Argonne NATIONAL LABORATORY

FRONTIERS IN MATERIALS MANUFACTURING

ACCELERATING SCALE-UP WITH AI PROFILES

January 28, 2021

Christine Chalk

Program Manager, U.S. Department of Energy, Office of Science, Advanced Scientific Computing Research

Christine Chalk is Program Manager for the Department of Energy Computational Science Graduate Fellowship (DOE CSGF) and for the Oak Ridge Leadership Computing Facility at Oak Ridge National Laboratory, both in the DOE Office of Science Advanced Scientific Computing Research (ASCR) program. Chalk also is the designated federal officer for the Advanced Scientific Computing Advisory Committee and leads lab appraisal and budget formulation in ASCR. She joined the program in 2006 to assist with the Scientific Discovery through Advanced Computing (SciDAC) program, overseeing its Computational Biology and Groundwater projects.

Chalk previously held a DOE Brookings Institution LEGIS Fellowship, working in the office of Rep. Nick Smith of Michigan, chair of the Research Subcommittee of the House Committee on Science, Space and Technology. She later led the Office of Science responses to Office of Management and Budget Program Assessment Rating Tool reports and helped develop the template for DOE's Laboratory Business Plans.

She joined the Office of Science in 1991, starting as a management intern with the International Office of the Superconducting Super Collider. Chalk later completed a project management rotation in Chicago on the Argonne National Laboratory Advanced Photon Source and Fermilab Main Injector projects. She returned to Washington and joined the DOE Office of Budget and Planning, focusing on strategic planning, Government Performance and Results Act-related activities, Office of Science budget overview and testimony, and other activities. She also led the first Office of Science web development team.

Chalk has degrees in economics from Trinity College and physics from the University of Maryland, College Park. She also completed a one-year intensive writing program at Oxford University.

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Nicola Ferrier

Senior Computer Scientist, Argonne National Laboratory

Nicola Ferrier received her doctorate from Harvard University in 1992. After postdoctoral fellowships at Oxford University and Harvard, she joined the Department of Mechanical Engineering at the University of Wisconsin (UW)-Madison in 1996. She became an associate professor in 2003 and professor in 2009. She received the NSF CAREER award (1997) and the UW Vilas Associates Professorship (1999) and the UW Honored Instructor Award (2009). She joined the Mathematics and Computer Science Division at Argonne in 2013.

Ferrier's research interests are in the use of computer vision (digital images) to control robots, machinery, and devices, with applications as diverse as medical systems, manufacturing, and projects that facilitate "scientific discovery" (such as her recent project using machine vision and robotics for plant phenotype studies).

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Ian Foster

Director of the Data Science and Learning Division and Argonne Distinguished Fellow, Argonne National Laboratory
Moderator

Dr. Ian Foster is the Director of Argonne's Data Science and Learning Division, Argonne Senior Scientist and Distinguished Fellow and the Arthur Holly Compton Distinguished Service Professor of Computer Science at the University of Chicago. He was the Director of Argonne's Computation Institute from 2006 to 2016.

Foster's research contributions span high-performance computing, distributed systems, and data-driven discovery. He has published hundreds of scientific papers and eight books on these and other topics. Methods and software developed under his leadership underpin many large national and international cyberinfrastructures.

Foster received a BSc (Hons I) degree from the University of Canterbury, New Zealand, and a PhD from Imperial College, United Kingdom, both in computer science. His awards include the Global Information Infrastructure (GII) Next Generation award, the British Computer Society's Lovelace Medal, R&D Magazine's Innovator of the Year, the IEEE Tsutomu Kanai award, and honorary doctorates from the University of Canterbury, New Zealand and CINVESTAV, Mexico.

He is an elected Fellow of the American Association for the Advancement of Science, the Association for Computing Machinery, and British Computer Society.

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Bryce Meredig

Founder and Chief Science Officer, Citrine Informatics

Bryce Meredig co-founded Citrine Informatics in 2013 to bring data-driven software to materials R&D and manufacturing. Prior to co-founding Citrine, Dr. Meredig earned his Ph.D. in the research group of Professor Chris Wolverton at Northwestern, where he co-authored 11 peer-reviewed publications. Dr. Meredig's doctoral research focused on developing algorithms and approaches for computational discovery, optimization, and characterization of materials. These ideas form the basis of Citrine's long-term vision of enabling routine materials informatics for materials researchers everywhere. During his Ph.D. studies, Dr. Meredig was awarded the Northwestern University Presidential Fellowship and the National Defense Science and Engineering Graduate Fellowship.

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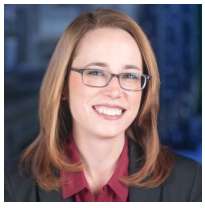
Kathleen O'Brien

Senior Director, Intelligent Systems, Raytheon Technologies Research Center



Kathleen O'Brien is the Senior Director of Intelligent Systems at Raytheon Technologies Research Center.

Kathleen O'Brien joined the Raytheon Technologies Research Center in 2020 as Senior Director of the Intelligent Systems department. Her team performs research in areas critical to the future of Raytheon Technologies including artificial intelligence, optimization and control technologies, systems engineering, and electric and electromagnetic systems. Prior to this, Kathleen was with GE Research for 15 years where she was the Technical Director for Electric Power and the leader of the external program portfolio for Energy and Electrification. Kathleen has 25 patents and a Ph.D. in electrical engineering from the Dresden University of Technology (Dresden, Germany).

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Paulina Rychenkova

Business Development Executive, Argonne National Laboratory

Paulina is a Business Development Executive in the Technology Commercialization and Partnerships Division.

Prior to joining Argonne in 2018, Paulina worked as a venture investor in early- and growth-stage technology companies (data infrastructure, enterprise software and healthcare technology) for Charles River Ventures, The Carlyle Group, and the BlueCross BlueShield Venture Fund. She started her professional career as a consultant in McKinsey & Company's Boston office.

As a parent of a child with a rare neurodevelopmental syndrome, Paulina has spearheaded work to raise awareness and fund research into the syndrome.

She holds a Ph.D. in Theoretical Physics from the University of Cambridge and a B.A. in Physics from Hope College (Mich.).

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Cristina Thomas

Global R&D Services Leader and R&D Global Process Owner, 3M

Dr. Cristina Thomas is currently the manager of Corporate R&D Services Center at 3M. As manager, Thomas is the Senior Technical Leader and RPR R& D Global Process Owner reporting to the Vice President of R&D/CTO. She has over 27 years with 3M starting as a Sr. Research Engineer after receiving a PhD in Chemical Engineering from the University of Massachusetts. Thomas advanced through R&D management positions involving safety, security, strategic planning, and global application development. She holds several patents and has given numerous presentations and published extensively.

Dr. Thomas' professional society memberships include American Institute of Chemical Engineers (AIChE) and American Chemical Society serving in a variety of leadership positions. Her work in the community includes science encouragement programs (e.g. STEP), Big Brothers/Sisters, and UMass and University of Wisconsin Industrial Board or Relations Team. At 3M, she has been active in the Women's Leadership Forum.

As an active senior member of AIChE, Dr. Thomas is chair of the Women's Initiative Committee 2019 Spring Programming and was involved with planning and execution of the 2017 Annual Meeting.