ROADMAP FOR TRANSFORMATIVE ACTION TO ACHIEVE HEALTH FOR ALL AT NET-ZERO EMISSIONS

THE "WHAT" OF SYSTEMS TRANSFORMATION:

ANCHORING CLIMATE ACTION IN HEALTH

VIRTUAL WORKSHOP

APRIL 29 & 30, 2025

NATIONAL ACADEMY of MEDICINE

Participant Briefing Book

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Dear Colleagues,

Welcome to the first workshop in our series—"The 'What' of Systems Transformation: Anchoring Climate Action in Health"—convened as part of the National Academy of Medicine's Commission to develop a Roadmap for Transformative Action to Achieve Health for All at Net-Zero Emissions.

We find ourselves at a pivotal moment. Around the world, accelerating climate change is destabilizing the foundations of human health and well-being. But the urgency of this moment is matched by unprecedented opportunity: to not only reduce emissions, but to fundamentally reimagine the systems—economic, social, and environmental—that shape the health of people and the planet.

This Commission was launched with a bold aim: to catalyze systems transformation that centers health as a guiding principle for climate action. That work begins here, in this workshop. Over the next two days, we invite you to explore the foundational elements of transformation—*the what*—and help us collectively define the characteristics, values, and design principles that must anchor a future of health for all at net-zero emissions.

Your contributions will shape not only the direction of this Commission but also the global conversation about what is possible when health becomes a driver of change, rather than a downstream consequence.

Finally, we extend our deepest thanks to the members of our workshop Planning Committee, whose vision and dedication have made this event possible:

- Daniel Kammen, *University of California, Berkeley*
- Jonathan Patz, *University of Wisconsin-Madison*
- Lewis Akenji, *Hot or Cool Institute*
- Maruxa Cardama, *SLOCAT Partnership on Sustainable, Low Carbon Transport*
- Kelly Levin, *Systems Change Lab*

Their thoughtful leadership has ensured that this gathering brings together a rich diversity of voices, perspectives, and insights needed to advance this work.

With appreciation and resolve,

Victor J. Dzau
President, National Academy of Medicine

Andy Haines
Roadmap Commission Co-Chair

Judith Rodin
Roadmap Commission Co-Chair

The "What" of Systems Transformation: Anchoring Health in Climate Action

TUESDAY – WEDNESDAY, APRIL 29 – 30, 2025 | VIRTUAL

Join the U.S. National Academy of Medicine (NAM) for the first of four information-gathering workshops to inform the Commission developing the *Roadmap for Transformative Action to Achieve Health for All at Net-Zero Emissions*. Spanning two days, this workshop will:

- Reframe climate action through a health-focused lens, examining opportunities and challenges for leveraging health as a strategic anchor point to bridge diverse economic and geopolitical interests.
- Illustrate the need for systems transformation by identifying the global economic sectors driving climate change—including energy, transportation, agriculture, and manufacturing, among others—and exploring pathways to net-zero emissions that also maximize health co-benefits.
- Explore the economic, political, and social systems shaping sector-specific and cross-sector responses to climate change, and identify the policy, governance, and behavioral shifts required to align economic and sustainability goals with improved health outcomes.

Day 1 – Tuesday, April 29, 9:00 AM – 1:00 PM EDT / 3:00 – 7:00 PM CEST

9:00–9:20AM EDT	**Welcome and Opening Remarks** Michele Toplitz, *National Academy of Medicine* Victor J. Dzau, *National Academy of Medicine*
9:20–10:45AM EDT	**SESSION 1** **Establishing a Systems Approach to Climate Action Anchored in Health**
	Objective: Introduce the core concepts and guiding vision of NAM's Roadmap initiative, uniting participants around centering health as a catalyst for climate solutions and establishing a systems transformation mindset to drive climate action.

Moderator: Jonathan A. Patz, *University of Wisconsin-Madison* | Roadmap Commissioner and workshop planning committee co-lead

Invited Speakers

- Andy Haines, *London School of Hygiene & Tropical Medicine* | Roadmap Commission co-chair
- Diarmid Campbell-Lendrum, *World Health Organization* | Roadmap Commissioner
- Kelly Levin, *Systems Change Lab* | Roadmap Commissioner and workshop planning committee member

10:45–11:00AM EDT	**BREAK**

11:00AM–12:50PM EDT	**SESSION 2** **Opportunities & Challenges for Transformative Health-Centered Climate Action across High-Emitting Sectors**

Objective: Explore how health can serve as both an anchor point and a strategic lever to address challenges, unlock opportunities, and drive climate action within and across high-emitting sectors toward net-zero emissions.

Moderator: Maruxa Cardama, *SLOCAT Partnership on Sustainable, Low Carbon Transport* | Roadmap Commissioner and workshop planning committee member

Invited Speakers

- Rana Adib, *REN21*
- Adina Renee Adler, *Global Steel Climate Council*
- Simeon Ehui, *CGIAR*
- Michael Replogle, *Institute for Transportation & Development Policy*
- Ommid Saberi, *International Finance Corporation (IFC)*

12:50–1:00PM EDT	**DAY 1 Wrap-Up & Adjourn**

Jonathan A. Patz, *University of Wisconsin-Madison* | Roadmap Commissioner and workshop planning committee co-lead

Michele Toplitz, *National Academy of Medicine*

Day 2 – Wednesday, April 30, 9:00 AM – 12:30 PM EDT / 3:00 – 6:30 PM CEST

9:00–9:15AM EDT	**Welcome and Day 2 Kick-Off** Michele Toplitz, *National Academy of Medicine* Daniel Kammen, *University of California, Berkely* | Workshop planning committee co-lead
9:15–10:45AM EDT	**SESSION 3** **Lessons for Transformational Climate-Health Action**
	Objective: Distill key learnings from past and ongoing initiative that have pursued systems-level change across institutions, levels of government, and sectors, drawing actionable insights for integrating health co-benefits into the Roadmap and other future efforts. **Moderator:** Tamer Rabie, *World Bank Group* | Roadmap Commissioner **Invited Speakers** • Sandrine Dixson-Declève, *The Club of Rome and Earth4All* • Emani Kumar, *ICLEI – Local Governments for Sustainability* • Bono Nemukula, *National Department of Health, Republic of South Africa*
10:45–11:00AM EDT	**BREAK**
11:00AM–12:15PM EDT	**SESSION 4** **Positioning Health as a Bridge Between Sectors and Systems**
	Objective: Explore how reframing health beyond traditional boundaries can embed it into policy, economic, and social systems, as well as climate strategies, to catalyze collective action and systems change. **Moderator:** Judith Rodin, *University of Pennsylvania* | Roadmap Commission co-chair **Invited Speakers** • Anita Chandra, *RAND Social and Economic Well-Being* • Fatimah Kelleher, *NAWI Collective* • Alaa Murabit, *500 Global*
12:15–12:30PM EDT	**DAY 2 Closing Reflections & Adjourn** Howard Frumkin, *University of Washington* | Roadmap Commissioner Michele Toplitz, *National Academy of Medicine*

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WORKSHOP PARTICIPANT GUIDELINES

The following provides information to help support participants' engagement in the workshop.

How to Watch

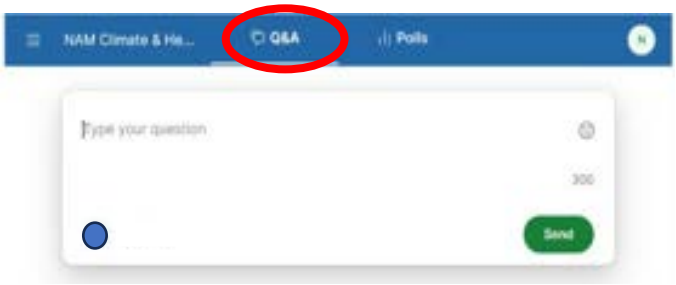
This workshop will be livestreamed on the workshop event page here, and a recording of the event will be uploaded and available publicly available on this page at the conclusion of the event.

How to Participate

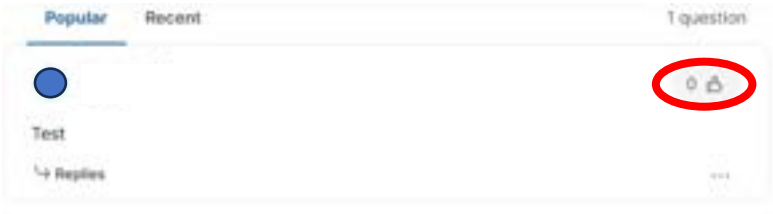
Throughout the workshop, we will be using an audience engagement platform for Q&A and live polls called "Slido," which is directly embedded on the event page itself.

When you join, please enter your name, check "agree", and then select "join Slido":

Each session will include an Audience Q&A segment. To submit a question to the panelists, please navigate to the Q&A section at the top left of the Slido screen:



Attendees also have the ability to “like” or “upvote” questions asked by other participants by selecting the “thumbs-up” icon to the right of the question:



In addition to Q&A, we will solicit additional input from attendees through live polls. These will appear to the right of the Q&A section during the event.

Participant Conduct

Please note that all participants of activities conducted by the National Academies of Sciences, Engineering, and Medicine (NASEM) are required to adhere to NASEM’s guidelines for preventing discrimination, harassment, and bullying. Please review and reference the full policy here.

Troubleshooting

Should you encounter any difficulties in accessing our platform throughout the event, please reach out to NAM staff at NAMClimateRoadmap@nas.edu.

CLIMATE GRAND CHALLENGE

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SPEAKER BIOGRAPHICAL SKETCHES

Rana Adib is the Executive Director of REN21, the global network of diverse stakeholders that enable the necessary changes to build the renewables economy for prosperous lives and societies. She is also the chair of SLOCAT, an international multi-stakeholder partnership enabling knowledge and action for sustainable, low carbon transport.

Rana comes from a background in private industry and applied research in the areas of renewable energy, energy access, waste management as well as waste to energy. With her cross-functional profile, she is championing pathways to a renewables-based world.

Adina Renee Adler was appointed Executive Director of the Global Steel Climate Council in December 2023. She was previously Deputy Executive Director at Silverado Policy Accelerator, a think tank, leading their work on Trade & the Circular Economy, critical minerals supply chains, and other key trade and environmental policy issues while also executing Silverado's growth strategy.

Adina was also Vice President of Advocacy for the recycling industry's association, the Institute of Scrap Recycling Industries – ISRI (now the Recycled Materials Association – ReMA); Director of Global Government Affairs for Alcoa and Arconic; and International Government Relations Advisor for Shell Oil Company. Adina's government service included working for the Office of the United States Trade Representative (USTR) and the U.S. Department of Commerce. She has a BA in International Affairs from The George Washington University and MA in International Economics and International Law from The Johns Hopkins University School of Advanced International Studies (SAIS).

Diarmid Campbell-Lendrum is the Head of the Climate Change and Health Unit at WHO Headquarters. His training is on the ecology of infectious disease and public health, and he has worked on climate change and health for over 20 years. During that time, Diarmid has played key roles in the development of the first quantitative estimates of the overall health impacts of climate change, resolutions of the World Health Assembly, the first four WHO global conferences on health and climate, and the expansion of WHO's climate change and health program, which has now provided direct support to over 30 low- and middle-income countries. Diarmid is author of over 100 journal papers, reports, and book chapters on the ecology and control of infectious disease, and on the health implications of global environmental

change. He is an international Member of the US National Academy of Medicine, and a lead author of the Intergovernmental Panel on Climate Change (IPCC) Special Report on Extreme Events, of the health chapters of the 5th and 6th IPCC Assessment reports, and of the first two health reports to the UN Climate Negotiations.

Maruxa Cardama is Secretary General of the SLOCAT Partnership on Sustainable, Low Carbon Transport. Driven by social and environmental justice, and with over 20 years' experience in the design and delivery strategies, policy solutions and multi-stakeholder partnerships, Maruxa specializes in sustainable urban development and transport for inclusive prosperity. From executive and advisory positions in NGOs, international organizations and civil service, Maruxa has worked with leaders in government, civil society, multilateral organizations, philanthropy and business across multiple countries, and run several high-impact international projects.

Before joining SLOCAT, Maruxa founded the stakeholder coalition Communitas, which pioneered knowledge-based advocacy for the Sustainable Development Goal on Cities. Former roles also include Secretary General of Regions for Sustainable Development, where she facilitated the engagement of sub-national governments in the UN Rio +20 Conference, Senior Policy Specialist in Cities Alliance-UNOPS, and local and regional civil service in the UK and Spain. In 2004-2010, as Deputy Director of the Representation of the South West of England to the EU in Brussels she led the sustainability portfolio for a partnership of regional authorities, academia and the private sector. Maruxa started her career at the Representation of the Spanish region of Galicia to the EU and at the EU Committee of the Regions.

Maruxa is regularly invited to policy forums and committees. In 2021-2023 she served in the Lancet Pathfinder Initiative for Healthy Zero-Carbon Futures. In 2019 she was selected to Chair the 68th UN Civil Society Conference. She has also served as expert in the Future Earth community, the Urban Expert Panel by UCL and Nature Sustainability, the interdisciplinary journal of Nature Research, and the Conference of European Peripheral Maritime Regions of Europe (CPMR).

Anita Chandra is Vice President and Director of RAND Social and Economic Well-Being and a Senior Policy Researcher at RAND. The division that she leads covers a range of topics at the intersection of social and economic policy and the organization of the economy, the environment, and social and physical infrastructure. The division also manages RAND Centers on housing, climate and energy policy, drug policy, policing, civil justice, and co-leads an initiative on economics and national security. As a researcher, Chandra leads studies on systems change, program and policy design and implementation, and measure development in the areas of health policy including positive health and health equity; civic well-being and community planning; disaster response and resilience; public health emergency preparedness; child health and development; and effects of military deployment on families.

Throughout her career, Chandra has engaged government and nongovernmental partners to employ cross-sector solutions to improve community well-being and to build more robust systems, implementation, and evaluation capacity. This involves work with federal and local government agencies on building systems for emergency preparedness and resilience both in the United States and globally as well as partnering with the private sector and government to modernize data systems and measure well-being and civic transformation. Chandra has conducted broad-scale health and environmental needs assessments to examine efficiency and effectiveness in the integration of health and human service systems. She earned a DrPH in population and family health sciences from the Johns Hopkins Bloomberg School of Public Health.

Sandrine Dixson-Declève is Honorary President of the Club of Rome and divides her time between the Club of Rome, advising, lecturing, and facilitating difficult conversations. She is the Executive Chair of the Club of Rome Programme Earth4All.

Sandrine sits on several Non-Executive Boards & Advisory Boards including for The Global Climate Governance Commission, OECD, Climate KIC, Leonardo Centre, Imperial College London and is an Ambassador for the Well Being Alliance (WeAll), as well as a Fellow of the World Academy of Science & Art.

She teaches at the College of Europe, Bruges, Belgium and is a Senior Associate and faculty member of the Cambridge Institute for Sustainability Leadership (CISL). Until recently, Sandrine was Chair for the European Commission's Expert Group on Economic and Societal Impact of Research & Innovation (ESIR) 2020-2023, a member of the European Commission's Sustainable Finance Platform and Sustainable Finance Taxonomy Expert Group 2019-2022; and an Assembly Member, Climate Mitigation & Adaptation Mission (European Commission, DGR&I) 2018. In 2017 Sandrine co-founded the Women Enablers Change Agent Network (WECAN).

Sandrine is a TED global speaker and recently published "Quel Monde Pour Demain" lucpire editions 2021 and Earth for All: A survival guide for humanity, New Society 2022.

She was recognised by Reuters in 2023 as one of 25 global female trailblazers and by GreenBiz as one of the 30 most influential women across the globe driving change in the low carbon economy and promoting green business.

Victor J. Dzau is President of the National Academy of Medicine, Vice-Chair of the National Research Council, Chancellor Emeritus of Duke University, and past CEO of Duke Health System. Previously, he was Professor and Chairman of Medicine at both Harvard and Stanford Universities. Dr. Dzau is recognized globally for a long and highly decorated career as a scientist, administrator, and leader. His research laid the foundation for development of lifesaving drugs known as ACE inhibitors, used globally to treat high blood pressure and congestive heart failure.

During Dzau's tenure, the NAM has launched important initiatives including the Global Health Risk Framework, the Human Genome Editing Initiative, the Action Collaborative on

Clinician Well-Being and Resilience, and the Healthy Longevity Grand Challenge. In 2020, the NAM launched the Grand Challenge on Climate Change, Human Health, and Equity, a multi-year global initiative to improve and protect human health, well-being, and equity by working to transform systems that both contribute to and are impacted by climate change. In 2021, Dzau inaugurated the NAM Action Collaborative on Decarbonizing the Health Sector, bringing together leaders to develop and implement strategies to reduce the health sector's carbon footprint and strengthen resilience.

A leader in global health, Dzau launched the Duke Global Health Institute and Duke-NUS Medical School in Singapore, founded the Division of Global Health Equity at Harvard, and chairs the International Advisory Board of McGill's School of Population and Global Health. Among other activities, he serves on WHO and World Bank's Global Preparedness Monitoring Board, is co-chair of G20 Scientific Panel on Global Health Security and was on the board of the Coalition of Epidemic Preparedness and Innovation. He leads the World Economic Forum Regional Vaccine Manufacturing Collaborative and is co-chair of the Science and Technology Expert Panel for the Independent Pandemic Preparedness Secretariat.

Siméon Ehui, born in Côte d'Ivoire, is the Director General of the International Institute of Tropical Agriculture (IITA) and CGIAR's Regional Director for Africa. He has more than 30 years of extensive experience in the fields of agriculture, food security, and sustainable development with a wide-ranging network of scientific research organizations within the CGIAR system, multilateral organizations, regional bodies, and national governments in Africa and other continents. During his career, he has held leadership positions, including Regional Director for Sustainable Development for West and Central Africa and Director of Agriculture at the World Bank, overseeing initiatives in Africa, the Middle East, Eastern Europe, and Central Asia.

Dr. Ehui has played a crucial role in transformative initiatives, such as the launch of the Regional Hub for Fertilizer and Soil Health in West Africa and the Sahel based in IITA. He is a strong advocate for youth engagement and digital innovation projects across the African continent. As a visionary leader in agri-food systems, he promotes science-based solutions, strategic partnerships, and climate-smart agriculture to drive meaningful change.

Dr. Ehui is a distinguished alumnus of Purdue University (USA) and serves on the Board of Directors of the Forum for Agricultural Research in Africa (FARA). He is also a member of the Scientific Advisory Board of the Purdue University Global Trade Analysis Project (GTAP). Dr. Ehui is deeply committed to advancing food security in Africa through partnerships, and the development and implementation of agricultural policy reforms.

Howard Frumkin, Professor Emeritus at the University of Washington School of Public Health, is a physician-epidemiologist specializing in environmental health.

His career has focused on health aspects of climate change, the built environment, nature contact, and sustainability, within the framework of Planetary Health. He has served as Director of the CDC's National Center for Environmental Health, as Dean of the University of Washington School of Public Health, as head of the "Our Planet, Our Health" initiative at the Wellcome Trust, and as Senior Vice President of Trust for Public Land.

He is author or co-author of over 300 scientific journal articles and chapters, and his ten books include Making Healthy Places: Designing and Building for Health, Well-Being, and Sustainability (2nd Edition, 2022), Environmental Health: From Global to Local (3rd Edition, 2016), Planetary Health: Protecting Nature to Protect Ourselves (2020), and Planetary Health: Safeguarding Human Health and the Environment in the Anthropocene (2021). He is an elected member of the Washington State Academy of Sciences and of the National Academy of Medicine and is a Hagler Fellow at Texas A&M University. He was educated at Brown (AB), the University of Pennsylvania (MD), and Harvard (MPH and DrPH).

Andy Haines was Director (formerly Dean) of the London School of Hygiene & Tropical Medicine from 2001- October 2010, having been trained in family practice and epidemiology. He developed an interest in climate change and health in the 1990's and was a member of the Intergovernmental Panel on Climate Change for the 2nd, 3rd and 5th assessment exercises. He chaired the Rockefeller/*Lancet* Commission on Planetary Health (2014-15) and the InterAcademy Partnership (140 science academies worldwide) working group on climate change and health. He is currently co-chairing the *Lancet* Pathfinder Commission on health in the zero-carbon economy. He was awarded the Tyler Prize for Environmental Achievement in 2022.

Daniel Kammen is the James and Katherine Lau Distinguished Professor of Sustainability at the University of California, Berkeley, with parallel appointments in the Energy and Resources Group, the Goldman School of Public Policy, and the department of Nuclear Engineering. His work is focused on decarbonization, energy access, and climate justice. He has served as Senior Advisor for Energy and Innovation at the US Agency for International Development (USAID). Kammen is a Coordinating Lead Author for the IPCC. He is the Co-Chair of the UC Berkeley Roundtable on Climate and Environmental Justice.
Kammen was appointed the first Environment and Climate Partnership for the Americas (ECPA) Fellow by Secretary of State Hilary R. Clinton in April 2010 and served as Science Envoy for Secretary of State John Kerry (2016- 2017).

His research is focused on the science and policy of decarbonized energy systems, energy access, and environmental justice. He has published more than 500 papers, which are available on his laboratory website, the Renewable and Appropriate Energy Laboratory

(RAEL). His research is currently focused on: decarbonization of power systems around the world; energy access and social justice; materials science for low-carbon economies; big-data approaches to clean transportation, and on the electrification of health facilities across Africa (HETA).

Kammen has founded or is on the board of over 10 companies and has served the State of California and US federal government in expert and advisory capacities. Kammen was the First Chief Technical Specialist for Renewable Energy and Energy Efficiency at the World Bank (2010 – 2011).

Kammen was educated in physics at Cornell and Harvard and held postdoctoral positions at the California Institute of Technology and Harvard. Before moving to the University of California, Berkeley, he was Assistant Professor and Chair of the Science, Technology and Environmental Policy Program at the Princeton School of Public and International Affairs.

Dr. Kammen has served as a contributing or coordinating lead author on various reports of the Intergovernmental Panel on Climate Change since 1999. The IPCC shared the 2007 Nobel Peace Prize.

Kammen serves on the Advisory Committee for Energy & Environment for the X-Prize Foundation. He is on the board of Native Renewables (Flagstaff, AZ); the Chabot Space and Science Center (Oakland, CA), The Human Needs Project/Kibera Town Center (Nairobi, Kenya). Kammen was elected to the American Academy of Arts and Sciences in 2020.

Fatimah Ya-Fanah Kelleher is a feminist political economist, strategic and technical adviser, researcher and activist with over 20 years of experience working globally across Africa, Asia, and the Caribbean at various levels. A Pan-African feminist, she focuses much of her work on gender and economic rights/justice issues using African/global southern feminist and justice frameworks, with particular specialisms in feminist macroeconomics (trade, decent work, care, taxation, budgets and fiscal space, agriculture and more) and feminist economic realities and alternatives more widely. She specializes in these and other equality, equity and empowerment issues, with additional long-standing experience in the education and health sectors, more specifically education for women and girls, and maternal health rights. Fatimah is a Nigerian-born dual national, with much of her work engaging with Nigerian women's rights and justice issues. An author of published multi-country research, evaluations, articles and thought pieces, her experience has involved work with civil society, feminist organizations, (I)NGOs, national and local governments, bilateral organizations, multilateral/regional organizations including various UN bodies including UNESCO, UNCTAD, and UNICEF. Fatimah is an Associate of the Nawi Afrifem Macroeconomics Collective and also sits on the Board of the International Association for Feminist Economists (IAFFE).

Emani Kumar has been the Executive Director of ICLEI South Asia since its founding in 2005. He was also appointed as Deputy Secretary General of ICLEI in the year 2013 and is the First Asian to occupy the position in ICLEI. With degrees in Environmental Management from Bradford University, UK; Environmental Planning from School of Planning, CEPT, Ahmedabad and Civil Engineering from Delhi University, Mr. Kumar has more than twenty-five years of professional experience on issues related to climate change policy and planning, water conservation, local governance, renewable energy and energy efficiency, social accountability, systems management, and auditing.

Previously Mr. Kumar has worked with the Confederation of Indian Industry (CII) and with the National Institute of Urban Affairs (NIUA). Apart from overseeing the organization's strategic development, he also coordinates various multi-year & small-scale projects and research work supported by various donor and UN agencies; State and National governments of India and Research Organizations. He also liaises for various projects such as Asia LEDS Partnership, CapaCITIES, INTERACT-Bio, Climate Development and Knowledge Network and more.

In his role as ICLEI Deputy Secretary General, Emani Kumar works with all the offices in Asia, to ensure cohesion in implementation of ICLEI's agendas and spearhead advocacy activities in the region; he also supports the Secretary General in representing ICLEI at all international forums.

Kelly Levin is Chief of Science, Data and Systems Change for the Bezos Earth Fund. In this role, she brings data, analysis and evidence to inform the Fund's strategic direction. Kelly is also Co-Director of the Systems Change Lab, which monitors, learns from and accelerates the transformational change required to protect people and the planet.

Before coming to the Earth Fund, Kelly spent 12 years at the World Resources Institute, where she was the Director of Tracking and Strengthening Climate Action in WRI's global climate program. Kelly holds a PhD and Master of Environmental Management from Yale's School of Environment and a BA in Ecology and Evolutionary Biology from Yale College.

Alaa Murabit is a globally recognized leader and strategist with a proven track record of driving systemic change across health equity, inclusive security, and sustainable development. Over her 15+ year career, Dr. Murabit has led multi-billion-dollar global initiatives, advised heads of state, and shaped policies impacting billions of lives across 193 countries.

As Director of Global Policy, Advocacy, and Communications at the Gates Foundation, Dr. Murabit oversees a $350M portfolio, managing a global team to advance health equity, climate resilience, and sustainable development. Her leadership secured $22B in funding

in 2022 alone for initiatives such as Gavi, CEPI, and the Global Fund. She has designed and implemented transformative strategies that mobilize public, private, and philanthropic partnerships to deliver measurable results for vulnerable populations globally.

At just 21, Dr. Murabit founded the Voice of Libyan Women (VLW) during the Libyan civil war, establishing a globally recognized organization that set new standards for community-driven solutions in conflict zones. Her groundbreaking Noor Campaign, lauded by Human Rights Watch, transformed the role of faith leaders in advancing gender equity and was replicated in over 58 countries. By the age of 25, Dr. Murabit had successfully negotiated and passed several key United Nations Security Council Resolutions.

Dr. Murabit has consistently demonstrated an ability to influence and execute at the highest levels. She played a pivotal role in shaping the UN Sustainable Development Goals, including securing the adoption of Goal 16: Peace, Justice, and Strong Institutions, which drives global policy and investment priorities to this day. Appointed as a UN Sustainable Development Goal Advocate by Secretaries-General Ban Ki-Moon and António Guterres and UN High-Level Commissioner on Health, Employment, and Economic Growth, she has forged partnerships and guided policy shifts that align public and private sector objectives with sustainable development.

Dr. Murabit's accolades are as extraordinary as her impact. Named a TIME100 Global Leader, WEF Young Global Leader, Lancet Global Leader, and recipient of the Canadian Meritorious Service Cross, she has been honored with over 100 awards, including recognition as one of Canada's "100 Women of Impact" and a Nelson Mandela International Changemaker. Her contributions have been profiled by the New York Times, Forbes, BBC, Vanity Fair, and CNN, among others.

In addition to her professional achievements, Dr. Murabit serves on global boards, including Gavi, the Vaccine Alliance, the Malala Fund, and Women for Women International, where she advises on policy and governance for projects impacting over 80 countries. Her ability to lead complex, multinational operations and deliver scalable, innovative solutions has positioned her as a sought-after advisor and executive leader.

With an exceptional ability to align strategy, operations, and partnerships, Dr. Murabit continues to drive transformational change globally, ensuring long-term impact and sustainable outcomes for the world's most vulnerable populations.

Bono Nemukula is a Deputy Director in the National Department of Health. She is an Environmental Health Practitioner by profession. She is responsible for Climate change, Vector Control and Air Quality programmes in the department. Ms Nemukula has been with the department in this position since 2018.

Ms Nemukula has experience of working as an Environmental Health Practitioner in province, district health services, hospital and municipality. Ms Nemukula also worked as an Occupational Health and Safety Assistant Director. Ms Nemukula holds National Diploma and BTech Degree in Environmental Health; a Post Diploma in Mining Impact and Post Mining Rehabilitation; a master's in business administration (MBA); Oliver

Tambo Postgraduate Diploma in Health Leadership and Advanced Leadership Programme for Elimination of Malaria.

Jonathan Patz is Vilas Distinguished Achievement Professor, John P. Holton Chair of Health and the Environment, and inaugural director (2011-2022) of the Global Health Institute at the University of Wisconsin-Madison. He also has an Adjunct Professorship with the Division of Planetary Health at Monash University. Professor Patz is an elected member of the US National Academy of Medicine for his pioneering research on climate change and human health, and he currently serves as Director and PI of the NIH-sponsored Health-First Climate Action Research Center at UW-Madison.

Dr. Patz served as Health Co-Chair for the first US National Climate Assessment – a mandated report to the US Congress – and for 15 years, served as a Lead Author for the United Nations Intergovernmental Panel on Climate Change (IPCC) – the organization that shared the 2007 Nobel Peace Prize. Some of his other awards include: the Aldo Leopold Leadership Fellows Award; shared Zayed International Prize for the Environment; Fulbright Scholarship; American Public Health Association's Homer Calver Award for environmental health leadership; Case Western School of Medicine Alumni Special Recognition award; Johns Hopkins Society of Scholars; Chanchlani Global Health Research Award.

Professor Patz has taught and conducted research on the health effects of climate change and global environmental change for nearly 30 years. His faculty appointment is jointly with the Department of Population Health Science and the Nelson Institute for Environmental Studies, and he currently directs the university's Planetary Health Scholars Program. He has published over 200 peer-reviewed scientific publications and several textbooks on these subjects.

Tamer Rabie is the Global Program Lead for Climate and Health at the World Bank. He joined the Bank in 2005 and has since been leading lending as well as advisory services programs across more than thirty countries across all regions, including those characterized by fragility, conflict and violence. He has over twenty-five years of wide-ranging policy, public health and health systems experience including in climate change, nutrition, reproductive health, service delivery, governance, the private sector, and environmental health. As a medical doctor and public health specialist, he has always remained acutely aware that addressing global health challenges transcends the confines of healthcare alone and necessitates a comprehensive approach encompassing social, economic, and environmental policies, among others. Having worked on the nexus of climate and health since 2008, he has helped the World Bank shape its vision on climate action. In his current role as the Global Program Lead for Climate and Health, Dr. Rabie leads the World Bank's efforts in addressing the climate-health crisis by scaling country tailored solutions, delivering global public goods, and forging partnerships with other development partners, the private sector and civil society organizations.

Michael Replogle is a globally recognized advisor on implementing transportation best practices to advance sustainable economic and community development. As New York City's Deputy Transportation Commissioner from 2015 to 2021, he developed Vision Zero policies that cut pedestrian deaths by 40%, repurposed 10,000 parking spaces for restaurants, negotiated a six-fold expansion of CitiBike to 36,000 shared bikes, and advanced innovative street, curb, and congestion management, freight, and electrification initiatives.

Replogle's expert 2024 testimony framed and helped secure a historic legal agreement in which Hawaii's Department of Transportation committed to decarbonize statewide transportation by 2045, with a 50% cut by 2030, 5-year targets for GHG and VMT reduction, annual reporting, changes to funding priorities, completion of statewide bike and pedestrian plans in 5 years, and $40 million in spending on electric vehicle chargers.

Replogle is founder, director emeritus, and past president of the Institute for Transportation and Development Policy (ITDP), which works worldwide promoting equitable, sustainable transportation. He co-founded and chaired the Partnership on Sustainable Low Carbon Transportation, winning a $175 billion 10-year commitment for more sustainable transport from multilateral development banks. As Transportation Director for the Environmental Defense Fund, he shifted substantial investment from roads to public transport, walking, cycling in cities worldwide. As transportation coordinator for Montgomery County, Maryland, he pioneered sustainable transport scenario planning and innovations in transportation modeling.

Replogle is President of SmartGo, a non-profit advancing walkable communities served by healthy, safe and sustainable transportation. He is also an advisor to Itselectric, a start-up developing urban curbside electric vehicle charging.

Holding graduate degrees in civil engineering and sociology from the University of Pennsylvania, Replogle has served as a adjunct professor at New York University and a visiting professor at the China Academy of Transportation Sciences in Beijing and has testified many times before Congress and state legislatures.

Judith Rodin is a pioneer, innovator, change-maker and global thought-leader. For over two decades Rodin led and transformed two global institutions: The Rockefeller Foundation and the University of Pennsylvania. A ground-breaking executive throughout her career, Dr. Rodin was the first woman named to lead an Ivy League Institution and was the first woman to serve as The Rockefeller Foundation's president. A research psychologist by training, she was one of the pioneers of the behavioral medicine and health psychology movements. Dr. Rodin's leadership ushered The Rockefeller Foundation into a new era of strategic philanthropy that emphasized partnerships with business, government, and the philanthropic community to address and solve for the complex challenges of the 21st century. Rodin championed two whole new fields that are now pervasive: resilience and impact investing.

At Penn, Dr. Rodin presided over an unprecedented decade of growth and progress that transformed the institution, its campus, and the community, taking the university from sixteenth to fourth in U.S. News and World Report national rankings. The University also engineered a comprehensive, internationally acclaimed neighborhood revitalization program in West Philadelphia. Rodin has served as a member of the board for several leading corporations and many non-profits. She has authored more than 250 academic articles and chapters, and has written or co-written 15 books, including The Power of Impact Investing: Putting Markets to Work for Profit and Global Good and The Resilience Dividend: Being Strong in a World Where Things Go Wrong. Her most recent book, published by Wharton School Press, is entitled Making Money Moral: How a New Wave of Visionaries is Linking Purpose and Profit.

Ommid Saberi serves as the Global Lead for the Building Resilience Index Program and co-lead for IFC's EDGE Green Buildings Program. Additionally, he co-chairs the Finance Hub of the Global Alliance for Building and Construction. In his role, Ommid collaborates on various projects within the World Bank Group, including IFC investment and advisory initiatives. He has conducted extensive work with the property sector, as well as with funds and commercial banks, to redirect investments towards climate-smart and resilient projects. Notable examples of his work include green affordable housing projects in Africa, zero-carbon commercial assets, portfolio retrofits, green construction finance, and green mortgages, with a total value exceeding US$15 billion.

Prior to joining IFC, Ommid provided advisory services on sustainability strategies for property development projects in the U.K., Middle East, and Asia. His work included the development of green building codes for multiple countries. Ommid has also served on regional government advisory panels as an expert in low-energy buildings and has held the position of Technical Director for Energy Conservation at the city scale.

Background Reading and Reference Material

Charting a path to health for all at net-zero emissions

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Climate change is the defining health challenge of the 21st century, with record-breaking temperatures and extreme weather events already exacting an unprecedented toll on human health and wellbeing. Scientific consensus is clear: rapid and deep reductions in greenhouse gas (GHG) emissions by 2050 are needed not only to reduce the risks of exceeding climate tipping points beyond which irreversible damage occurs to natural systems, but also to safeguard human health, wellbeing, and equity.[1,2] Despite growing awareness of the climate–health nexus, climate interventions often fail to consider opportunities to maximise co-benefits.

Yet, health fundamentally depends on determinants that extend far beyond biomedical interventions—social, economic, and environmental factors shaped by decisions across energy, agriculture, heavy industry, transportation, and building sectors. These sectors are responsible for the overwhelming majority of global GHG emissions and hold the greatest mitigation potential to achieve 2035 emissions targets,[3] underscoring the need for an integrated systems approach that explicitly accounts for the public health benefits of climate action. Unlike abstract emissions targets or distant ecological concerns, tangible health outcomes from climate mitigation offer immediate, compelling, and widely shared benefits while simultaneously reducing the health risks of climate change.[4]

For example, air pollution linked to burning of fossil fuels contributes to approximately 5 million premature deaths annually and costs the global economy an estimated $8·1 trillion in premature mortality, lost productivity, and higher health-care expenditures.[5,6] Resource-intensive food systems—driven by high consumption of GHG-intensive red meat and processed foods—are major contributors to GHG emissions, chronic disease, water pollution, land degradation, and biodiversity loss, imposing annual economic costs exceeding US$8 trillion.[7] Addressing these health and economic impacts in tandem can yield immediate and long-term benefits: transitioning to clean energy mitigates both emissions and pollution-related illness; shifting urban infrastructure away from car-centric design towards active transportation (eg, walking, cycling, and public transit) fosters physical activity while reducing fossil fuel use; and shifting towards plant-based diets enhances nutrition and sustainability.[4]

These economic impacts underscore that climate-induced health costs directly and indirectly affect productivity, labour markets, health-care expenditures, insurance markets, and economic stability. Consequently, businesses, finance institutions, governments, and other non-health sectors increasingly recognise health as intrinsically linked to their operational sustainability, profitability, and resilience.[8] Articulating these shared economic interests and climate–health co-benefits can forge broader coalitions across divergent economic and political constituencies, thereby accelerating integrated climate–health action.[9]

Fully realising such co-benefits, however, requires more than piecemeal, sector-specific measures. Achieving health for all at net-zero emissions demands a comprehensive systems-level approach encompassing environmental, social, economic, and political dimensions. Narrowly framed climate policies that overlook structural economic inequalities, political inertia, societal inequities, and intergenerational injustices quickly lose effectiveness, durability, and equity by failing to account for the complex interactions among these interconnected systems.[10] Truly transformative climate–health strategies must incorporate broader systemic determinants—policies, fiscal incentives, governance frameworks, societal norms, power dynamics, and economic structures. For example, relying solely on traditional metrics such as gross domestic product obscures long-term wellbeing

Crispin la vallente via Getty Images

by prioritising near-term economic gains over health, equity, and ecological sustainability.[11] Realising this shift demands rethinking incentives, regulations, urban planning, food systems, technologies, and economic models that explicitly prioritise holistic human health and wellbeing outcomes as well as actions to stabilise the climate and other crucial Earth systems on which our future depends.[12]

Recognising both the urgency and the opportunity, the US National Academy of Medicine (NAM) is launching a Commission to develop the Roadmap for Transformative Action to Achieve Health for All at Net-Zero Emissions (the Roadmap),[13] a global initiative designed to position health explicitly at the heart of climate responses. The Roadmap initiative aims to systematically identify high-impact strategies and actionable pathways capable of simultaneously reducing emissions, delivering health gains, promoting equity, and fostering economic resilience and societal wellbeing.

NAM has convened a diverse international Commission representing multiple geographies, sectors, and areas of expertise. The Commission's approach is purposely cross-sectoral and systems-oriented, recognising the interconnectedness of environmental, social, economic, and political systems in driving sustainable transformations. Throughout 2025, the Commission will assemble rigorous evidence syntheses; conduct policy dialogues, consultations, and expert-led workshops to explore promising strategies; identify key implementation barriers; and understand enabling conditions required for successful action. Insights gathered during these activities will directly inform the final Roadmap report (to be published in 2026), which will detail strategies, priorities for action, implementation pathways, and critical leverage points for systemic transformation.

This process will be grounded in an understanding of socioeconomic and historical context. Low-income and middle-income countries (LMICs), which bear minimal historical responsibility for emissions yet experience disproportionate climate–health impacts,[14] represent some of the fastest-growing populations and economies.[15] Targeted investments in sustainable infrastructure and resilient communities can leapfrog carbon-intensive development pathways—accelerating progress towards improved health outcomes, equitable economic growth, and significant reductions in global emissions.[16] The Roadmap will prioritise learning from and identifying equitable solutions for LMICs, engaging international actors and financing institutions to advance transformative climate–health investments in these contexts.

By explicitly harnessing the motivational power of health—linking it systematically to economic sufficiency, wellbeing, environmental sustainability, societal cohesion, and political resilience—the Roadmap seeks to galvanise broad-based global action towards achieving health for all at net-zero emissions. NAM invites diverse constituencies—including policy makers, industry leaders, researchers, and civil society worldwide—to actively contribute perspectives, evidence, and solutions to inform this global effort.

Charting a successful path towards health for all at net-zero emissions necessitates moving beyond incremental progress and sectoral silos by adopting a holistic, integrated systems approach. The NAM's forthcoming Roadmap provides a unique opportunity to operationalise this transformative vision, offering actionable guidance, proven strategies, and integrated system-level priorities for decision makers worldwide. By centring health within comprehensive climate strategies—explicitly addressing environmental, economic, social, and political determinants—we aim to catalyse sustained, equitable, and meaningful climate action, protecting human health and fostering resilience and prosperity for all.

JR, AH, JAP, CEW, and VJD were involved in the conceptualisation of the Comment. JRB and SW conducted investigation to inform the Comment, and JRB and ND wrote the original draft. JR, AH, JRB, ND, JAP, HF, CEW, MT, and VJD contributed to the review and editing stage of the writing. MT and ND administered the project, and VJD and MT conducted the funding acquisition related to the Comment. JRB reports support from the National Academy of Medicine for the present manuscript in the form of consulting fees and also contracts from NASA Health and Air Quality Applied Sciences Team. JRB is a co-chair of the American Geophyiscal Union GeoHealth Policy Committee. HF reports support for travel expenses for speaking engagements at the following convenings: Texas Children in Nature Network, Hagle Distinguished Lecture at Texas A&M University, World Conference on Forests for Public Health, Society of General Internal Medicine, Park Pride (Atlanta), and Washington State Medical Association. HF reports serving as an unpaid member of the following advisory boards: Planetary Health Alliance; Harvard Center for Climate, Health, and the Global Environment; Medical Society Consortium on Climate Change and Health; European Centre for Environment & Human Health at the University of Exeter; Global Consortium on Climate and Health Education; Yale Center on Climate Change and Health; and EcoAmerica's Climate for Health. HF also reports serving as a member of the Board of the Nature & Health Alliance and as a member of the Executive Committee of the Tyler Prize, both unpaid positions. JAP reports royalties for the second edition of his textbook, Climate Change and Public Health, B Levy and J Patz (eds), Oxford University Press, 2024. JAP has received travel support for the Regional World Health Summit from Monash University. JAP also serves on the following committees: Healthy Climate

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SESSION 4 – OVERVIEW OF CORE CONCEPTS

Session 4, "Positioning Health as a Bridge Between Sectors and Systems," will explore how reframing health as a collective, systems-wide priority—drawing on the three complementary frameworks outlined below—can drive transformative climate action.

Caring Societies place care at the core of social and economic systems, recognizing that current crises—climate, social, political, and otherwise—are interconnected and can be addressed by strengthening communal support. Here, health shifts from being an individual's responsibility to a shared social imperative, with care work—including historically un(der)paid and gendered labor—seen as essential and deserving of equitable recognition. By redistributing care obligations and realigning economic priorities to nurture well-being for all, Caring Societies embody a transformative approach that respects planetary boundaries and promotes collective flourishing. More information on Caring Societies is available here.

Resilience is a community's sustained capacity to adapt to, recover, and grow from adverse events—including those intensified by climate change—by transforming, rather than merely restoring, existing systems. In this framework, health becomes a unifying driver for policies and practices that center health assets, capacities, and capabilities, thereby building resilience and ensuring all members of society receive the support they need. Resilience is the pathway to thriving communities and community wellbeing. By integrating equity across preparedness, response, and recovery efforts, Resilience bridges sectors to build stronger, more cohesive societies that prioritize long-term societal strength. More information on Resilience is available here.

Well-Being Economy redefines societal progress by prioritizing the shared health of people and the planet over traditional metrics like perpetual GDP growth. In these economies, health is a key component of social, environmental, and economic well-being. There is a focus on equitable distribution of resources, proactive prevention of harm, and inclusive decision-making processes that amplify community voices. By centering climate action, equity, and human health and well-being in economic models, Well-Being Economies offer a transformative route that reshapes policies and business practices to uphold the well-being of all, paving the way for truly inclusive and sustainable prosperity. More information on Well-Being Economy is available here.

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ADDITIONAL RESOURCES & REFERENCE MATERIALS

The following materials have been submitted and are being considered by the Roadmap Commission and provide further information on the current insights and evidence informing its work:

Co-Benefits

- *Lancet* Pathfinder Commission Report
- *Lancet Planetary Health*-Earth Commission Report

Systems Change

- Global Tipping Points Report, 2023
- Systems Change Lab

Caring Societies

- Hot or Cool Institute - Caring: A Solution for Our Crisis
- ODI Global - Building Caring Societies: How States Can Shift the Gendered Norms of Care
- UN Women - Caring Societies, Inclusive, and Green Economies in Asia and the Pacific

Resilience

- RAND - Community Resilience
- World Economic Forum - Climate and Health Initiative

Well-Being Economy

- Advancing a Well-Being Narrative: Expanding How Decision-Makers Think About Progress in Order to Transform Priorities and Actions
- Wellbeing Economy Alliance

CALL FOR INFORMATION

In addition to participant contributions during the workshop, the Commission invites participants to submit concise, high-impact insights, information, and materials. We are particularly interested in:

- Emerging evidence (e.g., research findings, data analyses) that illuminate the links between climate action and health.
- Case studies of success demonstrating proven or promising approaches, policies, or technologies that advances health and climate action.
- Priority research questions identifying crucial knowledge gaps for future exploration.
- Best practices and practical learnings on effectively aligning economic, social, political, environmental, and health objectives.
- Initiatives or entities (coalitions, multilateral institutions, organizations, etc.) working to address climate change by (1) adopting a systems change approach and (2) considering health impacts of strategies, interventions, investments, and policies.

These submissions will inform the Commission's development of the *Roadmap for Transformative Action to Achieve Health for All at Net-Zero Emissions*. Please send relevant materials and comments to NAMClimateRoadmap@nas.edu.

About the Roadmap for Transformative Action

Roadmap for Transformative Action to Achieve Health for All at Net-Zero Emissions

Climate change is driving an escalating cascade of crises—from extreme weather events and worsening food insecurity to shifting patterns of infectious diseases and rising rates of non-communicable diseases. These interconnected conditions are profoundly affecting human health, with historically marginalized and under-resourced populations disproportionately shouldering the burden. This reality exacerbates disparities, heightens vulnerabilities, and threatens global progress toward a sustainable and healthy future for all.

Despite calls for bold action to reduce greenhouse gas emissions and adapt to unavoidable climate impacts, these considerations remain critically under-addressed. Bridging this gap demands a **coordinated, systems-level approach** that transcends sectors, regions, and disciplines, placing health for all at the forefront of climate action.

About the Roadmap

To address this urgent and growing need, the National Academy of Medicine (NAM) is spearheading the development of a *Roadmap for Transformative Action to Achieve Health for All at Net-Zero Emissions*, an ambitious effort to catalyze mitigation and adaption solutions that center health for all in climate action. By convening global leaders across diverse sectors and leveraging the best available evidence, the Roadmap aims to:

- **Identify high-impact strategies** to cut emissions in the highest-emitting sectors while advancing health for all.
- **Direct investments** toward proven, evidence-informed interventions that strengthen (and promote synergy between) adaptation and mitigation, prioritizing communities most vulnerable to climate impacts.
- **Equip leaders and decision makers** across government, industry, and civil society with evidence-based tools, metrics, and guidance to drive measurable progress toward a health-centered and net-zero future.
- **Foster the global adoption of effective, place-based solutions** by scaling and replicating successes from diverse economic and geographic settings.
- **Mobilize collective action** by engaging key champions within and across sectors to implement and sustain transformative and health-centered systems change.

The Roadmap envisions a future where climate action is synonymous with health for all. Achieving this will require bold innovation, targeted investment, and global cross-sector collaboration. By centering human health and well-being in the climate agenda, NAM and its partners are paving the way for a resilient, sustainable, and healthier future for all.

Climate Grand Challenge

The Roadmap is a part of the NAM Climate Grand Challenge - a multi-year global initiative to improve and protect human health and well-being by working to transform systems that both contribute to and are impacted by the changing climate. Learn more at nam.edu/ClimateAndHealth.

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WORKSHOP SERIES OVERVIEW

As part of the *Roadmap for Transformative Action to Achieve Health for All at Net-Zero Emissions* ("the Roadmap"), the National Academy of Medicine (NAM) is convening a series of four information-gathering workshops* designed to explore key questions, elevate diverse perspectives, and identify strategic opportunities for integrated climate-health action to inform the Commission's work.

The "What" of Systems Transformation: Anchoring Climate Action in Health

Virtual | April 29 – 30, 2025

This inaugural workshop will lay the foundation for the Commission's work by exploring how health can serve as a strategic anchor for climate action—both within key sectors and across interconnected systems. Discussions will identify the major economic sectors driving climate change—including energy, transportation, agriculture, and heavy industry—and examine pathways to net-zero emissions that advance health for all. The workshop will also consider the broader political, economic, and social systems shaping climate responses, and surface the policy, governance, and behavioral shifts needed to align sustainability and economic priorities with improved health outcomes.

The "How" of Systems Transformation: Strategies and Levers for Health-Centered Climate Action

Virtual | July 29 – 30, 2025

Building on the insights from the first workshop, this workshop will explore how to activate the levers of systems transformation to drive health-centered climate action. Discussions will focus on the enabling conditions—across governance, policy, finance, technology, innovation, and behavior change—that can accelerate progress both within and across sectors. Participants will examine the roles of policy tools, economic incentives, communication strategies, and leadership in aligning efforts across sectors and systems with broader health and climate goals. By surfacing practical strategies and identifying persistent barriers, the workshop will contribute to a shared framework for action that promotes health, sustainability, and system-wide alignment.

Leapfrogging Development: Pathways for Integrated Climate-Health Action in LMICs

Hybrid – Location TBD | Q4 2025

Focusing on the distinct opportunities and challenges facing low- and middle-income countries (LMICs), this workshop will explore integrated approaches to climate mitigation, adaptation, and health in the context of rapid urbanization and development. Participants will examine long-term low-emission development strategies (LT-LEDS), innovative

economic models, and cross-sector partnerships that can support equitable, climate-resilient growth. Drawing on lessons from past industrial transitions, the workshop will highlight opportunities for LMICs to leapfrog toward sustainable futures. It will center the lived experience and leadership of LMICs and engage key partners—such as regional development banks and multilateral institutions—in supporting country-led strategies for health and sustainability.

Scaling What Works: Health-Centered Climate Mitigation and Adaptation in Practice
Hybrid – Location TBD | Q1 2026

The final workshop will elevate emerging, real-world case studies that integrate health into climate mitigation and adaptation across diverse settings. Featuring examples from countries across the income spectrum, the workshop will highlight scalable cross-sector strategies and interventions led by governments, private industry, academia, civil society, and communities. Participants will assess what makes these interventions effective, identify opportunities to tailor and replicate across diverse settings, and explore the partnerships needed to scale and sustain them. Through collaborative discussion, the workshop will aim to catalyze new initiatives and commitments to advance a healthy, sustainable, and net-zero future for all.

[*] The focus of each workshop will be further refined as the Commission advances its work.

CLIMATE GRAND CHALLENGE

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COMMISSIONER ROSTER

Andy Haines (Co-Chair) Professor of Environmental Change and Public Health, Centre on Climate Change and Planetary Health, London School of Hygiene & Tropical Medicine

Judith Rodin (Co-Chair) President Emerita, The University of Pennsylvania; Former President, The Rockefeller Foundation

Lewis Akenji Executive Director, Hot or Cool Institute

Pablo Bereciartúa Minister of Infrastructure, City of Buenos Aires, Argentina; Chairman, Global Water Partnership

Diarmid Campbell-Lendrum Unit Head, Climate Change and Health, World Health Organization

Maruxa Cardama Secretary General, SLOCAT Partnership on Sustainable, Low Carbon Transport

Howard Frumkin Professor Emeritus of Environmental & Occupational Health Sciences, University of Washington

Joyeeta Gupta Distinguished Professor of Climate Justice, Sustainability and Global Constitutionalism, and Professor of Environment and Development in the Global South, University of Amsterdam; Professor of Law and Policy in Water Resources and Environment, IHE Delft Institute for Water Education

MaryAnne Hancock Chief Executive Officer, Y Analytics

Naoko Ishii Special Presidential Envoy for Global Commons, Professor, Institute for Future Initiatives, and Director, Center for Global Commons, The University of Tokyo

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María Mendiluce Chief Executive Officer, We Mean Business Coalition

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