



Present a symposium on

# Nuclear Everywhere?

How new technologies, regulations and policies may finally make the  
use of nuclear energy mainstream and ubiquitousCenter for Advanced  
Nuclear Energy Systems**50 Vassar Street Cambridge, MA 02139 USA ([map](#))  
MIT Building 34, Room 101 | March 28-29, 2023**

## PROGRAM

### Tuesday, March 28, 2023

8:30 am to 9:00 am – **CHECK-IN** (Building 34-101 Lobby)

9:00 am to 9:20 am – Greetings

**Benoit Forget**, Associate Dept. Head, Nuclear Science and Engineering, MIT**Robert Armstrong**, Director, MIT Energy Initiative

9:20 am to 9:50 am – Symposium Intro &amp; Objectives

**Jacopo Buongiorno**, Director, Center for Advanced Nuclear Energy Systems (CANES), MIT

#### KEYNOTE

9:50 am to 10:10 am – Will SMRs succeed? Requirements for new nuclear technologies in the market place

**Maria Korsnick**, President and Chief Executive Officer, NEI

#### SESSION 1: New Markets and Applications

Chair: **John Parsons**, Senior Lecturer, Sloan School of Management, MIT

10:10 am to 10:30am

• Nuclear hydrogen is already here | **Ugi Otgonbaatar**, Director of Technology Strategy, Constellation

10:30 am to 10:50am

• Nuclear biofuels: a potential game changer | **Charles Forsberg**, Principal Research Scientist, MIT

#### 10:50 am to 11:10 am – *COFFEE BREAK*

11:10 am to 12:30 pm – Nuclear energy comes to campus. A panel-style discussion on decarbonization of college campuses and technology of microreactors.

Chair: **Lance Snead**, Director of Strategic Development, Nuclear Reactor Laboratory, MIT

Panelists:

**Jean Paul Allain**, Head, Nuclear Engineering Dept., Penn State University**Seungjin Kim**, Head, Nuclear Engineering Dept., Purdue University**Rusty Towell**, Professor, Engineering and Physics Dept. and Director, NEXT Lab, Abilene Christian University**Caleb Brooks**, Associate Professor of Nuclear, Plasma and Radiological Engineering, UIUC**Yasir Arafat**, MARVEL Chief Designer, Idaho National Laboratory**Janine Helwig**, Director of Utilities, MIT

#### *WORKING LUNCH*

12:30 pm to 1:30 pm – “The Kärnfull Way – lessons learned from the Nordics”

Speaker: **John Ahlberg**, Founder, Kärnfull Group

## SESSION 2: Enabling Technologies

Chair: **Koroush Shirvan**, Associate Professor of Nuclear Science and Engineering, MIT

1:30 pm to 1:50 pm

- Advanced Manufacturing, Passive Safety Systems, Compact heat exchangers, state-of-the-art BOP | **Koroush Shirvan**, MIT

1:50 pm to 2:10 pm

- Advanced Fuels and Moderators | **Ellen Cerreta**, Associate Laboratory Director, Physical Sciences, Los Alamos National Laboratory

2:10 pm to -2:30 pm

- Life cycle assessment of graphite including disposal | **Lance Snead**, MIT Nuclear Reactor Laboratory

2:30 pm to 2:50 pm – COFFEE BREAK

2:50 pm to 3:10 pm

- 2D and 3D seismic isolation of buildings and equipment | **Andrew Whittaker**, Professor of Civil Engineering, University of Buffalo

3:10 pm to -3:30 pm

- Technology synergies with fusion | **Steve Zinkle**, Professor of Nuclear Engineering, University of Tennessee at Knoxville

4:15 pm to 5:30 pm – MIT REACTOR TOUR AND SIMULATOR

6:00 PM to 9:30 PM - BANQUET DINNER at Samberg Conference Center

Address: 50 Memorial Drive, Cambridge, MA 02142 (Chang Building -E52- 7<sup>th</sup> Floor)

- Re-Establishing U.S. Leadership in Nuclear Energy | **Rian Bahrn**, Assistant Director, Nuclear Technology & Strategy, White House Office of Science, Technology and Policy (OSTP)

**Wednesday, March 29, 2023**

## SESSION 3: Regulations, Policy and Geopolitical Context

9:00-10:45 – Is the US Government doing enough to enable a substantial expansion of the domestic nuclear industry? A panel-style discussion on nuclear R&D, regulations and export.

Chair: **Lin-wen Hu**, Senior Scientist, Nuclear Reactor Lab, MIT

Panelists:

**Alison Hahn**, Director of Nuclear Reactor Deployment, Office of Nuclear Energy, US Department of Energy

**Jeff Chamberlin**, Assistant Deputy Administrator, Office of Material Management and Minimization, NNSA

**John Kotek**, Senior Vice President, Policy Development and Public Affairs, NEI

**Rita Baranwal**, Chief Technology Officer, Westinghouse Electric Company

**Edward Blandford**, Co-Founder & Chief Technology Officer, Kairos Power

2:30 pm to 2:50 pm – COFFEE BREAK

11:00-12:30 – Fuel and waste: where do we stand? A panel-style discussion on HALEU, new fuel forms and HLW management for existing and new nuclear reactors

Chair: **Haruko Wainwright**, Assistant Professor of Nuclear Science and Engineering, MIT

Panelists:

**Monica Regalbuto**, Director, Nuclear Fuel Cycle, INL

**David Sassani**, National Technical Director, Spent Fuel and Waste Science and Technology, Sandia National Laboratories

**Jose Reyes**, Chief Technology Officer, Nuscale

**Bret van den Akker**, Director of Fuel Cycle Innovation, USNC

**Jorge Narvaez**, General Engineer, Office of Integrated Waste Management, US DOE

12:30 – Adjourn

# Biographies

\*read full Biographies: <https://canes.mit.edu/symposium-nuclear-everywhere>

## Symposium Session Chairs & Speakers

<b>AHLBERG John</b> , Founder, Kärnfull Group
<b>Allain Jean Paul</b> , Head, Nuclear Engineering Dept., Penn State University
<b>ARAFAT Yasir</b> , MARVEL Chief Designer, Idaho National Laboratory
<b>ARMSTRONG Robert</b> , Director, MIT Energy Initiative
<b>BAHRAN Rian</b> , Assistant Director, Nuclear Technology & Strategy, White House Office of Science, Technology and Policy (OSTP)
<b>BARANWAL Rita</b> , Chief Technology Officer, Westinghouse Electric Company
<b>BLANDFORD Edward</b> , Co-Founder & Chief Technology Officer, Kairos Power
<b>BROOKS Caleb</b> , Associate Professor of Nuclear, Plasma and Radiological Engineering, UIUC
<b>BUONGIORNO Jacopo</b> , Director, Center for Advanced Nuclear Energy Systems (CANES), MIT
<b>CERRETA Ellen</b> , Associate Laboratory Director, Physical Sciences, Los Alamos National Laboratory
<b>CHAMBERLIN Jeff</b> , Assistant Deputy Administrator, Office of Material Management and Minimization, NNSA
<b>FORGET Benoit</b> , Associate Dept. Head, Nuclear Science and Engineering, MIT
<b>FORSBERG Charles</b> , Principal Research Scientist, MIT
<b>HAHN Alison</b> , Director of Nuclear Reactor Deployment, Office of Nuclear Energy, US Department of Energy
<b>HELWIG Janine</b> , Director of Utilities, MIT
<b>HU Lin-wen</b> , Senior Scientist, Nuclear Reactor Lab, MIT
<b>KIM Seungjin</b> , Head, Nuclear Engineering Dept., Purdue University
<b>KORSNICK Maria</b> , President and Chief Executive Officer, NEI
<b>KOTEK John</b> , Senior Vice President, Policy Development and Public Affairs, NEI
<b>NARVAEZ Jorge</b> , General Engineer, Office of Integrated Waste Management, US Department of Energy
<b>OTGONBAATAR Ugi</b> , Director of Technology Strategy, Constellation
<b>PARSONS John</b> , Senior Lecturer, Sloan School of Management, MIT
<b>REGALBUTO Monica</b> , Director, Nuclear Fuel Cycle, INL
<b>REYES Jose</b> , Chief Technology Officer, Nuscale
<b>SASSANI David</b> , National Technical Director, Spent Fuel-Waste Science-Technology, Sandia National Lab
<b>SHIRVAN Koroush</b> , Associate Professor of Nuclear Science and Engineering, MIT
<b>SNEAD Lance</b> , Director of Strategic Development, Nuclear Reactor Laboratory, MIT
<b>TOWELL Rusty</b> , Professor, Engineering and Physics Dept. and Director, NEXT Lab, Abilene Christian Univ.
<b>VAN DEN AKKER Bret</b> , Director of Fuel Cycle Innovation, USNC
<b>WAINWRIGHT Haruko</b> , Assistant Professor of Nuclear Science and Engineering, MIT
<b>WHITTAKER Andrew</b> , Professor of Civil Engineering, University of Buffalo
<b>ZINKLE Steve</b> , Professor of Nuclear Engineering, University of Tennessee at Knoxville)

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## **BUONGIORNO Jacopo, Director, Center for Advanced Nuclear Energy Systems (CANES), MIT**

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**Jacopo Buongiorno** is the TEPCO Professor of Nuclear Science and Engineering at the Massachusetts Institute of Technology (MIT), the Director of the Center for Advanced Nuclear Energy Systems (CANES), and the Director of Science and Technology of the MIT Nuclear Reactor Laboratory. He has published over 100 journal articles in the areas of reactor safety and design, two-phase flow and heat transfer, and nanofluid technology. For his research work and teaching he won several awards, among which recently the 2022 ANS Presidential Citation. Jacopo is a consultant for the nuclear industry in the area of reactor thermal-hydraulics and safety, and a member of the Accrediting Board of the National Academy of Nuclear Training. He is also a Fellow of the American Nuclear Society, a member of the ASME, past member of the Naval Studies Board (2017-2019), and a participant in the Defense Science Study Group (2014-2015).

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## **HU Lin-wen, Senior Scientist, Nuclear Reactor Lab, MIT**

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**Dr. Lin-wen Hu** is a Senior Research Scientist at MIT Nuclear Reactor Laboratory (MIT-NRL) where she held management positions including Director for Research and Services. Dr. Hu is an internationally recognized expert with more than 25 years of experience in nuclear reactor design, safety analysis, advanced nuclear system development and demonstration, and nuclear technology applications. Her current research and development interests include the first demonstration of a new high-density Low Enrichment Uranium (LEU) fuel conversion of the MIT Research Reactors and an innovative Reactor Simulator Digital Twin concept to accelerate regulatory licensing of advanced reactors.

Dr. Hu has led and managed innovative programs such as nuclear fuel, high-temperature structural materials, molten salt irradiation tests, and nuclear facilities and experimental infrastructure development. Dr. Hu served on advisory and technical review committees for several First-of-A-Kind projects with private investment, industry and government funding support. She has served on numerous U.S. and international technical committees including National Academies of Sciences study committees on nuclear medicine and radioisotope production ; research and test reactors working group of the nuclear technology subcommittee of International Standards Organization; International Atomic Energy Agency (IAEA) reactor utilization review mission and program committee ; US High Performance Research Reactors working group ; LEU fuel element Design Authority ; International Group of Research Reactors steering committee, American Nuclear Society Isotope and Radiation division as chair and executive committee member ; and Editorial Advisory Board for Nuclear Technology journal.

Dr. Hu earned SB (1989) and SM (1991) degrees in nuclear engineering from National Tsing-Hua University in Taiwan, SM (1993) and PhD (1996) degrees in nuclear engineering from MIT.

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## **PARSONS John, Senior Lecturer, Sloan School of Management, MIT**

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**Dr. Parsons** is the Deputy Director for Research at MIT's Center for Energy and Environmental Policy Research (CEEPR). His research focuses on the valuation and financing of investments in the energy industry, as well as the problems of risk in energy and environment markets, the transition to a low carbon economy. He was a co-Director of the recent MIT study on the Future of Nuclear Energy in a Carbon Constrained World. Dr. Parsons has served as an Associate Member of the Energy and Environmental Markets Advisory Committee at the U.S. Commodity Futures Trading Commission and has been a Visiting Scholar at the U.S. Federal Energy Regulatory Commission. He holds a BA in Economics from Princeton University and a PhD in Economics from Northwestern University.

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## SHIRVAN Koroush, Associate Professor of Nuclear Science and Engineering, MIT

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**Koroush Shirvan** is the John Clark Hardwick (1986) Career Development Professor in Nuclear Science and Engineering department at Massachusetts Institute of Technology (MIT). He is Director of Accident Tolerant Fuel Integrated Research Project, PI of MIT ARC-20 project as part of the Advanced Demonstration Reactor Program and PI of Nuclear Thermal Propulsion Fuel Testing Program at MIT. In 2017, he established the center of Nuclear Innovation in Fission Technologies, currently supported by Department of Energy and industry partners including Constellation, Fortum and EPRI. He is an active consultant to the nuclear industry on matters of cost and safety. He is also organizer of several professional nuclear education activities including co-director of the Reactor Technology Course for Utility Executives sponsored by Institute of Nuclear Power Operation. He is currently the advisor of 24 graduate students at MIT.

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## SNEAD Lance, Director of Strategic Development, Nuclear Reactor Laboratory, MIT

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**Lance L Snead** is a research professor at the Nuclear Reactor Laboratory at MIT and in the Materials Science and Chemical Engineering Department at Stony Brook University. He is currently part of the management team of the reactor laboratory. He received his PhD from Rensselaer Polytechnic Institute in 1992 where he put forward the use of silicon carbide composites as a low-activation material for fusion reactors, laying the ground work for his early career emphasis at ORNL and an international effort in the area which continues today. Dr Snead is a fellow of both the American Nuclear and American Ceramic Societies and was named Distinguished Battelle Engineer and Corporate Fellow of ORNL in 2012. He was recipient of the American Nuclear Society Seaborg Medal in 2015 for outstanding scientific contributions to the development of peaceful uses of nuclear energy. He currently serves as associate editor for the Journal of Nuclear Materials. His research activities are equally divided between fusion and fission systems and includes both development of new materials and determination of their performance under irradiation environments. He has published over 300 archival publications and has been cited over 17,000 times. He is the lead inventor on numerous patents.

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## WAINWRIGHT Haruko, Assistant Professor of Nuclear Science and Engineering, MIT

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**Haruko Wainwright** is the Norman C. Rasmussen Career Development Professor of Nuclear Science and Engineering, and Assistant Professor of Civil and Environmental Engineering. She received MA in statistics and PhD in nuclear engineering from University of California, Berkeley. Before joining MIT, she was a Staff Scientist in the Earth and Environmental Sciences Area at Lawrence Berkeley National Laboratory. Her research focuses on environmental modeling and monitoring technologies, with a particular emphasis on nuclear waste and nuclear-related contamination.

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## John Ahlberg | Founder Kärnfull Next AB | [www.knxt.se](http://www.knxt.se)

**John Ahlberg** is the co-founder of Swedish nuclear energy start-up Kärnfull, and an award-winning entrepreneur, marketer and tech evangelist – with a knack for storytelling and building products and services that puts the user experience center stage.

After 15+ years in executive positions within the global FinTech and Digital ID scene, helping neo-banks disrupt financial institutional marketplaces, John decided to pivot in 2019 and infuse that nimble and pioneering mindset into the carbon-free energy space.

With Kärnfull he and co-founder Christian Sjölander has quickly built up a profitable and rapidly growing nuclear energy company group helping popularise and accelerate nuclear in order to help the tech play its pivotal role in the Nordics' reaching Paris goals. The results so far in Sweden and Denmark alone is proof-positive that the duo's formula seem to work.

As a father of three, John's on a mission to build a brand for generations that contributes with a key piece to the Nordics' sustainability puzzle. His appreciation for nuclear energy originates from his father's academic background at Chalmers University in Göteborg, and John's understanding of how efficient, clean and eco-friendly the tech is has always been with him throughout his career in Japan, the U.K. and France before returning home to Sweden.

Reading the IPCC report of 2018 and analysing a future European energy market in which the mega electrification was to be made even more difficult with multiple reactor closures planned across Europe, he and Chris started plotting out Kärnfull's role as a Hans Rosling-esque (“Factfulness”) brand acting as both an electricity supplier with 100% nuclear energy tariffs and a project development company for SMRs in the Nordics.

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## Jean Paul Allain | Head, Nuclear Engineering Dept., Penn State University

**Jean Paul Allain** is Professor and Department Head of the Ken and Mary Alice Lindquist Department of Nuclear Engineering. He holds the Lloyd and Dorothy Foehr Huck Chair in Plasma Medicine in the Huck Institutes for Life Sciences. He is also an Institute for Computational and Data Sciences faculty Co-hire and professor of biomedical engineering by courtesy. He received a masters and doctorate degree in Nuclear Engineering from UIUC and a bachelor's degree in mechanical engineering from Cal Poly Pomona. He leads the Radiation Surface Science and Engineering Lab (RSSEL) and has authored over 350 peer-reviewed and proceedings papers in experimental and computational modeling work in the area of particle and plasma-surface interactions with high-temperature materials in nuclear fusion. His group designs self-organized nanostructures with directed irradiation synthesis and directed plasma nanosynthesis to enable multi-functional and multi-scale properties at surface and interfaces of dissimilar material systems (e.g., polymer and metals, ceramics and biomaterials). His group's research areas include advanced functional biointerfaces, advanced nuclear fusion interfaces, multi-scale computational irradiation surface science, nanostructured functional materials, adaptive and self-healing interfaces, sustainable nanomanufacturing, and in-situ, in-operando material surface diagnostics.

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## ARAFAT Yasir, MARVEL Chief Designer, Idaho National Laboratory

**Yasir Arafat** is an accomplished nuclear engineer and a pioneer in microreactor technology who has made significant contributions to the development of advanced reactors. Mr. Arafat has 13 years of experience leading and executing nuclear research and development, primarily in advanced reactors, including designing and developing the Westinghouse AP1000®, Westinghouse SMR, fusion power plant, creating and leading eVinci & DeVinci microreactors at Westinghouse and DOE's MARVEL test microreactor at INL. As the Chief Designer and Project Lead of the MARVEL project, he has played a key role in the creation of the first advanced reactor to be built in the United States in 50 years. Under his leadership, the MARVEL test microreactor became the first reactor to achieve NEPA compliance through an Environmental Assessment and successfully undergo procurement and construction phases. Yasir is also one of the national Technical Area Leads for the Department of Energy Microreactor Program and serves as the subject matter expert for microreactors at the Nuclear Science and Technology Directorate at Idaho National Laboratory. He is a technical advisor to the Fission Battery Initiative.

Yasir specializes in leading complex engineering projects, reactor design & licensing, model-based systems engineering, advanced manufacturing, thermodynamic process modeling/simulation, agile product development, and innovation strategy. He has developed a novel Agile hardware development process that enabled the rapid development of nuclear reactor systems. He is also skilled in the techno-economic evaluation and led a pioneering effort in collaboration with the automotive industry to generate a microreactor factory manufacturing cost curve based on manufacturing MARVEL's 3800+ parts. He has been granted 11 patents and three provisional patents in reactor technology, with an additional four patent applications currently under review. Mr. Arafat's contributions to the field of nuclear energy have been critical to the development of advanced reactors and have cemented his reputation as a leading microreactor expert in the industry.

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## Robert C. Armstrong, Director, MIT Energy Initiative; Chevron Professor of Chemical Engineering

**Professor Robert C. Armstrong** directs the [MIT Energy Initiative](#), an Institute-wide effort at MIT linking science, technology, and policy to transform the world's energy systems. A member of the MIT faculty since 1973, Armstrong served as head of the Department of Chemical Engineering from 1996 to 2007. He was appointed as director of MITEI in 2013, after serving as the organization's deputy director from 2007-2013 with founding director Ernest Moniz. His research is focused on pathways to a low-carbon energy future.

Armstrong has been elected into the American Academy of Arts and Sciences (2020) and the National Academy of Engineering (2008). He received the 2006 Bingham Medal from the Society of Rheology, which is devoted to the study of the science of deformation and flow of matter, and the Founders Award (2020), Warren K. Lewis Award (2006), and the Professional Progress Award (1992) from the American Institute of Chemical Engineers.

Armstrong chaired MIT's recent [Future of Energy Storage](#) study and was a member of MIT's [Future of Natural Gas](#) and [Future of Solar Energy](#) study groups. He advised the teams that developed MITEI's recent reports, [The Future of Nuclear Energy in a Carbon-Constrained World](#) (2018) and [Insights into Future Mobility](#) (2019). He co-edited *Game Changers: Energy on the Move* with former U.S. Secretary of State George P. Shultz.

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**BAHRAN Rian, Assistant Director, Nuclear Technology & Strategy, White House Office of Science, Technology and Policy (OSTP)**

**Dr. Bahran** is currently at the White House Office of Science & Technology Policy (OSTP) where he serves as the Assistant Director as for Nuclear Technology and Strategy. Dr. Bahran received a PhD in Nuclear Engineering & Science from Rensselaer Polytechnic Institute based on research sponsored by the US Naval Reactors. He also has a Dual BS in Nuclear Engineering & Engineering Physics from the same university. He began his career at Los Alamos as a postdoc in and went on to become a program manager and R&D Scientist in the Nuclear Engineering and Nonproliferation Division where he was a recipient of the prestigious “Most Promising Asian Engineer of the Year” for leading the development of transformative nuclear technology solutions. Dr. Bahran has held several adjunct faculty university positions and has lectured at 20+ universities; is a past Fellow of the MIT Seminar XXI national security program; served as an associate editor of the Journal for Nuclear Materials Management; and is the author of 65+ publications (including in Nature Communications) on a wide range of technical nuclear issues. Prior to joining the White House, he served as a Senior Science & Policy adviser in the Office of Under Secretary of Defense for Policy (OUSDP) focusing on a wide range of strategic issues. For his exemplary performance during his time at the Pentagon, he received the Secretary of Defense Medal for Exceptional Public Service.

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**BARANWAL Rita, Chief Technology Officer and Senior Vice President of Digital & Innovation, Westinghouse Electric Company**

As Chief Technology Officer at Westinghouse, **Dr. Rita Baranwal** leads the clean energy company’s global research and development investments and spearheads a technology strategy to advance the company’s innovative nuclear solutions. She has 25 years of nuclear industry experience, and has held this role since January 2022.

Previously, Dr. Baranwal has served in the role as Chief Nuclear Officer and Vice President of Nuclear at the Electric Power Research Institute (EPRI); Assistant Secretary for the Office of Nuclear Energy in the U.S. Department of Energy (DOE) in a U.S. President-appointed and Senate-confirmed role; Director of Technology Development & Application at Westinghouse.

Dr. Baranwal is a Fellow of the American Nuclear Society (ANS). She serves on the Atlantic Council’s Nuclear Energy and National Security Coalition, the Board of Scholars at American Council for Capital Formation (and is the first non-economist selected to serve on this Board), the ANS’s International Council, and Advisory Boards for the US Nuclear Industry Council (US NIC) and the Nuclear Engineering departments of the University of Michigan and North Carolina State University.

She has previously served on Advisory Boards for MIT’s Materials Research Laboratory and UC Berkeley’s Nuclear Engineering Department, and also was adjunct faculty at University of South Carolina’s nuclear engineering graduate program. Dr. Baranwal is a past Chairman of the Executive Committee of the American Nuclear Society’s (ANS) Materials Science and Technology Division. She has also served on the Boards of Big Brothers Big Sisters-Pittsburgh and North Hills Community Outreach.

Dr. Baranwal has a bachelor’s degree from Massachusetts Institute of Technology in materials science and engineering and a master’s degree and Ph.D. in the same discipline from the University of Michigan.

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## BLANDFORD Edward, Co-Founder & Chief Technology Officer, Kairos Power

**Dr. Edward Blandford** is a Co-Founder & Chief Technology Officer of Kairos Power. He is responsible for technology development, experimental testing, modeling and simulation, as well as fuels and materials activities at Kairos Power.

Prior to co-founding Kairos Power, he was at the University of New Mexico where he was an assistant professor in the Department of Nuclear Engineering. Dr. Blandford was also a Stanton Nuclear Security Fellow at the Center for International Security and Cooperation at Stanford University. He also worked for several years as a project manager at the Electric Power Research Institute focusing on steam generator thermal-hydraulics and material degradation management.

Dr. Blandford has a B.S. in Mechanical Engineering from University of California, Los Angeles and a M.S. and Ph.D. in Nuclear Engineering from the University of California, Berkeley.

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## BROOKS Caleb, Associate Professor of Nuclear, Plasma and Radiological Engineering, UIUC

**Dr. Caleb Brooks** is an associate professor in the Nuclear, Plasma, and Radiological Engineering Department at the University of Illinois Urbana-Champaign. He holds B.S. and Ph.D. degrees in nuclear engineering from Purdue University and has been a member of the UIUC faculty since 2014. As the Director of the Illinois Microreactor RD&D Center, his work is focused on enabling and expanding safe, peaceful uses of nuclear power. Current research activities in this Center include microreactor modeling and simulation, siting analysis, market analysis, instrumentation, operations and reactor control, licensing, and policy. The Center's flagship project is the ongoing collaboration with Ultra Safe Nuclear Corporation (USNC) to deploy a Micro Modular Reactor (MMR) on the university campus as a Research and Test Reactor. Beyond his work in the Center, Dr. Brooks is also the director of the Multiphase Thermo-fluid Dynamics Lab (MTDL) which specializes in thermo-fluid dynamics of nuclear systems and reactor flows, and hybrid energy approaches for existing and future power systems. He has received the thermal-hydraulics division and society-wide young member research awards from the Atomic Energy Society of Japan, and the Landis Young Member Engineering Achievement Award from the American Nuclear Society.

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## CERRETA Ellen, Associate Laboratory Director, Physical Sciences, Los Alamos National Laboratory

**Ellen Cerreta** is the Associate Laboratory Director for Physical Sciences at Los Alamos National Laboratory. She previously served as the Division Leader for Materials Science and Technology, the Deputy Division Leader for Explosive Science and Shock Physics (M) and the ALDW High Explosive Safety Program Manager. Prior to joining M-Division, Ellen was the Group Leader for the Materials in Radiation and Dynamic Extremes Group (MST-8) at Los Alamos National Laboratory. She received her B.S. in Aerospace Engineering from the University of Virginia and her M.S. and Ph.D. degrees in Materials Science and Engineering from Carnegie Mellon University. Ellen has been at LANL since 2001 and her research focuses on the relationship between microstructure and dynamic materials properties. At Los Alamos, Ellen has led a number of projects to investigate dynamic materials performance and provide insight toward advanced predictive capabilities for strength and damage in extreme environments. Ellen has served on The Minerals Metals and Materials Society (TMS) and ASM, International Board of Directors and Board of Trustees, respectively. She is currently the past president for TMS and was inducted into the 2016 ASM Fellows Class.

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## CHAMBERLIN Jeff, Assistant Deputy Administrator, Office of Material Management and Minimization, National Nuclear Security Administration NNSA

**Jeffrey Chamberlin** is the Assistant Deputy Administrator for the Office of Material Management and Minimization, where he leads NNSA programs to achieve permanent threat reduction by managing and minimizing the use of nuclear materials, including the conversion of research reactors to non-weapons-usable materials and the removal and disposition of excess weapons-usable nuclear materials from civilian facilities in the United States and around the world.

### Career overview and accomplishments

Mr. Chamberlin has over 19 years of federal service, including 15 years at NNSA in program management roles of increasing responsibility. Prior to joining NNSA in 2007, Mr. Chamberlin entered federal service as a Presidential Management Fellow, and served as the White House Office of Management and Budget's Program Examiner for the U.S. Army's \$150 billion annual investment portfolio. Since joining NNSA, Mr. Chamberlin has led efforts to minimize weapons-usable nuclear materials in civilian applications as the Deputy Director of the Global Threat Reduction Initiative's Office of European and African Threat Reduction; Director of the Office of Material Management and Minimization's Office of Conversion; and as a Senior Advisor to the Principal Assistant Deputy Administrator for Defense Nuclear Nonproliferation and the Assistant Deputy Administrator for the Office of Material Management and Minimization. In addition, Mr. Chamberlin led efforts to arrest the declining state of NNSA infrastructure during his time as Director of the Office of Infrastructure and Operations' Office of Innovative Solutions.

### Hobbies and Interests

Mr. Chamberlin grew up outside Boston and is an avid, lifelong fan of all Boston sports teams, including the 6-time Super Bowl Champion New England Patriots. He spends much of his time outside work supporting his son Ben's competitive junior golf schedule, reading, swimming, practicing his Polish language skills, and trying to learn to play the guitar.

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## FORGET Benoit, Associate Dept. Head, Nuclear Science and Engineering, MIT

**Benoit Forget** is the Associate Department Head and the KEPCO Professor of the Nuclear Science and Engineering Department at the Massachusetts Institute of Technology. Upon joining MIT in 2008, he founded the Computational Reactor Physics Group (CRPG) which has produced the open source codes OpenMC and OpenMOC designed for high-fidelity, efficiency and parallel performance on leadership class computing. He has taught reactor physics, reactor engineering and radiation transport courses at both the undergraduate and graduate level and co-organized summer short courses on reactor safety and reactor engineering for young professionals and nuclear executives. Prior to joining MIT, Prof. Forget worked at the Idaho National Laboratory as a Reactor engineer where he worked on methods development and fuel cycle analysis.

Prof. Forget graduated from the Georgia Institute of Technology in 2006 with a PhD in Nuclear Engineering, and from École Polytechnique de Montréal in 2003 with a M.Eng degree in Energy Engineering and a B.Eng in Chemical Engineering. He has published more than 100 papers in leading peer-reviewed nuclear engineering journals and conferences. He has been a member of the American Nuclear Society since 2003 and served as Chair of the Reactor Physics Division in 2011-2012. He was also the recipient of the ANS John Landis Young Member Engineering Achievement award in 2013.

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## FORSBERG Charles , Principal Research Scientist, MIT

**Charles Forsberg** is a Principal Research Scientist in the Department of Nuclear Science and Engineering at the Massachusetts Institute of Technology (MIT). He teaches fuel cycle and energy classes and supervises graduate students. His research interests include nuclear fuel cycles, salt-cooled reactors and low-carbon nuclear renewable futures—specifically, large-scale 100-GWh heat storage and nuclear-assisted cellulosic biofuel systems. Large-scale heat storage would enable base-load nuclear plants to replace gas turbines in providing variable electricity to the grid on an hourly to seasonal basis. Nuclear-assisted cellulosic liquid hydrocarbon biofuels (gasoline, diesel and jet fuel) have the potential to replace all crude oil, reduce atmospheric carbon dioxide concentrations and enable long-term sustainable agriculture—without impacting food and fiber prices. However, this option requires massive external heat and hydrogen inputs at the bio-refinery. The heat and hydrogen inputs would make this the largest single market for nuclear energy. He is the principal investigator for installing a flowing high-temperature liquid salt loop into the MIT reactor. It will be the first such salt test loop built in more than 50 years. Before joining MIT, Dr. Forsberg was a corporate fellow at the Oak Ridge National Laboratory in Tennessee. He is a member of the American Institute of Chemical Engineers (AIChE) and a Fellow and former Director of the American Nuclear Society, and a Fellow of the American Association for the Advancement of Science. He has published more than 300 papers and holds 12 patents. Dr. Forsberg received his chemical engineering degree from the University of Minnesota and his PhD in nuclear engineering from MIT.

## HAHN Alison, Director of Nuclear Reactor Deployment, Office of Nuclear Energy, US Department of Energy

**Alison Hahn** serves as the Director of Nuclear Reactor Deployment in the Office of Nuclear Energy. She leads a diverse portfolio of research, development, and demonstration programs focused on modernizing technologies and approaches necessary to maintain the existing fleet of reactors, including the Light Water Reactor Sustainability program, and reducing the technical, financial, and regulatory uncertainty of multiple advanced reactor technologies. Her office manages several programs to enable and accelerate advanced reactor deployment including the Advanced Reactor Demonstration Program's National Reactor Innovation Center, Advanced Reactor Safeguards, and Regulatory Development. Her office also oversees the integration of nuclear energy with fossil and variable renewable sources by supporting research and development to demonstrate the feasibility of nuclear reactors to flexibly produce heat, electricity, and other non-electric products through the Integrated Energy Systems program. Lastly, she oversees the management of cost-shared, private-public partnerships that address technical challenges facing the U.S. industry to accelerate a variety of advanced designs and technologies, including NuScale's VOYGR, the Carbon Free Power Project, the ARDP's Risk Reduction projects, and hydrogen demonstration projects.

Ms. Hahn previously managed the Light Water Reactor Sustainability program, the Office of Nuclear Energy's primary programmatic activity focused on maintaining the existing fleet of reactors. The program conducts research to develop technologies and other solutions to improve economics and reliability, sustain safety, and extend the operation of the Nation's fleet of nuclear power plants. Prior to that, Ms. Hahn managed the Advanced Methods for Manufacturing program to accelerate innovations that reduce the cost and schedule of constructing new nuclear plants and make fabrication of nuclear power plant components faster, cheaper, and more reliable and the Nuclear Science User Facilities program, which provides the nuclear energy community access, at no cost to the researcher, to state-of-the-art experimental irradiation testing and Post-Irradiation Examination (PIE) facilities, as well as technical assistance including the design and analysis of reactor experiments.

Ms. Hahn holds a bachelor's degree in nuclear engineering from Pennsylvania State University and a master's degree in environmental engineering from John Hopkins University.

## HELWIG Janine, Director of Utilities, MIT

**Janine Helwig** is the Director of Utilities in the Department of Facilities at the Massachusetts Institute of Technology (MIT). She oversees MIT's Central Utilities Plant, which consists of a 44 MW combined heat and power plant, and is responsible for the efficient operation and management of all campus electricity, heating, and cooling resources and distribution systems. Janine leads her team on sustainable planning efforts to address MIT's future energy needs while also meeting MIT's commitment to reducing carbon. She has over 17 years of experience in facilities management, with over 10 years in higher education. Prior to joining MIT in 2021, Janine served as the Director of Utilities and Engineering at The George Washington University located in Washington, DC, which was her foray into district energy management. Janine is a registered Professional Engineer in DC and MD, a Certified Energy Manager (CEM), and a Certified Educational Facilities Professional (CEFP). She holds a Bachelor's in Environmental Engineering from Cornell University and a Master's in Environmental Process Engineering from The Johns Hopkins University.

## KIM Seungjin, Head, Nuclear Engineering Dept., Purdue University

**Dr. Seungjin Kim** is a Professor and Capt. James F. McCarthy Jr. and Cheryl E. McCarthy Head of the School of Nuclear Engineering at Purdue University. He is also the co-director of the Thermal-hydraulics and Reactor Safety Laboratory. Prior to joining Purdue University, he was a professor in the Department of Mechanical and Nuclear Engineering at the Pennsylvania State University. Dr. Kim's expertise is in the area of reactor thermal-hydraulics and two-phase flow. More specifically, he has done research in reactor thermal-hydraulics, reactor safety analysis, two-phase flow experiments, interfacial area transport, instrumentation and diagnostics of two-phase transport, reactor thermal-hydraulic system analysis codes, and computational two-phase flow. To date, Dr. Kim has published more than 180 technical papers, among which more than 75 are peer-reviewed journal papers. He has actively taken leadership positions in his field of technical expertise and has served as Chair of the American Nuclear Society Thermal Hydraulics Division. Dr. Kim is an ANS Fellow and served on the Nuclear Energy Advisory Committee (NEAC) in the Office of Nuclear Energy of U.S. Department of Energy in 2018 and 2019. Currently, he is serving as one of the principles-in-charge for Purdue-Duke Energy joint study to explore feasibility of using advanced nuclear technology for Purdue campus community's long-term energy needs.

## KORSNICK Maria, President and Chief Executive Officer, NEI

**Maria Korsnick** is president and chief executive officer of the Nuclear Energy Institute, the nuclear industry's policy organization in Washington, D.C. Drawing on her engineering background, hands-on experience in reactor operations and a deep knowledge of energy policy and regulatory issues, Korsnick aims to increase understanding of nuclear energy's economic and environmental benefits among policymakers and the public.

Before joining NEI, she was senior vice president of Northeast Operations for Exelon, responsible for overseeing operation of the Calvert Cliffs 1 and 2, R.E. Ginna, and Nine Mile Point 1 and 2 nuclear power plants.

Before Exelon, Korsnick served as chief nuclear officer (CNO) and acting chief executive officer at Constellation Energy Nuclear Group. She began her career at Constellation in 1986 and held positions of increasing responsibility, including engineer, operator, manager, site vice president, corporate vice president, and CNO.

Korsnick holds a bachelor's degree in nuclear engineering from the University of Maryland, and has held a Senior Reactor Operator license. She lives in Maryland with her husband and two children.

## KOTEK John, Senior Vice President, Policy Development and Public Affairs, NEI

**John Kotek** is the Senior Vice President for Policy and Public Affairs at the Nuclear Energy Institute. He's responsible for providing policy and public affairs leadership on economic, electricity market and environmental issues related to the nuclear energy industry. John also serves as President of Nuclear Matters, a national coalition of grassroots advocates working to inform the public and policymakers about the clear benefits of nuclear energy. John joined NEI from the U.S. Department of Energy. He was appointed in January 2015 as Principal Deputy Assistant Secretary for the Office of Nuclear Energy and was nominated by President Obama in October 2015 to serve as Assistant Secretary for Nuclear Energy. In that role he was responsible for DOE's research efforts on current and future nuclear energy systems, establishing a path forward for the nation's spent nuclear fuel management program, and other national priorities. Prior to his appointment, John was the Managing Partner of the Boise office of Gallatin Public Affairs. John advised energy, natural resources and other clients facing complex communication and government relations challenges. From 2010-2012, John served as Staff Director to the Blue Ribbon Commission on America's Nuclear Future, which recommended a new strategy for managing nuclear waste in the United States. From 2003-2006, John was Deputy Manager of the DOE's Idaho Operations Office. Before joining DOE-Idaho, John worked for Argonne National Laboratory where he directed Argonne's participation in the *Generation IV* nuclear energy technology roadmapping project. In 2002, John was the American Nuclear Society's Glenn T. Seaborg Congressional Fellow, serving in the office of Office of Senator Jeff Bingaman (D-NM). John started his career with DOE's Office of Nuclear Energy, Science and Technology. He held several positions during his nine years with DOE-NE, including Associate Director for Technology, Associate Director for Management and Administration, and Chief of Staff. John holds a Bachelor of Science in Nuclear Engineering from the University of Illinois and a Master of Business Administration from the University of Maryland. He serves on nuclear engineering advisory committees at the University of Illinois, the University of Michigan, and Penn State University.

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## Narvaez Jorge, General Engineer, Office of Integrated Waste Management, US Department of Energy

**Jorge Narvaez** is a General Engineer at the Department of Energy's Office of Integrated Waste Management (IWM) in the Office of Nuclear Energy (NE). Jorge supports IWM activities related to system analysis and integration including advanced reactor spent fuel management. Jorge assists with the development of siting analysis and modeling tools for consent-based interim storage of spent fuel from the current fleet of commercial reactors. Prior to joining NE, Jorge worked as a project engineer in the private sector designing digital control systems for US and South Korean nuclear power plants. Jorge has also served as a research associate for the White House Office of Science and Technology Policy (OSTP), and as a Technology and National Security Fellow at the Assistant Secretary of the Army (Acquisition, Logistics and Technology). Jorge received his B.S. degree in Physics and Mathematics from Adelphi University, and his M.S. degree in Nuclear Engineering and Engineering Physics from the University of Wisconsin-Madison.

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## OTGONBAATAR Ugi , Director of Technology Strategy, Constellation

**Ugi Otgonbaatar** is a Director, Technology Strategy, Grants & Partnerships at Constellation. Since joining the company in 2016, Ugi has been working for Constellation's (formerly Exelon) corporate R&D Partnership program focusing on early stage energy technologies, including clean hydrogen generation, energy storage, and technologies for repurposing the existing nuclear fleet. Ugi holds B.S. and Ph.D. in Nuclear Science and Engineering from MIT with research experience in thermal hydraulics and computational materials science and has previously worked for the R&D groups of Electricité de France, General Electric and Tokyo Electric Power company.

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## REGALBUTO Monica, Director, Nuclear Fuel Cycle, INL

**Dr. Monica Regalbuto** is an INL and ANS fellow and has been a key contributor to the nuclear fuel cycle and nuclear waste management mission by developing and demonstrating innovative nuclear energy technologies that have significantly advanced the scientific, engineering, policy, and regulatory aspects of the nuclear enterprise.

She has authored multiple journal articles, reports, and presentations and holds six patents. She has served as assistant secretary for DOE-EM, deputy assistant secretary for Fuel Cycle Technologies at DOE-NE, department head of Process Chemistry and Engineering with ANL, researcher with Amoco Oil Company. She currently serves as a member of the Nuclear and Radiation Studies Board at the National Academy of Sciences (NAS) and the Standing Advisory Group on Nuclear Energy (SAGNE) at the International Atomic Energy Agency (IAEA) which advises the director general.

Her education and awards include the following: PhD, Ch E, University of Notre Dame, 1988, MS, Ch E, University of Notre Dame, 1986, BS, Ch E, Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), 1983, Honorary Degree of Doctor of Public Service, University of South Carolina Aiken, 2017, U.S. Department of Energy Secretary's Achievement Award, 2016, 2013, and 2011, Professional Achievement Award, Hispanic Engineer National Achievement Award Corporation (HENAAC), 2007, Jane Oestmann Professional Women's Achievement Award, ANS, 2007, Outstanding Engineering Achievement by the Illinois Engineering Council, 2005.

Dr. Regalbuto is a member of ANS, AIChE, ACS, SWE, and Sigma Xi.

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## REYES Jose, Chief Technology Officer, Nuscale

**José N. Reyes**, Ph.D., co-founded NuScale LLC, co-designed the NuScale passively-cooled small nuclear reactor and has served as the company's CTO since 2007. Dr. Reyes is an internationally recognized expert on passive safety system design, testing and operations for nuclear power plants. He has served as a United Nations International Atomic Energy Agency technical expert on passive safety systems, is a co-inventor on more than 110 patents granted or pending in 20 countries and has received several national awards including the 2013 Nuclear Energy Advocate Award, the 2014 American Nuclear Society Thermal Hydraulic Division Technical Achievement Award, the 2017 Nuclear Infrastructure Council Trailblazer Award, the 2021 American Nuclear Society Walter H. Zinn Medal, and 2021 inductee into the University of Maryland Innovator's Hall of Fame.

Dr. Reyes is a fellow of the American Nuclear Society, a NURETH fellow and a member of the National Academy of Engineering. In the past, he has served as head of the Oregon State University (OSU) Department of Nuclear Engineering and Radiation Health Physics, directed the Advanced Thermal Hydraulic Research Laboratory and was the Co-Director of the Battelle Energy Alliance Academic Center of Excellence for Thermal Fluids and Reactor Safety in support of the Idaho National Laboratory mission.

Dr. Reyes currently serves as a Professor Emeritus in OSU's School of Nuclear Science and Engineering. He holds Ph.D. and Master of Science degrees in nuclear engineering from the University of Maryland and a Bachelor of Science degree in nuclear engineering from the University of Florida. He is the author of numerous journal articles and technical reports, and he has given lectures and keynote addresses to professional nuclear organizations in the United States, Europe and Asia. He is a licensed professional engineer in the state of Oregon

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## SASSANI David, National Technical Director, Spent Fuel-Waste Science-Technology, Sandia National Lab

**Dr. Sassani** has over 30 years of experience applying his expertise in geochemistry and geology to elucidate metal transport in fluids in the Earth's crust, evolution of radioactive waste repository source-terms, and safety assessments for geologic disposal of spent fuel and high-level radioactive wastes. He is a Distinguished Member of Technical Staff at Sandia National Laboratories and is the National Technical Director for the Spent Fuel and Waste Science and Technology (SFWST) Campaign within the U.S. DOE Office of Spent Fuel and Waste Disposition. Within the SFWST Campaign, Dr. Sassani leads and integrates technical work in the Disposal Research R&D and Storage and Transportation R&D programs, while synthesizing Campaign direction. He has contributed to other DOE projects including: the Office of Civilian Radioactive Waste Management (OCRWM) Program Yucca Mountain Project (YMP) for high-level radioactive waste disposal; the Office of Environmental Management Waste Isolation Pilot Plant for disposal of defense-related transuranic radioactive waste; the Office of Nuclear Energy Advanced Modeling and Simulation (NEAMS) Program; and the Office of Energy Efficiency & Renewable Energy Low Temperature Geothermal Systems Minerals Recovery Project. Dr. Sassani has collaborated on international projects on repository safety in the European Union, Republic of Korea, Japan, Australia, and Israel. Dr. Sassani received his Doctorate in Geology, from Washington University, St Louis, MO; his Master's degree in Geology from University of California, Berkeley; and his Bachelor's degree in Geology, from LaSalle College, Philadelphia, PA. His dissertation and post-doctoral research covered theoretical aqueous geochemistry, alteration of mafic intrusive rocks, and ore deposit formation, focusing on the geochemical behavior of platinum-group elements and actinides.

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**TOWELL Rusty, Ph.D., Director of NEXT Lab, Professor of Engineering and Physics  
Abilene Christian University**

**Dr. Rusty Towell** is the founding director for ACU's premiere research project called NEXT (Nuclear Energy eXperimental Testing). The mission of ACU's NEXT Lab is to provide global solutions to the world's need for energy, water and medical isotopes by advancing the technology of molten salt reactors while educating future leaders in nuclear science and engineering. Established in 2016, NEXT is building a Molten Salt Research Reactor in collaboration with the NEXT Research Alliance (NEXTRA) which includes Georgia Tech, Texas A&M, and the University of Texas at Austin.

Rusty has a BS degree in Engineering Physics from ACU and a Ph.D in nuclear physics from the University of Texas. He served in the U.S. Navy where he rose to the rank of Lieutenant as an instructor at the Naval Nuclear Power School. Rusty completed a postdoctoral research fellowship with Los Alamos National Laboratory working on the PHENIX experiment at the Brookhaven National Lab, and in 2001 he joined the physics faculty at ACU.

For the past 30 years, Rusty has worked at many different national labs on several international research projects. His over 250 articles and scholarly writings have been cited more than 35,000 times by peer-reviewed publications.

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**VAN DEN AKKER Bret, Director of Fuel Cycle Innovation, USNC**

**Dr. Bret Patrick van den Akker** (he/him/his) is the Director of Fuel Cycle innovation at Ultra Safe Nuclear Corporation (USNC) with the responsibility of developing and executing USNC's global back end strategy – from defueling to decommissioning. He is a subject matter expert in the repository performance of used nuclear fuel (UNF) with an emphasis on the interface and interaction of UNF with the near- and far-field transport environments. He received his PhD from UC Berkeley in 2012 with a dissertation topic “On the Disposition of Graphite Containing TRISO Particles and the Aqueous Transport of Radionuclides via Heterogeneous Geological Formations” – which was an investigation of the performance of spent transuranic TRISO fuel from a prismatic high temperature gas cooled advanced reactor funded under the U.S. Department of Energy's (DOE) Deep Burn program.

Dr. van den Akker spent several years at Oak Ridge National Laboratory (ORNL) first supporting the National Nuclear Technical Forensics Group in attribution modeling and then in the Used Fuel Systems Group supporting the DOE's priorities on the back end of the nuclear fuel cycle. Dr. van den Akker's back end work included efforts to support DOE's storage, transportation, and disposal obligations and most recently included involvement in developing their approach for the consent-based siting of interim storage and deep geological repository facilities for the Nation's commercial and defense high-level wastes.

After leaving ORNL Dr. van den Akker served as a commercial management consultant with the Boston Consulting Group before transitioning to public-sector consulting with Booz Allen Hamilton, where he supported cost-savings efforts the Y-12 and Pantex National Security Complexes, big-data applications at the Tennessee Valley Authority, and supported the DOE's Advanced Research Program Agency for Energy (ARPA-E) in the two-year development cycle for their Optimizing Nuclear Waste and Advanced Reactor Disposal Systems (ONWARDS) program – a \$40 million dollar program funding high-risk/high-reward research and development of technologies to support the commercialization of advanced reactors (AR) by proactively addressing AR back end challenges, including waste, reprocessing, and safeguards challenges.

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## WHITTAKER Andrew, Professor of Civil Engineering, University of Buffalo

**Andrew Whittaker** is a SUNY Distinguished Professor in the Department of Civil, Structural and Environmental Engineering at the University at Buffalo. He is a registered civil and structural engineer in the State of California. Whittaker served as the Vice-President and President of the Consortium of Universities for Research in Earthquake Engineering from 2003 to 2011, and on the Board of Directors of the [Earthquake Engineering Research Institute](#) and the World Seismic Safety Initiative from 2008 to 2010, on the Advisory Board for the Southern California Earthquake Center from 2010 to 2017, and on the Board of Directors for [TerraPraxis](#) since 2023. Whittaker has published more than 150 peer-reviewed journal articles, 11 books and book chapters, and more than 375 other papers and technical reports. He made significant contributions to the first generation of tools for performance-based earthquake engineering (FEMA 273/274, 1992-1997) and led the structural engineering team that developed the second generation of these tools (FEMA P58, 2000-2013). Whittaker serves (and has served) on a number of national committees including AASHTO T3 (seismic isolation), ASCE 4, ASCE 7, ASCE 43, ASCE 59, and ASCE Codes and Standards, and ACI 349. Whittaker wrote, and is updating chapters for risk-informed, performance-based seismic isolation of nuclear facilities in ASCE 4 and ASCE 43 and is the lead author of a topical report being submitted to the US Nuclear Regulatory Commission on the seismic isolation of advanced reactors. He is Chair of the ASCE Nuclear Standards Committee. Whittaker is a member of ANS, contributing to its Non LWR working group on PRA and serving on the ANS Rapid Response Taskforce, responding to man-made and natural hazard threats to operating nuclear power plants. His research interests are broad and include earthquake, blast and impact engineering of nuclear structures, buildings, long-span bridges, and transportation infrastructure. The US National Science Foundation, US Department of Energy, US Nuclear Regulatory Commission, US Department of Transportation, US Federal Highway Administration, and Canadian Nuclear Safety Commission fund his research. Whittaker consults to federal agencies, regulators, consultancies, contractors, reactor developers, and utilities in the United States, Canada, United Kingdom, Europe and Asia, on topics ranging from nuclear waste storage facilities and advanced nuclear power plants to tall buildings, tunnels, and long-span bridges, and other mission-critical structures such as telescopes.

## ZINKLE Steve, Professor of Nuclear Engineering, University of Tennessee at Knoxville

**Steve Zinkle** is the Governor's Chair Professor for Nuclear Materials at the University of Tennessee, Knoxville, with a joint appointment at Oak Ridge National Laboratory (ORNL). He previously served in various management and technical R&D roles at ORNL including Chief Scientist of the Nuclear Science and Engineering Directorate, director of the Materials Science and Technology Division, and ORNL Corporate Fellow. His research interests include deformation and fracture mechanisms in structural materials, accelerated design and maturation of high-performance structural materials, advanced manufacturing, and radiation effects in ceramics, fuel systems, and metallic alloys for fission and fusion energy systems. His research encompasses basic and applied materials science and engineering investigations under a wide range of extreme operating conditions (e.g., high temperatures, applied stresses, and radiation environments), with a particular emphasis on using transmission electron microscopy and other advanced microstructural characterization techniques to elucidate the linkage between microstructure and properties/performance in materials. He received his PhD in Nuclear Engineering and an MS in Materials Science from the University of Wisconsin-Madison in 1985. He has written over 350 peer-reviewed publications, and is a fellow of the American Nuclear Society (ANS), The Minerals, Metals and Materials Society (TMS), Materials Research Society, American Physical Society, ASM International, American Ceramic Society, and AAAS. He recently received the ANS Seaborg medal (2022) for outstanding scientific or engineering research achievements associated with the development of peaceful uses of nuclear science. He has served on a variety of national and international committees including the National Academies National Materials and Manufacturing Board (2015-2020), the DOE National Nuclear Security Administration Defense Programs Advisory Committee (2018-2022) and the DOE Fusion Energy Sciences Advisory Committee (2009-2015), and is currently on the National Academies Condensed Matter and Materials Research Committee. He is a member of the National Academy of Engineering.

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# Participants

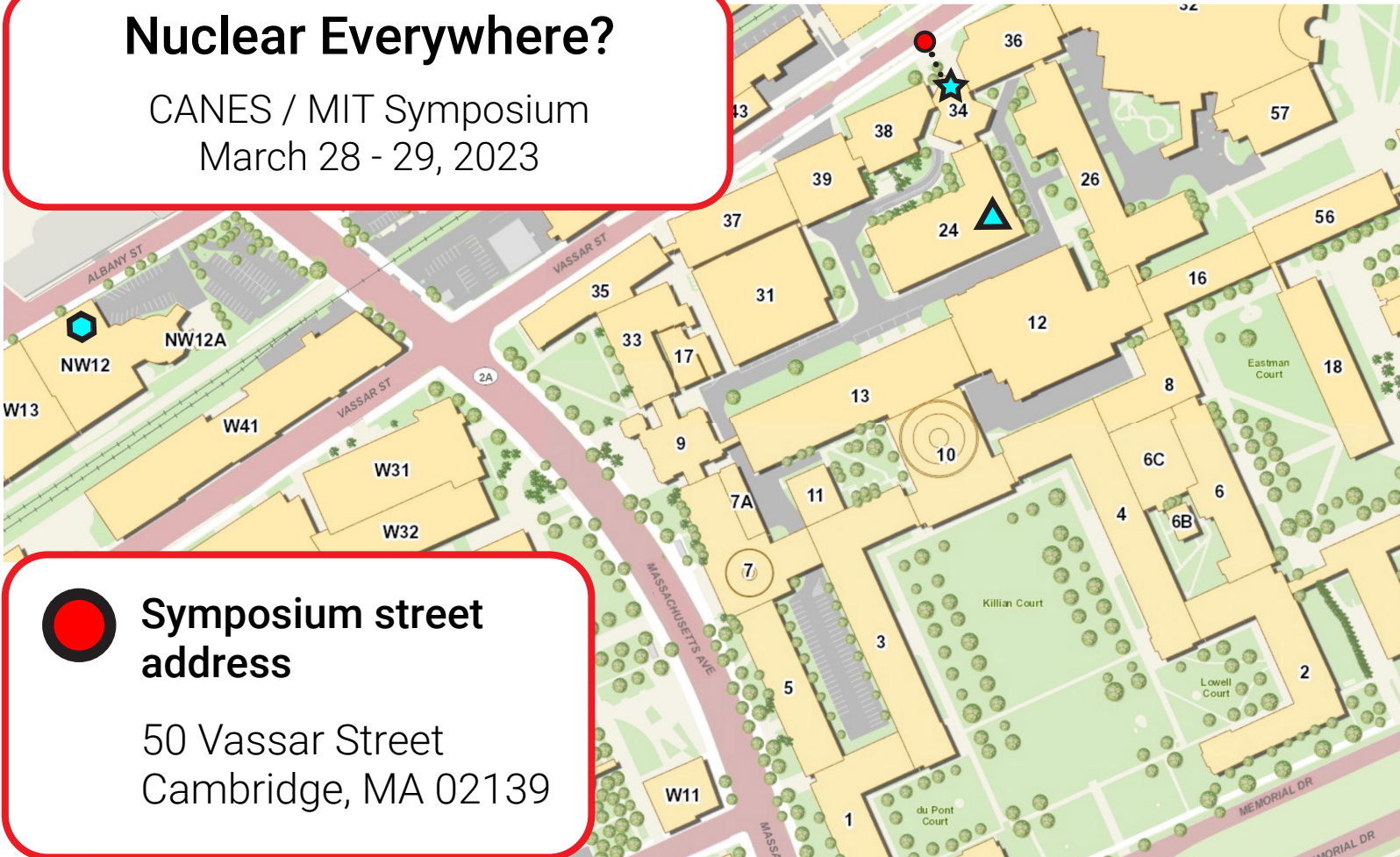
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Map

# Nuclear Everywhere?

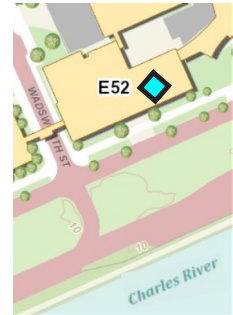
CANES / MIT Symposium  
March 28 - 29, 2023



## Symposium street address

50 Vassar Street  
Cambridge, MA 02139

0.5 miles  
11-minute walk



## Symposium rooms - Buildings 34 & 36

- Building 34 Lobby: Check In
- Room 34:101: Main meeting room
- Room 36:112: Welcome and hospitality



## Banquet - 7th Floor

Samberg Center  
50 Memorial Dr.  
Cambridge, MA



## MIT Reactor - Building NW12

138 Albany St.  
Cambridge, MA



## Nuclear Science and Engineering Dept. - Building 24