2023 MIT Sustainability Conference

September 26, 2023 - September 27, 2023

Day 1 | Tuesday September 26, 2023

8:00 AM	Registration and Light Breakfast

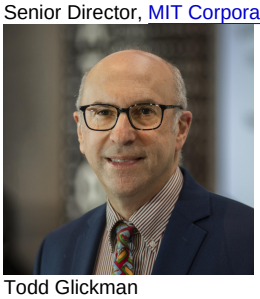
9:00 AM

Opening Remarks
John Roberts
Executive Director (Interim), MIT Corporate Relations

John Roberts
Executive Director (Interim)
MIT Corporate Relations

John Roberts has been Executive Director of MIT Corporate Relations (Interim) since February 2022. He obtained his Ph.D. in organic chemistry at MIT and returned to the university after a 20-year career in the pharmaceutical industry, joining the MIT Industrial Liaison Program (ILP) in 2013. Prior to his return, John worked at small, medium, and large companies, holding positions that allowed him to exploit his passions in synthetic chemistry, project leadership, and alliance management while growing his responsibilities for managing others, ultimately as a department head. As a program director at MIT, John built a portfolio of ILP member companies, mostly in the pharmaceutical industry and headquartered in Japan, connecting them to engagement opportunities in the MIT community. Soon after returning to MIT, John began to lead a group of program directors with a combined portfolio of 60-80 global companies. In his current role, John oversees MIT Corporate Relations which houses ILP and MIT Startup Exchange.

Todd Glickman
Senior Director, MIT Corporate Relations



Todd Glickman
Senior Director
MIT Corporate Relations

Mr. Glickman joined the Industrial Liaison Program in January 2000, serving as the MIT liaison for companies worldwide, and joined the senior management of the office in 2005.

Prior to joining ILP, Todd was Assistant Executive Director of the American Meteorological Society (AMS), the professional society for meteorologists, which is based in Boston. At AMS, Todd's responsibilities included strategic planning for conferences, headquarters' liaison with AMS member boards and committees, support to the AMS Council, and public relations. In addition, Todd was Managing Editor for the AMS Glossary of Meteorology (2nd edition).

From 1979 to 1994, Todd held a variety of positions with WSI Corporation of Billerica, MA, including Manager, New Product Development, Media Marketing Manager, and Manager of the Government Program Office. WSI was a pioneer in the development of real-time weather information, providing value-added information and workstations for clients in media, aviation, industry, academia, and government. Some of Todd's projects included development of the weather data/information infrastructure for The Weather Channel; the introduction of digital satellite and radar imagery for television; planning and implementation of a network of weather briefing systems for the Federal Aviation Administration; and serving as liaison with the National Weather Service and professional organizations. In addition, Todd was instrumental in helping to develop the public-private partnership between the weather information industry and the Federal government.

Concurrently, Todd has a more than 30-year career as a radio meteorologist, and has been heard on dozens of stations nationwide. Today, he can be heard occasionally on all-news WCBS Newsradio-88 in New York City. He has chaired numerous meteorological conferences and symposia, and served on a number of boards and committees for the American Meteorological Society (AMS). He was awarded the AMS Seal of Approval for Radio Weathercasting in 1979, and was elected a Fellow of the AMS in 1997.

Todd's interests include transportation systems of all types, and he is an officer and past-trustee of the Seashore Trolley Museum of Kennebunkport, Maine. At MIT, Todd an officer and trustee of the Technology Broadcasting Corporation, which oversees the campus radio station WMBR-FM. He also volunteers as the academic advisor to a group of MIT freshman.

View full bio
Corey Cheng
Program Director, MIT Industrial Liaison Program

9:10 AM

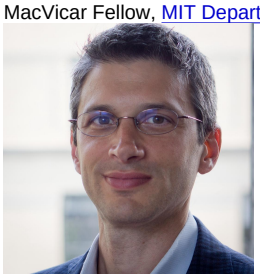
Invited Keynote: The Impact of National Scale Sustainability Policies on Industry

Tina Bahadori, M.S., B.S. MIT
Executive Director, Division of Engineering and Physical Sciences
The National Academies of Sciences, Engineering, and Medicine

A key pillar of sustainability is to optimize solutions while managing and minimizing unintended consequences. This requires that the impact of decisions and choices are considered throughout their lifecycle from design to implementation and across a cascade of adjacent decisions. Bound by mission and authority, national scale policies and regulatory frameworks are rarely holistic and tend to focus on compartmentalized aspects of sustainability. This presentation will discuss how industry is best positioned to transcend this patchwork of policies and lead the development of sustainability approaches that address society's greatest challenges, inspire the economy, create a resilient workforce pipeline, continuously charge a science, research, and development ecosystem, while protecting and enhancing the health and wellbeing of the environment and public health.

9:50 AM

MIT Sustainability Lightning Talks
Jeffrey Grossman
Professor of Materials Science and Engineering
MacVicar Fellow, MIT Department of Materials Science and Engineering



Jeffrey Grossman
Professor of Materials Science and Engineering
MacVicar Fellow
MIT Department of Materials Science and Engineering

Professor Grossman received his Ph.D. in theoretical physics from the University of Illinois and performed postdoctoral work at the University of California at Berkeley. In 2009, he joined MIT, where he developed a research program known for its contributions to energy conversion, energy storage, membranes, and clean-water technologies. He served as the Head of the Department of Materials Science and Engineering from 2020-2023, and in 2021 he helped create and became the founding co-director of the MIT Climate and Sustainability Consortium, a new type of academia-industry partnership. In recognition of his contributions to engineering education, Grossman was named an MIT MacVicar Faculty Fellow and received the Bose Award for Excellence in Teaching. He has published more than 200 scientific papers, holds 17 current or pending U.S. patents, and co-founded two Massachusetts companies to commercialize novel membranes materials for efficient industrial separations: ViaSeparations, a company that commercializes graphene-oxide membranes to separate chemicals for manufacturing, and SiTration, a company that commercializes silicon membranes for chemical-free, energy-efficient extraction and recycling of critical materials.

View full bio

The MIT Climate and Sustainability Consortium (MCSC) fosters deep collaboration with companies across the global economy alongside leading experts at MIT as we all work towards necessary and aggressive climate and sustainability goals. This presentation will provide the latest cross-institute, cross-sector efforts of the MCSC to decarbonize tough transportation sectors, carbon removals, material and product circularity as well as value chain resilience.

Dava Newman
Apollo Professor of Astronautics
Director, MIT Media Lab

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Apollo Professor of Astronautics
Director
MIT Media Lab

Dava Newman is the director of the MIT Media Lab. She holds the Apollo Program Professor of Astronautics chair at the Massachusetts Institute of Technology (MIT) and is a Harvard–MIT Health, Sciences, and Technology faculty member in Cambridge, Massachusetts. She was named a MacVicar Faculty Fellow (a chair for making significant contributions to undergraduate education); and was the former Director of the Technology and Policy Program at MIT (2003–2015); and Director of the MIT–Portugal Program (2011–2015, 2017-2021). As the Director of MIT's Technology and Policy Program (TPP), she led this unique multidisciplinary graduate program with over 1,300 alums and faculty advisors from all 5 Schools across the Institute. She has been a faculty leader in Aeronautics and Astronautics and MIT's School of Engineering for 29 years. She holds a top-secret clearance.

How can we reduce harm to our planet and the future prospects of life on Earth? How can we turn the tide to regenerate Earth's systems while enabling societies to flourish? The urgent challenge is to supply affordable energy, food, and security for sustained life on Earth—for all living beings—by inventing transformative technologies and adapting human behavior at an unprecedented scale at this critical time in history. We uniquely combine interdisciplinary expertise—from oceans to space, genetics to cities—and develop artificial intelligence, machine learning, supercomputer visualizations, and powerful experiences to change human behavior. We create transformative technologies, experiences, and systems

10:35 AM Networking Break

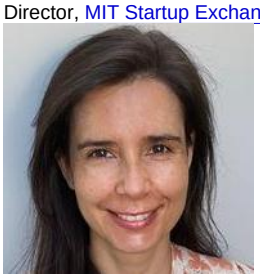
11:05 AM Perspectives on a Multi-Energy Mobility Ecosystem

Katie Rowen
SVP, Chief Legal & Sustainability Officer
Vontier Corporation

Across the globe, there's never been greater energy and investment to drastically reduce greenhouse gas emissions in the transportation industry — and leading this charge is the electric vehicle (EV) revolution. Vontier believes in the immense potential of electrification to transform the mobility sector and are proud to have over 40,000 plugs under management across the globe through our Driivz business. Electrification is not enough, however. Reaching both short and long-term decarbonization targets requires a more holistic and multi-energy approach. This is because electrification is only one piece of the larger puzzle, particularly when one looks across all modes of transportation and all geographies. A successful transition to zero-emissions will require multiple technologies and alternative fuels, like renewable natural gas and clean hydrogen. Katie will share Vontier's unique point of view as a multi-energy solutions providers, including lessons learned and sustainability program implications.

11:45 AM

MIT Startup Exchange Lightning Talks
Catarina Madeira
Director, MIT Startup Exchange



Catarina Madeira
Director
MIT Startup Exchange

Catarina has been working with the Cambridge/Boston startup ecosystem for over 10 years and joined Corporate Relations with a solid network in the innovation and entrepreneurial community. Prior to MIT, she was part of the team that designed and launched the startup accelerator IUL MIT Portugal, which was later rebranded as Building Global Innovators. She was based in Lisbon and worked in direct relation with the Cambridge team. She held positions including Operations Coordinator, Program Manager, and Business Developer. The accelerator soon achieved steady growth in large part due to the partnerships that Catarina led with regional and global startup ecosystems. After that, she worked at NECEC, leading a program that connects cleantech startups and industry. In this role, she developed and built a pipeline of startups and forged strong relationships with both domestic and European companies. She has also held positions in Portugal and France, including at Saboaria e Perfumaria Confiança and L'Oréal as Technical Director and Pharmacist. Catarina earned her bachelor's in chemistry and pharmaceutical sciences in Portugal. She went on to earn her Master of Engineering for Health and Medicines in France.

Julia Somerdin
Co-founder and CEO
Labby

Cameron Halliday
Co-Founder and CEO
Mantel Capture, Inc.

Jose Tomas Dominguez
Founder
Atacama

Peter Godart, PhD
Co-founder and CEO
Found Energy

Matthew West
Head of Marketing
Alsym

Jake Guglin
CEO and Founder
Foundation Alloy

Matt Hudson
Project Engineer
MAAT Energy

Mike Strauch
Senior Systems Engineer
Transaera

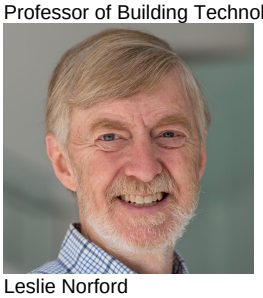
Virj Kan
CEO
Primitives Biodesign

Paolo Sabatini
Co-Founder & CEO
DMAT

Mark Poole
Director of R&D
Capra Biosciences

12:45 PM Lunch with Startup Exhibit

1:45 PM Optimized for Sustainability: Design of Structural and Thermal Systems for the Built Environment
Leslie Norford
Professor of Building Technology, MIT Department of Architecture



Leslie Norford
Professor of Building Technology
MIT Department of Architecture

Leslie Norford is Professor of Building Technology in the Department of Architecture at MIT. His research focuses on reducing building energy use and associated resource consumption and carbon emissions and his teaching includes project-based efforts to improve schools in developing countries and promote the use of simulation-enhanced building design workflows. He has developed fault detection and optimal control strategies for HVAC equipment and explored design options for low-energy space-conditioning systems based on the use of desiccants and membranes for latent cooling. Working with mechanical and electrical engineering colleagues and students at MIT, he has studied how control of HVAC systems can help electric utilities mitigate the impact of power fluctuations associated with wind and PV systems through provision of such services as power reserves and frequency regulation. Active internationally, he has conducted measurement campaigns and numerical analyses of building energy consumption in Russia, China, Pakistan, the UK and Norway. Work in India focused on indoor and ambient air quality, with emphasis on mitigating the impact of cooking and land-clearing fires in agricultural areas that surround cities. Over a decade of leading a research group in Singapore, under the auspices of the Singapore-MIT Alliance for Research and Technology, and related work with colleagues in Abu Dhabi continues to yield measurements and models of urban microclimates, with a focus on identifying strategies to improve human thermal comfort in outdoor urban areas. With colleagues, current work focuses on computational design of building structures and energy systems to minimize life-cycle carbon emissions while ensuring heat resilience and indoor thermal comfort.

View full bio

The environmental footprint of buildings includes energy use and carbon emissions associated with materials and construction as well as building operation. Design is most sustainable when it simultaneously accounts for structural and thermal performance of buildings and interactions of buildings with the urban environment. This presentation will share component and system designs produced by simulation workflows that capture these interactions: lightweight, thermally activated concrete floor systems that substantially reduce embodied carbon while achieving modest operational savings; rejection of heat by radiation to the night sky, night-flush ventilation or seasonal storage in the ground, in lieu of the use of conventional vapor-compression cooling systems; and 3D-printing of clay blocks that provide both thermal resistance and thermal storage.

2:25 PM

Panel: Innovation in the Water Sector: Focus on Industry-Academic Collaboration
Renee Robins
Executive Director, Abdul Jameel Water and Food Systems Lab

Renee Robins
Executive Director
Abdul Jameel Water and Food Systems Lab

Renee J. Robins is the Executive Director of the Abdul Latif Jameel Water and Food Systems Lab at MIT. Renee works closely with faculty director John Lienhard to develop and manage the lab's activities, priorities, and strategy, including new funding opportunities and international collaborations.

Since 1998, Renee has worked on the conception, launch, and development of a number of large interdisciplinary, international, and partnership-based research and education collaborations at MIT and elsewhere. MIT programs she has worked on since she joined the staff in 1998 include the Cambridge MIT Institute (Associate Director for Graduate Programs), the MIT Portugal Program (Director for Program Integration), the Mexico City Program (Program Coordinator), and the Program on Emerging Technologies (Program Manager). From 2000-2011, she also served as Director of Special Projects for the Technology and Policy Program, where she was responsible for the development of a number of academic initiatives and major events. Before joining J-WAFS as executive director, she managed a $15M research program at the Harvard Graduate School of Education as it scaled from implementation in one public school district to 59 schools in seven districts across North Carolina.

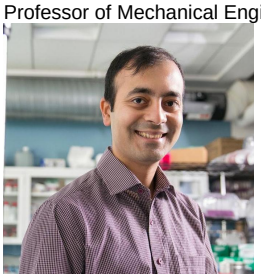
Outside of MIT, Renee's experience includes serving on the Board of Trustees for the International Honors Program (IHP) – a comparative multi-site study abroad program – and independent consulting work for the International Atomic Energy Agency in Vienna and program design and strategy consulting for Université Mohammed VI Polytechnique (UM6P), a new university in Morocco. For IHP, she conceived, initiated, and developed the "Cities in the 21st Century" program, which began in 1998 and is one of IHP's most popular offerings with over 1000 alumni. She is herself an alumna of IHP, having studied comparative culture and anthropology in seven countries around the world, and also studied at the Sorbonne in Paris.

Renee's holds two undergraduate degrees from MIT (biology and humanities/anthropology), and a masters degree in public policy from Carnegie Mellon University.

Carol Walczyk
Vice President, Process Efficiency Analysis
Veolia Corporation

Mr. Jeff Lopes
Technical Incubator & University Partnerships Lead
Xylem Innovation Labs

Rohit Karnik
Professor of Mechanical Engineering, Microfluidics & Nanofluidics Research Laboratory



Rohit Karnik
Professor of Mechanical Engineering
Microfluidics & Nanofluidics Research Laboratory

Rohit Karnik is Professor of Mechanical Engineering at the Massachusetts Institute of Technology, where he leads the Microfluidics and Nanofluidics Research Group. He obtained his B. Tech. degree from the Indian Institute of Technology at Bombay in 2002, and his PhD from the University of California at Berkeley in 2006 under the guidance of Prof. Arun Majumdar. After postdoctoral work with Prof. Robert Langer at MIT, he joined the Department of Mechanical Engineering at MIT in 2007. His research focuses on the physics of micro- and nanofluidic flows and design of micro- and nanofluidic devices for applications in healthcare, energy systems, and biochemical separation and analysis. Among other honors, he is a recipient of the Institute Silver Medal (IIT Bombay, 2002), NSF Career Award

3:10 PM

Sustainability Education for the Current and Future Corporate Workforce

Liz Potter-Nelson
Physics and Science Education
University of Maine

Education is a driver when we consider societal evolution and growth, and that is no different with topics of sustainability and climate change. As such, the intersection of sustainability with education is rich in growth, opportunity, and student engagement. This presentation will situate sustainability education and provide a brief overview of how students are currently educated on topics of climate change and sustainability, and what that means for you and your organization.

3:35 PM

Networking Break

4:05 PM

Digital Sustainability: Design, Infrastructure, and Applications for the Massachusetts Green High Performance Computing Center
Chris Hill
Principal Research Engineer, Department of Earth, Atmospheric, and Planetary Sciences

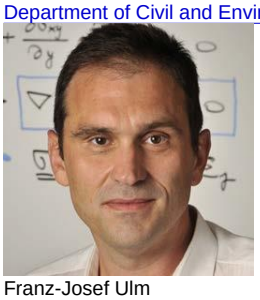
Chris Hill
Principal Research Engineer
Department of Earth, Atmospheric, and Planetary Sciences

Chris Hill is a principal research engineer in the Department of Earth, Atmospheric and Planetary Sciences at MIT. Hill specializes in Earth and planetary computational science, with a focus on applying large-scale computation to oceanography and climate. His work has included multi-physics, multi-scale models of fluid problems that have relevance to improved modeling of flows in inhomogeneous porous media. Hill co-leads the research, education, and outreach committee of the Massachusetts Green High Performance Computing Center (MGHPCC).

In this talk, I will describe the latest generation high-performance computing, storage, and networking facility that MIT operates in the town of Holyoke, MA. This facility is the latest in MIT's 60+ year history of deploying data center facilities to support every growing computing and data needs to researchers across MIT. The Holyoke facility is designed to be energy efficient, using a variety of techniques to reduce its power consumption. The facility also has robust cooling systems to ensure that the computers are kept within environmental limits. I will talk about the design, energy landscape, and operations of the facility, and will give an in-depth example of how the facility is used to study the role of the ocean in climate research.

4:45 PM

Scalable Energy Storage in Concrete – All Buildings A “Battery”
Franz-Josef Ulm
Faculty Director, Concrete Sustainability Hub
Professor, Construction Management, Civil and Environmental Engineering, MIT Department of Civil and Environmental Engineering



Franz-Josef Ulm
Faculty Director, Concrete Sustainability Hub
Professor, Construction Management, Civil and Environmental Engineering
MIT Department of Civil and Environmental Engineering

Franz-Josef Ulm is Professor of Civil & Environmental Engineering at MIT. A structural engineer by training he joined MIT in 1999, where he is responsible for Materials and Structures. He is an elected member of the US National Academy of Engineering, of the European Academy of Sciences and Arts and of the Austrian Academy of Sciences. He is Editor-In-Chief of the Journal of Engineering Mechanics of the American Society of Civil Engineers.

View full bio

Admir Masic
Esther and Harold E. Edgerton Associate Professor of Civil and Environmental Engineering, MIT Department of Civil and Environmental Engineering

Admir Masic
Esther and Harold E. Edgerton Associate Professor of Civil and Environmental Engineering
MIT Department of Civil and Environmental Engineering

Admir Masic is Associate Professor at the Massachusetts Institute of Technology. Masic’s research focuses on the science-enabled engineering of sustainable construction materials for large-scale infrastructure innovation. A chemist by training, with expertise in biomineralization, he specializes in the development of multifunctional cement-based materials, ranging from self-healing concrete materials to carbon absorbing concretes and electron conducting cement-based materials. He is a principal investigator in the Concrete Sustainability Hub at MIT, a faculty fellow in Archaeological Materials at MIT’s Center for Materials Research in Archaeology and Ethnology (CMRAE), and the faculty director of the Refugee ACTion Hub (ReACT) at MIT. MIT ReACT aims at providing new professional content development for displaced learners around the world.

View full bio

If you mix cement, carbon black with water, the magic of chemistry generates an electron conductive volumetric wire, which permeates a load-bearing cement-based matrix. Herein we show, how this magic of chemistry can be used to build a scalable supercapacitor technology for energy storage, which everyone can build into their homes and roads. Possible applications include the energy autarkic home, self-charging roads (by electromagnetic induction) and intermittent energy storage for wind energy and tidal waves. Availability of cement and carbon black makes this technology a good candidate the urgently needed energy transition from fossil fuel to renewable energies.

5:25 PM

Closing Remarks With Networking Reception

Day 2 | Wednesday September 27, 2023

8:30 AM	Registration and Light Breakfast
9:00 AM	Opening Remarks
9:05 AM	Invited Keynote: The Impact of Massachusetts Energy And Environmental Policy on Industry Rebecca Tepper Massachusetts Secretary Executive Office of Energy and Environmental Affairs With drastic changes happening to our climate, it is critical for Massachusetts to adapt and develop a resilient framework for addressing these challenges. From responses to extreme weather events, to preparing for coastal transformation, to bringing a new wave of clean, renewable energy online, and training a 21st-century workforce to operate and maintain it, the Executive Office of Energy and Environmental Affairs is ready to lead and partner with the private sector in tackling these opportunities head-on. This presentation will focus on ways in which the Commonwealth is building a roadmap for the future of clean energy, grid modernization, climate resilience, and workforce development.

9:45 AM

Sustainability for National Defense
Deborah Campbell
Senior Staff: Climate Change Initiative Lead-Humanitarian Assistance and Disaster Relief Group, MIT Lincoln Laboratory

Deborah Campbell
Senior Staff: Climate Change Initiative Lead-Humanitarian Assistance and Disaster Relief Group
MIT Lincoln Laboratory

Dr. Deborah Campbell co-leads MIT Lincoln Laboratory's Climate Change Initiative, which is growing the Laboratory's investments in climate change R&D and increasing its collaborations within the U.S. and around the world to innovate new systems and solutions. This work brings together the Laboratory's multidisciplinary expertise in areas including systems analysis, sensing and sensing architectures, artificial intelligence, and decision support to contribute to the global response to this challenge.

Campbell co-leads and serves as the executive director of the Climate Resilience Early Warning System Network, one of MIT's five flagship Climate Grand Challenges projects. She served on MIT's Climate Action Advisory Committee during the development of "Fast Forward: MIT's Climate Action Plan for the Decade," and was a member of the MIT campus–Lincoln Laboratory team that designed and built the MIT Covid-19 Response System. As a senior staff scientist in the Laboratory's Humanitarian Assistance and Disaster Relief Systems (HADR) Group, Campbell works at the nexus of climate change, health, and environmental equity.

Prior to joining the HADR Group, Campbell served as an associate technology officer in the Laboratory's Director's Office. In her earlier work at the Laboratory, she applied her analytical chemistry expertise to chemical and biological threat detection and to forensics and attribution, and led a significant portfolio of programs in these areas. Campbell earned a BS degree in chemistry from Bates College and a PhD degree in chemistry from the University of Wisconsin-Madison.

Climate change is one of the most pressing issues of our time. The effects of a warming planet are destroying ecosystems, threatening critical infrastructure, intensifying weather, and creating conditions incompatible with human life. This is coupled with continued population growth, a movement of people to cities, especially coastal cities, more pressure on the wildland-urban interface, and increasing competition for scarce critical resources. While such impacts are felt around the globe, communities most burdened by climate change are also those with the least resources to cope. These destabilizing forces and widening disparities are a significant risk to national and global security.

Lincoln Laboratory has established a major initiative to help address climate change and sustainability, with a focus on solving some of the most crucial and challenging technical problems consistent with our mission. Science and technology innovations can help address challenges associated with climate change and sustainability. We are bringing together multidisciplinary expertise — in areas such as systems analysis, sensing, artificial intelligence, data analytics, and decision support — to help contribute to the global response to this threat.

10:25 AM

Networking Break

10:55 AM

Bio-Inspired Technologies for Sustainability and Clean Energy
Ariel L. Furst
Paul M. Cook Career Development Professor, MIT Department of Chemical Engineering

Ariel L. Furst
Paul M. Cook Career Development Professor
MIT Department of Chemical Engineering

Ariel L. Furst is the Paul M. Cook Career Development Assistant Professor of Chemical Engineering at MIT. Her work centers on inventing technologies to improve human and environmental health by making access to resources more equitable. Her lab develops transformative technologies to solve important problems related to healthcare and sustainability by harnessing the inherent capabilities of biological molecules and cells. She is also a co-founder of the regenerative agriculture company, Seia Bio. She completed her Ph.D. at Caltech developing non-invasive diagnostics for colorectal cancer and was then an A. O. Beckman Postdoctoral Fellow at UC Berkeley, where she developed sensors to monitor environmental pollutants. She is a 2023 Marion Milligan Mason Awardee, a CIFAR Azrieli Global Scholar for Bio-Inspired Solar Energy, and an ARO Early Career Grantee. She was recently awarded the MIT UROP Outstanding Faculty Mentor Award for her work with undergraduate researchers. She is passionate about STEM outreach and increasing participation of underrepresented groups in engineering.

Significant effort has been devoted to developing technologies that effectively mimic biological processes, but these methods often fail to replicate the efficiency and selectivity of native systems. We have found that, by combining chemistry with the inherent activity of biomolecules and microbes, we can improve upon conventional technologies for clean energy and sustainability. Specifically, by combining biomolecular assembly with conventional electrocatalysis, we have improved the specificity and efficiency of electrocatalytic CO_2 reduction. Additionally, we have engineered bio-derived microbial coatings to enable their delivery to depleted soil. Finally, by combining electroactive microbes with engineered enzymes, we have developed a platform to degrade and electrochemically detect environmental contaminants. Through these technologies, we have consistently found that the combination of chemistry and biomolecular engineering affords advantages beyond the capabilities of either technology alone.

11:35 AM

MIT Energy & Climate Club Launchpad Program

Charlotte Ross
Co-founder
MITEC Launchpad

Trent Weiss
Co-founder
MITEC Launchpad

Jim Owens
Co-founder and Vice President External Relations
MITEC Launchpad

The MITEC Launchpad is an initiative within the MIT Energy and Climate Club to provide MIT students with the opportunity to solve real-world climate and energy problems with leading professionals in the industry. Partner companies work with MITEC Launchpad to scope out project milestones and deliverables, where each project consists of a graduate student team lead and three to five undergraduate students. Over the course of the 6-10 week project, company personnel have the opportunity to engage with MIT students and to benefit from their technical contributions. Each team meets with their partner company on a weekly basis and provides a final deliverable at the end of the semester. Example of past projects include 1) Developing machine learning models to augment renewables project development; and 2) Building a policy-informed tool to identify key entry markets for a new energy technology.

11:45 AM

MIT Climate Grand Challenges – Accelerating Innovation to Address the Climate Crisis
David Babson
Executive Director, MIT Climate Grand Challenges

David Babson
Executive Director
MIT Climate Grand Challenges

Dr. David Babson is the Executive Director of the Massachusetts Institute of Technology's Climate Grand Challenges Initiative, which develops and manages focused challenges that seed research aimed at developing impactful solutions for climate change mitigation and adaptation. Prior to leading MIT's CGC, David served as a Program Director for the Advanced Research Projects Agency – Energy (ARPA-E) at the U.S. Department of Energy where he focused on biotechnology, innovations for agriculture system carbon drawdown, and carbon removal and management. Before joining ARPA-E he was the Senior Advisor for Renewable Energy, Natural Resources, and the Environment in the Office of the Chief Scientist at the U.S. Department of Agriculture. David detailed in his USDA role from the Bioenergy Technologies Office (BETO) at the U.S. Department of Energy (DOE) where he was a Technology Manager. At USDA, David led R&D coordination efforts on carbon management, climate change mitigation, sustainability, and agricultural systems innovation. At BETO David oversaw projects for its Conversion Program and worked to understand how to leverage new technologies to advance the emerging bioeconomy and address global energy and climate challenges. Before joining DOE he worked as the Senior Fuels Engineer at the Union of Concerned Scientists and as an American Association for the Advancement of Science (AAAS) Science and Technology Policy Fellow at the U.S. Environmental Protection Agency. David completed post-docs at the University of Minnesota's Biotechnology Institute and the U.S. Naval Research Laboratory. David has a PhD in Chemical and Biochemical Engineering from Rutgers University and a BS in Chemical Engineering from the University of Massachusetts Amherst.

Miho Mazereeuw
MIT Climate Grand Challenges, Preparing for a New World of Weather and Climate Extremes

Miho Mazereeuw
MIT Climate Grand Challenges
Preparing for a New World of Weather and Climate Extremes

Miho Mazereeuw is the Associate Head for Strategy and Equity and is an Associate Professor of Architecture and Urbanism at MIT and is the director of the Urban Risk Lab. Working on a large, territorial scale with an interest in public spaces and the urban experience, Mazereeuw is known for her work in disaster resilience.

In the Urban Risk Lab multi-disciplinary groups of researchers work to innovate on technologies, materials, processes, and systems to reduce risk. Operating on several scales, the Lab develops methods to embed risk reduction and preparedness into the design of the regions, cities and urban spaces to increase the resilience of local communities.

Miho Mazereeuw taught at the Graduate School of Design at Harvard University and the University of Toronto prior to joining the faculty at Massachusetts Institute of Technology. As an Arthur W. Wheelwright Fellow, she is completing her forthcoming book entitled Preemptive Design: Disaster and Urban Development along the Pacific Ring of Fire featuring case studies on infrastructure design, multifunctional public space and innovative planning strategies in earthquake prone regions. Her design work on disaster prevention has been exhibited globally. As the director of the Urban Risk Lab at MIT, Mazereeuw is collaborating on a number of projects with institutions and organizations in the field of disaster reconstruction/prevention and is currently working in Haiti, India, Japan and Chile.

Mazereeuw was formerly an Associate at the Office for Metropolitan Architecture and has also worked in the offices of Shigeru Ban and Dan Kiley. Mazereeuw completed a Bachelor of Arts with High Honors in Sculpture and Environmental Science at Wesleyan University and her Master in Architecture and in Landscape Architecture with Distinction at the Harvard Graduate School of Design where she was awarded the Janet Darling Webel Prize and the Charles Eliot Traveling Fellowship.

12:45 PM	Closing Remarks
12:50 PM	Adjournment with Bagged Lunch