



WOMEN IN DATA SCIENCE
LIVERMORE

WiDS Livermore
Virtual Event
Monday, March 7, 2022

AGENDA (all times listed in PST)

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

8:45–9:00 **OPENING REMARKS**

FIRESIDE CHAT

9:00–10:00 Kim Budil, LLNL Director
Jessie Gaylord, LLNL Global Security Computing Applications Division Leader

WELCOME ADDRESS

10:00–10:35 Marisa Torres, LLNL, WiDS Ambassador

LIVESTREAM: TECHNICAL VISION TALKS

10:35–11:05 *Beyond Bias: Algorithmic Unfairness, Infrastructure and Genealogies of Data*
Alex Hanna, DAIR Institute
Confronting Data Bias in Travel Demand Modeling
Tierra Bills, UCLA

[Watch Livestream](#)

NETWORKING & LUNCH BREAK

12:00–2:00 WORKSHOPS

[Join Beginner Track](#)

[Join Applied Track](#)

12:00–1:00 *Beginner Track: A Framework for Analysis and Data Science*

Applied Track: Machine Learning for Climate Predictions

Gale M. Lucas, University of Southern California

Gemma J. Anderson, LLNL

1:00–2:00 *Beginner Track: A Framework for Analysis and Data Science*

Applied Track: A Walkthrough of the WiDS Datathon Dataset using Python

Continuation from above

Olivia Miano and Juanita Ordoñez, LLNL

2:00–2:40 LIVESTREAM: CAREER PANEL

Moderator: Suzanne Weekes, SIAM

[Watch Livestream](#)

2:40–3:00 BREAK

3:00–4:00 SPEED MENTORING (breakout rooms)

[Join Mentoring](#)

4:00–4:15 CLOSING REMARKS



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This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344. LLNL-BR-832023



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PRESENTERS and ABSTRACTS



MARISA TORRES is the Bioinformatics Group Leader at Lawrence Livermore National Lab. She's making drug discovery computational models for Covid-19 and to fight cancer for the ATOM consortium (Accelerating Therapeutics for Opportunities in Medicine). She specializes in sequence analysis for pathogen characterization. Marisa has a M.S. in Biomedical Informatics from Stanford, and a B.A. in Molecular and Cell Biology minoring in Computer Science from UC Berkeley. She enjoys mentoring and reading groups, is a Girls Who Code volunteer, and sings in choir.



KIM BUDIL is the 13th director in the history of LLNL and serves as president of Lawrence Livermore National Security (LLNS), LLC. Budil leads a workforce of approximately 7,400 employees and manages an annual operating budget of approximately \$2.7 billion. She came to the Lab in 1987 as a graduate student in Laser Programs and became a postdoc in the weapons program in 1994. Over her career, she has held roles of increasing management responsibility across LLNL programs, including Weapons and Complex Integration, in which she served as principal associate director, as well as Global Security, the National Ignition Facility, and Physical and Life Sciences. Budil served twice as a detailee in Washington, D.C., was the vice president for national laboratories in the UC Office of the President, and was the executive committee governor on the LANS and LLNS Boards of Governors. She is a Hertz Foundation Fellow and board member. Budil received her Ph.D. in engineering/applied science from the University of California, Davis in 1994 and obtained her bachelor's degree in physics from the University of Illinois at Chicago in 1987. She has published extensively in scientific and programmatic contexts and participated in numerous professional and community outreach activities.



JESSIE GAYLORD is the Division Leader for Global Security Computing Applications at Lawrence Livermore National Laboratory. In this role she manages 180 computer scientists, data analysts, software engineers, and system architects supporting projects across program areas in Global Security, Climate, Bio, and Security and Protection. She also leads data collection on a series of large physics experiments at the Nevada National Security Site for the Low Yield Nuclear Monitoring Project. She has held leadership roles on several multi-lab ventures supporting applied Data Science and data-intensive research for Defense Nuclear Nonproliferation Research and Development, including creating and initiating the annual DOE Data Days (D3) workshop event. Previously she worked as a developer and business analyst for the National Ignition Facility and in industry. She has an M.S. in Computer Science and a B.A. in Economics with a minor in Mathematics.



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GALE M. LUCAS is a Research Assistant Professor at University of Southern California's Institute for Creative Technologies (ICT). After earning her Ph.D. from Northwestern University, she completed her post-doctoral work at ICT, where she established a research program in the areas of Affective Computing (AC), Human-Computer Interaction (HCI) and Human-building Interaction (HBI). Her line of work in AC focuses on models predicting mental health, perceptions of trust and emotion in real-world situations. Her work in HCI is centered around understanding how various social factors affect trust in agents and robots. Her work in HBI is focused on developing and evaluating technologies for "smart buildings," especially smart office buildings,

that support occupants' well-being.

Workshop: A Framework for Analysis and Data Science

Data science includes a number of analytic approaches, both statistical and computational approaches, and data scientists must learn how to choose which approach(es) are appropriate for different kinds of data and problems/questions. Accordingly, during the workshop, we will first learn about the framework that facilitates determining the appropriate analytic approach based on the kind of data and problems/questions. The lecture will illustrate how to "scaffold" different kinds of analytic approaches onto the framework in order to organize (and understand) them, and several key approaches will be described and then placed within the framework to demonstrate how it can be used. Finally, the audience will get an opportunity to practice determining the appropriate analytic approach for a problem; the facilitator will provide a number of problems, the audience will be divided into groups and each given a problem to determine the best analytic approach(es) to address it. Groups then get to share their answer(s) with the rest of the audience and receive feedback from the facilitator so everyone can optimally learn from this application exercise.



GEMMA J. ANDERSON is the Deputy Group Leader of the Energy Group in the Atmosphere, Earth, and Energy Division at LLNL. After doing a postdoc at LLNL, she converted to Research Scientist in 2018. She received a Master's in Physics from Lancaster University, UK; a Master of Advanced Study in Mathematics from the University of Cambridge, UK; and a Ph.D. in Theoretical Early Universe Cosmology from the University of Sussex, UK. Her current research interests lie in using artificial intelligence for climate. She recently led a three-year project that developed AI methods to improve the accuracy and resolution of climate predictions.

Workshop: Machine Learning for Climate Predictions

Artificial intelligence (AI) methods have begun to show great promise in climate science applications. This talk will describe how cutting-edge AI is being used to improve the resolution and accuracy of climate predictions, important for assessing the local impacts of climate change and building resiliency. The latter half of this presentation will introduce and describe a dataset and methods to make machine learning predictions of a multiresolution climate model ensemble.



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OLIVIA MIANO is an LLNL Data Scientist hired March 2020 through the Data Science Immersion program, then later hired full time as a Data Scientist in September 2020. B.S. in Mathematics – Computer Science at UC San Diego, 2019. Her research interests include natural language processing, specifically authorship attribution and information extraction.



JUANITA ORDOÑEZ is an LLNL Data Scientist hired in 2016. She received her B.S. in Computer Science at the University of Texas at El Paso. Her research interests include natural language understanding and preprocessing.



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