ANNUAL REPORT

Academic Year 2025
(June 1, 2024 - May 31, 2025)

BOSTON COLLEGE

SCHILLER INSTITUTE FOR
INTEGRATED SCIENCE AND SOCIETY

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Acknowledgements

We thank BC Trustee Phil Schiller '82 and his wife Kim Gassett-Schiller for their lead gift to establish the Schiller Institute for Integrated Science and Society.

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MESSAGE FROM THE EXECUTIVE DIRECTOR

The Schiller Institute for Integrated Science and Society had another action-packed year during the 2024-25 academic year. Before you read about the events and accomplishments of the past year, I would like to reflect on some overall achievements of the Institute over the past five years. Within the Institute's focus areas of energy, environment, and health, we've set out to:

Encourage and build interdisciplinary research at BC across the sciences, and across all BC schools and colleges

The Institute sponsors two seed grant programs: the Schiller Institute Grants for Exploratory Collaborative Scholarship (SI-GECS) program and the Schiller Institute's grants for Research in Targeted and Emerging Areas (SI-RITEA) program. Since its inception in FY22, the SI-GECS program has funded 43 interdisciplinary projects for $1.4M. These projects have included 165 faculty collaborators and trained over 180 students and postdocs. The SI-RITEA program launched in FY24 and has supported 20 projects and 43 faculty collaborators for $600K. Many projects have led to externally funded projects and research publications, as detailed later in this report. The Institute also promotes interdisciplinary collaborations through many of its programs, including Affiliate Faculty, Women in MCAS STEM, COP participation, seminar series, and guest speakers.

Build a strong research program emanating from the Institute

We have hired four Core Faculty members, who are outstanding researchers and have dramatically raised the profile of BC, especially in the area of climate science. All of the Core Faculty have continued to advance their existing research agendas, while also taking new paths thanks to collaborations at BC and leading interdisciplinary proposals with BC colleagues. Focusing on the challenges of integrating knowledge across disciplines, the Institute has become a leader in studying collaboration and interdisciplinarity in the academy, including producing multiple papers and conference presentations.

Connect the Institute's work to the common good

We have continuously framed our work as having real-world impact, helping to meet societal challenges of the current moment and those that will require ingenuity and expertise in the future. Curriculum created and delivered through the Institute has been aimed at inspiring students to work towards the common good, including our signature Working For and With Communities program; the Entrepreneurship in Energy, Environment and Health course; and co-management of the Global Public Health Program. We have also supported research with direct impacts on people and communities, including SI-RITEA grants focused on the Global South and local, Massachusetts-based partnerships. To create public awareness of the Institute's work and to expand the impact of Schiller's work into the public space, we've created an informative and engaging web and social media presence, along with the SchillerNow and The Scoop newsletters. Given the importance of informing public discussion through our faculty's expertise, we've partnered with Journalism faculty to learn and practice techniques for engaging with the media. This year we are thrilled to bring this experience to an expanded group of BC faculty and to co-envision and co-sponsor the campus-wide Climate is Every Story program – a series bringing working climate journalists to campus for public conversations with BC scientists and students, culminating in a student-managed website highlighting climate journalism.

Create and support new interdisciplinary curriculum at BC

The program for Global Public Health and the Common Good (GPH&CG) launched as a minor through the Schiller Institute. The program successfully added a major last academic year and is now run in strategic partnership with the Connell School of Nursing. The Institute led a cross-campus committee charged with envisioning the future of data science at BC, which contributed to two new programs: the Data Science minor administered by the Computer Science and Mathematics departments; and the Data Science masters program, administered by the Lynch School of Education and Human Development. Using the SCHI course code, we've also created and taught many interdisciplinary courses.

Leverage 245 Beacon Street as a hub for student and faculty engagement on campus

The Schiller Institute Convening Space has proven to be an inviting, highly functional space within 245 Beacon Street. Through careful management and continual design optimization, the space continues to attract a wide range of users. The space has been used for a multitude of functions by building occupants, affiliated student groups, and university partners. We've also contributed to scholarship around interdisciplinary buildings, publishing "Making interdisciplinarity concrete: Understanding higher education interdisciplinary research buildings and their leadership" in the Journal of Research Administration and leading the session "Interdisciplinary Academic Buildings: Research and Design" with Payette architect colleagues Diana Tsang and Thomas Simister at the annual AIA Conference on Architecture in San Francisco.

Ensure the Institute becomes embedded in the essential fabric of the university

We have fully realized this goal, as evidenced by the numerous programs and events that are outlined here and in each year's annual report. I'm proud of the partnerships we've created with campus partners, including but not limited to the Office of Global Engagement, Thea Bowman AHANA and Intercultural Center, Career Center, Clough Center for the Study of Constitutional Democracy, Corcoran Center for Real Estate and Urban Action, Institute for Liberal Arts, ITS, University Libraries, and numerous academic departments and programs. We have also created new student programs, such as the Eagles Sustainability Competition and the Schiller Student Board, and engaged with many student groups, such as UGBC, Entrepreneurs for Social Impact, EcoPledge, and MakeBC; as well as being the sponsoring department for Engineers Without Borders and oSTEM.

None of this work would be possible without the support of Boston College Trustee Phil Schiller '82 and his wife, Kim Gassett-Schiller. Their multi-year lead gift totaling $25 million brought the Schiller Institute for Integrated Science and Society to life and we are continuously grateful for their support.

I hope you enjoy reading about what we've been up to the past year and I encourage you to visit our website for upcoming programs.

STUDENT ENGAGEMENT

Boston College is a leader in formative education, and the Schiller Institute advances this mission by preparing our students for both the rigorous and dynamic search for truth, and for the ongoing formation of their minds, hearts, and imaginations. The Institute aims to help students lead lives of meaning, oriented toward service for the common good. Our programming promotes an interdisciplinary perspective, enabling students to explore the connections and intersections between diverse academic disciplines. We offer students unique life experiences encouraging the examination of complex issues from multiple perspectives. We are committed to personal and professional development, to preparing students for life after college, and to empowering students to address real-world challenges.

Working For and With Communities: Community Engaged and Project Based Learning for the Common Good

The Institute led our third installment of the Working For & With Communities course sequence this year. This year's community partner was Hogar de Cristo (HdC), a public service organization dedicated to helping Chile's most vulnerable live with autonomy and dignity. We also partnered with Universidad Alberto Hurtado (UAH), a Jesuit institution recognized for its strong commitment to promoting a more just and inclusive society. During the spring, students were taught about how mental disabilities and conditions are treated in Chile, conducted research on the latest interventions, and combined insights to generate ideas for projects that can improve self-efficacy and quality of life for these populations. Throughout the spring over Zoom and during the summer in Santiago, Chile (May 24-June 14), the group met with representatives from HdC and the people they serve. They collaboratively conceptualized uses for underutilized outdoor space at an HdC facility in Santiago, culminating with prototyped designs emphasizing gardening, accessibility improvements, and engagement with the arts.

The course was led by Vaughn Thornton (Office of Global Engagement), with lectures during the spring from BC faculty members: Martin Summers (History), Lorelle Semley (History and Director, African and African Diaspora Studies program), Angie Picone (History), Brinton Lykes (Counseling, Developmental & Educational Psychology), Maryann Loughry (Social Work), Sunand Bhattacharya (Office of the Vice Provost for Research), and Tom Chiles (Office of the Vice Provost for Research). Justin Henriques (Engineering) provided in-country training in design thinking. UAH faculty provided multiple lectures to our student team in the spring and summer courses. Read more about the course and project.

Student testimonials: "I would recommend this program because it is the perfect combination of human interaction with deep research and you cannot always get that in every field of work. This program challenges you not just to think outside the box but to think in a different way that challenges your own beliefs."

"This program is very unique as to what it offers and so helpful in navigating career interests and developing personal skills and connections. It is nice to have everyone's unique backgrounds and skills embraced and determine how best you can contribute to the project. Those are real-world skills! And also very refreshing to experience in the midst of typical college coursework."

Additional Courses

The Schiller Institute offered the following additional courses this academic year, all using the SCHI course code.

Entrepreneurial Leadership in Energy, Environment and Health (SCHI3030) is taught by Seidner Family Executive Director Laura J. Steinberg, and complements the entrepreneurial courses offered by the Carroll School of Management. It is a one-credit professional development course featuring meetings with leaders engaged in both for-profit and social entrepreneurship, and whose organizations are aligned with the Schiller Institute's mission to serve the common good, focusing on our three core areas: energy, environment, and health.

Student testimonial: "I want everyone to take this course! It was exceptional. The speakers were very informative and inspiring. Well organized class and I always looked forward to it. Changed my life plan and perspective."

Forging Just, Effective Climate Policy in the UN COP Process (SCHI5010) is part of the Institute's leadership role in sending BC's delegation to the United Nations Conference of the Parties (COP). The one-credit fall semester course provided an academic overview of COP from historical, political, and social perspectives. The course was facilitated by School of Social Work Associate Professor Praveen Kumar and Lynch School of Education and Human Development Assistant Professor Caitlyn Bolton. It included guest lectures from experts on global public health, the history and political science of climate negotiations, youth activism, and environmental justice. The students also had a special briefing from Catherine Goldberg ('16), Senior Climate Policy Officer, U.S. Department of State.

Student testimonial: "This course integrated real–world insights and up–to–date developments from global climate negotiations. The readings directly from COP conferences offered an authentic perspective on international climate policy. Weekly current events summaries, such as discussions on the meaning of finance in COP lectures, kept the material relevant. Additionally, guest speakers with deep expertise in the field provided valuable context and firsthand knowledge."

Integrating Science and Society: A Tale of Four Nobels (SCHl3020) was co-taught by three of the Institute's Core faculty members: Jier Huang, Yi Ming, and Hanqin Tian. The course was inspired partly by four recent Nobel Prizes – in physics (2021), peace (2007), chemistry (2023) and economics (2018) – which help anchor the main units. The units included an overview of the scientific evidence for climate change and its causes; the current state of energy production, consumption and technology; the challenges and opportunities associated with transitioning to a more sustainable economy, and nature-based solution to climate change; and state-of-art technology toward renewable energy.

Student testimonial: "The professors are epic. They are so knowledgeable about some very high level concepts. I also liked the lecture materials, they were generally well done and made the material digestable."

Health and the Environment: People, Policy, and Technology (SCHI3040) was taught by the Institute's newest Core faculty member, Edson Severnini. This interdisciplinary course examined the relationship between health and the environment, focusing on how pollution, climate change, and ecosystem changes influence human health. Engaging with the material from five distinct perspectives – scientist, policymaker, community leader, environmental activist, and industry representative –students explored the roles of public response, policy, and technology in reducing health risks. As the culminating experience of the course, students gave oral presentations simulating testimony before Congress focusing on environmental health issues and related policy implications.

Student testimonial: "Great professor. I am not trained as an economist, so some of the journal articles were initially challenging for me to understand, but once I got the general idea, I believe Prof. Severini's choices of journal articles drove the overall points of the class regarding pollution (short and long term effects, mortality and morbidity), health effects of climate change, and ecosystem services as well as other points. I have a whole different way of viewing these social issues through the framework of economic analysis and scholarly study."

The Program for Global Public Health and the Common Good (GPH&CG)

The program for Global Public Health and the Common Good is led by Program Director Philip J. Landrigan (Professor of Biology) and Associate Director Summer Hawkins (Professor of Social Work). The program includes a major, minor, and an accelerated pathway to a Master of Public Health (MPH) degree at Tufts University, which launched this past academic year. This May, 18 students graduated with the GPH&CG major and 49 students graduated with the minor. The program continues to see strong interest during its annual application period. Members of the graduating class are pictured to the right along with Dr. Landrigan and professor Shelley White.

Student Employees

The Schiller Institute is very fortunate to work directly with multiple talented student employees. Our student employees are highly productive members of our staff. Their energy, enthusiasm, and knowledge of student life helps expand our vision for the Institute and inspires us to new heights. Thank you for everything that you do!

Charlotte Greenfield
Charlotte ('26) is a graduate student in the School of Social Work. She was the inaugural editor of The Scoop, helping the Institute launch the newsletter in December 2024. Charlotte also assisted with numerous ad hoc projects.

Sancia Sehdev
Sancia ('25) graduated with a degree in Biology. She was the teaching assistant for the Institute's COP course. She also helped with administrative and logistics support of the delegation during COP29, and led the organization of the Institute COP Symposium in the spring.

Shelby Seybold
Shelby ('25) graduated with a degree in Communication. She led the Institute's social media presence, primarily focusing on Instagram and YouTube. Her efforts increased engagement on both platforms, including collaborative posts with other departments on campus.

Lila Tabak
Lila ('26) is a graduate student in the School of Social Work. She maintains the Institute's website and led the creation and/or redesign of many pages on the Institute's website, including dynamic and engaging pages for COP and Working For & With Communities among other programs. She has also contributed to other creative projects, such as designing the logo for The Scoop.

Julia Wowkun
Julia ('26) is majoring in Environmental Studies and minoring in Finance. She is one of the Institute's primary designers, most notably designing this report! She has also helped the Institute collaborate with other departments, including working with the Office of Global Engagement on an international visitor guide to Boston.

Dominique Williams
Dominique ('28) is majoring in Environmental Studies and minoring in Chinese and Accounting for Finance and Consulting. She designs many of the Institute's event posters and has even been the driving force behind new event ideas, such as the Poetry + Environment Workshop during Green Week. She also connected us with this year's COP Symposium keynote speaker.

Schiller Student Board

The Schiller Student Board provides students from across campus interested in energy, environment, and health another way to engage with the Institute's work. Board members function as both an extension of the Schiller team, assisting with planning events and supporting communications, and advisors, providing valuable student insights. The Board consists of three subcommittees: events, communications, and research. A team of elected officers, working closely with Schiller Institute staff, coordinates the Board's activities and organizes monthly all-member meetings along with periodic subcommittee meetings. Elliana Steely was the President of the Board during the 2024-25 academic year, along with Munachi Onyiuke as Vice President, Hayoung Cho as Events Director, Taylor Vallas as Research Director, and Carly McDermott as Communications Director.

Ever to Excel Award Winner

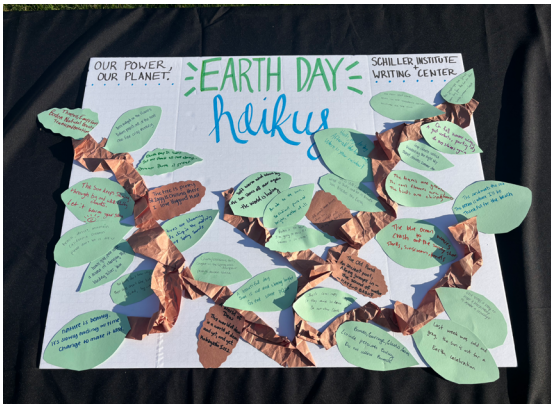
Our staff had the honor of introducing this year's recipient of the Brian D.A. Hall Legacy Award, Sancia Sehdev, at the Ever to Excel Awards celebration. The award is presented to the senior who demonstrated deep commitment to a student program or organization, and whose leadership advanced the mission of the organization and enhanced the quality of student life. Sancia has left an indelible mark on the Schiller Institute and BC at large. Through her leadership with COP28 and COP29, her tireless work as a TA and event moderator, and her unwavering dedication to sustainability and student life, Sancia has truly exemplified what it means to serve with purpose. As Assistant Director, Programs Kaley McCarty wrote in her award nomination, "working with Sancia has truly been a highlight of my time in this role! She has set the bar for what it will mean to be a Schiller Alum and for that we are so grateful."

The Scoop

The Scoop is the Institute's student-facing newsletter created by and for students. The Scoop debuted in December 2024 and published 10 issues through May 2025. The biweekly newsletter includes information about Schiller courses, students, faculty and staff, and events. The newsletter also regularly features our Poet Laureate, Jesse Julian, and articles written by students affiliated with the Schiller Institute. Sign up for The Scoop and see past editions here.

Poet Laureate

A central aspect of the Schiller Institute's mission is to bring together humanistic and scientific endeavors. Our inaugural Schiller Poet Laureate, Jesse Julian, expanded her role this year by writing poems and poetry analysis for the Institute's new student-focused newsletter, The Scoop. Jesse's work can be found on the Schiller website. Jesse also led our Poetry + Environment Workshop, which was the keynote event in our week-long series of events during Green Week.



parachute

by Jesse Julian

head down, i fall
vertical plunge in frigid nights
crystals crunch, each step
a memory onto Earth

above me, a plastic bag parachute
tangled in thin winter arms
her withering branch, reaching out
asking for freedom.

heads up, we spring
skin bare in sunkissed mornings
young dirt, each step
we remember the Earth

above me, the plastic bag parachute
still tangled now in summer vine
her blossoming buds, outgrowing us
fighting for freedom.

Jesse describes each of her poems. For this poem she wrote: I've been enjoying the final days of the school year, where everyone basks on the quad in newfound sunlight. Witnessing the seasons changing is truly magnificent. Yet on my walk to the train station, a specific tree has a plastic bag entangled in its branches. It's unfortunately out of my reach—trust me, I've tried—yet this bag seems to have stayed there throughout all the changing seasons. For me, this image symbolizes the fight for environmental justice—a tree that continues to grow despite its restraints, and the question of what we can do to save it. I am specifically inspired by this imagery as we watch our graduating seniors depart, who will hopefully continue to carry on a fight for freedom and justice that the Schiller Institute embodies and motivates.

Student Organizations

Engineers Without Borders (EWB) is a global non-profit organization, whose mission encompasses collaboration with local organizations in an effort to design and install sustainable projects. Through collaboration, the organization aims to ensure equal access to basic needs like clean water access, renewable energy, sanitation, and health technology, as well as further developing infrastructure. The Institute sponsors BC's chapter of EWB, which was previously led by Hayoung Cho. Bennett Lewis and Ava West participated in the 2025 National Engineers Without Borders Conference, and will be the co-presidents of BC's chapter this upcoming academic year.

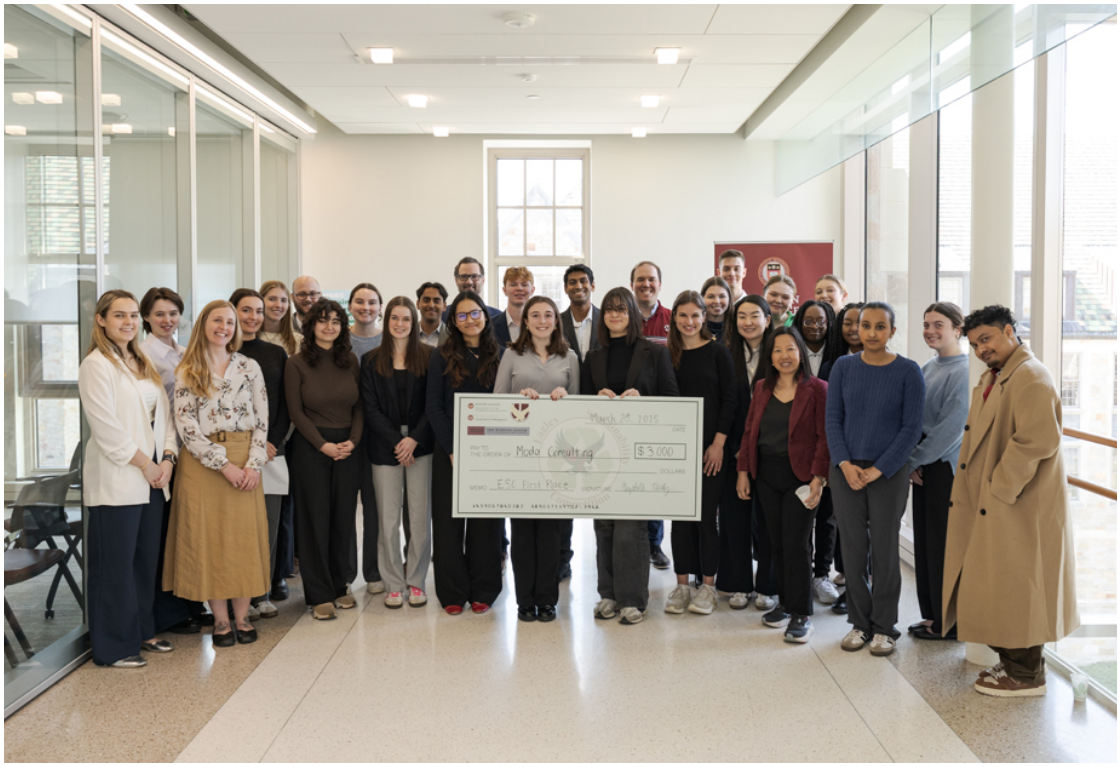
Out in STEM (oSTEM) is a national organization dedicated to supporting LGBTQ+ individuals in STEM fields. The Institute sponsors BC's chapter of oSTEM. One of the chapter's members, Echo Panana, works in the lab of Professor Héctor Rodríguez-Simmonds, focusing on research on the experiences of LGBT Q+ engineering students. Echo presented this research at both the oSTEM National Conference and American Educational Research Association. Echo wrote a reflection in The Scoop, sharing their experience at the oSTEM National Conference and how the experience inspired them to work with other members of the e-board to strengthen BC's chapter.

Eagles Sustainability Competition

The **Eagles Sustainability Competition** challenges teams of 2-3 undergraduate students to propose solutions to a sustainability-related issue on BC's campus. The competition is a collaborative effort between the Schiller Institute, Carroll School of Management, and Undergraduate Government Boston College (UGBC). Each year, the competition partners with a department on campus to develop the prompt that the student teams then address. This year's campus partner was the Office of Sustainability.

Each year, the competition concludes with an awards ceremony where all of the participating teams return to the Schiller Institute Convening Space to learn who took home the prizes. For the past two years, we've collaborated with BC Dining to provide a sustainable menu for the ceremony, including items such as heart of palm & seaweed lettuce "crab cakes".

The first place team was Moda Consulting, which included Molly Dugan (Environmental Studies and Hispanic Studies) and Seda Sargsyan (Finance and Marketing). Their proposal was for the office to implement a low-cost, autonomous First Year Fellowship Program that leverages students' growing passion for environmental sustainability and generates strong downstream benefits. The second place team was 90 Naturalists, which included Isabella Allen (Global Public Health and the Common Good), Julia Bender (Environmental Studies), and Lucy Moan (Accounting for Finance and Consulting). Their pitch was to reorient the mission statement of the office around the pillars of Laudato Si'. The third place team was Eagle Thermostat, which included Leonard Alsleben (Engineering, Economics) and Lucas Schmidt (Computer Science, Economics). They proposed implementing an Eagle Thermostat app (created by them) that would empower students and occupants to report temperature issues in BC buildings, enhancing comfort, improving learning conditions, and reducing energy waste and costs. [Learn more about the competition here.]



Events and Co-sponsored Events

The Institute co-sponsored multiple events organized by and/or for students during the year, including:

Hack the Heights. The Institute once again co-sponsored the Hack The Heights event, which is a hackathon organized by the Computer Science Society at Boston College. The group's goal is to promote coding for students from a variety of disciplines and backgrounds across campus.

Graduate Research Symposium. The university-wide, multidisciplinary research conference featured empirical research by almost 40 graduate students through oral and poster presentations.

Healing & Grieving Trees: Votive-Making Workshop & Performed Lecture.
As part of the Institute's Green Week series connecting art and the humanities to the environment and climate change, Art Professor Sheila Gallagher hosted a votives making workshop and performed lecture with Philosophy Professor Richad Kearney. A tradition going back to ancient Greek sanctuaries, votives are small objects that are made in petition or gratitude for healing. In this workshop participants created anatomical and botanical votives out of clay that symbolize our vows, wishes, or thanks for alleviating dis-ease or hurt whether that be physical, emotional or ecological. Through words and moving image projections, Gallagher and Kearney responded to the vital ecological cycle of pain and promise with a unique mixed media lecture.

Careers in Environmental Engineering, Construction, or Graduate School Information Session. With the Corcoran Center for Real Estate and Urban Action, the Institute co-sponsored an informational session lunch with Elizabeth Allen from Consigli Construction Co. Elizabeth is an environmental engineer and graduated from BC in 2021, majoring in Environmental Studies and Economics. Elizabeth was also a student participant in Schiller's Environmental Racism Summit in spring 2021.

Social Impact Entrepreneurship Series: Phil Coupe, ReVision Energy. Partnering with the student group Entrepreneurs for Social Impact, we hosted Phil for a lecture titled "Do We Have The Tools To Abandon Fossil Fuels?" Phil's talk addressed one of the most urgent questions facing humanity, while providing rich educational content.

Make-a-thon. The Institute was among several campus partners supporting BC's third annual make-a-thon, organized by the student organization MakeBC. Similar to the concept of a hackathon, a make-a-thon challenges students to create a physical object in 24 hours. The Institute sponsored the prize for the Sustainability track. Schiller student employee Dominique Williams was one of the judges and wrote about the event.

National Labs: Answering America's Science Questions. Don Walko is the lead scientist of beamline 7ID of the Advanced Photon Source at Argonne National Laboratory. He spoke about the history, the role, and the contribution of National Labs to energy and climate change.

Green Week: Poetry + Environment Workshop. This workshop, in collaboration with the BC Writing Center, highlighted the interdisciplinary and complementary nature of art, poetry, and the environment. The workshop was led by the Schiller Institute's inaugural Poet Laureate, Jesse Julian, and included a presentation on the importance of poetry and its connection to sustainability and environmental issues.

ENVS Spring Research Symposium. The Environmental Studies Program hosted its annual spring research symposium in the Schiller Institute Convening Space. The symposium features a poster session where senior environmental studies majors present their senior theses.

CARE course final presentations. In partnership with the Thea Bowman AHANA and Intercultural Center, Schiller co-sponsored the Community Advocacy and Research Engagement (CARE) course. The sponsorship included providing funding to the students in the course to support research expenses. In addition, the final presentations for the course were held in the Schiller Institute Convening Space.

Nature-based Sketching Workshop. Art Professor Hartmut Austen hosted a charcoal sketching workshop in the Pine Tree Reserve as part of the Institute's Green Week event series linking art and the environment.

SCHILLER INSTITUTE CORE FACULTY MEMBERS

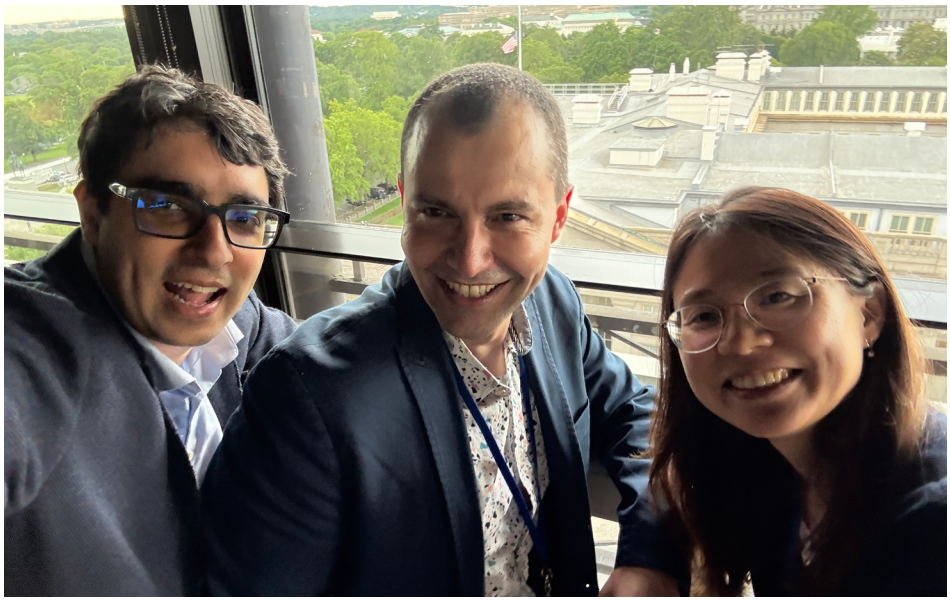
The Institute's Core faculty are visionary scholar-leaders who are driven by synergistic scholarship across academic disciplines and who build integrated teams within the Schiller Institute and across the University. Core faculty members strengthen the research profile of the university; stimulate collaborative, problem-focused research; develop, design, and participate in interdisciplinary curricula and co-curricular activities; build partnerships with leading institutions and organizations; and advance the results of BC applied research into the public sphere.

This year, we welcomed our newest Core faculty member, Edson Severnini. He joined Boston College in January 2025 and has a joint appointment in the Economics Department. He previously served as a professor of Economics and Public Policy at Carnegie Mellon University. Learn more about Edson and our other Core Faculty members below.

Edson Severnini

This year, Professor Edson Severnini's research and teaching centered on the intersection of environment, health, and inequality. One milestone was the publication of *Air Pollution and Adult Cognition: Evidence from Brain Training* (with Andrea La Nauze, Deakin University). It builds on his prior research on pollution's extreme health consequences—such as mortality— on vulnerable groups like infants or the elderly. The study innovates by showing that adults in their prime working years are also affected, and that the cognitive impacts of pollution may be broad-based. Using novel data from brain-training games, the study provided the first large-scale evidence that fine particulate matter (PM2.5) impairs adult cognitive function. These effects are most pronounced when adults face new tasks or have lower baseline ability, highlighting a channel through which pollution reduces workforce productivity and exacerbates inequality.

Another highlight was his presentation of *The Social Lifecycle Impacts of Power Plant Siting in the Historical United States* [with Karen Clay (Carnegie Mellon University), Danae Hernandez-Cortes (Arizona State University), Akshaya Jha (Carnegie Mellon University), Joshua Lewis (University of Montreal), and Noah Miller (Carnegie Mellon University)] in Washington, DC. This paper, forthcoming in a policy-focused volume, investigates whether disparities in exposure to fossil-fuel plants stem more from initial siting or from long-run demographic shifts. Policymakers have traditionally concentrated on the siting and permitting of infrastructure projects, often overlooking the social and demographic changes that unfold over time. Their findings reveal that while plants were not systematically sited in predominantly Black counties, Black population shares rose significantly in the decades following siting, particularly for early-20th century plants. These results deepen our understanding of the historical roots of environmental injustice and underscore the need for policy to pay closer attention to post-siting demographic dynamics. Professor Severnini is pictured with one of his coauthors in DC on the right.



Professor Severnini also delivered several invited presentations at universities in the U.S. and abroad, including Harvard, Nova SBE in Lisbon, and University College Dublin, as well as at high-profile academic and policy conferences such as the National Bureau of Economic Research (NBER) and the United Nations.

On the teaching side, Severnini launched a new interdisciplinary Schiller course, *Health and the Environment: People, Policy, and Technology*. This upper-level undergraduate course brings together students from economics, environmental studies, public health, and other disciplines to explore how pollution, climate change, and ecosystem change affect human health, and how public policy and technological innovation can mitigate risks. The course emphasizes active, role-based learning and culminates with students delivering simulated congressional testimony on environmental health issues.

Jier Huang

Jier Huang is the Institute's professor focusing on renewable energy and sustainability and Professor of Chemistry. Professor Huang's research focuses on developing cutting edge materials with atomic/molecular precision to address fundamental challenges in sustainable energy and climate change. She is particularly interested in using advanced physical methods to understand how solar energy is captured by the materials, how it travels through the materials, and how it can be directed to perform solar energy conversion.

In the academic year 2024-25, she secured grants from both the US Department of Energy and the National Science Foundation. Under the new DOE award, she will serve as the sole PI to design novel porous crystalline materials based on covalent organic frameworks (COFs) for the direct solar-driven conversion of renewable feedstocks (greenhouse gas and water) into fuels. Through the new NSF grant, she will collaborate with Professor Gonghu Li (University of New Hampshire) and Professor Anatoly Frenkel (Stony Brook University) to identify key descriptors governing the photocatalytic activity of single atom catalysts on semiconductor supports for solar fuel production. These projects will offer outstanding opportunities for graduate and undergraduate students to engage in research spanning clean energy, catalysis, and nanoscience. This past year, the Huang group has expanded to include six graduate students, three postdoc researchers, three undergraduates, and two high school students.

Professor Huang organized the "Energy Applications of Ultrafast Science" symposium in the American Chemical Society National Fall meeting, and presented invited seminars at multiple universities and national/international conferences such as Yale University, Johns Hopkins University, Dartmouth College, and Donor-Acceptor Interaction Gordon Research Conference. She served as Executive Committee Member in the ACS Physical Chemistry Division, Schiller core faculty search committee member, and external thesis committee member for graduate students from Dartmouth College, Wayne State University, and North Texas University.

Yi Ming

Professor Yi Ming, the Institute Professor of Climate Science and Society, continued to demonstrate excellence in teaching and research this year. To enrich the learning experience, Professor Ming invited several distinguished guest speakers: Father Jim Croghan, SJ, from BC High, who shared his missionary work in the Marshall Islands and first-hand experiences with sea level rise and coastal erosion; Dr. Jane Smyth, a former Ph.D. student of Professor Ming and now a climate scientist at Man Group, who discussed green financing and sustainable investment; and Jason Mikell, a broadcast meteorologist at CBS News Boston, who delivered a well-received lecture on communicating weather and climate risks to the public.

Professor Ming joined BC three years ago, and the hard work invested in building his research group is beginning to bear fruit. His first graduate student, Parker Hunt—who transitioned from the physics department—has made remarkable progress and is preparing a paper that promises to offer fundamental insights into how tropical circulation responds to anthropogenic warming. His second graduate student, Ilan Valencius, has been working jointly with Professor Ming and Professor Rich Sweeney in Economics on a study of past surface wind trends over the contiguous United States and their implications for wind energy.

Professor Ming also began incorporating artificial intelligence and machine learning (ML) into his research portfolio. He is co-advising a postdoctoral researcher with Professor George Mohler, Chair of Computer Science at BC, on applying ML techniques to climate-related problems. Together, they are preparing a manuscript on predicting crop yields in the U.S. Midwest at the county level using weather data and advanced machine learning models—an effort that bridges climate science, data analytics, and sustainability.

In summer 2025, Professor Ming also made a five-week extended visit to East and Southeast Asia, during which he visited leading institutions such as Seoul National University, National Taiwan University, and the National University of Singapore. The trip provided an opportunity to witness the region's rapid economic growth, cutting-edge infrastructure, and ambitious sustainability and renewable energy initiatives. These visits laid the groundwork for potential collaborations and exchange programs for students and faculty at Boston College, strengthening the Institute's global engagement.

In addition, Professor Ming delivered a series of high-profile lectures at Boston University, Fairfield University, PwC, and the National University of Singapore (NUS). Notably, he gave the inaugural seminar at the launch of the Center for Climate, Coastal, and Marine Studies at Fairfield University and the inaugural distinguished lecture of the Sustainable Futures Initiative at NUS. His engagement with PwC involved presenting on the frontiers of climate science at the firm's annual Power and Utilities Risk and Assurance Roundtable, which convenes industry leaders to discuss emerging trends and challenges.

Hanqin Tian

Hanqin Tian is the Institute Professor of Global Sustainability and a Professor in the Department of Earth and Environmental Science. He also directs the Center for Earth System Science and Global Sustainability. His research applies Earth System Science to advance global sustainability and guide strategies for preserving planetary health. Professor Tian's interdisciplinary work spans ecology, biogeochemistry, hydrology, economics, Earth system modeling, and data science, with a current focus on human impacts on biogeochemical and hydrological cycles that shape the food-energy-water nexus, and on nature-based solutions to societal challenges.

In 2024-25, Professor Tian and his team reached several major milestones. Supported by NSF and USDA, his research resulted in more than 30 peer-reviewed articles in leading journals, including Nature, Nature Geoscience, and Nature Communications, covering topics from fundamental science to applied solutions. In collaboration with the Global Carbon Project (GCP), in addition, he led the first greenhouse gas budget assessment for the Middle East and Central Asia, spanning 24 countries, which was featured in EOS Research Spotlight.

Professor Tian is deeply committed to mentoring the next generation of scientists. Among his mentees, one postdoctoral fellow accepted a tenure-track faculty position at Virginia Tech, one PhD student received NASA's prestigious FINESST fellowship (54 awardees selected from 539 applicants), and one undergraduate earned Program Honors for completing a senior thesis at Boston College.

As Director of the GCP Boston Office and a member of the GCP Scientific Steering Committee, Professor Tian has advanced Boston College's leadership in global sustainability. He organized a workshop on the "State of GHG and Climate Action," coordinated Earth Week events, convened a session at the American Geophysical Union (AGU) Fall Meeting, and contributed to international efforts on climate change, migration, and the development of UN Nationally Determined Contributions (NDC 3.0).

Acknowledging his global research impact, Clarivate's Web of Science named Professor Tian a 2024 Highly Cited Researcher, an honor that places him among the top one percent of scholars worldwide across multiple fields.

Professors Tian and Ming attended the Global Summit 2024: Building the Climate Workforce at the Harvard Club of Boston on September 25-26, 2024. Governor Maura Healey, speaking at the Global Summit 2024, emphasized the urgency of reducing greenhouse gas emissions and called for bold action to build a skilled, inclusive climate workforce as a cornerstone of sustainability efforts.

RESEARCH

The Schiller Institute supports BC faculty, students, and staff conducting interdisciplinary research through grant funding, training, and events aimed at connecting individuals with similar research interests across disciplines, schools, and research methodologies.

Seed Grant Programs: SI-GECS and SI-RITEA

During the 2024-25 academic year, the Schiller Institute **awarded 16 grants, totalling approximately $450,000**, to faculty members across campus. The Institute administers two grant programs: the Schiller Institute Grants for Exploratory Collaborative Scholarship (SI-GECS) program, and the Schiller Institute's grants for Research in Targeted and Emerging Areas (SI-RITEA) program. The SI-GECS program supports collaborative research projects and creative activities in the Institute's principal research focus areas of energy, health, and the environment. The SI-RITEA program supports two programmatic areas: A) grants to support scholarship focusing on the natural environment, health and well-being, or the energy transition as experienced in the Global South; and B) grants to support scholarship focusing on environmental or climate justice, climate resilience, sustainability, health and well-being, or the energy transition. Type B projects include collaboration with a US-based, non-academic partner i.e. a non-governmental organization, business (including smaller start-up companies), or local government entity.

Summary of SI-GECS grants awarded in AY25

Project Name and Principal Investigators	Project Abstract and Key Outcomes
Promoting Breastfeeding: A Qualitative and Data Science Approach to Better Understand Triple Feeding **PI: Lindsey Camp,** Assistant Professor, Connell School of Nursing **Collaborator(s):** **Emily Prud'hommeaux,** Gianinno Family Sesquicentennial Assistant Professor, Computer Science Department	Triple feeding is a trending approach to address low milk supply and inadequate infant weight gain in breastfeeding mother/infant dyads. Including a combination of feeding at the breast, pumping, and supplementing infant nutrition, this protocol has been described by mothers as time intensive and exhausting, but remains understudied in scientific research. This study implemented 1) qualitative interviews with mothers and lactation support providers and 2) natural language processing of Instagram data to better understand the lived experiences of mothers who have triple fed and the information used to guide triple feeding. Analyses are ongoing, but initial results explore the physical, mental and emotional toll of triple feeding, the need for more streamlined, supportive lactation support services during the triple feeding process, and the guidelines providers utilize to inform this practice. **Key outcomes include:** • One abstract submission to the Academy of Breastfeeding Medicine International Meeting • Two graduate and six undergraduate students trained and engaged with this research • Establishment of an interdisciplinary, cross-institutional team of experts in health communication, health behavior, human lactation, and computer science to continue to advance this work • One additional planned abstract • Two planned manuscripts
Melanin Nanoparticle - Infrared Light Cancer Therapy **PI: Michael J. Naughton,** Professor, Physics Department **Collaborator(s):** **Thomas Seyfried,** Professor, Biology Department and Krzysztof Kempa, Professor, Physics Department	Understanding the distribution of formic acid in the troposphere is crucial for addressing environmental issues that impact human activities, such as acidic precipitation and air quality. The project aims to use computer simulations to model the formation, transport, and distribution of formic acids based on fundamental physical and chemical principles. The investigators identified critical chemical reactions and reactive intermediates (Criegee intermediates) as well as explored their energies, structures, and kinetics, which deepened their mechanistic understanding of the chemical origins of formic acids in our atmosphere. **Key outcomes include:** • Three papers were published in peer-reviewed journals (two in the Journal of Chemical Theory and Computation, and one in Advanced Functional Materials). • One graduate student and one undergraduate student were trained in the project. • Two conference presentations (American Chemical Society 2024 Fall meeting, and Emerging Frontiers in Computational Chemistry and Materials). • Planned submission of a research proposal to Climate AI Innovation Grants 2024.

Summary of SI-GECS grants awarded in AY25

Project Name and Principal Investigators	Project Abstract and Key Outcomes
Examining the Costs and Utilization of Care for Those Over 65 Years Old from a Nursing-Economic Perspective **PI: Diana Bowser,** Professor & Associate Dean for Research and Integrated Science, Connell School of Nursing **Collaborator(s):** **Kit Baum,** Professor, Economics Department and **Michael Grubb,** Associate Professor, Economics Department	This research project sought to investigate Medicare spending in the U.S. using Medicare claims. Secure data were obtained, for the first time at Boston College, from the Centers for Medicare and Medicaid Services. Data included data on beneficiary enrollment information, demographics, individual health conditions and health insurance plan characteristics for individuals in two plans: Medicare Advantage and Traditional Medicare (the two largest health insurance plans for individuals over age 65 years old in the US). The analysis sought to propose methods to better understand the drivers of costs and utilization of services in these populations. The findings of this project have resulted in expanded collaborations between the nursing and economics departments and laid the groundwork for several future proposals. One of the more procedural, but equally important, outcomes for this project was setting up the secure space and computer to house the Medicare Claims. These are extremely confidential health care files and Boston College had to very closely examine the Data Use Agreement and ensure HIPAA compliant domain for the data. While a time intensive process, it was an important process for Boston College. **Key outcomes include:** • Two manuscripts in process • Two letters of intent submitted to the National Institute for Healthcare Management (NIHCM) • Developed a case study for use in health care related classes to teach students about the Medicare program and how Medicare Advantage works • Three graduate students trained • The development of the REACH Lab at Boston College. The research team, as well as several other faculty and students now meet monthly to discuss on-going research in both economics and nursing. The REACH meetings typically host undergraduate students across the economics and nursing departments.
Harnessing Solar Energy For Sustainable Ocean-based CO2-to-fuel Conversion **PI: Xingchen Tony Wang,** Assistant Professor, Earth and Environmental Sciences Department **Collaborator(s):** **Jier Huang,** Professor, Schiller Institute and Chemistry Department	This project advanced both materials and hardware needed to turn dissolved carbon dioxide (CO2) in seawater into energy-relevant molecules using sunlight. We designed visible-light-harvesting porous materials that move electrical charges efficiently to catalytic sites for CO2 conversion, and we engineered a benchtop system that extracts and concentrates CO2 from seawater to provide a clean feed for the conversion step. Together, these results outline a feasible path toward an integrated, solar-driven, ocean-based CO2-to-fuel process. **Key outcomes include:** • Synthesis and characterization of new covalent organic framework (COF) photocatalysts with improved charge separation and CO2-to-CO activity under visible light • Design, construction, and validation of a two-mode seawater CO2 extraction and concentration apparatus that delivers a clean CO2 stream for catalysis • Training and mentorship of student researchers (one graduate, two undergraduates) • Dissemination through invited seminars and conference presentations • One manuscript in preparation • Two external grant proposals submitted and pending
Using Game Theory to Make AI Safe Enough to Entrust With Our Health and Infrastructure **PI: Carl McTague,** Assistant Professor of the Practice, Computer Science Department **Collaborator(s):** **Mehmet Ekmekci,** Professor, Economics Department	Motivated by dangers posed by entrusting health and infrastructure to AI, this project investigates an approach to making AI safer, namely pitting multiple AI's against one another. If we can incentivize these AI's not to collude, then even if they become smarter than us, we may be able to trust them, because they would be scrutinizing each other. The project began working on a general framework which would apply to complex scenarios like large language models engaging in detailed, expert-level debate. But over time the research team narrowed its focus to a much simpler framework in which AI's engage simply by setting prices or quantities. This simpler framework not only simplifies simulation and analysis but directly models how firms have been incorporating AI-powered algorithms in their businesses today, and allows us to address a pressing problem of interest to policy-makers such as the Federal Trade Commission and Department of Justice: Modern companies are increasingly using algorithmic tools to set prices, raising the critical question whether these pricing algorithms could learn to collude and keep prices artificially high, even without any explicit agreement between companies. **Key outcomes include:** • Stimulated the development of a new course by Professor McTague on Reinforcement Learning • Lecture in one of Professor Ekmekci's graduate courses on Game Theory • A paper on algorithmic collusion

Summary of SI-GECS grants awarded in AY25

Project Name and Principal Investigators	Project Abstract and Key Outcomes
Climate Simulations to Serve Local Community Planning: Modeling Climate Change in the Neponset River Watershed (Massachusetts) **PI: Amin Mohebbi,** Associate Professor of Practice, Engineering Department **Collaborator(s):** **Yi Ming,** Institute Professor of Climate Science and Society & Professor, , Earth and Environmental Sciences Department	Precipitation events over the Neponset River Watershed (NRW) and the surrounding New England area were investigated. We evaluated three recent Nor'easter events using a numerical weather prediction model, which we validated against multiple observational datasets. Our results indicate that the model tends to slightly overestimate the past heavy rainfall event over New England. Furthermore, under a high-emission global warming scenario, the model simulations predict an increase in precipitation amount, warning of the increased vulnerability of NRW regions to climate change. **Key outcomes include:** • Multiple observational data were collected, and a numerical weather prediction model was installed on the BC computing system. • One manuscript submitted and one manuscript in progress • One presentation • One graduate student and two undergraduate students trained • One postdoc also contributed to the project, with funding from a separate source.
Computer-assisted Design of New Hybrid Superconductors for Energy-efficient Technology **PI: Fazel Tafti,** Associate Professor, Physics Department **Collaborator(s): James Morken,** Professor, Chemistry Department and Jan Engelbrecht, Professor, Physics Department	This project examined the feasibility of conducting research with Venezuelan migrants, including data collection before migration (in Venezuela) and shortly after arrival in the receiving context (in Colombia). Although, to date, only one participant has successfully migrated to Colombia, results suggest that this research design is feasible as the project successfully collected data with participants in Venezuela and re-contacted participants 6 to 9 months later. Myriad factors have delayed participants in emigrating. For many, worrying about elderly parents and other family members was a significant deterrent, but above all, the main reason for staying was not having the funds needed to relocate. Multiple participants have reaffirmed a desire to migrate after President Maduro's contentious reelection to a third six-year term in July 2024. The project team worked closely with international collaborators from Corporación Nuevos Rumbos in Bogotá, Colombia. **Key outcomes include:** • One conference presentation at the annual meeting of the National Hispanic Science Network, led by Boston College's inaugural UNICEF-USA BCSSW Postdoctoral Fellow (Dr. García). • One scientific manuscript in progress. • One NIH grant proposal in progress (NIH R21). • Two graduate students trained. • Key findings communicated to Venezuelan community leaders.

REACH Lab Meeting (Professor Bowser grant)

Summary of SI-RITEA grants awarded in AY25

Project Name and Principal Investigators	Project Abstract and Key Outcomes
Reduced Carbon Emissions and Enhanced Well-Being via the Four-day Workweek **Juliet Schor,** Professor, Sociology Department **Collaborator(s):** **Wen Fan,** Associate Professor, Sociology Department	The four-day week (a 32 hour schedule with no reduction in pay) is a social, economic, and ecological intervention which has the potential to help decarbonize the economy while improving employee well-being and enhancing organizational performance. The purpose of this project is to develop robust measures of the carbon impacts of the four-day week schedule. **Key outcomes include:** • Interviewed 28 people who have transitioned to a four day week schedule with no reduction in pay, to learn about their commuting , in-town transport, travel, food patterns, appliance use and other spending behaviors • Developed a 50 item survey module which we administered to 642 employees at 20 companies, using a before-and-after method (surveying at the beginning of the new schedule, at six months and at a year) • Enlisted a small number of people to upload a carbon tracking app and analyzed changes as a result of a shift to a four day week schedule
Is Healthcare a Common Good? Philosophical Perspectives and Clinical Practices in Boston and Kampala **PI: Micah Lott,** Associate Professor, Philosophy Department **Collaborator(s):** **Tom Crea,** Professor and Assistant Dean of Global Program, School of Social Work	This study explores contemporary African and Aristotelian framings of common goods, asking what the two traditions have in common, and what they can learn from each other. The empirical aim of the study is to discover whether and how different understandings of health and medicine (themselves informed by ideas about common goods) are embraced by medical practitioners in Kampala, Uganda, and Boston, USA, respectively, and what impact (if any) these understandings have on the approaches and experiences of practitioners. The IRB protocol was approved by Boston College in March of 2025. The protocol is still under review by Makerere University IRB as of September 2025. We employed a multipronged sampling approach to recruit healthcare providers in Boston and New England, including emailed introductions, flyers, classroom visits, and snowball sampling. **Key outcomes to date include:** • Recruited 13 healthcare providers, and have completed seven interviews in Boston. Aim is to complete 12 interviews in Boston and New England, and recruit an additional 12 healthcare providers from Uganda, ideally matched by professional role and gender. • One doctoral student in the School of Social Work trained • One undergraduate student in the Morrissey College of Arts and Sciences trained
Evaluating the Effectiveness of Climate Warning Labels on Gas Pumps **PI: Gregg Sparkman,** Assistant Professor, Psychology and Neuroscience Department **Collaborator(s):** **Stelios Syropoulos,** Postdoctoral Researcher, Schiller Institute & Psychology and Neuroscience Department	To address climate change, we need to reduce our usage of fossil fuels, including the use of gas and diesel vehicles. To this end, this project examines the potential benefits of adding climate change warning labels to fuel pumps to motivate people to use alternative forms of transportation. These warning labels are being considered in some states (e.g., HI and CO), and already exist in a couple cities (e.g., Cambridge, MA). We compared American drivers who were shown climate warning labels to those who were shown generic warning labels (e.g. "flammable), and found that exposure to climate warning labels have some benefits. **Key outcomes include:** • Found labels can decrease intentions to drive gas and diesel vehicles • Found labels can increase intentions to use alternatives to gas and diesel vehicles • Found labels can increase sense that one's community wants to stop driving gas and diesel vehicles • News coverage of this work in a state that was considering such labels (CO) • Shared preliminary findings with legislators in states considering labels (CO and HI) • One academic publication in preparation • One conference presentation under review • Research experience for Graduate Student and Postdoc • Small grant funding to continue this research

Summary of SI-RITEA grants awarded in AY25

Project Name and Principal Investigators	Project Abstract and Key Outcomes
Investigating Young Children's and Teachers' Climate Justice Literacies **PI: Faythe Beauchemin**, Assistant Professor, Teaching Curriculum and Society Department **Senior Consultant:** **David Deese**, Professor Emeritus, Political Science Department	This project investigated how teachers and students in first and second grade classrooms developed and grappled with climate justice literacies. We were fortunate to have the enthusiastic support of two elementary classroom teachers and a principal at a Northeastern urban, K-2 school that serves a student body that is majority multilingual and immigrant children of color. Throughout the study, we facilitated multimodal learning opportunities for children to engage in reading, writing, playing, drawing and photography about climate justice literacies. The data for this study was collected over the 2024-2025 school year. Classroom visits occurred two days per week for 6 hours each visit. This study shows how even young children in the earliest elementary grades can grasp the urgent need to act on the issue of global warming. **Key outcomes include:** • The corpus of data included 310 hours of classroom video, 431 artifacts such as student work projects (e.g. writing, artwork), over 2,000 photographs as well as field notes and conceptual memos. • Three journal articles under review • One conference presentation under review • Engaged with two BC multimedia groups: "Climate Reveal" podcast and "BC Replays lab" • Three doctoral and four undergraduate students trained.
Parks, Paths, and Dams: A History of Conservation and Infrastructure in Twentieth Century Patagonia **PI: María de los Ángeles Picone,** Assistant Professor, History Department	The Parks and Dams project explores the relationship between infrastructure development and environmental conservation in Patagonia, spanning Chile and Argentina, during the twentieth century. focus was to survey archives in Chile in the summer of 2024, which opened the path to understand how international organizations shaped conservation agendas. The project also included a trip to UNESCO archives in 2025. **Key outcomes include:** • Archival research in the Chilean Administrative Archives (Santiago, Chile) • Archival research in the Chilean National Library (Santiago Chile) • Archival research in the UNESCO archives (Paris, France) • One graduate student trained • Creation of a database with Chilean protected areas • Mapping of Chilean protected areas on ArcGIS • One grant application submitted

Research Showcases

Each year, we invite the project teams from the recently completed grants to present their work in a showcase to the campus. These symposia provide the faculty members and students with a platform to present their research, and invites members of the community, including alumni and donors, to learn more about the work being supported by Schiller.

Tracking Research Outcomes

Each year, we survey grantees on the outcomes of the grants. This allows us to measure the research productivity generated by our seed grant programs. The projects from the FY22-25 cohorts have led to the following outcomes, as reported by the grantees:

Outcome Type	Examples
54 New Grant Proposals Submitted Totaling $18.5 million. Of these proposals, 39 were funded, with awards totalling $7 million.	Funding agencies include, but are not limited to: • American Chemical Society Petroleum Research Fund Grant • NSF Convergence Accelerator Track I: Sustainable Topological Energy Materials (STEM) for Energy-efficient Applications • William T. Grant Foundation • American Chemical Society Petroleum Research Fund for Doctoral New Investigator (DNI) • National Science Foundation (Empowering Youth in STEM and Technological Careers through AI-enhanced Sustainable and Community-focused Urban Gardening) • Constellation's E2 Energy to Educate • National Science Foundation (bringing STEM education to marginalized youth) • American Nurses Foundation's Reimagining Nursing Initiative • Josiah Macy Jr. Foundation (Macy Faculty Scholars) • Grodman Family Foundation • Canadian Institutes of Health Research • National Endowment for the Humanities • Sloan Foundation (Truth in the age of large language models)
38 Papers Published	Journals include, but are not limited to: • Journal of Mathematical Chemistry • Journal of Chemical Physics • Journal of Chemical Theory and Computation • Redesigning the Future of Education in the Light of New Theories, Teaching Methods, Learning, and Researches • Journal of Health Ethics • Reproductive Health • Journal of Pediatric Nursing • Cancers • Genes • Frontiers • Journal of Gerontological Social Work Research on Aging • Journal of Community Practice • Scientific Reports • International Symposium on Computer-based Medical Systems Computing in Cardiology • Waste Management • Journal of Ethics in Educational Leadership • Journal of Community Practice
183 Boston College Students Trained	Including undergraduate students, graduate students, and postdoctoral fellows. Students have leveraged this training in obtaining jobs and writing PhD dissertations.

Outcome Type	Examples
185 Presentations **Including peer-reviewed presentations, invited presentations, community outreach**	Venues include, but are not limited to: • Gordon Research Conference • American Chemical Society • International Conference on Communication in Healthcare • Boston Public Library • International Congress of Endocrinology • Gerontological Society of America • U.S. Senator Kirsten Gillibrand's subcommittee to strengthen the Older Americans Act • U.S. Department of Labor • American Educational Research Association • American Psychological Association • Max Planck Summer Institute on Bounded Rationality • Society for Personality and Social Psychology • Air Force Office of Sponsored Research Trust and Influence Program Review • American Geophysical Union

Studying Collaboration and Interdisciplinarity in the Academy

The Institute strives for leadership in the science of interdisciplinarity as practiced in the academy. As such, the Executive Director engages in research in this topic. This year Dr. Steinberg, Schiller Institute postdoctoral researchers, and Professor Liane Young (Psychology & Neuroscience Department) completed a year of research resulting in the submittal of the paper "Interdisciplinarity and intellectual virtues in knowledge work: Evidence from a longitudinal survey of IDR-engaged faculty" to *Tertiary Education and Management*.

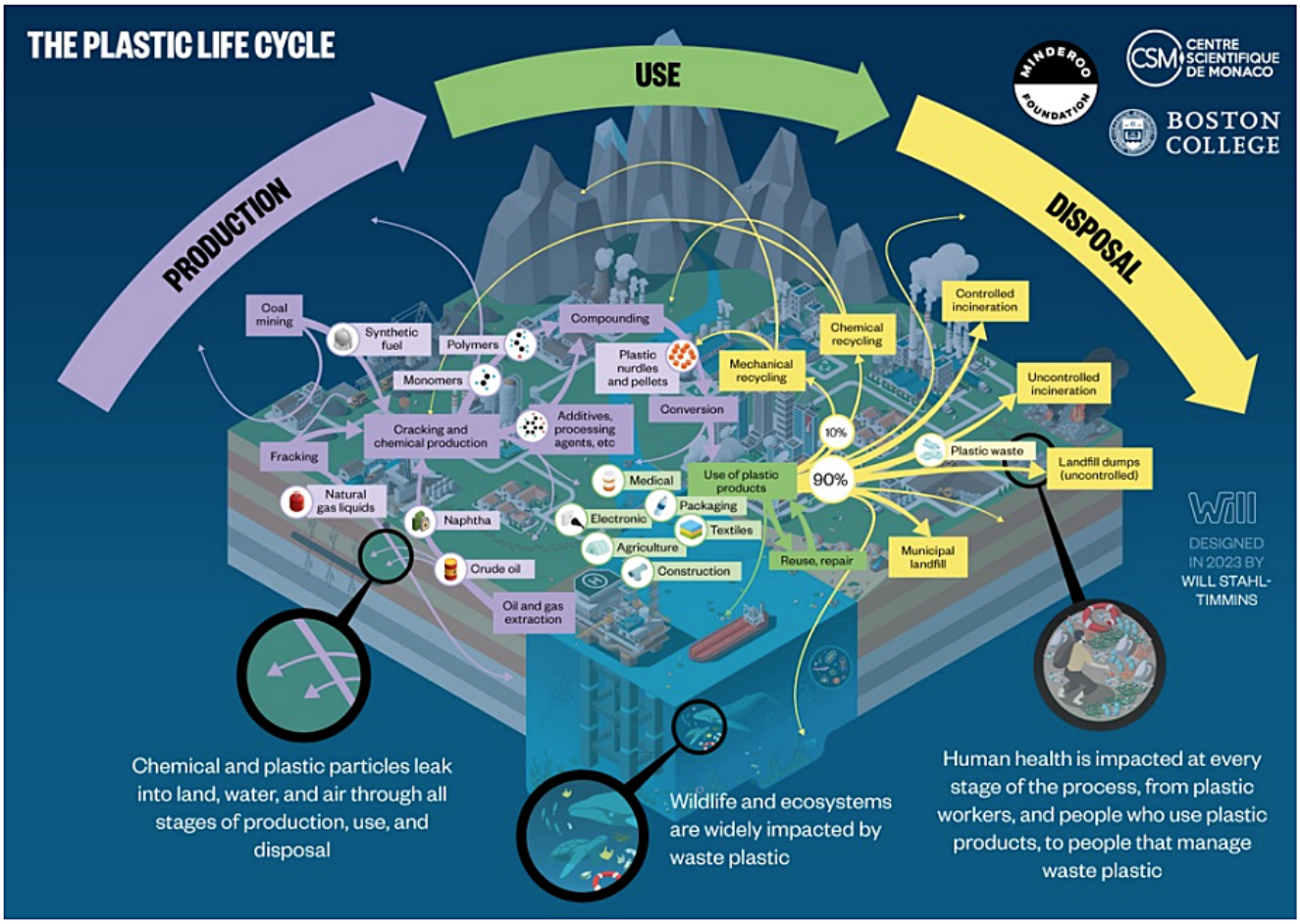
Center for Earth System Science and Global Sustainability (CES3)

Institute Professor of Global Sustainability Hanqin Tian serves as the inaugural director for Center for Earth System Science and Global Sustainability (CES3). The center works in partnership with the Global Carbon Project (GCP), which analyzes the impact of human activity on greenhouse gas emissions and Earth systems, producing global budgets for the three dominant greenhouse gasses—carbon dioxide, methane, and nitrous oxide. CES3, under Dr. Tian's direction, leads GCP's efforts related to the nitrous oxide (N2O) budget. Dr. Tian attended multiple meetings this past year to advance the work of the center, including the Coordinating Lead Authors (CLA) workgroup meeting at the UN Food and Agriculture Organization (FAO) in Rome, the annual American Geophysical Union (AGU) meeting, and the International Food Policy Research Institute (IFPRI).

The center's research achievements included the Global Nitrous Oxide Budget (1980-2020), published in Earth System Science Data. Nitrous oxide (N2O) is the third most significant greenhouse gas, following carbon dioxide (CO2) and methane (CH4), in contributing to human-induced global warming. It is 273 times more powerful than CO2 as a greenhouse gas over a 100-year time horizon, underscoring its critical role in climate change. The report includes the N2O trends and budgets for the last four decades using observations, biospheric modeling, observation-upscaled synthesis products, activity-based inventories, and atmospheric observations and modeling. This comprehensive assessment was completed by 58 authors from 55 organizations and 15 countries led by GCP in partnership with INI (International Nitrogen Initiative). More highlights from the past year can be found in the center's newsletter.

Global Observatory on Planetary Health

The Global Observatory on Planetary Health is a research center within the Schiller Institute under the direction of Dr. Philip J. Landrigan, who was the lead author of a groundbreaking new report about the far-reaching health hazards of plastics manufacturing and pollution across the entire product life cycle. The report was published in the journal *Annals of Global Public Health* and released in Monaco during Monaco Ocean Week. The study was undertaken by an international group of scientists led by the Observatory and partners at Australia's Minderoo Foundation and the Centre Scientifique de Monaco.



Dr. Landrigan describes the study: "This is the first analysis to look at hazards to human health caused by plastics across their entire life cycle - cradle to grave – beginning with extraction of the coal, oil and gas from which nearly all plastics are made, through production and use, and on to the point where plastic wastes are thrown into landfills, dumped into the ocean or shipped overseas. Previous studies have looked at pieces of the plastic life cycle. They have looked at the problem from many different perspectives based on expertise in air pollution, or the oceans, or fracking, or medicine. But until now, nobody has looked at the entire problem all at once. That is what is different about our approach...that and the fact that we focused very specifically on plastics' impacts on human health." Read more about the study here.

FACULTY ENGAGEMENT

In addition to the Core faculty and seed grant programs, the Schiller Institute offers many opportunities for faculty members to connect over shared interests in energy, environment, and health.

Events

A defining feature of the Institute is its identity as a place which draws upon and supports the expertise and perspectives of faculty across all of Boston College's departments, schools, and colleges. The **Schiller Institute Welcome Celebration for New Faculty** invited all new faculty members at Boston College to enjoy a cocktail reception and hor d'oeuvres with colleagues, mingle with Institute faculty and staff, and learn about the Institute's programs and grants. The welcome event has become an annual tradition and provides these faculty with the chance to reconnect with their colleagues beyond orientation. The Institute also continued our **Faculty Social Hour** series. These events provide faculty members with common interests with not only space to connect socially, but also to create and strengthen collaborative relationships. Multiple seed grant proposals have catalyzed from faculty members meeting or learning about potential collaborators at these events. These events have also generated new programmatic ideas that the Institute has brought to life.

Affiliate Faculty

We welcomed the inaugural cohort of Affiliate Faculty this academic year. The group convened multiple times and planning is underway for new initiatives from the group in the coming year. The affiliates took advantage of the benefits provided by their participation, including:

- Funding for nine projects, trips, etc. for eight affiliates, including publishing costs, panel costs for a
- conference meeting, project costs, workshop costs for attendees to build on a public impact project, and research equipment
- Office space for a visiting researcher
- Opportunities to meet with invited speakers
- Invitations to attend various symposia

Affiliated members helped to publicize the Institute's activities to their departments and schools, participated in reviewing seed grant proposals, and offered suggestions on future activities of the Institute.

John Christianson shared the following reflection when invited to join: "The folks affiliated with Schiller share a common vision to generate a new sort of intellectual community at BC and it has been enjoyable to be part of the effort."

The 2024 – 2026 Schiller Affiliates are:

Marina Bers, Augustus Long Professor of Education, Formative Education, LSEHD

John Christianson, Chair and Professor, Psychology and Neuroscience, MCAS

Avneet Hira, Assistant Professor, Engineering, MCAS

S. Mo Jones-Jang, Associate Professor, Communications, MCAS

Praveen Kumar, Associate Professor, SSW

Rebecca Lowenhaupt, Professor, Educational Leadership, LSEHD

Karen Lyons, Professor, CSON

Qiong Ma, Professor, Physics, MCAS

C. Shawn McGuffey, Associate Professor, Sociology, MCAS

Daniel McKaughan, Associate Professor, Philosophy, MCAS

George Mohler, Chair and Professor, Computer Science, MCAS

Babak Momeni, Associate Professor, Biology, MCAS

Gergana Y. Nenkov, Associate Professor, Marketing, CSOM

María Fernanda Piñeros, Assistant Professor, SSW

Min Song, Chair and Professor, English, MCAS

Richard Sweeney, Associate Professor, Economics, MCAS

Fazel Tafti, Associate Professor, Physics, MCAS

Conevery Bolton Valencius, Professor, History, MCAS

Brittney van de Water, Assistant Professor, CSON

Sandra Waddock, Galligan Chair of Strategy and Professor, Management, CSOM

Liane Young, Professor, Psychology and Neuroscience, MCAS

OTHER CONTRIBUTIONS TO CAMPUS LIFE

The Schiller Institute prides itself on being dynamic and responsive to the needs and interests of the campus community. We host and co-sponsor numerous events and programs that address timely topics and provide people with an opportunity to connect. We have had the pleasure of working with many great partners across campus.

United Nations Conference of the Parties (UN COP)

Boston College is an official observer organization to the United Nations Framework Convention on Climate Change (UNFCCC), which enables the institution to send a delegation to one of the foremost international meetings on climate change, the Conference of Parties (often simply referred to as COP). COP provides an annual forum for treaty parties to negotiate new goals and review progress toward existing commitments and typically culminates in an agreement released at the close of the conference, perhaps the best known example of which is the Paris Agreement. From November 11th through November 22nd, our COP29 delegation represented the BC community in Baku, Azerbaijan.

Delegation

Each year, Institute staff chair a selection committee to pick the delegation through a competitive two-round campus-wide application. Delegates were competitively selected from a pool of over 200 applicants by a committee of faculty, staff, and students from across campus. The interdisciplinary committee consists of faculty, staff, and students from prior delegations. Applicants are assessed on a variety of criteria with the ultimate goal of selecting a delegation that represents the University through a diversity of disciplines, experience, and cultural perspectives.

The delegation traveled in two groups with Caitlyn Bolton (Assistant Professor of Formative Education) serving as faculty lead for the first group and Praveen Kumar (Associate Professor of Social Work) leading the second group. Faculty leads have the dual responsibility of working with Schiller and BC to ensure the safety of delegates, and for providing COP-related expertise for the benefit of the delegation, including facilitating reflection sessions during the time in-country. The delegation included two additional faculty members, six graduate students, seven undergraduate students, and one staff member. The delegates represented the Carroll School of Management, Connell School of Nursing, Law School, Lynch School of Education and Human Development, School of Social Work, Woods College of Advancing Studies, and the Morrissey College of Arts & Sciences, including Communication, Economics, Environmental Geoscience, Environmental Studies, Global Public Health and the Common Good, Human-Centered Engineering, International Studies, and Philosophy. More information about the delegates can be found on the Institute's COP29 website.

COP Events and Symposium

During the two weeks of COP29, the Institute hosted **Broadcasts from Baku**, where members of the BC community gathered in the Schiller Institute Convening Space and connected with the delegation via Zoom. The delegates shared their experiences so far, including on-the-ground reports from the largest international climate change conference in the world. In addition to the live interaction during the Broadcasts, highlights were edited into **Discover Boston College podcast episodes**. DBC is produced by Boston College's Division of Student Affairs in collaboration with D100 Media, a venture founded by Dylan Carollo '25. Full recordings of the Broadcasts and the podcast episodes can be found on the COP29 digital media section of the website.

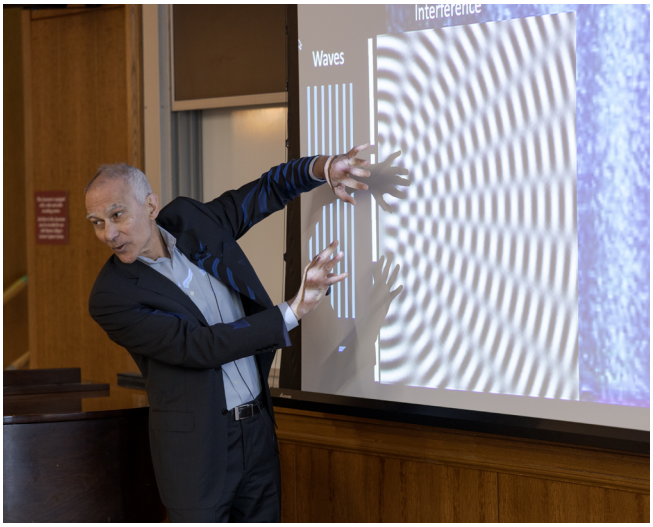
The **COP Symposium** is a half-day event that consists of a student panel and multiple exhibits where attendees interact with delegates directly. Each year's delegation designs the Symposium to be a "mini COP," providing BC faculty and students who didn't travel to the conference with an opportunity to share in their experiences. This year's symposium featured Esquire Henry as the keynote speaker. Esquire is a passionate youth advocate and community leader. Among his many accomplishments, he serves as a National and CARICOM Youth Ambassador for Antigua and Barbuda, a member of the United Nations Youth Advisory Group for Barbados and the Eastern Caribbean, and a member of the Caribbean Development Bank's Future Leaders' Network. He has also been the NYPAAB Youth Parliamentarian for All Saints East and St. Luke for four years. The symposium was also featured on the Discover Boston College podcast, and received coverage in the *Antigua Observer* and *SchillerNow*.

Our COP delegation and programming received additional media coverage, including articles in *Bloomberg* (quote by Praveen Kumar), *BC Chronicle*, the Woods College website, the University of Oregon's College of Arts and Science alumni publication (article about Schiller staff member Kaley McCarty), and Colégio Medianeira (a Jesuit university in Brazil, which wrote about one of our delegates who is from Brazil).

Events Hosted by the Schiller Institute

The **Schiller Institute Distinguished Lecture Series** brings experts from diverse fields to campus to share their insights with a wider interdisciplinary audience. These lectures aim to foster cross-disciplinary dialogue, encourage innovative thinking, and promote the dissemination of knowledge beyond traditional academic boundaries. The series inspires collaboration and provides valuable perspectives on critical issues at the intersection of energy, health, and the environment. During the past academic year, we welcomed three esteemed speakers to campus to give the following lectures:

"My Life in Science: Why quantum mechanics is fascinating and how it is changing our world" by Dr. Moungi Bawendi, who is a 2023 Nobel Prize winner in Chemistry and Lester Wolfe Professor at MIT. Bawendi is renowned for his pioneering work in nanoscience, particularly in quantum dots – one of the first engineered nano-materials – which have become ubiquitous in displays and other applications. Their properties intrinsically reflect the magic of quantum mechanics. Bawendi discussed their origin story, development, and applications during a span of almost 4 decades, as well as his own journey of scientific exploration. This story reflects the importance of curiosity-driven science to propel innovation and technological progress.



"Climate models: whence they came, where they're going, and why we should trust them" by V Balaji, who is a Schmidt Sciences Distinguished Fellow and climate modeling pioneer. His presentation provided an introduction to climate models, their history and evolution, and their central role today in climate research and climate policy. We rely on them to design pathways to a carbon-neutral future. From the early days, the models have added a dizzying amount of detail and remain our one method of getting data from the future of our planet and from counterfactual planets. However, the evolution of computing technology is bringing forth new methods borrowed from machine learning and artificial intelligence, which pose fundamental questions about the next generation of models. But if successful, the new approaches promise the possibility of placing these tools in the hands of those who most need them.

"Risks of destabilization of the carbon cycle" by Dr. Philippe Ciais, who is a senior researcher at Laboratoire des Sciences du Climat et de l'Environnement in Saclay, France. He is a globally recognized expert in climate science with over 1,200 peer-reviewed publications cited 200,000 times. Ranked among the top 1% most-cited scientists in Geosciences and Ecology and one of the top-5 most influential authors in climate change, Dr. Ciais has focused on terrestrial greenhouse gas fluxes for over two decades. He co-chaired the Global Carbon Project, coordinating 80 research institutions to study carbon cycle trends, and served as Convening Lead Author for the IPCC's 5th Assessment Report. An elected member of the French and Chinese Academies of Sciences, Dr. Ciais now leads a groundbreaking project assessing the destabilization of the natural carbon cycle due to climate change.

Co-sponsored Events

In addition to events hosted by the Institute, we co-sponsored many exciting events with campus partners throughout the year. These events included:

What The Constitution Means to Us. The Institute co-sponsored this event put on by the Clough Center for the Study of Constitutional Democracy. The event invites faculty and students to consider the following prompt: Since the founding of the United States, the American Constitution has been central to our public life. It has inspired hope, and it has provoked despair. It has remained in place, as few other national constitutions have. Yet it has also repeatedly been changed, and some today think it needs to change again. At a moment when its basic meaning seems more contested than ever, how should we look at the Constitution today? This year's event featured A.J. Jacobs, a New York Times-bestselling author with a flare for comedy and "immersion journalism."

Climate and Migration Lecture Series - Geek Democracy: How to Be an 'Expert' in the Anthropocene. Lecture by Liz Fisher, a Professor of Environmental Law Corpus Christi College, Oxford. Given the ecological risks societies face, having reliable in-depth knowledge about the physical and social world matters more than ever. But 'expertise' is often viewed superficially, with cynicism, and as anti-democratic – leading to a risk that the very institutions that are needed in our precarious times are hollowed out. Dr. Fisher shared five lessons learned over three decades of researching environmental regulation, and presented a more constructive and hopeful vision of expertise and its place in democracy. The series was co-sponsored by the Schiller Institute, Law School, and the Program on Global Ethics and Social Trust.

Here Be Dragons: The Challenges of Pursuing Responsible AI. danah boyd, partner researcher at Microsoft Research and Distinguished Visiting Professor at Georgetown University, spoke about human-centered data science. The lecture was co-sponsored with the Lynch School of Education and Human Development.

Rare Earth Mineral Geopolitics in Ukraine: What Are We Actually Talking About? Ethan Baxter, Professor of Earth and Environmental Sciences at Boston College, gave a lecture inspired by media reports of the "minerals deal" or the "rare earth minerals deal" with Ukraine. His presentation examined the critical minerals actually in play, as well as the environmental and geopolitical issues surrounding their extraction and use. The lecture was in collaboration with the Earth and Environmental Sciences Department and Environmental Studies Program.

Sy Montgomery: "The Secrets of the Octopus". Sy Montgomery is the author of 34 books, including The Soul of an Octopus: A Surprising Exploration into the Wonder of Consciousness, which was a finalist for the 2015 National Book Award for Nonfiction and was a New York Times best seller. The event was co-sponsored by the Environmental Studies Program, Biology Department, BC Arts Council and part of the Lowell Humanities Series.

Gerson Family Lecture: Ed Yong: "What Pandemics Teach Us". Named "the most important and impactful journalist" of 2020 by Poynter, Ed Yong was awarded the 2021 Pulitzer Prize for Explanatory Reporting for his crucial coverage of the coronavirus pandemic. He anticipated the course of the virus, the complex challenges that the U.S. faced, and the government's disastrous failure in its response. An accomplished speaker, Yong brought his vast scientific knowledge and engaged the audience through his insightful conversations about the pandemic, the animal kingdom, and the challenges of science journalism. The event was co-sponsored by the Park Street Corporation Speaker Series, and Asian American Studies Program; and made possible by the Gerson Family Lecture Fund, established by John A. and Jean N. Gerson, P'14, and Jaclyn Gerson Rossiter '14.

John McNeill: "The Industrial Revolution as Global Environmental History". Since 1985, John McNeill has taught history at Georgetown University. He has received two Fulbright awards, a Guggenheim fellowship, a MacArthur grant, and a fellowship at the Woodrow Wilson Center. He has had visiting appointments at the Ecole des Hautes Etudes en Sciences Sociales and Universities of Oslo, Bologna, Canterbury, Otago, and was a Guest Professor at Peking University. Since 2011, he has served as a member of the Anthropocene Working Group. He has served as President of the American Society for Environmental History and the American Historical Association. The event was co-sponsored by the University Core Curriculum, History Department, and part of the Lowell Humanities Series.

Earth Week Presents: Linking knowledge with action to support sustainable development. William Clark is the Harvey Brooks Research Professor of International Science, Public Policy and Human Development at Harvard University's John F. Kennedy School of Government. Global Sustainability has long been a vision for a world in which people's well-being in the here and now is enhanced without compromising the ability of people elsewhere or in the future to define and promote their own well-being. The pursuit of sustainability is ultimately a political process requiring constant efforts to combat barriers of power, corruption and inequity. But it is also an intellectual process requiring constant efforts to experiment, discover, and innovate. This seminar reviewed what has been learned about the challenges of – and opportunities for – linking knowledge with action to support sustainable development in our chaotic and polarized world. Co-sponsored by Global Carbon Project, Center for Earth Systems Science and Global Sustainability (CES3), and Earth and Environmental Sciences department.

The Social and Cultural Origins of Invention. Lecture by Joe Henrich, the Ruth Moore Professor of Biological Anthropology in the Department of Human Evolutionary Biology at Harvard University. His research deploys evolutionary theory to understand how human psychology gives rise to cultural evolution and how this has shaped our species' genetic evolution. Using insights generated from this approach, Professor Henrich has explored a variety of topics, including economic decision-making, social norms, fairness, religion, marriage, prestige, cooperation, and innovation. Co-sponsored by the department of Psychology & Neuroscience.

Research Section of *BC Talks AI.* Institute Professor of Climate Science and Society Yi Ming and Schiller Affiliated Faculty George Mohler led an interdisciplinary committee organizing the research section of this conference. The conference was led by ITS and the Provost's Office.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