

## Christine Mirzayan Science and Technology Policy Graduate Fellows 2019 Biographical Sketches



**Meghan Ange-Stark** (PGA/COSEMPUP/STEP) is currently completing a PhD in genetics. Her work focuses on the dynamics of pathogen invasion and disease spread, specifically white-nose syndrome. Throughout her time as a graduate student, Meghan has been a fellow with the U.S. Fish and Wildlife Service where she was able to work directly with biologists to develop new conservation-focused education material for Region 3. Additionally, she served as worked for U.S. Senator Maggie Hassan, providing grant consultation services for constituents. Prior to graduate school, Meghan worked as a secondary science teacher in Birmingham, Alabama with Teach for America. Through her participation in the Mirzayan Fellowship, Meghan hopes to advance her understanding and skill set as it relates to scientific policy with the additional goal of discovering the fields in which her previous experience as an educator and researcher can be best utilized.

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**Kilan Ashad-Bishop** (PGA/BHEW) is currently completing a PhD in Cancer Biology at the University of Miami. Her research focuses on characterizing the functional role of genetic factors in triple negative breast cancer development and progression. During her graduate studies, Kilan has volunteered with K-12 STEM outreach efforts, served as president of the Black Graduate Student Association, and served as a member of various University-wide diversity and inclusion committees. She also serves on the City of Miami Sea Level Rise Committee, where she combines her research training, community outreach, and advocacy skills to advance policies that prioritize low-income communities in resilience planning. During leisure time, Kilan enjoys cooking, outdoor activities and spending time with her cat Shadow. As a Mirzayan Fellow, Kilan hopes to hone her skills in advancing transformative, evidence-based policy.



**Arielle Baker** (PGA/CWSEM) is a PhD candidate studying Neuroscience at Dartmouth College. Her dissertation research uses electrophysiological approaches to study the connectivity and modulation of cortical microcircuits. Prior to Dartmouth, she earned bachelor's degrees in Neuroscience and in Molecular, Cellular, and Developmental Biology at the University of Colorado, Boulder. During her doctorate, Arielle led a sundry of science outreach and education initiatives at the community level, and believes her time spent in the gender-balanced classroom fostered an interest in the failure to retain women at the upper echelons of science. Arielle seeks to enhance the equity of women in STEM, and has a particular interest in the role of implicit bias in higher education. As a Mirzayan Fellow, she hopes to learn how to apply her passion for equity into meaningful policy outcomes that will create actionable change for women at the institutional level. Arielle is a Colorado native who enjoys baking (and tasting!) pies, watching hockey, and trying to figure out how to keep plants alive.



**Annalise Blum** (PGA/DSC) is a postdoctoral fellow in Earth and Planetary Sciences at Johns Hopkins University and a visiting fellow with the American Meteorological Society's Policy Program. Her research focuses on how urbanization impacts floods and communication of forecasts to inform water resource management. Annalise completed her PhD in environmental and water resources engineering from Tufts University in 2017. She also holds an MS in environmental science and engineering from UNC-Chapel Hill and a BS in environmental engineering, with a minor in comparative politics, from Stanford University. She has conducted research in Africa, Latin America and Asia including on sustainability of water systems in Ecuador and household decision-making in Kenya. Previously, Annalise worked in the Center for International Development at the Harvard Kennedy School of Government and as a fellow with the U.S. Geological Survey. As a Mirzayan Fellow with DSC, Annalise looks forward to learning about and supporting international science cooperation and policy.

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**Mary Burkey** (PGA/CISAC) completed her PhD in physics at the University of Chicago. Her dissertation comprised of a high-precision test of the Standard Model using nuclear beta decay. She holds three bachelor's degrees from North Carolina State University in physics, chemistry, and applied mathematics. Throughout her postsecondary education, Mary has worked in student government to help improve quality of life and boost engagement on campus. Mary is excited to gain experience in policy-making on the federal stage and learn more about international global security from the experts at CISAC. Following the Mirzayan Fellowship, she hopes her experience in D.C. will be put to good use as she pursues a postdoc at Lawrence Livermore National Laboratory in the Weapons and Complex Integration Directorate.



**Leah Cairns** (PGA/CSTL) is serving as a 2019-2020 AAAS Congressional Science & Technology Policy Fellow sponsored by the Biophysical Society and was a 2019 Mirzayan fellow with CSTL. Leah received her PhD in Biophysics at the Johns Hopkins University School of Medicine. In her dissertation work, Leah used quantitative approaches to investigate the underlying mechanisms which regulate the Hippo signaling pathway. This pathway is a promising new target for cancer therapeutics and regenerative medicine. In addition to her research, Leah was a leader in the science policy community at Johns Hopkins. As Chair of the Advocacy Committee of the Johns Hopkins Science Policy Group, Leah led advocacy efforts on many local and federal issues including leading a group of graduate students to advocate for fair prescription drug pricing legislation in the Maryland state legislature with the Maryland Citizens' Health Initiative. Leah has undergone training in science policy and advocacy through her professional societies, and has represented AAAS, the Biophysical Society, and the American Society for Biochemistry and Molecular Biology on Capitol Hill. Leah received her B.A. in Biochemistry from Hamilton College with a minor in English Literature.



**Irene Cheng** (PGA/IAP-R) received her PhD in neuroscience from the University of Virginia and her BS from the University of Connecticut. During her doctorate, Irene studied the development of the nervous system and molecules that trigger neuronal death. During graduate school, she participated in and led teams that supported student welfare, promoted diversity within STEM, improved science communication, and addressed social inequality. She also co-founded the non-profit Cville Comm-UNITY, which serves to connect the research being done at University of Virginia to the Charlottesville community. More recently, Irene was a Science Policy Research Consultant with Pfizer, where she developed advocacy materials and performed landscape analyses to support the research and development pipeline. During the Mirzayan Fellowship, Irene hope to gain valuable experience towards her career goal to develop and evaluate science policies that are evidence-based, supportive of collaboration, and focused ultimately on benefiting society.

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**Sara Crandall** (DEPS/SSB) is currently a graduate student researcher of astrophysics at the University of California Santa Cruz. She holds an M.S. and B.S. in physics from Kansas State University. Sara conducts research on the physical parameters of dwarf stars, currently investigating whether our collected data on stellar surface activity might be the key to more precise determinations of stellar ages. Outside of her PhD work Sara advocates for affordable and family-friendly campus housing. She also teaches astronomy and math at a local jail. Sara is eager to dive into the science policy realm, and as a Mirzayan Fellow she hopes to cultivate her insight on the symbiotic relationship between scientists and legislators. She looks forward to participating in the Space Studies Board as we help develop the future of astronomy.



**Danielle DaCrema** (DBASSE/CNSTAT) is currently completing her PhD in Cell Biology at the University of Virginia- School of Medicine. Her research focuses on tissue regeneration during development by understanding the changes that occur within the tissues when they lose the ability regenerate from damage as they develop. Danielle is interested in improving scientists' communications with non-scientists, and thinks that policy is a particularly important place for good science communication. She is active in the Science Policy Initiative at UVA, and has worked on a few projects with the National Science Policy Network. She hopes that the Mirzayan Fellowship will provide her with the training and experience to work in science policy professionally. She is interested by the broad range of topics covered by CNSTAT and is excited to learn how statistics are used in policy making. In her free time, Danielle enjoys baking or hiking with her dog in the mountains.



**Taylor Dunivin** (DELS/BCST) is currently completing a dual PhD in Environmental Toxicology and Microbiology and Molecular Genetics at Michigan State University. She holds a BS in Biology with a minor in Environmental Science from the University of Michigan. Her PhD thesis focuses on antibiotic and arsenic resistance within soil microbiomes with an emphasis on how they impact human health. She co-founded the MSU chapter of Science Debate to facilitate science policy discussions on campus. She is also passionate about science communication and has worked with local news outlets, spoken at a local venue, and published a science video. Taylor is thrilled to gain hands on experience working at the intersection of science and policy as a Mirzayan Fellow. Taylor also enjoys cooking, playing piano, and spending time with her Corgi puppy.

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**Katrina Ferrara** (DBASSE/BCYF) is currently a postdoctoral research fellow at the Center for Brain Plasticity and Recovery at Georgetown University. She received her Ph.D. in Cognitive Science from Johns Hopkins University. Her research uses behavioral and neuroimaging methods to study cognitive development in areas such as visual-spatial ability, memory, and STEM education. She has worked with a variety of populations, including typically developing children and adults, individuals with genetic disorder, and those who have survived a perinatal stroke. Prior to graduate school, Katrina earned a bachelor's degree in Psychology and English from Williams college. As a Mirzayan Fellow she worked with the Board on Children, Youth, and Families (DBASSE) and is now pursuing a career in science policy that focuses on addressing the needs of children, especially those belonging to vulnerable populations, and their families.



**Alyssa Frederick** (DELS/BLS) is a PhD candidate at University of California, Irvine, studying ecology and evolutionary biology. She holds an MS in Biological Sciences from UC Irvine, and a BS in Marine Biology from American University. Alyssa studies the impact of natural and human-caused changes on marine organisms and their environments. Her PhD work focuses on how disease and temperature stress affect abalone (a culturally, economically, and ecologically important group of marine snails). She has partnered with government management agencies, fishery and aquaculture industry, non-profits, and community stakeholders to ensure that her research will help meet research priorities for the conservation of these species and future sustainability of these fisheries. She is broadly interested in both research and community empowerment for ocean sustainability. Alyssa is also passionate about science advocacy and policy, and improving opportunities for underrepresented groups in science. She created and currently directs the Turn of the Tide podcast, which highlights the voices of early career women in science. As a Mirzayan Fellow, Alyssa is excited analyze questions with the BLS, and to learn new ways to use scientific skills to craft evidence-based science policy.



**Chris Fu** (DEPS/BMSA) is currently completing a PhD in chemical engineering at the University of Washington. He holds an MS in chemical engineering and a BS in chemical engineering from the University of Virginia, along with a minor in chemistry. His doctoral work focuses on developing new tools and methods for using molecular dynamics simulations to study complex reacting systems. Additionally, during his PhD Chris participated as in an IGERT program for big data and data science research. Chris is excited to learn more about scientific policy and how it relates to data science.

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**Kassandra Grimes** (EngineerGirl/NAE) is currently completing a PhD in Civil and Environmental Engineering at the University of Virginia as a National Science Foundation Graduate Research Fellow. She holds a MS from the University of Virginia and a BS from Rowan University, both in Civil and Environmental Engineering. Her dissertation research focuses on evaluating sustainable wastewater treatment technologies for the treatment of constituents that stimulate antibiotic resistant bacteria in the environment. During her graduate studies, Kassandra has worked for UVA CHARGE, developing programs to improve faculty hiring procedures and promotion and tenure processes to facilitate better hiring and retention of faculty from underrepresented people groups. She also actively serves as the Outreach Chair for the university-wide Graduate Engineering Student Council where she coordinates programs to support and advocate for her fellow engineering graduate students and organizes science outreach initiatives with the Charlottesville community. During her undergraduate studies, Kassandra worked as an Engineering Outreach coordinator, facilitating programs to engage k-12 students in New Jersey with engineering education.



**Steph Guerra** (PGA/CWSEM) enjoys translating complicated scientific topics so that they are easy for everyone to understand, devoting much of her career to engaging with non-scientist audiences. She recently received her Ph.D. from Harvard University in Biological and Biomedical Sciences with her thesis work focused on the development of novel treatments for lung cancer patients. Outside of her lab work, Steph spent much of her time at Harvard acting as the co-director of Science in the News, a science outreach group that trains over 250 graduate students each year in science communication. One of her greatest accomplishments was the organization of a daylong science conference aimed at the public, an event now entering its fifth year. Steph also has a passion for improving the academic enterprise, organizing events for her fellow scientists about academic diversity, research reproducibility issues, and civic engagement. Steph enjoys working to improve the research community and ideally, her future job will be devoted to this endeavor. Specifically, she envisions a scientific community that values and incentivizes the civic engagement of its scientists. Through the Mirzayan fellowship, Steph aims to learn how to best manage policy-

based projects, understand consensus writing, and design communications campaigns for professional stakeholders.



**Anna Hagstrom** (DELS/BASC) recently completed her PhD in chemical and environmental engineering at Yale University. Anna's doctoral research focused on developing practical solid-state materials that manipulate the color of light, using a unique photoluminescence process known as triplet-triplet annihilation upconversion, in order to improve the light harvesting of technologies ranging from solar cells to photocatalytic devices that break down pollutants. During her time at Yale, Anna also served as an executive board member of Yale's graduate section of the Society of Women Engineers and a teaching fellow for ENVE 410, a fieldwork-based undergraduate course on environmental technology in the developing world. Prior to graduate school, she received a bachelor's degree in chemistry from Amherst College with additional concentrations in Spanish and environmental studies. As a Mirzayan Fellow with BASC, Anna is excited to delve into science policy in the environmental sector. Moving forward, she hopes to put her research background to use in the development of evidence-based policies that advance renewable energy technologies and safeguard public health.

## Christine Mirzayan Science and Technology Policy Graduate Fellows 2019 Biographical Sketches



**Abla Hariri** (PGA/STS) received her PhD in Electrical Engineering from Florida International University. Her doctoral studies focused on the large scale integration of Electric Vehicles in the electric power grid and their collective distribution onto public charging stations, in addition to finding solutions to address several challenges that come along, like those of big data and cyber security. During her PhD program, Abla was also involved with several professional development activities. She chaired the IEEE Women in Engineering Affinity Group in Miami Section and the FIU Student Branch of the IEEE Industry Applications Society. She also served on the organizing committee of the international conferences: IEEE CEFC 2016 and IEEE IEMDC 2017 that both took place in Miami, Florida. Abla obtained her MS and BS degrees in Electrical Engineering from Rafik Hariri University in Mechref, Lebanon. In participating in the Mirzayan Fellowship, she anticipates to explore various tracks in the vibrant career path of science and technology policy, in which she could combine her interests in engineering and social work and deploy them into efforts with fruitful outcomes on

regional, national, and/or global levels.



**Ans Irfan** (DBASSE/CPOP) is currently completing a Doctor of Public Health (DrPH) in environmental and occupational health at the Milken Institute School of Public Health. He holds an MD from the Xinjiang Medical University, China, an MPH from the George Washington University, and a graduate certificate in International Migration Studies from Georgetown University. Ans's current doctoral research focuses on health safety management and operational performance as well as the development of predictive indicators of a culture of safety at the institutional level. He also serves as an adjunct professor at the George Washington University where he teaches social dimensions of climate change. More recently, he represented the US at the 2017 UN Framework Convention on Climate Change - COP 23. Ans is one of the 2018 Health Policy Research Scholars - a national health policy leadership development program - by the Robert Wood Johnson Foundation. He actively serves with the American Public Health Association in various roles including the LGBTQ Mentorship Program, Chair of Student Development Committee, and a founding member of Health and Water Committee. He is also in the process of developing a non-profit focused on achieving

global health equity. He is proficient in several languages.



**Pritishma Lakhe** (Gulf Research Program) is a doctoral student in Chemical Engineering at Texas A&M University. Her thesis focuses on identifying and addressing process safety issues with scaling up graphene production. As part of Mary Kay O'Connor Process Safety Center at Texas A&M, she has contributed in multiple projects assessing process safety issues for governmental agencies and petrochemical industries. As a Mirzayan Fellow, she worked with the Gulf Research Program in their offshore energy systems safety initiative. Pritishma has also served as a President for the Chemical Engineering Graduate Student Association and as an Award Chair for the Graduate and Professional Student Council. She graduated with a BS in chemical engineering from Louisiana State University and worked in a specialty chemical company in Baton Rouge, Louisiana before starting her Ph.D. After the Fellowship, she will continue her doctoral degree and plans to finish by Spring 2020. She will be seeking new opportunities in the science-policy sphere after graduation.

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**Alex Martin** (DEPS/BEES) earned his PhD in Physical Chemistry from New York University in 2018. He holds a BS in Chemistry from Boston College, where he conducted atmospheric physical chemistry research related to oxidation pathways and visible-light absorption of organic aerosols. In his doctoral dissertation, Alex developed new optical modeling methods in the field of spectroscopic ellipsometry and polarimetry, experimental techniques which are used widely in optoelectronic device fabrication (e.g., photovoltaics and LEDs) for material characterization. Alex has worked as a US delegate for the CliMates think tank, organized two professional conferences on sustainability in the chemical and technology sectors as Co-President of the NYU Chemists' Club, and participated in various science policy events in DC, including the 2018 AMS Summer Policy Colloquium. Additionally, Alex has experience in strategy consulting, working with clients in the transportation and pharmaceutical industries. Through participation in the Mirzayan fellowship at BEES, Alex would like to build a foundational knowledge of the US energy portfolio, its trajectory in the coming decades, and the governmental and market forces which will affect US energy production, consumption, and security.



**Laura Patricia Minero** (DBASSE/BCYF) is a doctoral candidate in the Counseling Psychology department at University of Wisconsin-Madison and Pre-Doctoral Ford Fellow. As an undocumented, queer, muXer of color, Laura is passionate about examining how policy impacts undocumented immigrant and LGBTQ+ communities to identify how to better-serve these populations through more inclusive implementation of policy and distribution of services. Laura was awarded a research grant from the Latino Center for Leadership Development to study the impact of detention proceedings and solitary confinement of Latinx Transgender immigrants. While in Wisconsin, Laura co-founded DREAMERS of UW-Madison and trained organizations throughout the state on racial equity, cultural responsiveness, and effectively serving undocumented students. Laura was featured by Our Live's Magazine as an influential leader on their Queer People of Color 2017 Pride List and received the 2017 Alix Olson Award for the Promotion of a Tolerant and Just Community in recognition of her advocacy. As a Mirzayan fellow on the BCYF, having a hands-on opportunity to work with a team of esteemed scholars will contribute to her goal of influencing science policy and supporting immigrant and queer families on a broader level. Laura also enjoys discovering the best vegan tacos, art exhibits and hiking trails.



**Rebecca Monteleone** (NAE/ CEES) is a doctoral candidate in the School for the Future of Innovation in Society at Arizona State University. A former NSF IGERT Fellow and Fulbright Postgraduate Scholar, she holds a BA in disability studies from Ohio State University and an MA in intellectual and developmental disabilities (sociology, social policy, and social research) from the University of Kent. Her research centers on how and by whom disability is defined and operationalized in the design and deployment of biomedical and assistive technologies, with particular attention to whose claims are taken seriously, who is excluded in decision-making and deployment of technologies, and embedded assumptions about bodies, minds, and quality of life. In addition to her research, she works with several grassroots disability organizations, is co-editing an anthology about disability justice in Kenya, and founded the Ohio Disability Pride Parade and Festival in 2014. Additionally, she is an associate editor for the Journal of Science Policy & Governance. She is currently completing her dissertation work and continues to contribute to projects for the Center for Engineering Ethics and Society.



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**Steven Moss** (DELS/BLS) is currently finishing up a PhD in chemical biology at the University of California, San Francisco. His graduate work looks to better understand the proteins that bacteria use to infect their host. He holds a BS in biochemistry from American University where he minored in political science. Following his time at American, he spent two years in Washington, DC working at the NIH as a post-bac fellow. Steven is excited to make a return to DC after spending many years on the west coast. He is especially looking forward to exploring the many facets of science policy as a Mirzayan Fellow. He spent much of his free time in graduate school working with UCSF's Science Policy Group, and knows that the Mirzayan Fellowship will help him get a hands-on experience in the world of policy.



**John-Ben Soileau** (DELS/WSTB/LabX) is a Ph.D. candidate in Anthropology at the University of Illinois at Urbana-Champaign. He holds an M.A. in Latin American Studies from Tulane University and a B.A. in Anthropology from the University of New Orleans. John-Ben's doctoral dissertation is based on two years of ethnographic fieldwork with quilombo (maroon) communities in the Brazilian Amazon. His thesis examines the quilombo land title as a mechanism of environmental governance and analyzes the development of timber extraction projects on collectively owned quilombo territory. His academic and policy interests converge through a commitment to community-engaged and empirically-based field research in the development of social and environmental policies. John-Ben also serves as the Brazilian Partnership Coordinator for The Minga Foundation, a non-profit that collaborates with underserved communities to improve socio-economic and health equity. While conducting dissertation fieldwork in the rural Amazonian village where he lived, John-Ben coordinated the installation of a water distribution network and led a reforestry initiative. As a Mirzayan Fellow, John-Ben will join a collaborative effort between the Science and Technology Board and LabX that aims to broaden public understanding of the world's water supply and explore how its quality and distribution can be improved.



**Melody Tan** (HMD/HCS) is a PhD Candidate in Bioengineering at Rice University, where her thesis research focuses on using optical imaging to improve oral cancer diagnosis. She also holds an MSE in Bioengineering Innovation and Design from Johns Hopkins and a BS in Bioengineering and Global Health Technologies from Rice. Melody interns at Rice University's Baker Institute for Public Policy, where she has written about vaccine misconceptions in the Texas Legislature and started a group equipping students to engage with policymakers. After the Mirzayan, Melody will be back in Houston finishing her PhD while spending all her free time registering voters, volunteering for campaigns, and running long distances.

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**Augusta Williams** (DBASSE/BECS) is currently completing a ScD in environmental health at the Harvard TH Chan School of Public Health. She holds an MPH in environmental health sciences and a certificate in climate and health from Columbia University Mailman School of Public Health. Her ScD thesis focuses on the role of the built environment in modifying temperature exposures during extreme heat events and resulting public health impacts. Augusta has also completed research about the impacts of climate change on aviation and indoor environments, the health impacts of El Nino, and the use of weather radar in tracking migratory birds. Through the Mirzayan Fellowship and her time spent with the Board on Environmental Change and Society, Augusta is eager to deepen her understanding of the role of science in policy and policymaking and aspires to combine her scientific training with the expertise within the National Academies to contribute to federal policymaking that shapes our communities, our future, and our world.