



2023 Christine Mirzayan Science and Technology Policy Graduate Fellows

Biographical Sketches



Nafeesa Andrabi (DBASSE/CPOP) is a PhD candidate in the Department of Sociology at UNC Chapel Hill, a Biosocial Fellow at the Carolina Population Center and a National Science Foundation Graduate Research Fellow. Before starting her PhD, Nafeesa worked at the Health, Emotion and Addiction Lab at USC Keck School of Medicine. She obtained her BA in 2014 from Occidental College. Her academic research ranges across racial and immigrant health disparities, the measurement of race and ethnicity in population health research, incarceration and surveillance, and the subjective experiences of social stratification across the life course. In her dissertation research, Nafeesa draws on vital statistic natality data and temporal shocks to examine the prevalence and distribution of adverse birth outcomes among Muslim immigrants in the US between 2005 and 2020. Nafeesa is looking forward to working with the Committees on Population and National Statistics on problems regarding

demographic data collection to better represent the breadth and depth of US society, the measurement of structural racism using race, ethnicity and ancestry in genomic research, social mobility, and the linkages between climate change, health outcomes and social mobility among those who have been most structurally marginalized. As a Mirzayan Fellow, Nafeesa is excited to be immersed in the science policy ecosystem and expand her imagination on how to work across disciplines and contexts to solve complex social problems. In her non-work time, Nafeesa loves to backcountry ski, mountaineer, trail run and mountain bike. Recently, Nafeesa joined The North Face Athlete Development Program on their Snow team where she spends her time ski mountaineering in places like the Eastern Sierra and Pakistani Karakoram. You might also find her making wobbly pottery, sewing crooked clothing, baking pies or volunteering with programs to support BIPOC and women in mountain sports. She also teaches Sociology at prisons in the Southeast through the Digital and Lifelong Learning program at UNC Chapel Hill and occasionally hosts author interviews on the New Books Network podcast.



Chris Brandt (PGA/BISO) is a second-year Ph.D. student researching science & technology policy at Arizona State University. He has a bachelor's degree in philosophy from Texas A&M University and a master's in business and organizational leadership from the University of Kansas. He is also a U.S. Army officer with 16 years of service, including deployments to Iraq and Afghanistan. His drive to complete a Ph.D. began with an interest in learning about complexity, data science, AI, and the diffusion of innovations. Combining these interests with a desire for professional growth, Chris applied for a unique program that allowed him to pursue his Ph.D. His research centers on the prioritization of science & technology for funding, policy, and security considerations by federal agencies. He is exploring this through scientometric and machine learning methods for forecasting exponential growth in research fields. During the fellowship, Chris interviews S&T policymakers in the national

capital region to learn more about the peer review process for grant proposal selection. For his dissertation, he hopes to use network analysis methods to identify indicators of exponential growth in a research community. He will use this data to train machine learning algorithms and deep neural networks to forecast growth potential in a research community. Chris is very excited to get firsthand experience in science & technology policymaking and the opportunity to learn from everyone he will meet during the Mirzayan Fellowship! He is a nerd for new tech and games when not focused on work and research. He is also a husband, father of two daughters, and dog dad to an adorable wheaten terrier pup!



Kavitha Chintam (DEPS/BEES) is a fourth year Ph.D. Candidate in the Department of Chemical and Biological Engineering at Northwestern University. In her research, she explores electrochemical carbon dioxide reduction as a way to reduce greenhouse gas emissions for the production of hydrocarbons, the basis of many important fuels and chemicals. She is the President of the Science Policy Outreach Taskforce (SPOT) at NU where she works to expand local advocacy efforts and connect with state legislators. She is also Co-Founder and Co-Chair of my department's Anti-Racism, Diversity, Equity, and Inclusion (ARDEI) committee. Outside of NU, Kavi is a volunteer Policy Analyst for the Transportation Hub of RE-AMP Network, a nonprofit that advocates for equitable climate action and policies in the Midwest. She also enjoys spending her time with local organizations who help those in need, such as RefugeeOne and SitStayRead. She is involved in efforts related to food

security through the Chicagoland Food Sovereignty Coalition and the Edgewater Mutual Aid Network and spends time getting out the vote for local elections. As such, the majority of her policy experience has been

on the hyperlocal, state, and regional levels. Through the Mirzayan Fellowship, Kavitha looks forward to exploring how her skills in those areas can translate to the federal level. Furthermore, she is interested in how the diversity of the country's needs in terms of energy and the environment is addressed at a higher level. She is also excited for the other opportunities the fellowship affords to learn more about work in D.C. in general. In her free time, Kavitha loves being outdoors and is often running, swimming, or biking. She loves to read, cook, and craft, and has been fostering cats for a few years!



Danielle Coogan (DEPS/SSB, ASEB, BPA) is a fifth-year Aerospace Engineering Ph.D. Candidate at the University of Florida (UF) in the Precision Space Systems Laboratory (PI: John Conklin). Her research focuses on precision timing and instrumentation for small (mainly CubeSat) satellites for the applications of time-transfer and laser communication. She is also the radio ground station operations manager for the UF Mechanical and Aerospace Engineering Department. She received her M.S. in Aerospace Engineering from UF in 2020 and graduated from the University of Miami in 2018 with a B.S. in Mechanical Engineering and a Mathematics minor. During her undergraduate career, Danielle interned at NASA Marshall Space Flight Center and Boeing's Vertical Lift division. She is a NASA Academy alumna (2016) and a MIT Lincoln Laboratory GEM Fellow (2018). She became interested in science policy through a student organization at UF. She looks forward to participating in the

Mirzayan Fellowship program and learning more about how science policy is developed and implemented. Outside of work and academics, Danielle likes to knit, bake, watch soccer (go USMNT/USWNT!), play soccer, and compete in pub trivia.



Matt Cowan (PGA/CSTL) is currently a PhD candidate in Biology at Drexel University in Philadelphia and holds a bachelor's degree in Business Administration from the College of William & Mary. As a cell biologist he researches molecular mechanisms for how human cells move in diverse physical environments. Beyond the lab, he advocates for graduate students as president of the Biology Graduate Student Association and serves as a member of the Public Policy Committee for the American Society for Cell Biology. Prior to graduate school, Matt worked as a professional photographer and artist, teaching classes, and engaging with the community through artist cooperatives and nonprofits. He initially developed an interest in science policy through earlier work with a health software R&D company implementing an electronic health record. Matt is interested in the feedback between research in fundamental science and policy development at the national level. He likes

learning about the many ways in which seemingly abstract research affects our everyday lives and translating science for others. In his free time Matt enjoys hiking, rock climbing and street photography.



Dr. Emily Packard Dawson (HMD/HSP) earned a PhD in Cell and Molecular Biology from Baylor College of Medicine. During her graduate training and postdoctoral fellowship, her research interests revolved around the specification and maintenance of the germ cell lineage. Living through the pandemic transformed how Emily wants to contribute to society as a scientist; now, she aims to use her reproductive biology training and personal experience to develop guidance for policies that support maternal-fetal health. Emily is currently a Scientific Writer and Editor at BioScience Writers where she distills complex information into engaging, accessible language for diverse audiences. As a Mirzayan Fellow with the Board on Health Care Services, Emily is excited to learn how scientific, ethical, and regulatory implications are considered when cutting-edge reproductive biology research is translated into health care. She hopes to build on her scientific expertise and communication skills to accelerate

toward a career dedicated to addressing maternal-fetal health issues. In her free time, Emily enjoys going to playgrounds with her family, hiking, cheering on the Memphis Grizzlies, and watching (most of) the Oscar-nominated movies.



Grete Gansauer (PGA/STEP) is an economic geographer who researches the policy dimensions of decline and renewal in rural regions. She is currently a PhD candidate in the Resources and Communities Research Group at Montana State University where she holds a National Institute on Food and Agriculture Predoctoral Fellowship with the US Department of Agriculture. Her dissertation project evaluates the extent to which programs in recent US infrastructure laws address social and economic needs in rural and Tribal communities in the state of Montana. In the future, Grete aims to contribute to innovations in rural development, infrastructure, and domestic economic policy through her research. Through the Mirzayan fellowship, Grete is looking forward to connecting with policy-oriented scholars across disciplines, living in a city for the first time (!), and learning more about how research supports all phases of the policy-making process. Outside of work Grete enjoys spending time with her

horse (George) and cattedog (Blue), riding a tandem bike with her spouse Zach, and skiing. Ella está intentando aprender hablar español, pero no va bien.



Mariela Garcia Arredondo (DBASSE/BECS) studies soil biogeochemistry in the Department of Environmental Conservation at the University of Massachusetts Amherst. She holds a B.S. from Cornell University where she completed an honors thesis on soil carbon restoration of desertified grasslands in Ningxia, China and was part of a Conservation Project Team in Imbabura, Intag, Ecuador. For her Ph.D., she's built microsenors and managed isotope labelling greenhouse experiments to investigate rhizosphere processes that control carbon storage and nutrient cycling in soils. Her interests include regenerative soil practices, land and water remediation, climate change adaptation, foreign affairs, and food security. She is passionate about bridging the gap between research in soil and its application. She believes incorporation of the biogeochemical sciences is essential for land use decisions and that none of our environmental solutions will be effective if we don't center and include

the voices of those most affected by climate change. She's excited to bring her insight and passion to her time with the NAS and to learn how academic research is incorporated into policy and decision-making on climate-social science issues. Mariela also volunteers with GeoLatinas on language exchange and science translation and the Eagle Eye Institute to increase outdoor experiences and education for K-12 students from low-income minoritized households. She's worked with friends to start an initiative (BRiDGE) to diversify departmental colloquium by inviting underrepresented early career scholars and a cross department symposium (ECoGSS) that prioritizes connecting the work of student researchers with conservation professionals. Mariela enjoys listening to live music, painting, dragon boat, swimming, reading, and cooking.



Laura Hancock (DELS/BLS) is currently a PhD Candidate at the University of Massachusetts Amherst (UMass) within the Organismic & Evolutionary Biology Program. Laura's research focuses on the population ecology of bats and plants, specifically, she investigates the drivers of population structuring and distribution patterns seen across multiple spatial scales (microsite to landscape). In addition to research, Laura is also passionate about teaching and mentoring; she has designed and taught multiple courses within the UMass College of Natural Sciences and has mentored over 45 undergraduate and graduate students. Laura also received an M.S. at UMass after completing a B.S. at Christopher Newport University in Newport News, Virginia. In between -- and during -- her higher education training, she was an intern through the NASA DEVELOP program, served as a Biology Fellow with the National Park Service through the Scientists in Parks program, and served as chief financial

officer & executive leader for the UMass Amherst Graduate Student Senate (GSS). Within the GSS, Laura focused on food and basic needs security for students, creating anti-exclusionary policies, and aligning University and GSS finances with inclusive and just practice. Laura is thrilled to be part of the 2023 Christine Mirzayan S&TP Graduate Fellowship cohort so that she can get to know and contribute to a great community of people and causes. In her free time she enjoys volunteering, hiking, spending time with her cat Moose, and traveling.



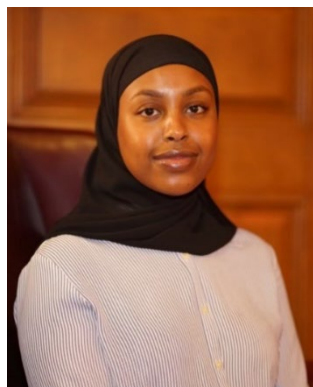
Sarah Hartman (DELS/BESR) is a 4th year doctoral candidate in UC Berkeley's Department of Environmental Science, Policy, and Management focusing on the Food-Water Nexus. Her research examines the sustainability of food-water systems and impacts on regional to global food and water security amidst climate change. Sarah uses biophysical modelling, remote sensing, and machine learning algorithms to study the sustainability of local agricultural production and natural resource use for the global market. Sarah also holds a Bachelors of Environmental Engineering from the University of Delaware. Sarah is looking forward to returning to Washington D.C. as a Christine Mirzayan Fellow because she will get to learn first-hand how her background in environmental change, engineering, and sustainable resource use is used to inform society-oriented questions in Washington. She looks forward to learning more about the federal science policy space during the fellowship. In her free

time, Sarah enjoys learning new languages (including French and Spanish), running half marathons, and volunteering with Engineers Without Borders.



Dr. Alicia Hendrix (GRP/GHRB, GEPS) recently completed her doctoral program at the University of Washington's School of Public Health. As an environmental toxicologist, her research both during and prior to graduate school primarily addressed the resilience of marine ecosystems to environmental threats, both natural and anthropogenic. She began studying marine ecology during her undergraduate program at Scripps College, where her thesis explored intertidal barnacles' respiratory responses to temperature stress. After graduating with majors in biology and fine art, she moved to the Caribbean, where she worked with the Cape Eleuthera Institute and with Operation Wallacea, expanding her research to include concerns like invasive species and overfishing. Following her work on the Mesoamerican Reef, Alicia returned to the U.S. and spent her graduate career studying harmful algal bloom toxins. Her dissertation covers their expansion into new geographic

regions around Alaska, age- and sex-associated susceptibilities to toxicosis, and new pathologies associated with novel, chronic exposure scenarios. During the Mirzayan Fellowship, she is particularly interested in learning about positions and actions that develop collaboration and knowledge exchange between researchers, community members, activists, and policy makers. Alicia is very excited to work with the Gulf Research Program as it explores and grows connections between work in the Gulf of Mexico and Alaska; this will be a unique opportunity to see the process of bridging communities up close. Alicia feels the NASEM staff and her fellowship cohort have a wealth of knowledge that she feels privileged to begin to access. Outside of work, she enjoys yoga, hiking, backpacking, bouldering, board games, and crosswords.



Nafisa Ibrahim (DBASSE/BOSE) is a chemistry PhD candidate at the University of Illinois, Urbana-Champaign as a National Science Foundation GRFP Fellow where she conducts research on optimizing the synthesis of biocompatible redox-active polymers for use in bio-integrated energy storage systems. Previously, she received a B.S in chemistry from the College of St. Scholastica in Duluth, Minnesota. In addition to her research, Nafisa is active in several academic and social justice organizations on campus, including the Illinois Chapter of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers. Due to experiences as a first-generation college student, her science policy interests are improving the state of science education both at home in the U.S. and globally. All her experiences have reinforced her goal to be a lifelong leader who contributes significantly to both scientific innovation and teaching to ensure the vitality, strength, and

creativity of our diverse society. She is eager to bring her skills to the National Academies' Board on Science Education as a Mirzayan Fellow. In her free time, she enjoys reading, powerlifting, and crocheting.



Dr. Charlotte A. Love (PGA/Capacity, DELS/WSTB) is a Postdoctoral Scholar at the University of California, Irvine (UCI) in the Civil and Environmental Engineering department. Her current area of research focuses on spatial extreme value analysis and its applications in hydrometeorology. She is also an early-career collaborator in the Accelnet PEER2PEER program led by NASEM and funded by NSF. Charlotte attained her B.S. in Earth Sciences from the University of California, San Diego (UCSD), and worked on seismology research at Scripps Institution of Oceanography during her undergraduate studies and after graduation as a Research Associate I. Her M.S. and Ph.D. research were conducted at UCI under the mentorship of Prof. Amir AghaKouchak and in collaboration with the U.S. Army Corps of Engineers. Her graduate work progressed from a drought recovery assessment using GRACE-based gravimetry information to improving estimates of extreme precipitation by incorporating physically informed information within spatial statistical models. She has taught multiple GIS and data visualization lab sessions for undergraduate students at both UCI and UCSD. She has also participated as a presenter in the UCI Global Connect outreach program by teaching the basics of climate change at local schools throughout Orange County, California. Charlotte enjoys multidisciplinary collaborations that span cultural and physical borders. She hopes to continue to share and communicate science beyond the classroom and academic journals through interaction and engagement with policy makers and the public. She believes that it is the responsibility of scientists to communicate the latest scientific evidence directly to those that need it most to facilitate turning science into action. She looks forward to her time as a Mirzayan Fellow and the new collaborations and topics it will open.



Dr. Grace McCarthy (HMD/HCS) received her PhD in cancer biology from Oregon Health & Science University (OHSU). Her thesis involved investigating the role of RNA-binding proteins in remodeling the pancreatic tumor microenvironment, in addition to partnering with a biotechnology company to design a nanocarrier that targets pancreatic cancer cells. Overall, her work aimed to improve patient survival and response to therapy. Currently, Grace is the Outreach Coordinator for the Brenden-Colson Center for Pancreatic Care. In this role, she aids in building relationships within OHSU and with local communities to improve the accessibility and diversity of the Center through community-led strategies. Outside of OHSU, she serves as the Mission Chair for the Portland Affiliate of the Pancreatic Cancer Action Network, overseeing pancreatic cancer education, outreach, and advocacy. Her career goals include increasing access and equity in healthcare, specifically regarding cancer care.

Grace is eager to be a part of the Mirzayan Fellowship because she believes this fellowship will provide her with the necessary tools to address healthcare disparities through policy. She is also excited to join the fellowship because she loves working and collaborating with people from various backgrounds to achieve common goals. On a personal level, Grace is an Iron(wo)man, plays tennis, and loves exploring and painting!



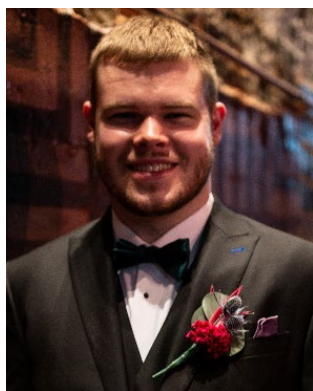
Moses Ogutu (PGA/Networks, Capacity) is an International Development Specialist with experience working on projects related to Public Policy, Trade and Sustainable Development, EU/US – Africa relations, Social Innovation and Entrepreneurship, and Leadership Development in Africa. He was most recently an Assistant Professor at the African Leadership University, Rwanda, where in addition to teaching courses in International Business and Trade, he provided strategic mentorship to start-ups and young enterprises using digital technology to solve some of Africa's pressing challenges in sectors such as agriculture, education, health, climate change, and the circular economy. Moses has an MA in International Relations with a specialization in EU – Africa relations, and a Master of Philosophy in Inclusive Innovation Research and Practice, with a thesis exploring how formative years prepare individuals for social change leadership, both from the University of Cape Town. He was also a Graduate

Fellow at UMass Amherst, where he studied Political Economy and Global Health. He is a Mandela Rhodes Scholar (2017) and a Dalai Lama Fellow at UVA (2019). At the Academies, Moses looks forward to supporting projects in Africa and the Global South. He is particularly interested in capacity development and science and technology regulation policies in Africa and hopes to use his time at the Academies to learn more about these. On the fun side, he likes working out (gym, hike, and jog) and travelling. Those who have tasted his food say he should start a restaurant.



Dr. Theresa Patten (DBASSE/CNSTAT) has spent the past ten years researching aspects of neuroscience and pharmacology. She received her Ph.D. in Pharmacology from the University of Pennsylvania in 2021. For her dissertation research, she used a mouse model to study nicotine use, focusing on the role that characterizing flavors have on nicotine reward in adolescence. Before graduate school, she received a B.S. in Chemistry from Wake Forest University, where as an undergraduate lab technician, she studied proteins that interact with the cannabinoid receptor. This past year, she has been a postdoctoral researcher at the University of Pennsylvania investigating the circuits involved in sleep and sleep deprivation in fruit flies. Her postdoctoral research pushed her to expand her programming skills, which led her to discover a passion for working with big data. In her future endeavors, she hopes to develop software and database management skills in applications related to

public health. Outside the lab, Theresa enjoys sharing her love of science with her community. During graduate school, she founded an outreach group that provides hands-on STEM lessons for high-school students, and she interned at the Franklin Institute, where she worked on an event series that illuminated disparities in clinical trials. As a Mirzayan Fellow, Theresa is excited to work with CNSTAT and to explore her passion for big data and science policy. She is eager to learn how we can responsibly utilize data from multiple sources (e.g., government, private sector, etc.) to make more evidence-based policy decisions. As a lifelong learner, she often listens to podcasts, watches documentaries, and reads in her free time. She also values spending time with friends and family, ideally while on a hike, cooking a delicious meal, or enjoying a glass of wine.



Zack J. Quirk (DELS/BASC, PRB) is a National Science Foundation GRFP Fellow and PhD Candidate in the Department of Earth and Environmental Sciences at the University of Michigan. He earned a BS in Ecology/Evolutionary Biology and a BA in Geological Sciences from the University of Rochester. His research focuses on how leaf traits of living and fossil monocot flowering plants adapted to climatic and environmental changes. Zack is a member of the University of Michigan Gerald Ford School of Public Policy's Science, Technology, and Public Policy graduate certificate program. Apart from his doctoral studies, Zack served as a team co-lead for the environmental justice policy group of the Virginia Scientist-Community Interface (V-SCI). He was also a policy intern for the American Geosciences Institute in Alexandria, VA, where he researched how current federal policy impacts paleontological grant funding. His policy interests include climate change impact policy, energy transition

policy, and environmental justice. Zack enjoys beer and mead homebrew, as well as playing sports with friends. As a Mirzayan Fellow, Zack is excited to work with the Polar Research Board and the Board on Atmospheric Sciences and Climate on climate adaptation policy, as well as engaging with the science policy community in DC.



Nabila Riaz (PGA/CWSEM, BHEW) is a Ph.D. candidate in the biology department at Dartmouth College. Her research focuses on making edible plants more nutritious and resistant to climate change, with the goal of eventually assisting in establishing a sustainable food system that provides adequate nutrition to all. She received a B.S. in Biology from the Lahore University of Management Sciences (LUMS), Pakistan, in 2015 and her master's degree in plant sciences from the University of Bonn, Germany, in 2017. Outside of the lab, Nabila works with several organizations that aim to improve scientific training, communication, and engagement to get people excited about science. She is an E.E. Just Graduate Student Fellow at Dartmouth, where she mentors first-year graduate and undergraduate fellows from underrepresented minorities (URMs). She has also worked as a Local science partner at the American Geophysical Union, collaborating with the New Hampshire legislative

office to discuss how the effects of climate change are becoming more frequent and why science is needed to lead the way. She also served as an ambassador for the Journal of Science Policy and Governance and as a National Science Policy Network member to enable early career scientists to engage with policy at the local, state, national, and international levels. As a Mirzayan fellow, Nabila is excited to collaborate with CWSEM and BHEW. Her experiences as an international student will allow her to bridge gaps and bring people together, and she looks forward to opportunities to help build a diverse and inclusive STEM community. Aside from her studies and work experiences, Nabila enjoys hiking, kayaking, and baking cakes.