2026 U.S.-Africa Frontiers Symposium

Organizing Committee Bios

Asmeret Asefaw Berhe (Co-Chair)
Professor of Soil Biogeochemistry
University of California, Merced
Merced, California, United States

The Honorable Dr. Asmeret Asefaw Berhe, a Professor of Soil Biogeochemistry and Falasco Chair in Earth Sciences and Geology, and Director of the Sierra Nevada Research Institute and Climate Institute at the University of California, Merced. She previously served as Director of the United States Department of Energy's Office of Science (Senate confirmed, Presidential nomination) and Associate Dean for Graduate Education at UC Merced. Dr. Berhe's cutting-edge research bridges the disciplines of soil science, geochemistry, global change science, and political ecology. Her research aims to improve our understanding of the soil system's role in regulating the Earth's climate; how soil carbon and nutrient cycles respond to environmental changes, including climate change, land-use changes, erosion, and wildfires; and the dynamic two-way relationship between soil and human communities. Dr. Berhe has deep expertise in science education, communication, and developing practices to ensure inclusive excellence in the science & technology enterprise. She holds the distinction of being an elected member of the United States National Academy of Engineering and a Fellow of the American Geophysical Union and the Geological Society of America, and is a recipient of many other awards and honors.

Balla Diop Ngom (Co-Chair)
Professor of Nanomaterials Physics
Université Cheikh Anta Diop de Dakar
Dakar, Senegal

Balla Diop Ngom is a Professor of Nanomaterials Physics originally trained in solid state physics at the University Cheikh Anta Diop of Dakar (UCAD) in Dakar, Senegal. His keen interest led him to complete doctoral studies in Physics at the same university. His scientific curiosity led him to pursue a second PhD in nanomaterials physics at the University of the Western Cape (UWC), Cape Town, South Africa. Building on this high-level training, excellent academic record and uncommon motivation and dedication, he returned to Senegal to embark on an academic career of high promise, already delivering spectacular results and outcomes. As a result of these distinguished academic achievements, Prof Balla has gained some fourteen years of in-depth knowledge and experience in the multi-disciplinary field of nanoscience, focusing on energy and advanced nanomaterials. He has co-authored more than 90 ISI scientific publications, given more than 50 invited lectures at national and international conferences, universities and research institutions including ten lectures at multinational companies. In addition to his outstanding research and training of young scientists, Prof. Ngom is also actively involved in the promotion of science, technology, and education motors of development in Africa and the global South, for example via website and social media platforms. In 2021 Prof Balla Diop Ngom was awarded the first iCANX Young Scientist Award which is an annual event of iCANX, that is aimed to promote and inspire the leading young scientists worldwide. Prof Balla is currently the President of the African Materials research Society (AMRS) and the Chairman of the NanoSciences African Network (NanoAfnet).

Capitalizing on his achievements, leadership, and vision, in 2019 the nominee received a highly prestigious and competitive FLAIR (Future Leaders – African Independent Research) Grant on "innovative electrode materials for energy storage applications as supercapacitors". The originality of his approach rests on using low-cost sustainable electrode materials for energy storage applications such as supercapacitors and batteries based on local Senegal resources such as plant biomass. These methods are improving energy storage devices by using new composite materials derived from local agricultural residues, with enhanced charge transfer properties for electrodes with increased surface area to volume ratios. Overall, Prof. Balla's impact stems from developing efficient energy storage systems based on local Senegal resources to build future decentralized energy vectors at different scales. While his work so far focuses on local materials development, his vision and plans also include the development of high-performance devices, laying the foundation towards future decentralized renewable energy systems to be installed in urban or rural areas in Senegal and other developing countries. The clarity, quality and originality of his research outputs are excellent, and his innovative ideas are having substantial scientific influence. Prof. Balla's research and vision are geared towards societal development, particularly in the global South. Consistently, his work addresses directly

or indirectly several of the Sustainable Development Goals (SDGs). His work is contributing to SDG7 (clean and affordable energy), SDG4 (quality education) and SDG12 (responsible consumption and production) and SDG11 (sustainable cities and communities) as well as SDG9 (Industry, Innovation and Infrastructure). In the longer term, it will also contribute to eradicating poverty (SDG1), gender equality (SDG5) and climate action (SDG13).

Anne CC Lee
Levinger Family Professor of Pediatrics
Brown University
Boston, Massachusetts, United States

Anne CC Lee is the Levinger Family Professor of Pediatrics at Warren Alpert Medical School of Brown University and Founding Director of the Brown Global Alliance for Infant and Maternal Health Research (Global AIM). Dr. Lee received her B.S.E. in biomedical engineering at Duke University, M.D. from Harvard Medical School, and M.P.H. at Johns Hopkins Bloomberg School of Public Health. She completed pediatrics residency training at Boston Children's Hospital/Boston Medical Center, and a postdoctoral research fellowship at the Hopkins International Center for Maternal and Newborn Health.

Dr. Lee's research focuses on perinatal epidemiology and the design, evaluation, and implementation of interventions to reduce mortality and optimize the health of mothers, newborns, and children globally. She has conducted epidemiologic studies and clinical trials in Asia and Africa for two decades, primarily in China, Bangladesh, and Ethiopia. Dr. Lee's current research program focuses on: 1) perinatal epidemiology, 2) prenatal interventions to prevent adverse birth outcomes and optimize child development, and 3) innovation in tools and technology for maternal-neonatal care. She collaborates with the World Health Organization Department of Maternal, Newborn, Child and Adolescent Health, where she has contributed to the development of guidelines for sepsis and preterm infants, and novel methods to assess gestational age. Dr. Lee has served on committees for the National Institute of Child Health and Human Development, Every Newborn Action Plan, and National Academy of Sciences, Engineering and Medicine.

Nelson Dzade
Chair of Undergraduate Engineering Program
Pennsylvania State University
University Park, Pennsylvania, United States

Nelson Dzade is a passionate educator and an interdisciplinary research scientist. He is an Assistant Professor of Energy and Mineral Engineering and the Chair of the Undergraduate Energy Engineering Program in the John and Willie Leone Family Department of Energy and Mineral Engineering at Penn State. He is also the Co-Director of AESEDA – The Penn State Alliance for Education, Science, Engineering, and Design with Africa. Before joining Penn State, he was a U.K. Innovation Research Fellow and Independent Group Leader at the School of Chemistry, Cardiff University. He was a Postdoctoral Research Scholar at the Department of Earth Sciences, Utrecht University, The Netherlands. Dr Dzade received his doctoral degree in Computational Materials Science from the University College London (UCL), United Kingdom; Master's degree in Material Science from the African University of Science and Technology (AUST), Nigeria; Postgraduate Diploma in Materials Science from the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), India; and Bachelor's degree in Applied Statistics from the University for development Studies (UDS), Ghana. Dr. Dzade leads the Materials and Minerals Theory Group at Penn State, which specializes in the development and application of advanced theoretical methods and machine-learning approaches to unravel structure-property-performance relationships in solid-state materials for applications in solar cells, heterogeneous catalysis, high-capacity batteries, and critical minerals beneficiation. Dr. Dzade's research work has been published extensively (over 125 publications) in several high-impact scientific journals and communicated as keynote and invited talks at several high-profile international conferences. Dr. Dzade is recipient of several competitive awards and scholarships, including the U.S.-Africa Frontiers Fellowship Award, by the National Academies of Sciences, Engineering, and Medicine (NASEM); G. Montgomery and Marion Mitchell Award for Innovative Teaching from Penn State College of Earth and Mineral Sciences; U.S. Department of Energy (DOE) Early Career Research Award; UK Research and Innovation Fellowship Award; The DUO-India Professor Fellowship Award; and Overseas Research Scholarship from University College London. Dr Dzade serves on the editorial board of Modeling, Theory, and Computational Catalysis for the Frontiers in Catalysis journal and is an Associate Editor for Engineered Science, Materials and Manufacturing journal.

Archana Bhaw-Luximon
Arthur F. Thurnau Associate Professor of Civil and Environmental Engineering
University of Mauritius
Moka, Mauritius

Branko Kerkez is the Arthur F. Thurnau Associate Professor of Civil and Environmental Engineering at the University of Michigan, where he directs the Digital Water Lab. He is also the chief technical officer at Hyfi, steering research and development of sensing and AI technologies for urban water management. His research interests include water, data, and sensors. His group is working to enable smart water systems, which autonomously adapt themselves to changing conditions using real-time data and controls. His research projects have spanned wireless sensing of large mountain basins, real-time flood forecasting, robotics, and control algorithms for water systems. He is the founder of Open-Storm.org, an open-source consortium dedicated to freely sharing hardware, software, and case studies on smart water systems. He was recognized as a Gilbreth Lecturer by the US National Academy of Engineering in 2018 for his contributions to smart water systems. Other honors include the National Science Foundation's CAREER Award, Verizon Climate Resilience Prize, the Grand Prize for the WEF/WRF Intelligent Water Challenge, UM’s1938E Award, as well as numerous teaching and research paper awards. Dr. Kerkez holds a Ph.D. and M.S. in Civil and Environmental Engineering, as well as an M.S. in Electrical Engineering and Computer Science from UC Berkeley.

Siraj Ismail Kayondo
Cassava Molecular Breeder
International Institute of Tropical Agriculture
Dar es Salaam, Tanzania

Based at the International Institute of Tropical Agriculture (IITA), Dr. Kayondo Siraj Ismail, part of the Genetic Innovation Group of CGIAR, is a trailblazer in Molecular Cassava Breeding. His contributions are crucial in propelling food security and promoting sustainable agriculture across East Africa. Dr. Ismail's role as the lead of IITA's East African cassava breeding programmes since 2023 has been instrumental. He's been improving cassava's disease resistance, yield, and root quality by leveraging state-of-the-art quantitative genetics and genomics-assisted breeding methodologies. His leadership ensures seamless collaboration across cassava breeding network members in East Africa, enhancing state-of-the-art phenotyping techniques and unraveling the genetics of Cassava Brown Streak Disease (CBSD). Dr. Ismail's approach to breeding prioritizes market needs, working closely with cassava value chain stakeholders to ensure newly developed

varieties meet market demands. His involvement in the Community of Practice Partnership (COPP) aids in sharing superior genetic materials and breeding advancements, elevating the impact of breeding programmes. His work on finding and using game-changing traits has led to identifying key loci for virus resistance and other essential traits in cassava. This has led to the creation of improved varieties that meet the needs of both farmers and consumers.

Monica Dus
Associate Professor
University of Michigan
Ann Arbor, Michigan, United States

Dr. Monica Dus is a molecular biologist and science strategist whose work bridges research, science policy, and national capacity building. She is an Associate Professor at the University of Michigan, where she leads the Laboratory of Molecular Nutrition. Her lab integrates molecular and systems approaches to study precision nutrition, neurometabolism, and nutrigenomics. This work has direct relevance to human performance, resilience, and health, and has been recognized with a Guggenheim Fellowship and major awards from the NIH, NSF, Sloan, Klingenstein-Simons, and Rita Allen Foundations. As Director of the Office of National Laboratories in the University of Michigan's Office of the Vice President for Research, Dr. Dus leads initiatives that align academic science and workforce development with federal science and technology priorities. She collaborates closely with national laboratories, defense agencies, and interagency partners across critical and emerging technologies. A former White House Fellow and Special Assistant to the 78th Secretary of the Navy, she helped lead projects on national science and technology strategy, workforce development, and force resilience. She currently serves on the National Academies' New Voices program, the AAAS Task Force on the Vision for American Science & Technology, and the AAAS Leadership Development Committee. Dus is interested in science as an element of national power and its roles in security and diplomacy. Her life mission is to contribute to strategies and organizational structures that meet the innovation demands of the future and renew the social contract between science and society. She earned her Ph.D. in Molecular Biology from the Cold Spring Harbor Laboratory School of Biological Sciences, followed by a postdoctoral fellowship in neurobiology at the Skirball Institute of Biomolecular Medicine at NYU.

Casey Greene
Professor of Biomedical Informatics
Colorado University, Boulder
Boulder, Colorado, United States

Casey is the Chair of and a Professor in the Department of Biomedical Informatics and the founding Director of the Center for Health AI. His lab develops machine learning methods that integrate distinct large-scale datasets to extract the rich and intrinsic information embedded in such integrated data. This approach reveals underlying principles of an organism's genetics, its environment, and its response to that environment. The overarching theme of his work has been the development and evaluation of methods that acknowledge the emergent complexity of biological systems.

Cheikh Loucoubar
Assistant Professor
Institut Pasteur
Dakar, Senegal

Cheikh Loucoubar is a data scientist with several years of research experience in biostatistics for Epidemiology and Genetic Epidemiology applied to infectious diseases. He studied applied mathematics and statistical genetics. He is a researcher at the Institut Pasteur de Dakar where he heads the Epidemiology and Data Science Unit. Cheikh has teaching activities in statistical genetics, biostatistics and R statistical software in some master programs at Senegalese universities. His main research interest is the development of statistical methods and tools for family-based genetic association studies of multifactorial diseases traits. He was Co-Pi in H3ABioNet (Human Health and Heredity in Africa, The Bioinformatic Network) leading the Senegal's Node.

Amina Qutub
Chief Research Scientist and Associate Professor
University of Texas, San Antonio
San Antonio, Texas, United States

Amina Ann Qutub is the Burzik Endowed Professor of Engineering Design and an Associate Professor in Biomedical Engineering at the University of Texas, San Antonio (UTSA). She serves as co-director of the Center for Precision Medicine, assistant director of strategic partnerships and research thrust lead of the MATRIX Artificial Intelligence (AI) Consortium, and Director of the UTSA – UT Health Joint Graduate Group in Biomedical Engineering. Qutub is a co-founder of the AI biotech startups PaloBio and LeahAI. Qutub pioneers methods at the interface of computer science, biology, and engineering to study the design of human cells and help eradicate diseases affecting cells of the brain and vasculature. Qutub co-leads the iRemedyACT project in partnerships with seven hospitals, where her team is developing and testing AI clinical decision-making tools to optimize care for trauma patients. She also directs the Quantu Project, a nationwide study to optimize brain health over a lifespan using an integration of biosensing technology, AI, and neurogenesis bioassays. Qutub is an American Institute for Medical and Biological Engineering Fellow, National Academies' Keck Future Initiatives Awardee, The Health Cell Honoree, and NSF CAREER Awardee. Qutub received a B.S. in chemical engineering from Rice University and a Ph.D. in bioengineering from the University of California, Berkeley and University of California, San Francisco, and completed her postdoctoral training as a NIH NRSA Fellow at Johns Hopkins University. She is a member of the National Academies' Standing Committees on Transformative Science and Technology for the Department of Defense. Qutub co-chaired the planning committees for the National Academies' workshops on AI other than LLMs (2025); AI and Automated Laboratories for Biotechnology (2024); and Transformative S&T for Assessing and Strengthening Individual-to-Population Resilience under Societal and Environmental Stress (2024).

Girmaw Abebe Tadesse
Principal Research Scientist and Manager
Microsoft AI for Good Lab
Nairobi, Kenya

Dr. Girmaw Abebe Tadesse is a Principal Research Scientist and Manager at Microsoft's AI for Good Research Lab, where he leads the Africa team in developing AI solutions for agriculture, healthcare, biodiversity, and more. He collaborates with a diverse range of partners, including governments, non-profits, academic institutions, and startups. He holds over 20 U.S. patents, and his work has received Best Paper Awards at conferences, been published in leading journals such as Nature, and featured by media outlets including the BBC. He is an active program committee member and speaker at global AI conferences, including ICLR 2023 (Kigali), ICLR 2024 (Vienna), IJCAI 2024 (Jeju), and ICCV 2024 (Paris). He previously worked as a Staff Research Scientist at IBM Research Africa and as a Postdoctoral Researcher at the University of Oxford. He earned his PhD from Queen Mary University of London through the Erasmus Mundus Double Doctorate Program.

Moses Obimbo Madadi
Chairman of Department of Human Anatomy and Medical Physiology
University of Nairobi
Nairobi, Kenya

Obimbo Moses Madadi, a Science Leadership fellow, is a clinician-scientist and a professor passionate about women's health. He is the Chairman of the Department of Human Anatomy and Medical Physiology at the University of Nairobi and the Hon. Secretary of the Kenya Gynecological and Obstetrical Society (KOGS). He is a practicing Obstetrician and Gynecologist with a Postdoctoral and Ph.D. in Reproductive Sciences. His current work focuses on investigating the -omics of key pathways he continues to uncover in the field of reproductive biology, with the goal of developing innovative diagnostics and therapeutics. In his pursuit of excellence in women's health, he led a team in successfully launching the world's first-ever Postpartum Hemorrhage awareness run— *'Run for Her'*—held in Nairobi. This groundbreaking initiative was designed to raise awareness of postpartum hemorrhage, the leading threat to maternal health. The event has since gained both regional and international traction. Additionally, he is currently leading a team of scientists dedicated to exploring the crucial role of the microbiome

in women's and global health, focusing on its relevance to adverse pregnancy outcomes and reproductive performance, sexually transmitted infections, human papillomaviruses, placenta biology, and high-risk pregnancies. Importantly, the skills and approaches that he has learnt can be applied to many other areas of research. Thus, he is in an ideal position to build capacity at the various institutions in Africa. Most notably, he is well-positioned to strengthen existing research programs and to mentor the next generation of translational scientists—those who, like him, bridge clinical practice, scientific research, and advocacy. His collaborations with both local and international institutions have yielded impactful and productive outcomes.