National Science Advisory Board for Biosecurity (NSABB)
Meeting Minutes

November 21, 2024
Virtual Meeting

Table of Contents

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NSABB Voting Members Present

Gerald W. Parker, Jr., D.V.M., Ph.D. (Chair)
Shannon Benjamin, M.S., M.B.A.
Kenneth Bernard, M.D.
Mark R. Denison, M.D.
Jacqueline Fletcher, Ph.D.
John D. Grabenstein, R.Ph., Ph.D.
Rachel Levinson, M.A.
Alex John London, Ph.D.
Syra Madad, D.H.Sc., M.Sc., M.C.P.
Dennis Metzger, Ph.D.

NSABB Members Absent

Karmella Haynes, Ph.D.

Incoming/Ad Hoc NSABB Members Present

Arianne Callender, J.D.

NSABB Ex Officio Members Present

Brinsfield, Kathy, M.D., M.P.H.
Graber, Joseph, Ph.D.
Howerton, Samuel, Ph.D.
Kozlovac, Joseph, M.S.
Limage, Julia, Ph.D.
Weand, Kirsten, Ph.D.
Welby, Stephen,

The NSABB is a federal advisory committee that addresses issues related to biosecurity and dual use research (DUR) at the request of the U.S. government. The NSABB has up to 25 voting members with a broad range of expertise, including molecular biology, microbiology, infectious diseases, biosafety, public health, veterinary medicine, plant health, national security, biodefense, law enforcement, scientific publishing, and other related fields.

Welcome

Gerald W. Parker, Jr., D.V.M., Ph.D., NSABB Chair, Associate Dean for Global One Health, Texas A&M University

Dr. Parker called the meeting to order at 1:00 p.m. ET, explained the role and purpose of the NSABB, and welcomed members and guests.

Ms. Cari Young of the Office of Science Policy reviewed the conflict-of-interest (COI) policy. She reminded NSABB members that they are special government employees and, as such, are

subject to specific rules of conduct. Members must disclose personal, professional, and financial COIs at scheduled intervals. Should an issue that could affect—or appear to affect—a member's interests arise, the member is requested to recuse themself from the discussion and leave the meeting.

Dr. Parker thanked former NSABB members who have completed their terms of service for their contributions and dedication. He also welcomed incoming members and thanked ex officio members for their valuable input. Dr. Parker announced the end of his term as NSABB chair after November 2024 and introduced Ms. Rachel Levinson as the incoming chair. He thanked NSABB members for their hard work and insight and recognized the National Institutes of Health (NIH) Office of Science Policy staff for their diligence and continued assistance to enable NSABB activities.

Dr. Parker reviewed the agenda and introduced the speakers for the opening remarks.

Opening Remarks

Shankar Sundarum, Ph.D., Special Assistant to the President and Senior Director for Global Health Security & Biodefense, National Security Council (NSC)

Gopal Sarma, M.D., Ph.D., Assistant Director for AI and Biosecurity, Office of Science and Technology Policy (OSTP)

Laina Bush, M.B.A., Associate Deputy Assistant Secretary for Planning and Evaluation, Science and Data Policy, U.S. Department of Health and Human Services (HHS)

Dr. Sundarum thanked NSABB members for their work to inform the U.S. Government in finalizing the 2024 Policy for Oversight of Dual Use Research of Concern (DURC) and Pathogens with Enhanced Pandemic Potential (PEPPs). The DURC/PEPP Policy recognizes the benefits and risks associated with research on pathogens and toxins. This research is critical to strengthen U.S. pandemic preparedness and biodefense, but it also requires careful oversight. While the policy recommends voluntary oversight of computational methods and datasets—including artificial intelligence (AI) technologies—it does not institute a set of required safeguards for this kind of research. *In silico* modeling of pathogens and toxins presents both risks and opportunities. While these technologies are critical for mitigating biological threats, managing their risks and preserving U.S. leadership remains a top priority for the administration.

This prompts the request for the NSABB to perform a review and provide science-based, security-informed recommendations on how to best identify, prioritize, prevent, and mitigate risks from the misuse of *in silico* research, models, tools, and datasets. In particular, the NSABB should consider ways in which *in silico* research on pathogens and toxins could generate information hazards that could be exploited by nefarious actors, including computational tools and datasets that could be misused to create new bioweapons.

Dr. Sarma thanked members and attendees on behalf of OSTP. He said that the OSTP national security team is focused on the full scope of natural, accidental, and deliberate biothreats and is grateful for the recommendations provided by the NSABB to shape the 2024 DURC/PEPP

Policy. The team is eager to see continued engagement so they can better understand how to extend this policy to *in silico* approaches.

On behalf of HHS, Ms. Bush thanked NSABB members for their service and their work to make these discussions possible, and thanked NIH, NSC, and OSTP colleagues. HHS is committed to enabling critical scientific and technological advances—including supporting research to understand pathogens—while mitigating risks. This work informs public health and pandemic-preparedness efforts, including in development of vaccines and countermeasures. The potential of AI to improve human health and health care delivery continues to grow, but it is important to acknowledge the risks associated with these advances. This calls for guidance to promote safety and security. HHS developed robust policy frameworks and practices that guides stakeholders through the biomedical and behavioral research ecosystem to protect research participants, encourage sensible data sharing, specify the privacy of health information, facilitate responsible development of emerging technologies—including AI methods and tools—and mitigate biosecurity concerns. HHS stays nimble in these efforts, and has partnered with multiple collaborators across the U.S. government to work on a set of policies and practices that help balance the risks and benefits of AI and emerging technologies in research to advance medicine, public health, and social services.

All three speakers reaffirmed the NSABB's position as an important continuing source of advice on biosafety and biosecurity for the U.S. government. They also thanked members in advance for their insight on how to address these challenging issues.

Charge to the NSABB

Lawrence A. Tabak, D.D.S., Ph.D., Principal Deputy Director, NIH

Lyric Jorgenson, Ph.D., Associate Director for Science Policy, NIH

Dr. Tabak welcomed attendees to the discussion of the new charge. He thanked former NSABB members who have completed their terms of service and welcomed new voting and ex officio members. He also thanked Dr. Parker for his commitment and leadership as the current NSABB chair, and Ms. Levinson for taking over the position starting in December 2024.

Dr. Tabak reminded attendees that life sciences research—including studies that aim to understand rapidly evolving pathogens and develop related testing and countermeasures—has important benefits and risks. HHS and the U.S. government remain committed to ensuring that research on infectious agents is conducted responsibly. NSABB members are recognized experts in their respective fields and help the U.S. government navigate complex biosecurity questions to preserve the benefits of that research and mitigate its risks.

Dr. Tabak summarized the last charge to the NSABB, to review existing U.S. government policies related to certain higher-risk work with pathogens. The NSABB's recommendations outlined in the *Proposed Biosecurity Framework for the Future of Science*, along with input from the public, were instrumental in informing the 2024 United States Government Policy for Oversight of Dual Use Research of Concern and Pathogens with Enhanced Pandemic Potential. The DURC/PEPP Policy created a unified federal oversight framework, and acknowledged the

rapidly evolving nature of computational biology and the increased use of computational approaches and custom datasets that may contribute to the production of dual-use biological knowledge, information, technologies, and products.

Dr. Tabak highlighted recent and ongoing U.S. government and National Academies developments and efforts related to the NSABB charge, mentioning that there have been extensive discussions and coordinated actions across the U.S. government in response to the rapid evolution of *in silico* models, including AI, to promote innovation and protect public safety and national security.

There is a need for a more granular road map for safeguarding *in silico* research with potential dual use concerns. In view of this, and building upon the 2024 DURC/PEPP Policy and previous NSABB recommendations, the next NSABB charge has been developed based on three high-level needs:

- The need for better approaches to identify and assess the risks and benefits of *in silico* models with dual use potential and of conducting computational research that could facilitate the design of a PEPP
- The need for further guidance on risk mitigation to strengthen safety and foster the trustworthiness of this kind of research
- The need for methods to responsibly communicate research products and educate the research community about misuse risks and mitigation strategies

Dr. Tabak then presented the new charge for the NSABB, which is arranged into two phases and divided into three components: Phase 1A, Phase 1B, and Phase 2.

Phase 1A of the NSABB's charge focuses on identifying and assessing risks and benefits associated with *in silico* research—including AI approaches. The NSABB is asked to recommend strategies to identify and mitigate risks of computational models and datasets in life sciences settings. This work will include identifying approaches, ability, and propensity of models that could result in the development of dual-use information or models directly enabling the design of a pathogen with enhanced pandemic potential (PEPP) or a novel biological agent or toxin; assessing these risks and benefits against clear criteria and mitigating risks of publishing results; and considering how in silico research could enable the design, development, enhancement, or acquisition of transmissible biological agents with specific attributes.

Phase 1B of the NSABB's charge focuses on identifying mitigation strategies and could be undertaken in concert with Phase 1A. The NSABB is charged with outlining options for promoting responsible innovation while mitigating risks, including methods and approaches to:

- Incorporate current and future guidelines for managing misuse risks of dual-use foundation models established by the National Institute of Standards and Technology (NIST) into the development of these dual-use AI models, datasets, and research results
- Mitigate the risk of misuse of deployed dual-use AI models with tools that could identify potential cases of misuse with minimal disruption to legitimate users
- Select the appropriate mitigation strategies that are commensurate to the risks and benefits of the dual-use AI model or datasets

Phase 2 of the NSABB's charge focuses on facilitating responsible communication. The NSABB is charged with charting paths for promoting transparency while safeguarding research, including methods and approaches to:

- Responsibly share and communicate research results and datasets in repositories, preprints, and peer-reviewed publications, including decisions around model releases and hosting dual-use models and datasets
- Educate the scientific community and enhance researcher and institutional awareness and oversight of misuse risks and mitigation strategies

Dr. Tabak presented the proposed timeline for the NSABB's work, with a goal of wrapping up by the end of 2025. He said that the NSABB would receive support to form a working group to address the charge and bring in individuals with relevant expertise. As per the proposed timeline, the working group will kick off in January 2025.

The NSABB is asked to provide an interim report in the summer of 2025, followed by the delivery in December 2025 of a final report that features recommendations, findings, and strategies to inform future U.S. government discussions around oversight and practices around *in silico* research and computational models and datasets with biosecurity implications.

NSABB Discussion and Next Steps

Gerald W. Parker, Jr., D.V.M., Ph.D., NSABB Chair, Associate Dean for Global One Health, Texas A&M University

Cari Young, Sc.M., Acting Director, Biosafety, Biosecurity, and Emerging Biotechnology Policy Division, Office of Science Policy, NIH

Dr. Parker noted that the charge is timely and that although the proposed timeline for the charge is aggressive, these issues require the NSABB to approach them with serious and careful consideration. He then opened the floor for NSABB members to speak.

Dr. Bernard asked for clarification on the two National Academies' efforts underway and their timelines, which Dr. Jorgenson clarified would be in the next year. Ms. Young added that the NSF workshop on responsible publication would take place in early 2025 with proceedings to follow. Dr. Jorgenson added that NIH has been in contact with the sponsors of the workshop to ensure that the NSABB and working group are informed and that there is synergy between the efforts.

Dr. Madad noted that a large portion of this research is being conducted in the private sector. She asked other NSABB members to reflect on strategies to ensure that the private sector will adopt the Board's recommendations. Dr. Parker agreed and encouraged NSABB members to start thinking about which stakeholders should be invited to the working groups. Dr. Jorgenson noted that engaging with the private-sector has been a key focus across the federal government, citing recent synthetic biology-related procurement requirements that have been developed. The hope is that the public release of this type of report will reach both publicly and privately funded stakeholders and encourage the entirety of the research community to adhere to best practices and standards. Ms. Levinson agreed that it is clear that the private sector needs to be involved, and she noted that the breadth of the NSABB's charge includes those efforts. She added that the

charge's aggressive timetable is well substantiated by the fast pace at which this technology is advancing and the need to address these concerns promptly.

Closing Remarks and Adjournment

Gerald W. Parker, Jr., D.V.M., Ph.D., NSABB Chair, Associate Dean for Global One Health, Texas A&M University

Dr. Parker thanked attendees and commended current and former NSABB members and NIH Office of Science Policy staff for their dedicated service and hard work. He said that the NSABB is a critical voice that has informed U.S. government policies in the past and will continue to do so in response to this new charge.

Dr. Parker adjourned the meeting at 1:46 p.m.

Certification

I hereby acknowledge that, to the best of my knowledge, the foregoing Minutes and the following Attachments are accurate and complete.

This Minutes document will be considered formally by the NSABB; any corrections or notations will be incorporated into the Minutes.

Caroline E. Young, Sc.M.
Executive Secretary
National Science Advisory Board for Biosecurity

09/17/2025
Date

Rachel Levinson, MA
Chair
National Science Advisory Board for Biosecurity

09/18/2025
Date

Attachment 1: NSABB Voting Member Roster

Chair

Gerald W. Parker, Jr., D.V.M., Ph.D.
Associate Dean for Global One Health
College of Veterinary Medicine &
Biomedical Sciences Texas
A&M University

Voting Members

Shannon Benjamin, M.S., M.B.A.
Associate Director, Environmental Health &
Safety
Ginkgo Bioworks

Kenneth Bernard, M.D.
RADM, U.S. Public Health Service (Retired)
Former Special Assistant to the President for
Biodefense, Homeland Security Council,
White House
Former Special Adviser for Health and
Security, National Security Council

Mark R. Denison, M.D.
Edward Claiborne Stahlman Professor of
Pediatrics
Professor of Pathology, Microbiology, and
Immunology
Director, Division of Pediatric Infectious
Diseases
Vanderbilt University Medical Center

Jacqueline Fletcher, Ph.D.
Regents Professor Emerita
National Institute for Microbial Forensics
and Food and Agricultural Biosecurity
Oklahoma State University

John D. Grabenstein, R.Ph., Ph.D.
President, Vaccine Dynamics

Karmella Haynes, Ph.D.
Associate Professor
Wallace H. Coulter Department of
Biomedical Engineering
Georgia Institute of Technology and Emory
University

Rachel Levinson, M.A.
Executive Director, National Research
Initiatives
Knowledge Enterprise
Arizona State University

Alex John London, Ph.D.
K&L Gates Professor of Ethics
and Computational Technologies
Department of Philosophy
Carnegie Mellon University

Nicolette Louissaint, Ph.D., M.B.A.
Senior Vice President of Policy and
Strategic Planning
Healthcare Distribution Alliance

Syra Madad, D.H.Sc., M.Sc., M.C.P.
Faculty, Boston University's Center on
Emerging Infectious Diseases Policy & Research
Fellow, Harvard Kennedy School Belfer
Center for Science and International Affairs
Senior Director, System-wide Special
Pathogens Program, NYC Health +
Hospitals

Dennis Metzger, Ph.D.
Distinguished Professor Emeritus, Department of
Immunology and Microbial Disease
Albany Medical College

Attachment 2: NSABB Ex Officio Member Roster

William Beaver
Biodefense Policy Advisor
Office of the Under Secretary of Defense for Policy
Department of Defense

Kathy Brinsfield, PhD
Director/National Counterproliferation and Biosecurity Center
Office of the Director of National Intelligence

Joseph Graber, PhD
Senior Technical Advisor
Department of Energy

Samuel Howerton, PhD
Chief Scientist of DHS Science and Technology Directorate
Department of Homeland Security

Joseph Kozlovac, MS
Biological Safety Specialist
Agricultural Research Service
United States Department of Agriculture

Wendi Kuhnert-Tallman, PhD
Senior Advisor for Laboratory Science
Office of the Deputy Director for Infectious Disease
Centers for Disease Control and Prevention

Julia Limage, PhD
Director, Office of Strategy, Policy, and Requirements
Administration for Strategic Preparedness and Response

Jeanne Marrazzo, MD, MPH, FACP, FIDSA
Director, National Institutes of Allergy and Infectious Diseases
National Institutes of Health

Segaran Pillai, PhD
Director, Office of Laboratory Safety
Office of the Commissioner
Food and Drug Administration

Kirsten Weand, PhD
Acting Director, Office of the Biological Policy Staff
Bureau of International Security and Nonproliferation
Department of State

Stephen Welby
Deputy Director for National Security
Office of Science and Technology Policy