NATIONAL ACADEMIES Sciences Engineering Medicine

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NEW VOICES

IN SCIENCES, ENGINEERING & MEDICINE

2018-2024

COHORT MEMBER & ALUMNI BIOS

new voices

Overview

New Voices in Sciences, Engineering, and Medicine is a cohort-based leadership program that promotes collaboration among outstanding early- and mid-career scientists, engineers, and medical professionals during a two-year term of service. The program aims to expand the diversity of expertise engaged in the convening and advisory functions of the National Academies while building a network of emerging U.S. leaders to address national and global challenges.

Selection Process

The New Voices selection process is a merit-based, open competition based on applications generated by interested individuals. Staff reviews applications and finalists participate in virtual interviews with members of the selection panel.

About the Academies

The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions that provide expert advice on some of the most pressing challenges facing the nation and world. Our work helps shape sound policies, inform public opinion, and advance the pursuit of science, engineering, and medicine.

2018-20 Cohort of New Voices in Sciences, Engineering, and Medicine

New Voices Member Bios

HEALTH/MEDICINE
Olujimi Ajijola
Associate Professor of Medicine, University of California Los Angeles
Los Angeles, CA
Academia

Focus Areas: Cardiovascular Sciences and Neurosciences; Physician Scientist Training, Equity, Diversity, & Inclusion; Scientific workforce; Medicine

Dr. Olujimi Ajijola completed his undergraduate studies at the University of Virginia and received his medical degree from Duke University. He went on to the Massachusetts General Hospital for residency training in internal medicine and completed clinical fellowships in cardiovascular medicine and cardiac electrophysiology at UCLA. He received a Ph.D. in Molecular, Cellular, and Integrative Physiology at UCLA, as part of the Specialty Training and Advanced Research (STAR) program. He is interested in novel approaches for cardiac arrhythmias and performs invasive cardiac electrophysiological procedures. His research interests revolve around peripheral neural circuits that control cardiac function in health and disease, including neural interventions that alleviate progressive cardiac dysfunction and arrhythmias. In addition to the NIH Director's New Innovator award, he is a recipient of the Jeremiah Stamler Cardiovascular Research Award, an A. P. Giannini Foundation award, and the Burdon Sanderson Prize Lecture Award from the University of Oxford. He is an alumnus of the New Voices program of the National Academies of Science, Engineering, and Medicine. He is a recipient of the Chan Zuckerberg Science Diversity Leadership Award and an elected member of the American Society for Clinical Investigation (ASCI). He is a standing member of the National Academies Roundtable on Black Men & Women in Science, Engineering and Medicine. He is the Associate Director of the UCLA Cardiac Arrhythmia Center & EP Programs and directs the Neurocardiology Research Program at UCLA. He also co-directs the NIH-funded UCLA-Caltech Medical Scientist Training Program.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Joel P. Baumgart
Associate Vice Provost, Emory University
Atlanta, GA
Academia

Focus Areas: Science Diplomacy; Toxicology; Public Health; STEM Education; Global Health

Dr. Joel P. Baumgart is the Associate Vice Provost at Emory University, an Adjunct Assistant Professor of Pharmacology at Cornell University Weill Medical College, and an Associate Editor of the journal Science & Diplomacy. Dr. Baumgart was a U.S. Fulbright Scholar in Tanzania in 2015-16 and is a Diplomate of the American Board of Toxicology. Before his time abroad, Joel was an American Association for the Advancement of Science (AAAS) Science & Technology Policy Fellow in the Office of the Director at the National Institutes of Health, and a Christine Mirzayan Science and Technology Fellow at the National Academy of Engineering. Dr. Baumgart was the recipient of the Eric W. Lothman Award for Outstanding Achievement in Neuroscience, the Award for Excellence in Scholarship in the Sciences & Engineering, and the Early Achievement Alumni Award from the University of Virginia, the Dr. Louis B. Fink Capstone Award from the Johns Hopkins Bloomberg School of Public Health, and the Zora Neale Hurston Thesis Award for the Social Sciences from Columbia University. Dr. Baumgart has recently been awarded the MacVittie Emerging Leader Award from the American Association of University Administrators and was inducted into the Bouchet Society at Cornell University in 2012.

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NATURAL SCIENCES

Asmeret Asefaw Berhet

Director, Office of Science, Department of Energy

Merced, CA

Government

Focus Areas: Soil Biogeochemistry; Climate Change; Political Ecology; Equity and Inclusion in STEM; Science Communication

Dr. Asmeret Asefaw Berhe is the Director of the Office of Science for the U.S. Department of Energy. Dr. Berhe is currently on leave from the University of California, Merced where she holds the Ted and Jan Falasco Chair in Earth Sciences and Geology; is a Professor of Soil Biogeochemistry; and previously served as Associate Dean for Graduate Education. Her research focus lies at the intersection of soil science, global change science, and political ecology with an emphasis on how the soil system regulates the earth's climate and the dynamic two-way relationship between the natural environment and human communities. She previously served as the Chair of the U.S. National Committee on Soil Science and member of the Board of International Scientific Organizations at the National Academies; and Leadership board member for the Earth Science Women's Network. Her scholarship and efforts to ensure equity and inclusion of people from all walks of life in the scientific enterprise have received numerous awards and honors. Dr. Berhe is a member of the National Academy of Engineering; she is also a Fellow of the American Geophysical Union and the Geological Society of America and a member of the inaugural class of the U.S. National Academies' New Voices in Science, Engineering, and Medicine. Berhe received a B.Sc. in Soil and Water Conservation from the University of Asmara; an M.Sc. in Political Ecology from Michigan State University; and a Ph.D. in Biogeochemistry from the University of California, Berkeley.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Michelle Birkett
Assistant Professor at Northwestern University, Feinberg School of Medicine
Evanson, IL
Academia

Focus Areas: Underserved and marginalized populations; Sexual and Gender Minorities; Health Disparities Research; Network and Social Data; Computational Social Science

Dr. Michelle Birkett is a tenured Associate Professor in the Departments of Medical Social Sciences and Preventive Medicine at Northwestern University and the Director of the CONNECT Complex Systems and Health Disparities Research Program within the Institute for Sexual and Gender Minority Health and Wellbeing. Dr. Birkett has extensive expertise in the use of network and quantitative methodologies to understand the social contextual influence of stigma on the health of marginalized populations, in particular, sexual and gender minority youth. Her research is grounded in a multilevel perspective of health that considers direct and indirect social, relational, and environmental influences. This multilevel approach underlies her interest in network data and her commitment to conducting research that advances social change to eliminate health disparities. Dr. Birkett has led multiple NIH and federally funded projects, serving as Principal Investigator on studies totaling over $15 million and serving as Co-Investigator on 14 projects totaling over $37 million. Across this work, she and her team have captured rich data on the social systems and physical spaces inhabited by racial and sexual minorities and have utilized these data to understand how the social and sexual isolation of individuals at the intersection of racial and sexual minority identity drives infectious disease disparities. Additionally, Dr. Birkett has led the development, the design, and dissemination of the Network Canvas Software Suite, an open-source software that simplifies complex network data capture for social and behavioral health researchers.

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NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCES

Orianna Bretschger
CEO at Aquacycl
San Diego, CA
Industry

Focus Areas: Education and Mentorship; Water Research, Technology, and Education; Local and Global Water Cycles; Intersection of Research and Technology Development; Sustainability For Industry, Agriculture and Emerging Markets

A native of the Southwest, Orianna Bretschger grew up appreciating water issues. She received a B.S. in Physics and Astronomy at the University of Northern Arizona; and after a career in aerospace and government consulting, she subsequently found her way back to water while completing a Ph.D. at the University of Southern California. During her graduate work, she studied how microbes remove pollutants from water and produce electricity at the same time. Her time at USC also instilled a passion for education and mentorship. In 2008, Dr. Bretschger accepted a position at the J. Craig Venter Institute in San Diego where she continued her research and developed outreach programs highlighting microbiome activities in wastewater treatment and the importance of understanding the water cycle from a local and global perspective. To-date, Dr. Bretschger's research has resulted in 31 publications, over 1000 citations, 3 book chapters, and 4 patents. Her research also led to technology development and in 2016, Dr. Bretschger founded Aquacycl LLC with her partners. Aquacycl is now commercializing sustainable wastewater treatment systems for industry, agriculture and emerging markets. Dr. Bretschger holds Adjunct Associate Professor positions at USC and San Diego State University to advance water research, technology, and education.

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NATURAL SCIENCES

Frances Colón

Senior Director, Center for American Progress

Washington, D.C.

Non-Profit

Focus Areas: Climate Change; Science Diplomacy/International Cooperation; STEM; Gender Underrepresented Minorities

Frances Colón is the Senior Director for International Climate Policy at Center for American Progress, where she leads a program to drive international ambition and action to meet global climate mitigation and adaptation goals. Colón is a member of the President's Council of Advisors on Science and Technology and the former Deputy Science and Technology Adviser to the Secretary of State. Colón earned her Ph.D. in neuroscience in 2004 from Brandeis University and her B.S. in biology in 1997 from the University of Puerto Rico. Colón was a 2019 Open Society Foundations Leadership in Government fellow, a city of Miami Climate Resilience Committee member, and a 2020 Yale-OpEd Project Public Voices on the Climate Crisis fellow. She is a member of the National Academies of Science, Engineering, and Medicine Roundtable on Science and Technology for Sustainability and the Global Science Diplomacy Roundtable.

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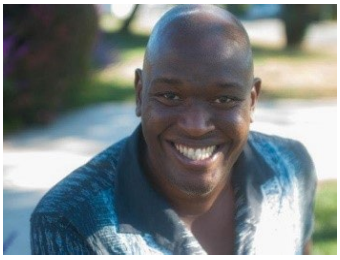

COMPUTER SCIENCE

Tyrone Grandison
Chief Technology Officer, Application Innovation, Infrastructure, and Security. Industry and Partner Solutions, Microsoft
Seattle, WA
Industry

Focus Areas: Computing; Data Science; AI; Privacy; Security; Human Rights; Open Data; Software Engineering

Tyrone Grandison's work is at the intersection of technology, data, and social good. He has developed and deployed data-driven, impact-focused, people-centered products and services that improve the lives of the under-represented, and often ignored, communities. Dr Grandison served as the Co-Chair of the Seattle Human Rights Commission from 2018 to 2022; where he focused on human centered solutions to tackle homelessness, equity, and human trafficking. Dr. Grandison was also a Laureate of the Global Young Academy; where he, and his cohort of young scientists across the Global North and Global South, collaborate on inclusive ways to collaborate on solutions for the world's hardest and most pressing problems. While in the inaugural class of the New Voices, Dr Grandison collaborated on the creation of the Cohort 1 New Voices Website, the pilot Network and the COVID AI chatbots for the New Voices program. Dr. Grandison's extra-curricular activities follow his passion and personal mission. He is the Founder and Board Chairman of The Data-Driven institute, which is a public health non-profit that helps policymakers and executive decision makers create and implement effective programs, policies, and products to solve their most critical problems, using the knowledge of the community, data and technology.

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ENGINEERING

Faisal Hossain
Endowed Professor, University of Washington
Seattle, WA
Academia

Focus Areas: Civil and Environmental Engineering; Filmmaking and Communication of Science; Improving Water, Food and Energy Security; The Intersection of STEM Education with the Arts; Sustainable Applications of Earth Science

Faisal Hossain enjoys interacting with students at all levels and disciplines as part of his day job as a faculty in the Department of Civil and Environmental Engineering at the University of Washington. His night job where he devotes an equal amount of energy is about filmmaking and communication of science. He uses these to build bridges between communities and solve pressing problems for society. His research group at University of Washington focuses on improving livelihoods in challenging environments through sustainable application of earth science, remote sensing and advanced information technology to improve security for water, energy and food at local and regional scales. His capacity building and education initiatives involving satellite remote sensing has resulted in several independently owned satellite management system for Governments of several Asian nations for improved water, food and energy security. Currently, he serves as Editor for Journal of Hydrometeorology and Applications lead for Science Team of Surface Water Ocean Topography (SWOT) Satellite Mission that is scheduled for launch in 2021. He initiated the Engineering Student Film Contest at University of Washington in 2017 that is now planned as the nation's first and bi-annual student film festival for STEM majors as a way to explore the arts.

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NATURAL SCIENCES

Colleen Iversen
Senior Staff Scientist, Oak Ridge National Laboratory
Knoxville, TN
Government

Focus Areas: Ecosystem Ecology; Environmental Sciences and Change; Science Communication; Organizing Symposia, Sessions, and Workshops

Colleen Iversen is an ecosystem ecologist who uses a variety of field and laboratory techniques to understand and predict how ecosystems are shaped by environmental change. Her work takes her from upland forests to soggy peatlands to thawing arctic tundra, chasing a better understanding of the secret lives of roots hidden beneath the soil surface. She works at the millimeter scale to answer a global question: how will ecosystems respond to the climate of the future? Iversen is a Senior Staff Scientist in the Environmental Sciences Division at Oak Ridge National Laboratory, and serves as a Theme Lead in the Climate Change Science Institute. She has published more than 50 papers in high-impact journals ranging from New Phytologist to the Proceedings of the National Academies of Sciences. She serves on the Editorial Advisory Board for the journal New Phytologist and is an elected Early Career Fellow of the Ecological Society of America. Iversen sees science communication as the foundation for a shared understanding of society's future, and she has shared her scientific vision on Public Radio International's 'Science Friday', and in the Alda School's 'Flame Challenge', as well as in organized symposia, sessions, and workshops. For more information, visit www.colleeniversen.com.

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COMPUTER SCIENCE

Yunyao Li
Director of Machine Learning, Adobe Experience Platform
San Jose, CA
Industry

Focus Areas: Artificial Intelligence; Natural Language Processing; Knowledge Graph; Human Computer Interaction; Machine Learning

Yunyao Li is the Director of Machine Learning at Adobe Experience Platform, where she leads the strategic initives to bring the power of Generative AI and Knowledge Graph to enterprise systems and transform the way companies approach audiences, journeys and personalization at scale. Previously, she was the Head of Machine Learning, Apple Knowledge Platform, where she led the building of the next-generation machine learning solutions to help power features such as Siri and Spotlight, improving the experience for billions of Apple users. Before joining Apple in early 2022, she was a Distinguished Research Staff Member and Senior Research Manager at IBM Research - Almaden where she built and managed the Scalable Knowledge Intelligence department and led the research strategy on foundational NLP technology across IBM Research globally. Yunyao is particularly known for her work in scalable NLP, enterprise search, and database usability. She has built systems, developed solutions, and delivered core technologies to over 20 IBM products under brands such as Watson, InfoSphere, and Cognos. She has published over 100 articles and two books. She was an IBM Master Inventor, with 36 patents granted. Her technical contributions have been recognized by prestigious awards within and outside of IBM on a regular basis. She is an ACM Distinguished Member. She is a member of New Voices program (inaugural class) of the American National Academies. She regularly organizes conferences, workshops, and panels at top research conferences and served on prestigious program committees, editorial boards, advisory boards, and review panels. Yunyao obtained her Ph.D. degree in Computer Science & Engineering and dual-degree of M.S.E in Computer Science & Engineering and M.S in Information from the University of Michigan. She went to college at Tsinghua University, Beijing, China.

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NATIONAL ACADEMIES Sciences Engineering Medicine

COMPUTER SCIENCE

Yan Liu
Professor, University of Southern California
Los Angeles, CA
Academia

Focus Areas: Computer Science; Machine Learning; AI for Health; AI for sustainability

Yan Liu is a full professor in the Computer Science Department at University of Southern California, and Director of USC Machine Learning Center (MASCLE). Before joining USC, she was a Research Staff Member at IBM Research. She received her Ph.D. degree from Carnegie Mellon University in 2006. Her research interest is developing machine learning models for time series data and structured data with applications to health care, sustainability and social media analysis. She has received several awards, including NSF CAREER Award, Okawa Foundation Research Award, ACM Dissertation Award Honorable Mention, Best Paper Award in SIAM Data Mining Conference, Yahoo, IBM and Facebook Faculty Award and the winner of several data mining competitions, such as KDD Cup and INFORMS data mining competition.

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NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCE

Ali Nouri

Assistant Secretary, U.S. Department of Energy

Washington, D.C.

Government

Focus Areas: Energy Policy; National Security; Climate Change; Emerging Technologies; Pandemic Response

Dr. Ali Nouri leads the Office of Congressional and Intergovernmental Affairs as an Assistant Secretary at the U.S. Department of Energy. He was previously serving as the Principal Deputy Assistant Secretary in that office. Prior to joining the Biden Administration, Dr. Nouri was the President of the Federation of American Scientists, a public policy organization focused on countering WMDs, addressing emerging infectious diseases, and crafting solutions to energy and innovation challenges. Under his leadership, the organization also tackled science denialism and COVID-19 misinformation by providing timely, science-based information to policy makers and to the public. Previously, Dr. Nouri served as an advisor in the U.S. Senate for nearly a decade, including six years for a member of the Senate Committee on Energy and Natural Resources. During his time in the Senate, he served in various positions including as an Energy and Environment Advisor, a National Security Advisor, and as a Legislative Director. Prior to that, Dr. Nouri served as an advisor to the office of UN Secretary General Kofi Annan where he developed initiatives to block biotechnology from being used to produce biological weapons. He earned a B.A. in biology from Reed College and a Ph.D. in molecular biology from Princeton University. He resides in Washington D.C. with his wife, Logan Gibson, and their two sons.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Cynthia Reinhart-King
University Distinguished Professor, Senior Associate Dean for Research in Engineering, Vanderbilt University
Nashville, TN
Academia

Focus Areas: Biomedical Engineering; Cancer; Cardiovascular Disease; Cellular Engineering; Biomaterials

Cynthia Reinhart-King is the Cornelius Vanderbilt Professor of Biomedical Engineering at Vanderbilt University. Prior to joining Vanderbilt in 2017, she was on the faculty of Cornell University where she received tenure in the Biomedical Engineering Department in 2013. She obtained her undergraduate degrees in chemical engineering and biology at MIT and her PhD at the University of Pennsylvania in bioengineering as a Whitaker Fellow. She received postdoctoral training as an NIH NRSA postdoctoral fellow at the University of Rochester. Dr. Reinhart-King's current research interests are in cell mechanics and migration in cancer and atherosclerosis. Her lab has received funding from numerous agencies including the National Institutes of Health and the National Science Foundation. She was awarded the Rita Schaffer Young Investigator Award from the Biomedical Engineering Society, an NSF CAREER Award, the 2010 Sonny Yau '72 Excellence in Teaching Award, a 2013 Cook Award for "contributions towards improving the climate for women at Cornell," and the 2015 Zellman Warhaft Commitment to Diversity Award from Cornell. She served on the Board of Directors of the Biomedical Engineering Society from 2014-2017. She is a fellow of the Biomedical Engineering Society and the American Institute for Medical and Biological Engineering.

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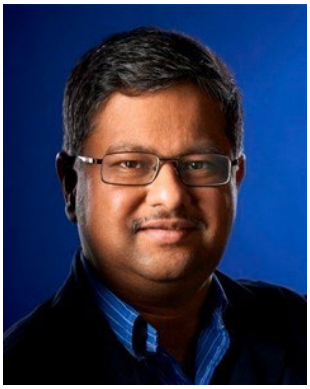

NATURAL SCIENCE

Abhishek Roy
Scientist, The Dow Chemical Company
Englewood, CO
Industry

Focus Areas: Chemistry; Global Challenges of Energy and Water; Technical and R&D Leadership; Innovation in Sustainability

Dr. Abhishek Roy is a Scientist at The Dow Chemical Company with a passion for addressing global challenges of energy and water. The journey started in 2003 with fuel cells at Virginia Tech to current research at Dow (Hydrocarbons) towards energy efficient separation processes. Recipient of the prestigious Gordon E. Moore Medal from SCI, Dr. Roy's most significant contribution is reducing the energy requirements of water purification (BWRO) by 30 % and improving water quality by 40% (DOW FILMTEC™ ECO) through the invention of a breakthrough terpolymer membrane chemistry. With experience in technical and R&D leadership, customer interactions, he developed several membrane technologies enabling 10+ reverse osmosis products. A major impact is in the residential segment where these innovations are providing drinkable water in India and China. Dr. Roy coauthored 100+ scientific articles and presentations and is an inventor of 23 granted U.S. patents. Notable awards include the Edison Award, Dow's Presidential Sustainability Innovator award, Influential Researcher IE&C, and outstanding recent graduate alumnus from Virginia Tech. He participated in Dow's Leadership In Action program for rehabilitation of Creeks in Cebu, Philippines. Born in Kolkata, India, Abhishek currently lives with his beloved wife Mou and twin boys, Aharshi and Anush in Houston.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Alison Sheets-Singer
Principal Researcher, Nike, Inc.
Beaverton, OR
Industry

Focus Areas: Mechanical Engineering; Biomedical Engineering; Wearable Robotics; Human Performance; Women in STEM

Alison Sheets-Singer is a Principal Researcher in the Nike Sport Research Lab. The broad goal of the Sport Research Lab is to make athletes measurably better, and her team focuses on how Nike can create products and services that amplify and augment human performance for athletes of all abilities. Her research program leverages experimental approaches as well as computer simulation, modeling, and optimization to link changes in biomechanics, physiology, and perception. Her largest contributions to the sports biomechanics field are realized through Nike's product line. She has been awarded 12 patents and is the recipient of a Visionary Award from the Women of Nike for her leadership and teamwork. Her work has also been recognized by the International Society of Biomechanics, Technical Group on Computer Simulation with the Andrzej Komor New Investigator Award, and Dr. Sheets-Singer was an invited speaker at the 2012 Japan America Frontiers of Engineering Symposium sponsored by the National Academy of Engineering. Prior to joining Nike, Dr. Sheets-Singer was an Assistant Professor at The Ohio State University in the Department of Mechanical and Aerospace Engineering. She received her B.S. in Mechanical Engineering from Cornell University, Ph.D. in Mechanical Engineering from the University of CA, Davis, and was Postdoctoral Researcher at Stanford University. Dr. Sheets-Singer was a co-chair of the inaugural cohort of the New Voices in Sciences, Engineering, and Medicine program, is on the Engineering Research Visioning Alliance's Standing Council, and is on Sigma Xi's Committee on Global Outreach.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Patricia Silveyra
Chair of the Department of Environmental and Occupational Health, Indiana University Bloomington School of Public Health
Bloomington, IN
Academia

Focus Areas: Lung Diseases; Diversity in STEM; Faculty Development; Environmental Toxicology; Supporting International Trainees

Dr. Patricia Silveyra is the Anthony D. Pantaleoni Eminent Scholar, Associate Professor, and Chair of the Department of Environmental and Occupational Health at Indiana University Bloomington School of Public Health. She earned her bachelor's and master's degrees in molecular biology and biotechnology, and her PhD in Biochemistry, from the University of Buenos Aires, Argentina and did her postdoctoral training as a Rotary International Ambassadorial Scholar at Penn State College of Medicine. In 2013, she established her research program as an Assistant Professor, and between 2015-2016, she served as the Director for Diversity, Equity and Inclusion in Education at Penn State College of Medicine. From 2018-2020, she led the Biobehavioral Laboratory at the University of North Carolina at Chapel Hill, and in 2021, she joined Indiana University Bloomington. Dr. Silveyra has served in various national organizations and committees committed to increase representation of women and minorities in STEM, including the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), where she was board member and Treasurer. She was part of the first cohort of the New Voices program, and she served in The National Academies Board on Higher Education and Workforce (BHEW). Dr. Silveyra has received numerous awards for her research accomplishments, her mentoring of underrepresented and international trainees, and her efforts to promote diversity in STEM at the local, national, and international level.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Lauren Stewart
Assistant Professor, Georgia Institute of Technology
Atlanta, GA
Academia

Focus Areas: Civil and Environmental Engineering; Structural Engineering; Safety and Design Of Materials; Engagement with Veterans and Active-Duty Military

Dr. Lauren Stewart is an Assistant Professor in the School of Civil and Environmental Engineering at the Georgia Institute of Technology. She received the NDSEG Fellowship from the Army Research Office to support her Ph.D. in Structural Engineering at the University of California, San Diego, where she also completed her M.S. and B.S. Dr. Stewart is Director of the Structural Engineering and Materials Laboratory at Georgia Tech, and her research employs innovative experimental strategies to investigate the behavior of structures subjected to extreme environments (e.g., blast, ballistics, earthquakes). These strategies are then further used to characterize materials, develop computational models, and create design strategies, thus improving the safety of infrastructure. Specifically, her research on explosive and shock effects has impacted various national security programs for agencies including Air Force Research Laboratory, US Army ERDC, and Office of Naval Research. Since joining Georgia Tech, she received the CEE Research Program Development Award, the Bill Schutz Junior Faculty Teaching Award, was named an Air Force Summer Faculty Fellow, and was named a 2017 Rising Star in Structural Engineering. In 2014, Dr. Stewart started the Tech Vets program, which engages U.S. veterans and active duty military into her research programs.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Amos Winter
Associate Professor of Mechanical Engineering,
Massachusetts Institute of Technology
Cambridge, MA
Academia

Focus Areas: Mechanical Engineering; Global Engineering and Research; Machine and Product Design For Developing and Emerging Markets; Irrigation, Water, and Power Systems; Assistive Devices

Amos Winter is the Ratan N. Tata Career Development Associate Professor of Mechanical Engineering at MIT and Director of the Global Engineering and Research (GEAR) Laboratory. His research focuses on machine and product design for developing and emerging markets, with particular applications to irrigation, water purification, assistive devices, and power systems. Prof. Winter earned a BS from Tufts University (2003) and an MS (2005) and PhD (2011) from MIT, all in mechanical engineering. He received the 2010 Tufts University Young Alumni Distinguished Achievement Award, the 2012 ASME/Pi Tau Sigma Gold Medal, was named one of the MIT Technology Review's 35 Innovators Under 35 (TR35) for 2013, and received the MIT Edgerton Faculty Achievement Award and an NSF CAREER award in 2017. Prof. Winter is also the principal inventor of the Leveraged Freedom Chair (LFC) developing world wheelchair, which was a winner of a 2010 R&D 100 award, named one of the Wall Street Journal's top innovations in 2011, received a Patents for Humanity award from the U.S. Patent and Trademark Office in 2015, and was the subject of "Engineering Reverse Innovations", winner of the 2015 McKinsey Award for the best article of the year in Harvard Business Review.

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2021-23 Cohort of New Voices in Sciences, Engineering, and Medicine

New Voices Member Bios

ENGINEERING
Mahdieh Aghazadeh
Principal Process Engineer, Johnson and Johnson
Philadelphia, PA
Industry

Focus/Research Areas: Biopharmaceutical Manufacturing; Drug Substance Process Engineering; Sustainability analysis; Workforce DE&I; Biological drug Supply Chain; Medical Device material development

Mahdieh Aghazadeh was born and raised in Qazvin, Iran, and moved to the nation's capital to receive her first degree in chemical engineering from Sharif University of Technology. Multiple socio-economic issues encouraged Mahdieh to pursue graduate degrees (Chemical Engineering master's at the University of Maine in 2011 and Biological Engineering PhD from Purdue University in 2016) in the USA; during which she has been involved in SWE, NASBE, and SHPE. Immediately after graduation, she entered the private sector as a scientist at Johnson and Johnson's orthopaedical company R&D department. Since then, she has taken multiple roles within JnJ. She has worked with compliance and quality teams to enhance customers' experience with drug delivery devices and most recently joined Janssen Supply Chain team as a principal process engineer. Working at a heavily regulated industry, in addition to her graduate school research in biofuel production, clarified the importance of global scale collaboration. Mahdieh has initiated many technical collaborations within different sectors of JnJ as well as external innovators and academia. Advocating for multi-functional collaborations and partnerships for sustainability in biopharmaceutical production, new technology development, data collection and analysis, customer experience improvements, community outreach and education, and eventually promoting workplace inclusion and equity have become the primary goals of her career.

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NATIONAL ACADEMIES Sciences Engineering Medicine

SOCIAL SCIENCE

Omar Asensio
Associate Professor Georgia Institute of Technology
Atlanta, GA
Academia

Focus Areas: Energy and Transportation Policy; Data Science and Machine Learning; Public Policy Analysis

Dr. Omar I. Asensio is an Associate Professor and Director of the Data Science & Policy Lab at the Georgia Institute of Technology and a Climate Fellow at Harvard Business School. Professor Asensio's research focuses on climate and electrification strategies at the intersection of technology, AI, and public policy. He uses large-scale data and conducts field experiments to address innovation challenges in energy systems, transportation, and human mobility. He contributed to the zero emission vehicles (ZEV) policy guidance for COP26 and the Glasgow Climate Pact. Professor Asensio has received multiple awards for his research including the National Science Foundation CAREER Award, the Alliance for Research on Corporate Sustainability (ARCS) Emerging Sustainability Scholar Award, and the ONE-NBS Research Impact on Practice Award by the Academy of Management (AOM) Organizations & the Natural Environment (ONE) Division. His work in energy conservation and electric vehicle charging behavior has been cited in government and policy advisory communications by the US National Academy of Sciences, the UK government, the United Nations Economic Commission for Latin America and the Caribbean, NSF Public Affairs, and the IndiaAI initiative. His research also has been featured in media outlets including the New York Times, NPR's All Things Considered, Scientific American, Yahoo! News, the Huffington Post, and the Washington Post. Professor Asensio is a member of The National Academies New Voices 2021 cohort. He holds a doctorate in environmental science and engineering with specialties in economics from UCLA. He is a faculty participant in the Research University Alliance (RUA) Research Exchange and is engaged in multiple activities to increase the representation of women and under-represented students and professionals in STEM fields.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Baindu Bayon Paicely
Senior Development Officer, VentureWell
San Franciso, CA
Industry

Focus Areas: Inclusive Innovation; Human Development in West Africa; Small Business Funding; Black Women in STEM; Medical and Molecular Genetics

Baindu Bayon Paicely, PhD is a Senior Development Officer at VentureWell where she cultivates federal funding relationships to enable institutional growth, particularly in the life sciences. She is also an Adjunct Professor in the Department of Biology at Saint Mary's College of California. Prior to joining VentureWell, Dr. Bayon Paicely was a Principal Consultant for BBC Entrepreneurial Training and Consulting, where she specialized in the NIH and NSF Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. She is a former AAAS Science and Technology Policy Executive Branch Fellow at the NIH Office of the Director in the Small business Education and Entrepreneurial Development (SEED) Office. Before joining SEED, she worked at the National Center for Advancing Translational Sciences (NCATS) in the Division of Clinical Innovation where she explored commercialization and entrepreneurship at CTSA (Clinical Translational Science Award) hubs. Dr. Bayon Paicely enjoys STEM outreach, mentorship, and driving youth toward solving problems with life science. She is one-half of the science-tech YouTube duo "The STEM SiSTARS" along with her sister. She has earned a myriad of awards throughout her career, including the coveted Indianapolis Business Journal's Forty Under 40. She earned her Ph.D. in Medical & Molecular Genetics from the Indiana University School of Medicine with a focus on the neurogenetics of Alzheimer's disease and transcription factor regulation of beta-secretase. While in New Voices, Dr. Bayon Paicely was the 2021-2022 cohort co-chair. She led the Disrupting Academia working group and The National Academies GUIRR collaborative symposium.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Enrico Castillo
Associate Vice Chair for Justice, Equity, Diversity, and Inclusion, Department of Psychiatry, UCLA
Los Angeles, CA
Academia

Focus Areas: Health equity; health services, and policy research; social medicine; community-government-academic partnerships; curriculum development; graduate medical education; structural competency; physician advocacy; homelessness and housing policy; incarceration; serious mental illness

Dr. Enrico Castillo is the Associate Vice Chair for Justice, Equity, Diversity, and Inclusion at the University of California Los Angeles (UCLA) Department of Psychiatry and is an Assistant Professor in the UCLA Center for Social Medicine. Dr. Castillo's research focuses on health equity, serious mental illness, and community-public-academic partnerships. Dr. Castillo aims to improve the capacity of public systems to address inequities. He leads a NIMH-funded project on the jail-to-homelessness pipeline experienced by individuals with serious mental illness (K23 MH125201). As a New Voices cohort member, Dr. Castillo participated in the National Academies Workshop on "Improving Access to High-quality Mental Health Care for Veterans" and served on the Letten Prize Committee and the organizing committee of the Arab-American Frontiers of Science, Engineering, and Medicine Symposium. Dr. Castillo is a member of the California State Council on Criminal Justice and Behavioral Health. He holds national leadership roles related to health equity in research policy and medical education in the American Psychiatric Association, Association of American Medical Colleges, Career Development Institute for Psychiatry, American Association of Directors of Psychiatric Residency Training, and National Anti-racism in Medicine Curriculum Coalition. Dr. Castillo received his BA with High Distinction from the University of Virginia, his medical degree with a concentration in underserved populations from the University of Pittsburgh, and his MS in Health Policy and Management from UCLA. He completed his residency and public psychiatry clinical fellowship at Columbia University and his postdoctoral research fellowship at the UCLA Robert Wood Johnson Foundation Clinical Scholars Program.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Stephanie Diem
Assistant Professor in the Nuclear Engineering and Engineering Physics, the University of Wisconsin-Madison
Madison, WI
Academia

Focus Areas: Fusion Energy; Women in Science, Engineering and Medicine; GUIRR & Workforce Development; Energy Systems; Community Engagement and Misinformation

Dr. Stephanie Diem is an Assistant Professor in the Nuclear Engineering and Engineering Physics at the University of Wisconsin-Madison, where her experimental plasma physics research focuses on using microwaves to heat and drive current in magnetically confined, high-temperature plasmas for fusion energy development. Dr. Diem is the Primary Investigator of the Pegasus-III Experiment, a new fusion experiment funded by the US Department of Energy studying innovative plasma startup techniques in an effort to reduce the cost and complexity of future fusion power plants. She was an invited speaker at the 2022 White House Summit: Developing a Bold Decadal Vision for Commercial Fusion Energy. Prior to joining the faculty at UW-Madison, she was a Staff Scientist at Oak Ridge National Laboratory on long-term assignment at the DIII-D National Fusion Facility in San Diego, CA.

Dr. Diem was selected as a member of the 2021 New Voices in Science, Engineering, and Medicine cohort and currently serves as Co-Chair. New Voices activities have included: co-author JEE article engineering education, New Voices One Health Webinar Series and she has worked on several projects through the NAS Science & Entertainment Exchange. Prior to New Voices, she was one of the organizers of the Early Career Fusion Scientists (ECFS) forum, a grassroots organization which initiated discussions and polling among the early career community to provide input to the National Academies Committee on a Strategic Plan for U.S. Burning Plasma Research. Diem received her B.S. in Nuclear Engineering at UW-Madison and her Ph.D. in Astrophysical Sciences from Princeton University.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Meghana Gadgil
Assistant Professor of Medicine, University of California San Francisco (UCSF) and an Adjunct Assistant Professor, UC Berkeley (UCB) School of Public Health
San Franciso, CA
Academia

Focus Areas: Medicine; Public Health; Health Systems; Climate Change; Gender Equity in Medicine

Dr. Meghana Gadgil is an Assistant Professor of Medicine at the University of California San Francisco (UCSF) and an Adjunct Assistant Professor at the UC Berkeley (UCB) School of Public Health. She is also the Director of Innovation at The Better Lab, a human-centered design research and practice venture at UCSF with a focus on vulnerable populations. Dr. Gadgil received her dual undergraduate degrees and master's in public health (MPH) from UC Berkeley. She completed her medical degree (MD) at the Jacobs School of Medicine at the University at Buffalo and trained in Internal Medicine at Stanford in the Global Health Track. Prior to joining the University of California, Dr. Gadgil spent five years on the faculty at Dell Medical School at UT Austin, where her work as an academic hospitalist was complemented by positions with the Design Institute for Health, the Value Institute, and in the Division of Global Health. Dr. Gadgil's research interests include health system resilience in response to climate change and environmental health vulnerabilities, chronic disease in South Asian and Latin American populations, and the innovative applications of human-centered design to understand and address complex, system-level challenges that cross disciplines. For the past ten years, she has also been engaged in research, advocacy and mentorship to improve gender equity in medicine. Dr. Gadgil's clinical foci include the care of vulnerable populations, medical education, and capacity building in low-resource health care and public health settings. Dr. Gadgil has been recognized with a Fulbright Fellowship to Bangladesh and has twice been a Johnson & Johnson Global Health Scholar for work in Uganda and Borneo. At UT Austin, she was awarded the President's Award for Global Learning for work in Mexico and won the Dell Medical School Teaching Excellence Award. Dr. Gadgil is a Fellow of the American College of Physicians.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Mary L. Garcia-Cazarin
Deputy Director of Extramural Research, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), National Institutes of Health (NIH).
Rockville, MD
Government

Focus Areas: Arthritis, Bone, Musculoskeletal and Skin diseases

Dr. Mary L. Garcia-Cazarin is the Deputy Director of Extramural Research at NIAMS, a role that she has held since June 2023. As the Deputy Director, she participates in the management, planning, coordination, and communication of scientific programs. This includes participation in program development; implementation and identification of emerging opportunities and challenges in areas of the NIAMS mission; oversight of the program analyst team; representing NIAMS at NIH-wide meetings; and coordinating with other NIAMS senior leadership team members. Dr. Garcia-Cazarin has extensive experience working across and within Federal agencies and has led initiatives to stimulate and implement research and programs related to disease prevention, regulatory science, and public health. Dr. Garcia-Cazarin has committed her career to public service and is passionate about training and mentoring. She first joined NIH in 2012 as an American Association for the Advancement of Science (AAAS) Science and Technology Fellow in the Office of Dietary Supplements. In 2014, Dr. Garcia-Cazarin joined the NIH Office of Disease Prevention as a Scientific Advisor, where she supported the NIH and FDA partnership and helped develop national scientific programming related to tobacco regulatory science and disease prevention. Outside of work, Dr. Garcia-Cazarin volunteers her time and expertise to advocate and mentor in outreach programs working to increase the participation of underrepresented groups in science-related fields. In recognition of these efforts, she won the NIH's prestigious 2020 Ruth L. Kirschstein Mentoring Award. She has also volunteered for in the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) since 2008, and served as an elected board member from 2015-2017. Dr. Garcia-Cazarin holds a bachelor's degree in Chemistry from Universidad Veracruzana, Mexico; a master's degree in Biology from James Madison University; and a Ph.D. in Pharmacology from the University of Kentucky.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Umut A. Gurkan
Wilbert J. Austin Professor of Engineering, Case Western Reserve University
Cleveland, OH
Academia

Focus Areas: Government University Industry Research; Global Health and Personalized Health; Future of Health and One Health; Bio Manufacturing; Cell and Gene Therapy

Umut A. Gurkan, Ph.D., is the Wilbert J. Austin Professor of Engineering at Case Western Reserve University. Dr. Gurkan holds BS degrees in Chemical Engineering and Mechanical Engineering from the Middle East Technical University in Turkey and a Ph.D. in Biomedical Engineering from Purdue University. He completed his postdoctoral training at Harvard Medical School and Harvard-MIT Health Sciences and Technology. Dr. Gurkan's research is on global equitable access to diagnostics and personalized health. Dr. Gurkan has authored over 100 peer-reviewed journal articles. Dr. Gurkan's inventions have led to 13+ issued US patents and four successful biotechnology companies to date with products in global markets. Dr. Gurkan's innovations won numerous awards, including USPTO Patents for Humanity recognition and USFDA Breakthrough Device Designation. His honors include National Science Foundation CAREER Award, Translational Research Featured New Investigator Award, MIT Technology Review Innovator under 35 Award, the Doris Duke Innovations in Clinical Research Award. Dr. Gurkan is a member of the Global Gene Therapy Initiative, American Society of Mechanical Engineers, Biomedical Engineering Society, and American Society of Hematology. Dr. Gurkan is a Senior Member of the National Academy of Inventors (NAI), a member of the New Voices in Science, Engineering and Medicine Program by the The National Academies and a fellow of the American Institute for Medical and Biological Engineering (AIMBE). Dr. Gurkan has attended the First US Africa Frontiers in Science Engineering and Medicine Symposium, and he is co-chairing the 9th Arab American Frontiers Symposium.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Brandy Huderson
Associate Professor, University of the District of Columbia
Washington, D.C.
Academia

Focus Areas: Workforce Development; Higher Education; DEI; STEM Ed Policy; Women in STEM Initiatives

Dr. Brandy Huderson is a STEM educator with extensive experience in higher education instruction, scientific research, informal STEM education programming, project management, qualitative and quantitative portfolio analysis, program evaluation, and federal grant management. Dr. Huderson is an Associate Professor at the University of the District of Columbia where her research focuses on steroid receptor biology, in normal and abhorrent systems, as well as STEM Education. Dr. Huderson works in project management, managing federal scholarship programs working to increase diversity in STEM. She is also a DEI Consultant with Avent Diversity Consulting, and STEM Innovations, specializing in institutional and organizational change, strategic planning, and program evaluation. Dr. Huderson is a former American Association for the Advancement of Science (AAAS) Science and Technology Policy Fellow (STPF) and was placed at the National Science Foundation (NSF) in the Directorate for Education and Human Resources (EHR). Dr. B. Huderson has a B.S. in Biology from Xavier University of Louisiana (New Orleans, LA), Masters of Biological Sciences degree with concentrations in Molecular Genetics from the University of New Orleans (LA), and a PhD in Animal Science with a concentration in Dairy Science from Virginia Tech (Blacksburg, VA).

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Darshan Karwat
Assistant Professor, Arizona State University Co-Founder of the Constellation Prize
Washington, D.C.
Academia

Focus Areas: Engineering; Sustainability Ethics; Human Rights in Engineering; Space Systems; Aerospace Engineering

Darshan Karwat, an unexpected academic, is an aerospace engineer by training, with a background in combustion chemistry, gas dynamics, and sustainability ethics from the University of Michigan. Over the last few years, as an assistant professor at Arizona State University, he has focused on (1) issues related to engineering, environmental protection, social justice, peace, and human rights; (2) questioning (and changing) the assumptions that underpin how and why we engineer the way we do; and (3) reimagining the future of energy and environmental governance. He misses working on space systems and is figuring out his way back into that world. (Insights always welcome!) Originally from Mumbai, he's spent time as a AAAS Science and Technology Policy Fellow at the US EPA and US DOE. He loves soccer than most things.

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NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCES

Elena Krieger

Director of Research, PSE Healthy Energy

Oakland, CA

Non-Profit

Focus Areas: Clean Energy Transitions; Energy Resilience; Energy Equity; Energy Storage; Energy Policy

Dr. Elena Krieger is the Director of Research at PSE Healthy Energy, an energy science and policy research institute based in Oakland, California. She joined PSE in 2013 to launch the organization's clean energy practice area, and now oversees its scientific research efforts. Her current work focuses on accelerating the transition to clean and renewable energy resources, and developing transition pathways that realize health, environment, equity, and resilience co-benefits. She serves as principal investigator on numerous scientific research projects, and simultaneously works closely with community organizations, non-profits, policymakers, regulators, and other stakeholders to use data and science to inform energy policy decisions. In turn, her research is deeply informed by the questions posed and challenges faced by these stakeholders. Dr. Krieger is currently a member of the Disadvantaged Communities Advisory Group to the California Energy Commission and the California Public Utilities Commission and serves on the board of the CEE Partnership. During her time in New Voices, she also served on the National Academies Committee on Hazard Mitigation and Resilience Applied Research Topics, The National Academies Committee on the Role of Net Metering in the Evolving Electricity System, and—as a representative of the New Voices—as a member of the Letten Prize Committee. She received her PhD in Mechanical & Aerospace Engineering from Princeton, where her research focused on optimizing energy storage in renewable systems, and holds an AB in Physics and Astronomy & Astrophysics from Harvard.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Meghan Lane-Fall
David E. Longnecker Associate Professor and Vice Chair of Inclusion, Diversity, and Equity, Department of Anesthesiology and Critical Care
Philadelphia, PA
Academia

Focus Areas: Implementation Science & Environmental Health; Change Management and Systems Engineering in Healthcare; Clinical Medicine (especially acute care medicine); Inclusion, Diversity, and Equity in the Scientific Workforce; Social Science Research Methodology

Dr. Meghan Lane-Fall is an implementation scientist and practicing anesthesiologist and intensive care physician. She serves as the David E. Longnecker Associate Professor and Vice Chair of Inclusion, Diversity, and Equity in the Department of Anesthesiology and Critical Care, with a secondary faculty appointment in epidemiology. Dr. Lane-Fall is also the Executive Director of the Penn Implementation Science Center at the Leonard Davis Institute of Health Economics. Her social science lab focuses on the application of implementation science and systems engineering to improve patient safety and communication in perioperative and critical care settings. She has a particular interest in learning health systems science and has methodological expertise in the use of qualitative and mixed methods approaches to scientific inquiry. She collaborates as an implementation science methodologist on a suite of projects, including work focused on maternal health and structural racism. Dr. Lane-Fall's work is supported by grant funding from the National Institutes of Health, the Agency for Healthcare Research and Quality, the Patient Centered Outcomes Research Institute, and the American Heart Association. Dr. Lane-Fall also serves as Vice President of the Anesthesia Patient Safety Foundation and is on the Board of Directors of the Foundation for Anesthesia Education and Research.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Hussam Mahmoud
George T. Abell Professor in Infrastructure, Colorado State University
Fort Collins, CO
Academia

Focus Areas: Sustainable Infrastructure and Communities; Extreme Events and Resilience; Healthcare System Resilience; Climate Change and Mitigations; Risk-informed Decisions

Hussam Mahmoud is the George T. Abell Professor in Infrastructure at Colorado State University. He obtained his BSc and MSc in civil engineering from the University of Minnesota and his PhD from the University of Illinois at Urbana-Champaign. Dr. Mahmoud's research is focused on sustainable and resilient infrastructure and communities with emphasis on developing socio-physical to capture the recovery of systems as influenced by human behavior and socio-economic policies. He has been developing models for risk-informed recovery of infrastructure with focus on hospitals and schools using complex systems analysis. He has authored over 250 publications and has given more than 120 presentations including 100 invited talks at national and international conferences and workshops. He has chaired and served on numerous technical committees, including the ASCE Committees on Fire Protection and on Multi-hazard Mitigation. Dr. Mahmoud is a Fellow of the Structural Engineering Institute and is the recipient of various awards, including the American Institute of Steel Construction early faculty career award, the American Iron and Steel Institute Robert J. Dexter Memorial Lecture award, and the Air Force summer faculty fellowship award. He has recently been selected by The National Academies among the 22 New Voices Cohort from across the U.S. He has been invited to various symposia by the U.S. National Academies, the Royal Academy of Engineering, and the Royal Institute of International Affairs. His research has received media coverage through citations and interviews in numerous venues, including Nature Climate Change, The U.S. National Academy of Engineering, Smithsonian Magazine, and CNN.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Benedetto Marelli
Associate Professor in the Department of Civil and Environmental Engineering at the Massachusetts Institute of Technology
Cambridge, MA
Academia

Focus Areas: Biomedical Engineering; Agriculture; Urban Farming; Food Safety, and Food Security

Benedetto Marelli received a B.Eng. and a M.Sc. in Biomedical Engineering from Politecnico di Milano in 2005 and 2008 and a PhD in Materials Science from McGill University in 2012. After a Postdoc in the Silklab at Tufts University, Benedetto joined the MIT Faculty in November 2015. At MIT, the Marelli research group works in the areas of structural biopolymers and nanomanufacturing. By using biofabrication strategies that integrate bottom-up and top-down techniques, the research efforts are focused on the design of materials that act at the biotic/abiotic interface with applications in precision agriculture, urban farming, food safety, and food security. Benedetto has received several awards, including PECASE, NSF CAREER, ONR Young Investigator Award, ONR Director of Research Early Career Award and the BII& Science Prize for Innovation. Benedetto's research resulted in more than 20 IP positions, and he is co-founder of Mori Inc., which uses silk technologies to enhance the preservation of perishable food.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENGINEERING

Michael James Martin
Staff Scientist, National Renewable Energy Laboratory
Golden, CO
Government

Focus Areas: Climate and Energy; Human Rights; Engineering Education; Fluid Dynamics and Heat Transfer Research; Sustainability

Michael James Martin's participation in New Voices includes projects in the climate group, where he led an assessment of challenges in engineering education linked to climate change, and work in science and human rights with National Academies' Human Rights Committee. He is a scientist at the National Renewable Energy Laboratory (NREL), where his research includes simulation of new energy technologies operating at extreme temperatures and the sustainability of new technologies. Dr. Martin leads NREL activities in applying high-performance computing to advanced manufacturing, and co-leads initiatives in atmospheric sciences at NREL's Joint Institute for Strategic Energy Analysis. Prior to joining NREL, Dr. Martin held scientific positions at the Naval Research Laboratory, Louisiana State University, and NASA's Jet Propulsion Laboratory; as well as science policy fellowships at the Department of Energy, the United States Senate, and the National Academies. Dr. Martin previously served as a volunteer advisor at the Institute for International Education's Scholar Rescue Fund (SRF), where he wrote the first journal paper on the challenges facing displaced scientists. He is also a member of the American Society of Mechanical Engineers (ASME) Energy Policy Committee. Dr. Martin is a Fellow of the ASME and an Associate Fellow of the AIAA. Dr. Martin received a PhD in Aerospace Engineering, an MA in Asian Studies, and an MS in Mechanical Engineering from the University of Michigan. Dr. Martin also holds an MS in Science and Technology Studies from Virginia Tech and a BS in Mechanical Engineering from the University of Florida.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Jesús Alvelo Maurosa
Chief Science and Sustainability Officer, Zion Capital Investment
Washington, D.C.
Industry

Focus Areas: Sustainability; Epidemiology; Environmental Microbiology; Climate Change; Natural Disasters

Jesús Alvelo Maurosa is the Chief Science and Sustainability Officer for Zion Capital Investment, a private equity firm focused on the aerospace industry. Formerly, Dr. Alvelo Maurosa worked at the National Science Foundation in the Directorate of Engineering for 5 years working as an Engineer/Science Analyst for the Division of Civil, Mechanical and Manufacturing Innovation where he provided data and scientific analysis to senior leadership across the division and the directorate. He also worked in multiple research solicitations such as the Disaster Resilience Research Grants, an initiative with the National Institute of Standards and Technology, and the Navigating the New Artic, an NSF 10 Big Idea Initiative. In 2016 he was a postdoctoral researcher at Massachusetts Institute of Technology at the Department of Civil and Environmental Engineering researching how viruses and bacteria spread through sneezes and cough. In 2016, Jesus obtained his Ph.D. in microbiology from University of Massachusetts Amherst, he received his B.S. from Universidad de Puerto Rico del Recinto de Río Piedras in 2008. During the National Academies New Voices Cohort 2021-2023 Dr. Alvelo Maurosa contributed in developing a survey to measure the impact of National Academies New Voices program on the cohort on their first year, attended a G7 Research Summit One Health in Canada, deposed at a Board on Higher Education and Workforce panel regarding the statues of Federal STEM workforce and reviewed proposals of 2023 US NAM Catalyst Award Competition and the National Academies Scientists and Engineers in Exile or Displaced (SEED) program for displaced Ukrainian scientists.

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NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCES

Clare Rittschof
Associate Professor of Entomology, University of Kentucky
Lexington, KY
Academia

Focus Areas: Entomology; Behavioral Ecology; Sociobiology; Neuroscience; Genomics; Ethics in Sciences; Environmental change; STEM education

Dr. Clare Rittschof is an Associate Professor of Entomology at the University of Kentucky. Her unusually integrative research program, focused primarily on honey bees, includes approaches from molecular neuroscience to landscape ecology. She studies how the social environment shapes behaviors, and the interplay between social behaviors and health. In pursuit of principles that unify social species, she has studied diverse organisms including humans, and collaborated broadly across the social and medical sciences. Clare has served as a science policy fellow and committee member for the 7,000-member Entomological Society of America (ESA), leading the development of position statements on climate change and pollinator health, and organizing a symposium on policy and communication. She also chaired the Ethics Committee, focused on modernizing the society's code of conduct to emphasize inclusive behavior. She has participated in over 45 public outreach events on neuroscience and bee biology in the last five years alone, and she launched a citizen-science honey bee virus project and invites beekeepers into her research lab. Clare's original courses, Bees & People and The Neuroscience of Pollination, emphasize the diverse cultural and biological connections between pollinators and humans while educating students on the process of scientific consensus building. Clare's work has been recognized for its unusual breadth and novelty, earning her an Outstanding New Investigator Award (Animal Behavior Society), an Early Career Innovation Award (ESA), and a Career Development Award from the National Science Foundation. Her research-education program includes a strong emphasis on high school and undergraduate career mentoring in agricultural STEM.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Patricia Silveyra
Chair of the Department of Environmental and Occupational Health, Indiana University Bloomington School of Public Health
Bloomington, IN
Academia

Focus Areas: Lung Diseases; Diversity in STEM; Faculty Development; Environmental Toxicology; Supporting International Trainees

Dr. Patricia Silveyra is the Anthony D. Pantaleoni Eminent Scholar, Associate Professor, and Chair of the Department of Environmental and Occupational Health at Indiana University Bloomington School of Public Health. She earned her bachelor's and master's degrees in molecular biology and biotechnology, and her PhD in Biochemistry, from the University of Buenos Aires, Argentina and did her postdoctoral training as a Rotary International Ambassadorial Scholar at Penn State College of Medicine. In 2013, she established her research program as an Assistant Professor, and between 2015-2016, she served as the Director for Diversity, Equity and Inclusion in Education at Penn State College of Medicine. From 2018-2020, she led the Biobehavioral Laboratory at the University of North Carolina at Chapel Hill, and in 2021, she joined Indiana University Bloomington. Dr. Silveyra has served in various national organizations and committees committed to increase representation of women and minorities in STEM, including the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), where she was board member and Treasurer. She was part of the first cohort of the New Voices program, and she served in The National Academies Board on Higher Education and Workforce (BHEW). Dr. Silveyra has received numerous awards for her research accomplishments, her mentoring of underrepresented and international trainees, and her efforts to promote diversity in STEM at the local, national, and international level.

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NATIONAL ACADEMIES Sciences Engineering Medicine

BIOMEDICAL ENGINEERING

Kelly R. Stevens
Associate Professor of Bioengineering, and Laboratory Medicine & Pathology, University of Washington
Seattle, WA
Academia

Focus Areas: 3D Bioprinting; Medicine; Equity in Science Funding; Stem cells; Organ Mapping

Dr. Kelly R. Stevens is an Assistant Professor of Bioengineering, and Laboratory Medicine & Pathology at the University of Washington. Dr. Stevens' research team focuses on human organ design. Her team is developing molecular blueprints of human organs, as well as new fabrication methods to build human organs, such as by 3D printing. Dr. Stevens has received awards for this work such as the NIH New Innovator Award, BMES CMBE Rising Star Award, John Tietze Stem Cell Scientist Award, Keck Foundation Award, and Gree Scholar Award. Her work in 3D Bioprinting and organ mapping has been spotlighted by over 500 media outlets worldwide.

Dr. Stevens co-founded and co-leads a nationwide coalition of ~400 scientists and engineers working to dismantle racial and ethnic inequities in the academy. This coalition's first effort generated the Fund Black Scientists movement, which refocused attention on racial funding disparity in biomedical research. Dr. Stevens works to disseminate the message that to develop advances that equitably improve the lives of all people, our profession needs to include all people – diversity is the requisite engine of innovation and impact that will lead us successfully into the post-pandemic world.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE

Catharine Young
Assistant Director of Cancer Moonshot Policy and International Engagement, The White House
Washington, D.C.
Government

Focus Areas: Cancer research; Biotech; Biomedical; Science Policy; Entrepreneurship

Originally from South Africa, Dr. Catharine Young holds a doctorate degree in Biomedical Sciences and currently serves in the White House Office of Science and Technology Policy. Here she works to advance the Cancer Moonshot - The President and First Lady's mission to decrease the cancer death rate by 50% over the next 25 years. Her focus on cancer began with serving as the Senior Director of Science Policy at the Biden Cancer Initiative (BCI), a non-profit established in 2017 by then former Vice President Biden, leading efforts to bring together the biotech, technology, science, and academic fields to drive innovative solutions and breakthroughs against cancer. Catharine then served as the Executive Director of a Rare Cancer Advocacy organization, where she advanced policy reform and awareness for all rare cancers. Prior to BCI, Catharine served as the Senior Science and Innovation Policy Advisor and Head of the DC team for the Foreign Ministry of the UK. Following her Postdoctoral training at Cornell University in Biomedical Engineering, Catharine was selected as an American Association for the Advancement of Science, Science and Technology Policy Fellow in the Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs. Here she helped lead international engagements on eliminating biological weapons, improving biosafety and biosecurity, and establishing and enhancing biosurveillance capacity, and assisted with the DoD's response to the Ebola outbreak in Western Africa, during the Obama Administration. Awards include being selected as a TED Fellow, a New Voices Fellow of the National Academies of Science, Engineering and Medicine, a Presidential Leadership Scholar, and Social Enablers top 100 most inspiring social entrepreneurs. Catharine is an advocate for women in STEM and has been a contributor to major social and media networks including TED-Ed, the Guardian and the UK Science and Innovation Network.

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NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCES

Tamara Jane Zelikova
Executive Director at the Soil Carbon Solutions Center
Colorado State University
Fort Collins, CO
Academia

Focus Areas: Climate Policy; Carbon Sequestration; STEM Diversity; Ecosystem Science; Science communication

Tamara Jane Zelikova is an ecosystem scientist working at the intersection of climate science and policy. She earned a PhD from the University of Colorado, has published in scientific journals and popular media outlets and written and contributed to climate policy reports. Her research focuses on examining the effects of global change in natural and managed ecosystems. Most recently, she focused on scaling engineered and natural carbon sequestration and advancing the science of carbon removal. She is also the co-founder of 500 Women Scientists, a global grassroots organizing with the mission to make science open, inclusive, and accessible and to fight racism, patriarchy, and oppressive societal norms. In addition to her science and activism, she is also a filmmaker and works on bringing a creative eye to science-based projects.

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2024-26 Cohort of New Voices in Sciences, Engineering, and Medicine

New Voices Member Bios

BIOMEDICAL ENGINEERING

Kiana Aran

Associate Professor, University of California San Diego

San Diego, CA

Academia and Industry Sectors

Focus/Research Areas: Digital Biology; Integration of Biology with Semiconductor industry for healthcare and Biotech applications; Developing Bioelectronic systems for healthy aging

Prof. Kiana Aran is an Associate Professor of Bioengineering and Medicine at the University of California, San Diego. She is also the Co-Founder and Chief Scientific Officer at Cardea Bio (M&A, Paragraf) a biotechnology company developing graphene-based biosensors. She is also the co-founder of CRISPR QC, a biotechnology company that develops analytical tools for CRISPR gene editing. Prof. Aran received her B.S. in Electrical Engineering from the City University of New York and her Ph.D. in Biomedical Engineering from Rutgers University. She then continued her postdoctoral studies in bioengineering at the University of California, Berkeley, and was a recipient of the National Institutes of Health postdoctoral training fellowship at the Buck Institute for Aging Research in 2015. Her efforts have been recognized within the scientific community by the Clinical OMICs 10 under 40 Award, Athena Pinnacle Award in Life Sciences, NSF Career Award, Nature Research Awards for Most Inspiring Women in Science in 2021, Distinguished Engineering Medal of Excellence from Rutgers University in 2022, and Inc. USA top 200 female founders in 2023. Prof. Aran is also a selected member of the WORLD.MINDS community and is the recipient of multiple National Science Foundation, National Institute of Health, Department of Defense, NASA, and Gates Foundation grants to develop the next generation of electronics for precision medicine and digital biology. Prof. Aran is a big advocate for leadership training and alliance between academia, industry, and government to promote impactful science.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE – INFECTIOUS DISEASES

Sabrina Assoumou

Associate Professor and Inaugural Louis W. Sullivan, MD, Endowed Professor of Medicine, Boston University, Boston Medical Center

Boston, MA

Academia

Focus/Research Areas: Infectious complications of substance use including HIV and hepatitis C

Sabrina A. Assoumou, MD, MPH, is a physician-scientist and the inaugural Louis W. Sullivan, MD, Professor of Medicine at Boston University. She is also an infectious diseases physician at Boston Medical Center. Dr. Assoumou is a thought leader in research focused on infectious complications of substance use including HIV and hepatitis C. Her research uses health economics to inform guidance panels on the best approach to improve the uptake and implementation of evidence-based interventions. She also develops and implements interventions. Her research has been published in leading journals such as JAMA, Annals of Internal Medicine, and Clinical Infectious Diseases. Her findings have also informed the Centers for Disease Control and Prevention and the Infectious Diseases Society of America's guidance panels. Her current research on HIV prevention is funded by the National Institutes of Drug Abuse. Dr. Assoumou graduated magna cum laude from Williams College and obtained her medical degree from the University of Rochester School of Medicine and Dentistry. She then completed a combined Internal Medicine/Pediatrics residency at Brown University and an Infectious Diseases Fellowship at Harvard University's Beth Israel Deaconess Medical Center. She has received research honors that include Boston University's Evans Junior Faculty Research Merit and Evans Investment awards and the Massachusetts Infectious Disease Society's Finland Award for Research Excellence as well as teaching awards including Boston Medical Center's Excellence in Teaching Hospital-Based Faculty Award. Dr. Assoumou is also a recipient of an Extraordinary Women Advancing Healthcare in Massachusetts Award by The Women's Edge.

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NATIONAL ACADEMIES Sciences Engineering Medicine

COMPUTER ENGINEERING

Ayodeji Coker

Director, Intelligent Systems, Booz Allen Hamilton

Washington, DC

Industry Sector

Focus/Research Areas: Autonomous Systems; Artificial Intelligence

Dr. Ayodeji Coker is the Director of Intelligent Systems at Booz Allen Hamilton, where he provides AI and Autonomy subject matter expertise, thought leadership, and strategic vision to the GDS NMC Account. Prior to this role, he served as the Office of Naval Research (ONR) Portfolio Manager for Autonomy. As a Portfolio Manager, he led ONR's corporate strategy in Autonomy, managed the corresponding investment portfolio, and provided focus on transition, operationalization, and fielding for autonomy and autonomous unmanned systems. Dr. Coker has also served as a Science Director for Artificial Intelligence, Autonomy, and Unmanned Systems at the Office of Naval Research Global (ONRG) London office. In this capacity, he built a program spanning Complex Adaptive Systems and Distributed and Collaborative Autonomy with particular emphasis on Swarm intelligence. His primary responsibilities were to scout and fund cutting-edge research and facilitate collaboration and partnership opportunities between scientists in Europe and the U.S. Naval Science and Technology Research Enterprise and academic institutions. He was also responsible for coordinating ONRG S&T activities in Sweden, Italy, and Sub-Saharan Africa.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE - INFECTIOUS DISEASES

Angel Desai

Assistant Professor, University of California Davis

Sacramento, CA

Academia

Focus/Research Areas: Emerging Infectious Diseases; Clinical Countermeasures; Infection Prevention and Control; Migration Health; Global Health

Dr. Angel Desai, MD, MPH (she/her) is an infectious diseases physician and Assistant Professor at the University of California, Davis. Her research focuses on leveraging novel data sources to discern epidemiological trends in emerging diseases and outbreaks, particularly among displaced and other vulnerable populations. Her other interests include global infection prevention and control measures in resource-limited settings and health communication. She completed her internal medicine training at the University of Washington, infectious diseases fellowship at Massachusetts General Hospital/Brigham & Women's, and Master of Public Health at the Harvard TH Chan School of Public Health. She is an Emerging Leaders in Biosecurity Initiative Fellow at the Johns Hopkins Center for Health Security, 40 under 40 at the National Minority Health Forum, and a Term Member at the Council on Foreign Relations.

Instagram: @angdesai

NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCES - BIOLOGY

Monica Dus
Associate Professor, University of Michigan
Ann Arbor, MI
Academia

Focus/Research Areas: Molecular Genetics; Neuroscience; Nutrigenomics; Nutrition

Monica Dus is a tenured molecular biology and neuroscience professor at the College of Literature, Science, and the Arts at the University of Michigan in Ann Arbor, MI. She leads a research laboratory that studies the interplay between food, genes, and brain function, teaches undergraduate students, and is actively involved in public engagement and science communication. This year she is on leave from her academic position to assist the Secretary of the Navy in matters of education, mental health, and science as part of the White House Fellowship. Her scholarly and science communication work in nutrigenomics and neuroscience has been published in the top scientific journals and recognized with grants and awards, such as the Guggenheim Fellowship, the Sloan Research Fellowship, the NIH New Innovator Award, the NSF CAREER Award, the Ajimonoto Award in Gustation, the Rita Allen Foundation Scholars, and the Brain and Behavior New Investigator Award. Dr. Dus is a passionate teacher and science communicator. She teaches neuroscience and genetics to hundreds of undergraduates, and has contributed to museum workshops and exhibits, published *SugarBuzz*, a children's comic book about food, hosted her own science podcasts (How to Science and Neuroepic), written for *The Conversation,* and participated in documentaries, radios shows, and podcasts. She holds a Ph. D. in molecular biology from Cold Spring Harbor Laboratory and a post-doctorate in neurobiology from New York University.

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NATIONAL ACADEMIES Sciences Engineering Medicine

EARTH AND ENVIRONMENTAL SCIENCES

Rachel Gallery

Professor, University of Arizona

Tucson, AZ

Academia

Focus/Research Areas: Biodiversity; Climate Change; Ecology; Natural Resource Conservation; Soil Health; Science Communication

Dr. Rachel E. Gallery is the Thomas E. Lovejoy Endowed Chair in Biodiversity, Conservation Science, and Policy and a Professor of Microbial Ecology in the School of Natural Resources and the Environment at the University of Arizona. With an emphasis on enhancing equity and inclusion in STEM, Rachel builds opportunities to support global biodiversity conservation. Her research focuses on the ecology and conservation of soils and on sustaining ecosystem resilience in the face of wildfires, droughts, species invasions, and climate change. Rachel holds a Ph.D. in Plant Biology from the University of Illinois, Urbana-Champaign, and a B.S. in Biology from American University. A former Research Fellow of Wolfson College and Postdoctoral Research Associate at the University of Oxford, she was also a Staff Scientist at the National Ecological Observatory Network before joining the University of Arizona faculty. A Fulbright Scholar and a former fellow and current member of the American Association of University Women, Rachel serves on nonprofit advisory boards, international working groups, and proposal review panels and regularly speaks at local outreach events and international conferences.

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NATIONAL ACADEMIES Sciences Engineering Medicine

INDUSTRIAL AND OPERATIONS ENGINEERING

Mariel Lavieri

Associate Professor, University of Michigan

Ann Arbor, MI

Academia

Focus/Research Areas: Applications of Operations Research to Healthcare Medical Decision Making: Disease Modeling; Treatment Decisions; Outcomes Measurement; Screening and Monitoring Rules; Chronic Disease Management Policy and Operations: Health Workforce Planning; Patient Flow Modeling; Capacity Planning; Global Health; Resource Allocation; Hospital Readmissions; Organ Allocation Methodology: Dynamic Programming; Reinforcement Learning; Stochastic Control; Partially Observable State Space Models; Applied Statistics; Data Analytics; Bayesian Updating; Optimization; Simulation

Mariel Lavieri is an Associate Professor and the Associate Chair for Undergraduate Studies in the Department of Industrial and Operations Engineering at the University of Michigan. Born in Caracas, Venezuela, she has a Bachelor's Degree in Industrial and Systems Engineering and Statistics, and a minor in String Bass Performance from the University of Florida. She holds a Master's Degree and Ph.D. from the University of British Columbia. In her work, she applies operations research methods to medicine and human health. Among others, Dr. Lavieri has created dynamic programming, stochastic control, and continuous, partially observable state space models to guide screening, monitoring, and treatment decisions of chronic disease patients. She has designed models for health workforce and capacity planning that have guided both national and international policy. Dr. Lavieri's has been recognized for her championship of Diversity, Equity and Inclusion initiatives. Dr. Lavieri is the recipient of the National Science Foundation CAREER Award, the MICHR Distinguished Mentor Award, the Pierskalla Best Paper Award, and the Sanjay and Panna Mehrotra Research Excellence Award. She has guided work that won the Medical Decision-Making Lee Lusted Award, the INFORMS Doing Good with Good OR Award, the Minority Issues Forum Best Paper Award, and the Production and Operations Management Society College of Healthcare Operations Management Best Paper Award. Dr. Lavieri currently serves as the Health Care Department Editor at IISE Transactions and as the President of the Health Applications Society at The Institute for Operations Research and the Management Sciences.

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NATIONAL ACADEMIES Sciences Engineering Medicine

MECHANICAL ENGINEERING

Mitul Luhar

Associate Professor and Henry Salvatori Early Career Chair, University of Southern California

Los Angeles, CA

Academia

Focus/Research Areas: Aerodynamics; Hydrodynamics; Environmental Fluid Mechanics; Coastal Engineering; Nature-Based Infrastructure Solutions; Climate Resilience

Dr. Mitul Luhar is Associate Professor of Aerospace and Mechanical and Civil and Environmental Engineering at the University of Southern California (USC). His primary expertise is in fluid mechanics, and his research addresses hydrodynamic and aerodynamic design, soft robotics, environmental science, and coastal engineering. Mitul has worked on the development of functional materials and surfaces that can passively control fluid flows, the restoration of river systems, and the evaluation of nature-based defenses against coastal hazards. Before joining USC, Mitul was a Postdoctoral Scholar in the Graduate Aerospace Laboratories at Caltech. He earned his Ph.D. in Civil and Environmental Engineering from MIT where he was awarded the Presidential Fellowship and the Martin Family Society Fellowship for Sustainability. He earned B.A. and M.Eng. degrees from the University of Cambridge. Mitul has received the AFOSR Young Investigator Program award, the NSF CAREER award, and is a member of the Frontiers of Engineering community at the National Academy of Engineering. Mitul is the inaugural holder of the Henry Salvatori Early Career Chair in Engineering at USC.

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NATIONAL ACADEMIES Sciences Engineering Medicine

ENVIRONMENTAL ENGINEERING

Holly Mayton
Principal Scientist – Sustainability, Science, and Policy, Deere & Company
Urbandale, IA
Industry Sector

Focus/Research Areas: Digital and Precision Agriculture; Sustainability; Food Systems; Science Policy; Science Diplomacy; Carbon Accounting; Data Science

Dr. Holly Mayton works to advance sustainability through digital and precision agriculture as a member of John Deere's Sustainability Solutions team, where she integrates data analytics and scientific expertise with agriculture and climate policy. Holly is also a founding Co-Director and Senior Advisor of the National Science Policy Network (NSPN), a nonprofit coalition uniting thousands of early-career scientists and engineers committed to shaping equitable policy outcomes and championing the crucial role of science in society. Holly previously served as the Managing Director of the Internet of Things for Precision Agriculture (IoT4Ag) research center at the University of Pennsylvania and as a Science and Technology Policy Fellow in the U.S. Department of State's Office of Agriculture Policy, sponsored by the American Institute of Physics. Her science policy interest also extends to the state level where she has co-developed the Commonwealth of Virginia Engineering and Science (COVES) Policy Fellowship and, more recently, the Commonwealth of Pennsylvania Science and Technology Policy (COPA-STEP) Fellowship. Holly earned her Ph.D. in Chemical and Environmental Engineering with a Designated Emphasis in Public Policy from the University of California, Riverside, in 2018. Her graduate research focused on the fate of waterborne pathogens in agricultural environments, stimulating her interest in addressing critical, interdisciplinary challenges in the field. Originally from Virginia Beach, Holly holds a B.S. in Chemical Engineering from the University of Virginia. She is currently based in Philadelphia where she enjoys seeking out new flavors of water ice and rooting on the Sixers and UVA basketball.

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NATIONAL ACADEMIES Sciences Engineering Medicine

MECHANICAL ENGINEERING

Jessica Menold
Associate Professor of Engineering,
Pennsylvania State University
University Park, PA
Academia

Focus/Research Areas: Engineering design; Design Decision Making; Manufacturing; Immersive Technologies

Dr. Jessica Menold is an Associate Professor of Engineering Design and Mechanical Engineering. She is the Director of the Center for Immersive Experiences and Associate Director of Outreach and Inclusion at the Pennsylvania State Learning Factory. Her research explores fundamental issues related to engineering design and recent efforts to explore the interaction between design teams and intelligent agents, immersive technologies, the utility of digital twins, and the tradeoffs between nascent manufacturing technologies and design outcomes. Her work is funded by the National Science Foundation, the Air Force Office of Scientific Research, and Industry Partners.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE – PUBLIC HEALTH

Melanie Napier
Public Health Epidemiologist,
North Carolina Division of Public Health
Raleigh, NC
Government Sector

Focus/Research Areas: Public health; Epidemiology of Environmental Contaminants; Water quality; Children's Health; Lead Poisoning Prevention; Social Determinants of Health; Climate Change

For more than a decade, Dr. Melanie Napier's background as an epidemiologist in research and government settings has included a focus on environmental epidemiology and children's health. In her current role as an epidemiologist for the Childhood Lead Poisoning Prevention Program (CLPPP) at the North Carolina Division of Public Health, Melanie manages a cross-functional project team; implements strategies to improve data quality in the statewide lead surveillance system; and provides case management assistance, large group trainings and technical support for clinicians and environmental health professionals using the system. During her tenure, she has worked to strengthen the sustainability of the CLPPP in its growth from a single multi-year, $2.7 million federal grant to three multi-year initiatives totaling nearly $158 million. Melanie's skills in grant-writing, drafting legislative rules, and contract administration were pivotal in securing the $150 million American Rescue Plan Act-funded Lead and Asbestos Remediation in School and Child Care Facilities project and the $4.2 million EPA-funded Voluntary School and Child Care Lead Testing and Reduction Grant Program. Her professional efforts have contributed to several publications and awards, including the Mutual of America Community Partnership Award and Harvard Roy Family Award for Environmental Partnership, in recognition of the partnership to develop the Clean Water for Carolina Kids program which used community scientists to test for lead in water at almost all child care centers during the pandemic. Melanie earned her Master of Science in Public Health and Doctorate in Epidemiology at the UNC Gillings School of Global Public Health.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE – EMERGENCY CARE AND PUBLIC HEALTH

Jamaji C. Nwanaji-Enwerem
Emergency Medicine Chief Resident Physician and Adjunct Assistant Professor of Environmental Health, Emory University
Atlanta, GA
Academia

Focus/Research Areas: Advocacy; Aging; Air Pollution; Biomarkers; Built Environment; Chemical Exposure; Community Health & Development; Emergency Medicine; Environmental Health; Epigenetics; Exposome Geriatrics; Global Health; Health Equity; Public Policy; Social Determinants of Health

Jamaji C. Nwanaji-Enwerem, MD, PhD, MPP, is an Emergency Medicine Chief Resident Physician and Adjunct Assistant Professor of Environmental Health at Emory University. He also serves as the Executive Director of Elnd, a community environmental education/improvement organization. Dr. Nwanaji-Enwerem graduated Phi Beta Kappa, Valedictorian from Morehouse College. He earned his PhD in the Harvard University Biological Sciences in Public Health program, his Master's in Public Policy (MPP) from Harvard Kennedy School, and his MD from Harvard Medical School. He completed a postdoctoral research fellowship in Environmental Health Sciences at the University of California, Berkeley School of Public Health. He is an NIH National Research Service Award Principal Investigator and has served as a member of the World Health Organization technical advisory group for the occupational burden of disease estimation, the White House Office of Public Engagement Roundtables on Clinical Innovation and Health Equity, and the International Society of Exposure Science Board of Directors. Dr. Nwanaji-Enwerem is the recipient of numerous honors including being named a National Minority Quality Forum 2021 40 Under 40 Leader in Health, a Schmidt Futures International Strategy Forum Fellow, a Paul & Daisy Soros New American Fellow, and an Agents of Change in Environmental Justice Fellow. He has authored several peer-reviewed publications and given many domestic/international lectures on his research, which leverages molecular biomarkers to better understand how environmental exposures impact human aging and health, particularly for the underserved. His work further emphasizes the need for public policy solutions aimed at fostering greater health equity and environmental justice.

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NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCES - CHEMISTRY

Emily Pentzer

Associate Professor, Texas A&M University

College Station, TX

Academia

Focus/Research Areas: Polymers and Soft Matter for Carbon Capture; Thermal Energy Management; Electrochemical Energy Storage

Emily Pentzer is an Associate Professor in Chemistry and Materials Science and Engineering at Texas A&M University. She received a BS from Butler University (Chemistry, 2005) and PhD from Northwestern University (Chemistry, 2010). She then completed postdoctoral work in the Department of Polymer Science and Engineering at the University of Massachusetts, Amherst, before starting her independent career at Case Western Reserve University in 2013 and moving to Texas A&M in 2019. The Pentzer Lab's research centers on developing new polymeric materials and assemblies to understand structure-property-application relationships and access functions not possible with current state-of-the-art systems. Her group works on the encapsulation of "active" liquids and gases, designing and synthesizing new polymer chemistries, and developing feedstocks for additive manufacturing to produce multifunctional materials. Dr. Pentzer regularly participates in events aimed at the professional development of students and post-docs and facilitating their transition to vibrant STEM careers. She has received the NSF CAREER award (2016), PMSE Young Investigator Award (2017), CWRU Faculty Diversity Excellence Award (2019), ACS WCC Rising Star Award (2021), Journal of Polymer Science Innovation Award (2023); she was named a Texas A&M Presidential Impact Fellow (2021) and finalist for the Blavatnik Award in Physical Sciences and Engineering (2022). She serves as Editor-in-Chief of the new journal of the Royal Society of Chemistry: RSC Applied Polymers and was named a Vanguard Visiting Fellow at the University of Birmingham (UK, 2024). Emily is from Bedford, Indiana and currently lives in College Station, Texas with her husband, Dean Ilijasic, and dog Mika.

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NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCES – BIOLOGY

John Reich
Scientific Program Director,
Foundation for Food and Agriculture Research (FFAR)
Washington, DC
Non-Profit Sector

Focus/Research Areas: RNA biology; Development; Food and Agriculture Sciences; Urban Food Systems

John Reich joined the Foundation for Food and Agriculture Research (FFAR) in February 2016, as a Scientific Program Director. John joined FFAR because he strongly believes that advancements in the food and agriculture sector will be key to maintaining our quality of life and that the right investments at opportune moments will provide us with the necessary tools to overcome future challenges in agriculture. At FFAR, John works on building partnerships between the public and private sectors that target pre-competitive research to advance agriculture science including FFAR's first multi-stakeholder consortium, the Crops of the Future, creating a model for FFAR consortia, and his most recently announced consortium, the Precision Indoor Plants Collaborative. John continuously works on developing partnerships and programs that catalyze new areas of multi-disciplinary, cross-sectorial, and participatory research that build on current investments to benefit the public. Trained as a biomedical scientist, John applies his background in genetics, molecular biology, and biochemistry to a broad range of topics that support nutrition security, health, and economic opportunities through scientific advancement.

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NATIONAL ACADEMIES Sciences Engineering Medicine

HEALTH/MEDICINE – PRIMARY CARE

Lisa Rotenstein

Assistant Professor, University of California at San Francisco

San Francisco, CA

Academia

Focus/Research Areas: Primary Care; Mental Health; Gender Issues in Healthcare; Electronic Health Records; Workforce Wellbeing

Dr. Lisa Rotenstein is a primary care physician, researcher, and operational leader. She is an Assistant Professor of Medicine, Medical Director of Ambulatory Quality and Safety, and Primary Care Physician at the University of California, San Fransisco, Health. She additionally serves as the Director of the Physicians Foundation Center for Physician Experience and Practice Excellence. In her current roles, she oversees ambulatory quality and safety for the UCSF Health System and leads research aimed at finding actionable solutions to enhance the physician experience. Previously, she served as an Assistant Professor of Medicine and Medical Director of Population Health at Brigham and Women's Hospital, where she oversaw ambulatory quality and integrated behavioral health for BWH's 150,000 patients across sixteen practices. Dr. Rotenstein's research focuses on enhancing outpatient care delivery, the clinician experience, and the intersection of the electronic health record with these issues. Her research and writing have been published in JAMA, JAMA Internal Medicine, The New England Journal of Medicine, The Harvard Business Review, and more. She has presented her work to the National Academy of Medicine, Department of Health and Human Services leadership, and at Grand Rounds presentations across the United States. Dr. Rotenstein was named a 2021 STAT Wunderkind, a 2022 Modern Healthcare Top 25 Emerging Leader, and the 2022 Society of General Internal Medicine New England Region Investigator of the Year. She is a graduate of Harvard Medical School, Harvard Business School, and the Harvard School of Public Health.

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NATIONAL ACADEMIES Sciences Engineering Medicine

BIOMEDICAL ENGINEERING

Kaitlyn Sadtler
Investigator, National Institutes of Health
Bethesda, MD
Government Sector

Focus/Research Areas: Immuno-Engineering

Dr. Kaitlyn Sadtler is a scientist and Chief of the Section on Immuno-Engineering at the National Institutes of Health. She began her lab at the National Institute of Biomedical Imaging and Bioengineering after a postdoctoral fellowship at the Massachusetts Institute of Technology in the Department of Chemical Engineering working on the molecular mechanisms of immune activation in the foreign body response. She completed her Ph.D. at the Johns Hopkins University School of Medicine where she showed a role for immune cells in biomaterial-mediated muscle regeneration. Her research has been published in journals such as Science, Nature Methods, Nature Communications, Nature Materials, and Science Translational Medicine. She was recognized as a TED Fellow and delivered a TED talk that was listed as one of the top-viewed talks of 2018. Dr. Sadtler was selected for the Forbes 30 Under 30 List in Science, the MIT Technology Review 35 Innovators Under 35, and the World Economic Forum Young Global Leaders. She also received an Outstanding Recent Graduate Award from Johns Hopkins University and an honorary doctorate from her undergraduate university, University of Maryland, Baltimore County. At NIH, Dr. Sadtler has lent her lab's expertise to the fight against COVID-19, leading a study that detected 16.8 million undiagnosed SARS-CoV-2 infections in the US after the first pandemic wave in the US. She continues her work on immune-engineering in the context of traumatic injury focusing on the balance of tolerance and autoimmunity during tissue reconstruction, recently implicating a new immune cell type in self-tolerance after volumetric muscle loss.

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NATIONAL ACADEMIES Sciences Engineering Medicine

NATURAL SCIENCES – EARTH AND ENVIRONMENTAL SCIENCES

Eri Saikawa
Professor and Winship Distinguished Research Professor, Emory University
Atlanta, GA
Academia

Focus/Research Areas: Air Pollution; Soil Contamination; Climate Change; Environmental Policy

Eri Saikawa is a Professor and Winship Distinguished Research Professor of Environmental Sciences at Emory University. She serves as the Director of Graduate Studies and also of Emory Climate Talks. She holds a Bachelor's Degree in Chemistry and Biotechnology Engineering from the University of Tokyo, Japan, a Master's Degree in Environmental Policy and Natural Resource Management from Indiana University Bloomington, and a Ph.D. in Science, Technology, and Environmental Policy from Princeton University. Her research interests are focused on quantifying the sources and the magnitude of various emissions linked to air pollution and climate change, as well as the impacts of these emissions on humans and society.

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NATIONAL ACADEMIES Sciences Engineering Medicine

MECHANICAL ENGINEERING

Karma Sawyer
Division Director, Pacific Northwest National Laboratory
Washington, DC
Research Organization

Focus/Research Areas: Clean Energy; Energy Efficient Building; Renewable Integration

Dr. Karma Sawyer is the Director of the Electricity Infrastructure and Buildings (EI&B) Division at Pacific Northwest National Laboratory (PNNL). She is responsible for vision and strategy to tackle the nation's most important energy efficiency, clean energy, and electricity infrastructure challenges. The Division consists of 400+ staff in electrical, mechanical, and systems engineering, data and computer sciences, cybersecurity, policy and economics and provides innovative and actionable solutions to Department of Energy and Department of Defense clients. Prior to joining PNNL, Dr. Sawyer served as the Program Manager for Emerging Technologies in the U.S. Department of Energy's (DOE) Building Technologies Office. Under her leadership, the Program's activities are projected to avoid an estimated 315 metric tonnes of CO2 emissions and cut building energy costs by some $94 billion through 2035. From 2010-2013, she served as Assistant Program Director and Fellow at the Advanced Research Projects Agency-Energy (ARPA-E), focusing on carbon capture and thermal storage technologies. Dr. Sawyer earned a Ph.D. in Chemistry from the University of California, Berkeley in 2008 and a B.S. in Chemistry from Syracuse University in 2003. She was a named a AAAS and ARPA-E fellow in 2010 and Distinguished Gilbreth Speaker of the National Academy of Engineering in 2023. She lives in Washington DC with her husband and two children and is a proud and vocal advocate for disability rights.

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NATIONAL ACADEMIES Sciences Engineering Medicine

POLICY

Amanda Vernon
Science and Engineering Policy Analyst,
National Science Board Office, National Science Foundation
Alexandria, VA
Government Sector

Focus/Research Areas: Science and Engineering Policy

Amanda Vernon is a Science and Engineering Policy Analyst in the office of the National Science Board (NSB) at the National Science Foundation (NSF). She serves as liaison to two NSB committees: the Committee on National Science and Engineering Policy and the Committee on Awards and Facilities. Her work with the NSB focuses on the development and release of the Congressionally-mandated report "Science and Engineering Indicators" and on broader policy analysis, especially on issues related to the STEM workforce, S&E and national security, and international collaboration. Prior to joining NSF, Amanda was a Program Officer for Science, Engineering, and Technology at the American Academy of Arts and Sciences. Her work there focused on international scientific collaboration, climate change policy, and the U.S. R&D enterprise. Amanda received her Ph.D. in Brain and Cognitive Sciences from the Massachusetts Institute of Technology and her ScB in Neuroscience with Honors from Brown University. She is originally from Madison, Georgia.

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NATIONAL ACADEMIES Sciences Engineering Medicine

EARTH AND ENVIRONMENTAL SCIENCES

Jim Yoon

Scientist, Pacific Northwest National Laboratory

Richland, WA

Government Sector

Focus/Research Areas: Coupled Human-Natural Systems; Agent-Based Modeling; Water Security; Multi-Sector Dynamics

Dr. Jim Yoon is a Senior Scientist at the Pacific Northwest National Laboratory. His research focuses on the development and application of advanced modeling and simulation techniques to understand, quantify, and evaluate climate and socioeconomic impacts on coupled human-natural systems, identifying solutions that can enhance system resilience, sustainability, and equity under changing and adverse conditions. Dr. Yoon leads several climate adaptation and agent-based modeling research efforts being conducted for the Department of Energy Office of Science Multi-sector Dynamics (MSD) Program and the Department of Defense. He is a member of the MSD Community of practice scientific steering group and chair of the MSD Human Systems Modeling Working Group. Dr. Yoon obtained his M.S. and Ph.D. from Stanford University where he was integrated model lead on the Jordan Water Project, an international interdisciplinary research project focused on the development of a multi-agent hydrologic-economic model for evaluation of water security in Jordan and the Middle East. Prior to his work at Stanford, Dr. Yoon spent several years working as a water resources engineer at MWH Global in Southern California, consulting for municipal clients across the western U.S. He is also co-founder of WellDone International, a non-profit organization working to support clean water and sanitation projects in underserved regions across the developing world. Dr. Yoon holds a B.S. in Civil Engineering with an English Literature minor from the University of California, Los Angeles.

Profile: energyenvironment.pnnl.gov/staff/staff_info.asp?staff_num=3295

NATIONAL ACADEMIES Sciences Engineering Medicine

COMPUTER SCIENCE

Ying Zhang

Senior Software Engineering Manager, Meta Platform Inc.

Menlo Park, CA

Industry Sector

Focus/Research Areas: Computer Networking; Internet; Distributed Systems

Ying Zhang is the Senior Engineering Manager at Facebook. She works on large scale network management problems and her research interests are in software-defined networks, network function virtualization, network monitoring, Internet routing, and network security. She has 100+ granted US/International patents, 90 peer-reviewed publications with over 7000 citations, and she was named by Swedish media as Mobile Network 10 Brightest Researcher. She was awarded as a Rising Star in the Networking and Communications area.

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NATIONAL ACADEMIES Sciences Engineering Medicine

New Voices '21-23 Extension Members

CHEMICAL ENGINEERING

Mahdieh Aghazadeh

Principal Process Engineer, Johnson and Johnson

New Brunswick, NJ

Industry Sector

Focus/Research Areas: Biopharmaceutical Manufacturing, Drug Substance Process Engineering, Sustainability analysis, Workforce DE&I, Biological drug Supply Chain, Medical Device material development

Mahdieh Aghazadeh was born and raised in Qazvin, Iran, and moved to the nation's capital to receive her first degree in chemical engineering from Sharif University of Technology. Multiple socio-economic issues encouraged Mahdieh to pursue graduate degrees (Chemical Engineering Master's at the University of Maine in 2011 and a Biological Engineering PhD from Purdue University in 2016) in the USA; during which she has been involved in SWE, NASBE, and SHPE. Immediately after graduation, she entered the private sector as a scientist at Johnson and Johnson's orthopedic company R&D department. Since then, she has taken multiple roles within Johnson and Johnson. She has worked with compliance and quality teams to enhance customers' experience with drug delivery devices and most recently joined the Janssen Supply Chain team as a Principal Process Engineer. Working in a heavily regulated industry, in addition to her graduate school research in biofuel production, clarified the importance of global-scale collaboration. Dr. Aghazadeh has initiated many technical collaborations within different sectors of Johnson and Johnson as well as external innovators and academia. Advocating for multi-functional collaborations and partnerships for sustainability in biopharmaceutical production, new technology development, data collection and analysis, customer experience improvements, community outreach and education, and eventually promoting workplace inclusion and equity have become the primary goals of her career.

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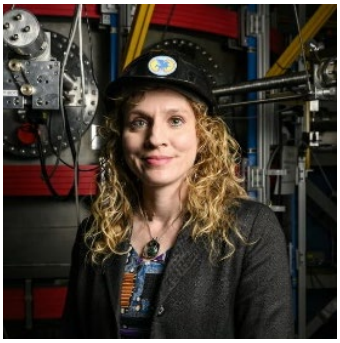
NATIONAL ACADEMIES Sciences Engineering Medicine



ENGINEERING – PHYSICS

Steffi Diem

Assistant Professor, University of Wisconsin-Madison

Academia

Focus/Research Areas: Fusion Energy; Plasma Physics

Dr. Diem is an Assistant Professor in the Nuclear Engineering and Engineering Physics Department at the University of Wisconsin-Madison, where her experimental plasma physics research focuses on using microwaves to heat and drive current in magnetically confined, high-temperature plasmas for fusion energy development. Dr. Diem is the Principal Investigator of the Pegasus-III Experiment, a new magnetic confinement fusion experiment funded by the US Department of Energy studying innovative plasma startup techniques in an effort to reduce the cost and complexity of future fusion power plants. Additionally, she is building an interdisciplinary team with a research focus on the environmental, economic, and societal impacts of fusion energy as it accelerates toward commercialization in support of an equitable energy transition. She was an invited speaker at the 2022 White House Summit on Developing a Bold Decadal Vision for Commercial Fusion Energy and is the recipient of the 2023 Fusion Power Associates Excellence in Fusion Engineering award. Dr. Diem was selected as a member of the 2021 cohort of New Voices in Science, Engineering, and Medicine and served as co-chair. She is a co-leader of the US Fusion Outreach Team (a grassroots organization focused on reducing barriers to outreach efforts) and co-developed the USFusionEnergy.org website.

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NATIONAL ACADEMIES Sciences Engineering Medicine

BIOMEDICAL ENGINEERING

Umut Gurkan

Professor, Case Western Reserve University

Academia

Focus/Research Areas: Global Health; Sickle Cell Disease; Personalized Medicine; Cell and Gene Therapies; Point-of-Care Diagnostics; Clinical Microfluidics

Umut A. Gurkan, Ph.D., is the Wilbert J. Austin Professor of Engineering at Case Western Reserve University. Dr. Gurkan holds Ph.D. in Biomedical Engineering from Purdue University. He completed his postdoctoral training at Harvard Medical School and Harvard-MIT Health Sciences and Technology. Dr. Gurkan's research program aims to achieve global equitable access to diagnostics and personalized medicine. Dr. Gurkan is a leader in translating microfluidics and point-of-care diagnostics for blood disorders, infectious diseases, and cancer. Dr. Gurkan has authored over 100 peer-reviewed journal articles. His inventions and patents have led to four successful biotechnology companies to date with products in global markets. Dr. Gurkan has industry roles in his start-up companies as the Director of Technology at BioChip Labs Inc. and Senior Scientist at Hemex Health Inc. BioChip Labs Inc. offers commercial clinical microfluidic biomarker assays for inherited or acquired blood disorders. Hemex Health Inc. offers affordable point-of-care diagnostics for hemoglobin disorders, anemia, and infectious diseases. Dr. Gurkan is a Senior Member of the National Academy of Inventors (NAI), a Member of the New Voices Program by The National Academies, and a Fellow of the American Institute for Medical and Biological Engineering (AIMBE).

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NATIONAL ACADEMIES Sciences Engineering Medicine

CIVIL ENGINEERING

Hussam Mahmoud

Professor, Colorado State University

Academia

Focus/Research Areas: Sustainable and Resilient Infrastructure; Communities in an Era of Climate Change

Hussam Mahmoud is the George T. Abell Professor in Infrastructure in the Department of Civil and Environmental Engineering at Colorado State University (CSU). He obtained his BSc and MSc in civil engineering from the University of Minnesota and his PhD from the University of Illinois at Urbana-Champaign (UIUC). Prior to pursuing his Ph.D., he was the manager of the NEES Earthquake Laboratory at the UIUC and a research scientist at Lehigh University. Dr. Mahmoud's research focuses on sustainable and resilient infrastructure and communities, emphasizing developing socio-physical models to capture the recovery of systems as influenced by human behavior and socio-economic policies. Dr. Mahmoud is an international authority on infrastructure and community resilience and an advisor to the World Bank, insurance companies, and other agencies on such topics. He has authored over 250 publications and given over 120 presentations, including 100 invited talks. He has chaired and served on numerous technical committees, including the ASCE Committees on Fire Protection and Multi-hazard Mitigation. Dr. Mahmoud is a Fellow of the Structural Engineering Institute and is the recipient of various awards, including the American Institute of Steel Construction Early Faculty Career Award, and the Air Force Summer Faculty Fellowship Award. He has been invited to various symposia by the U.S. National Academies, the Royal Academy of Engineering, and the Royal Institute of International Affairs. His research has received media coverage through citations and interviews in numerous venues, including Nature Climate Change, The U.S. National Academy of Engineering, Smithsonian Magazine, CNN, and Forbes.

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NATIONAL ACADEMIES Sciences Engineering Medicine

MECHANICAL ENGINEERING

Michael Martin

Staff Scientist, National Renewable Energy Laboratory (NREL)

Government

Focus/Research Areas: Sustainability; Fluid Dynamics

Michael James Martin is a staff scientist at the National Renewable Energy Laboratory (NREL) in Golden, Colorado. He received his Bachelor's Degree in Mechanical Engineering from the University of Florida, and his PhD in Aerospace Engineering from the University of Michigan. He also holds an MA in East Asian Studies from the University of Michigan, and an MS in Science and Technology Studies from Virginia Tech. He is the author or co-author of more than 100 journal and conference papers and presentations applying his expertise in thermal science and systems engineering to challenges in nanotechnology, space exploration, and sustainability. He has also contributed to peer-reviewed publications in public policy, science and human rights, and engineering education. Prior to joining NREL, Dr. Martin held scientific positions at the Naval Research Laboratory, Louisiana State University, and NASA's Jet Propulsion Laboratory. Dr. Martin has also held science policy fellowships at the US Department of Energy, the United States Senate, and the National Academies. Dr. Martin is a fellow of the American Society of Mechanical Engineers (ASME) and an associate fellow of the American Institute of Aeronautics and Astronautics (AIAA).

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