Meeting Goals: Discussion with experts working with Foundation Models for Scientific Research on the current state of the technology.

March 6, 2025 [9am – 5pm PT]

Location: Board Room, Beckman Center, 100 Academy Wy, Irvine, CA 92617
https://nasem.zoom.us/j/98364139736?pwd=dKsfFI34oqDrWYRwB3nseCo8rNIfJJ.1

HYBRID OPEN SESSION

[9 am] Welcome and Introductions

- **Dona Crawford**, Committee Chair

[9:20 am] Industry Perspective

20 minute presentation from each speaker with 35 minute Q&A for the group.

Moderator Petros Koumoutsakos

- **Vivek Natarajan,** Google DeepMind
- **Sebastian Nowozin,** Google DeepMind

Panel Q&A, Moderated by Petros Koumoutsakos

[10:35 am] Break

[10:50 am] U.S. Department of Energy, National Lab Panel 1

20 minute presentation from each speaker with 30 minute Q&A for the group.

Moderator Syed Bahauddin Alam

- **Earl Lawrence,** Los Alamos National Laboratory
- **Michael Mahoney,** Lawrence Berkeley National Laboratory
- **Chris Ritter,** Idaho National Laboratory

Panel Q&A, Moderated by Syed Bahauddin Alam

[12:20 pm] Lunch

[1:20 pm] U.S. Department of Energy, National Lab 2

20 minute presentation from each speaker with 40 minute Q&A for the group.

Moderator Dan Meiron

- **Hendrik Hamann,** Brookhaven National Laboratory
- **Rick Stevens,** Argonne National Laboratory
- **Georgia Tourassi,** Oak Ridge National Laboratory

Panel Q&A, Moderated by Dan Meiron

[3:00 pm] BREAK

[3:20 pm] Applications and Foundation Model Users Panel 1

20 minute presentation from each speaker with 40 minute Q&A for the group.

Moderator Krishna Garikipati

- **Rémi Lam,** Google DeepMind
- **James Warren,** National Institute of Standards and Technology
- **Bin Yu,** University of California at Berkeley

Panel Q&A, Moderated by Krishna Garikipati

[5:00 pm] Open Session Adjourn

Meeting Goals: Discussion with project sponsoring offices within the Department of Energy, Advanced Scientific Computing Research and National Nuclear Security Administration.

March 7, 2025 [9am – 3pm PT]

Location: Board Room, Beckman Center, 100 Academy Wy, Irvine, CA 92617
https://nasem.zoom.us/j/98364139736?pwd=dKsfFI34oqDrWYRwB3nseCo8rNIfJJ.1

HYBRID OPEN SESSION

[9 am] Welcome Back and Introductions

- **Dona Crawford**, Committee Chair

[9:20 am] Applications and Foundation Model Users Panel 2

20 minute presentation from each speaker with 35 minute Q&A for the group.

Moderator Marta D'Elia

- **William Collins,** Lawrence Berkeley National Laboratory
- **Ann Speed,** Sandia National Laboratory

Panel Q&A, Moderated by Marta D'Elia

[10:35 am] Break

[10:50 am] U.S. Department of Energy, National Lab Panel 3

20 minute presentation from each speaker with 30 minute Q&A for the group.

Moderator Brian Kulis

- **Kevin Dixon,** Sandia National Laboratory
- **Kelly Rose,** National Energy Technology Laboratory
- **Brian Spears,** Lawrence Livermore National Laboratory

Panel Q&A, Moderated by Brian Kulis

[12:20 pm] Lunch - Open Session Adjourns

[1:20 pm] Closed Committee Session

Speaker and Committee Member Biographies

Committee Members

Dona L. Crawford [Committee Chair]

Dona L. Crawford retired as associate director for computation from the Lawrence Livermore National Laboratory (LLNL), where she led the laboratory's high-performance computing efforts. In that capacity, Ms. Crawford was responsible for the development and deployment of an integrated computing environment for petascale simulations of complex physical phenomena. Prior to her LLNL appointment in 2001, Ms. Crawford was with Sandia National Laboratories (SNL) since 1976 serving on many leadership projects including the Accelerated Strategic Computing Initiative and the Nuclear Weapons Strategic Business Unit. Ms. Crawford serves on the National Academies Laboratory Assessments Board and has previously served on several NASEM committees including the Committee to evaluate Post-Exascale Computing for the National Nuclear Security Administration, the Committee to Review Governance Reform in the National Nuclear Security Administration and the Committee to Evaluate the NSF's Vertically Integrated Grants for Research and Education (VIGRE) Program. She received her MS in operations research from Stanford University.

Syed Bahauddin Alam

Dr. Syed Bahauddin Alam is an Assistant Professor of Nuclear, Plasma, & Radiological Engineering at the University of Illinois Urbana-Champaign (UIUC), where he leads the MARTIANS (Machine Learning & ARTificial Intelligence for Advancing Nuclear Systems) Laboratory. He holds a joint appointment at the National Center for Supercomputing Applications. Previously, he served as a faculty at Missouri S&T, was a Nonproliferation Fellow at KAIST, and held MeV Fellowship at Argonne National Laboratory. Dr. Alam's research expertise centers on explainable AI and data science, with a primary focus on developing real-time AI algorithms for nuclear energy systems. His innovative contributions to digital twins and advanced reactors have integrated cutting-edge AI methodologies, enhancing safety and efficiency through real-time predictive capabilities. He has been recognized with numerous prestigious awards, including the Illinois Innovation Award finalist for excellence in cutting-edge innovation, a "Top of Minds" feature by UIUC Grainger College, the Cambridge Philosophical Society Award for an exceptionally promising piece of research, American Nuclear Society Best Paper Award, the Cambridge Trust Award, and an Outstanding Teaching Award. He earned his Ph.D. (2018) and MPhil (2013) in Nuclear Engineering from the University of Cambridge and previously conducted postdoctoral research at the French Atomic Energy Commission.

Marta D'Elia

Marta D'Elia is the Director of AI and ModSim at Atomic Machines and an Adjunct Professor at Stanford University, ICME. She previously worked at Pasteur Labs, Meta, and Sandia National Laboratories as a Principal Scientist and Tech Lead. She holds a PhD in Applied Mathematics and master's and bachelor's degrees in Mathematical Engineering. Her work deals with design and analysis of machine-learning models and optimal design and control for complex industrial applications. She is an expert in nonlocal modeling and simulation, optimal control, and scientific machine learning. She is an Associate Editor of

SIAM and Nature journals, a member of the SIAM industry committee, the Vice Chair of the Siam Northern California section, and a member of the NVIDIA advisory board for scientific machine learning.

Krishna Garikipati

Krishna Garikipati obtained his PhD at Stanford University in 1996, and after a few years of post-doctoral work, he joined the University of Michigan in 2000, rising to Professor in the Departments of Mechanical Engineering and Mathematics. Between 2016 and 2022, he served as the Director of the Michigan Institute for Computational Discovery & Engineering (MICDE). In January 2024 he moved the Department of Aerospace and Mechanical Engineering at University of Southern California. His research is in computational science, with applications drawn from biophysics, materials physics, mechanics and mathematical biology. Of recent interest are data-driven approaches to computational science. He has been awarded the DOE Early Career Award for Scientists and Engineers, the Presidential Early Career Award for Scientists and Engineers (PECASE), and a Humboldt Research Fellowship. He is a fellow of the US Association for Computational Mechanics, the International Association for Computational Mechanics, and the Society of Engineering Science, a Life Member of Clare Hall at University of Cambridge, and a visiting scholar in Computational Biology at the Flatiron Institute of the Simons Foundation.

Shirley Ho

Shirley Ho is a senior research scientist at the Center for Computational Astrophysics at the Simons Foundation and she joined the Foundation in 2018 to lead the Cosmology X Data Science group. Her research interests range from cosmology to developing new machine learning methods for scientific data that leverage shared concepts across scientific domains. Ho has extensive expertise in astrophysical theory, observation, and data science. She focuses on novel statistical and machine learning tools to address cosmic mysteries like the origins and fate of the universe. Ho analyzes data from surveys including ACT, Euclid, LSST, Simons Observatory, SDSS, and Roman Space Telescope to understand our universe's evolution. She earned her Ph.D. in Astrophysical Sciences from Princeton in 2008 and B.S. degrees in Computer Science and Physics from UC Berkeley in 2004. Ho was previously a Chamberlain and Seaborg Fellow at Lawrence Berkeley National Lab. She joined Carnegie Mellon as an Assistant Professor in 2011, becoming Cooper Siegel Career Development Chair Professor and tenured Associate Professor. In 2016 she moved to Lawrence Berkeley Lab as a Senior Scientist.

Scott H. Holan

Dr. Scott H. Holan is a Professor of Statistics and Department Chair at the University of Missouri and serves as a Senior Research Fellow in the Research and Methodology Directorate at the U.S. Census Bureau. His research expertise includes developing statistical and machine learning methodology for dependent data (spatial, spatio-temporal, functional, and multivariate, among others), Bayesian methods, environmental and ecological statistics, official statistics, and survey methodology. He is an elected Fellow of the American Statistical Association (2014), an Elected Member of the International Statistical Institute (2017), and an elected Fellow of the Institute of Mathematical Statistics (2021). Prof. Holan was a previous co-awardee of the Statistical Partnerships Among Academe, Industry, and Government (SPAIG) Award (2017). Prof. Holan has an M.S. in mathematics from University of Illinois at Chicago (1999) and a Ph.D. in Statistics from Texas A&M University (2004).

Michael Kearns

Micheal Kearns is professor and National Center Chair of the Department of Computer and Information Science at the University of Pennsylvania and the Founding Director of the Warren Center for Network and Data Sciences. His research interests include topics in machine learning, artificial intelligence, algorithmic game theory and microeconomics, computational social science, and quantitative finance and algorithmic trading. Dr. Kearns often examine problems in these areas using methods and models from theoretical computer science and related disciplines. He also often participates in empirical and experimental projects, including applications of machine learning to problems in algorithmic trading and quantitative finance, and human-subject experiments on strategic and economic interaction in social networks. Dr. Kearns spent the decade 1991-2001 in machine learning and AI research at AT&T Bell Labs and in the last 4 years of his appointment was head of the AI department which conducted a broad range of systems and foundational AI work. Dr. Kearns received his undergraduate from the University of California at Berkeley in math and computer science and his Ph.D. in computer science from Harvard University. In 2020, Dr. Kearns joined Amazon Web Services as an Amazon Scholar, focusing on fairness, privacy and other "responsible AI" topics.

Petros Koumoutsakos

Petros Koumoutsakos is Herbert S. Winokur Professor of Engineering and Applied Sciences and Area Chair of Applied Mathematics at Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS). He also currently holds a visiting position at Google DeepMind based in London. He studied Naval Architecture (Diploma-NTU of Athens, M.Eng.-U. of Michigan), Aeronautics and Applied Mathematics (PhD-Caltech). He has conducted post-doctoral studies at the Center for Parallel Computing at Caltech and at the Center for Turbulent Research at Stanford University and NASA Ames. He has served as the Chair of Computational Science at ETH Zurich (1997-2020) and has held visiting fellow positions at Caltech, the University of Tokyo, MIT, the Radcliffe Institute of Advanced Study at Harvard University and he is Distinguished Affiliated Professor at TU Munich. Petros is elected Fellow of the American Society of Mechanical Engineers (ASME), the American Physical Society (APS), the Society of Industrial and Applied Mathematics (SIAM) and the Collegium Helveticum. He is recipient of the Advanced Investigator Award by the European Research Council and the ACM Gordon Bell prize in Supercomputing. He is elected International Member to the US National Academy of Engineering (NAE).

Brian Kulis

Brian Kulis is an associate professor at Boston University, with appointments in the Department of Electrical and Computer Engineering, the Department of Computer Science, the Faculty of Computing and Data Sciences, and the Division of Systems Engineering. From 2019-2023, he was also an Amazon Scholar, working with the Alexa team. Previously, he was the Peter J. Levine Career Development assistant professor at Boston University. Before joining Boston University, he was an assistant professor in Computer Science and in Statistics at Ohio State University, and prior to that was a postdoctoral fellow at UC Berkeley EECS. His research focuses on machine learning, statistics, computer vision, and large-scale optimization. He obtained his PhD in computer science from the University of Texas in 2008, and his BA degree from Cornell University in computer science and mathematics in 2003. For his research, he has won three best paper awards at top-tier conferences---two at the International

Conference on Machine Learning (in 2005 and 2007) and one at the IEEE Conference on Computer Vision and Pattern Recognition (in 2008). He was also the recipient of an NSF CAREER Award in 2015.

Daniel I. Meiron

Dan Meiron is currently a professor of Aerospace and Applied and Computational Mathematics. His research interests are primarily in computational fluid dynamics with connections to high performance computing. He also has interests in computational materials science. He received an ScD in applied mathematics at MIT working under Steven A. Orszag. He has participated as part of a recent NASEM study on Exascale Computing.

Nathaniel Trask

Dr. Trask recently joined the Mechanical Engineering Department at the University of Pennsylvania after spending eight years as technical staff at Sandia National Laboratories. His research focuses upon developing foundational aspects of scientific machine learning (SciML) for high-consequence engineering settings. By integrating concepts from modern physics and probability into the design of deep learning architectures, he leads a research program both employing SciML for scientific discovery as well as to construct digital twins of complex systems. He is deputy director of SEA-CROGS, an Office of Science funded multi-institutional center developing next-generation AI architectures for Earth and Embedded Systems. He has received the Department of Energy Early Career Award, as well as the National Science Foundation Mathematical Science Postdoctoral Fellowship. His doctoral training was in Applied Mathematics, with a focus on developing novel optimization-based discretizations of partial differential equations to simulate multiphysics and multiscale problems. After moving to Sandia National Laboratories for a fellowship, he went on to work extensively on machine learning applied to material science and physics in extreme environments.

Speakers

William Collins

William D. Collins, Ph.D., is the Associate Laboratory Director of Earth and Environmental Sciences at Lawrence Berkeley National Laboratory as well as Professor in Residence of Earth and Planetary Science at the University of California, Berkeley. He is an internationally recognized expert in climate modeling and climate change science. His personal research concerns the interactions among greenhouse gases and aerosols, the coupled climate system, and global environmental change. Dr. Collins is a Fellow of the American Association for the Advancement of Science (AAAS), the American Physical Society (APS), the American Geophysical Union (AGU), and the American Meteorological Society (AMS). He was awarded the AGU's Tyndall History of Global Environmental Change Lectureship in 2019 and their Jule Charney Lectureship in 2024. He was a Lead Author on the Fourth Assessment of the Intergovernmental Panel on Climate Change (IPCC), for which the IPCC was awarded the 2007 Nobel Peace Prize, and has also served as Lead Author on the Fifth and Sixth Assessments. His role as Chief Scientist in launching the Department of Energy's Accelerated Climate Model for Energy (ACME) program was awarded the U.S. Department of Energy Secretary's Achievement Award on May 7, 2015. Before joining Berkeley and Berkeley Lab, Dr. Collins was a senior scientist at the National Center for Atmospheric Research (NCAR) and served as Chair of the Scientific Steering Committee for the DOE/NSF Community Climate System

Model project. Dr. Collins received his undergraduate degree in physics from Princeton University and earned an M.S. and Ph.D. in astronomy and astrophysics from the University of Chicago.

Kevin Dixon

Dr. Kevin R. Dixon is the Director of the Applied Information Sciences (AIS) center at Sandia National Laboratories in Albuquerque, New Mexico. The Center is dedicated to the research and application of innovative techniques for high-impact National Security decision making. We transform decision making by integrating competencies in artificial intelligence, computational analytics, human systems, cyber threat hunting, machine learning, optimization, real-world data fusion, discrete-event simulation, and statistical sciences. We are laser-focused on five core capability areas: Patterns of Life, Cyber Analytics, Human Performance Research, Information Integrity, and Statistical Sciences. Our teams work closely to bring these core capabilities to bear on some of the hardest security issues facing the Nation today. Our team conducts fundamental research in these areas, collaborating with academic, industry, and Laboratory partners, and bridges this research into applications across all areas of National Security.

Hendrik Hamann

Dr. Hendrik F. Hamann is a recent AI Chief Scientist at Brookhaven National Laboratory (BNL) in Environment, Biology, Nuclear Science & Nonproliferation, where he is responsible for developing new AI strategies and programs. He is also a full Professor at Stony Brook University (SBU). Before joining BNL and SBU, Hendrik worked for 26 years at IBM Research, most recently in the role of Chief Science Officer at the TJ Watson Research Center, where he was responsible for the development of AI foundation models for accelerated scientific discovery. He has authored more than 260 scientific papers, holds over 180 patents and has won several awards including the 2016 AIP Prize for Industrial Applications of Physics. He is a fellow of the American Physical Society and a member of the NY Academy of Sciences. Hendrik is also a Visiting Professor at Yamagata University and Adjunct Professor at the University of Illinois Urbana-Champaign. Hendrik is a board member and advisor to universities and has served extensively including as member of the standing committee for Geographical and Geospatial Sciences at the National Academies of Sciences.

Rémi Lam

Rémi Lam is a Staff Research Scientist at Google DeepMind working on making weather forecasting faster and more accurate. His research leverages machine learning techniques such as adversarial neural networks, graph neural networks and diffusion models to design tools for precipitation nowcasting (DGMR) and global medium range weather prediction (GraphCast, GenCast). GraphCast has received the MacRobert award from the Royal Academy of Engineering and Remi was featured in the 2024 edition of Nature's 10.

Earl Lawrence

Earl Lawrence is a Senior Scientist of Statistical Sciences at Los Alamos National Laboratory (LANL). Lawrence completed his Ph.D. in statistics at the University of Michigan in 2005. He has been a member of the Statistical Sciences group at Los Alamos ever since. During that time, he has worked with collaborators in fields including cosmology, nuclear theory, space weather, materials science,

infrastructure networks, Martian geology, and nuclear weapons. For the last year, he had been leading LANL's Director's Initiative on AI.

Michael Mahoney

Michael W. Mahoney is at the University of California at Berkeley in the Department of Statistics and at the International Computer Science Institute (ICSI). He is also an Amazon Scholar as well as head of the Machine Learning and Analytics Group at the Lawrence Berkeley National Laboratory. He works on algorithmic and statistical aspects of modern large-scale data analysis. Much of his recent research has focused on large-scale machine learning, including randomized matrix algorithms and randomized numerical linear algebra, scientific machine learning, scalable stochastic optimization, geometric network analysis tools for structure extraction in large informatics graphs, scalable implicit regularization methods, computational methods for neural network analysis, physics informed machine learning, and applications in genetics, astronomy, medical imaging, social network analysis, and internet data analysis. He received his PhD from Yale University with a dissertation in computational statistical mechanics, and he has worked and taught at Yale University in the mathematics department, at Yahoo Research, and at Stanford University in the mathematics department. Among other things, he was on the national advisory committee of the Statistical and Applied Mathematical Sciences Institute (SAMSI), he was on the National Research Council's Committee on the Analysis of Massive Data, he co-organized the Simons Institute's fall 2013 and 2018 programs on the foundations of data science, he ran the Park City Mathematics Institute's 2016 PCMI Summer Session on The Mathematics of Data, he ran the biennial MMDS Workshops on Algorithms for Modern Massive Data Sets, and he was the Director of the NSF/TRIPODS-funded FODA (Foundations of Data Analysis) Institute at UC Berkeley. More information is available at https://www.stat.berkeley.edu/~mmahoney/.

Vivek Natarajan

Vivek leads research at the intersection of AI and biomedicine at Google Research. He is the lead researcher behind Med-PaLM (published in Nature) and Med-PaLM 2, the first AI systems to obtain passing and expert level scores on US Medical License exam questions, respectively. Vivek also co-leads Project AMIE, a research program aiming to build and democratize medical superintelligence. Over the past year, AMIE has shown promising potential in controlled settings, including primary care, specialty care, and complex diagnostic challenges, as both a standalone and assistive tool for clinicians. He most recently led the development of AI co-scientist, designed to help scientists uncover new original knowledge and accelerate scientific discoveries. Prior to Google, Vivek worked on multimodal assistant systems at Facebook AI Research. He is also part of the faculty for executive education at Harvard T.H. Chan School of Public Health in a part-time capacity.

Sebastian Nowozin

Sebastian Nowozin is Principal Research Scientist at Google DeepMind, leading the machine learning research at the Science unit. He received his PhD in machine learning in 2009 from the Max Planck Institute and since has worked in research and research leadership roles at Microsoft Research and Google Brain. In 2021 he was a founding leadership member of the AI for Science programme at Microsoft Research and joined DeepMind in 2022. He currently works on scientific applications of LLMs.

Chris Ritter

Chris Ritter is the division director of scientific computing & AI and director of the Digital Innovation Center of Excellence at Idaho National Laboratory (INL). His team of ~100 computational and data scientists are changing the world's future with AI/ML, digital twinning, digital engineering, multi-physics, HPC, and digital thread technologies across a portfolio of nuclear energy, non-proliferation, semiconductor, and defense applications.

Kelly Rose

Kelly Rose, PhD is the Senior Fellow for Computational Science & Engineering at the U.S. Department of Energy's National Energy Technology Laboratory (NETL). With over 20 years of experience in research and leadership, she has held senior roles, including serving as a research scientist and group leader at NETL. Before joining NETL, Rose worked as a resource exploration geoscientist in the energy sector. Rose also served as the first Director of NETL's Science-based AI/ML Institute (SAMI), where she established the first cross-disciplinary research institute dedicated to advancing explainable and innovative, science-based artificial intelligence research aligned with NETL's applied energy mission.

Brian Spears

Brian Spears is a physicist and Director of AI Innovation Incubator (AI3) at Lawrence Livermore National Laboratory. He is a principal architect of cognitive simulation methods – artificial intelligence (AI) methods that combine high-performance simulation and precision experiments with the goal of improving model predictions. He applies cognitive simulation techniques to stockpile stewardship missions with emphasis on quantifying uncertainty in inertial confinement fusion (ICF) experiments and advancing certification methods for the US nuclear weapons stockpile. He also uses cognitive simulation research applications to guide development of next-generation supercomputers. He is passionate about developing deep learning for applied science, especially inertial confinement fusion. Brian focuses on large-scale high-performance computing and the confluence with deep learning.

Ann Speed

Ann Speed (Sandia National Laboratories) is a Distinguished Member of the Technical Staff with a background in cognitive psychology. She holds an M.S. and Ph.D. in Cognitive Psychology from the Louisiana State University. Ann's primary research interests lie in understanding expert visual search, but more broadly her expertise is in the design and execution of human subjects experiments, and in the statistical analysis of the resulting data. She has applied this expertise to a broad range of phenomena including analogy-making, collection of data in online social interactions, visual search, design and evaluation of systems for augmenting physical security personnel control station operation, and evaluation of a fusion center for a local police department. More recently, Ann has applied psychological personality and cognitive measures to large language models and has explored the issue of user trust in artificial intelligence and automation.

Rick Stevens

Rick Stevens is a Professor of Computer Science at the University of Chicago and the Associate Laboratory Director of the Computing, Environment and Life Sciences (CELS) Directorate and Argonne

Distinguished Fellow at Argonne National Laboratory. His research spans the computational and computer sciences from high-performance computing architecture to the development of advanced tools and methods. Recently, he has focused on developing artificial intelligence (AI) methods for a variety of scientific and biomedical challenges, and also has significant responsibility in driving the development of a new national initiative to ensure American leadership in AI.

Georgia Tourassi

Dr. Georgia Tourassi is the Associate Laboratory Director of the Computing and Computational Sciences Directorate at the Oak Ridge National Laboratory (ORNL). Concurrently, she holds appointments as an Adjunct Professor of Radiology at Duke University and as a joint UT-ORNL Professor of the Bredesen Center Data Science Program at the University of Tennessee at Knoxville. Under her leadership, the Oak Ridge Leadership Computing Facility delivered Frontier in 2022, the world's first exascale computing system dedicated to open science.

James Warren

Dr. James A. Warren is the Director of the Materials Genome Program in the Material Measurement Laboratory of the National Institute of Standards and Technology (NIST). After receiving his Ph.D. in Theoretical Physics at the University of California, Santa Barbara, in 1992 he took a position as a National Research Council post-doc in the Metallurgy Division at NIST. In 1995, with three other junior NIST staff members, he co-founded the NIST Center for Theoretical and Computational Materials Science, which he has directed since 2001. From 2005-2013 he was the Leader of the Thermodynamics and Kinetics Group. In 2010-11, Dr. Warren was part of the ad hoc committee within the Office of Science and Technology Policy's National Science and Technology Council (NSTC) that crafted the founding whitepaper of Materials Genome Initiative (MGI). Since 2012, Dr. Warren has served as the Executive Secretary of the NSTC MGI Subcommittee, coordinating inter-agency efforts to achieve the goals laid out in the MGI. He is Fellow of the American Physical Society, ASM International, and TMS.

Bin Yu

Bin Yu is CDSS Chancellor's Distinguished Professor in the Departments of Statistics and EECS, and Center for Computational Biology, and serves as a scientific advisor at the Simons Institute for the Theory of Computing, all at UC Berkeley. She obtained her BS Degree in Mathematics from Peking University, and MS and PhD Degrees in Statistics from UC Berkeley. She was Assistant Professor at UW-Madison, Visiting Assistant Professor at Yale University, Member of Technical Staff at Lucent Bell-Labs, and Miller Research Professor at Berkeley. She was a Visiting Faculty at MIT, ETH, Poincare Institute, Peking University, INRIA-Paris, Fields Institute at University of Toronto, Newton Institute at Cambridge University, and the Flatiron Institute in NYC. She was Chair of the Department of Statistics at UC Berkeley from 2009 to 2012. Recently, she was a 50% consultant researcher in the deep learning group of MSR at Redmond (2022-2023). She was a Guggenheim Fellow and is a member of the National Academy of Sciences and the American Academy of Arts and Sciences.