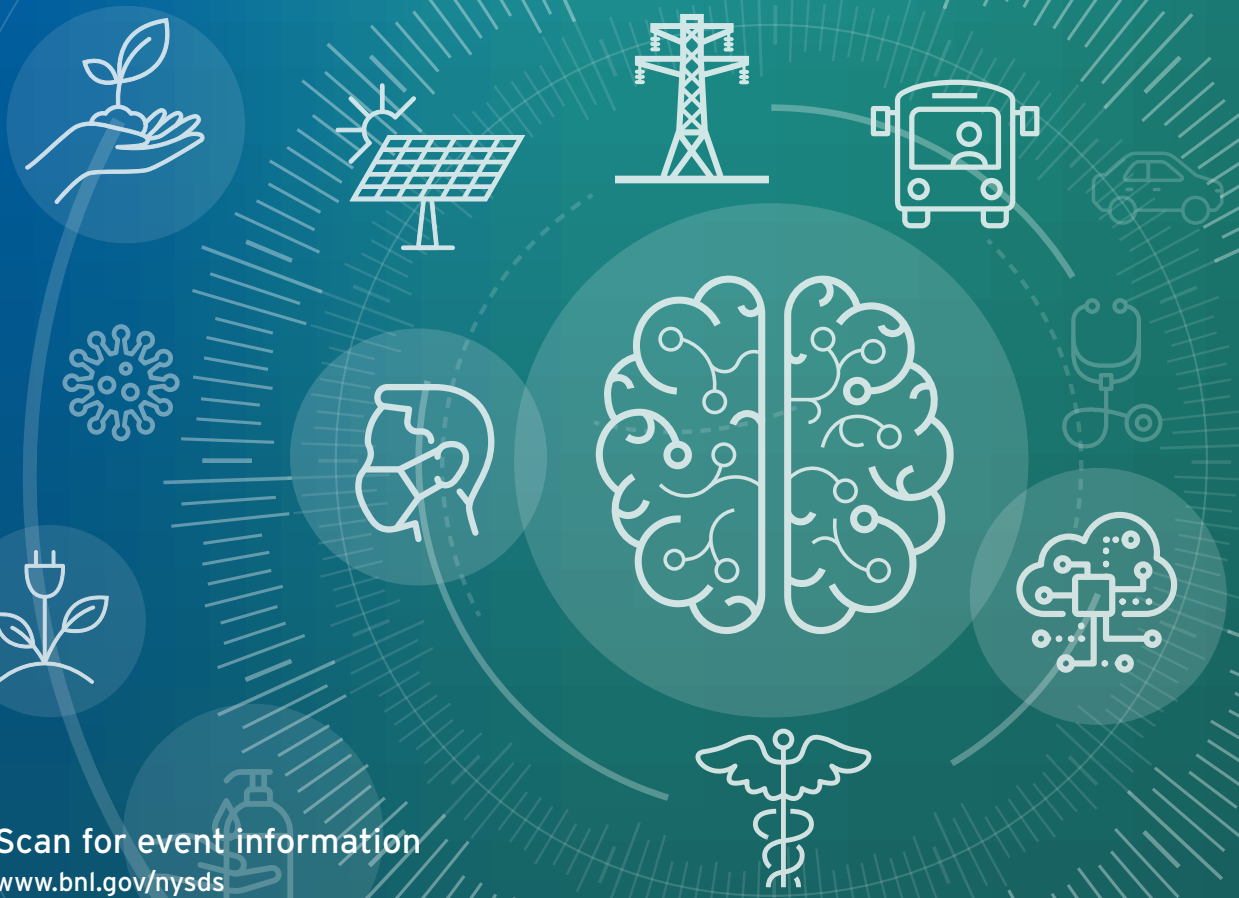
New York Scientific Data Summit 2024

Addressing Data Challenges in Digital Twins

September 16-17, 2024
SUNY Global Center, New York City



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FRANCIS J. (FRANK) ALEXANDER

ARGONNE NATIONAL LABORATORY

Frank Alexander presently is the Director for Artificial Intelligence Strategy and Research with a national security focus at Argonne National Laboratory. Before joining Argonne, he served as deputy director of the Computational Science Initiative at Brookhaven National Laboratory from 2017-2023. Previously, he was acting division leader of the Computer, Computational, and Statistical Sciences (CCS) Division at Los Alamos National Laboratory (LANL). During his more than 20 years at LANL, he held several leadership roles, including serving as deputy division leader of the CCS Division, Information Sciences Group Leader, and Information Science and Technology Institute Lead. He first joined LANL in 1991 as a postdoctoral researcher at the Center for Nonlinear Studies and returned to the lab in 1998 after doing postdoctoral work at the Institute for Scientific Computing Research at Lawrence Livermore National Laboratory. He also was a research assistant professor at Boston University's Center for Computational Science.

Alexander's current research interests include AI, machine learning, decision-making under uncertainty, optimal design of experiments, computational physics, and nonequilibrium physics. He has led many research projects, including serving as Principal Investigator of the Exascale Machine Learning Technologies Codesign Center, known as ExaLearn, and has published more than 70 papers in peer-reviewed venues. He earned his doctorate in physics from Rutgers University and a B.S. in physics and mathematics from The Ohio State University.

GARY AN

UNIVERSITY OF VERMONT LARNER COLLEGE OF MEDICINE

Gary An is the Green and Gold Professor of Trauma and Critical Care and Vice-Chairman for Surgical Research in the Department of Surgery at the University of Vermont Larner College of Medicine. He is a clinically active trauma/critical care surgeon who has worked on the application of complex systems analysis, agent-based modeling, and *in silico* trials to study sepsis, inflammation, wound healing, host-pathogen interactions, and cancer since 1999. He is one of the co-founders of translational systems biology, a discipline that promotes the use of multiscale mechanistic simulation models to cross the “valley of death” of drug development. His work consists of the development of multiscale, cell-based computer simulations and the integration of machine learning and artificial intelligence with such models to represent the individual diversity within clinical populations (e.g., populations of biomedical digital twins for *in silico* trials) and for discovery and development of personalized therapeutic control modalities.

NATHANIEL BRADLEY

DATA VAULT HOLDINGS, INC.

Nathaniel Bradley is the Chief Executive Officer (CEO) and Founder of Data Vault Holdings, Inc., a private New York-based corporation. With over two decades of experience, Bradley has played a pivotal role in the commercialization, practice, and enforcement of groundbreaking Internet patents, focused on the customization of online content, data visualization, and data monetization. As a named inventor, he developed several patented phonetic and navigational technologies, notably AudioEye, which revolutionized Internet accessibility for individuals with disabilities.

Bradley's groundbreaking work in technology has earned him recognition from top-tier media outlets, including Fox News, Bloomberg, Forbes, and Entrepreneur, highlighting his expertise in artificial intelligence and data monetization. He is the recipient of the prestigious Edison Gold Award and has founded multiple publicly traded companies. He has held key executive roles, including chairman, CEO, chief technology officer, and chief information officer of AudioEye, Inc. Bradley also has played a critical role in the development of VoiceAmerica, Radio Pilot, World Talk Radio, and BoomBox Radio with his patent portfolio becoming one of the most cited in the industry, eventually acquired by Upland Software (NASDAQ). His contributions continue to shape the future of technology and innovation.

JEREN M. BROWNING

IDAHO NATIONAL LABORATORY

Jeren Browning is the Digital Thread Group Lead for the Digital Engineering Department at Idaho National Laboratory. His expertise includes digital thread and systems integration technologies, digital twin development, full stack development, systems architecture, and cloud. His accomplishments include leading efforts such as the creation of digital twins for remote and autonomous control of live assets, architecting and developing distributed applications, leading the development of common data models for data integration, and development of the DeepLynx open-source data warehouse. His work has been closely tied to furthering the goals of the nuclear industry by moving toward operational efficiency and automation.

He holds a master's degree in computer science from the Georgia Institute of Technology and a bachelor's in computer information technology from Brigham Young University-Idaho. Prior to joining Idaho National Lab, he was a software engineer with Capital One.

FRANCK CAPPELLO

ARGONNE NATIONAL LABORATORY

Franck Cappello has made contributions to parallel and distributed computing, high-performance computing resilience, and scientific data compression. In January 2024, he became the Lead of the Evaluation activity for the AuroraGPT project at Argonne National Laboratory. He is an Institute of Electrical and Electronics Engineers (IEEE) Fellow and a recipient of the 2024 IEEE Charles Babbage Award, 2024 Euro-Par Achievement Award, 2022 Association for Computing Machinery High Performance Distributed Computing Achievement Award, two R&D 100 awards (2019 and 2021), 2018 IEEE Technical Community on Parallel Processing Outstanding Service Award, and 2021 IEEE Transactions of Computer Award for Editorial Service and Excellence.

ANIRBAN CHAUDHURI

ODEN INSTITUTE FOR COMPUTATIONAL ENGINEERING AND SCIENCES

Anirban Chaudhuri currently is a Research Associate at the Oden Institute for Computational Engineering and Sciences at the University of Texas at Austin. Prior to joining the Oden Institute in 2021, he spent six years at Massachusetts Institute of Technology as a postdoc, then as a research scientist working with Professor Karen Willcox. He received his doctorate in mechanical engineering under Professor Raphael Haftka at the University of Florida in 2014.

Chaudhuri's research expertise includes digital twins, multifidelity methods, scientific machine learning, uncertainty quantification, optimization under uncertainty, risk analysis, and multidisciplinary analysis. A major focus of his work is developing transformative digital twin capabilities for high-consequence decision-making in applications spanning aerospace, advanced manufacturing, and personalized medicine.

ANASTASIA CHRISTIANSON

EPAM SYSTEMS INC.

Anastasia Christianson is a visionary data science and artificial intelligence Senior Executive with more than two decades of experience driving data science, AI, and information technology innovation in the pharmaceutical industry and across four major pharma companies, most recently as Senior Vice President and Global Head of AI/Machine Learning, Data, and Analytics at Pfizer. She is renowned for fostering strategic partnerships and innovative ways of working that integrate science and technology and accelerate digital transformation and impactful business outcomes.

Christianson's passion for digital transformation and data-driven decision-making in pursuit of medical innovation and therapeutic development for patients globally has defined her career. With a unique blend of scientific, technical, and business acumen, she has excelled in building and leading high-performance teams, fostering innovation while defining and executing transformative strategies across all stages of drug discovery and development. A scientist by training, Christianson has championed strategic technology and advanced analytics initiatives, driven groundbreaking collaborations, and emphasized the value of digital health technologies. Recognized as a thought leader in the healthcare AI space, she has delivered compelling keynote addresses at prestigious events, including the Plenary Keynote at the 2023 Bio-IT World Conference and a panel discussion at the 2022 United Nations General Assembly 77 World Woman Future Forum.

Christianson's leadership style, emphasizing the strategic adoption of technology and data-driven solutions, extends to her role as a key contributor in AI policy discussions, including a recent round table at the White House organized by the Office of Public Engagement. Her commitment to ethical and responsible use of data and AI to drive health equity is evident in her public presentations, including her address at Women Impact Tech New York 2023 on the *Journey to Health Equity*.

Christianson earned her B.S. from the College of New Jersey, Ph.D. in biological chemistry from the University of Pennsylvania, and completed postdoctoral training at Harvard University and executive training at Harvard Business School. She recently completed the Women on Boards Executive course at Harvard School of Public Health and currently is providing senior strategic advisory and consultancy to a number of organizations.

MICHAEL CHURCHILL

PRINCETON PLASMA PHYSICS LABORATORY

Michael Churchill is the Head of Digital Engineering at Princeton Plasma Physics Laboratory. His research focuses on integrating physics and engineering modeling/simulation for magnetic confinement fusion energy systems.

Churchill earned a doctorate in nuclear science and engineering in 2014 at the Massachusetts Institute of Technology, where he performed experimental research on the Alcator C-Mod tokamak. He received his B.A. in electrical and computer engineering from Brigham Young University.

SAJAL DASH

OAK RIDGE NATIONAL LABORATORY

Sajal Dash is a Research Scientist at Oak Ridge National Laboratory. His research interests are at the intersection of high-performance computing and artificial intelligence. He explores scaling approaches for large-scale deep learning applications by focusing on efficient distribution strategies and algorithms on supercomputing platforms. Dash also explores the application of large models in various scientific domains, especially in cancer informatics.

JUN DENG

YALE UNIVERSITY

Jun Deng is a Professor and Director of Physics Research at the Department of Therapeutic Radiology, a professor in the Department of Biomedical Informatics & Data Science at Yale University School of Medicine, Principal Investigator of Yale Smart Medicine Lab, and the leading member of the Digital Twins for Health (DT4H) Consortium. Deng received his doctorate from University of Virginia and finished his postdoctoral fellowship at Stanford University.

With funding from the National Institute of Biomedical Imaging and Bioengineering, National Science Foundation (NSF), National Cancer Institute (NCI), Department of Energy, Yale Cancer Center, and Amazon, Deng's research has focused on artificial intelligence, machine learning, big data, and medical imaging for real-time clinical decision support, digital twins of cancer patients, early cancer detection, and AI-empowered mobile health.

Deng has served on the editorial board of numerous peer-reviewed journals; on study sections for the National Institutes of Health, NSF, Department of Defense, American Cancer Society, Radiological Society of North America, American Society for Radiation Oncology (ASTRO), and Cancer Prevention and Research Institute of Texas since 2005; and as scientific reviewer for various national and international science foundations and institutions since 2015. He is an elected fellow of the Institute of Physics, American Association of Physicists in Medicine, and ASTRO and was selected as a Key Thought Leader of the NCI Cancer AI Accelerator Program and as a NIH AIM-AHEAD PAIR Program Expert.

JOSH ELLIS

INTEMPO HEALTH

Josh Ellis brings 24 years of experience in both hands-on and leadership roles across higher education and big tech. Ellis graduated from The Ohio State University and spent six years leading bioinformatics for the Campus Chemical Instrument Center (Mass Spectrometry & Proteomics Facility). In partnership with collaborators from the Ohio Supercomputing Center, he co-founded the Ohio Collaborative Conference on Bioinformatics (now GLBio). After moving to San Francisco, Calif., he spent 11 years with Dell Technologies, working closely with startups such as Uber, Salesforce, Twitter, Box, and others.

In 2017, Ellis joined Google Cloud, where he led multiple teams and initiatives in engineering, technical recruiting, and data center capacity planning, splitting his time between Austin, Tex. and eventually Reston, Va. In 2023, his team successfully designed, implemented, and commercially closed Google Cloud's first Generative AI solution in North America. He is currently the founder and chief executive officer of Intempo Health, a consumer AI healthcare platform disrupting the healthcare space to provide meaning, advocacy, and opportunity for individuals. Ellis lives in Vienna, Va.; is married with two children; and, in his free time, enjoys spending time with his family and working with undergraduates on career planning and entrepreneurship.

KJIERSTEN FAGNAN

JOINT GENOME INSTITUTE (JGI)

After completing a petascale postdoctoral fellowship at the National Energy Research Scientific Computing Center (NERSC) and Lawrence Berkeley National Laboratory's Computational Research Division, Kjiersten Fagnan began working with JGI as a NERSC bioinformatics computing consultant in 2012. As a postdoc, her research focused on stable and accurate computational methods for reacting subsurface flows and evolved into scalable methods for scientific data analysis.

In 2014, Fagnan became the JGI-NERSC Engagement Lead with a focus on adapting JGI workloads to run on supercomputing hardware and worked closely with staff to understand the data-intensive nature of JGI workloads. In 2016, she was appointed Chief Information Officer of JGI in 2016 and became JGI's Data Science and Informatics Department Head in 2018.

Fagnan has more than 10 years of experience building distributed data and computing infrastructure for JGI and has overseen the deployment of user-focused tools, such as the JGI Data Portal. Fagnan also is a co-Principal Investigator of the National Microbiome Data Collaborative, supporting infrastructure and user-centered design efforts.

ELIOT FEIBUSH

PRINCETON UNIVERSITY/
PRINCETON PLASMA PHYSICS LABORATORY

Eliot Feibush is a Lead Computational Scientist, specializing in computer graphics and scientific visualization at Princeton University Research Computing and Princeton Plasma Physics Laboratory. He specializes in developing animated visualizations of $f(x,y,z,t)$ data acquired from experiments or generated by simulations. He has developed interactive programs and workflows to select, analyze, explore, and display data from various applications and disciplines, including the Department of Atmospheric and Ocean Sciences. Previously, he worked in medical imaging, architectural rendering, and geo-spatial analysis. His recent projects include the Catch a Falling Star exhibit and the Electronic Theater Retrospective at SIGGRAPH 2023.

BARTON FISKE

NVIDIA

As Senior Alliances and Product Manager for Math Libraries and DevTools at NVIDIA, Barton Fiske has been fascinated by three-dimensional graphics, visualization, and computer gaming from a very early age and pursued his degree in computer science specifically to further these interests into a full-blown profession. A graduate of the Rochester Institute of Technology, Fiske has more than 30 years of experience in a variety of roles, ranging from software engineer to systems engineer and demo architect to senior cloud architect and director of technical sales and evangelism. Fiske is the co-author of two books on Java programming and has developed dozens of interactive 2D, 3D, and virtual reality demo experiences for a variety of industrial scenarios, from global product launches to end user applications. He currently is using digital twin technology in his own life to manage and maintain models of his seaside home in Newport, RI.

ROGER GHANEM

UNIVERSITY OF SOUTHERN CALIFORNIA

Roger Ghanem holds the Tryon Chair in Stochastic Methods and Simulation at the University of Southern California (USC), where he is Professor in the Departments of Civil & Environmental Engineering and Mechanical & Aerospace Engineering. Ghanem earned his doctorate from Rice University in 1989 in civil engineering. Before joining USC in 2005, he held faculty positions at the State University of New York-Buffalo and Johns Hopkins University. He is an expert in uncertainty quantification (UQ) and scientific machine learning (SciML).

Ghanem has published more than 180 refereed journal publications and over 180 refereed conference papers. His research has been funded by the National Science Foundation, Office of Naval Research, Air Force Office of Scientific Research, Defense Advanced Research Projects Agency, Department of Energy (DOE), Nuclear Regulatory Commission, Nuclear Energy University Program, Sandia National Laboratories, and Lawrence Livermore National Laboratory, in addition to numerous industries. Ghanem is member of FASTMATH, a DOE Scientific Discovery through Advanced Computing Institute. He has organized UQ Summer School at USC from 2010-2024 and the UQ/ML Workshop at USC in 2018 and 2019.

Ghanem is president of the International Association for Structural Safety and Reliability, has served as president of the Engineering Mechanics Institute of American Society of Civil Engineers (ASCE), on the Executive Council of U.S. Association for Computational Mechanics (USACM), and as chair of the Society for Industrial and Applied Mathematics (SIAM) Activity Group on UQ. He is currently a member of the U.S. National Committee on Theoretical and Applied Mechanics. Ghanem is a Fellow of the American Association for the Advancement of Science, Engineering Mechanics Institute, SIAM, USACM, and International Association for Computational Mechanics, and he is a Distinguished Member of ASCE. His research has been recognized by a number of awards from the ASCE, USACM, and International Association for Structural Safety and Reliability.

MICHAEL HADJISAVAS

p-CHIP CORPORATION

Michael Hadjisavas serves as the Head of Life Sciences and Healthcare at p-Chip Corp., where he is responsible for developing and implementing advanced digital process control solutions for diagnostic, therapeutic, and clinical operations. Hadjisavas has more than 25 years of experience in executive global leadership roles in multinational, publicly traded life science tool and diagnostics companies. His expertise is in leveraging a broad spectrum of molecular and genomics technologies to build businesses and capabilities for enabling discovery, translational research, and clinical development for diagnostic and therapeutic applications. His prior roles and experience include general management, corporate strategy and development, mergers and acquisitions, new business incubation, board directorships, portfolio leadership, professional society committees, strategic partnering, and venture capital investment.

Prior to p-Chip, Hadjisavas served in executive and leadership roles at QIAGEN, Abcam, Hologic, Life Technologies/Thermo, and Millipore Sigma. He currently holds board and advisory roles for Hummingbird Diagnostics GmbH, Association of Molecular Pathology, and Greybird Ventures. He holds BSc and Ph.D. degrees in molecular and cellular immunology from the University of Adelaide.

FLORENCE HUDSON

COLUMBIA UNIVERSITY

Florence Hudson is Executive Director of the Northeast Big Data Innovation Hub, COVID Information Commons, and Prototype Open Knowledge Network programs at Columbia University funded by the National Science Foundation (NSF), National Institutes of Health, and Department of Transportation Federal Highway Administration. Founder and chief executive officer of FDHint, LLC, a global advanced technology and diversity and inclusion consulting firm, she chairs the Institute of Electrical and Electronics Engineers (IEEE) Clinical Internet of Things Data and Device Interoperability with the Trust, Identity, Privacy, Protection, Safety, Security working group and is a member of the IEEE Engineering in Medicine and Biology Standards Committee.

As former IBM vice president and chief technology officer, Internet2 senior vice president and chief innovation officer, special advisor for the NSF Cybersecurity Center of Excellence, and aerospace engineer at NASA, Hudson has served on NASDAQ-listed industry, academic, and nonprofit boards. She earned her mechanical and aerospace engineering degree from Princeton University, as well as executive education certificates from Harvard Business School and Columbia University.

DAN ISAACS

DIGITAL TWIN CONSORTIUM

Dan Isaacs is the General Manager and Chief Technology Officer of Digital Twin Consortium, where he is responsible for setting the technical direction for the Member Consortium, liaison partnerships, and business development support for new memberships. Previously, he was director of strategic marketing and business development at Xilinx, where he was responsible for emerging technologies, including artificial intelligence/machine learning, and for defining and executing the ecosystem strategy for the Industrial Internet of Things. Isaacs was responsible for automotive business development, which focused on automated driving and advanced driver-assistance systems.

He has more than 25 years of experience working in automotive, aerospace, and consumer-based companies, including Ford, NEC, LSI Logic, and Hughes Aircraft. An accomplished speaker, Isaacs has delivered keynotes and presentations, is a member of international advisory boards, and holds degrees in computer and electrical engineering from Cal State University and a B.S. in geophysics from Arizona State University.

ANUJ J. KAPADIA

OAK RIDGE NATIONAL LABORATORY

Anuj J. Kapadia is a Distinguished Research Scientist and Section Head for Advanced Computing in Health Sciences at Oak Ridge National Laboratory. He is also an adjunct professor of radiology, physics, and medical physics at Duke University, where he also earned a doctorate in biomedical engineering. His work focuses on artificial intelligence, machine learning, and modeling and simulation in health applications.

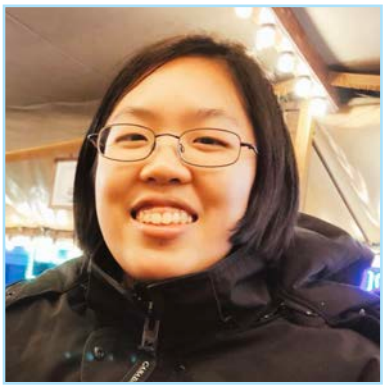
Kapadia has more than 20 years of experience in neutron and X-ray scattering, Monte Carlo simulation development, and data analytics for security and medical applications. His work has been funded by the Department of Energy, Department of Defense, Department of Homeland Security, National Institutes of Health, and the North Carolina Biotech Center. His work has received acclaim in press articles, national and international conferences, and he has won awards for his teaching, mentorship, and leadership roles. Kapadia has mentored 33 students and postdocs and has authored over 100 journal and conference papers. He is a senior member of the Institute for Electrical and Electronics Engineers and the Society for Photo-optical Instrumentation Engineers, and a Fellow of the American Association for Physicists in Medicine.

MEIFENG LIN

BROOKHAVEN NATIONAL LABORATORY

Meifeng Lin is a Distinguished Scientist and Group Lead of the Computational Science Initiative's High Performance Computing group at Brookhaven National Laboratory. She also serves as director of Brookhaven Lab's Digital Twins Institute. Trained as a theoretical particle physicist, her diverse research interests include nuclear and particle physics, HPC technologies and applications, and quantum information science.

Lin earned her doctorate in theoretical particle physics at Columbia University and her B.S. in physics at Peking University (China). Prior to joining Brookhaven Lab in 2013, she was a postdoctoral researcher at Massachusetts Institute of Technology, Yale University, and Boston University.



WEIJIAN (LUCY) LIN

BROOKHAVEN NATIONAL LABORATORY

Lucy Lin is an Accelerator Physics Research Associate under Kevin Brown in the Collider Accelerator Department at Brookhaven National Laboratory. She earned her doctorate in physics from Cornell University, where she studied machine learning applications for particle accelerator operations under Professor Georg Hoffstaetter. Her current focus is on developing machine learning algorithms to improve beam quality at the Relativistic Heavy Ion Collider injector compound.

SUSAN (SUE) MINKOFF

BROOKHAVEN NATIONAL LABORATORY

Sue Minkoff is the Chair of Applied Mathematics at Brookhaven National Laboratory. From 2012-2024, she was a professor of mathematical sciences and an affiliated professor in the departments of Sustainable Earth Systems Sciences and Science and Mathematics Education at the University of Texas at Dallas. From 2000-2012, she served on the faculty in the Department of Mathematics and Statistics at the University of Maryland, Baltimore County.

Minkoff's research interests include uncertainty quantification, digital twins modeling, Earth science, and photonics. She received her doctorate in computational and applied mathematics from Rice University in 1995. From 1995-199, she was a National Science Foundation-Industrial joint postdoc with the University of Texas at Austin and British Petroleum, and, from 1997-2000, she held a von Neumann Fellowship in the Mathematics Department at Sandia National Laboratories (New Mexico). In 2000, Minkoff was promoted to senior member of the technical staff in Sandia's Geophysics Department.

PAIGE MORKNER

NATIONAL ENERGY TECHNOLOGY LABORATORY (NETL)

Paige Morkner is a Geologist and Geo-Data Scientist at the Department of Energy's NETL. Her work applies geology, data science, machine learning, geographic information systems, and data analytics to support data curation for subsurface modeling, analysis, and simulation. Morkner leads and collaborates with teams of researchers at NETL to develop data curation strategies for multi-source, multiscale datasets in support of onshore carbon transport and storage and methane emissions mitigation research. Her research is often driven by the need to find and build data solutions for varying stakeholder communities. She has a B.S. in Earth science from California Polytechnic State University (San Luis Obispo) and an M.S. in geology from Western Washington University.

MIKE O'KEEFFE

NVIDIA

Mike O'Keeffe is a Senior Solutions Architect on the Higher Education and Research team at NVIDIA. In this role, he supports researchers, research computing, and university leadership in accelerating computational solutions bridging artificial intelligence, machine learning, physics, and quantum computing for scientific applications. O'Keeffe received his doctorate in physics from the City University of New York with research in condensed matter theory focusing on magnetism and superconductivity. He joined the technical staff at MIT Lincoln Laboratory, where he contributed to advancing quantum computing and quantum sensing technologies and applications. Most recently, he was a senior data scientist at RTX (formerly Raytheon Technologies), engaged in various projects ranging from prognostics and health management of industrial assets to enterprise Generative AI solutions.

MIHIR A. PARIKH

NISHITH DESAI ASSOCIATES

Mihir A. Parikh is a Futurist and Strategic Thought Leader at Nishith Desai Associates, an India-centric global law firm. He leads the firm's Research and Innovation and Strategic Legal Consulting practice from its Silicon Valley office in Palo Alto, Calif.

Parikh helps companies understand and apply strategic legal perspectives to manage future business risks, defend competitive advantages, and create new growth opportunities. He also advises private equity/venture capital firms in investment decisions and creating value for portfolio companies by integrating technology and law as strategic assets. Additionally, he heads the firm's initiative for setting up PACER, a thought leadership center at the intersection of technology, law and strategy and runs a series on futuristic technologies: www.sprintingseries.com. He is also an adjunct professor in the Management of Technology and Innovation Department at New York University and teaches in graduate programs.

TOM PATERSON

FULCRUM NEUROSCIENCE | EMBODYBIO

Tom Paterson is a serial entrepreneur and pioneer of Computational Systems Physiology (CSP) modeling, digital populations, and digital twins. For more than 25 years, he has led the development of CSP methodologies, tools, and applications of these capabilities for precision medicine inside multiple organizations and is an inventor on several related patents. His first company, Entelos, was pivotal in establishing Quantitative Systems Pharmacology (QSP) modeling within the pharmaceutical industry. His current work in CSP applies engineering paradigms to understand the physiology of homeostasis, establishing the organizing principles and technology needed to reconcile and integrate disparate data in molecular and physiological phenotyping. Paterson has a B.S. in aeronautical and astronautical engineering from Massachusetts Institute of Technology and an M.S. in engineering and economic systems (decision science) from Stanford University.

GRACE PENG

NATIONAL INSTITUTE OF BIOMEDICAL IMAGING AND BIOENGINEERING (NIBIB)

Grace C.Y. Peng is the Director of Mathematical Modeling, Simulation and Analysis at the NIBIB within the National Institutes of Health (NIH) in the U.S. Department of Health and Human Services. In this capacity, she has programmatic oversight of extramural activities in these areas.

Peng received a B.S. degree in electrical engineering from the University of Illinois Urbana-Champaign and M.S. and Ph.D. degrees in biomedical engineering from Northwestern University. She performed postdoctoral and faculty research in the Department of Neurology at Johns Hopkins University. In 2000, she became the Clare Boothe Luce Professor of Biomedical Engineering at Catholic University of America. Her research focused on developing computational models of the vestibular system in control of the head and neck and analytical tools for studying the oculomotor system in patients with vestibular dysfunction.

Since 2002, Peng has been a Program Director in the NIBIB, overseeing various programs that promote the development of mathematical and statistical modeling and analysis methods; medical simulation tools; and next-generation engineering systems for rehabilitation, robotics, neuroengineering, and surgical systems. In 2003, she led the creation of the Interagency Modeling and Analysis Group (IMAG), which now consists of program officers from multiple U.S. federal agencies. Since 2004, IMAG has supported funding initiatives targeted to multiscale modeling of biomedical, biological, and behavioral systems. Since 2006, IMAG has facilitated the activities of the Multiscale Modeling Consortium of investigators. Peng also has served in leadership roles in NIH SPARC (2014-2016), BRAIN Initiative (since 2014), Bridge2AI Program (since 2020), and ComPASS Program (since 2022).

Peng is committed to promoting the development and use of intelligent tools and reusable data and models to accelerate biomedical research and translate scientific knowledge to the clinic and community. In 2020, she was inducted into the American Institute for Medical and Biological Engineering College of Fellows.

HOIFUNG POON

MICROSOFT RESEARCH

Hoifung Poon is the General Manager at Health Futures in Microsoft Research and an affiliated faculty at the University of Washington Medical School. He leads biomedical artificial intelligence research and incubation with the overarching goal of structuring medical data to optimize delivery and accelerate discovery for precision health. His team and collaborators are among the first to explore large language models and multimodal generative AI in health applications, producing popular open-source foundation models, such as PubMedBERT, BioGPT, BiomedCLIP, LLaVA-Med, and GigaPath.

Poon has led successful research partnerships with large health providers and life science companies, creating AI systems in daily use for applications such as molecular tumor board and clinical trial matching. His prior work has been recognized with Best Paper awards from premier AI venues, including the North American Chapter of the Association for Computational Linguistics, Empirical Methods in Natural Language Processing, and Conference on Uncertainty in Artificial Intelligence. He received his doctorate in computer science and engineering from the University of Washington, specializing in machine learning and natural language processing.

NABEEL S. QURESHI

OPENHEALTH

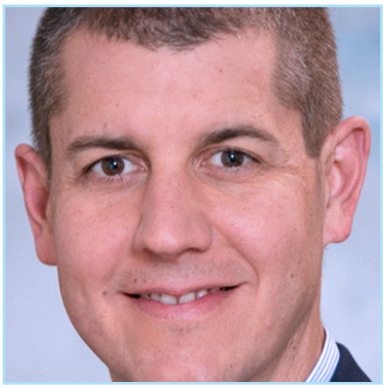
Nabeel S. Qureshi is the Chief Executive Officer of OpenHealth and a Visiting Scholar with the Program on Artificial Intelligence and Progress at the Mercatus Center, George Mason University. Previously, Qureshi led engagements with U.S. federal agencies at Palantir Technologies, specializing in machine learning for biosciences and public health, including serving as a key architect of the N3C enclave, which was the largest centralized COVID-19 patient-level clinical data resource in the United States. He was a founding employee and vice president of business development at GoCardless, a major European financial technology unicorn. Qureshi has published articles on artificial intelligence in *WIRED* Magazine and co-authored papers on science, public health, and technology. His expertise spans software engineering for large-scale health data systems, AI applications in public health, and fostering collaboration between policymakers and technologists to leverage technology for improved healthcare outcomes and population health management.

ADAM RASHEED

AMAZON WEB SERVICES (AWS)

Adam Rasheed is the Head of Emerging Technologies Go-To-Market at AWS, where he is working with customers to incubate new workloads that will scale in 3-10 years. He has more than 25 years of experience in mid-stage technology development, spanning both industrial and digital domains, including over 12 years developing digital twins in the aviation, energy, oil and gas, and renewables industries.

Rasheed earned his doctorate from the California Institute of Technology, where he studied experimental hypervelocity aerothermodynamics (orbital reentry heating). Recognized by *MIT Technology Review* as one of the "World's Top 35 Innovators," he also was awarded the American Institute of Aeronautics and Astronautics Lawrence Sperry Award, an industry award for early career contributions in aeronautics. He has over 32 issued patents and more than 125 technical publications related to industrial analytics, operations optimization, artificial lift, pulse detonation, hypersonics, shock-wave-induced mixing, space medicine, and innovation.



JOHN RATZAN

ACCENTURE

John Ratzan is an Accenture Senior Managing Director, who has more than 25 years of experience in the banking industry. In his current role, Ratzan leads the Financial Services North America Data & Artificial Intelligence business, as well as the Accenture business at a global bank. He guides client relationships with business and technology leadership and consults on the business strategy and technology vision to deliver technology, process, and operational transformations. His expertise is in data, analytics, banking, payment systems, AI, and innovation.

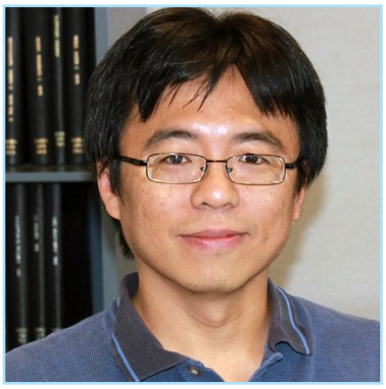
Prior to his current role, Ratzan led several transformations for global Financial Services clients, leveraging his aforementioned expertise and capability. He holds a B.S. dual major undergrad degree in management information systems (MIS) and operations management, a Masters in MIS, and an MBA – all from the University of Arizona. He also has a DBA focused on AI from Pace University.

KELLY ROSE

NATIONAL ENERGY TECHNOLOGY LABORATORY (NETL)

Kelly Rose is the Senior Fellow for Computational Science & Engineering at NETL. She is a geo-data science researcher with more than 20 years of experience developing data-driven methods and advanced computing solutions to address energy and environmental challenges at NETL. She also is the technical director of NETL's Science-based Artificial intelligence/Machine learning Institute (SAMI), which seeks to foster responsible and innovative AI solutions for applied energy challenges.

She holds a doctorate from Oregon State University, an M.S. from Virginia Tech, and a B.S. from Denison University. She has coauthored more than 100 public datasets, models, tools, journal publications, and technical studies. Rose also has mentored more than 50 STEM (science, technology, engineering, and mathematics) research interns and fellows.



HAN-WEI SHEN

THE OHIO STATE UNIVERSITY

Han-Wei Shen is a Full Professor at The Ohio State University and currently serves as the Editor-in-Chief of *IEEE Transactions on Visualization and Computer Graphics*. He is a member of Institute of Electrical and Electronics Engineers (IEEE) Visualization and Computer Graphics (VGTC) Visualization Academy and was the chair of the steering committee for IEEE Scientific Visualization Conference (2018-2020). His primary research interests are visualization, artificial intelligence, high-performance computing, and computer graphics.

Shen is a winner of the National Science Foundation's CAREER award and a Department of Energy Early Career Principal Investigator Award. He received a B.S. from the Department of Computer Science and Information Engineering at National Taiwan University in 1988, an M.S. in computer science from the State University of New York at Stony Brook in 1992, and a doctorate in computer science from the University of Utah in 1998. From 1996 to 1999, he was a research scientist at NASA Ames Research Center in Mountain View, Calif.

CARLOS XAVIER SOTO

BROOKHAVEN NATIONAL LABORATORY

Carlos Xavier Soto is a computer scientist, leading the AI Theory and Security (ATS) research group in the Artificial Intelligence Department (AID) at Brookhaven National Laboratory. His research within AID focuses on developing and using machine learning and natural language processing techniques for scientific and security applications – with a particular focus on safe, secure, and trustworthy AI. The ATS group works on a variety of scientific and security problems and collaborates closely with other groups within AID and across Brookhaven Lab. Soto also is a member of Brookhaven's Nonproliferation and National Security Department, working on computational and machine learning techniques to enhance nonproliferation efforts and enable new technologies supporting national security.

Beyond research and management, Soto is active in mentorship, outreach, and engagement activities with various communities and stakeholders and takes pride in effective communication of complex ideas. He holds a doctorate in computer engineering from Texas A&M University, where he worked in the Center for Robot-Assisted Search and Rescue (CRASAR) lab on human-robot interaction research. Outside of work, he is passionate about nature, film, technology, and knowledge for its own sake.

ANIL SRIVASTAVA

OPEN HEALTH SYSTEMS LABORATORY

Anil Srivastava serves as the President of Open Health Systems Laboratory (OHSL), where he leads the collaboration on development and deployment of digital twins in medicine, including an open-source toolkit, in collaboration with Frederick National Laboratory for Cancer Research and several other medical research centers in India, Europe, United Arab Emirates, United Kingdom and the United States. Over the years, Srivastava has worked with the National Cancer Institute (NCI)'s Cancer Biomedical Informatics Grid program, as a special volunteer with NCI's Radiation Research Program and as a consultant for the India-United States Advanced Research Consortium. Prior to OHSL he served as head of knowledge engineering with Cendit (1972-1986), in various capacities with Apple in Asia-Pacific and later with the Advanced Technology Group in Cupertino (1987-2000), and in between as a senior professional advisor with Book-Allen & Hamilton consulting arm and as founding executive director (1989-91) of India's National Association of Software and Service Companies.

ERIC STAHLBERG

FREDERICK NATIONAL LABORATORY

Eric Stahlberg directs cancer data science initiatives at Frederick National Laboratory. He was instrumental in establishing the Frederick National Laboratory's High-Performance Computing initiative and in assembling collaborative teams across organizations to advance predictive oncology. Stahlberg has played a leadership role in many key partnerships, including forming the collaboration between the National Cancer Institute (NCI) and the Department of Energy, where the agencies are accelerating progress in precision oncology and computing. He worked collaboratively to establish the Computational Approaches for Cancer workshop, HPC Applications of Precision Medicine workshop, Accelerating Therapeutics for Opportunities in Medicine collaboration, Predictive Oncology Model and Data Clearinghouse, and most recently the NCI computational.cancer.gov community website. He co-founded the Virtual Human Global Summit in October 2023 to advance medical digital twins. Stahlberg has undergraduate degrees in chemistry, computer science, and mathematics and a doctorate in theoretical chemistry from The Ohio State University.

QI SUN

NEW YORK UNIVERSITY (NYU)

Qi Sun is an Assistant Professor at New York University. Before joining NYU, he was a research scientist at Adobe Research. He received his doctorate at Stony Brook University. His research interests lie in virtual and augmented reality, generative artificial intelligence, computer graphics, and visual perception. He is a recipient of the Institute of Electrical and Electronics Engineers (IEEE) Virtual Reality Best Dissertation Award. With colleagues, his research has been recognized as several best paper and honorable mention awards at Association for Computing Machinery Special Interest Group on Computer Graphics, IEEE International Symposium on Mixed and Augmented Reality, IEEE Virtual Reality, and IEEE Visualization Conference. The research is supported by the National Science Foundation, NASA, Defense Advanced Research Projects Agency, and industry.

NATHAN URBAN

BROOKHAVEN NATIONAL LABORATORY

Nathan Urban is a computational scientist and leads the Applied Mathematics group at Brookhaven Lab. His research interests include decision making under uncertainty, uncertainty quantification, digital twins, model reduction/surrogate modeling, optimal experimental design, optimization, modeling and simulation, scalable data analysis, and numerical methods.

SVITLANA VOLKOVA

APTIMA

Svitlana Volkova serves as Chief Artificial Intelligence Scientist in Aptima's Office of Science and Technology. She spearheads the company's initiatives to develop trustworthy and human-centric AI systems that tackle complex real-world problems for the Department of Defense and other government agencies. Volkova's research focuses on advancing natural language processing and machine learning techniques with an emphasis on graph neural networks, causal inference, and multimodal models. Her work has pioneered methods for AI-powered analytics to explain complex social systems and behaviors. She is recognized as an expert in human-centered AI design, evaluation, and developing trustworthy AI systems.

Volkova has led projects funded by Defense Advanced Research Projects Agency; Intelligence Advanced Research Projects Activity; United States Special Operations Command; Department of Energy, Office of Advanced Scientific Computing Research; and National Nuclear Security Administration, focused on advancing AI to support national security missions. Her more than 70 peer-reviewed publications exemplify her contributions across AI, machine learning, and social media analytics.

Volkova serves on program committees and review boards for premier AI conferences, including Association for the Advancement of Artificial Intelligence, Association for Computational Linguistics, Empirical Methods in Natural Language Processing, and Conference and Workshop on Neural Information Processing Systems. An advocate for diversity in technology, she is an active member of Women in Machine Learning. She earned her doctorate in computer science from Johns Hopkins University, where she was affiliated with the Center for Language and Speech Processing and the Human Language Technology Center of Excellence.

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