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CHRISTINE MIRZAYAN SCIENCE & TECHNOLOGY POLICY GRADUATE FELLOWSHIP

Christine Mirzayan Science and Technology Policy Graduate Fellows 2017 Biographical Sketches

Jeff Alstott (2017; PGA/STEP) has a broad research background, having published on animal behavior, neuroscience, statistics and social physics. He received an MBA from Indiana University and a PhD from the University of Cambridge in complex systems (thesis: "The Behavior and Utility of Branching Processes on Complex Networks"). Jeff has applied his knowledge to create useful tools: he built fraud-detection software for the World Bank, wrote a popular statistical software package for researchers, and co-founded a startup using machine learning to power reading acceleration software. He is currently a research fellow at MIT, where he studies technology development; he builds tools to predict it and researches how to direct it. He also consults for IARPA on these topics. Jeff wants to help policymakers use evidence to make strategic decisions about science and technology. He is particularly interested in fostering and directing technology development, assessing major risks from science and technology, and improving returns on investment for the US research system. In his work Jeff has operated independently and in diverse teams of up to a dozen members. He has lived in Australia, Brazil, Singapore and the United Kingdom. (Updated 4/2017)

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Carlo Altamirano (2017; PGA/STS) is currently completing a PhD in the Human and Social Dimensions of Science and Technology (HSD) program and graduate research assistant at the School for the Future of Innovation in Society at Arizona State University. Carlo is a Fulbright scholar from Mexico City, where he received his BS and MSc in physics at the National Autonomous University of Mexico (UNAM). His research focuses on the social dimensions of clean energy transitions in Mexico. In particular, on the different understandings of sustainability, progress and participation in Mexican democracy, and how those narratives play out in the development of their energy futures. He has been involved in the design of diverse public participatory processes on urban sustainability issues; has taught courses on energy policy, science diplomacy, and co-led study abroad trips to explore sustainable development in Morocco (summer 2016) and Ecuador (summer 2017). Carlo is an avid reader, trail runner, and yoga practitioner. (Updated 4/2017)

Brittany Bernik – Gulf Research Fellow – (2017; GRP) earned her PhD in ecology and evolutionary biology at Tulane University. Her doctorate focused on the ecosystem consequences of genetic variation, investigating how heritable differences in a widespread grass species cascade to affect salt marsh erosion and coastal eutrophication. Following the Deepwater Horizon oil spill, Brittany coordinated her doctoral research with the cleanup response, collaborating with other universities, private industries, and government agencies to advance understanding of marsh remediation and restoration approaches. As a result of this work, improvements to cleanup techniques were implemented into spill response operations. Prior to pursuing her PhD, Brittany received an MS degree in ecology and evolutionary biology and a BS degree in environmental biology from Tulane University. More recently, Brittany has engaged in postdoctoral research at the ByWater Institute examining plant-microbe dynamics in petroleum contaminated marshes, as well as the socioecological responses of urban vegetation in New Orleans following Hurricane Katrina. In moving toward a career in science, Brittany hopes to continue to be able to link theoretical research with its practical applications. (Updated 4/2017)

Sarah Blankenship (2017; DBASSE/BCYF) completed the requirements for her PhD in Neuroscience and Cognitive Science from the University of Maryland, College Park in October 2016. Sarah is broadly interested in how early experiences influence long-term outcomes by shaping children's developing neurobiology. Her dissertation research examined the effects of the early parenting environment and child stress physiology on childhood brain development. Sarah has nearly 10 years of research experience spanning multiple theoretical and methodological domains. She has served as a Graduate Dean's Dissertation Fellow, a Phi Delta Gamma Interdisciplinary Scholarship Fellow, and participated in diverse institutional and community service efforts, including volunteer work at a local Early Head Start facility. Ultimately, Sarah aims to leverage developmental science to advance research and policies that promote healthy development of high-risk, marginalized, and underserved individuals and communities. In her spare time Sarah enjoys crafting, hiking, and travel. (Updated 4/2017)

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Jordan Blenner (2017; DBASSE/BBCSS) received her PhD in psychology (social) and JD in law from the University of Nebraska Law-Psychology Program. Jordan's doctorate focused on how, under threat conditions, sexual minority stigma impacts marital and housing equality within relevant legal contexts. In her graduate research, Jordan investigated the impact of mental illness stigma on employment discrimination within the context of the Americans with Disabilities Act. As part of her graduate work, Jordan provided discrimination case legal assessments as the Student Legal Assistant for the Weibling Project for the Psychological Treatment and Study of Discrimination. Jordan also contributed research, writing, and project coordination as a Student Researcher for the ACLU of Nebraska. In addition, Jordan served as Co-Chair of the Unitarian Church of Lincoln's LGBTA Welcoming Congregation Committee, creating safe spaces for LGBTQ persons and advocating for equality. Jordan graduated Summa cum Laude from Temple University with a BA in Psychology and co-founded Temple Common Ground, Temple University's Gay/Straight Alliance. Recently, Jordan has volunteered with political campaigns and the National LGBTQ Task Force's Creating Change Conference. (Updated 4/2017)

Emily Byers (2017; DBASSE/BOCYF) is currently completing a PhD in speech and hearing sciences at Indiana University. She holds an MA in linguistics/BA in English from Florida International University and a BS in political science from Appalachian State University. Her PhD studies focus on "code-switching," or language mixing (e.g. "Spanglish" or "Hinglish"), and the acoustic-phonetic factors that facilitate perception of mixed-language speech. Her studies also explore how cognitive, perceptual, and experiential factors predict individual differences for understanding foreignaccented and mixed-language speech. In 2014 Emily served as a summer intern at the National Institutes of Health (NIDCD-Language Section) preparing epidemiological reports on cerebrovascular accidents (CVAs) and the prevalence of post-CVA aphasia. In moving toward a career in science policy, Emily has recently joined the Journal of Science Policy & Governance (JSPG) as an associate editor. She is also the managing editor for Indiana University's general interest science blog SciIU: Conversations in Science. She is an advocate for better inclusion of multilingual and minority groups in research studies across all branches of language science to develop a more robust understanding of how language works, both behaviorally and from a neurophysiological perspective. (Updated 4/2017)

Helena Chapman (2017; HMD/BSP) received her PhD in Public Health (One Health) and MPH in Epidemiology from the University of Florida (UF). She holds an MD from the Iberoamerican University. Her dissertation research examined the "knowledge-action" gap among healthcare workers regarding adherence to tuberculosis infection control measures in health institutions in the Dominican Republic (DR). During her doctoral program, she served as research assistant at the Southeastern National Tuberculosis Center in the UF College of Medicine. She completed a three-week crosscultural training in tuberculosis surveillance and control at the "Pedro Kourí" Tropical Medicine Institute in Cuba. Prior to her doctoral studies, she completed a research fellowship at the Centers for Diagnosis, Advanced Medicine and Telemedicine and served as professor at the Iberoamerican University School of Medicine in the DR. She was the founding member of the first DR (non-governmental) medical student organization (Organización Dominicana de Estudiantes de Medicina). She has disseminated her research through peer- and non-peer-reviewed publications and conference presentations. (Updated 4/2017)

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Maggie Esch (2017; PGA/OSP) completed her Ph.D in environmental science and ecology from the University of North Carolina at Chapel Hill. Her doctorate research focused on hydrological processes and groundwater in a tidal salt marsh along the Florida Gulf coast and included numerical modeling work along with in-situ sampling instrument design and deployment. Prior to her doctoral work, she studied iron and manganese cycling in the ocean sediments of the Bering Sea, and earned her M.S. from Western Washington University in Bellingham, WA. In addition to two oceanographic cruises in the Bering Sea, she also participated in two research cruises in the Gulf of Mexico to investigate the effects of the BP oil spill on sediment microbial processes. (Updated 4/2017)

Amanda Field (2017; DELS/BLS) earned her PhD in molecular biology at the University of Maryland. Her doctorate work focused on the transcription factor network in the fruit fly, giving insight into how transcription factors guide embryonic development. During her doctorate, Amanda volunteered at several organizations, including University of Maryland senate committees, the Smithsonian Museum of Natural History, and the nonprofit Women in Bio, in order to improve her community and communicate science to the public. Afterwards, she continued her research in the development of fruit flies, working on the epigenetic landscape of the embryo at Stockholm University. (Updated 4/2017)

Jordan Hoyt (2017; DEPS/BEES) is completing his PhD in Aerospace Engineering at the University of Minnesota- Twin Cities with a focus in wind turbine control systems. He garnered his BS in Mechanical Engineering from the University of Tulsa a school known for its petroleum engineering. His 4 years of undergraduate research mostly entailed solar thermal/photovoltaic hybrid systems through a DoE ARPA-E grant. Summer REU projects include carbon nanoscience in Japan, piezoelectric devices at Rutgers, and wind turbine control systems at NREL's National Wind Technology Center in Colorado. (Updated 4/2017)

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Yasmeen Hussain (2017; PGA/BHEW) completed a PhD in biology at the University of Washington, where her work focused on the role of sperm chemotaxis in sperm-egg interactions in sea urchins and its effect on an individual's reproductive success. During her doctorate work, Yasmeen was an ARCS fellow and an NSF Graduate Research Fellow and volunteered her time in informal science education and academic policy. Yasmeen previously earned B.S. degrees in mathematics and biology from the University of Utah. She is passionate about education, women in science, and community engagement. (Updated 4/2017)

Kellyann Jones-Jamtgaard (2017; PGA/CWSEM) recently completed her PhD in Microbiology, Immunology, and Molecular Genetics from the University of Kansas Medical Center where she focused on intracellular trafficking during Hepatitis C Virus infection. During graduate school, Kellyann was very involved in student government and diversity initiatives including the passage of a Childbirth Accommodation policy for graduate students. She also represented trainees as part of the Committee for Postdocs and Students (COMPASS) through the American Society for Cell Biology, co-chairing the career development subcommittee in 2015. Appointed by Mayor Sly James, Kellyann currently serves as a commissioner on the Kansas City Health Commission, a group tasked with improving public health in Kansas City. Prior to moving to Kansas City, she received a BS in Biology and Spanish from Duke University and participated in the National Institutes of Health Academy post-baccalaureate program. (Updated 4/2017)

Albert Manero II (2017; NAE) completed his PhD in mechanical engineering at the University of Central Florida in 2016. His dissertation focused on non-destructive characterization of aerospace ceramic composites via synchrotron radiation, conducted in part at Argonne National Laboratory and the German Aerospace Center during his Fulbright graduate research experience in Germany. Albert is the founder of Limbitless Solutions non-profit, which is devoted to designing bionic arms for children in need at no-cost to families. Limbitless looks to encourage students to identify technology infused with compassion as a tool to positively impact their communities. Throughout his participation in the Mirzayan Fellowship, Albert had the opportunity to gain experience in policy considerations related to engineering education and improving accessibility/inclusivity in STEM education for students. (Updated 4/2017)

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Andrew Merluzzi (2017; HMD/BPH) is a graduate student in the Neuroscience and Public Policy Program at the University of Wisconsin – Madison. After graduating from American University, Andrew accepted a science writing position at the Association for Psychological Science. Here, his interest in the intersection of science and policy grew, and upon writing an article about modifiable risk factors for Alzheimer's disease and their implications for public policy, he became interested in public health and prevention. In his dissertation research, Andrew utilizes protein and brainimaging based biomarkers to predict the earliest brain changes in Alzheimer's disease, and to identify biomarkers of eventual cognitive decline in healthy adult populations. Andrew also took on an internship with the Wisconsin Medical Society, where he organized a task force of physicians to address the burgeoning opioid epidemic. There, he built an evidence-based educational program for clinicians about responsible opioid prescribing. (Updated 4/2017)

Joshua Mullenite – Gulf Research Fellow – (GRP) is currently a Ph.D. candidate in Global and Sociocultural Studies in the Steven J. Green School of International and Public Affairs at Florida International University. He holds a BA in Anthropology and a certificate in Latin American and Caribbean Studies. Using historical and ethnographic methods, his dissertation research examines the persistence of colonial-era flood management policy along Guyana's coastal plain in order to better understand how the country's colonial history has shaped currently experienced vulnerabilities to flooding as well as the present-day design and implementation of flood management policy. Prior to conducting his dissertation research, Joshua worked as a research assistant on a project that examined how sociocultural differences between communities shape individual experiences with and vulnerabilities to the impacts of climate change in Miami-Dade County, Florida. (Updated 4/2017)

Eileen Oni (2017; PGA/CSTL) received her PhD in cell and developmental biology from Rutgers University. She received her BS in biological sciences from Rowan University. Her thesis work focused on the underlying role of genetic variants in addiction behaviors, specifically the role of molecular and genetic variation. Using adult induced pluripotent stem cellderived neurons, Eileen identified, on a cellular level, how single DNA changes are associated with an increased risk of drug addiction. During her graduate career, Eileen worked on collaborative fundraising and outreach efforts for Seeding Labs, a non-profit organization dedicated to assisting developing countries in creating a sustainable scientific research infrastructure. As a member of the Rutgers Chapter of the National Science Policy Group, Eileen assisted in organizing on campus science policy informational meetings and traveled annually to Washington DC to communicate to local legislative offices support for sustainable science research funding. Eileen plans to develop federal policy making and research skills, as her long-term careers interests lie in becoming an effective policy playmaker, combining technical and scientific expertise in developing evidence- based, well-balanced polices. (Updated 4/2017)

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Zachary Perry (2017; DELS/BCST) is currently a Chemistry PhD Candidate at Texas A&M University. His studies center on synthesizing porous materials for their potential applications in the separation and storage of gasses. His experience in these studies fostered a strong interest in mitigation and remediation of greenhouse gasses released into the atmosphere through industrial processes. Zac obtained his B.S. in Chemistry from The University of Tennessee at Chattanooga. Currently he serves as president of Aggies in Science, Technology, and Engineering Policy, a science policy organization seeking to engage students studying science in science policy. Through this work a strong interest in increasing scientific communication and literacy with the public as a means to increase public understanding and support for fundamental research was generated. During his time in Washington Zac wishes to gain a better understanding of how science is currently communicated between the scientific community, policy makers, and the public. (Updated 4/2017)

Gabriel Sandler (2017; PGA/CISAC) – the Rosenblith Fellow – is a nuclear engineering PhD student at the University of Florida (UF) and a fellow of the Consortium for Verification Technology. He holds a BS in nuclear engineering and minor in sales engineering from UF. Gabriel began his graduate work on the utilization of X-ray Backscatter Radiography for non-destructive testing of polymer coated steel. For his thesis work, Gabriel's research focus will shift to a project in plume tracking analysis for nuclear security and non-proliferation purposes. Additionally, in the summer of 2016, Gabriel interned at Sandia National Laboratory studying detection characterization of a neutron multiplicity counter. Following the culmination of his fellowship and studies, he aims to further his career in policymaking at the federal level. In his free time, Gabriel enjoys watching and playing sports, and writing music. (Updated 4/2017)

Jacob Scheff (2017; BASC/PRB) received his PhD in Atmospheric Sciences from the University of Washington and is now at Columbia University's Lamont-Doherty Earth Observatory, where he was an NSF postdoctoral research fellow for two years and is now an NSF-funded principal investigator. Jacob's work is aimed at understanding how and why global climate change and CO2 impact Earth's water cycle, including precipitation, river flow, soil moisture, and plant water needs. He is also strongly interested in the communication and synthesis of science and in the role of science within society, and directed his department's extensive weather and climate outreach efforts for two years during his PhD. (Updated 4/2017)

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Joseph Schmitt (2017; DEPS/SSB) is currently completing his PhD in astronomy at Yale University. He received his Master of Science and Master of Philosophy in astronomy in 2015 from Yale University and his B.S from the University of Iowa majoring in physics and astronomy and minoring in Latin. His PhD research has focused on exoplanets, planets outside of the solar system, specifically the discovery and characterization of new exoplanets and doing statistics with populations of exoplanets. Much of this research has been made possible by the Planet Hunters citizen science project, in which online users help in the discovery of new planets and other astronomical phenomena. In addition to the citizen science project, Joey has participated in public outreach as an author for Astrobites.org and presenting weekly planetarium shows and telescope nights at the Leitner Family Observatory and Planetarium. (Updated 4/2017)

Stephanie Seki (2017; SASP/TRB) completed her PhD in Engineering and Public Policy at Carnegie Mellon University in August 2016. Her research focused on understanding the life cycle impacts and policy implications of alternative transportation fuels including natural gas, and the distribution of ethanol fuel for light-duty vehicles. Before starting her graduate studies Stephanie was a geotechnical and environmental engineer in Boston, MA. Her work included challenging urban redevelopment and remediation projects. Stephanie holds an MS in Engineering and Public Policy and a BS in Civil Engineering, both from Carnegie Mellon University. (Updated 4/2017)

Amy Shaw (2017; NAE/NAE PO) is currently completing a PhD in environmental engineering at Vanderbilt University. She holds an MS in environmental engineering and a BE in civil engineering with a mathematics minor, both from Vanderbilt. Her graduate research focuses on reducing negative water quality impacts while optimizing hydropower dam operations through integration of high-fidelity simulation models within decision support tools. Prior to graduate school, Amy worked on water resources projects as an intern at the engineering consulting firm CDM. For fun, she enjoys wheel throwing ceramic pottery, rooting for the Nashville Predators and Vanderbilt Commodores, and going to concerts. She is enthusiastic about participating in science outreach and education programs. (Updated 4/2017)

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Tiffany Taylor (2017; DBASSE/BOSE) received her PhD in Biomedical Sciences from the University of California, San Diego. Her doctoral thesis focused on understanding how glioblastomas (brain tumors) evolve from therapeutically sensitive to resistant, which is one of the biggest obstacles to successfully treating this disease. In addition to her commitment to academic research, Tiffany is extremely passionate about the legacy of science education and its inclusion of persons of diverse backgrounds. Throughout her graduate tenure, she tutored and mentored underserved youth in order to encourage the pursuit of studies and careers in STEM. Additionally, as a member of the Graduate Student Association Lobby Corps she advocated for State support to accommodate the hiring and retention of renowned faculty and building maintenance and infrastructure, which greatly influences the quality of a graduate science education. (Updated 4/2017)

Jenell Walsh-Thomas (2017; DBASSE/BECS) recently received her PhD in Environmental Science and Public Policy at George Mason University. She holds an MS in Earth Systems Science also from George Mason University, and a BS in Environmental Science and Environmental Policy from Marist College. Her PhD dissertation focused on the evaluation of metaphors in climate change communication as an explanatory tool, and used both qualitative and quantitative methodologies. During her doctoral studies, Jenell coordinated the Center for Climate Change Communication and the National Park Service Partnership where she mentored undergraduates as well as graduate student interns in developing a variety of informative climate change communication materials for park staff and visitors. In her spare time she enjoys swimming and being outside, especially hiking in National Parks. (Updated 4/2017)