AI Infrastructure: Foundations for Energy Efficiency and Scalability

Program – April 14

(8:00 – 9:00) Breakfast

(9:00 – 9:20) Welcome and Opening Remarks
We set the stage for this workshop, which rethinks computing infrastructure, from semiconductors to datacenters, for sustainable systems and artificial intelligence. We will introduce an NSF Expedition Computing, a multidisciplinary team of academic researchers studying these questions from diverse perspectives.

- Benjamin Lee, University of Pennsylvania

(9:20 – 10:30) Panel — Artificial Intelligence and Efficiency
We explore the challenges and opportunities in developing energy-efficient AI systems. What are the latest advances in AI and what does the future hold? How can we design AI systems that are both capable and energy-efficient? How can we coordinate the optimization of software models, hardware architectures, and system platforms?

- Chris Callison-Burch, University of Pennsylvania
- Beidi Chen, Carnegie Mellon University
- Emma Strubell, Carnegie Mellon University (M)
- Rene Vidal, University of Pennsylvania

(10:30 – 10:45) Coffee Break

(10:45 – 12:00) Panel — Datacenter Policy and Regulation
We explore the regulatory landscape of building and connecting datacenters to the grid. Should datacenters be treated differently from other industrial loads from a legal and policy perspective and, if so, in what ways? How can we reconcile data center growth and the clean energy transition? How can we ensure costs are spread equitably? Are there countries or states that are managing particularly well? What role can academia play?

- Tom Bonner, PECO
- Tim Burdis, PJM
- Miles Farmer, Independent Clean Energy Policy and Legal Consultant, Miles Farmer PLLC
- Shelley Welton, University of Pennsylvania (M)

(12:00 – 1:30) Lunch

(1:30 – 2:45) Panel — Datacenters and Energy
We explore the technical challenges in provisioning and managing energy for modern datacenters. What strategies do datacenters employ to provision energy for next-generation workloads like artificial intelligence? How can datacenter and grid operators work together to manage energy demand, optimize workload distribution, and maintain grid stability? How can we balance the need for computational power with sustainable energy practices?

- Eric Manaset, University of California, Santa Barbara
- Angel Rodriguez, Harvard Kennedy School
- Adam Wierman, California Institute of Technology (M)
- Tom Wilson, Electric Power Research Institute (EPRI)

(2:45 – 3:30) Coffee Break

(3:30 – 4:45) Panel — Carbon Accounting for the Tech Sector
We explore strategies for accurately measuring and disclosing emissions from technology companies and datacenters. What do regulations from the European Union (CSDR and SFDR) and California require, and how do they impact technology companies? What is the role of ISSB standards, which are being adopted or considered by 30+ countries? What role can academia play?

- Vit Henisz, University of Pennsylvania (M)
- Elizabeth Seeger, ISSB
- Guenther Glenk, University of Mannheim
- Mary Beth Houlihan, Kirkland

(4:45 – 5:30) Virtual Talks – Datacenter Computing
We explore strategies for energy-efficient artificial intelligence, focusing on power, energy and thermal challenges associated with generative AI in datacenter computing.

- Ricardo Bianchini, Microsoft
- Esha Chouske, Microsoft
- Vincent Liu, University of Pennsylvania (M)

(5:30 – 8:00) Reception and Dinner

Program – April 15

(8:00 – 9:00) Breakfast

(9:00 – 10:15) Plenary – Energy Systems and Innovation
We explore scenarios and pathways to sustainable energy and systems. How can we accelerate the commercialization of sustainable energy technologies? How can insights from behavioral sciences inform energy policy and promote sustainable practices? What are broader challenges in the provision and use of energy and water resources for computing?

- Vanessa Chan, University of Pennsylvania
- Maria Duaime Robinson, Interstate Renewable Energy Council
- Benjamin Lee, University of Pennsylvania (M)
- Kelly Sanders, University of Southern California

(10:15 – 11:30) Panel – Datacenter Architecture
We explore new directions in datacenter architecture, design, and management. How can we better integrate renewable energy sources and emerging cooling technologies into datacenter infrastructure? What are the opportunities for developing microgrids and deploying batteries into datacenter infrastructure? How can we develop flexible energy management systems with improved monitoring, attribution, and decision making?

- Dorit Aviv, University of Pennsylvania
- William Braham, University of Pennsylvania
- Benjamin Lee, University of Pennsylvania (M)
- Anand Ramesh, Verrus

(11:30 – 1:00) Lunch

(1:00 – 2:15) Panel – Hardware Manufacturing
We explore advances and challenges in sustainable hardware manufacturing. How do we define and quantify metrics for carbon-efficient computing and develop strategies for reducing the impact of semiconductor fabrication? What is the state-of-the-art in life cycle assessment (LCA) for decision making? How can we build an ecosystem that encourages collaboration within industry?

- Chris Eckstein, Fraunhofer Institute
- Udit Gupta, Cornell University
- Gage Hills, Harvard University (M)
- Kelly Scanlon, IPC

(2:00 – 3:15) Panel – Looking Forward
We discuss policy pathways in energy and technology policy. How can policymakers ensure that AI technologies are adopted responsibly? How can federal initiatives strengthen the research enterprise and support innovation in artificial intelligence and technology systems? What are critical policy considerations for competing effectively in emerging technologies?

- Arthur van Benthem, University of Pennsylvania (M)
- Marsden Hanna, Google
- Varun Rai, University of Texas, Austin
- Oliver Stephenson, Federation of American Scientists

(3:15 – 3:30) Closing Remarks

(3:30 –) Networking Reception

Speakers and Biographical Sketches

Dorit Aviv (Design, University of Pennsylvania) is an Assistant Professor of Architecture at the Weitzman School of Design and a faculty member of the Material Science and Engineering (MSE) graduate group. She directs the Thermal Architecture Lab, focusing on decarbonizing the built environment through innovative design and policy. Aviv's research, supported by grants from the U.S. Department of Energy, NSF, and industry partners like Microsoft, explores the synergy between renewable environmental forces and architectural materials. She received a Ramboll Foundation grant in 2024 for membrane-assisted radiant cooling and a Holcim Award in 2021 for passive cooling in desert climates. Aviv has led projects like the mobile urban cooling station to combat the Urban Heat Island effect in North Philadelphia. She holds a PhD and M.Arch from Princeton University and a B.Arch from The Cooper Union. Aviv has taught at The Cooper Union, Pratt Institute, and Princeton University, and practiced at firms like Tod Williams Billie Tsien Architects.

Tom Bonner serves as Sr. Manager, State Government Affairs for PECO, with primary responsibility for analyzing the impact of federal, state and local policy challenges on the company and leading internal teams to develop its Advancing Smart Energy policy and business solutions. During his time with PECO, Mr. Bonner has focused on both policies and programs advancing new technologies, including serving as the lead author of PECO's successful $200 million Smart Grid Investment Grant application with the U.S. Department of Energy. Following the grant award, he organized the company's grant compliance assessment and implementation planning project and functioned as Project Manager for PECO's external Partnership programs. Prior to coming to PECO in 2007, he served as Manager, Congressional Relations for MidAmerican Energy Holdings Company for more than a decade, and as Associate Director of the Commonwealth of Pennsylvania's Washington, DC office. From 1991-1995, he worked in the U.S. House of Representatives as a senior legislative staffer. Tom holds a Master of Planning Degree from the University of Virginia and a B.A. from the University of Pennsylvania.

Timothy C. Burdis is a lead strategist within the State Government Policy Department at PJM Interconnection. He assists in outreach and strategy development for state government engagement; focusing on policy assessment, market design and transmission planning. He is responsible for PJM's engagement with the Organization of PJM States, Inc. (OPSI). Before his current post, Mr. Burdis worked on PJM emerging markets; responsible for the planning and integration management of changes to the wholesale electricity market. He specialized in changes brought about by state policy, renewable energy and infrastructure investment. He was also responsible for conducting industry research and analysis impacting electricity markets, and facilitating PJM's corporate strategic planning process. Additionally, Mr. Burdis served as director of business development & external affairs for PJM Environmental Information Services, Inc. Mr. Burdis holds a Master of Science degree in Software Engineering from West Virginia University.

William W. Braham (Design, University of Pennsylvania) is the Andrew Gordon Professor of Architecture. He has served as Department Chair and Chair of the Faculty Senate, and currently directs the MSD in Environmental Building Design and the Center for Environmental Building + Design. Braham studied civil and mechanical engineering at Princeton University before working as a solar consultant with the Princeton Energy Group. He joined Penn to work on a DOE research project, "Teaching Passive Design in Architecture," and later completed his Master of Architecture and PhD in Architecture there. With over 40 years of experience in energy and architecture, Braham has worked as a designer, consultant, and researcher. His research applies systems ecology to the built environment and utilizes building performance modeling, addressing urban morphology and responsive building envelopes. His recent consulting projects include energy and carbon plans for the University of Pennsylvania Health

System and building energy modeling for the Daikin Open Innovation Lab, Silicon Valley. Braham has collaborated with colleagues like Dorit Aviv on radiant cooling innovations. He holds a B.S.E. from Princeton University, an M.Arch, and a Ph.D. in Architecture from the University of Pennsylvania.

Chris Callison-Burch (Engineering, University of Pennsylvania) is a Professor of Computer and Information Science. His course on Artificial Intelligence has one of the highest enrollments at the university with over 500 students taking the class each Fall. He is best known for his research into natural language processing. His current research is focused on applications of large language models to long-standing challenges in artificial intelligence. His PhD students joke that now whenever they ask him anything his first response is “Have you tried GPT for that?” Prof Callison-Burch has more than 150 publications, which have been cited over 25,000 times. He is a Sloan Research Fellow, and he has received faculty research awards from Google, Microsoft, Amazon, Facebook, and Roblox, in addition to funding from DARPA, IARPA, and the NSF.

Vanessa Chan (Engineering, University of Pennsylvania) is the Jonathan and Linda Brassington Practice Professor of Materials Science and Engineering and the Vice Dean of Innovation and Entrepreneurship at the University of Pennsylvania. Under President Biden, Vanessa served as the Chief Commercialization Officer and Director of the Office of Technology Transitions at the U.S. Department of Energy. She played a pivotal role in advancing clean energy technologies through the “Pathways to Commercial Liftoff” reports. Before joining Penn Engineering in 2017, Vanessa was a partner at McKinsey & Company, where she co-led the innovation practice. She later founded re.design, a company focused on reinventing consumer products, with her product Loopit achieving notable success. Vanessa holds a Ph.D. from MIT and a B.S.E. from the University of Pennsylvania, both in Materials Science and Engineering.

Beidi Chen (Carnegie Mellon University) is an Assistant Professor in the Department of Electrical and Computer Engineering. She is a Visiting Research Scientist at FAIR, Meta. Before that, she was a postdoctoral scholar at Stanford University. She received her Ph.D. from Rice University in 2020 and B.S. from UC Berkeley in 2015. Her research focuses on efficient machine learning. Specifically, she designs and optimizes algorithms and models on modern hardware to accelerate large machine learning systems. Her work has won a best paper runner-up at ICML 2022, a best paper award at IISA 2018, and a best paper award at USENIX LISA 2014. She was selected as a Rising Star in EECS by MIT in 2019 and UIUC in 2021.

Chris Eckstein (Fraunhofer Institute) is a Research Fellow in Environmental and Reliability Engineering at the Fraunhofer Institute for Reliability and Microintegration (IZM) in Berlin, Germany. He is part of the Sustainable Networks and Computing Group, where he engages in applied research focused on the environmental assessment of ICT systems. Chris's work primarily revolves around semiconductor fabrication and data centers. He is dedicated to conducting, harmonizing, and standardizing lifecycle impact assessment methodologies. His efforts aim to promote a more circular economy, with initiatives such as digital product passports (DPPs) and digital twins becoming integral to the industry. Chris holds a PhD in Technologies for Nanosystems, Bioengineering, and Energy from the University of Rovira i Virgili in Tarragona, Spain.

Miles Farmer is an independent energy policy, strategy, and legal consultant. Prior to his current role, Miles worked as a legal advisor to Commissioner Allison Clements of the Federal Energy Regulatory Commission. He has also served as a senior policy advisor on Governor Cuomo’s energy team, and as a senior attorney at the Natural Resources Defense Council, where he focused on both state and federal electricity regulation. Miles began his legal career as an associate at Latham & Watkins LLP. He clerked

for Judge Debra Ann Livingston on the U.S. Court of Appeals for the Second Circuit, and attended Yale Law School.

Guenther Glenk is an Assistant Professor of Business Administration at MISES at the University of Mannheim. His research examines managerial economics of climate and sustainability. Topics include the accounting for corporate emissions, the cost of corporate decarbonization, and the incentives for climate action. Recent work has focused on the competitiveness of climate technologies, such as green hydrogen, energy storage, and electric mobility. He has BS, MS and PhD degrees from the Technical University of Munich.

Udit Gupta (Cornell University) is an Assistant Professor in the Department of Electrical and Computer Engineering at Cornell Tech. His research focuses on co-designing solutions across the computing stack to enhance performance, efficiency, and environmental sustainability of emerging applications. Dr. Gupta has led the characterization of industry-scale neural personalized recommendation models, contributing to the development of open-source benchmarks and tools standardized by MLPerf. His research also emphasizes the importance of environmental sustainability in systems design. Dr. Gupta's work identifies fundamental bottlenecks in achieving sustainable computing, opening new research opportunities. His work has been featured in Bloomberg Green, The Guardian, and CNBC. He has received IEEE MICRO Top Picks (2022, 2023) and Honorable Mentions (2021), as well as Best Paper Nominations at PACT 2019 and DAC 2018. Dr. Gupta earned his Ph.D. in Computer Science from Harvard University and his BSc in Electrical and Computer Engineering from Cornell University.

Marsden Hanna (Google) is the Head of Sustainability and Climate Policy at Google, where he leads the company's efforts in sustainability and climate public policy. Prior to this role, Marsden led Google's energy policy and markets team. Before joining Google, Marsden served as the Director of Business Analysis and Strategy at Opower Inc., where he contributed to business and regulatory analysis. He has also held positions in the U.S. Department of State and the U.S. Department of Energy, where he worked on various energy and climate initiatives. Marsden holds a BA from Northwestern University, an MPA from the Harvard Kennedy School, and a MBA from The Wharton School at the University of Pennsylvania.

Witold (Vit) J. Henisz is the Vice Dean and Faculty Director of the ESG Initiative and Deloitte & Touche Professor of Management in Honor of Russell E. Palmer, former Managing Partner, at The Wharton School, The University of Pennsylvania. His research examines the impact of political hazards as well as environmental, social and governance factors more broadly on the strategy and valuation of global corporations. This work analyzes best practices in corporate diplomacy to win the hearts and minds of external stakeholders as well as the measurement and valuation thereof. His most recent work focuses on the application of alternative data to the measurement of non-traditional political and ESG risks and opportunities and their financial and operational impact on multinational firms as well as the performance of the asset managers that invest in them. He received his Ph.D. in Business and Public Policy from the Haas School of Business at University of California, Berkeley and previously received a M.A. in International Relations from the Johns Hopkins School of Advanced International Studies.

Gage Hills (Harvard University) is an Assistant Professor in Electrical Engineering. His Nano-Design Research Group (https://nanodesign.seas.harvard.edu/) develops future generations of energy-efficient and environmentally sustainable computing systems. His approach is to combine technology advances across the computing stack, spanning nanomaterials, compute/memory devices, circuit topologies, computer architectures, and 3D integration techniques. As recent research highlights, two of his students' papers on environmentally sustainable computing have received Best Paper Award recognition in 2025.

These include an honorable mention for Best Paper Award at the High Performance Computer Architecture (HPCA) conference in 2025 for collaborative work with Harvard and Meta, as well as a Best Paper Award nomination at the Design, Automation, and Test in Europe (DATE) conference in 2025.

Mary Beth Houlihan is an environmental, social, and governance (ESG) and impact partner in the New York office of Kirkland & Ellis LLP. Her practice focuses on advising clients with respect to complex and dynamic ESG issues, including legal and regulatory compliance considerations, investor demands, and voluntary reporting frameworks. Mary Beth is the go-to ESG counsel for numerous asset managers, providing them with advice on their firm-wide ESG policies and programs, commitments and disclosures, fund-level ESG strategies and communications, investor negotiations, and ESG-regulatory compliance and enforcement. This includes both public and private asset managers, with a particular focus on energy, infrastructure and real-estate strategies. Mary Beth is also a thought leader on ESG topics and has written on related subjects for such publications as Wall Street Lawyer, Law360, the Harvard Law School Forum on Corporate Governance, the ABA Environmental Disclosure Committee Newsletter, and Bloomberg BNA Mergers & Acquisitions Law Report.

Benjamin C. Lee (Engineering, University of Pennsylvania) is a Professor of Electrical and Systems Engineering and of Computer and Information Science and serves as associate department chair for the former. He is also a visiting researcher at Google in the Global Infrastructure Group. Dr. Lee's research focuses on computer architecture (microprocessors, memories, datacenters), energy efficiency, and environmental sustainability. He builds interdisciplinary links to machine learning and algorithmic economics to better design and manage computer systems. His research on sustainable computing received an Expedition in Computing award from the National Science Foundation in 2024 and, in collaboration with Harvard, co-directs an interdisciplinary research center on these topics. He received his post-doctorate from Stanford University, Ph.D. from Harvard University, and B.S. from the University of California at Berkeley. He has also held visiting positions at Meta AI, Microsoft Research, Intel Labs, and Lawrence Livermore National Lab. He is an IEEE Fellow and ACM Distinguished Scientist.

Eric Masanet (UC Santa Barbara) is the Mellichamp Chair in Sustainability Science for Emerging Technologies and Professor in the Bren School of Environmental Science and Management and (by courtesy) in the Department of Mechanical Engineering. He has (co-)authored more than 170 scientific publications on sustainability analysis of energy and materials demand systems, with a particular focus on data centers and information technology. He co-led the first Report to Congress on U.S. Data Center Energy Use (2007) and co-authored the second (2016) and third (2024) reports. He has held numerous service roles to help advance energy and climate technology analysis and policy. These include service as: Head of the Energy Demand Technology Unit at the International Energy Agency in Paris (2015-2017), a Lead Author of the Intergovernmental Panel on Climate Change's (IPCC's) Sixth Assessment Report (WGIII, Chapter 5: Demand; Technical Summary), an author of the Fifth and Sixth U.S. National Climate Assessments (NCA5 and NCA6), a member of the Research Advisory Board of the American Council for an Energy Efficient Economy (2019-2024), and as a Consultant at the U.S. White House Office of Science and Technology Policy (2022-2024). He holds a PhD in mechanical engineering, with an emphasis on sustainable design and manufacturing, from the University of California, Berkeley.

Varun Rai (University of Texas, Austin) is the Walt and Elspeth Rostow Professor in the LBJ School of Public Affairs with a joint appointment in Mechanical Engineering. Through his interdisciplinary research at the interface of complex systems, decision science, and public policy, he studies emergence in socio-technical systems, with applications toward the design of a sustainable and resilient global energy system. He was a Global Economic Fellow in 2009 and a commissioner for the vertically-integrated electric utility Austin Energy from 2013-2015. At UT Austin, he has served as the Associate Dean for

Research for the LBJ School (2017-2022) and as the director of the UT Austin Energy Institute (2019-2021). In 2016 the Association for Public Policy Analysis & Management (APPAM) awarded him the David N. Kershaw Award and Prize, which “was established to honor persons who, at under the age of 40, have made a distinguished contribution to the field of public policy analysis and management.” He is the editor-in-chief of The Electricity Journal, a leading interdisciplinary journal on electricity markets and policy and serves as the Chair of the newly constituted National Academies Electricity Forum. He received his Ph.D. and MS in mechanical engineering from Stanford University and a bachelor’s degree in mechanical engineering from the Indian Institute of Technology (IIT) Kharagpur.

Anand Ramesh (Verrus) is the Chief Technology Officer at Verrus, where he brings extensive experience in data center engineering, energy, and software product management. Prior to joining Verrus, Anand served as the Senior Vice President of Advanced Technology at EdgeConneX, a global data center provider, where he deployed technologies that significantly improved total cost of ownership, performance, and sustainability. Anand spent nearly 15 years at Google, where he built technologies and teams in data center and software infrastructure, automotive mapping, and power electronics systems. He also held the position of Vice President of Infrastructure at Renovo Auto, a Silicon Valley-based autonomous vehicle infrastructure software provider, which was later acquired by Woven Planet Holdings/Toyota. Anand holds a PhD in Mechanical Engineering from the Georgia Institute of Technology, a Master of Science in Materials Engineering from the University of Maryland, College Park.

Maria Duaime Robinson (Interstate Renewable Energy Council) is the President and CEO of a 40-year-old organization that accelerates clean energy and efficiency. In 2022, she served as the inaugural Director of the Grid Deployment Office at the U.S. Department of Energy, managing $26 billion in federal funding to develop and upgrade electric infrastructure nationwide. Maria was the first Korean-American elected to the Massachusetts General Court, where she served in the House of Representatives. She led the bicameral Clean Energy Caucus and was the Massachusetts state lead for the National Caucus of Environmental Legislators. She also served on the U.S. EPA Clean Air Act Advisory Committee. Additionally, she was a faculty member at Tufts University's Graduate School of Urban Planning and Environmental Policy. Before her election in 2018, Maria led the Wholesale Markets Program at Advanced Energy Economy (now Advanced Energy United), engaging with FERC and regional transmission organizations.

Angel Rodriguez (Harvard Kennedy School) is a Research Fellow at the Harvard Kennedy School of Government. His research focuses on applying social science methods to develop a standardized framework for organizational accountability in medicine and public health, with a particular emphasis on history and racial equity. This work was funded by the Robert Wood Johnson Foundation for the period 2021-2022. Rodríguez has a strong background in technology and public health, having served as an analyst for the Boston City Council President and later Mayor, Kim Janey. In this role, he designed health policy interventions to combat COVID-19, especially targeting vulnerable communities such as Boston District 7. He completed a Takemi Fellowship in the Department of Global Health and Population at the Harvard T.H. Chan School of Public Health in 2020. Rodríguez holds a BA and MA from the University of California, Santa Barbara, and an additional MA from Harvard University.

Kelly Twomey Sanders (University of Southern California) is an Associate Professor in the Sonny Astani Department of Civil and Environmental Engineering. Her research aims to ease tensions between human and natural systems, with particular emphasis on reducing the environmental impacts of providing energy and water, analyzing tensions between climate change adaptation and mitigation strategies, and anticipating the effects of climate change on energy systems. She has authored more than two dozen publications and has given dozens of invited talks on topics at the intersection of engineering, science,

and policy. In 2019, she was granted an NSF Early CAREER award. Sanders received her B.S. in Bioengineering from the Pennsylvania State University, as well M.S.E and Ph.D. degrees in Mechanical Engineering and Environmental Engineering from the University of Texas at Austin, respectively. She teaches classes related to energy and the environment.

Kelly Scanlon (IPC) is lead sustainability strategist for a cross-functional initiative that brings together the association's standards, education, and advocacy teams in support of the electronics manufacturing industry's sustainability goals. Dr. Scanlon's role at IPC includes working with the industry to develop results-oriented solutions that can be implemented without delay and that lead to demonstrable, positive change. She has more than 20 years of experience as a public health scientist supporting industry, academia, and government in sustainability matters. She is a certified industrial hygienist and has graduate degrees in environmental and occupational health. Learn more about Evolve, IPC's sustainability program for the electronics industry (https://www.ipc.org/evolve) and (https://www.linkedin.com/showcase/sustainability-for-electronics).

Elizabeth Seeger has over 20 years' experience of standard-setting, investment and working on sustainability topics. She was appointed as a full-time member of the International Sustainability Standards Board (ISSB) in July 2022, effective November 2022. She joined the ISSB from global investment firm KKR, where she served as Managing Director, Sustainable Investing, responsible for helping oversee the firm's consideration of sustainability matters throughout KKR's investment process and part of KKR's Global Impact team. She also oversaw KKR's public sustainability reporting efforts, including the development of SASB and TCFD-aligned reporting. Ms. Seeger served on the SASB Standards Board as an inaugural member, but began her standard-setting work when becoming a member of the SASB Standards Council in 2012. She is a 2013 Aspen Institute First Movers Fellow and earned a BA in Environmental Studies with honours from the University of Chicago and an MBA from the Wharton School of the University of Pennsylvania.

Oliver Stephenson (Federation of American Scientists) is the Associate Director for Artificial Intelligence and Emerging Technology Policy. In this role, he connects technical expertise with the policymaking process, ensuring that AI and other emerging technologies are adopted ethically and responsibly. Before joining FAS, Oliver worked on Capitol Hill, advising on science and technology policy. His portfolio spanned issues at the intersection of AI, national security, civil rights, and environmental sustainability. Oliver holds a Ph.D. and master's in Geophysics from the California Institute of Technology, where his research included developing novel applications of deep learning for disaster response. He also received a master's and bachelor's in Experimental and Theoretical Physics from the University of Cambridge.

Emma Strubell (Carnegie Mellon University) is the Raj Reddy Assistant Professor in the Language Technologies Institute (within the School of Computer Science) at Carnegie Mellon University. Previously they held research scientist roles at Google, FAIR and the Allen Institute for AI after earning their doctoral degree in 2019 from the University of Massachusetts Amherst. Strubell's research lies at the intersection of natural language processing and machine learning, with a focus on providing pragmatic solutions to practitioners who wish to gain insights from natural language text via computation- and data-efficient AI. Their work has been recognized with a Madrona AI Impact Award, best paper awards at ACL and EMNLP, and in 2024 they were named one of the most powerful people in AI by Business Insider.

Arthur van Benthem (Wharton, University of Pennsylvania) is an Associate Professor of Business Economics and Public Policy, specializing in environmental and energy economics. His research focuses on the unintended consequences of environmental legislation, energy policy efficiency, and markets for

transportation, renewable energy, and carbon trading. He is a Faculty Co-Director of the Wharton Climate Center and advises MBA and undergraduate programs in Business, Environment, Energy, and Sustainability. Arthur holds a Ph.D. in Economics and a master's in Management Science & Engineering from Stanford, and an undergraduate degree from the University of Amsterdam. Prior to academia, he worked in corporate strategy at Royal Dutch Shell and as a stock trader at IMC Trading.

Rene Vidal (Engineering, University of Pennsylvania) is the Rachleff and Penn Integrates Knowledge (PIK) University Professor of Electrical and Systems Engineering & Radiology and the Director of the Center for Innovation in Data Engineering and Science (IDEAS) . He is also the director of THEORINET, an NSF-Simons Collaboration on the Mathematical Foundations of Deep Learning, an Amazon Scholar and an Affiliated Chief Scientist at NORCE. His current research focuses on the foundations of deep learning and trustworthy AI and its applications in computer vision and biomedical data science. Dr. Vidal is an ACM Fellow, AIMBE Fellow, IEEE Fellow, IAPR Fellow and Sloan Fellow, and has received numerous awards for his work, including the IEEE Edward J. McCluskey Technical Achievement Award, D'Alembert Faculty Award, J.K. Aggarwal Prize, ONR Young Investigator Award, NSF CAREER Award as well as best paper awards in machine learning, computer vision, controls, and medical robotics.

Shelley Welton is Presidential Distinguished Professor of Law and Energy Policy at the University of Pennsylvania Carey Law School where she holds an affiliation with the Kleinman Center for Energy Policy in the Weitzman School as part of President Amy Gutmann's 2019 commitment to build a multidisciplinary energy policy faculty affiliated with the Kleinman Center. At the Law School, Welton teaches environmental law and a climate change law seminar. She also teaches "Introduction to Energy Policy," a university-wide graduate course, for the Kleinman Center on Energy Policy. Welton comes to Penn from the University of South Carolina School of Law, where she taught administrative law, energy law, environmental law and policy, environmental justice, and climate change law. Her scholarship has appeared in publications including the Yale Law Journal, Stanford Law Review, California Law Review, Columbia Law Review, Michigan Law Review, and Harvard Environmental Law Review. Prior to academia, Welton worked as the deputy director of Columbia Law School's Sabin Center for Climate Change Law. She also clerked for the Honorable David Trager of the Eastern District of New York and the Honorable Allyson Duncan of the Fourth Circuit. She received her PhD in law from Yale Law, her JD from NYU School of Law, a Master of Public Administration in environmental science and policy from Columbia University's School of International and Public Affairs, and her BA from the University of North Carolina at Chapel Hill.

Adam Wierman (California Institute of Technology) is the Carl F Braun Professor in the Department of Computing and Mathematical Sciences. He received his Ph.D., M.Sc., and B.Sc. in Computer Science from Carnegie Mellon University. Adam's research strives to make the networked systems that govern our world sustainable and resilient. He is best known for his work spearheading the design of algorithms for sustainable data centers, which has seen significant industry adoption (e.g. through the startup Verrus), and his work on heavy tails, including co-authoring a book on "The Fundamentals of Heavy Tails." He is an IEEE Fellow, a Distinguished Member of the ACM, and an AAIA Fellow. He has received the ACM Sigmetrics Rising Star award, the ACM Sigmetrics Test of Time award, the IEEE INFOCOM Test of Time award, the IEEE Communications Society William R. Bennett Prize, the Caltech IDEA Advocate award, multiple teaching awards, and is a co-author of papers that have received "best paper" awards at conferences across computer science, power engineering, and operations research.

Tom Wilson (Electric Power Research Institute) is a Principal Technical Executive in the Integrated Grid and Energy Systems Division at the Electric Power Research Institute (EPRI). With over 40 years of experience in energy and environmental research, Dr. Wilson has been a pivotal figure at EPRI since

1985, focusing on the decarbonization of the electric sector and its role in economic decarbonization. Dr. Wilson has contributed to climate science and policy, serving as a convening lead author for the U.S. National Climate Assessment and as a contributing author to the Intergovernmental Panel on Climate Change's Fifth Assessment. He has advised institutions such as MIT, the University of Maryland, Stanford, and the National Renewable Energy Laboratory. From April 2022 to June 2023, he was Assistant Director for Electricity at the Office of Science and Technology in the White House. Before EPRI, Dr. Wilson worked at ICF Incorporated, Stanford's Energy Modeling Forum and International Energy Program, and Brookhaven National Laboratory. He holds a bachelor's degree in Statistics from the University of North Carolina, Chapel Hill, and master's and doctoral degrees in Operations Research from Stanford University.