2023 Girls* in STEAM Leadership Summit

Workshop Information

Geri Dimas, Worcester Polytechnic Institute

Data Science: What Is It, and Why Should I Care?

We live in a world driven by data. In this workshop, we will explore what exactly Data Science is, and how its use impacts our daily lives. We will discuss the broad array of applications including the emerging use of Data Science for Social Good in domains such as anti-human trafficking, homelessness, and immigration.

Geri Louise Dimas is a Ph.D. Candidate in the Data Science Program at Worcester Polytechnic Institute, and Co-Director of the Institute for the Qualitative Study of Inclusion, Diversity, and Equity (QSIDE) Stopping Trafficking And Modern-day Slavery Project (STAMP) Lab. Her research focuses on applications of applied analytics and data science at the intersection of societal issues such as immigration, anti-human trafficking, and homelessness.

Jessica Driscoll, Sanofi

Health Science Pathways - Helping You Explore a Career in Healthcare!

This workshop will expose participants to a general overview of the vast possibilities of a career in healthcare based in the 5 pathways: therapeutic services, diagnostic services, informatics, biotech research & development and support services as well as a variety of medical subspecialties (i.e. cardiology, oncology, orthopedics, etc.). An oncology nursing career in the setting of hematologic oncology, specifically stem cell transplantation will be utilized as an example. The workshop will conclude with the discovery of the course of a hematopoietic stem cell.

Jessica Driscoll, DNP, ANP-BC is a Senior Medical Science Liaison in Hematologic Oncology for Sanofi and the Assistant Varsity Field Hockey Coach at Austin Prep. She started her career in healthcare majoring in Biology at Assumption University where she played field hockey for four years and was nominated as captain senior year. She also served as a hospice volunteer and gained clinical experience at an adult day health center for Alzheimer's patients as part of a Certificate in Gerontology. She went on to earn a Master of Science in Nursing and a Doctorate in Nursing Practice at Simmons University where she later taught. Jessica started her nursing career at Massachusetts General Hospital as an inpatient nurse on the Hematology/Oncology/Bone Marrow Transplant unit and later as an outpatient Bone Marrow Transplant Nurse Practitioner. Upon completing her Doctorate in Nursing Practice, she entered nursing leadership as the Interim Co-Director of Nursing for the Mass General Hospital Cancer Center and later the Nurse Director of Hematologic and Gastrointestinal Malignancies at Dana Farber Cancer Institute. In the fall of 2020, she left academic medicine for the pharmaceutical industry as a medical science liaison, but she continues serving as a nursing mentor for her field hockey student-athletes and colleagues alike.

Deb Gardner, Cushing Academy

Let's Fire it Up: Chemical Reactions in the Art Studio

In this workshop, Deb will provide an overview and application of glaze chemistry, exploring how the process of mixing and blending materials can be both a deeply scientific and a deeply artistic pursuit. Glaze formulas and the application of heat allow glaze chemists to engage in design thinking, using data to inform and refine their approach over time. Join Deb to learn more about this process and about her experience in multiple STEAM fields.

Deb Gardner has been an educator for almost four decades and currently serves as the Chair of the Visual Arts Department at Cushing Academy. In addition to the wide range of visual arts courses that she has taught at Cushing - including Advanced and Basic Ceramics, Advanced and Basic Silversmithing, Painting and Drawing, Stained and Fused Glass, and Photography - Deb has also contributed as a member of the science faculty teaching Chemistry. She previously worked with undergraduate students as an Instructor for Organic Chemistry Laboratory and Instructor for General Chemistry Laboratory at Bridgewater State College.

Deb holds a BS in Chemistry and worked as a Research Specialist for the Chemistry Department Instrumentation Laboratory at the Massachusetts Institute of Technology, instructing graduate students on the use of chemical analysis instrumentation, and specialized in research projects utilizing Nuclear Magnetic Resonance Spectrometry.

The Owner of Art Studios and a Nuclear Magnetic Resonance Spectrometry Consulting Business, Deb often finds herself at the intersection of multiple disciplines, working to identify and implement creative solutions for complex problems.

McCaela Prentice, Memorial Sloan Kettering Cancer Center

Promoting Creativity in the Sciences: An Exploration of Poetry, Pathogens, and Problem Solving

McCaela will be holding a discussion about building a career in two seemingly opposite fields: Science and Creative Writing. It will be opening a conversation about maintaining your passions, and finding time to do what makes you happy. You don't have to choose just one. She will conclude the session with an outbreak activity, which emphasizes how creative thinking actually benefits the science community.

NOT AVAILABLE FOR 1/30 SNOW DATE

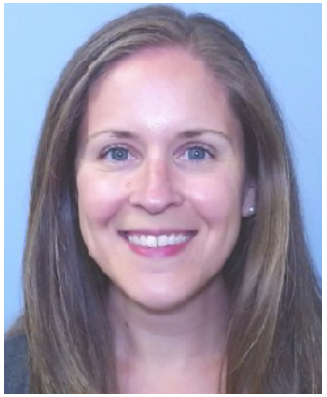
McCaela Prentice is an ICU Administrator at Memorial Sloan Kettering Cancer Center.

She completed her undergraduate in Biology/Public Health at St. Lawrence University in 2019, and is currently in a Master's program for Infectious Disease Biology at Drexel. She is studying to become an Infection Preventionist.

Outside of healthcare, she is also a writer and an avid reader. Her first poetry book was published in 2020, and she has another collection, *Pulp Prophet*, forthcoming in May 2023.

Melissa Schoenfeld, MIT Lincoln Laboratory

Man-Made Objects in Space: How Do We Keep Track?



From the first satellite in 1957 to tens of thousands of satellites today, satellites have become the backbone of global communication, passing messages all over the globe for Internet, radio, and television. Other satellites map the earth, help predict the weather, and chart constellations in the night sky. Flying at thousands of miles per hour, satellites sometimes zoom out of sight and risk collision. Come learn how we find and track these satellites using radar technology.

Established in 1951, Lincoln Laboratory is a designated Department of Defense (DoD) Federally Funded Research and Development Center (FFRDC). The Laboratory researches and develops advanced technologies to meet critical national security needs. The Research and Development (R&D) process begins with a difficult problem that we believe technology can solve. What sets Lincoln Laboratory apart from many national R&D laboratories is our emphasis on building operational prototypes of the systems we design. Our mission areas include radars, electro-optical systems, radio frequency circuits and antenna technology, cybersecurity, air traffic control technology, disaster relief systems, and supercomputing—to name only a few.

Ms. Melissa Schoenfeld is an Assistant Group Leader of the Advanced Sensors and Techniques Group at MIT Lincoln Laboratory. Since joining Lincoln Laboratory in 2002, Melissa has specialized in ground-based radar systems for tracking and characterizing on-orbit satellite activity. In her current position, she is responsible for managing and providing technical oversight of several programs for space surveillance in support of the United States Space Force and NASA. She holds a BS in mathematics and computer science from Tufts University, and a MS in mathematics from Boston University.

Dr. Suzanne Scarlata, Worcester Polytechnic Institute

Fun with Polymers!

Polymers are chains of chemicals. Molecules like proteins and DNA are polymers and so are many materials that we use in our everyday lives. The building blocks or small molecules that make up polymers gives each its distinctive properties such as thickness, strength, etc. In this workshop, we will make polymers by reacting small molecules to give unique materials.

Suzanne Scarlata, Richard Whitcomb Professor of Chemistry and Biochemistry, joined the university faculty in 2016. She studies how small molecules in the bloodstream can change the behavior of cells. In particular, she is interested in how certain hormones and neurotransmitters can activate a family of organic molecules known as G proteins (guanine nucleotide-binding proteins), which are involved in transmitting signals from various stimuli from the exterior to the interior of cells. G proteins help control how cells move, divide, and change structure; the signaling pathways they mediate are integral to a wide array of biological functions, including sensory perception, the regulation of the heart, nervous system, and reproduction, and the development of cancer. Scarlata has received more than $10 million for her research from the National Institutes of Health, the American Heart Association, the Keck Foundation, the U.S. Department of Education, and other organizations. In addition, she has been the keynote speaker at several national and international meetings.

Before joining WPI, Scarlata was professor of physiology and biophysics at Stony Brook University, where she had taught since 1991. She previously served as assistant professor in the Department of Medicine at Cornell University Medical College and as a member of the technical staff at AT&T Bell Laboratories, where she developed optical testing methods for printed circuit boards.

She is associate editor of the Journal of Bioenergetics and Biomembranes and serves on the editorial boards of the Journal of Fluorescence and the Journal of Membrane Biology. She has also served on the editorial boards of Analytical Biochemistry, BBA Biomembranes, F1000, Journal of Biological Chemistry and Analytical Biochemistry, and Methods and Application of Fluorescence Spectroscopy.