



WiDS Livermore
Hybrid Event
Wednesday, March 8, 2023

AGENDA (all times listed in PST)

[Click to Join Main WebEx \(open all day\)](#)

9:00–9:50	CHECK IN (in-person recruiting)
9:50–10:00	WELCOME Mary Silva, LLNL Data Scientist
10:00–10:30	MORNING ADDRESS Amanda Randles, Assistant Professor of Biomedical Sciences, Duke University
10:30–11:30	FIRESIDE CHAT Dona Crawford, Board Chair of Livermore Lab Foundation Nisha Mulakken, LLNL Biostatistician & Data Science Summer Institute Co-Director
11:30–11:45	LIVESTREAM: Technical Vision Talk Killing Diseases with Really Big Computers: Building Analysis Tools to Solve Disease Marisa Torres, LLNL WiDS Ambassador
11:45–12:45	LUNCH & NETWORKING BREAK (in-person recruiting)
12:45–2:00	SPEED MENTORING (virtual & physical breakout rooms) Click to Join Separate Mentoring WebEx
2:00–2:40	LIVESTREAM: Technical Vision Talks Bringing Motion Diffusion Models to Immersive Entertainment Jhanvi Shriram & Ketaki Shriram, Krikey Optimization-in-the-Loop Machine Learning for Energy and Climate Priya Donti, Climate Change AI
2:40–3:00	DATATHON RECOGNITION
3:00–3:30	AFTERNOON ADDRESS Kelli Humbird, LLNL Design Physicist
3:30–3:40	CLOSING Mary Silva, LLNL Data Scientist
3:40–4:30	NETWORKING RECEPTION (in-person recruiting)



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SPEAKERS



DONA L. CRAWFORD is the former Associate Director of Computation at LLNL where she led the Laboratory's high performance computing efforts. Prior to her LLNL appointment in July 2001, Crawford was with Sandia National Laboratories since 1976, serving on many leadership projects, including the Accelerated Strategic Computing Initiative. She currently Chairs the Board of the Livermore Lab Foundation, a 501(c)(3), whose mission is to advance scientific research, technology development, and educational endeavors at LLNL through philanthropic contributions. Crawford has served on advisory committees for the National Research Council and the National

Science Foundation. She co-chaired the Council on Competitiveness High Performance Computing Advisory Committee, and is a member of the Strategic Research Advisory Board at the University of Oklahoma, the DOE/NNSA's Defense Programs Advisory Subcommittee on High Performance Computing, and is a past chair of the U.S. Supercomputing Conference. She has a Master's degree in operations research from Stanford University and a Bachelor's degree in mathematics from the University of Redlands, California.



KELLI HUMBIRD is a Design Physicist at Lawrence Livermore National Laboratory. Most of her research is concentrated in inertial confinement fusion (ICF), and applications of machine learning to strengthen predictive modeling and optimize designs. In addition to ICF, she has spent time at LLNL working in stockpile certification and technical nuclear forensics. She is the principal investigator of a project to accelerate atomic physics calculations with neural networks, and briefly worked on ML analysis for the spread of COVID-19 during the first year of the pandemic. The common thread throughout much of this work is the application of machine learning to scientific problems with

sparse data.



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WOMEN IN DATA SCIENCE
LIVERMORE

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NISHA MULAKKEN's research lies at the confluence of biology, computer science, and statistics. Her work in LLNL's Bioinformatics Program includes designing tools for rapid detection of pathogens, including SARS-CoV-2, experimenting with machine learning algorithms for predicting protein function, and creating scalable infrastructure to support large metagenomics projects. She is currently the Group Leader for the Biosecurity and Data Science team in the Global Security Computing Applications Division. Mulakken is co-director of the Data Science Summer Institute (DSSI), a highly competitive internship program and valued hiring pipeline for LLNL. She

currently serves as the LLNL liaison to the Livermore Lab Foundation, connecting talented students and dedicated mentors working on cutting edge science across many disciplines. A four-time LLNL summer intern and longtime employee, Mulakken holds degrees in genetics and biostatistics.



AMANDA RANGLES is the Alfred Winborne Mordecai and Victoria Stover Mordecai Assistant Professor of Biomedical Sciences and Biomedical Engineering at Duke University. She has courtesy appointments in the departments of Mechanical Engineering and Material Science, Computer Science and Mathematics, and is a member of the Duke Cancer Institute. Focusing on the intersection of high performance computing, machine learning, and personalized modeling, her group is developing new methods to aid in the diagnosis and treatment of a diseases ranges from cardiovascular disease to cancer. Amongst other recognitions, she has received the NIH Pioneer

Award, the NSF CAREER Award, and the ACM Grace Hopper Award. She was named to the World Economic Forum Young Scientist List and the MIT Technology Review World's Top 35 Innovators under the Age of 35 list and is a Fellow of the National Academy of Inventors. Amanda received her PhD in Applied Physics from Harvard University as a DOE Computational Graduate Fellow and NSF Fellow. Before that, Randles received her Master's degree in Computer Science from Harvard University and her Bachelor's degree in Computer Science and Physics from Duke University. Prior to graduate school, she worked as a software engineer at IBM on the Blue Gene supercomputing team. She has contributed to over 80 peer-reviewed papers, over 100 granted US patents, and had over 100 pending patent applications.



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MARY SILVA joined LLNL in 2020 and works on active learning and Bayesian spatial models for rapid design of COVID-19 antibodies, as well as enhancing machine learning models through the multi-institutional Scalable Precision Medicine Open Knowledge Engine (SPOKE) project. With an M.S. in Statistics and Applied Math from UC Santa Cruz, she contributes to vaccine development and target identification while utilizing domain experts' knowledge to interpret models and results. A former DSSI intern, she now mentors students and helps them improve their weaknesses. Silva also co-organizes the Lab's WiDS event and datathon challenge.



MARISA TORRES is the Bioinformatics Group Leader at LLNL. She builds analysis tools to solve disease, working on machine learning for drug discovery and detecting pathogens. She is working on computational models for fighting cancer for the ATOM consortium and for COVID-19 countermeasures. Her computational tools help biologists make decisions on public health. Torres's predictive biology research improves result interpretability for biosecurity. She is interested in building more useful molecular data modeling systems for understanding disease-related mechanisms and treatment. She enjoys mentoring and reading groups, is a Girls Who Code volunteer, is on the WiDS Ambassador Advisory Council, and sings in a community choir.



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