Review of the Draft 5th National Climate Assessment

Committee

Joel B. Smith

Chair

MR. JOEL B. SMITH is an independent researcher and member of the National Academies' Advisory Committee to the U.S. Global Change Research Program. Mr. Smith has provided technical advice, guidance, and training on assessing climate change impacts and adaptation to international organizations, the U.S. government, states, municipalities, and the non-profit and private sectors. He was a member of the National Academy of Sciences "Panel on Adapting to the Impacts of Climate Change." He was a coordinating lead author or lead author on the Third, Fourth, and Fifth Assessment Reports of the Intergovernmental Panel on Climate Change. Mr. Smith was also an author of three U.S. National Climate Change Assessments (NCA), including Chapter Lead on the International Chapter for the fourth NCA. He has been a consultant since 1992, having worked for Hagler Bailly, Stratus Consulting, and Abt Associates. He worked for the U.S. Environmental Protection Agency (EPA) from 1984 to 1992, where he was the deputy director of the Climate Change Division. Mr. Smith received a BA from Williams College in 1979 (graduating magna cum laude), and a Masters in Public Policy from the University of Michigan in 1982. Mr. Smith served as a Special Government Employee with EPA from May 2021 through February 2022; he did not work on matters directly relevant to USGCRP. Over the past five years, Joel co-authored a peer reviewed paper with Marcus Sarofim (co-author on NCA5 chapter 19) who at the time was a client at USEPA with while Joel worked at Abt Associates and he serves as a member of the Advisory Committee to the USGCRP with Kris Ebi (co-author on NCA5 chapter 15).

Marissa K. Aho

Member

MARISSA AHO, AICP has served as the Policy Director/Chief Resilience Officer for the Washington State Department of Natural Resources since July 2021. She previously served as the first Chief Resilience Officer for the cities of Los Angeles and Houston. She led the development and implementation of the cities' resilience strategies (Resilient Los Angeles and Resilient Houston) that are focused on preparing for catastrophic events and addressing chronic stressors. She is a member of the American Institute of Certified Planners. She has a Bachelor of Arts degree in Political Science and Communications, Legal Institutions, Economics, and Government from American University and a Master of Planning degree from the University of Southern California. Marissa has worked with multiple NCA5 contributors in different capacities over the past five years: she served on the Resilient Los Angeles working group with Juliette Finzi Hart (co-author of NCA5 chapter 9) and Emmanuel Crisanto Liban (lead author on NCA5 chapter 13), she was project lead on a Climate Assessment for Houston that Katharine Hayhoe (co-author of NCA5 chapter 2) was hired to conduct, she worked with Laura Patino (contributor of NCA5 chapter 26) on Resilient Houston, she also worked with Earthea Nance (co-author for NCA5 chapter 18) on multiple projects in Houston and she served as a Chief Resilience Officer with Daniel Zarrilli (co-author of NCA5 chapter 21) and both contributed to 100 Resilient Cities work.

Shanondora M. Billiot

Member

DR. SHANONDORA BILLIOT (United Houma Nation) is an Assistant Professor at Arizona State University. Her research uses mixed methods to understand indigenous-specific risk and protective factors to global environmental change exposure and pathways to health outcomes within Indigenous populations with the goal to co-develop adaptation activities. Dr. Billiot is currently a Co-PI on an interdisciplinary team exploring resilience, culture, climate, and movement among an Indigenous community on the Gulf Coast funded by Gulf Research Program Thriving Communities Grant. She serves as a Technical Advisory Member of the Climate Change Taskforce for the National Congress of American Indians and is a Member of the Community Board for Engagement and Evaluation of the Gulf Research Program within the National Academies of Sciences, Medicine, and Engineering. She earned a PhD in Social Work from Washington University in St. Louis as a Henry Roe Cloud visiting doctoral fellow at Yale University.

Michael Dettinger

Member

DR. MICHAEL DETTINGER is a visiting researcher at Scripps Institution of Oceanography, Center for Western Weather and Water Extremes, and a part-time researcher at the Desert Research Institute. He retired from the U.S. Geological Survey as a senior research hydrologist in 2019 after 38 yrs studying climate and water resources in the western U.S. Dettinger continues his research on hydroclimatic variability, extremes (including atmospheric rivers and droughts), and climate-change impacts and adaptations. He is a Fellow of the American Geophysical Union (AGU) and American Association for the Advancement of Science, a member of the National Academy of Engineers, and is recipient of two California Climate Science Service Awards. He has authored >150 scientific articles in scholarly journals and books, 30+ government reports, and 100 articles and reports in other outlets. These publications have been cited >32,000 times in the scientific literature, with >70 cited 100 or more times each. He was a lead author of the 2013 Third National Climate Assessment Water Resources chapter, co-edited State of Bay-Delta Science Reports in 2008 and 2016, led the California Fourth Climate-Change Assessment Sierra Nevada Region Report in 2018, and was AGU Tyndall Lecturer on History of Global Environmental Change in 2021. He earned his M.S. in Civil Engineering at Massachusetts Institute of Technology and his PhD in Atmospheric Sciences at the University of California, Los Angeles in 1997. Dr. Dettinger served as a senior scientist with the USGS through May 2019. In the past 5 years, he has published on California's 4th Climate Change Assessment report, California drought, climate change scenarios, and extreme precipitation. He has also given technical and public talks in recent years on local-to-regional climate change science. Mike has collaborated with three NCA5 contributors over the past five years: he has co-authored a publication and collaborated on a workshop panel with Paul Ullrich (co-author on NCA5 chapter 3), collaborated on a Nevada State Climate-Change Vulnerability Assessment with Stephanie McAfee (co-authored NCA5 chapter 4), and he served as a PI on a USGS funded Southwest Climate Adaptation Science Center with Erica Fleischman (co-author on NCA5 chapter27).

Janet Franklin

Member

DR. JANET FRANKLIN (NAS) is the Endowed Campanile Foundation Department of Geography, at San Diego State University. She is a Distinguished Professor of Biogeography Emerita, retired from the University of California, Riverside. Her work addresses the impacts of human-caused landscape change on the environment. Her research has garnered new insights into the impact of fire regimes on ecosystems and the role of early humans in shaping ecological communities. In 2014, Dr. Franklin was elected to the National Academy of Sciences (NAS) for her significant advancement of the understanding of human impacts on ecosystems by developing novel species distribution models, combined with innovative geospatial analysis and extensive fieldwork. She is currently a member of the NAS Geographical and Geospatial Sciences Committee and served as co-Chair of the joint NAS-Royal Society Forum on Climate Change & Ecosystems (2018). She received her Ph.D. and M.A. in geography and a B.A. in environmental biology from the University of California, Santa Barbara. Dr. Franklin co-published an editorial introduction to “Climate Change and Ecosystems–Threats, Opportunities, and Solutions” in the Philosophical Transactions of the Royal Society B. Janet has co-authored publications over the past five years with Forrest M. Hoffman (co-author on NCA5 chapter 3) and David Hondula (co-author on NCA5 chapter 12).

Jada F. Garofalo

Member

MS. JADA GAROFALO, JD, MS, is an Associate in the Domestic Environment and Natural Resources Division at Abt Associates. Her expertise intersects multiple topic areas, including climate impacts, adaptation, and mitigation; environmental regulations; water law, regulation, and policy; energy and energy-transition regulation and policy; health, including nutrition, infectious and vector-borne diseases; and social and environmental justice issues. Ms. Garofalo blends her science and legal skills to develop purposeful research and policy in the climate arena. Currently, she is engaged in interdisciplinary project leadership, management, and development on issues related to climate impacts and adaptation to the energy, environment, health, and water sectors, and climate mitigation. Ms. Garofalo earned her BS in Food Science and Human Nutrition in 2010, followed by her MS in Climate Science and Policy in 2014, and her JD in environmental law in 2019. As an attorney, Ms. Garafalo has represented clients on siting of wind development projects, and has served as a panelist for webinars on legal considerations for advanced and renewable energy and clean energy standards. Ms. Garafalo has recent publications on rare earth elements, carbon capture, and CO2 pipelines. Jada conducts work under a contract for USACE Ariane Pinson (federal coordinating lead author on NCA5 Chapter 4).

Shineng Hu

Member

DR. SHINENG HU is an Assistant Professor in the Division of Earth and Climate Sciences, Nicholas School of the Environment, Duke University. Dr. Hu specializes in climate dynamics and air-sea interactions. The main goal of his research is to understand the ocean's role in global climate variability and change through the interaction with the atmosphere. Dr. Hu received the National Aeronautics and Space Administration's Earth and Space Sciences Fellowship in 2014-2017, the Scripps Institutional Postdoctoral Fellowship and the Lamont-Doherty Postdoctoral Fellowship in 2018. Dr. Hu obtained his B.S. degree in Atmospheric Science from Peking University in 2012, and his Ph.D. degree in Climate Dynamics from Yale University in 2018.

Richard J. Jackson

Member

DR. RICHARD JACKSON is Professor Emeritus at the UCLA Fielding School of Public Health, where he was Department Chair in Environmental Health Sciences. A pediatrician, he has served in many leadership positions with the California Health Department, including the highest as the State Health Officer. He served as Director of the Centers for Disease Control and Prevention (CDC) National Center for Environmental Health for nine years and received the Presidential Distinguished Service Award. He was elected to the National Academy of Medicine in October 2011, where he was co-leader of its Climate Interest Group and in October 2022 he received NAM's David Rall medal for service. Dr. Jackson was instrumental in establishing the California Birth Defects Monitoring Program and instigating state and national laws to reduce risks from pesticides, especially to farm workers and to children. He has received the John Heinz Award for national leadership in the Environment; the Sedgwick Memorial Medal, the highest award of the American Public Health Association; and the Henry Hope Reed Award for his contributions to Architecture. Dr. Jackson co-authored the books: Urban Sprawl and Public Health, Making Healthy Places, and Designing Healthy Communities. Dr. Jackson earned a Masters in Public Health in Epidemiology from the University of California, Berkeley, and an MD from the University of California, San Francisco School of Medicine.

Rachael G. Jonassen

Member

RACHAEL JONASSEN is the Director of Climate Change and Greenhouse Gas Management programs in the Environmental and Energy Management Institute as well as Associate Research Professor of Urban Sustainability at George Washington University. Her primary appointment is in the Department of Engineering Management and Systems Engineering. She served as Senior Climate Scientist at Logistics Management Institute advising the Obama Administration and New York City on Greenhouse Gas management and climate impacts after four years at the National Science Foundation (NSF), directed Carbon Cycle Science and Biogeoscience research and represented NSF at the United States Global Change Research Program, leading on international efforts on carbon cycle research and managing the North American Carbon Program. Prior she was a Professor of Hydroclimatology where she developed and applied downscaling methods for climate change assessments for hydroelectric systems and biogeographic problems and supported the Department of Energy on high-level nuclear waste efforts. She was recognized for her service at NSF with the Director's Award and is a Fellow of the Geological Society of America. She serves on the National Cooperative Highway Research Program panel 15-61. Jonassen holds a PhD and MS from Penn State and BA from Dickinson College. Dr. Jonassen advises international climate change mitigation and adaptation with the Asian Development Bank, the World Bank, and the United Nations. Through the Center for Climate and Security, she has publications on "A Climate Security Plan for America."

Natalie Marie Mahowald

Member

DR. NATALIE MAHOWALD is the Irving Porter Church Professor of Engineering at Cornell University in the Department of Earth and Atmospheric Sciences. Before joining Cornell in 2007, she completed her postdoctoral work at Stockholm University, was an Assistant Professor at University of California, Santa Barbara (1998-2002); and a Scientist (I, II and III) at the National Center for Atmospheric Research (2002-2007). The focus of Natalie's work is on natural feedbacks in the climate system, how they responded in the past to natural climate forcings, and how they are likely to respond in the future. This includes building new parameterizations within Earth system models that couple new areas: for example aerosols and biogeochemistry, or fires within the Earth system, or the impacts of land use on aerosols and the carbon cycle. Natalie has received several awards and recognitions throughout her career including: American Meteorological Society Henry G. Houghton Award, American Meteorological Society Fellow, American Geophysical Union Fellow, American Association for the Advancement of Science Fellow, and Guggenheim Foundation Fellow. She served as lead author on two Intergovernmental Panel on Climate Change reports: Assessment Report 5, Working Group 1 and the Special Report on 1.5°C. She earned her M.S. in Natural Resource Policy at the University of Michigan and her Ph.D. in Meteorology at Massachusetts Institute of Technology in 1996. Dr. Mahowald has made public statements on SR1.5 of the IPCC, and testified on the same topic to the House Committee on Science, Technology, and Space.

Regan F. Patterson

Member

DR. REGAN F. PATTERSON is a newly appointed Assistant Professor of Civil and Environmental Engineering at the University of California, Los Angeles. Her research focuses on the intersection of air quality engineering, sustainable transportation, and environmental justice. She was previously the Transportation Equity Research Fellow for the Congressional Black Caucus Foundation (CBCF), where she conducted intersectional transportation policy analysis and research. Prior to joining the CBCF, Dr. Patterson was a postdoctoral research fellow at the University of Michigan Institute for Social Research, where she examined the linkages between air pollution and racial residential segregation. Dr. Patterson was a recipient of the U.S. Environmental Protection Agency's Science to Achieve Results Fellowship, Switzer Environmental Fellowship, and UC Berkeley Chancellor's Fellowship. Her dissertation research modeled the air quality and environmental justice benefits of state and local transportation policies for mitigating exposure to traffic-related air pollution. She earned her Ph.D. in Environmental Engineering at the University of California, Berkeley. She holds a B.S. in Chemical Engineering from UCLA and an M.S. in Environmental Engineering from UC Berkeley.

Yueming (Lucy) Qiu

Member

DR. YUEMING (LUCY) QIU is an Associate Professor in the School of Public Policy at the University of Maryland College Park. Her research group focuses on using big data with quasi-experimental and experimental methods to answer empirical questions related to the interactions among consumer behaviors, energy technologies, and incentives. Her research projects have been funded by the National Science Foundation, the Sloan Foundation, Electric Power Research Institute, Department of Defense, and Water Research Foundation. Dr. Qiu received her Ph.D. from Stanford University and B.S. from Tsinghua University.

Charles W. Rice

Member

DR. CHARLES (CHUCK) RICE is a University Distinguished Professor and holds the Vanier University Professorship at Kansas State University as a Professor of Soil Microbiology in the Department of Agronomy. He teaches courses and conducts research on soil health and climate change impacts. Dr. Rice received the honorary title of “National Associate” of the National Academies of Sciences Engineering and Medicine (NASEM). He was named the Hugh Hammond Bennett Awardee by the Soil and Water Conservation Society, which recognizes exceptional service and national and international accomplishments in the conservation of soil, water, and natural resources. Internationally, he served on the United Nations’ Intergovernmental Panel on Climate Change to author a report on Climate Change in 2007 and 2014 and was among scientists recognized when that work won the Nobel Peace Prize in 2007. Dr. Rice is a Fellow of the Soil Science Society of America, the American Society of Agronomy, and the American Association for the Advancement of Science. He has also served in numerous capacities with professional societies including the President of the Soil Science Society of America in 2011. Dr. Rice currently chairs the Board on Agriculture and Natural Resources at NASEM. He earned his degrees from Northern Illinois University and the University of Kentucky.

Anjali Sauthoff

Member

DR. ANJALI SAUTHOFF is an environmental health scientist who works with the government, nonprofit organizations, academia, and businesses on climate change, public health, equity, data justice, and the use of geospatial technology for scientific communication. She leads the Westchester County Climate Crisis Task Force Health and Community Resilience teams; develops university capstone projects and works with communities to address equitable climate mitigation and adaptation. Dr. Sauthoff’s prior academic research centered on the development of models to estimate exposure to air pollution and on strategies to decrease greenhouse gas emissions from the transportation sector. She received her master’s degree in Neurobiology and Behavior from SUNY Stony Brook and her Ph.D. in Environmental Health Science from Columbia University. Dr. Sauthoff currently serves on the New York State Climate Impact Assessment Health and Safety technical working group. She recently published a book chapter entitled “Social Determinants of Health as a Framework for Addressing Urban Climate Adaptation” (Mutnick D., Griffiths C. (Eds). The City Is An Ecosystem: Sustainable Education, Policy, and Practice. London: Routledge), which focused on urban climate adaptation and justice.

David L. Skole

Member

DR. DAVID L. SKOLE is Professor of Forestry and Director of the Global Observatory for Ecosystem Services in the Department of Forestry at Michigan State University. Prior to that he was a Research Professor at the Institute for the Study of Earth Oceans and Space at the University of New Hampshire. Dr. Skole is an advisor to the Forest Investment Program (World Bank Group) and led the development of its monitoring and reporting toolkit. His research focuses on the role of forestry and agriculture in global climate change, the use of geographical information for sustainable development and natural resource management, new methods and applications of Earth observations for global environmental change analytics, and mitigation and adaptation. He is the Chair of: the United Nations Program on Global Observations of Forest Cover (GOFC); the National Science Foundation Advisory Committee on Environmental Research and Education; and the International Geosphere Biosphere Programme's Core Project on Land Use and Cover Change (LUCC). He has been a member of several committees of the National Academies, including the Committee on Earth Science and Applications from Space. Dr. Skole earned a PhD in natural resources from the University of New Hampshire and a BA and MS from Indiana University. He is now active in the emerging carbon financial markets and applications of his research to carbon sequestration and domestic and international climate change mitigation programs, and in developing methods for carbon offsets under cap-and-trade carbon regulations. This includes work with the California Climate and Forest Fund, and the Chicago Climate Exchange, membership on U.S. Government advisory groups, and an advisory role for the Michigan Department of Natural Resources.

Phil Thompson

Member

DR. PHILIP R. THOMPSON is an Associate Professor in the Department of Oceanography at the University of Hawai'i at Manoa and Director of the University of Hawaii Sea level Center (UHSLC). As director of the UHSLC, he oversees the operation of an international network of sea-level monitoring stations—many distributed throughout the Pacific Islands—as well as the curation of widely cited sea-level datasets. He also serves as the principal investigator for research projects funded by the U.S. Geological Survey, the National Oceanic and Atmospheric Administration, and the National Aeronautics and Space Administration focused on understanding decadal climate variability, future tidal flooding, and the interaction of sea level and waves in the nearshore environment. An emerging theme in his work is the co-production of research that facilitates science-based coastal management and tools that support effective science communication. Philip earned a PhD in Physical Oceanography from the University of South Florida in 2012 and a BS in Physics from North Carolina State University in 2004. Phil has had professional ties with a number of contributors to NCA5 over the past five years: he has co-authored two papers with William Sweet (co-author of NCA5 Chapter 9), he has two current projects that are being funded by PI-CASC who is directed by Mari-Vaughn V. Johnson (federal coordinating lead author on NCA5 chapter 30), he is a co-PI on a current project with Curt Storlazzi (co-author of NCA5 chapter 30), one of his current grants partially funds Christopher Shuler (co-author of NCA5 chapter 30), he is the direct supervisor of Matthew Widlansky (technical contributor of NCA5 chapter 30), and he has co-authored many papers with and has a current PI/co-PI relationship on three federally-funded projects with Benjamin Hamlington (co-author of NCA5 chapter 3).

Kristin Marie Fischer Timm

Member

DR. KRISTIN TIMM, PhD is a Research Associate at the Alaska Climate Adaptation Science Center at the International Arctic Research Center, University of Alaska Fairbanks. She previously worked and studied with the Center for Climate Change Communication at George Mason University and has spent over a decade working as a science education project manager and professional science communicator. Dr. Timm's expertise is in science and climate change communication, and the people and processes at the interface of science and society. Her dissertation investigated news coverage of the Fourth National Climate Assessment and the factors that influenced it. She has received several awards for her work, including the U.S. Geological Survey Eugene M. Shoemaker Communication Award for effectiveness communicating complex scientific concepts. Dr. Timm has a Ph.D. in Communication from George Mason University, and a M.Sc. in Interdisciplinary Studies (Science Communication) and a B.A. in Rural Development: Land, Resources, and Environmental Management, both from the University of Alaska Fairbanks. Kristin has collaborated with a number of contributors to NCA5 over the past five years: she has co-authored publications with Aparna Bamzai (co-author on NCA5 chapter 25), Shawn Carter (federal coordinating author on NCA5 chapter 8), Jeremy Littell (co-author on NCA5 chapter 29), and Katharine Mach (chapter lead on NCA5 chapter 18). She co-authored publications and presently is co-chairing a journal special issue with Julian Reyes (co-author on NCA5 chapter 27) and Louie Rivers (co-author on NCA5 chapter 22), she has a proposal in preparation with Heidi Roop (co-author on NCA5 chapter 24), and she has co-authored publications and collaborated on proposals with Sarah Trainor (co-author on NCA5 chapter 29) and Kripa Akila Jagnnathan (co-author on NCA5 chapter 18).

Gary W. Yohe

Member

DR. GARY YOHE is the Huffington Foundation Professor of Economics and Environmental Studies (Emeritus) at Wesleyan University. He has published more than 150 scholarly articles on climate change and climate policy or economics germane to climate change of climate policy. He has published more than 70 opinion and communication pieces alone and with colleagues, Richard Richels, Henry Jacoby, and Benjamin Santer in venues like Scientific American, the Hill, the Guardian, Yale Climate Connections, and the like. SpringerNature is publishing a collection of 35 of these essays later this year. As a very senior member of the Intergovernmental Panel on Climate Change, he shared the 2007 Nobel Peace Prize. He has served as Co-vice-chair of the Third U.S. National Climate Assessment and on many Academies' panels – including Susan Solomon's Stabilization Panel and both the Adaptation Panel and overarching panel of America's Climate Choices. Yohe was educated at the University of Pennsylvania and received his Ph.D. in Economics from Yale University in 1975. Gary has written an opinion piece article for The Hill titled GOP-controlled House: Children playing poorly in the climate change sandbox in November of 2022.