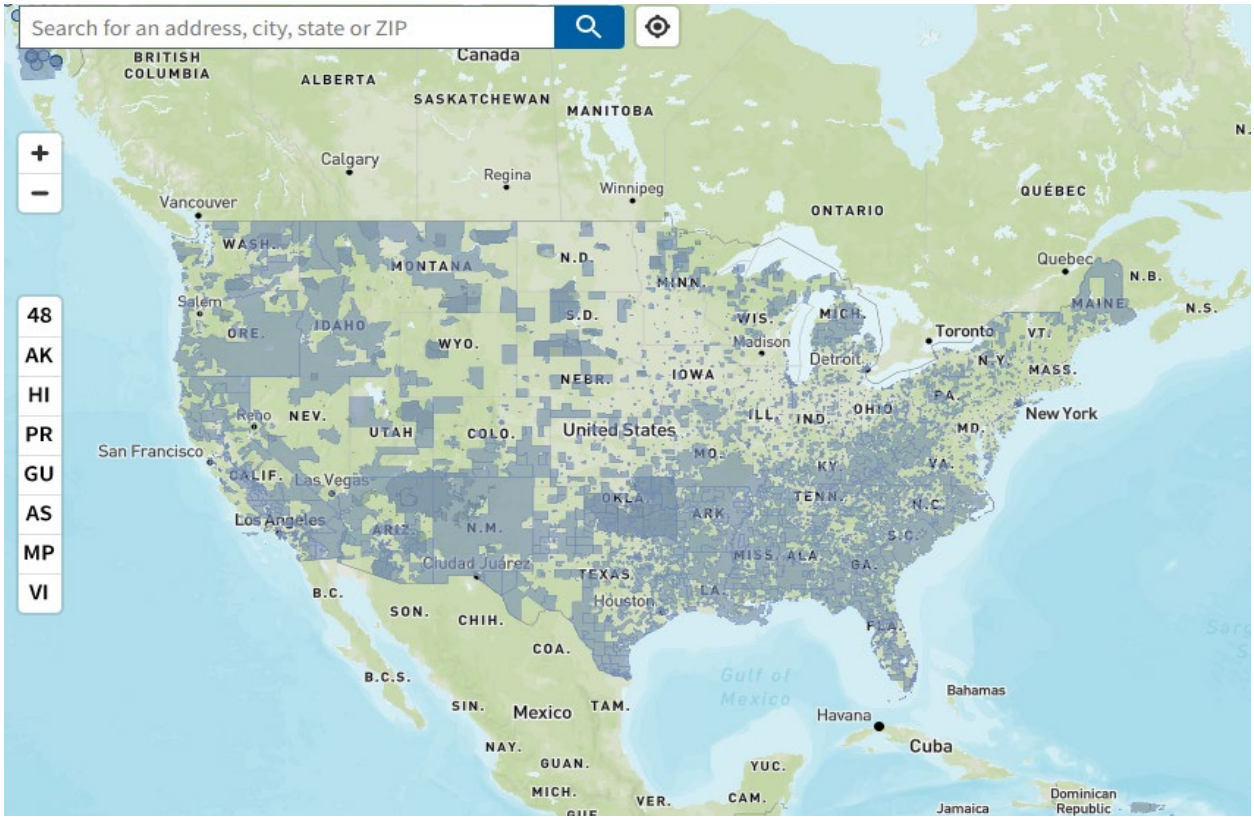
NATIONAL ACADEMIES Sciences Engineering Medicine

Community Perspectives: Representing Lived Experience in the Climate and Economic Justice Screening Tool (CEJST)

Hybrid Community Workshop Briefing Book



National Academy of Sciences
Building 2101 Constitution Ave., N.W.
Washington, DC 20418
Members' Room and Rooms 114, 118 & 360

June 1st, 2023

1
Meeting Information

Community Perspectives: Representing Lived Experience in the Climate and Economic Justice Screening Tool (CEJST)

Hybrid Community Workshop

This workshop of the Committee on Utilizing Advanced Environmental Health and Geospatial Data and Technologies to Inform Community Investment will explore how well data used within the Climate and Economic Justice Screening Tool (CEJST) represent lived experiences of different kinds of communities across the Nation. CEJST, a geospatial tool, was developed by the White House Council of Environmental Quality to identify communities experiencing climate and economic burdens. Workshop participants will discuss (a) how information obtained using CEJST reflects conditions within communities, (b) gaps in the data used within CEJST, and (c) how cumulative burdens are experienced and represented in CEJST. The information gathered during this workshop will inform the study committee's deliberations and recommendations regarding a future data strategy for CEJST. View the full study description at https://www.nationalacademies.org/our-work/utilizing-advanced-environmental-health-and-geospatial-data-and-technologies-to-inform-community-investment.

Purpose

To understand connections between the lived experiences of historically marginalized and overburdened populations and:

- the representativeness of the current measures in the tool.
- measures currently absent from the tool that relate thematically to the Justice40 categories.
- how cumulative burdens are experienced.

June 1, 2023
ALL TIMES EASTERN

10:00 – 10:20 **Event Opening**

- Welcomes and Introductions.
- Background about project and CEJST tool.
- Objectives and logistics for the day.

10:20 – 10:50 **The CEJST Categories of Burden**

- Presentation regarding the categories and indicators of burden in CEJST and the data used to represent them.

10:50 – 11:00 **Break**

11:00 – 11:55 **Flash Talks: How does the existing tool reflect conditions in your community?**

- Flash talks from experts on understanding the lived experience of communities.
  - **Michelle Alvarado** - Executive Director, Resiliency Law Center
  - **Loka Ashwood** - Associate Professor of Sociology, University of Kentucky
  - **Nayamin Martinez** - Executive Director, Central California Environmental Justice Network
  - **Vi Waghiyi** - Native of Village of Savoonga, Physician, Environmental Health and Justice Program Director with Alaska Community Action on Toxics (ACAT), WHEJAC
  - **Neza Xiuhtecutli** - General Coordinator, Farmworker Association of Florida
- Clarifying questions and discussion.

11:55 – 12:00 **Plenary: Concluding the Morning Sessions**

12:00 – 12:45 **Lunch**

12:45 – 1:00 **CEJST Demonstration**

- Provide a base level understanding of each component of the tool to prepare participants for hands-on exercise.

1:00 – 2:00 **Hands-on Exercise: How well does CEJST represent conditions in your community?**

- Focus on the representation of conditions through CEJST categories of burden.
- Exercise worksheet: https://forms.gle/23LxjfHK8ravhAgL9

2:00 – 2:15 **Break**

- Rapporteurs organize notes from the breakout to present in plenary.

2:15 – 3:30 **Plenary: Reports from Rapporteurs**

- Report outs from rapporteurs.
- Group discussion on common observations about data gaps; unique observations.

3:30 – 4:10 **Panel Discussion: Defining Disadvantaged Communities**

- Discussion on defining disadvantaged communities and approaches for how CEJST can better identify these communities.
    - **Jack Ding** - Environmental Justice Technology Fellow, Anthropocene Alliance/Environmental Policy Innovation Center
    - **Rep. Larry Lambert** - State Representative, 7th District, Delaware General Assembly, House of Representatives
    - **Marisa Sotolongo** - PhD candidate in the School of Public Policy and Urban Affairs, Northeastern University; Research Assistant, Initiative for Energy Justice
    - **Mathy Stanislaus, Esq.** - Vice Provost & Executive Director, The Environmental Collaboratory, Drexel University
    - **Sacoby Wilson** - Professor and Director, Center for Community Engagement, Environmental Justice and Health (CEEJH) Lab, Maryland Institute for Applied Environmental Health, School of Public Health, University of Maryland-College Park

4:10 – 4:45 **Open Plenary Discussion: Addressing Data Needs**

- Committee member opens questions to the participants to reflect on the data needs identified throughout the day's sessions and how they can be addressed.
- Form for sending other useful datasets for committee ocnisderation: https://forms.gle/LF1wYwMnbHUVn5yf6

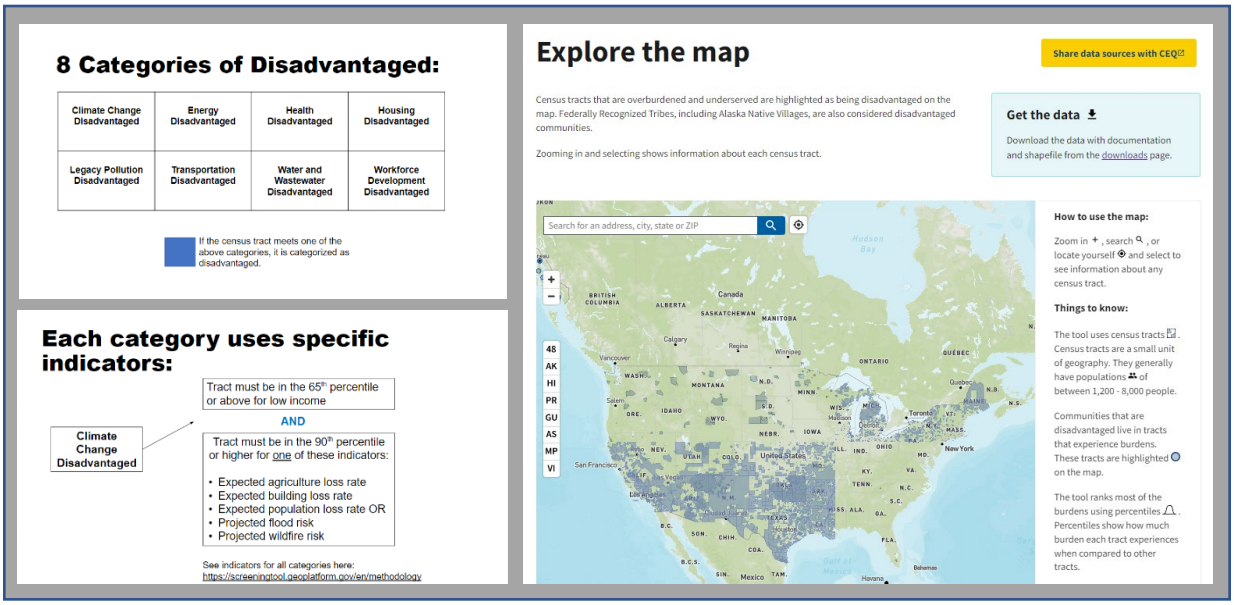
4:45 – 5:00 **Closing Remarks**

5:00 **End of Open Session**

NASEM Workshop Activity Handout: Using the CEJST Mapping Tool

Objective: The objective of this exercise is to have workshop attendees use the Climate and Economic Justice Screening Tool and provide feedback on how well the tool reflects real-world conditions.

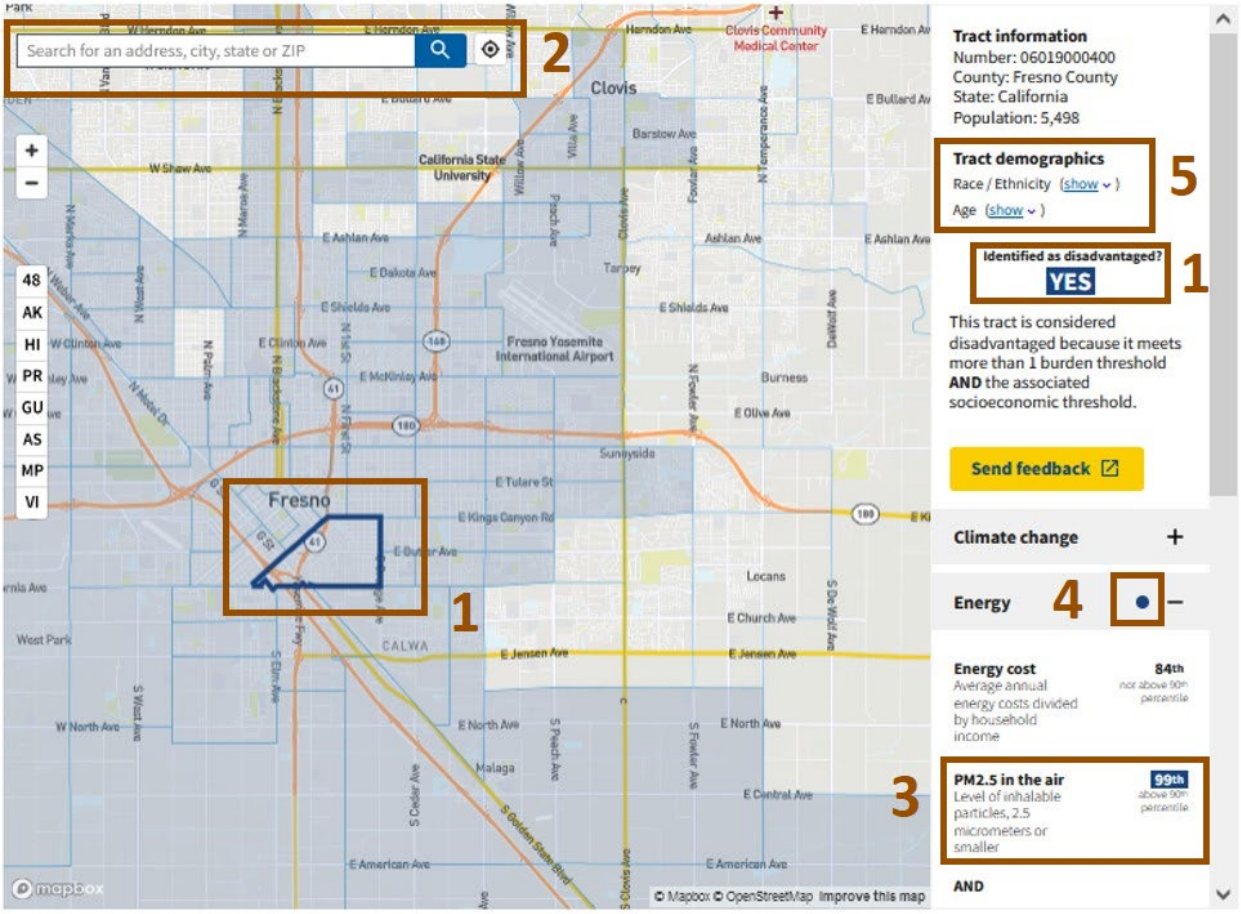
Here is a brief overview of the Climate and Economic Justice Screening Tool, https://screeningtool.geoplatform.gov/



Outcomes

By completing this exercise, workshop attendees will have a better understanding of how to use the Climate and Economic Justice Screening Tool and get an initial sense of how well it captures conditions in their community.

Map Interface Review



The brown boxed segments correspond to the descriptions below according to number:

1. How to identify a disadvantaged community: disadvantaged communities are shaded in light blue on the map. Clicking on a disadvantaged community will also result with the word 'YES' in the right-hand panel.
2. How to find a location: enter an address, city, state, or ZIP code in the search bar at the top left.
3. How to interpret percentiles: each indicator has an associated percentile, ranging from 0 – 100. The percentile value shows, for that indicator, where that census tract ranks relative to other census tracts nationwide. In this example, this census tract in Fresno ranks 99 for PM 2.5 in the air, meaning that levels of PM 2.5 in the air are higher than 99% of other census tracts nationwide.
4. How to understand which components and indicators contribute to disadvantaged community status: If a component contains one or more indicators that contribute to disadvantaged community status, it will be marked with a blue dot. The indicators are marked by a blue square surrounding the indicator percentile.
5. How to get demographic information about the census tract: click on the 'show' link under 'Tract demographics to access information about the age and race/ethnicity profiles for that tract.

Exercise Instructions

Break into small groups of less than five and take turns navigating CEJST using your laptop or phone. One at a time within your group, go to a location familiar to you, whether it be home, school, work, or a broader community, etc. Investigate the various components and indicators in CEJST for that location. Have at least three participants rotate in leading this exercise, each one choosing a location, examining the data, and describing to the others their observations. Answer the questions below and describe your observations to fellow group members. As you see fit, write your responses in the Google Form (link and QR code provided): https://forms.gle/ZctBhm9h3X5WiB1aA

Disclaimer: Any results submitted through this form will be part of the NASEM study's public access file. You can choose not to include your name on the form.

1. Does your community show up in CEJST with multiple high burdens (blue dots)?

2. Some communities have multiple burdens, while others have just one. Is it important for the CEJST map to differentiate between communities with multiple burdens and communities with one burden? If so, how would you do this?

3. In what ways do the results from CEJST in this area reflect your own lived experience and/or the communities you serve? In what ways do they not?

4. Were you surprised by any of the results? Why?

5. Based on results from this exercise, how can the tool be improved to better characterize lived experience? What other datasets, if any, do you think should be included?

After completing this exercise, groups will report back to all workshop attendees to summarize their findings. **Please assign a rapporteur to convey the group's discussion.**

2
Study Background

Utilizing Advanced Environmental Health and Geospatial Data and Technologies to Inform Community Investment

Board on Earth Sciences and Resources
Mapping Science Committee
Board on Environmental Studies and Toxicology
Division on Earth and Life Studies
National Academies of Sciences, Engineering, and Medicine

July 12, 2022

STATEMENT OF TASK

A committee of the National Academies of Sciences, Engineering, and Medicine will analyze how environmental health and geospatial data and environmental screening tools can inform CEQ's Climate and Economic Justice Screening Tool by conducting a data assessment to assist CEQ in considering the disparities it has prioritized. The committee's assessment will build on the following tasks:

1. Scan of existing screening tools for types of data and approaches used to identify disadvantaged communities and their potential to benefit from investment (e.g., CEQ-funded Climate and Economic Justice Screening Tool, Environmental Protection Agency Environmental Justice Screen, tools and approaches reviewed in Luskin, 2021)
2. Identification of the types of data (e.g., environmental, socioeconomic, energy, transportation) needed for CEQ's screening tool(s)
3. Evaluation of current data availability, quality, and spatial and temporal resolutions, as well as key data gaps
4. Discussion of approaches to process, integrate, and analyze these data (e.g., weighting, consideration of additive effects)

The committee will provide recommendations to be incorporated in an overall data strategy for CEQ's tool(s).

CONTEXT

President Biden's Executive Order 14008 (Tackling the Climate Crisis at Home and Abroad) established the Justice40 initiative and directed the Council on Environmental Quality (CEQ) to develop a whole-of-government approach to environmental justice. Justice40 is intended to implement equitable federal investments in critical sectors, specifically around the implementation of the Justice40 initiative and addressing service

gaps in critical sectors (energy, housing, health and resilient communities and infrastructure, economic and workforce development, transportation, and water). Justice40 sets a goal that disadvantaged communities reap 40 percent of federal investment benefits in those sectors, and Executive Order 12898 charged CEQ with creating a geospatial Climate and Economic Justice Screening Tool (CEJST) that will be used to identify the communities across the U.S. and its territories that will be eligible for Justice40 investment benefits.

The CEJST is a historic screening tool. It is the first time a tool of this kind has been developed at the federal level to identify the most vulnerable communities in terms of climate, energy, sustainable housing, employment, and pollution burden for the purpose of federal investment. This tool will be invaluable not only for the federal government, but also for state and local governments and for the private sector. However, as with any novel initiative, the CEJST is breaking new ground in terms of research methodologies and data use. It requires data of sufficient granularity and scientific validity to be able to compare communities across states and regions, and in terms of their rural and urban context. For example, urban communities may face a different set of exposures or vulnerabilities than rural communities, and tribal nations and U.S. territories may not have had historical access to resources that other communities have had.

Recent advances in geospatial screening tools that help analyze the effects of environmental hazards, pollution, and environmental change and other health risks are expected to provide valuable information. However, a review of the data needed to populate these tools is important to ensure that the tools yield information that is scientifically valid, useful to the government across areas and scales, informed by communities, transparent, and equity-driven.

The National Academies of Sciences, Engineering, and Medicine will establish a multidisciplinary committee composed of 12-15 experts that will assess the current suite of screening tools, identify types of data needed for CEQ's tool, evaluate data availability and quality, and discuss approaches to analyze and integrate these data. The committee will deliver a workshop proceedings-in-brief as an interim deliverable, as well a consensus report that provides guidance to CEQ on its overall data strategy. This guidance will also be relevant for other federal agencies and for non-governmental organizations that are seeking to assist communities with the resources to be allocated from Justice40.

Table of CEJST Categories of Burden

Information taken from screeningtool.geoplatform.gov on May 5, 2023.

"The tool uses datasets as indicators of burdens. The burdens are organized into categories. A community is highlighted as disadvantaged on the CEJST map if it is in a census tract that is (1) at or above the threshold for one or more environmental, climate, or other burdens, and (2) at or above the threshold for an associated socioeconomic burden.

In addition, a census tract that is completely surrounded by disadvantaged communities and is at or above the 50% percentile for low income is also considered disadvantaged.

Census tracts are small units of geography. Census tract boundaries for statistical areas are determined by the U.S. Census Bureau once every ten years. The tool utilizes the census tract boundaries from 2010. This was chosen because many of the data sources in the tool currently use the 2010 census boundaries."

The complete methodology can be found at https://screeningtool.geoplatform.gov/en/methodology.

Table of CEJST Categories of Burden

Category of Burden	*Communities are identified as disadvantaged if they are in census tracts that:*	Indicator of Burden with source hyperlinked	Income Limit
Climate Change	**ARE** at or above the 90th percentile for an indicator of burden	Expected agriculture loss rate Expected building loss rate Expected population loss rate Projected flood risk Projected wildfire risk	**AND** are at or above the 65th percentile for low income
Energy	**ARE** at or above the 90th percentile for an indicator of burden	Energy cost PM2.5 in the air	**AND** are at or above the 65th percentile for low income
Health	**ARE** at or above the 90th percentile for an indicator of burden	Asthma Diabetes Heart disease Low life expectancy	**AND** are at or above the 65th percentile for low income
Housing	Experienced historic underinvestment **OR** are at or above the 90th percentile for an indicator of burden	Housing cost Lack of green space Lack of indoor plumbing Lead paint	**AND** are at or above the 65th percentile for low income
Legacy Pollution	Have at least one abandoned mine land **OR** Formerly Used Defense Sites **OR** are at or above the 90th percentile for an indicator of burden	Proximity to hazardous waste facilities Proximity to Superfund sites (National Priorities List) Proximity of Risk Management Plan facilities	**AND** are at or above the 65th percentile for low income
Transportation	**ARE** at or above the 90th percentile for an indicator of burden	Diesel particulate matter exposure Transportation barriers Traffic proximity and volume	**AND** are at or above the 65th percentile for low income
Water and Wastewater	**ARE** at or above the 90th percentile for an indicator of burden	Underground storage tanks and releases Wastewater discharge	**AND** are at or above the 65th percentile for low income

Workforce Development	**ARE** at or above the 90th percentile for an indicator of burden	Linguistic isolation	**AND** more than 10% of people ages 25 or older have a high school education (i.e. graduated with a high school diploma) (source 1 & source 2)[1]
		Low median income (source 1 & source 2)[1]	
		Poverty (source 1 & source 2)[1]	
		Unemployment (source 1 & source 2)[1]	
Tribes	Federally Recognized Tribes, including Alaska Native Villages, are also considered disadvantaged communities.		

[1] Source 1: American Community Survey from 2015-2019
Available for: All U.S. states, the District of Columbia, and Puerto Rico
Source 2: American Community Survey from 2010
Available for: American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands

3
Committee Information

NATIONAL ACADEMIES Sciences Engineering Medicine

Utilizing Advanced Environmental Health and Geospatial Data and Technologies to Inform Community Investment

2023 COMMITTEE MEMBERSHIP

Harvey J. Miller, Co-Chair
Reuche Chair in Geographic Information Science
Department of Geography
The Ohio State University

Eric Tate, Co- Chair
Associate Professor
Director of Graduate Studies
Geographical and Sustainability Sciences Dept.
The University of Iowa

Susan Anenberg
Associate Professor of Environmental and Occupational Health and of Global Health
Milken Institute School of Public Health
The George Washington University

Lauren Bennett
Group Product Engineering Lead
ESRI, Inc.
Spatial Analysis and Data Science

Jayajit Chakraborty
Professor, Director
Department of Sociology and Anthropology
Socio-Environmental and Geospatial Analysis Laboratory

Ibraheem Karaye
Assistant Professor of Population Health
Department of Population Health
Hofstra University

Marcos Luna
Professor, Coordinator
Geography and Sustainability Department
Geo-Information Science graduate program
Salem State College

Bhramar Mukherjee, NAM
John D Kalbfleisch Collegiate Professor and Chair
Department of Biostatistics
Professor, Department of Epidemiology
Professor, Global Public Health
University of Michigan

Kathleen Segerson, NAS
Board of Trustees Distinguished Professor
Department of Economics
University of Connecticut

Monica E. Unseld
Founder and Executive Director
Until Justice Data Partners

Walker Wieland
Research Scientist
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

Staff
Sammantha Magsino, Senior Program Officer
Anthony DePinto, Associate Program Officer
Oshane Orr, Program Assistant
Sarah Hartman, Mirzayan Fellow

Committee for Utilizing Advanced Environmental Health and Geospatial Data and Technologies to Inform Community Investment:

Committee Member Biographies

Committee Member Biographies

Harvey J. Miller (Co-Chair) is the Bob and Mary Reusche Chair in Geographic Information Science, Professor of Geography, Courtesy Professor of City and Regional Planning, Director of the Center for Urban and Regional Analysis at The Ohio State University. His research interests include geospatial data analytics, transportation, urban science, sustainable mobility, equitable and resilient communities, and the relationships between human mobility and health. Awards include the Edward L. Ullman Award from the Association of American Geographers (AAG), the Research Award from the University Consortium for Geographic Information Science (UCGIS), and the Community Engaged Scholar Award from The Ohio State University, and he is an elected Fellow of the AAG and the American Association for the Advancement of Science. He has a PhD in Geography from The Ohio State University. Dr. Miller co-chairs the NASEM Geographical and Geospatial Sciences Committee and is a member of the NASEM Board on Earth Sciences and Resources. He serves on the Regional Data Advisory Committee of the Mid- Ohio Regional Planning Commission in Columbus, Ohio and is the president elect of the UCGIS, a non-profit organization that creates and supports communities of practice for GIScience research, education, and policy endeavors in higher education and with allied institutions.

Eric Tate (Co-Chair) is an associate professor in the Department of Geographical and Sustainability Sciences at the University of Iowa. His research examines connections among natural hazards and society, through spatial modeling of social vulnerability and risk. His primary focus is vulnerability to floods, including (a) assessing social equity in disaster mitigation and recovery spending, (b) validating vulnerability indicators, and (c) analyzing uncertainty and sensitivity of geospatial models. He received a B.S. in environmental engineering from Rice University, an M.S. in water resources engineering from the University of Texas, and a Ph.D. in geography from the University of South Carolina. Dr. Tate currently serves on the Board of Directors for the Anthropocene Alliance—an organization of experts providing organizational, scientific, and technical guidance to communities that have been impacted by climate change. He has served on multiple National Academies of Sciences, Engineering, and Medicine committee, and serves as the co-chair of the NASEM Resilient America Roundtable.

Bhramar Mukherjee is the University of Michigan (UM) John D. Kalbfleisch Collegiate Professor and Chair, Department of Biostatistics; Professor, Department of Epidemiology, Professor, Global Public Health, UM School of Public Health; Research Professor and Core Faculty Member, Michigan Institute of Data Science; and founding director of the UM Summer Institute on Big Data. She is also the Associate Director for Quantitative Data Sciences, UM Rogel Cancer Center, and the Associate Workgroup Director for Cohort Development for UM Precision Health. Her research interests include statistical methods for analysis of electronic health records, studies of gene-environment interaction, and analysis of multiple pollutants and she collaborates in research related to cancer, cardiovascular diseases, reproductive health, exposure science and environmental epidemiology. Dr. Mukherjee is a fellow of the American Statistical Association and the American Association for the Advancement of Science and is the recipient of many awards for scholarship, service, and teaching. Dr. Mukherjee has a M.S. in applied statistics and data analysis from the Indian Statistical Institute, an M.S. in mathematical statistics from Purdue University, and a Ph.D. in statistics from Purdue University. She

serves on the NASEM Committee on Applied and Theoretical Statistics and has served on NASEM committees on the Reassessment of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry and on the Rising Midlife Mortality Rates and Socioeconomic Disparities.

Susan Anenberg is an Associate Professor of Environmental and Occupational Health and of Global Health at the George Washington University (GW) Milken Institute School of Public Health. She is also the Director of the GW Climate and Health Institute. Dr. Anenberg's research focuses on the health implications of air pollution and climate change, from local to global scales. Previously, Dr. Anenberg was a Co-Founder at Environmental Health Analytics, LLC, the Deputy Managing Director for Recommendations at the U.S. Chemical Safety Board, an environmental scientist at the U.S. Environmental Protection Agency (EPA), and a senior advisor for clean cookstove initiatives at the U.S. State Department. She received her PhD in Environmental Science & Engineering, Environmental Policy from the University of North Carolina. Dr. Anenberg currently serves pro bono on the U.S. Environmental Protection Agency's Science Advisory Board and Clean Air Act Advisory Committee, the World Health Organization's Global Air Pollution and Health Technical Advisory Group, and as President of the GeoHealth section of the American Geophysical Union. She has written public comments to EPA on the importance of including environmental justice analysis in regulatory impact analyses, and has chaired an EPA Science Advisory Board committee providing advice to EPA on including distributional analyses in air quality regulations. Dr. Anenberg currently serves on the NASEM Committee to Advise the U.S. Global Change Research Program.

Lauren Bennett is the Group Product Engineering Lead and Program Manager of Spatial Analysis and Science at Esri. In her 15 years at Esri has also worked as a solution engineer for the Federal Sciences team, as well as a lead product engineer on the Spatial Statistics software development team. Dr. Bennett's research has focused on spatial statistics and spatiotemporal analysis, especially their application to human geography problems including public health, social equity, and urban planning. Dr. Bennett received a BA in Geography from McGill University, an MS in Geographic and Cartographic Science from George Mason University, and her PhD in Information Systems and Technology from Claremont Graduate University.

Jayajit Chakraborty is a Professor in the Department of Sociology and Anthropology and the Founding Director of the Socio-Environmental and Geospatial Analysis Laboratory at the University of Texas at El Paso. He currently serves as a member of the U.S. Environmental Protection Agency (EPA) Science Advisory Board and the first EPA Environmental Justice Science Committee. Dr. Chakraborty's research activities encompass a wide range of environmental health and environmental justice issues, with an emphasis on social vulnerability to hazards, risks, and disasters. He is particularly interested in applying geospatial tools and spatial statistical techniques for analyzing environmental and social injustices. Dr. Chakraborty has published more than 100 articles/chapters and 4 books and is currently coauthoring a chapter for the US Government's Fifth National Climate Assessment (NCA5). He has been a principal/co-principal investigator for over 30 sponsored projects, which include grants from the EPA, National Science Foundation, US Department of Transportation, US Department of Treasury, Florida Department of Transportation, Australian Research Council, and many other agencies. Dr. Chakraborty has a MS in Urban and Regional Planning and PhD in Geography, both from the University of Iowa. He recently contributed to reviewing and advancing EJScreen—EPA's environmental justice mapping and screening tool.

Ibraheem Karaye is Assistant Professor of Population Health and Director of the Health Science Program at Hofstra University. His research broadly examines the physical, mental, and environmental health impacts of disasters and mass trauma on socially vulnerable populations, including racial and ethnic minorities and older adults. His work also examines health disparities and the distribution of health outcomes globally and in the United States. Dr. Karaye's approach has been to study social variables using large secondary data sets and novel statistical and spatial analytic methods. His

publication, 'The impact of social vulnerability on COVID-19 in the US: an analysis of spatially varying relationships' was recognized by the American Journal of Preventive Medicine as a finalist for 2020 Article of the Year. Dr. Karaye currently serves as Academic Editor for the journal, PLOS ONE. Dr. Karaye attended medical school at Bayero University Kano, Nigeria. He holds a Master of Public Health degree (epidemiology) and a doctorate in public health (epidemiology and environmental health) from Texas A&M University.

Marcos Luna is a Professor of Geography and Sustainability and Coordinator of the graduate Geo-Information Science program at Salem State University in Salem, Massachusetts, USA. His research focus is on environmental justice and applications of geospatial analytic techniques to social and environmental inequities, particularly around energy and climate change. He has published research on the inequity of natural gas leaks, urban noise, transit efficiency and equity, energy, air pollution, and environmental policy. Dr. Luna holds a MA in Geography from the California State University, Los Angeles and PhD in Urban Affairs and Public Policy from the University of Delaware. In addition to academic research, he works with community organizations and policy makers on issues including residential housing and segregation, transportation equity, voter mapping and outreach, and climate change adaptation. He is a member of the Board of Directors for GreenRoots, Inc., an environmental justice organization based in Chelsea, Massachusetts, and he is a governor-appointed member of the Massachusetts Environmental Justice Advisory Council, which is charged with (re)assessing the appropriateness of the state's definition of "environmental justice communities".

Kathleen Segerson is a Board of Trustees Distinguished Professor of Economics at the University of Connecticut. Her research focuses on the incentive effects of alternative environmental policy instruments, including applications in the following areas: groundwater contamination, hazardous waste management, land use regulation, climate change and nonpoint pollution from agriculture. In addition, she has worked on valuing ecosystem services and the protection of marine species. Dr. Segerson is a member of the National Academy of Sciences, and a fellow of the Association of Environmental and Resource Economists (AERE) and of the American Agricultural Economics Association (AAEA). Dr. Segerson holds a PhD from Cornell University and a BA from Dartmouth College. She has or is currently serving on a number of advisory boards, including the U.S. Environmental Protection Agency's Science Advisory Board (SAB) and the Committee on Valuing the Protection of Ecological Systems and Services (CVPESS), the National Academy of Science Advisory Committee for the U.S. Global Change Research Program (USGCRP) and Review Panel on the National Climate Assessment, the NASEM Board on Agriculture and Natural Resources (BANR), the U.S. National Member Organization of the International Institute of Applied Systems Analysis (IIASA), and the Advisory Board of the Beijer Institute of Ecological Economics in Stockholm.

Monica E. Unseld is the founder and Executive Director of the nonprofit Until Justice Data Partner, utilizing her experience as a subject matter expert in environmental and public health and believes that science should be accessible to all. The organization partners with marginalized communities nationwide and internationally to apply research methods to environmental and social justice issues, through her specializations in endocrine disruption, environmental signaling and public health. Prior to her nonprofit work, she was an Assistant Professor and worked at a data think tank in Louisville, KY. She has almost 15 years of volunteer environmental justice work experience as subject matter expert in science and general research methodology, working with predominantly Black- and Brown-led groups and coalitions to help normalize the use of research and data. In December 2022, she was named a Union of Concerned Science, Science Defender for her efforts to democratize data. She obtained her doctorate in biology in 2008 from the University of Louisville and her Master's in Public Health in 2018 from Benedictine University.

Walker Wieland is a Research Scientist with the Office of Environmental Health Hazard Assessment (OEHHA), at the California Environmental Protection Agency. Mr. Wieland is also the Office Environmental Justice Liaison to the Agency. Mr. Wieland has 12 years of experience in planning and conducting research studies to characterize the distribution of environmental pollutants or sources of pollution to support the development of screening cumulative impact analysis. He is co-author of each version of CalEnviroScreen, California's pioneering environmental justice screening tool. He has held multiple leadership positions throughout state government in geographic information systems (GIS) and open data and has formerly received certification as a GIS professional. Mr. Wieland is an award-winning public speaker and routinely provides training to agencies on considering cumulative impacts and environmental justice mapping in their policies and programs. He also has consulted with agencies across the United States and internationally in implementing their own environmental health screening tools. Mr. Wieland received his Bachelor of Arts in Environmental Studies from California State University, Sacramento, and his Associate of Science in Geographic Information Systems from American River College.

4
Participant Information

Community Perspectives: Representing Lived Experience in the Climate and Economic Justice Screening Tool (CEJST)

INVITED PARTICIPANT LIST

Michelle Alvarado*
Executive Director
Resiliency Law Center

Loka Ashwood
Associate Professor of Sociology
University of Kentucky

Sharunda Buchanan*
Director
Office of Priority Projects and Innovation, and Environmental Justice (OPPIEJ)
Office of the Director (OD)
National Center for Environmental Health/Agency for Toxic Substances and Disease Registry (NCEH/ATSDR)
Centers for Disease Control and Prevention (CDC)
Interim Director
Office of Environmental Justice (OEJ)
Office of Climate Change and Health Equity (OCCHE)
Office of the Assistant Secretary for Health's (OASH)
Department of Health and Human Services (DHHS)

Chitra Bulakrishnan
Research Analyst
Office of Race and Equity Research
Urban Institute

Winn Costantini
Environmental Planning and Policy Scientist The Academy of Natural Sciences
Drexel University

Quentin Cummings
Climate Analytics Technical Assistance Lead
Federal Emergency Management Agency

Marilee Davenport
Senior Director,
Capacity and Collaboration
Science Office
Natural Resources Defense Council

Ke Jack Ding
Environmental Justice Technology Fellow
Anthropocene Alliance/Environmental Policy Innovation Center

Samuel Herbert
Senior EEJ Policy Advisor
Office of Energy Justice Policy & Analysis
Office of Economic Impact & Diversity
U.S. Department of Energy

Rep. Larry Lambert
State Representative, 7th District
Delaware General Assembly
House of Representatives

Charles Lee*
Senior Policy Advisor
Office of Environmental Justice and External Civil Rights
U.S. Environmental Protection Agency

Nayamin Martinez*
Executive Director
Central California Environmental Justice Network

Ben McKenzie*
Geospatial Epidemiologist
Coordinator of the Environmental Justice Index
Geospatial Research, Analysis & Services Program (GRASP)
Office of Innovation and Analytics (OIA)
Agency for Toxic Substances and Disease Registry (ATSDR)
Centers for Disease Control and Prevention (CDC)

Mario Nicholas
Intern
Office of Energy Justice Policy and Analysis
U.S. Department of Energy

*** Indicates Virtual Attendance**

Alexis Schulman
Assistant Research Professor
Department of Biodiversity, Earth and Environmental Science
Drexel University

Marisa Sotolongo
PhD candidate
School of Public Policy and Urban Affairs
Northeastern University; Research Assistant
Initiative for Energy Justice

Mathy (Vathanaraj) Stanislaus
Vice Provost & Executive Director,
The Environmental Collaboratory,
Drexel University – Office of the Provost

Deborah Sunter
Senior Advisor on Energy Justice
U.S. Department of Energy

Lupe Villatoro*
Social Scientist for Energy Justice
Office of Energy Justice Policy & Analysis
Office of Economic Impact & Diversity
U.S. Department of Energy

Vi Waghiyi*
Native of Village of Savoonga
Program Director
Environmental Health and Justice with Alaska Community Action on Toxics (ACAT)
WHEJAC

Sacoby Wilson
Professor and Director
T.H.E. EJ Lab
Maryland Institute for Applied Environmental Health
School of Public Health
University of Maryland-College Park

Neza Xiuhtecutli
General Coordinator
Farmworker Association of Florida

*** Indicates Virtual Attendance**

Invited Speaker Biographies

Loka Ashwood

Dr. Loka Ashwood is an associate professor in the Department of Sociology at the University of Kentucky. She studies the legal and corporate structures that prompt environmental injustices and animosity toward the state. She uses pragmatism in her work to bridge the depth of theory with the immediacy of change for those most aggrieved. Current she is studying networks of power in energy and agriculture, right-to-farm laws, and community embedded approaches to taking action to remediate environmental contamination. She published the book, *For-Profit Democracy: Why the Government is Losing the Trust of Rural America* (Yale 2018), and is co-author of *Empty Fields, Empty Promises: A Guide to Understanding and Transforming the Right to Farm* (Forthcoming 2023) and *An Invitation to Environmental Sociology* (6th edition, Sage, fall 2020).

Ke Jack Ding

Jack Ding is the Environmental Justice Technology Fellow at Environmental Policy Innovation Center and Anthropocene Alliance. He leverages technology and data analytical tools to help the frontline communities facing environmental injustice and other challenges dissect their issues and help develop solutions. His research interests include environmental justice in the US, drinking water quality in US public water systems, and food-energy-water nexus system management under different social-climate scenarios. He was a Postdoctoral Research Scientist at Iowa State University and got his Ph.D. in Environmental Engineering from Vanderbilt University in 2020.

Nayamin Martinez

Nayamin Martinez is currently serving as Executive Director at the Central California Environmental Justice Network. Prior to joining CCEJN, Nayamin worked for the Madera County Public Health Department as a Health Education Coordinator and for ten years was the Health Projects Coordinator for the Binational Center for the Development of the Oaxacan Indigenous Communities. Nayamin has vast experience in working with immigrant and indigenous communities across the San Joaquin Valley managing public health programs in a variety of environmental topics including pesticides and air pollution. She has conducted participatory research and launched leadership and civic engagement programs.

Marisa Sotolongo

Marisa Sotolongo is a PhD candidate in the School of Public Policy and Urban Affairs. Her research focuses on environmental justice theory, informed by indigenous restorative and critical conceptions of justice, and environmental justice policy applications in the U.S. as they relate to climate adaptation, energy policy, and community resilience. She is a research assistant with the Initiative for Energy Justice and has published policy briefs on energy policy in California and other western states, including the use of utility-initiated power shutoffs in environmental justice communities, and an evaluation of western states' wildfire policies as climate adaptation. She is currently working on a research project focused on how communities vulnerable to environmental, energy, and climate injustice are defined.

Mathy (Vathanaraj) Stanislaus, Esq

Mathy (Vathanaraj) Stanislaus, Esq, is an environmental lawyer and chemical engineer with over 15 plus years of experience in the environmental field in the private, and public sectors. He currently serves as Vice Provost and the inaugural Executive Director of The Environmental Collaboratory at Drexel University. He joined Drexel from the Global Battery Alliance, a multi-stakeholder initiative established at the World Economic Forum. There, he served as its first interim director and policy director with a focus on establishing a global transparent data authentication system to scale up electric mobility and clean energy in alignment with circular economy, human rights and community development. He has also served as a senior political official for the Obama Administration, serving as the Assistant Administrator of the USEPA's Office of Land and Emergency Management, a US Senate confirmed position.

Neza Xiuhtecutli

Nezahualcoyotl ("Neza") Xiuhtecutli is an immigrant from Mexico and grew up in South Carolina. He is the General Coordinator of the Farmworker Association of Florida. He has been with the organization since 2016 when he joined the research team. During that time, he focused primarily on protections against heat stress for farmworkers and worked on testing curricula for pesticide training for farmworkers. Before coming to the Association in 2016 he worked with rural communities in Mexico and Central America, where he became interested in indigenous economic and governance systems, including communal land tenure. He has also completed his PhD in anthropology at Tulane University.

Viola Waghiyi

Viola ("Vi") Waghiyi is a Sivuqaq Yupik, Native Village of Savoonga Tribal Citizen, mother, and grandmother. Since 2002, she has worked with ACAT and serves as Environmental Health and Justice Director. She was appointed by President Biden to the White House Environmental Justice Advisory Council (WHEJAC) in April 2021. She is a nationally recognized environmental justice leader and is frequently invited to speak locally, nationally, and internationally. Vi serves as a leader of the Global Indigenous Peoples Caucus that advises the United Nation's international delegates for treaties concerning persistent organic pollutants. She served as a member of the Environmental Health Sciences Council that advises the NIEHS.

Sacoby Wilson

Dr. Sacoby Wilson is a Professor with the Maryland Institute for Applied Environmental Health and Department of Epidemiology and Biostatistics in the University of Maryland, College Park School of Public Health where directs the Center for Community Engagement, Environmental Justice and Health (CEEJH). Dr. Wilson has over 20 years of experience as environmental health scientist in the areas of exposure science, environmental justice, environmental health disparities, community-based participatory research, water quality analysis, air pollution studies, built environment, industrial animal production, climate change, community resiliency, and sustainability. He works primarily in partnership with community-based organizations to study and address environmental justice and health issues and translate research to action. He received his BS degree in Biology/Ecotoxicology with a minor in Environmental Science from Alabama Agricultural and Mechanical University, and his MS and PhD in Environmental Sciences and Engineering from UNC-Chapel Hill.

5
Additional Information

NATIONAL ACADEMIES Sciences Engineering Medicine

PREVENTING DISCRIMINATION, HARASSMENT, AND BULLYING: POLICY FOR PARTICIPANTS IN NASEM ACTIVITIES

The National Academies of Sciences, Engineering, and Medicine (NASEM) are committed to the principles of diversity, inclusion, integrity, civility, and respect in all of our activities. We look to you to be a partner in this commitment by helping us to maintain a professional and cordial environment. **All forms of discrimination, harassment, and bullying are prohibited in any NASEM activity.** This policy applies to all participants in all settings and locations in which NASEM work and activities are conducted, including committee meetings, workshops, conferences, and other work and social functions where employees, volunteers, sponsors, vendors, or guests are present.

Discrimination is prejudicial treatment of individuals or groups of people based on their race, ethnicity, color, national origin, sex, sexual orientation, gender identity, age, religion, disability, veteran status, or any other characteristic protected by applicable laws.

Sexual harassment is unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature that creates an intimidating, hostile, or offensive environment.

Other types of harassment include any verbal or physical conduct directed at individuals or groups of people because of their race, ethnicity, color, national origin, sex, sexual orientation, gender identity, age, religion, disability, veteran status, or any other characteristic protected by applicable laws, that creates an intimidating, hostile, or offensive environment.

Bullying is unwelcome, aggressive behavior involving the use of influence, threat, intimidation, or coercion to dominate others in the professional environment.

REPORTING AND RESOLUTION

Any violation of this policy should be reported. If you experience or witness discrimination, harassment, or bullying, you are encouraged to make your unease or disapproval known to the individual at the time the incident occurs, if you are comfortable doing so. You are also urged to report any incident by:

- Filing a complaint with the Office of Human Resources at 202-334-3400 or hrservicecenter@nas.edu, or
- Reporting the incident to an employee involved in the activity in which the member or volunteer is participating, who will then file a complaint with the Office of Human Resources.

Complaints should be filed as soon as possible after an incident. To ensure the prompt and thorough investigation of the complaint, the complainant should provide as much information as is possible, such as names, dates, locations, and steps taken. The Office of Human Resources will investigate the alleged violation in consultation with the Office of the General Counsel.

If an investigation results in a finding that an individual has committed a violation, NASEM will take the actions necessary to protect those involved in its activities from any future discrimination, harassment, or bullying, including in appropriate circumstances **the removal of an individual from current NASEM activities and a ban on participation in future activities**.

CONFIDENTIALITY

Information contained in a complaint is kept confidential, and information is revealed only on a need-to-know basis. NASEM will not retaliate or tolerate retaliation against anyone who makes a good faith report of discrimination, harassment, or bullying.

Updated December 2, 2021