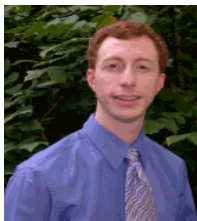


## Christine Mirzayan Science and Technology Policy Graduate Fellows 2007 Summer Biographical Sketches



**Rae Benedict** (Summer 2007, PGA/COSEPUP) works for the Centers for Disease Control and Prevention in the Office of Public Health Preparedness and Response (OPHPR). After working in communications for 9 months, she was selected to intern with the Division of Strategic National Stockpile (DSNS) for 6 months. Currently, Rae works in the Program Preparedness Branch of DSNS where she advises the data team, assists with coordination of a webinar series and works policy related special projects. While a Mirzayan Fellow, Rae led an International Property Rights seminar group, worked on *Evaluating the Efficiency of Research and Development Programs at the Environmental Protection Agency* and defended her PhD in toxicology at the University of Maryland. Her career and personal activities include mentoring scientists, toxicology, and gaining proficiency in climbing, kayaking and motorcycling. (Updated 2/2011)



**Joshua Braun** (Summer 2007, NAS/Koshland) is an assistant professor of journalism at UMass Amherst, where he teaches courses in science journalism and "media, technology, and culture." He is also an affiliated fellow of the Information Society Project at Yale Law School. His first book, on digital media distribution, was published by Yale University Press in 2015. He is also a founding member of the "Culture Digitally" NSF working group on cultural production in the digital age. Josh received his Ph.D. and M.S. in communication from Cornell University, where his work earned him the Anson E. Rowe award for research productivity, teaching excellence, and service to the community. He holds a master's in bioethics from the University of Pennsylvania and an individual-concentration bachelor's degree in "Sciences in the Media" from the University of California, Santa Barbara. He is also a former science journalist, having worked as a junior editor for *Seed Magazine* and contributed to WNYC's *Radio Lab*. (Updated 2/2016)

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**Jay Cole** (Summer 2007, PGA/BHEW) is senior advisor to the president of West Virginia University (WVU), a public, Research I, land-grant university with an enrollment of almost 30,000. He served as chief of staff at WVU from 2008 to 2015. Prior to coming to WVU, he served as director of federal policy for the College Board. From 2001 to 2007, he served as the Deputy Secretary of Education, as well as an arts and education policy advisor to the Governor of West Virginia. He earned a PhD in higher education and public policy at the University of Michigan, where his dissertation was a study of the diffusion of science and technology policy innovations across states. He holds a M.A. in educational policy and leadership from The Ohio State University and a B.A. with honors in political science and history from West Virginia University. Jay is a 1993 Truman Scholar, a 1995-96 Foreign Language and Area Studies Fellow, an International Young Leader delegate to the European Union Visitors Program in 2005, and a 2007 Mirzayan Science and Technology Policy Fellow at the National Academies. He is co-author of a RAND monograph on higher education philanthropy, a book chapter on state higher education policy, a journal article on assessment, and numerous conference presentations in the U.S. and Europe. He is a member of the Dante Society of America, the Cosmos Club in Washington, and the West Virginia Humanities Council. His professional interests include higher education policy, state innovation and research policies, international and comparative education, the history of American education, and the Divine Comedy. His personal hobbies include ham radio, role playing games, and the Pittsburgh Pirates and Steelers. He is married to Dr. Lisa DeFrank-Cole, director of the Leadership Studies Program at West Virginia University. (Updated 2/2016)



**Patrick Cunningham** (Summer 2007, NAE/CASEE) completed his PhD in mechanical engineering at Purdue University in the fall of 2006. His doctoral research focused on monitoring diesel particulate filters. Specifically, he investigated experimental and theoretical correlations between dynamic pressure signal features and the amount of diesel particulate stored in a filter. Part of his graduate work was funded by an NSF fellowship. Patrick's MSME and BSME were also from Purdue University. Since November 2006 Patrick has been following his passion teaching at Rose-Hulman Institute of Technology as an assistant professor in the mechanical engineering department. He is particularly interested in how we teach engineers to handle the often competing forces of social, cultural, political, economic, and environmental responsibilities. As a Mirzayan Fellow with CASEE, he saw the broader landscape of scholarly engineering education research and participating in it. His career goals in academia include teaching mechanical engineering courses, improving ethical and social acuity of students and the pedagogy behind it, and conducting research promoting efficient energy conversion and reduced emissions. Patrick enjoys running, hiking, reading, roasting and drinking coffee. He also enjoys spending time with his wife, Jennie, and children in his personal time. Currently, Patrick and Jennie are experiencing the wonders of adoption through their two Ethiopian children. (Updated 4/2009)



**Chantel F. Fuqua** (Summer 2007, BCYF/DBASSE) completed her Ph.D. in biochemistry at Meharry Medical College. Currently, she is an adjunct professor of chemistry and a research analyst working at North Carolina Agricultural & Technical State University. Her current work at the university consists of teaching undergraduate and graduate biochemistry lecture and laboratory classes, and the development of innovative STEM pedagogy approaches for diverse student populations. In addition, she is conducting research to investigate the work-life balance policies at historical black college and universities. From her extensive scientific literature reviews and faculty workshops, the results will support the development of a matrix for use by academic institutions to evaluate their current work-life balance policies to maximize faculty productivity and success. Previously, she worked as a health science analyst for Science Applications International Corporation, providing analyses and evaluation for the Congressional Medical Directed Research Programs and U.S. Army Medical Research and Materiel Command. She also developed additional program management experience working as a science lead for the Cooperative Biological Engagement Program within the Defense Threat Reduction Agency. In her free time, she

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enjoys playing the piano, going out to see live music and theater performances, spending time with friends and family, reading, and traveling. (Updated 02/2016)



**Yeimy Garcia** (Summer 2007, PGA/COSEPUP) has been working towards a PhD in chemistry at the University of California, Los Angeles. Her research, funded by the National Institutes of Health, uses computational chemistry to explore mechanisms of reactions catalyzed by organic catalysts and to examine sources of regioselectivity for reactions catalyzed by transition metal complexes. She received a BS in chemistry from Seton Hall University in 2005, where she was actively involved in the Martin Luther King Scholarship Association. Yeimy enjoys cooking, reading, running, and biking—especially in beautiful Southern California.



**Noah Giansiracusa** (Summer 2007, PGA/CISAC) is pursuing a Ph.D. in pure mathematics at Brown University, focusing on algebraic geometry. During his undergraduate education at the University of Washington he spent a summer as a cryptological intern at the National Security Agency and immediately afterward a semester in Moscow, Russia as part of a study abroad program. At the NSA he saw how math can be instrumental in issues such as international security, but living and working with mathematicians in a foreign country made it clear that the best results are attained through open communication and international collaboration, rather than secrecy. Working at CISAC for a summer afforded him an opportunity to put this philosophy into action by helping overcome international barriers in the scientific community in the name of peace and prosperity. (Updated 9/2010)



**Nathaniel "Nate" Hafer** (Summer 2007, CISAC and PGA/DSC) is currently director of operations at the University of Massachusetts Center for Clinical and Translational Science (UMCCTS). The UMCCTS is based at the UMass Medical School in Worcester and is part of the NIH Clinical and Translational Science Award (CTSA) consortium. The goal of the Center is to accelerate clinical and translational research in order to improve the health of patients and communities. Previously, Nate was a AAAS Science and Technology Policy Fellow with the National Institutes of Health from 2008-2010, worked as a biology research associate at the Federation of American Scientists from 2007-08, and was a science and technology policy graduate fellow at the National Academies. At the Academies, Nate's project focused on international collaborations to strengthen biosecurity. Nate completed his PhD in molecular biology at Princeton University, where he studied a novel gene in the fruit fly that regulates RNA localization and protein expression in the germline and nervous system. Prior to graduate school, he received a BS in biology from Penn State with a minor in science, technology, and society. (Updated 10/2011)

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**Sylvia Y. He** (Summer 2007, TRB/TRB Studies) is an Assistant Professor of Urban Studies at the Chinese University of Hong Kong. Prior to that, she was a visiting research fellow at the Department of Urban Structure and Transport Planning at the Technical University of Munich in Germany. Her research interests include transportation planning and policy, land use, urban economics, and spatial analysis. Sylvia is also interested in facilitating networks and collaboration among academics, government and industry. She coordinated the GEOIDE Students' Network in Canada, and the Corporative Research Centre for Spatial Information invited her to Australia to discuss issues regarding post-graduate activities and education programs. After obtaining a BS in geography from Sun Yat-sen University in China, she earned a MA in geography from McMaster University in Canada and a MA in economics from the University of Southern California, where she also completed her PhD in Policy, Planning, and Development. Her research has been funded by the U.S. Department of Transportation and the Institute for Mobility Research (ifmo). (Updated 1/26/2013)



**Alicia Jackson** (Summer 2007, PGA/COSEPUP) is currently CTO and co-founder of Drawbridge Health, a new company backed by GE Ventures and GE Healthcare, focused on creating a new sample acquisition and stabilization platform to enable the broad access, cost-effective, accurate, and actionable information necessary to pave the way for truly individualized healthcare. Dr. Jackson launched and served as the deputy director of the Biological Technologies Office at the Defense Advanced Research Projects Agency (DARPA), the Pentagon's principal engine for disruptive innovation. Previously at DARPA, Dr. Jackson created and managed DARPA's synthetic biology portfolio as well as programs in transient electronics. Earlier in her career, Dr. Jackson served as professional staff for energy technology policy for the Chairman of the Senate Energy Committee. She has a long standing involvement and expertise in technology policy, serving as an Energy Scholar at Georgetown, a Mirzayan Fellow at the National Academies, and co-establishing the Science Policy Initiative at MIT. Dr. Jackson received both her undergraduate and doctorate in materials science and engineering from MIT. (Updated 2/2016)



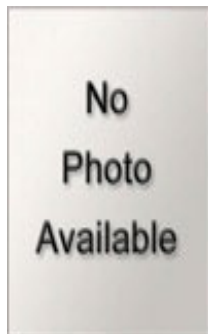
**Gemayel Jean-Paul** (Summer 2007, PGA/CSTL) has been working on his JD at the Syracuse University College of Law. He received dual bachelor's degrees in political science and in information management and technology, at Syracuse. Gemayel has learned and participated in various fields by being: a research assistant for The Burton Blatt Institute; a volunteer at New York City Housing Authority, New York City Board of Education, and Local Initiatives Support Corporation; and an IT project manager and web technology analyst, respectively at General Electric's Corporate business unit and United Technology Corporation's Carrier business unit. Gemayel intends to devote his life for the well-being of our society by using his understanding of law and technology to reach his goal, a career in public service. In his free time, Gemayel enjoys exploring cities, socializing, weightlifting, and playing various sports.



**Vikas Khanna** (Summer 2007, DEPS/NMMB) completed his PhD in chemical engineering at The Ohio State University in the summer of 2009. Vikas received his undergraduate degree in chemical engineering from Panjab University in India. He also received his master's degree in applied statistics from Ohio State. Vikas is currently an assistant professor in the Department of Civil and Environmental Engineering at the University of Pittsburgh. His research and teaching interests are in the general areas of sustainability science and engineering, industrial ecology, and role of environmental policy in engineering decision-making. The primary goal of his research is to develop and apply tools and techniques for understanding the sustainability of engineered products and processes. He believes that systems view coupled with technology and policy perspective can be very beneficial for guiding decision making and ensuring that the

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expected benefits of technology manifests themselves in real form. Vikas had hoped that his Mirzayan Fellowship experience at The National Academies would help him broaden his scientific perspective and expand his reach into the public policy arena. In his free time, Vikas enjoys reading, playing racquetball, and running. (Updated 10/2011)



**Kevin Kless** (Summer 2007, DEPS/AFSB) earned his Masters with Thesis in Physics from the University of Florida. He did his thesis work at the Micro-Kelvin Laboratory specializing in experimental condensed matter and ultra-low temperature Physics. Later Kevin joined the United States Air Force and became a decorated Combat Veteran from Iraq working with the Persistent Threat Detection Aerostat System at Baghdad International Airport. He continued his service as a Chief of Operational Test and Evaluation at Edwards Air Force Base for the RQ-4 Global Hawk Unmanned Aerial Vehicle and graduated from the Air Force Electronic Warfare University and Air Force Institute of Technology. He later conducted research in High Energy Electromagnetism at Florida Atlantic University. Kevin was activated for a follow up tour with U.S. Space Command as a reserve Operational Test Officer in Colorado Springs. He has extensive experience as a Physics Teacher and Laboratory Instructor on both the K-12 and College levels. Currently he is conducting several STEM R&D initiatives in generative pedagogy for both the private and public sectors. He is training to become a professional pilot and plans to enter into the Secular Order of

the Franciscans. Kevin was a policy fellow at the National Academies of Science with the Air Force Studies Board during the summer of 2007.



**Puneet Kishor** (Summer 2007, PGA/BESR and BISO) is a researcher in the Dept. of Forest and Wildlife Ecology at the University of Wisconsin-Madison, developing web-based large scale, terrestrial ecosystem processes models. Puneet is a Fellow of Science Commons, focusing on geospatial data, an elected charter member of the Open Source GeoSpatial Foundation (OSGeo), and a member of the working group on science at the Open Knowledge Foundation. His research interests are on the role of public policy in open data access and its impact on innovation. Puneet returned to academia in 2006 to work on his PhD in Environment and Resources at the Nelson Institute for Environmental Studies, University of Wisconsin-Madison after a 13-year detour, first via international development at the World Bank, then at a geographic information systems (GIS) consulting company in Madison, WI. After completing his undergraduate in engineering from the Indian Institute of Technology, New Delhi, Puneet started

his career working for a non- governmental rural development agency designing better hand-loom. Puneet believes that his open source work is bringing him back full- circle to where he started - applying high technology to solving problems that beset the least fortunate. In the unlikely event that he is able to find any free time, he seeks out live jazz (jazz is the original open source movement), and hand-crafted espressos, hopefully concurrently. Puneet believes that life is too short to drink bad beer. (Updated 3/2010)



**Lawrence Lin** (Summer 2007, BEES & DEPS/DEPS EO) is currently a Foreign Affairs Officer in the Office of the Science and Technology Adviser at the Department of State and was formerly a AAAS Fellow in the same office. He is working on science diplomacy broadly as well as science and technology for developing countries, including geospatial sciences, agriculture, food security, energy, and climate change. Prior to his current position, he was a Mirzayan Fellow working on the initial phases of a comprehensive energy technology study with the Division on Engineering and Physical Sciences and the Board on Energy and Environmental Systems. Lawrence completed his PhD in physics at the University of California, Santa Barbara in June of 2006. His graduate research involved the use of simplified models of biological membranes as a means for studying various biophysical processes. Working with these models, he did theoretical calculations and performed simulations to quantitatively analyze different systems containing cell membranes. His undergraduate studies were done at Brown University where he wrote a

thesis in the area of cosmology and large-scale structure of the universe. (Updated 10/2011)

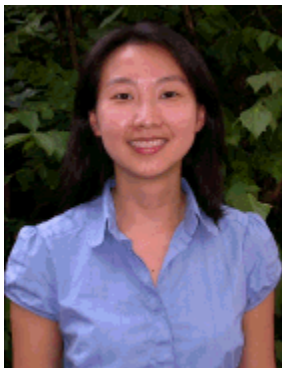
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**Anne Murdaugh** (Summer 2007, PGA/GUIRR) has been completing her Ph.D. in experimental condensed matter physics at the University of Arizona (UA). Her research uses atomic force microscopy to explore the principles governing the growth of crystalline monolayers at the nanoscale. A warm weather enthusiast, she originally hails from Atlanta where she received her BS in physics from Georgia Tech in 2002. Anne's interest in science policy began with her election to the UA Graduate and Professional Student Council in 2005, and recently she has become involved with the National Association of Graduate and Professional Students, with a special interest in legislative affairs. Through these associations, she witnessed the intricate relationship between policy and research and became inspired to pursue a career in science policy and advocacy. She hoped her time at the Academies would help her explore the complicated realm of science policy and further define her career goals. For relaxation, she practices Shotokan Karate and enjoys good movies, books, and jazz.



**Jamie Skipper** (Summer 2007, IOM/VSRT) graduated from the University of Glasgow, Scotland with a PhD in cardiac physiology. Her research experience and her years as a registered nurse in adult and pediatric cardiology lead her to the National Institutes of Health (NIH). Here she served as a Program Director for the National Heart Lung and Blood Institute (NHLBI) managing and directing millions of dollars of national research in heart failure. During her time at the NIH, Jamie became interested in national health and science policy. Her experience during her NAS fellowship in health information technology and evidenced-based medicine lead her Capitol Hill, where Jamie served as health policy advisor to Congressman Phil Gingrey. After her time on the Hill, Jamie started Skipper Congressional Strategies, a congressional consulting firm which focuses on directing health information technology (IT) policy. Jamie now works on federal health IT policy at the Office of the National Coordinator for Health IT in the Department of Health and Human Services. In her free time Jamie enjoys her family, traveling, competitive sports, and cooking. (Updated 10/2011)



**Susan Su** (Summer 2007, NAE/DEW) is a patent examiner with the U.S. Patent and Trademark Office. She graduated from the University of California, San Diego with a PhD in bioengineering in January 2007. Her graduate research focused on the mechanotransducing behavior of human leukocytes in the context of inflammation. More specifically, Susan used numerical methods to characterize the membrane stress of leukocytes under blood flow and recorded the translocation of membrane molecules in these cells that resulted from fluid shear. She graduated magna cum laude from Binghamton University with a bachelor's in mechanical engineering and a minor in Spanish. During her Mirzayan Fellowship in Diversity for the Engineering Workforce, she worked on multiple projects including researching diversity representation in science, technology, engineering, and math occupations and working on the content of a new website that encourages high school girls to pursue an engineering career. She hopes eventually to become involved in international science policy, especially in promoting science education for women. (Updated 10/2011)

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**Jennifer Weisman** (Summer 2007, NAS/Koshland Science Museum) is a senior science & technology advisor at Strategic Analysis, Inc. and a 2016 Emerging Leaders in Biosecurity Initiative Fellow. She advises the DARPA Biological Technologies Office on programs that aim to outpace the spread of infectious diseases, including efforts in rapid diagnostics, nucleic acid-based vaccines, and novel immunoprophylaxis strategies. Prior to Strategic Analysis, Jennifer was a special assistant to the Deputy Director of the National Institutes of Health. She also served in multiple capacities at the U.S. Department of Health and Human Services, working on human subjects protections related to patient privacy in clinical research, as well as personalized medicine. Jennifer was previously an AAAS Science & Technology Policy Fellow, a National Academies Mirzayan Science & Technology Policy Fellow, and a Giannini Family Foundation Medical Research Fellow. Her research experience in antimalarial drug discovery spans computational design and biological assay development. She holds a Ph.D. in physical chemistry from the University of California, Berkeley, and a B.S. in chemistry from The College of William &

Mary. (Updated 2/2016)



**Ryan Zelnio** (Summer 2007, PGA/DSC) is a scientometrician working as a contractor for DDL Omni at the Naval Surface Warfare Center in Dahlgren, Va., where he models and assesses global science and technology trends. He is also a doctoral candidate at George Mason University's School of Public Policy finishing his dissertation on international cooperation for science and technology. Previously, he worked as chief researcher on visa and export control issues for the National Research Council's Committee on Scientific Communication and National Security which produced the report *Beyond Fortress America: National Security Controls on Science and Technology in a Globalized World*. Additionally, Mr. Zelnio has nine years of experience in developing and managing a wide range of complex software solutions in aerospace, financial and government services sectors. Mr. Zelnio has a BSc in computer science and in mathematics from Marycrest International University and a MSc in space

studies from the University of North Dakota. (Updated 10/2011)