

Christine Mirzayan Science and Technology Policy Graduate Fellows 2008 Fall Biographical Sketches



Albert Einstein Memorial Statue © 1978 by Robert Berks



Gavi Begtrup (Fall 2008, PGA/COSEPUP) is currently the Policy Advisor for Congresswoman Gabrielle Giffords where his portfolio includes Science and Technology; Energy (especially renewable electricity and DOD energy use); Space. Gavi received his PhD in physics at the University of California, Berkeley in August 2008. His research focused on in situ electrical and thermal transport measurements of carbon nanotube devices during concurrent transmission electron microscopy. Specifically, he explored the high temperature stability of carbon nanotubes and the electromigration of encapsulated metals for memory applications. He was supported by a National Science Foundation Graduate Research Fellowship. While in graduate school, he somehow found time to serve in student government, to chair the American Physical Society Forum on Graduate Affairs, and to front a rock band (The Thrillionaires, now on hiatus). His BS is from Western Kentucky University, where he majored in physics and mathematics with a minor in computer science. During his fellowship, Gavi worked with COSEPUP on evaluating and designing Breakthrough Science Projects. After his Mirzayan Fellowship with the National Academies he worked at Analytic Services on Homeland Security and Defense acquisition policy issues and most recently he was the 2009-2010 AAAS/MRS/OSA Congressional Science Fellow. (Updated 10/2011)

Christine Mirzayan Science and Technology Policy Graduate Fellows 2008 Fall Biographical Sketches



Leslie Brandt (Fall 2008, DELS/BASC) is currently a climate change specialist with the USDA Forest Service. She works with the Northern Institute of Applied Climate Science, where she focuses on providing forest managers with tools and information in order to respond to climate change. She was hired through the Presidential Management Fellowship. She completed her PhD in ecology, evolution, and behavior at the University of Minnesota. Her dissertation research, supported by an EPA STAR Fellowship, focused on understanding the role of photodegradation in decomposition of plant litter in grassland ecosystems. In addition to her dissertation research, Leslie completed an internship at the Nature Conservancy examining state-level invasive species policies. Prior to coming to the University of Minnesota, Leslie worked in the Chicago Botanic Garden's conservation science department studying rare and endangered plants. She received her bachelor's degree in biology from Gustavus Adolphus College. In her spare time, Leslie enjoys community gardening, theater, knitting, canoeing, hiking, camping, and cooking. (Updated 10/2011)



Yousaf Butt (Fall 2008, PGA/CISAC) is currently a consultant for the Federation of American Scientists. He was previously a staff scientist at the Harvard-Smithsonian Center for Astrophysics for more than a decade, and holds a PhD in nuclear astrophysics from Yale University. His research work has involved trying to figure out the celestial origins of the very energetic cosmic rays that continually rain down on earth, using ground- and space-based observatories. He holds bachelor's degrees from the Massachusetts Institute of Technology: in physics and in mechanical engineering. From 1999-2004, he worked on NASA's Chandra X-ray Observatory project. More recently, he was a research fellow in the Global Security Program at the Union of Concerned Scientists where he was mostly involved with the technical and policy aspects of space security. He hopes his time at the National Academies will help him understand how technical policy recommendations are actually implemented into

policy: how they are communicated to decision-makers, how they percolate through the political system and how they are discussed, and eventually, adopted, modified or rejected. He plans to pursue his interest at the intersection of science and policy wherever it may take him. In his spare time, he is an avid offshore sailor and most recently completed a Boston-to-Venezuela open-ocean passage in a 35-foot sailboat. (Updated 3/2012)



Amber Carrier (Fall 2008, DEW/NAEPO) completed a PhD at the University of Louisville and is currently finishing her MD at Wake Forest School of Medicine, where she is scheduled in May 2016. Her doctoral work focused on the interaction of infectious agents and the immune system and the influence of reproductive hormones and evolution, and later research has focused on kidney transplantation. She received her B.S. in biophysics from the University of Southern Indiana in 2005. Amber completed two terms as Graduate Student Council President at Louisville and served on the University's Commission on the Status of Women, enabling her to help start programs that made the transition into graduate and professional school easier and encourage women to pursue advanced degrees. She also volunteered with the Office of LGBT Services and a number of diversity-related organizations on campus and was the first recipient of the University of Louisville Student Ally Award, which was

subsequently named in her honor. As a medical student, Amber served as class president for all four years, started the medical school's Gay-Straight Alliance, and initiated a program to implement Safe Zone training for all medical students. Amber hopes that her time as a Mirzayan Fellow helped her to broaden her knowledge about the encouragement of diversity in academia and increasing the public understanding of science. She also hopes she can use the experience in a future career in academic medicine (her dream job would be to be dean of a medical school). In her time away from research she enjoys running (long distance), cooking, travel, games (board and video), music, humanism, science fiction, fantasy, martial arts movies, and telling terrible jokes to her students. She will be starting a residency in general surgery after medical school, with hopes of becoming a transplant surgeon. (Updated 2/2016)

Christine Mirzayan Science and Technology Policy Graduate Fellows 2008 Fall Biographical Sketches



Lisa Cockrell (Fall 2008, DEPS/AFSB) received her PhD in molecular systems and pharmacology from Emory University in August 2008. While there, Lisa studied the protein signaling pathways involved in determining a cell's decision to undergo death or maintain survival. Although Lisa's expertise is in cancer biology, her pharmacology training allows her to understand a whole host of physiological processes and diseases, and the drugs that treat them. Over the past two years, Lisa also started a scientific medical writing company, Cockrell Scientific Communications, through which she has sharpened both her technical writing, as well as her business skills. As a Mirzayan Fellow, Lisa has been working with the Air Force Studies Board. Lisa is a proud wife of a U.S. Army soldier, and the happy owner of two cats who constantly keep her on her toes.



Andrew Crowther (Fall 2008, DELS/BCST) returned to academia after his Mirzayan Fellowship. He is currently a postdoctoral researcher at Columbia University, where he uses spectroscopy to study the molecular doping of graphene. While at the National Academies, he worked with BCST on renewable energy and sustainability projects. He completed his PhD in chemistry at the University of Wisconsin-Madison in August 2008. His graduate work used lasers to follow the time evolution of reactants and products in condensed phase CN radical reactions, thus forming a comprehensive picture of how these reactions proceed. A National Science Foundation Graduate Research Fellowship supported Andrew for part of his doctoral work. Andrew obtained a BA in chemistry from Washington University in St. Louis in 2002. In his free time, he enjoys playing soccer, going to baseball games, reading, and watching movies. (Updated 3/2010)



Baruch Feldman (Fall 2008, DEPS/BPA) received his PhD in physics in August 2008 from the University of Washington and his undergraduate degree in physics from the Massachusetts Institute of Technology in 2001. His research focuses on condensed matter physics with applications to electronics and nanotechnology. In addition to science, Baruch is interested in public affairs and policy. In between his bachelor's degree and PhD, he received a master of public administration degree at City University of New York, graduating in 2003. He has also consulted for several nonprofit organizations and worked on economics research. During his Mirzayan Fellowship, he worked the Board on Physics and Astronomy, particularly on the Astro 2010 Decadal Survey. (Updated 4/2009)



Kiran Gupta (Fall 2008, IOM/BGH) is currently working towards her MD at Harvard Medical School. She graduated from Harvard College in 2005 with an AB in government and a certificate in health policy. While in college and medical school, Kiran has focused on a variety of domestic health policy issues including healthcare privacy legislation, medical errors, and insurance coverage. She has also explored international disparities in healthcare working to expand treatment of those affected by HIV and AIDS in Lesotho, Africa. Kiran is very much looking forward to her Mirzayan Fellowship supporting the Roundtable on Evidence Based Medicine. She views her time here as a valuable chance to learn about and engage in the complexities of healthcare policy issues. In her free time, Kiran enjoys traveling, running, cooking, reading, and writing.

Christine Mirzayan Science and Technology Policy Graduate Fellows 2008 Fall Biographical Sketches



Cristina Kapustij (Fall 2008, PGA/CSTL) is a Congressional Health Fellow in the office of Representative John Dingell. Prior to this she was placed at NIH's National Human Genome Research Institute as their Genetics and Public Policy Fellow. She has also worked at Duke University's Center for Genome Ethics, Law and Policy as a policy analyst. She was a member of the Medical Center Institutional Review Board while at Duke. During her tenure as a Mirzayan Fellow at the National Academies, she explored various topics, including direct-to-consumer genetic testing and intellectual property. Cristina's interest in science policy was fostered as an intern in the AAAS Science and Policy Directorate. She holds an MS in biotechnology from Georgetown University. Cristina graduated from Oakland University with a BS in biology and a BA in Russian language and civilization. She is an avid skier and certified yoga instructor. She believes (albeit mistakenly) that she should be the next Food Network star. Contact via email. (Updated 2/2012)



Amy Hee Kim (Fall 2008, DEPS/BEES) is currently pursuing her PhD in physical chemistry at the University of Chicago. For her graduate research, Amy is investigating insulin granule transport in pancreatic β -cells by developing new microscopy techniques and image analysis tools. Her graduate work is in collaboration with researchers in the endocrinology department at the University of Chicago, in hopes of finding a link between insulin granule transport and Type II diabetes. Outside of her research efforts, Amy has helped organize a career panel series for her department, where alumni were invited to meet current graduate students and share their career experiences from various fields of expertise. Recently, Amy has become very interested in energy policy issues, especially exploring how scientists can contribute to solutions for the current energy crisis. She is looking forward to working with BEES, and she wishes that this experience will help her learn more about energy and environmental policies. After her graduation, Amy wishes to work for science funding agencies in hopes to improve communication between research scientist and policy makers. In her free time, she enjoys cooking, watching movies, exploring new neighborhoods and trying new restaurants with her friends. (Updated 3/2010)



Carly (Langlais) Cummings (Fall 2008, IOM/BGH) currently works for Mississippi State University. Her time at MSU began as an Instructor in the Department of Biological Sciences, teaching biology and microbiology courses to undergraduate and graduate students. Carly now works in the Dean's office in the College of Arts & Sciences in the realm of research administration. While in D.C., Carly worked for the Research Competitiveness Program at the American Association for the Advancement of Science (AAAS) and was a Scientific Integrity Intern at the Union of Concerned Scientists. Prior to moving to D.C., Carly was an Assistant Professor of Biology at a small college in Vermont. Carly holds a PhD in molecular microbiology and immunology from Oregon Health & Science University. (Updated 2/2012)



Guruprasad Madhavan (Fall 2008, PGA/STEP) is a program director at the National Academies of Sciences, Engineering, and Medicine, where he has led the research, design, and development of SMART Vaccines—a novel decision support tool to prioritize new vaccines for development. Madhavan received his M.S. and Ph.D. in biomedical engineering and an M.B.A. from Binghamton University. He has worked in the medical device industry as a research scientist developing cardiac surgical catheters for ablation therapy and has been a strategic consultant for technology startup firms and nonprofit organizations. Madhavan is a vice-president of IEEE-USA of IEEE, the world's largest society for engineering and technology. Among numerous honors, he has received the Innovator Award and the Cecil Medal from the presidents of the National Academies of Sciences, Engineering, and Medicine. He was a founding member of the Global Young Academy, and has been named a distinguished young scientist by the World Economic Forum. Madhavan has co-edited six books, and is the author

Christine Mirzayan Science and Technology Policy Graduate Fellows 2008 Fall Biographical Sketches

of *Applied Minds: How Engineers Think* (W.W. Norton, 2015) that has been translated into many languages. His work has been featured in various outlets, including the *Wall Street Journal*, *Washington Post*, *Science*, *Nature*, *Discover*, *Economic Times*, and BBC Radio 4.



Sanjay Magavi (Fall 2008, DELS/BLS) completed a postdoctoral fellowship at the M.I.T. Picower Institute for Learning and Memory, where he studied factors influencing the generation and integration of new neurons in the adult brain. He did his undergraduate studies at Brown University and completed his PhD in neurobiology at Harvard University, where he demonstrated that the adult brain can generate new neurons in response to injury. Sanjay is particularly interested in fostering interdisciplinary and translational research, and understanding how policy influences the choices scientists make and the type of research they do. He and his wife recently renovated a house to LEED environmental standards. Sanjay enjoys sports of all kinds, especially soccer, ultimate Frisbee, and bicycling. He also has a weakness for science fiction. His three daughters are tiny geniuses. Sanjay is a research fellow working on drug discovery for multiple sclerosis and

adrenoleukodystrophy at Vertex Pharmaceuticals. (Updated 2/2016)



Maureen McCamley (Fall 2008, DEPS/NMMB) completed her PhD in biomedical engineering at Brown University. Her research focused on biomedical optics, and the application of liquid crystalline technology in medical applications. Specifically, her project involved the development of a liquid crystal based sensor for the detection of a bacterial biomarker for sepsis. Prior to graduate school, Maureen earned a BS in mechanical engineering from New Mexico State University. Following her Mirzayan Fellowship, Maureen accepted a position as a Presidential Management Fellow working on systems redesign, quality improvement and project management in the VA New England Healthcare System. (Updated 9/2010)



Ami Patel (Fall 2008, NAS/Koshland) completed her PhD in chemistry at Northwestern and received her BS in chemistry from the University of North Carolina. Her graduate research examines the dynamics involved in the transfer of an electron across a protein-protein interface. At the Koshland Science Museum, Ami developed public program ideas for the general public and hands-on activities for volunteers to perform. Her interest in science museums stems from her work at Chicago's Museum of Science and Industry as a Science Connections volunteer and her experiences teaching science to elementary students in the student run organization, Science In The Classroom. Currently, Ami is an assistant professor of chemistry at Elmhurst College, a small liberal arts college in Elmhurst, Ill. During her free time, Ami enjoys exploring the city of Chicago. Ami also spends time volunteering with the South Asian Progressive Action Collective to help increase voter registration within the South

Asian community. (Updated 10/2011)

Christine Mirzayan Science and Technology Policy Graduate Fellows 2008 Fall Biographical Sketches



Mark Peterson (Fall 2009, IOM/BGH) received his PhD in biological and medical informatics from the University of California, San Francisco, where his doctoral research focused on protein structure and evolution. Prior to joining UCSF, he studied influenza epidemiology at the Los Alamos National Laboratory. He holds a BS in electrical engineering from Stanford University and an MS in computer science from the University of Illinois. After completing his Mirzayan Fellowship, Mark joined the New York office of the Boston Consulting Group as a health care consultant. In September 2010, he became a AAAS Science Policy Fellow working with USAID. In his free time, Mark enjoys playing tennis, running, hiking, learning Mandarin, and playing dodge ball on trampolines. (Updated 10/2011)



Kacy Redd (Fall 2008, PGA/BHEW) is the Assistant Director for Science and Mathematics Education Policy at the Association of Public and Land-grant Universities (APLU) in Washington, D.C. At APLU, she is currently working on the Science and Mathematics Teacher Imperative (SMTI) to increase the quantity, quality, and diversity of secondary math and science teachers. During her graduate studies in neuroscience at Columbia University, she served on the university senate, which sparked a deep interest in higher education policy. This interest led to a science and technology policy fellowship at the National Academy of Sciences on the Board of Higher Education and Workforce. At the National Academies, she worked on the Assessment of Research Doctorate Programs Report. (Updated 10/2011)



Milan Shrestha (Fall 2008, DBASSE/CHDGC) received his PhD in anthropology from the University of Georgia (UGA) in August 2007. In his dissertation research, supported by the NSF Dissertation Improvement Grants (Cultural Anthropology), he analyzed the coupled human-ecological system of a mountain landscape in Nepal. The main focus of the dissertation, which integrated ethnographic and spatially- explicit survey data with remote sensing and GIS applications, was to study household conditions and community contexts under which mountain smallholders change their agricultural land-use strategies, and how such land-use strategies are linked to the district scale land-cover change patterns identified from multi-temporal landsat images. His graduate studies were supported by the NASA Earth System Science Fellowship and Dissertation Writing Award of UGA. Before coming to UGA, Milan was a Robert McNamara Fellow of the World Bank and a senior research associate at the Institute for Integrated Development Studies (IIDS) in Nepal. Milan has a MA in international development from Clark University and a BSc in agriculture from Tribhuvan University. He was excited about his Mirzayan Fellowship at the CHDGC and hopes to learn more about U.S. climate change policies and knowledge base from leading scientists. (Updated 3/2010)

Christine Mirzayan Science and Technology Policy Graduate Fellows 2008 Fall Biographical Sketches



Anu Swaminathan (Fall 2008, PGA/GUIRR) is senior program manager at the Biomedical Research Institute (BRI) at Brigham & Women's Hospital, a teaching affiliate of Harvard Medical School in Boston. At the BRI, she is currently responsible for the Centers for Human Genetics, Regenerative Therapeutics, Musculoskeletal Disorders and Women's Health and Gender Biology. She completed her PhD in biomedical science from the University of Connecticut (UConn) where her doctoral thesis focused on the assembly of pili in bacteria. Her doctoral dissertation has been published in the leading journals of her sub-specialty and is also part of a book chapter. She has also played an active role in mentoring high school students interested in science through the Farmington High School Cutting Edge program during her PhD. Anu's passion lies at the interface of science, business, law and administration. She has explored some of this through her internship at the Center for

Science & Technology Commercialization at UConn and through her Mirzayan Fellowship at the National Academies and is continuing to do the same via her current role at the BRI. Anu is an excellent orator and has won state and national level elocution contests in India. Her leisure activities include reading biographies, playing Scrabble and debating politics, science & religion with her favorite scientist – her husband. Her long term career goal is to pursue a career in policy making and/or diplomacy either in the U.S or back home in India. (Updated 10/2011)



Michael Tu (Fall 2008, PGA/DSC) works in the Office of National Security and Technology Transfer Controls in the Department of Commerce, Bureau of Industry and Security. He provides technical input in support the administration of export controls on dual-use commodities and technologies with maritime, commercial spacecraft, aviation and sensor applications, including licensing and support of law enforcement actions. Prior to Commerce, Tu worked with the Middlebury Institute for International Studies on chemical and biological nonproliferation issues and as a space systems operations engineer with Raytheon Missile System, building test and performance analysis tools for sensor components of the EKV ground-based missile interceptor. He graduated from Swarthmore College (BA -- history and BS -- electrical engineering) and the University of Pennsylvania (MSE – bioengineering), where he developed magnetic resonance elastography tools for studying hepatic fibrosis in a

murine model.. (Updated 4/2016)



Wraegen Williams (Fall 2008, PGA/COSEPUP) graduated from Virginia Commonwealth University (VCU) in December 2007 with a PhD in organic chemistry. Her interdisciplinary research focused on enhancing the sensitivity and reliability of an immunosensor response through the synthesis of novel fluorophores. Prior to attending graduate school she participated in a summer research internship at the Bristol-Myers Squibb Pharmaceutical Research Institute. After completing her doctoral studies, she obtained a lectureship position at a small university where the minority population of both students and faculty was limited. This issue piqued her interest in discovering more about diversity issues in higher education. As a Mirzayan Fellow at the National Academies of Sciences, Engineering, and Medicine, she gained insight as to how policies are prepared, reviewed, and implemented to create a diversified workforce. She feels that her Fellowship aided her pursuit of a career in

higher-educational administration. Currently, Wraegen works as an academic advisor at Kellogg Community College in Battle Creek, Mich. Prior to this appointment, she was the director of undergraduate advising and research in the Department of Chemistry at VCU and was also a research associate in the Center for Diversity in Engineering at the University of Virginia. In each of these roles, she has helped to impact student success. Outside of these activities, she takes time to mentor and provide support to undergraduate and graduate students who will soon become the future workforce of research scientists and engineers. In her spare time, she enjoys baking and puzzles. (Updated 4/2016)