

**DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES**

**MINUTES OF THE SPECIAL OPEN SESSION OF THE
NATIONAL ADVISORY ENVIRONMENTAL HEALTH SCIENCES COUNCIL**

November 29, 2021

November 29, 2021, NIEHS convened a special National Advisory Environmental Health Sciences Council (NAEHSC) meeting to consider an NIH-wide Climate Change and Health Concept. Early in the Biden administration, an Executive Order was issued directing HHS to identify, understand, and address impacts of climate change on people’s health, with emphasis on creating greater health equity among populations of concern. Furthermore, Congress is expected to appropriate funds to this purpose, specifically designating NIEHS as the NIH lead for climate and health, while acknowledging the necessary participation of multiple components of the agency in this expanded scientific effort. To meet the challenge laid before NIH, an Executive Committee comprising the Directors of seven ICs—NIEHS, FIC, NIMHD, NIMH, NINR, NICHD, and NHLBI—has committed to providing leadership and oversight of the NIH Climate Change and Health Initiative.

The Concept presented during this Special NAEHSC session outlined a strategic framework to address the climate crisis by proposing to: strengthen capacity for climate and health research at home and abroad; promote the best science and most impactful interventions, with an emphasis on health equity and community-engaged research; support a pipeline of climate change and health workforce and research; and promote synergies through collaboration with other federal agencies and research organizations.

The meeting was open to the public on November 29, 2021 from 3:30 p.m. to 5:00 p.m. In accordance with the provisions set forth in Section 552b(c)(4) and 552b(c)(6), Title 5, U.S. Code and Section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2). Notice of the meeting was published in the *Federal Register*. Dr. Rick Woychik presided as Chair.

Participating Council Members

William Cibulas, Jr., PhD (*ex officio*)
Suzanne Fitzpatrick, PhD (*ex officio*)
Andrew Geller, PhD (*ex officio*)
Lynn Goldman, MD, MPH
Irva Hertz-Picciotto, PhD
Terrance Kavanagh, PhD

Katrina Korfmacher, PhD
Edith Parker, DrPH
Trevor Penning, PhD
Marla Pérez-Lugo, PhD
Brad Racette, MD
Robyn Tanguay, PhD
Robert Wright, MD, MPH

Executive Committee IC Directors

Rick Woychik, PhD, NIEHS (Chair)
Diana Bianchi, MD, NICHD
Gary Gibbons, MD, NHLBI
Roger Glass, MD, PhD, FIC
Eliseo Perez-Stable, MD, NIMHD
Shannon Zenk, PhD, NINR

Executive Committee IC Council Representatives

John Lowe, University of Texas School of Nursing (NINR)
Joseph Telfair, Georgia Southern University (NIMH)
Judith Wasserheit, University of Washington, (FIC)
Rebecca Wong, University of Texas Medical Branch (NICHD)
Carmen Zorrilla, University of Puerto Rico (NIMHD)

Steering Committee

Regina Bures, NICHD
Gwen Collman, NIEHS (Advisor)
Larry Fine, NHLBI
Flora Katz, FIC
Aubrey Miller, NIEHS
Ivan Navarro, NIMHD
Louise Rosenbaum, NINR
Joshua Rosenthal, FIC
Claudia Thompson, NIEHS

Steering Committee+1 Group

Kristopher Bough, NINR
Abee Boyles, NIEHS
Adriana Costero-Saint Denis, NIAID
Amit Mistry, FIC
Shyamal Peddada, PhD, NICHD
Liz Perruccio, NINR
Rachel Scheinert, NIMH
Kimberly Thigpen Tart, NIEHS

Nishadi Rajapakse, NHLBI

NIEHS Staff

Alicia Abdelmasih
Kathy Ahlmark
David Balshaw, PhD
Linda Bass, PhD
Martha Barnes
Sharon Beard
Danielle Carlin, PhD
Toccaro Chamberlain
Jennifer Collins
Christie Drew, PhD
Chris Duncan, PhD
Anika Dzierlenga
Gary Ellison, PhD, MPH
Benny Encarnacion
Christine Flowers
Amanda Garton
Michelle Heacock, PhD
Heather Henry, PhD
Jon Hollander, PhD
Mike Humble, PhD
Mary Jacobson
Bonnie Joubert, PhD
Richard Kwok, PhD
Alfonso Latoni, PhD
Cindy Lawler, PhD
John Maruca
Lindsey Martin, PhD
J. Patrick Mastin, PhD
Kim McAllister
Liz McNair
Carolina Medina
Parris Milly
Nathan Mitchiner
Rosemary Moody
Srikanth Nadadur, PhD
Liam O'Fallon
Suzy Osborne
Kristi Pettibone, PhD
Nicole Popovich
Alicia Ramsaran
Lingamanaidu Ravichandran, PhD
Scott Redman

Les Reinlib, PhD
Jim Remington
Carol Shreffler, PhD
Dan Shaughnessy, PhD
Varsha Shukla, PhD
Melissa Smarr, PhD
Spencer Smith
Bill Suk, PhD, MPH
Laura Thomas, PhD
Claudia Thompson, PhD
Brittany Trottier
Fred Tyson, PhD
Mitch Williams
Leroy Worth, PhD
Darryl Zeldin, MD

Members of the Public Present

Ernie Hood, Bridport Services, LLC

I. Call To Order and Opening Remarks

NIEHS and NTP Director Rick Woychik, Ph.D., welcomed attendees and called the special session to order. He asked the Executive Committee members to introduce themselves. Acting DERT Director Gary Ellison, Ph.D., asked NIEHS Council members to introduce themselves, followed by Executive Committee IC representatives, who were Council members from other ICs. He then went over some of the logistics for the meeting.

II. Opening Remarks

Dr. Woychik delivered opening remarks on the NIH Climate Change and Health Initiative. He provided background information about the concept to be presented during the meeting. He referred to four specific objectives encompassed by the concept:

- To strengthen the capacity for climate and health research at home and abroad
- To promote the best science and most impactful interventions, with an emphasis on health equity and community-engaged research
- To support a pipeline of climate change and health workforce and research
- To promote synergies through collaboration with other federal agencies and research organizations

He went over several initiatives that are part of the federal government's renewed focus on climate change, including the budget allocation of \$100 million to NIEHS, with other ICs named as part of the president's Executive Order, leading to an NIH-wide response

to the issue of climate change and health (CCH).

He discussed the governance structure for the CCH initiative, including an Executive Committee comprised of the directors of seven ICs, and chaired by Dr. Woychik. The structure also includes a Steering Committee responsible for planning, strategy, and implementation, and a CCH Working Group with more than 120 participants from 18 ICs and 4 Offices.

III. Concept: NIH Climate Change and Health Initiative

Dr. Claudia Thompson presented the concept on behalf of the very large NIH-wide team. She provided background information about the climate change crisis, which has been called “Code Red for Humanity” by the UN Secretary General in the most recent IPCC report. She alluded to climate-related disasters, climate change impacts on health, and the unequal impacts of climate change on vulnerable populations.

Turning to the NIH-wide initiative, Dr. Thompson described the plan’s goals and objectives. Goals include reducing health threats across the lifespan and building health resilience in individuals, communities, and nations around the world, especially among those at highest risk. Objectives include identifying risks and optimizing benefits, developing the necessary research infrastructure and workforce, leveraging partnerships, and innovating across the research translation continuum. She discussed the timeline leading to the concept clearance and culminating in first funding in FY22. She provided details about the NIH CCH research portfolio over the past decade, as well as a summary of the NIH CCH RFI, which was issued by the Working Group July 30, 2021. A total of 184 responses were received from a range of organizations.

She related the results of the NIH-wide Working Group Synthesis “Whiteboard” meeting, which took place in September, 2021, with 61 participants from 12 ICOs. Meeting participants identified important thematic areas for research, added new suggestions for NIH activities, and prioritized actions on a short-to-long-term timeline.

Dr. Thompson described a diagram that initiative leadership has labeled the Centerpiece, which articulates the four major themes of the program and areas of science. She provided several examples of CCH-related research projects.

She discussed several elements of the first steps toward implementing a CCH research agenda. The proposed appropriation would be a catalyst to implement an NIH-wide CCH initiative. It would:

- Expand funding for grants across the NIH ecosystem to create a sustainable portfolio of CCH research.

- Use Notices of Special Interest (NOSI) to broadly advertise NIH's intent to expand our CCH portfolio.
- Create a flagship Centers of Excellence program that fosters team science across disciplines with extensive community engagement.
- Create a sustainable Small Business Innovative Research/Small Business Technology Transfer Program
- Support conferences and workshops that dive deeper into areas of need for the field.
- Explore ways to build CCH capacity in the Intramural Research Program.

Next steps for the initiative will involve continued strategizing and implementation planning.

- NIH will address the climate crisis with the urgency, foresight, innovation, and collaborative spirit this challenge requires.
- NIH will strengthen capacity at home and abroad and will promote the best science and most impactful interventions, with an emphasis on health equity and community-engage research.
- NIH will develop a sustainable model to support a pipeline of needed health researchers and research and will promote collaborations with other federal agencies, research organizations, and community organizations.
- Combined, these efforts will empower transdisciplinary solutions that will advance human health in a rapidly changing world.

Council reviewers for the concept were Drs. Goldman, Wasserheit, and Zorrilla.

Dr. Goldman congratulated NIEHS and the other involved ICs on moving forward rapidly and with a methodologically sound approach. She said it was a truly collaborative process across the NIH, which is very important for an issue at this level of complexity, and where the science is still quite immature. She felt that the framework put forth in the concept was striking the right note, focusing on the short-term need and the long-term need with the appropriate level of urgency. She agreed with the idea that the funding is designed to catalyze the research. She noted that the funding amount is a "drop in the bucket" compared to what will ultimately be needed, but will bring a significant return by catalyzing the research. She also strongly agreed with the need for multi-year commitments and multi-year funding. The sustained commitment will be extremely important, given that these are mostly new programs. She stressed that beyond the exposure issues, there are important biological issues, which should be highlighted more than seen in the concept document. She felt that the establishment of Centers of Excellence is a great idea, as NIH has an excellent track record with such centers. She noted that they may help to incentivize partnerships with minority-serving institutions

and institutions in high climate-risk areas. She said she was unclear about the commitment to training in the program. In conclusion, she said she was very excited by the concept paper and the work that has gone into supporting this transdisciplinary and transformative research effort.

Dr. Wasserheit congratulated all involved in “this extremely important and long overdue initiative.” She felt that investments to date had been quite limited compared to the need and the opportunity, and had focused primarily on descriptive studies, with little intervention research or implementation science. She said that the major strengths of the proposed program are that it is an NIH-wide initiative, includes a focus beyond the descriptive studies to include intervention research, and that it incorporates training and capacity building. She shared thoughts in four specific areas. First, she noted that climate change and human health is a quintessentially global health issue, and solutions will need to be tested globally. She felt that global issues were “strikingly under-addressed” in the concept materials. Second, she said that the lessons to be learned about what works from building successful research initiatives for other extremely urgent, complex and challenging global health problems should be asked. She noted that new methods, metrics, and collaborations will be required, including large multi-institution and multi-country consortia. She described the importance of including diverse disciplines and sectors in the research. Timeframes differ at both ends of the spectrum, she noted, with needs for both rapid research response mechanisms and longer-term opportunities. Thirdly, she addressed mechanisms. She said that the urgency and opportunity presented by CCH demand that NIEHS and NIH move quickly to establish a network of research centers. With the urgent need for new types of research, the institute should issue an RFA that clearly articulates the needs and calls for truly innovative research directions and frameworks, and new global interdisciplinary and inter-sectoral collaborations. The mechanism will need to provide sufficient lead time, sufficient funding, and will need to be sustained over time. Fourthly, she addressed governance. With the presence of current and possible future pandemics, NIAID has a major role to play in the trans-NIH initiative and must be represented on the executive and steering committees. She recommended involving other US government agencies and global health organizations from the start of the effort.

Dr. Zorrilla expressed her support for the initiative. She felt that the framework and initiative were rational, but that there was insufficient attention paid to the biological impact of climate change, such as genetic changes. She approved of the Centers for Excellence concept, but said it needs to be ensured that there will be partnerships with investigators and groups in the affected areas. She expressed concern about communication and miscommunication related to the initiative. The initiative needs to pay close attention to its messages, and should have strategies to deal with disinformation.

Dr. Ellison opened the floor to Council members for their discussion.

Dr. Pérez-Lugo pointed out an apparent absence of attention in the concept to the political economy of climate change. She said she feared that more attention needs to be paid to macro processes, such as the political economy. She felt that the proposal would benefit from looking at two frameworks: the framework of the science in terms of the methodology of translational and transdisciplinary research, and the concept of the global nature of the problem, with many stakeholders and complex decision-making. She endorsed the focus on capacity-building, but feared that it is often directed to the wrong people.

Dr. Penning congratulated Dr. Thompson and her team for their thoughtful work on the initiative. He was interested in preparedness, expressing concern that much of the plan was reactionary to climate change, versus being prepared for it. He stressed the importance of transdisciplinary research. He said plans should be modeled on what climate change would look like if promises from events such as the recent Glasgow meeting were kept, and what it would look like if the promises are not kept.

Dr. Kavanagh said that when putting together the Centers of Excellence, the existing infrastructure should be leveraged, with its multidisciplinary expertise. He suggested that perhaps some of the existing centers might be able to apply for supplemental funding. Dr. Thompson replied that there had been an effort to look at existing resources that could potentially be leveraged by shifting toward climate change and health. She said that administrative supplements may be considered.

Dr. Hertz-Picciotto said there is tremendous potential in the approach of involving many agencies and organizations in the effort. She emphasized the importance of research policies in different cities, counties, and states, taking very different approaches to what they do and do not incentivize with regard to mitigation or adaptation to climate change. She felt that NIH resources could be used to understand such policies on a large scale.

Dr. Ellison thanked all participants for their comments and Dr. Thompson for her presentation. He called for a motion and vote by the Council to approve the concept. Dr. Goldman so moved, and Dr. Kavanagh seconded. The Council members voted to approve the concept.

Dr. Ellison pointed out that Zoom chat comments were recorded, as well as emails from the Council email box.

IV. Adjournment

