Rethinking training for Cornell STEM graduate students & postdoctoral scholars

Why?
Because a majority of us will end up working beyond academia. It’s time to rethink, retrain and be ready for tomorrow’s careers.

A nationwide consortium
Sharing BEST practices

www.BEST.cornell.edu

Contact:
Susi Sturzenegger Varvayanis
Senior Director
BEST Program: Broadening Experiences in Scientific Training Graduate Research & Education
CORNELL UNIVERSITY
S2-057 Schurman / 325 Caldwell Hall
Ithaca, NY 14853
607.253.4304
sv27@cornell.edu

Funded by the National Institutes of Health

www.BEST.cornell.edu
Opportunity pathways

Science Communication
- Scientific writing, editing and media skills
- weekend science communication workshop
- coursework in journalism; intern with the Chronicle
- write a press release, develop a podcast or blog

Science policy
- Learn how policy is created
- externship in Albany, speak with policymakers
- prepare and pitch a bill for congressional consideration
- take a course in science policy

Governance, Risk & Compliance
- Learn how to assess risk, develop solutions
- externship with the FDA or CDC over spring break
- visit biocontainment facilities & learn how they're run
- workshops on quality assurance, good lab practices

Industry, Entrepreneurship & Management
- leadership & management courses
- invite and interact with industry speakers
- "BESTernship" with a life sciences startup
- develop the commercial aspects of your technology

Academic Research:
Many of the skills you will acquire in the BEST program will also help you in an academic career of your choice. Science Communication and Management knowledge for instance can help you run your academic laboratory and convince funding agencies.

BEST Program

Flexible & Experiential
Trainees can opt for a single pathway (through workshops, courses, customized "BESTernships") and/or sample each of the pathways in less detail (primarily through lectures). Trainee initiated project experiences are encouraged, subject to program staff approval and available funding.

Get Involved!
- Visit the www.BEST.cornell.edu website
- Are you eligible? See the weblink 'Get Involved' to see FAQs and connect with BEST via our application
- Request to join our BEST LinkedIn Group
- Follow us @Cornell_BEST on twitter
- Make an appointment with BEST Program staff
- Ask to be added to our BEST track-specific listservs

Metrics for success
Points will be assigned for participation in each experience and an attestation certificate will be awarded to trainees who obtain sufficient points. Evaluation of the program will be extensive, to increase program effectiveness, and to gauge the effect on the scientific careers of trainees in the long and medium terms. Trainees participate in long-term impact studies.

LinkedIn: Cornell_BEST Program    Twitter: @Cornell_BEST
Rebecca Williams, Director, Cornell Biotechnology Resource Center Imaging

As director of Cornell’s Biotechnology Resource Center’s imaging core, my role is to ensure that Cornell researchers have access to expertise and the best tools for optimally visualizing and quantitatively analyzing their experimental systems.

My staff and I support advanced microscopy stations (confocal, multiphoton and super resolution), flow cytometry and sorting, high-resolution ultrasound and CT platforms, as well as more standard luminescence and fluorescence platforms. We have developed numerous modules and workshops for educating students and researchers on fluorescence, imaging technologies and image analysis and visualization.

In addition to the managerial day-to-day tasks inherent in running a core facility, I am involved in instrument acquisition efforts as well as pushing some of the more challenging imaging applications, including in vivo animal imaging at the cellular level and development of project-specific image analysis algorithms.
Dr. August assumed his position as Professor and Chair of the Department of Microbiology and Immunology in July 2010. His previous position was as Distinguished Professor of Immunology in the Department of Veterinary & Biomedical Sciences, and Director of the Center for Molecular Immunology & Infectious Disease, at The Pennsylvania State University at University Park, where he started as an Assistant Professor in 1999.

He received a B.S. degree in Medical Technology from the California State University at Los Angeles, and a Ph.D. degree in Immunology from the Weill Cornell Graduate School of Medical Sciences. He was a Postdoctoral fellow at The Rockefeller University with the late Hidesaburo Hanafusa.

Now completing its third year, the Broadening Experiences in Scientific Training (BEST) Program provides information, experiential opportunities, and other resources to prepare students for careers in industry, government, and communication, in addition to traditional academic careers.

August, along with Chris Schaffer and John Parker are Principal Investigators. Cornell was awarded the $1.8 million, five-year grant from the National Institutes of Health to give graduate students and post-doctoral scholars at Cornell University new opportunities to explore both traditional and non-traditional career options. Thanks to additional support from the Graduate School, CALS, and the Colleges of Engineering, Arts & Sciences, Human Ecology and Veterinary Medicine, the BEST Program supports science, technology, engineering and mathematics (STEM) trainees across campus.

Susi Varvayanis, Senior Director, Cornell BEST Program

Susi came to Cornell in 1988 and is currently Senior Director for Cornell’s Broadening Experiences in Scientific Training, or BEST Program. Previously, she was Business Development Officer at the Institute of Biotechnology and liaison to the McGovern Center for Venture Development in the Life Sciences, the on-campus business incubator, where she helped fill the pipeline of early stage technologies and entrepreneurs emanating from research at the university.

Since 2009, Susi was the host city coordinator for the statewide Pre-Seed Workshop (PSW) to evaluate high tech ideas for commercial potential. She launched the PSW in Switzerland while she was Chief Operating Officer for a Swiss NSF Center for Research Excellence, bringing together the fields of chemistry and biology. While there she had responsibility for technology transfer, science communication, advancement of women in science, and education and training efforts. She also oversaw a $7M/y budget for researchers from 5 institutions.

At Cornell, Susi managed for six years the prestigious University-wide Presidential Life Science Fellowship (PLSF) program for first year graduate students, and the Center for Advanced Technology (CAT) NYSTAR awards for ten years. Prior to Cornell, Susi worked in the NIH lab of Robert Gallo on retroviruses, and for Biotech Research Laboratories, Inc., a Maryland startup. She has co-authored over 30 peer-reviewed publications in cancer cell biology. Her past includes managing a flow cytometry laboratory, and teaching at an international boys’ school in Switzerland. Susi earned a BA in Biological Sciences and French from Mount Holyoke College, and an MS in Microbiology & Immunology from Georgetown University.
Gary Stewart, Director, Community Relations, Cornell University

Gary Stewart is director of Community Relations at Cornell University. Prior to taking that job, Gary was a lifelong newspaperman, serving as Opinion Page Editor of The Ithaca Journal for 10 years, and, before that posting, was the first managing editor of The Moscow Times, during and after the dissolution of the Soviet Union.

Gary serves on a variety of local non-profit boards, writes a regular newspaper column on town-gown connections, and produces the weekly radio show “All Things Equal”, which is broadcast every Tuesday morning on WHCU 870 AM.

He is a native of Canandaigua NY, and a graduate of Emerson College, with a B.S. in journalism.

Merry Buckley, Communications Manager, The Baker Institute for Animal Health and Feline Center

Merry Buckley is a writer and communications professional located in Ithaca, New York. After earning her B.S. in Biochemistry and Ph.D. in Crop and Soil Sciences, Merry worked for more than ten years as a contract writer for such clients as the American Society for Microbiology (ASM), the Department of Energy, and the National Institute of Allergy and Infectious Disease.

The original host of the podcast series Meet the Scientist, a production of ASM, Merry eventually took on the roles of Social Media Editor, Commentaries Editor, and blogger for ASM’s online open-access journal, mBio, when it was launched in 2009.

Today, Merry is Education and Outreach Program Manager at Cornell University’s Baker Institute for Animal Health and the Cornell Feline Health Center, where she coordinates and implements strategic communications, outreach, and marketing programs designed to publicize the scientific work of the units and connect with pet owners, veterinarians, and donors.
Theresa Curtis received her Ph.D. from Albany Medical College in Physiology and Cell Biology, and completed a Postdoctoral Fellowship at the University Of Virginia School Of Medicine. After her postdoc, she moved to Ithaca and took a position as a Research Scientist at Agave BioSystems. While at Agave she was the P.I. for projects funded through the Department of Defense (DOD), including the development of vertebrate cell-based diagnostic assays for water and air toxicant sensing, development of a mast cell sensor for bacterial detection, a high-throughput wound healing assay for drug screening, and the development of an antibody-based infectious disease diagnostic.

Theresa is now an Associate Professor at SUNY Cortland, where she has continued her DOD-supported research on the development of a cell-based biosensor for the detection of environmental toxicants.
Jeffrey Fearn, Senior Licensing Officer at Cornell's Technology Licensing (CTL)

Jeff manages a diverse portfolio of life sciences, biomedical engineering, nanotechnology and polymer chemistry technologies.

Jeff spent five years at Fisher Scientific where he was a Life Sciences Product Manager overseeing a portfolio of over fifteen well known life science vendor partners. He was responsible for the sales, profitability and marketing of these products through Fisher. Previously, he spent almost ten years at Upstate Biotechnology in various capacities of new product development, quality assurance and product marketing.

He obtained a PhD in Biological Chemistry from the University of Illinois - Chicago and a BS in Biochemistry from Cornell University, College of Agriculture and Life Sciences. He is a member of the Licensing Executives Society and the Association of University Technology Managers.

---

Chris Schaffer, Associate Professor, and Director of Graduate Studies in the Meinig School of Biomedical Engineering at Cornell University

Chris B. Schaffer is an Associate Professor and Director of Graduate Studies in the Meinig School of Biomedical Engineering at Cornell University. He will begin a three-year term as the Associate Dean of Faculty this summer. Chris grew up in Jacksonville, FL and was an undergraduate at the University of Florida, where he studied physics.

He received his PhD from Harvard University, also in physics, where he worked with Eric Mazur. He was then a post-doc in David Kleinfeld's neuroscience laboratory at the University of California, San Diego. He now runs a lab at Cornell that develops advanced optical techniques that enable quantitative imaging and targeted manipulation of individual cells in the central nervous system of rodents with the goal of constructing a microscopic-scale understanding of normal and disease-state physiological processes in the brain. One area of current focus is understanding the role of brain blood flow disruptions in the development of Alzheimer’s disease. Chris is also active in developing novel educational strategies to teach science as a dynamic process for discovery. These approaches are used in outreach settings in middle and high-school science classes as well as in his undergraduate and graduate level courses. Chris also has a strong interest in science policy and recently spent a one-year sabbatical in Washington, DC, working as a science policy fellow for Senator Edward Markey in the United States Congress. He continues to be active in policy, including through a science policy course he teaches. Chris is an accomplished surfer, having ridden waves all over the world and surfed some “big wave” spots, including greater than 20 ft. waves at Todos Santos, Mexico.
**Chelsea Gregg, PhD candidate, Cardiovascular Developmental Bioengineering Laboratory, Department of Biomedical Engineering, Cornell University**

Chelsea earned a BSE and MS in Biomedical Engineering from Arizona State University. Her research focus in Jonathan Butcher's lab is on live quantitative imaging of cardiovascular development and hemodynamics in the developing embryo.

She is the founding President of the graduate student club Advancing Science And Policy (ASAP) and is active as a Broadening Experiences in Scientific Training (BEST) trainee in the Science Policy track.

In 2014 Chelsea won a reviewer's choice award at the 2014 BMES annual meeting in San Antonio, TX for her poster "Gold Nanoparticles as Exogenous Soft Tissue Contrast for Live in Vivo MicroCT Imaging of Avian Morphogenesis." The Reviewer's Choice Award is given for an outstanding abstract and/or presentation at the conference. Chelsea's poster demonstrated the efficacy of non-toxic gold nanoparticle-based contrast agents for use in live in vivo microCT imaging of avian morphogenesis. Her work consists of characterizing the soft tissue contrast enhancement through a single intravenous injection of 10% blood volume of particles.

**Jack Rudnick, Director, New York State Science and Technology Law Center and Syracuse University College of Law’s Technology Commercialization Law Program**

Jack Rudnick is Director of the New York State Science and Technology Law Center and Syracuse University College of Law’s Technology Commercialization Law Program. He is an experienced corporate and intellectual property attorney who has been providing legal counsel for 40 years.

He has extensive experience in commercializing new technologies and advising emerging technology companies. His interests are IP strategy development to maximize protection and return on investment and managing technology commercialization programs and ventures.

Rudnick began his career as in-house counsel, first at Oneida Ltd. and then at medical device manufacturer Welch Allyn, Inc. Rudnick co-founded Blue Highway, Inc. while at Welch Allyn to locate and accelerate the development of technologies with medical applications. He continued with Blue Highway after it was transferred to Syracuse University in the role of Senior Vice President, Legal and Government Affairs. He is currently of counsel with Barclay Damon, LLP's Emerging Technology Team, where he provides business and legal consultation to technology-based companies. Prior to Professor Ghosh’s appointment, Rudnick served as the Director of the Technology Commercialization Law Program from 2013 to 2016.

He is an active member of several professional organizations and is on the Board of Trustees for the Everson Museum of Art. In addition, Rudnick serves on the Board of Directors for MedTech Association and the Central New York Community Foundation, Inc., the Advisory Board of the Lally School of Management’s M.S. in Technology Commercialization and Entrepreneurship at Rensselaer Polytechnic Institute (RPI), and the Board of Advisors of the CNY Biotech Accelerator. He received his JD from Syracuse University College of Law. He received his undergraduate degree from Middlebury College.
**Anne Poduska**, Graduate & International Student Career Advisor, Cornell Career Services

As the Graduate & International Student Career Advisor in Cornell Career Services, Dr. Anne Poduska provides career support for graduate students, international students, and students interested in an international career. She consults with students on their career questions and job-search documents, creates and presents seminars and workshops, and collaborates with groups across campus to develop workshops and increase awareness of career resources. In 2012, she co-authored a book chapter on non-academic science careers for the National Science Teacher’s Association’s Exemplary Science for Building Interest in STEM Careers.

In this role, Dr. Poduska draws upon her five years of international experience, which includes teaching English in Guangdong, China and conducting graduate and postdoctoral chemistry research and science outreach activities in Bangalore, India. Prior to joining Cornell, she worked at the American Association for the Advancement of Science’s Research Competitiveness Program, where she oversaw the peer review process for grant competitions.

Dr. Poduska received a M.S. and Ph.D. from Cornell University in theoretical chemistry and science communication, and a B.A. in English and chemistry from Macalester College.

**Kim Holloway**, Associate Director of Proposal Advancement, Cornell University

As the Associate Director of a new initiative to support and advance Cornell proposals in areas of strategic interest and importance, Kim Holloway's work primarily involves competitions for large, extramural, multi-investigator grants and contracts that have particularly significant impact in advancing Cornell’s research enterprise. She works with PIs, Office of the Vice Provost for Research (OVPR) leadership, the Office of Sponsored Programs, and college and department administrators to assemble teams of department and college staff and external experts to support PIs in proposal development and submission. Additionally, Kim develops and provides information, training, and other resources for PIs and the broader research community to increase and facilitate participation in competitions for external funding in areas of strategic importance as well as in targeted funding areas, such as early career awards, and to enhance overall proposal development expertise and success across the campus.

Kim’s main research interests lie in the control of mammalian meiotic progression and the mechanisms governing timing and placement of meiotic recombination events in the germ line. She attained her Ph.D. from the University of Leicester in the UK, studying the patterns of linkage disequilibrium (LD) in the human genome and directly measuring the frequency and distribution of meiotic recombination events in the male germ line. She has over 14 publications in the peer-reviewed literature and was awarded NIH K99 and R00 grants.

Since 2009 Kim has also been active as a Team Leader and puppy raiser at Guiding Eyes for the Blind in the Fingerlakes Region, serving as a class teacher and mentor as well as in fundraising.
**Rush Holt**, Chief Executive Officer, American Association for the Advancement of Science (AAAS)

Physicist and eight term Congressman in the U.S. House of Representatives, Rush Holt is now the CEO of AAAS, the world's largest general scientific organization, succeeding Alan Leshner who spoke at last year's Cornell BEST Symposium.

Holt also serves as the executive publisher of the Science family of journals since February 2015. Over his long career, Dr. Holt has held positions as a teacher, scientist, administrator, and policymaker. He has run the large Department of Energy national particle physics lab at Princeton, was a AAAS American Physical Society Science & Technology Policy Fellow, and served as an arms control expert at the U.S. State Department.

In Congress, Holt served as a senior member of the Committee on Natural Resources and the Committee on Education and the Workforce. On Capitol Hill, Holt established a long track record of advocacy for federal investment in research and development, science education, and innovation. His combined efforts earned him the well-deserved moniker 'Champion of Science.'

Holt is a Phi Beta Kappa graduate of Carleton College in Northfield, Minnesota, and he holds M.A. and Ph.D. degrees in physics from New York University. He is an elected fellow of AAAS, the American Physical Society, and Sigma Xi, and he holds honorary degrees from Monmouth University, Rider University, and Thomas Edison State College.

**John Parker**, Associate Professor of Virology in the Department of Microbiology and Immunology within the College of Veterinary Medicine at Cornell University

Dr. John Parker received his veterinary degree from the University of Glasgow in 1983 and his Ph.D. in virology from Cornell University in 1999. John worked for 9 years in clinical practice as a veterinarian from 1983 to 1993 in the UK and Australia. His graduate studies at Cornell focused on the cellular and viral determinants of host range. As a post-doc at Harvard Medical School, John worked with Max Nibert on mammalian reoviruses in the Department of Microbiology and Genetics. His current lab at the Baker Institute for Animal Health studies the cell biology of viral infection with a particular interest in how viruses usurp normal cellular processes for virus replication. The lab works with several viruses, but primarily uses mammalian reoviruses (REOV) and feline caliciviruses (FCV). Current areas of investigation include virus entry into cells (FCV), virus interaction with the cellular translational machinery (REOV), virus-induced programmed cell death or apoptosis (REOV), virus assembly and cellular chaperones (REOV), and virus effects on host translation.

Dr. Parker is the recipient of a Burroughs Welcome Fund Investigatorship in the Pathogenesis of Infectious Disease and a Pfizer Award for Research Excellence. He served on the council of the American Society for Virology as councilor for Veterinary Virology from 2010 to 2013. He is currently the Director of the Cornell Leadership Program for Veterinary Students and the Director of two NIH training grants.
**Felix Litvinsky**, Managing Director, Blackstone LaunchPad at Cornell University

Felix Litvinsky is a Managing Director of Blackstone LaunchPad at Cornell University. Blackstone LaunchPad is an experiential campus based program designed to introduce entrepreneurship as a viable career path and develop entrepreneurial skills and mindsets through individualized coaching, ideation and venture creation support.

Felix Litvinsky is a Co-founder and a Managing Partner of Minority Venture Partners (MVP), a business acceleration company whose mission is to increase and expand Minority and Women Business Enterprise participation in emerging technology sectors throughout New York City and the Tri-state Area.

Felix is also a mentor and advisor at Princeton University's Keller Center. He is a Founder of The IoT Partners, an IoT ecosystem initiative focusing on enabling IoT across verticals.

Earlier, Felix was the VP of Business Development at ARC International (LSE: ARK.L). Prior to ARC, he was the co-founder and CEO of Alarity Corporation (acquired by ARC International, now Synopsys), a company with a world renowned team of over 40 professionals specializing in multimedia IP. Under Felix’s stewardship, Alarity became a trusted strategic partner to many “Tier 1” OEM and ODM customers creating multimedia products. Prior to founding and operating Alarity, Felix spent many years in major corporations in various technology management roles.

Felix is a seasoned international technology entrepreneur and is an active member of various angel investor groups. He has held executive & management positions in business development, technology, and strategy at international companies. Felix was instrumental in launching technology startups and developing new markets. Felix has been a speaker at various international and local industry events. He is an advisor/mentor to startup companies worldwide.

---

**Sunish Mohanan**, DVM, MS, PhD, Diplomate ACVP, Principal Research Scientist-Pathologist, Preclinical Safety / Patient Tailoring Strategies, Eli Lilly and Co.

Dr. Mohanan received his veterinary medical degree from the College of Veterinary Medicine, Kerala Agricultural University in India. He gained diverse research experience working in muscle biology/pathology projects in University of Wisconsin-Madison and U. Penn before joining the comparative pathology residency program at Wake Forest School of Medicine Primate Center. He became a Diplomate of the American College of Veterinary Pathologists in 2010. In the same year Dr. Mohanan joined Cornell’s Comparative Biomedical Sciences PhD program and received the DVMs Seeking PhD fellowship. At Cornell, he worked on understanding the role of PAD enzymes and protein citrullination in cancer progression under the mentorship of Dr. Scott Coonrod. During his PhD training he also established pathology collaborations with multiple labs at Cornell including biomedical engineering (Dr. Claudia Fischbach) and the Weill School of Medicine (Dr. Andy Dannenberg) to evaluate the role of physicochemical properties, obesity and inflammation in cancer pathogenesis. Dr. Mohanan has co-authored more than 20 peer-reviewed scientific publications and book chapters. In 2014, Sunish joined Eli Lilly and Company as a Principal Research Scientist – Pathologist in the preclinical safety assessment group. Sunish applies his knowledge in pathology and cancer biology towards oncology preclinical safety and patient tailoring in both small molecule and biotherapeutics development. He is also involved in biomarker strategy development, external contract research organization partnerships, and serves in professional organization committees including the Society of Toxicologic Pathology and Society of Toxicology.
Bruce V. Lewenstein, Professor of Science Communication and Chair of the Department of Science & Technology Studies, Cornell University

Bruce V. Lewenstein is Professor of Science Communication and chair of the Department of Science & Technology Studies at Cornell University. He is also a full member of the Department of Communication.

He works primarily on the history of public communication of science, with excursions into other areas of science communication (such as informal science education), including training scientists in science communication.

He has been active in international activities that contribute to education and research on public communication of science and technology, especially in the developing world. In general, he tries to document the ways that public communication is fundamental to the process of producing reliable knowledge about the natural world.

Jonathan Miller, Associate Director, Einaudi Center for International Studies, Cornell University

Jonathan Miller spent 28 years as a freelance radio, television, and print journalist. His features, news reports, and commentaries have been broadcast on NPR, BBC, CBC, Marketplace, The World, and PBS NewsHour; his articles have been published in the New Yorker, Condé Nast Traveler, Parents, American Way, Christian Science Monitor, and many other publications.

He has worked in more than 20 countries and has lived in the Philippines, Peru, and Kenya. In 2016 he became associate director of the Mario Einaudi Center for International Studies at Cornell.

Between 2006 and 2016 Jonathan was executive director of Homelands Productions, a nonprofit journalism cooperative specializing in public radio features and documentaries. He served as executive producer of Homelands’ “Food for 9 Billion,” “WORKING,” and “Worlds of Difference” projects, and as editorial director of “Think Global,” a nationwide public radio collaboration on globalization.

Before becoming a journalist, Jonathan worked as a farmhand, forest ranger, firefighter, trail builder, construction worker, bicycle messenger, maintenance man, cafeteria worker, day laborer, and plasma donor. As a VISTA volunteer in Seattle, he helped establish a child care center for the children of homeless families. He has an English degree from Swarthmore College and is married to a scientist.