

The 94th Annual National Conference

Science Beyond the Bench

**June 20, 2015 At The Pennsylvania
State University**



HOSTED BY: Nu Chapter
GRADUATE WOMEN IN SCIENCE

A Conference for Students, Post-Docs, Faculty, and Professionals in the
Science, Technology, Engineering, and Mathematics (STEM) Fields

**Hosted by Graduate Women in Science,
Nu Chapter**

**June 20, 2015
Chemistry Building, University Park, PA**

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Welcome to GWIS National Meeting!

Graduate Women in Science (GWIS) is an interdisciplinary society of scientists who encourage and support women to enter and achieve success in science through full participation in their scientific research and its applications; in the development and advancement of women; in the integration of their careers, personal goals, and society's needs; and by professional networking and mutual inspiration. The purpose of GWIS is to further women's interest in STEM, to be a support and networking group for women in STEM both at Penn State and nationally, and to provide a vehicle for women's recognition as scientists, technicians, engineers, and mathematicians. Our organization consists of graduate students, post-docs, and faculty who are involved in or who support STEM.

For information on GWIS please visit our websites:
Local PSU (Nu) Chapter: <http://psugwis.weebly.com/>
National GWIS: <http://www.gwis.org>

Schedule

8:30am – 9:00am	Registration & Poster Setup (<i>Lobby</i>) Coffee Break (includes light breakfast snacks) (<i>Bridge</i>) Silent Auction (begins in 301D)	102 Chemistry Bldg and Lobby
9:00am – 9:15am	Welcome Address <i>Melissa Mullen Davis, National GWIS President</i>	102 Chemistry Bldg
9:15am – 9:45am	Opening Plenary Address <i>Eva Pell, former Secretary for Science at Smithsonian Institution</i>	102 Chemistry Bldg
9:45am - 10:00am	Networking Break (includes coffee, beverages, and snacks)	Life Sciences Bridge
10:00am - 11:15am	Snapshots of STEM Research and Applications: 10:00-10:15 Science Writing <i>A'ndrea Messer</i> 10:15-10:30 Policy Talk <i>Ben Corb</i> 10:30-10:45 Industry Talk <i>Kathleen Gehoski</i> 10:45-11:00 Academia Talk <i>Melissa Rolls</i> 11:00-11:15 Outreach Talk <i>Michael Zeman</i>	102 Chemistry Bldg
11:15am – 12:15pm	Panel Discussion: Bridging STEM Careers <i>A'ndrea Messer, Ben Corb, Kathleen Gehoski, Melissa Rolls, and Michael Zeman</i>	102 Chemistry Bldg
12:15pm – 1:30pm	Lunch (check seating list for assigned tables hosted by guest speakers)	Life Sciences Bridge
1:30pm – 3:00pm	Research Poster Session (<i>coffee and snacks available</i>) Silent Auction end at 3pm	Life Sciences Building Bridge
3:00pm – 3:15pm	Networking Break (includes coffee, beverages, and snacks)	Life Sciences Bridge
3:15pm – 4:15pm	Symposium Keynote Address <i>Brendan Mullan, Director of Science, The Wrinkled Brain Project, Former Director of the Buhl Planetarium and Observatory at the Carnegie Science Center in Pittsburgh</i>	102 Chemistry Bldg
4:15pm – 4:45pm	Closing Plenary Address – <i>GWIS Nu Chapter</i> Poster Session Award Winners Announced Silent Auction Results	102 Chemistry Bldg
4:45pm – 5:00pm	Farewell Address <i>Laura Havens, National GWIS President-Elect</i>	102 Chemistry Bldg
6:00pm – 9:00pm	GWIS National Meeting Banquet with Keynote Address The Freelance Scientist: What can science learn from Art? <i>Indre Viskontas, Professor of Sciences and Humanities at the San Francisco Conservatory of Music</i>	The Nittany Lion Inn

Meet the Speakers

**Opening Plenary
9:15 AM-9:45 AM**



Eva Pell

**Keynote
3:15 PM-4:15 PM**



Brendan Mullan

Snapshot Speakers and Panelists 10:00 AM -12:15 PM



A'ndrea Messer



Ben Corb



Kathleen Gehoski



Melissa Rolls



Mike Zeman

**Banquet Keynote
6:00PM-9:00PM**



Indre Viskontas

Keynote Speaker

From Academia to Nonprofits: Life Lessons Through Stock Photos



Brendan Mullan, Ph.D.

(Director of Science, The Wrinkled Brain Project, Former Director of the Buhl Planetarium and Observatory at the Carnegie Science Center in Pittsburgh)

Brendan Mullan explores innovative ways to communicate astronomy to the public and inspire a new generation of scientists. He is a 2013 National Geographic Emerging Explorer, the national champion of the 2012 U.S. FameLab science communication competition, former director of the Buhl Planetarium and Observatory at the Carnegie Science Center in Pittsburgh, and current Director of Science at The Wrinkled Brain Project.

Brendan thinks scientists should reach out—to schoolchildren, college undergraduates, folks in the neighborhood, curious web browsers, and everyone in between. His astronomy research tackles some of astrophysics's most complex questions, but his public outreach efforts bring astronomy and astrophysics out of the ivory tower to make science more accessible, engaging, and entertaining. His current work at The Wrinkled Brain Project is a unique synthesis of real scientists and science educators to revolutionize science education. Rather than focusing on science content, they want science education to focus on science process, such as critical thinking skills, problem solving and collaboration. They aim to wrinkle student's brains by introducing inquiry and science thinking in the science classroom through low-cost online platforms that schools of all economic levels can access.

He believes that inspiring this new generation of scientists is crucial. "The 21st-century problems we face—climate change, sustainability, disease, you name it—can only be ameliorated with 21st-century ideas, aka science."

Brendan has had stars in his eyes since he was 10 years old. "It all started at a planetarium for me. I went on a school field trip to the local dome we had in one of the high schools. The lights dimmed, all these bright pinpoints appeared overhead, and I learned about how stars are born, evolve, and die; the mystery of black holes; violent supernovae explosions. I thought it was the coolest thing in the world and decided right there I wanted to know how it all works. I was so fortunate to have access to resources like that; I want to pay it forward to the next generation. What could be more fun and meaningful than sharing the majesty of the cosmos with everyone?"

Opening Plenary

Science at the Smithsonian and Beyond

Eva Pell, Ph.D.



Dr. Eva J. Pell, recently retired under secretary for science at the Smithsonian Institution and former Penn State senior vice president for research and dean of the Graduate School, is a biologist, plant pathologist, and science administrator.

Dr. Pell spent nearly four decades at Penn State before leaving to work as the under secretary of science for the Smithsonian Institution in Jan. 2010. As under secretary, she oversaw operations of the National Museum of Natural History; the National Air and Space Museum; the National Zoo and its Conservation and Research Center in Front Royal, Va.; the Smithsonian Astrophysical Observatory in Cambridge, Mass.; the Smithsonian Environmental Research Center in Edgewater, Md.; the Smithsonian's Museum Conservation Institute in Suitland, Md.; and the Smithsonian Tropical Research Institute in Panama. In her efforts to foster and increase scientific research at the Smithsonian, Dr. Pell led the creation of the four "Grand Challenges Consortia" that develop interdisciplinary collaborations across the Smithsonian.

Dr. Pell earned a bachelor of science in biology from City College of the City University of New York in 1968 and a doctorate in plant biology from Rutgers University in 1972. She joined Penn State in 1973 as an assistant professor of plant pathology. She was named distinguished professor of plant pathology in 1991 and was named the John and Nancy Steimer Professor of Agricultural Sciences in 1995.

From Jan. 2000 to Dec. 2009, she served as the senior vice president for research and dean of the Graduate School. When Dr. Pell took over the research office, research expenditures were \$393 million. During the decade of her tenure, the University's expenditures nearly doubled: in the 2008-09 academic year research expenditures reached \$765 million. This garnered the University a ninth-place ranking nationally among all public and private universities in research and development. In addition, Dr. Pell was responsible for the Penn State Research and Technology Transfer Organization, which connects Penn State researchers with industries in order to stimulate economic development. Pell was active in economic development and served on numerous state boards including the Ben Franklin Center of Central and Northern Pennsylvania, the Ben Franklin Technology Development Authority, the Technology Collaborative and the Life Science Greenhouse for Central Pennsylvania. She was also President of the Penn State Research Foundation and the Research Park Management Corp. In 2013 the university recognized her contributions by naming a new building after her, the "Eva J. Pell Laboratory for Advance Biological Research."

A recipient of grants totaling more than \$7 million and the author or co-author of more than 100 publications and 65 abstracts, Dr. Pell is recognized internationally for her research in the field of plant pathology. Her research focused on the impact of air pollutants on vegetation and spanned from the molecular to the ecophysiological. In recognition of leadership in her field, Dr. Pell was also elected as a Fellow of the American Association for the Advancement of Science (AAAS) in 2003.

Snapshot Speakers and Panelists



A'ndrea Messer, Ph.D.

(Senior Science and Research Information Officer, The Pennsylvania State University)

A'ndrea Messer is a senior science and research information officer at the Pennsylvania State University. She graduated from Purdue University with a B.A. in Science and Culture and received a M.S. from Boston University in Journalism/ Science Communication. A'ndrea earned a M.S. and Ph.D in Anthropology from the Pennsylvania State University. She has worked as a science writer for the American Society of Mechanical Engineers and worked at Bell Labs as a technical editor.

She has served as a volunteer press officer for the Society of American Archaeology. She has edited many journals and is also a AAAS fellow.



Ben Corb, Ph.D.

(Director of Public Affairs, American Institute for Medical and Biological Engineering)

Benjamin Corb brings to the American Society for Biochemistry and Molecular Biology more than a decade of experience in building partnerships between the federal government and the private sector to utilize scientific advancement to improve the quality of life and well-being of Americans. Corb has made a career in science policy and advocacy, having spent two years as director of public affairs at the Washington, D.C.-based American Institute for Medical and Biological Engineering, serving as the chief public face of the organization before institute partners, the White House and Congress. Before that, he served as Executive Director and senior technical coordinator for the Next Generation Air Transportation System Institute, a policy manager for the American Institute of Aeronautics and Astronautics and a management analyst for the U.S. Department of Veteran Affairs, where he developed the VA's first energy conservation policy.



Kathleen Gehoski

(Lead Lithography and Imprint Engineer, Materials Research Institute, The Pennsylvania State University)

Kathleen A. Gehoski, is the Lead Lithography and Imprint Engineer in the Nanofabrication Laboratory, within the Materials Research Institute, at The Pennsylvania State University. She is also the NNIN Education and Outreach Coordinator. She has been with the University since 2008. Prior to joining the University Mrs. Gehoski was a Senior Lithography Engineer at Motorola Labs at Motorola Inc. in Tempe, Arizona for 25 years. Her primary responsibilities included lithography process development for a variety of devices; MEMs, MRAM, RF, NED, Fuel Cells, Micro-Fluidic and SAW on a variety of substrates; GaN, GaAs, Si, quartz, SiC, and flexible materials. The last five years at Motorola Mrs. Gehoski was instrumental in bringing on-line the first commercially available Imprint tool. She has authored or co-authored over 40 publications pertaining to lithography and imprint, with two issued US patents. Mrs. Gehoski has an AAS in Electro-Mechanical-Automation, a BS in Computer Information Systems, and an MBA.



Melissa Rolls, Ph.D.

(Associate Professor of Biochemistry and Molecular Biology, The Pennsylvania State University)

Melissa Rolls is currently an Associate Professor of Biochemistry and Molecular Biology at Penn State. Her cell biology training began in the summer between high school and college when she worked in a lab at Johns Hopkins University. She continued to do cell biology and virology research as an undergraduate at Yale University. During graduate school at Harvard she turned her microscope to neurons and has been working on these long, thin and very important cells since then. She moved to the west coast to the University of Oregon for a post-doc and learned how to combine *Drosophila* genetics with cell biology. Her lab at Penn State continues to work on the basic cell biology of neurons in addition to how these cells respond to injury and stress. In addition, she is the Director of the Center for Cellular Dynamics, the Associate Director of the MD/PhD program and the Chair of the Molecular, Cellular and Integrative Biosciences graduate program.



Mike Zeman, M.S.

(Director of Outreach and Science Engagement, The Pennsylvania State University)

Mike Zeman earned his B.S and M.S degrees in Kinesiology at Penn State University. He then spent seven years teaching K-12 Health Education in Rochester, NY. Mr. Zeman earned his school district administrative degree (SDA) from the Massachusetts College of Liberal Arts and worked as an assistant principal in Greece Central School District, NY, before returning to State College with his family to direct the Science-U program as Director of Outreach and Science Engagement at Penn State.

He has presented talks on leadership and science education at the Schreyer Institute for Teaching Excellence Student Leadership Conference as well as the National Science Teachers Association Conference, and currently serves on the College of Science Retention Committee and the University Task Force on Service Learning and Student Engagement. Mr. Zeman has experience coordinating outreach efforts with Penn State faculty across many STEM departments to make Penn State outreach phenomenal.

Banquet Keynote

The Freelance Scientist: What can science learn from Art?



Indre Viskontas, Ph.D

(Professor of Sciences and Humanities at the San Francisco Conservatory of Music)

Combining a love of music with scientific curiosity, Dr. Indre Viskontas is a Professor of Sciences and Humanities at the San Francisco Conservatory of Music, where she is pioneering the application of neuroscience to musical training, and an Adjunct Professor of Psychology at the University of San Francisco. She completed her undergraduate degree in psychology and French literature at Trinity College in the University of Toronto, her Masters of Music degree in vocal performance at the San Francisco Conservatory of Music and her Doctorate of

Philosophy in cognitive neuroscience at the University of California, Los Angeles.

Dr. Viskontas has published more than 35 original papers and chapters related to the neural basis of memory and creativity, including several seminal articles in top scientific journals such as the *Proceedings of the National Academy of Sciences*, *the Journal of Neuroscience*, *Current Opinion in Neurology* and *Nature: Clinical Practice*. Her scientific work has been featured in Oliver Sacks' book *Musophilia*, *Nature: Science Careers* and *Discover Magazine*. Her dissertation was recognized as the best of her class at UCLA and her ongoing collaborations include projects with internationally-acclaimed artist Deborah Aschheim, with whom she has created art pieces highlighting the interplay between memory, creativity and the brain, and a multi-media project exploring the interplay between musical ensembles and empathy, funded by a grant from the Germanacos Foundation.

Defying traditional career boundaries, Dr. Viskontas spends much of her time performing as an opera singer. She often works with living composers and has created roles in three contemporary operas. A regular soloist with several Bay Area chamber groups, she is the founder and director of *Vocallective*, a consortium of singers and instrumentalists dedicated to the art of vocal chamber music as well as *Opera on Tap: San Francisco*, a chapter of the nation-wide organization whose mission is to create a place for opera in popular culture.

A passionate communicator, Dr. Viskontas made her television debut as a co-host of *Miracle Detectives*, a six hour-long episode documentary series that aired on *The Oprah Winfrey Network*. She has appeared on *The Oprah Winfrey Show* and several major radio stations across the US, including the popular NPR program *City Arts & Lectures* in the US and *The Sunday Edition* on the CBC in Canada. She was a featured host of the podcast *Point of Inquiry*, from 2012-2013, and currently co-hosts the popular science podcast *Inquiring Minds*, produced in partnership The Climate Desk, a collaboration with *The Atlantic*, *Center for Investigative Reporting*, *The Guardian*, *Grist*, *Mother Jones*, *Slate*, *Huffington Post* and *Wired*. She is a sought-after public speaker, an Editor of the journal *Neurocase* and a frequent contributor to *MotherJones.com*. Her 24-lecture course called *Essential Scientific Concepts* was released by The Great Courses as a series of videos on DVD and audio lectures on CD, as well as streaming online in 2014 and her second course, *Brain Myths Exploded: Lessons from Neuroscience* will be released in 2016.



Graduate Women in Science

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Lincoln Caverns	Walt Disney World
Mad Mex	Wawa
Maize Quest	Western Digital Foundation
National Aquarium	
National Aviary	

Current as of June 12, 2015

Graduate Women in Science Poster Session Participants

Name	Title	Number
Dr. Michelle Booze	The 5 Rules of Career Success for a Young Scientist	C1
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Utkarshna Sinha	Mechanisms of interleukin-6 regulation in response to acute ozone exposure	101
Fatemeh Bahari	Evidence of SUDEP in a murine model of Post-Malarial Epilepsy	102
Melody Pham	Identification of miRNA Biomarkers for Pediatric Bronchopulmonary Dysplasia	103
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Sravani Banerjee	Redirecting phosphoinositide biosynthesis to the replication organelle of an RNA virus	107
Tayler Croom-Perez	Expanding the Functional Proteome of an RNA Virus by Phosphorylation of a Protein Containing an Intrinsically Disordered Domain	C3
Yao Wang	Genetic variation of mitochondrial transcriptional system and their impact	108
Debasish Saha	Global Warming and Bioenergy: It's About Hot Spots and Hot Moments	109
Fatma Pir-Cakmak	Adsorption of Clay Microparticles at the Interface of PEG/Dextran Aqueous Biphasic Systems: Formation of Clay-Stabilized Aqueous-Aqueous Emulsion Droplets	110
Robert Johnson	Non-Plasmonic Nanoparticles as Extremely Stable Photothermal Sources	111
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Giorgia Picci	The development of gender and age biases in face recognition from childhood into adulthood	114
Sabrina Syeda	Coarsening dynamics in binary liquids with active rotation	115
Tien Truong	Novel Sulfated Dehydropolymer of Caffeic Acid (CDSO3): Its Hypoxia-inducible Factor-1a (HIF1a)-dependent Lung Repair Effects in Emphysema	116
Saima Shahid	Annotation of root and haustorial small RNAs from the parasitic flowering plant <i>Triphysaria versicolor</i>	117

Ceyda Coruh	Comprehensive annotation of <i>Physcomitrella patens</i> small RNA loci reveals that the plant heterochromatic siRNA pathway is largely conserved.	118
Lizabeth Benson	An Emotion Diversity Perspective on Experiential Well-being and Physical Health	119
Hasin Feroz	Determining Single Molecule Ion Transport Properties of Light-Driven Membrane Proteins	120
Candace Davison	Neutron, Gammas and Tours Oh My!	C4
Shu Li	All 17 S-locus F-box Proteins of <i>Petunia inflata</i> Involved in Self-Incompatibility Are Each a Component of the SCF Complex Containing Pollen-Specific Cullin1 and Skp1-Like Protein	C5

NOTES:

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