cities, **Patricia Fabian** and **Madeleine Scammell** (School of Public Health) et al.

Environmental Development. Spatial planning offshore wind energy farms in California for mediating fisheries and wildlife conservation impacts, **Ethan Deyle**, **Sucharita Gopal**, and **Les Kaufman** (College of Arts & Sciences) et al.

Advances in Space Research. Optimized YOLOv8 with multi-level attention for satellite image-based landslide detection, **Magaly Koch** (College of Arts & Sciences) et al.

ENERGY SYSTEMS OF THE FUTURE

Energy Strategy Reviews. Sex for solar? Examining patterns of public and private sector corruption within the booming California solar energy market, **Benjamin Sovacool** (IGS, College of Arts & Sciences) et al.

Journal of Energy Storage. A systematic implementation of the solid electrolyte interphase layer and study of its impact on lithium plating morphology in lithium metal batteries, **Emily Ryan** (College of Engineering) et al.

Published Research Highlights & Accolades

Advanced Materials, Electrodeposition of polymer networks as conformal and uniform ultrathin coatings, **Joerg Werner** (College of Engineering) et al.

Advanced Functional Materials, Mechanically rupturing liquid metal oxide induces electrochemical energy, **Joerg Werner** (College of Engineering) et al.

IEEE Transactions on Sustainable Computing, Distributed economic dispatch in power networks incorporating data center flexibility, **Ayse Coskun** and **Michael Caramanis** (College of Engineering) et al.

Polymer, Selective infusion-templated polymerization in nanostructured organogels for ordered mesoporous materials, **Joerg Werner** (College of Engineering) et al.

ACS Energy Letters, Self-heating conductive ceramic composites for high temperature thermal energy storage, **Sean Lubner** (College of Engineering) et al.

ACS Applied Materials & Interface, Enhancing hydrogen evolution reaction through coalescence-induced bubble departure on patterned gold-silicon microstrip surfaces, **Joerg Werner** and **Chuanhua Duan** (College of Engineering) et al.

Energy Research & Social Science, Beyond economies of scale: Learning from construction cost overrun risks and time delays in global energy infrastructure projects, **Benjamin Sovacool** (IGS, College of Arts & Sciences) and **Hanee Ryu** (IGS)

“Something else that may boost electricity prices— if utilities opt to build fossil fuel or nuclear plants, a recent report from Boston University finds that those projects are more likely to be over budget and take longer than planned. Solar projects and wind farms, by contrast, are likely to be finished ahead of schedule and under budget.”

– **Forbes** citing IGS construction cost overrun research in **Energy Research & Social Science**



IGS Executive Director Rebecca Pearl-Martinez kicks off IGS's annual Research for Sustainability event. Photo by Rooted in Light Media.

Notable Media Quotes



Michelle Amazeen, College of Communication

“There is evidence that fact-checking can reduce people’s misperceptions around disinformation. An alternative is prebunking or relying upon inoculation theory to try and forewarn people...”

The Wall Street Journal



Benjamin Sovacool, College of Arts & Sciences

“We often forget that the electricity grid is incredibly complex. In the United States, the National Academies of Engineering had to vote on the most complex technology we’ve ever invented, and they chose the grid.”

BBC News



Jonathan Buonocore, School of Public Health

“There’s a rapidly growing body of evidence on health impacts of folks living near oil and gas production wells.”

The Boston Globe



Patricia Fabian, School of Public Health

“And then at a neighborhood scale, all the things that cities are doing [to stay cool] - so things like planting trees, getting rid of impervious surfaces, painting roofs white.”

NPR, All Things Considered



Cutler Cleveland, College of Arts & Sciences

“Right now, solar, wind, and battery storage is at a disadvantage in the way they’re valued, because our system is used to building large coal and gas plants. There is a bias against how we value renewable sources. And that’s a policy decision.”

The Brink



Research Partnerships

Industry and Lab Collaborations Extend Research Impact

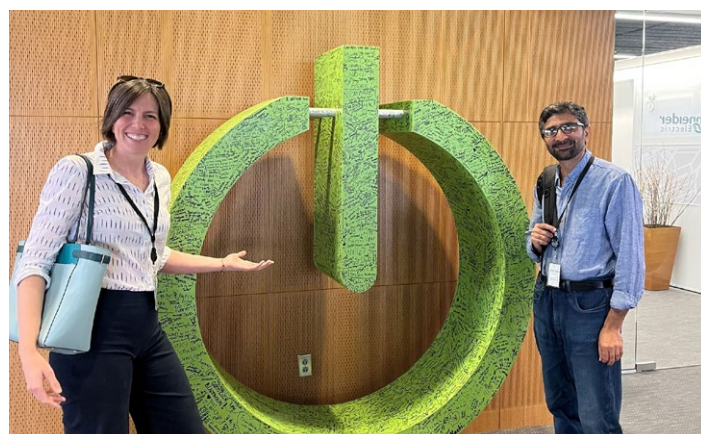
Building a Green Future with Schneider Electric

Decarbonizing the building sector is essential to meeting carbon reduction targets by 2050. However, efforts to improve energy efficiency, electrify building systems, and switch to low-impact materials are not progressing at the speed or scale needed to meet global climate goals. In partnership with Schneider Electric, IGS is researching why.

IGS is proud to partner with Schneider Electric, recognized for the second consecutive year as *TIME*'s most sustainable company in the world. As our research continues into the next phase, IGS and Schneider are helping to understand more effective, equitable, and scalable solutions to accelerate decarbonization in the building sector.

So far, the multi-phase research agenda has uncovered 95 barriers and 50 risks to building sector decarbonization, published in *Energy and Buildings*, with more findings forthcoming in *Nature Communications*. Dismissing the widespread belief that technological advancement on its own is the best path forward, this research points to the social, political, and behavioral factors that shape whether low-carbon technologies can be feasibly adopted into conventional building practice. It also looks at the role that policy plays and the challenge of retrofitting existing buildings.

The study is led by IGS postdoctoral associate **Erin Heinz**, in collaboration with co-authors IGS Director **Benjamin Sovacool** (College of Arts & Sciences professor) and **Thomas Kwan**, an IGS visiting researcher from Schneider Electric, with colleagues.



Erin Heinz (IGS) and Muhammad Asif (IGS Visiting Researcher) visited Schneider Electric's Boston headquarters.

Examining Equity & Justice in EV Adoption with NREL

Does access to electric vehicles (EVs) vary by race or income? An electric mobility study published in *Applied Energy* has offered new insights into this question. It was led by the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), in collaboration with IGS and researchers from Rutgers University and the Georgia Institute of Technology. Through sophisticated geospatial modeling, this research was the first to quantify income and racial inequalities in EV adoption and charging infrastructure distribution—compared to conventional vehicles and gas stations—at local, regional, and national levels across the U.S., based on current and historical trends. In the process, a novel way of quantifying the evolution of inequality has emerged that could be applied more broadly. IGS researchers included IGS Director **Benjamin Sovacool**, **Cutler Cleveland**, and **Robert Kaufmann**, all faculty in BU's Department of Earth & Environment in the College of Arts & Sciences.

A second electric vehicle study, published in *Energy and Climate Change*, found that income, age, gender, and other factors can significantly influence perceptions related to purchasing and using EVs. This research, a collaboration between NREL, IGS, and Rutgers University, is one of the first to examine EV adoption and charging infrastructure through an equity lens using state-of-the-art original survey data. Survey results from more than 7,000 U.S. adults revealed that individual characteristics can strongly shape EV purchase preferences—contributing to disparities in who adopts electric mobility. IGS Director **Benjamin Sovacool** co-authored this study.



Pictured from left: IGS Director Benjamin Sovacool, IGS Visiting Researcher Adam Warren (NREL), and IGS Executive Director Rebecca Pearl-Martinez. Photo by Rooted in Light Media.

Global Collaborations



The Federation of Indian Chambers of Commerce and Industry (FICCI) hosted an interactive session in **New Delhi, India** with IGS Director Benjamin Sovacool (College of Arts & Sciences), titled “Blueprint for Sustainability: Designing for a Resilient World.”



The IGS team celebrated its international Visiting Researchers Muhammad Asif, Johan Nordensvard, and Haneer Ryu, who joined the team from research positions in **Saudi Arabia, Sweden, and South Korea**, respectively.

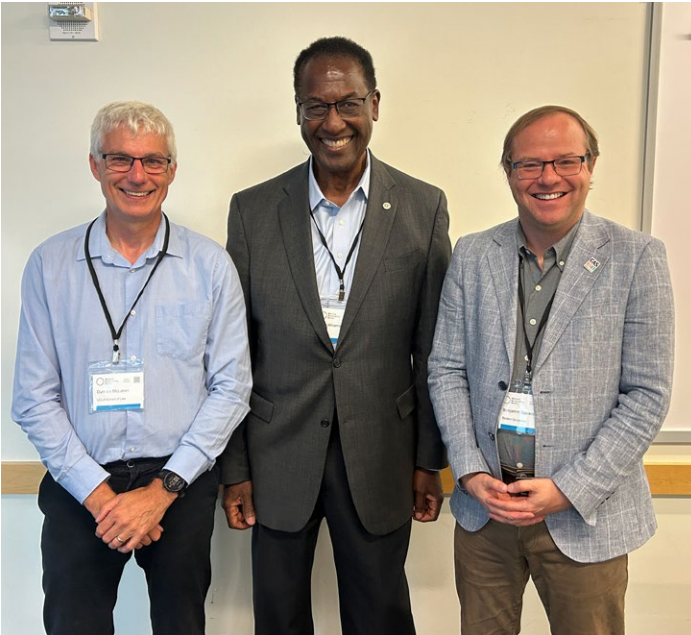


At the International Society for Environmental Epidemiology’s 36th Annual Conference in **Santiago, Chile**, Associate Director Patricia Fabian (School of Public Health) led a presentation on community-engaged heat research.



Benjamin Sovacool delivered the keynote address at the 8th SRA-E Benelux meeting in **The Hague, Netherlands**, titled “The Low-Carbon Risk Society: Dilemmas of Risk-Risk Tradeoffs in Energy Transitions and Climate Policy,” based on a 2025 study.

Global Collaborations



In **Seattle**, the National Sustainability Society Annual Conference panel on “The Equity and Governance Implications of Geoengineering” included Benjamin Sovacool with speakers from UCLA School of Law and American Geophysical Union.



Benjamin Sovacool visited an urban cooling project in **Sierra Leone** led by the nonprofit organization MEER (Mirrors for Earth’s Energy Rebalancing).



IGS welcomed a delegation of energy and sustainability experts from University College Cork MaREI, located in **Cork, Ireland**, and collaborators at University of Massachusetts Lowell Rist Institute for Sustainability & Energy to discuss potential synergies across centers — and international borders. Photo by Alison Gold.

Events



THE BOSTON GLOBE SUSTAINABILITY SUMMIT included a **panel** with IGS faculty affiliates across BU: David Abel, Madeleine Scammell, Anna Goldman, and Lucy Hutyra. Photo by The Boston Globe.



PARADISE FALLS BOOK TALK kicked off the IGS author series with **The New York Times bestselling author Keith O'Brien**. Moderated by Stephanie Ettinger de Cuba with opening remarks by David Abel. Photo by Alison Gold.



THE PRICE IS WRONG: WHY CAPITALISM WON'T SAVE THE PLANET event with author **Brett Christophers**, part of the BU Global Development Policy Center's Global Economic Governance Book Talk series, was co-sponsored by IGS.



HEALTH EQUITY IN THE WAKE OF CONTINUED CLIMATE CHANGE Focused Research Program **symposium** speaker Gloria Waters, BU provost. IGS co-sponsored the FRP. Photo by Casey Demarsico.

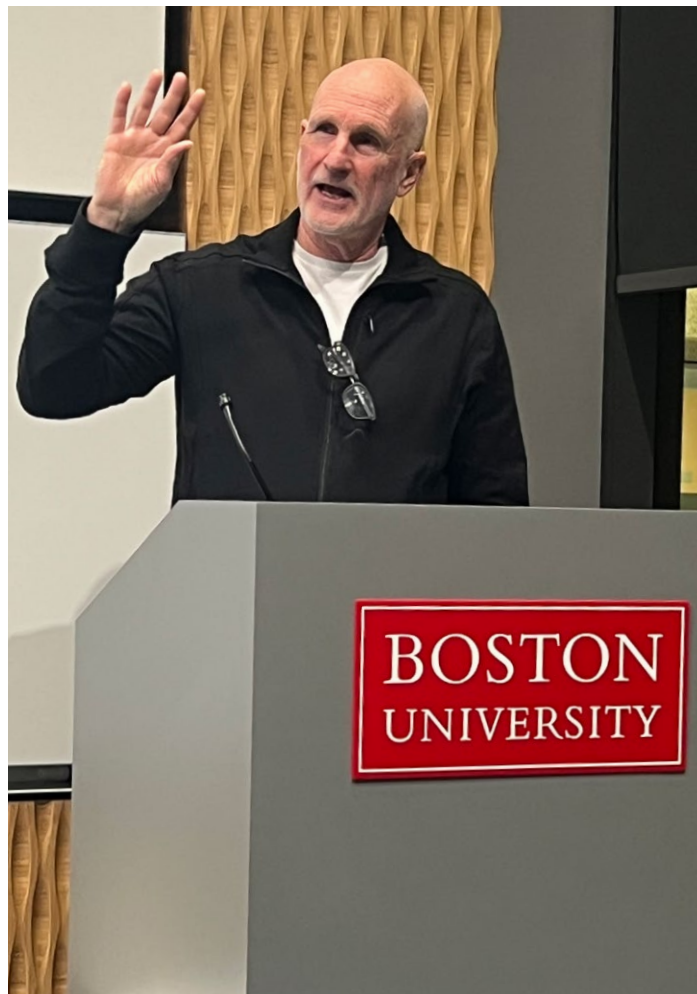
Events



GREEN AI SUMMIT 2025, co-sponsored by BU's Center for Information and Systems Engineering, featured BU faculty and researchers Ayse Coskun, Benjamin Sovacool, Suchi Gopal, Nathan Phillips, and Can Hankendi. Photo courtesy of organizers.



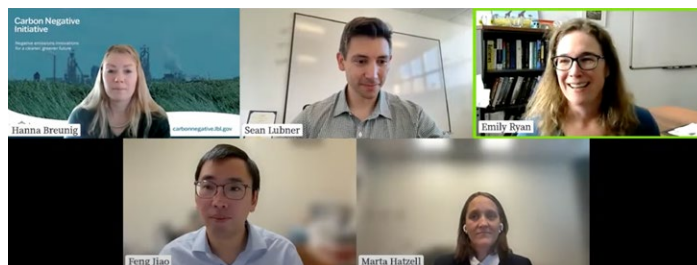
IGS RESEARCH FOR SUSTAINABILITY annual gathering brought together our BU research community, including members of the IGS advisory board. Photo by Rooted in Light Media.



RESEARCH ON TAP: CLIMATE CHANGE AND CLEAN ENERGY lightning research talks were sponsored by the BU Office of Research and co-hosted by IGS Associate Directors Cutler Cleveland (College of Arts & Sciences) and Emily Ryan (College of Engineering). Photo by Alison Gold.

Working Towards a Zero Waste World Workshop Series

The **three-part series**, co-hosted by IGS with the BU Energy & Sustainable Technologies Lab and the College of Engineering, discussed the next big questions in waste, recycling, and manufacturing. The first workshop covered Plastics, the second Sustainable Materials & Manufacturing, and the third Reducing Greenhouse Gases through Carbon Conversion. Panelists joined from universities, national laboratories, and companies across the U.S.



Associate Director Emily Ryan and core faculty Sean Lubner (College of Engineering) facilitate the "Reducing Greenhouse Gases through Carbon Conversion" webinar.



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