DOE Hydrogen Shot Summit
Breakout Panel Session Speakers

Panel Session 1: Electrolysis

Bryan Pivovar

Director, H2NEW

Senior Research Fellow and Group Manager, NREL

Bryan Pivovar is a Senior Research Fellow and Group Manager at the National Renewable Energy Laboratory (NREL) in Golden, Colorado, where he oversees NREL's electrolysis and fuel cell R&D. Since October 2021, he has served as Director of H2NEW (Hydrogen from Next-gen Electrolyzers of Water), a Hydrogen and Fuel Cell Technologies Office Consortium focused on improving the economics of hydrogen via electrolysis with a budget of at least $50M over 5 years. He has been a pioneer in several areas taking on leadership roles and organizing workshops for the Department of Energy in the areas of sub-freezing effects, membranes, H2@Scale, and extended surface electrocatalysis. He received his Ph.D. in Chemical Engineering from the University of Minnesota in 2000 and led fuel cell R&D at Los Alamos National Laboratory (LANL) prior to joining NREL. He received the 2012 Tobias Young Investigator Award and the 2021 Energy Technology Division Research Award from the Electrochemical Society. He has co-authored over 150 papers with over 10,000 citations in the general area of fuel cells and electrolysis.

Kathy Ayers

Vice President of R&D, Nel Hydrogen US

Kathy Ayers is Vice President of R&D for Nel Hydrogen US, focused on onsite hydrogen generation via water electrolysis. Dr. Ayers manages a broad portfolio of projects from basic research to production implementation, across a range of collaborators in academia, industry, and National Labs. She has also served in multiple advisory capacities for DOE. Dr. Ayers received her Ph.D. in chemistry at Caltech and spent 10 years in the battery industry before joining Nel. She has received multiple research awards and became a Fellow of the Electrochemical Society in 2020.

Dr. Cortney Mittelsteadt

Vice President of Electrolyzer Technology, Plug Power

Dr. Cortney "Corky" Mittelsteadt is currently the Vice President of Electrolyzer Technology for Plug Power. He is Responsible for establishing a new manufacturing, R&D, and sales center. He is responsible for technical direction on electrolyzer stack technology to improve performance while dropping costs through technology, manufacturing, and supply chain improvements.

Prior to that Corky was at Giner, Inc for 21 years, the last three as CEO. As CEO Dr. Mittelsteadt continued to act as technical lead, overseeing great growth in Sea and Space as Giner became the electrolyzer provider for the International Space Station. During Corky's three years as CEO, he led the sale of their Transdermal Alcohol Sensor, to Smart Smart for ~$25M, and Giner created Giner Life Sciences, leading to >$8M in funding from Sanofi for Giner's diabetes treatment. Finally, he led negotiations with Plug Power to acquire Giner ELX, where he was CTO. His research has concentrated on all manner of PEM materials and devices. Over 21 years at Giner, Dr. Mittelsteadt led over $40M in private and public programs as PI. He is co-inventor of Giner's DSM and vapor-feed technology. He has been the PI on numerous government programs for PEMs and PEM devices for government agencies, including NASA, DOE, US Navy, Air Force, and NSF. He oversaw the cooperation between Giner/General Motors to develop high temperature fuel cells for automotive use. He is a recognized expert in the field, having won recognition from the DOE for his PEM contributions and authored chapters on membrane characterization and PEM electrolysis.

Michel Archambault

Director of Business Development and Sales of Cummins Inc., Fuel Cells and Hydrogen Technology

Michel Archambault is Director of Business Development and Sales of Cummins Inc., Fuel Cells and Hydrogen Technology. He has close to 20 years of experience in the hydrogen sector in Europe and North America. In his current role, Michel is focused on increasing the availability of hydrogen in the Americas to enable the growth of fuel cell electric mobility and infrastructure and other industrial applications. Michel is a mechanical engineer from l'École Polytechnique de Montréal and earned a Business and Science Administration Degree from the University of Quebec in Montréal. He is actively engaged in various hydrogen associations and currently serving as Chair of Hydrogene Quebec (CHFCA) and co-president of the AQPER.

Joseph Poindexter

Hydrogen Products Manager, Teledyne Energy Systems

Joe Poindexter is the Hydrogen Products Manager at Teledyne Energy Systems. Joe is responsible for sales, customer support, and product development for their product line of Alkaline Electrolytic Hydrogen Generators. In Joe's 25 years working in Teledyne's Hydrogen Products group, he has worked on all aspects of the product line including: product design, field service, customer training, sales, and business development. He has played a large role in their successes over the last few decades. Joe lives in Westminster, MD with his wife, Mary Beth, and their 6 children.

Olga Marina

Chief Scientist, Pacific Northwest National Laboratory; Adjunct Faculty, Washington State University

Olga Marina is a Chief Scientist at the Pacific Northwest National Laboratory (PNNL). She leads an electrolysis-related multi-million dollar project portfolio funded by DOE-FE and EERE-HFTO. Her research focuses on the development of innovative materials for high temperature fuel cells and electrolyzers, relative to energy generation and storage and electrochemical upgrading of fuels to chemicals. She has made notable contributions to the scientific understanding of how materials degrade in electrochemical devices at high temperatures. She received her Ph.D. in Chemistry from the Boreskov Institute of Catalysis and has been at PNNL since 1999. She has co-authored over 80 publications, 2 book chapters, and holds 7 patents. She serves as an Associate Editor of the Journal of the Electrochemical Society and is an adjunct faculty at Washington State University. Read more about Olga Marina.

Venkat Venkataraman

CTO and EVP of Engineering, Bloom Energy

Venkat Venkataraman is the CTO and EVP of Engineering at Bloom Energy. He leads the development of clean, highly efficient, and low-cost Bloom Energy Servers to generate clean power onsite using natural gas, biogas, and hydrogen as feedstock. During his 17 years tenure at Bloom, he led the company through many technological breakthroughs bringing Solid Oxide Fuel Cell (SOFC) technology from early stages of development to a matured state enabling deployment of highly efficient commercial systems deployed across the world reducing greenhouse gas emissions significantly. Over the years, Venkat has assembled, led, and mentored a very strong team of engineers and innovators around the world in the areas of fuel cell stack technology, system integration and power electronics, who have made tremendous strides in that time, solving the key technical challenges that had previously prevented the commercialization of SOFC technologies. Venkat's recent focus has been on the use of Solid Oxide Electrolyzer Cell (SOEC) technology for hydrogen production and use hydrogen SOFC for power generation, in an effort to accelerate hydrogen economy and decarbonization across the world.

Anthony Leo

Executive Vice President, Chief Technology Officer, FuelCell Energy

Anthony (Tony) Leo joined FuelCell Energy in 1978 and has held key leadership roles in research, development, and commercialization of electrochemical systems during his tenure. He is well known throughout the battery and fuel cell industry, and has authored numerous papers, contributed to technical books, holds several US Patents, and has served as Chairman of the American Society of Mechanical Engineers PTC-50 Fuel Cell Performance Test Code committee and as a member on the Department of Energy's (DOE) Hydrogen and Fuel Cell Technical Advisory Committee (HTAC).

Mr. Leo holds a Bachelor of Science degree in Chemical Engineering from Rensselaer Polytechnic Institute.

Joe Hartvigsen

VP Engineering, Oxeon Energy

Entering the solid oxide systems field from a defense aerospace simulation background, Joe's work was initially focused on detailed multi-physics simulations of SOFC stacks. He also applies analytical models to stack operation and ceramic manufacturing processes used in the fabrication of fuel cell components.

Joe earned his B.S. in Chemical Engineering from Brigham Young University and his M.S. in Chemical Engineering from Iowa State University of Science and Technology. His graduate research was conducted at the Ames Laboratory of the DOE on the topic of "The preparation of silicon nitride by pyrolysis of iminopolysilanes."

Scott L. Swartz

CTO and Co-Founder, Nexceris

Dr. Scott L. Swartz is the Chief Technical Officer and a co-founder of Nexceris, in Lewis Center, Ohio. Dr. Swartz holds a B.S. in Ceramic Engineering from Alfred University, and a Ph.D. in Solid State Science from The Pennsylvania State University. After co-founding Nexceris in 1994, Dr. Swartz has led Nexceris' technology development activities, resulting in the company's emergence as one of the preeminent technology providers in the areas of solid oxide fuel cell and related electrochemical ceramic technologies. He currently serves as Chair of the Ohio Fuel Cell Coalition. Dr. Swartz received the 2020 Medal for Leadership in the Advancement of Ceramic Technology from the American Ceramic Society.

Andrew Smeltz

New Applications R&D Manager of Electrode Technologies, North American Division, De Nora

Andrew Smeltz is the New Applications R&D Manager of Electrode Technologies, North American Division of De Nora, one of three global R&D centers within the De Nora network. Within this division, he manages a portfolio of electrode and related component development activities for alkaline and PEM water electrolysis as well as CO2 conversion, hydrogen compression and purification, energy storage, and gas sensing. Prior to joining De Nora in 2016, he worked on electrical energy storage technology development at United Technologies Research Center which is now licensed and commercialized by Largo Clean Energy in Massachusetts. He received his PhD in Chemical Engineering from Purdue University in 2009 with a focus on heterogeneous catalysis and surface science and B.S. in Chemical Engineering from Ohio University in 2004.

Andrew Park

R&D Principal Engineer, Chemours Company

Andrew Park is an R&D Principal Engineer at the Chemours Company, with >12 years' experience in membranes/ionomers for electrochemical devices. At Chemours, he is responsible for Nafion new product development programs in membranes for fuel cells and water electrolyzer applications, along with overseeing evaluation of Nafion materials in membrane electrode assemblies. He is currently PI or sub-PI on three DOE programs in HydroGEN or M2FCT consortia. Before Chemours, he was a postdoctoral researcher with Bryan Pivovar at NREL studying alkaline MEAs and received his Ph.D. at Vanderbilt with Peter Pintauro in 2015.

Peter Ellis

Technology Director, Green Hydrogen, Johnson Matthey

Peter is Technology Director of Johnson Matthey's new Green Hydrogen business, which he joined when it was founded in October 2020. Prior to that he was leading a project exploring new opportunities for JM in the electrochemistry area. Peter's background is in catalyst materials. He has a PhD in catalysis from the University of Durham and post-doctoral experience in catalytic approaches to hydrogen peroxide synthesis from Reading University and Queens University, Belfast. Peter joined Johnson Matthey just over 20 years ago and has worked on a wide range of catalyst technologies, most notably cobalt catalysts for the Fischer-Tropsch process.

Barr Zulevi

President and CTO, Pajarito Powder LLC

Dr. Barr Zulevi, President and CTO Pajarito Powder LLC, has extensive experience in materials science, both from his academic career and commercialization experience since co-founding Pajarito Powder in 2012. Dr. Zulevi has overseen and led the Pajarito Powder team in developing the world-class VariPore manufacturing platform and VariPore line of Engineered Catalysts and Catalysts Supports. Pajarito Powder develops and commercializes catalysts for Water Electrolysis in PEM and AEM devices. Under his leadership, Pajarito Powder has licensed, scaled-up, and re-engineered catalytically relevant materials, including catalyst technologies from Los Alamos National Laboratories, University of New Mexico, INRS, and Northeastern University. A team of scientists and technicians supports him with extensive expertise in developing catalysts, technology-transfer, scale-up, and manufacturing of electrocatalysts for fuel cell and electrolyzer applications.

Sasha Dass

Director of Engineering Program Management, Analog Devices

As Director of Engineering Program Management at Analog Devices, Sasha oversees the development and execution of ADI's product portfolio in the Consumer Electronics, Healthcare, and Automotive sectors. Her background in large-scale semiconductor development and manufacturing positions her well to bring silicon + AI solutions to the space of electrolytic hydrogen production and fuel cells. Prior to joining Analog, Sasha worked for Intel where she held a variety of leadership roles in process development and manufacturing. Sasha holds a BS in Optics from the University of Rochester, an MS in Electrical Engineering from the Rochester Institute of Technology, and an MBA from Babson College. She is currently continuing her advanced business studies at Harvard as part of the executive MBA program. Sasha lives in the Boston area.

Stan Lueck

President, RODI Systems Corp.

Mr. Lueck holds a Bachelor of Science degree in chemistry and has spent the last forty-one years as a technical professional. For the last thirty years, Mr. Lueck has specialized in the area of high-performance water treatment. He is responsible for designing systems for high purity water production, desalination, and industrial wastewater treatment. He provides troubleshooting services, designs pilot tests and feasibility studies, and develops monitoring and control systems specifically for ultrafiltration, reverse osmosis, and deionization applications. Since 1995, Mr. Lueck has served as President and principal owner of RODI Systems Corp., a New Mexico corporation specializing in water treatment systems for ultra-pure water production, desalination, process water treatment, and industrial wastewater treatment and reuse.

Blanca Ramirez

Major equipment and special projects, Lectrodryer

Lectrodryer first drying system was for natural gas in 1932. We have been engineering solutions for hydrogen drying for the power sector since the first commercial hydrogen cooled generator was put in commercial service back in 1935. Blanca joined Lectrodryer in 2004 and she currently serves as project leader in the development of the future solutions for utilities and OEMs. While at Lectrodryer, Blanca serves at the Steam Turbine and Generator Auxiliaries track at ASME Power. Blanca provides training in adsorption equipment to utilities and has co-authored papers on Hydrogen Cooled Generator Auxiliaries and has presented at ASME Power, EPRI, CFE Generation Convention and IEEE Mexico. She is currently leading green hydrogen applications team at Lectrodryer.

Richard Morin

E-mobility and Hydrogen Segment Manager, Dynapower

Richard Morin leads Dynapower's Hydrogen segment which is supplying SCR, IGBT Chopper Rectifiers, Bi-directional Inverters, and DC/DC converters to help power green hydrogen and fuel cell projects worldwide. Dynapower, a power electronics specialist based in South Burlington, Vermont, has supplied power electronics of various capacities for hydrogen electrolysis since its founding in 1963.

Jack Brouwer

Professor, Mechanical and Aerospace Engineering, Civil and Environmental Engineering, UC Irvine; Director, National Fuel Cell Research Center & Advanced Power and Energy Program

Professor Brouwer is an energy system dynamics expert with research interests in renewable energy systems development; dynamic simulation and control; energy system thermodynamics, design, and integration; electrochemical conversion devices and systems such as fuel cells, electrolyzers and batteries; hydrogen production, storage, and conversion systems; and electrochemical reactions with concurrent heat, mass, and momentum transfer. Prof. Brouwer obtained his M.S. and B.S. in Mechanical Engineering from the University of California, Irvine, and his Ph.D. in Mechanical Engineering at MIT.

Molly Strasser

Nuclear Innovation Manager, Xcel Energy

Molly Strasser is currently the Nuclear Innovation Manager with Xcel Energy in Minneapolis and has over 18 years of experience in the nuclear industry. She has a degree in Mechanical Engineering from the University of Missouri – Columbia.

Noah D. Meeks

Principal Research Engineer, Southern Company Services, Inc.

Noah D. Meeks is a Principal Research Engineer with Southern Company Services R&D, working in the Advanced Energy Systems Research Group. His primary focus is technology development for the hydrogen economy and its potential in value creation for the Company and economy-wide decarbonization. The portfolio of technologies under development includes those for hydrogen production, infrastructure, and efficient energy utilization.

In 2012, Noah joined Southern Company Services R&D in the Environmental Controls Research Group. He managed several technology field demonstrations in support of mercury and air toxics standards (MATS) compliance, a multi-year project demonstrating pulse-jet fabric filter baghouse technology in a high-SO_3 environment, and installation of a pilot wet electrostatic precipitator (WESP). He also developed advanced sorbents for mercury control in collaboration with key suppliers. This work led to informed MATS compliance decisions, overcame key baghouse O&M challenges, and improved sorbent performance in challenging flue gas environments.

Michael Green

General Manager Hydrogen Energy Initiatives, Pinnacle West Capital Corporation / Arizona Public Service Company

Michael Green is the General Manager, Hydrogen Energy Initiatives, for Pinnacle West Capital Corporation and its wholly-owned subsidiary Arizona Public Service Company (APS), a rate-regulated electric utility that provides retail and wholesale electric service to approximately 1.3 million customers throughout the State of Arizona. In this role, he leads enterprise-wide strategy, policy, business development, and research, development, and demonstration activities involving clean hydrogen as an energy source for deep decarbonization.

Michael previously served as the General Manger, Nuclear Policy and Law for APS, advising the nuclear senior management team on strategic and business planning, federal and state energy policy, communications, and legal issues involving APS's Palo Verde Generating Station. Prior to joining APS, Michael completed a 20-year career in the U.S. Navy in a variety of positions and locations worldwide as a naval flight officer and Judge Advocate General's Corps officer.

Brittany Westlake

Sr. Technical Leader, Electric Power Research Institute

At EPRI, Brittany recently joined the Low-Carbon Resources Team where she leads R&D and demonstration projects related to hydrogen production from electrolysis. Working to understand electrolysis technology performance and the technical and economic considerations for adoption pathways and deployment on the grid. She previously worked with EPRI's Energy Storage and Distributed Generation Program to understand battery, storage, hydrogen, and fueled distribution technology performance characteristics and the role they play in a variety of applications from stationary storage, the transportation sector, and to support the generation sector.

Panel Session 2:
Thermal Conversion with Carbon Capture and Sequestration

The Honorable Bill Cassidy

U.S. Senator (R-LA)

Dr. Bill Cassidy is the United States Senator for Louisiana.

Bill grew up in Baton Rouge, Louisiana, and attended Louisiana State University (LSU) for undergraduate and medical school. In 1990, Bill joined LSU Medical School teaching medical students and residents at Earl K. Long Hospital, a hospital for the uninsured.

During this time, he co-founded the Greater Baton Rouge Community Clinic, a clinic providing free dental and health care to the working uninsured. Bill also created a private-public partnership to vaccinate 36,000 greater Baton Rouge area children against Hepatitis B at no cost to the schools or parents. In the wake of Hurricane Katrina, Bill led a group of health care volunteers to convert an abandoned K-Mart building into an emergency health care facility, providing basic health care to hurricane evacuees. Read more about Bill Cassidy.

Jared Ciferno

Technology Manager, Natural Gas and Oil, Strategic Planning, National Energy Technology Laboratory, U.S. Department of Energy

Jared Ciferno is the Technology Manager of the National Energy Technology Laboratory's Upstream and Midstream Natural Gas and Oil R&D programs. In this capacity, Mr. Ciferno manages an R&D portfolio encompassing advanced technology projects ranging from basic energy science (modeling, materials development, sensors, controls) through large scale field demonstrations and includes upstream natural gas (shale gas), midstream, enhanced oil recovery, and methane hydrates. Mr. Ciferno has 20 years of diversified engineering and management experience that spans a broad spectrum of technology areas including: advanced natural gas & oil production and transportation technologies, electric power generation, advanced greenhouse gas control technologies, process control, fossil energy conversion technologies, produced water management, and simulation/systems analysis. Previously at NETL, Mr. Ciferno served as Director of the Office of Coal and Power R&D Program, Technology Manager of the Carbon Capture Program and Engineering Systems Analyst. Prior to joining NETL, he worked as a chemical engineer for Science Applications International Corporation (SAIC) and as a research/process engineer for Calgon Carbon Corporation. Mr. Ciferno holds B.S. and M.S. degrees in chemical engineering from the University of Pittsburgh.

Eric Lewis

Senior Engineer, National Energy Technology Laboratory, U.S. Department of Energy

Eric Lewis, P.E. is a Senior Engineer who has served the U.S. Department of Energy's (DOE) National Energy Technology Laboratory (NETL) for 9 years as a site support contractor. Eric's experience at NETL has focused on leading techno-economic analysis (TEA) studies of numerous advance d, fossil-based energy systems in support of DOE's mission. A Chemical Engineer by background, he has also spent time in Project and Process Engineering roles in the commodity chemicals and midstream natural gas industries.

Marc von Keitz, Ph.D.

Program Director, ARPA-E

As a program director at ARPA-E, Marc is developing and managing R&D funding programs in advanced marine biomass production in off-shore environments, as well as biochemical and thermo-chemical conversion processes with a particular emphasis on using methane/biogas as a feedstock. Prior experiences include co-founder and CTO at BioCee Inc, an industrial biotechnology startup, director of the Biotechnology Resource Center at University of Minnesota, and consulting environmental engineer at Montgomery-Watson in California. Marc studied biology and chemical engineering in Karlsruhe, Germany, and Toulouse, France. He obtained graduate degrees in Environmental Engineering and Science from Stanford University and the University of Minnesota.

Dr. Dane Boysen

CEO and Founder, Modular Chemical, Inc.

Dr. Boysen has spent 20 years in clean energy at the intersection of entrepreneurship, technology, and innovation. In 2017, Boysen founded Modular Chemical Inc. to consult on and develop environmentally beneficial gas processing technology. He is currently working on a project with Palo Alto Research Center (PARC) to develop a novel methane pyrolysis process for emission-free hydrogen he co-invented that is funded by the U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E). Boysen also served on a National Academies committee to create a national research agenda for the development of greenhouse gas removal technology, which resulted in the National Academies publication "Negative Emissions Technologies and Reliable Sequestration: A Research Agenda." Prior to launching Modular Chemical, Boysen served as Chief Technologist at Cyclotron Road—a lab-embedded mentorship program at Lawrence Berkeley National Lab—where he mentored hard-tech innovators through critical technology and commercialization challenges.

Peter Johnson

Partner, Azimuth Capital

Pete Johnson is a Partner with private equity firm Azimuth Capital, where he leads strategic investing into energy transition and low carbon fuel opportunities. Prior to joining Azimuth, he was the Co-Founder, President, and CTO of Monolith Materials, a company he founded to commercialize hydrogen production technology based on methane pyrolysis. Monolith currently operates the world's largest green hydrogen production facility, located near Lincoln, Nebraska and is aggressively expanding and developing new plants. Pete's role with Monolith is now as a Director and Board Member. Before founding Monolith, he was the Director of Engineering at Ausra, which was purchased by AREVA Solar, and led the construction of multiple solar thermal power plants in US and international locations. Pete received a master's degree in Mechanical Engineering from Stanford and a bachelor's degree in Physics from the University of Utah.

Bryan Morreale

Associate Laboratory Director, Research and Innovation, National Energy Technology Laboratory

As associate laboratory director for Research and Innovation for NETL, Bryan Morreale, Ph.D., is responsible for all aspects of NETL's internal research efforts, valued at approximately $120 million per year and involving about 500 multidisciplinary federal and contract research staff at the Lab's three research sites. Morreale leads NETL's Research and Innovation Center (RIC) in developing and implementing a dynamic research portfolio that effectively addresses DOE and other customer goals by effectively exercising NETL's core competencies. In nearly 19 years of service with NETL, Morreale has pursued gas separations and membrane-reactor research, led strategic technical and organizational initiatives, and served in senior leadership positions within RIC. Morreale holds a doctorate in chemical engineering from the University of Pittsburgh.

Raghubir Gupta

Co-Founder and President, Susteon Inc.

Dr. Raghubir Gupta is Co-founder and President of Susteon Inc.—a technology startup with a mission of development and deployment of low-carbon energy technologies to achieve Net Zero emissions. Susteon is developing technologies for production of hydrogen and capture of CO_2 from direct air and point sources and conversion of CO_2 into fuels and chemicals. Previously, Dr. Gupta served as the Senior Vice President of the Energy Technology Division at RTI International, where he led a large R&D team to develop technologies in syngas, hydrogen, CO_2 capture and methane and biomass conversion. Dr. Gupta obtained his B. Tech. degree in Chemical Engineering from the Indian Institute of Technology, New Delhi, India. He got his Ph.D. degree (also in Chemical Engineering) from the Illinois Institute of Technology, Chicago.

Mark A. Cappelli

Professor of Mechanical Engineering, Stanford University

Mark A. Cappelli is a Professor of Mechanical Engineering at Stanford University, and co-Director of the Engineering Physics Major. He received his B.Sc. degree in Physics from McGill University, and his M.A.Sc. and Ph.D. from the University of Toronto in Aerospace Sciences. His early research involved the formation of high density plasma channels to facilitate the propagation of ion beams to targets in light-ion beam fusion. He joined the Stanford faculty in 1987. At Stanford, he has studied the applications of plasmas to space propulsion, materials synthesis and processing, combustion, and aerodynamics. Most recently, he has been involved in studying the use of plasmas in applications related to decarbonization and sustainability, and also in the control of electromagnetic waves. He is co-founder of ElectroFlame, which is developing low temperature plasma technologies to produce liquid fertilizers. He currently sits on the board of directors of ReCarbon, Inc., which is a rapidly growing Silicon Valley company that has developed thermal plasma methods of producing hydrogen from methane and CO2-containing feedstock.

Nathan Weiland

Senior Fellow, Energy Conversion Engineering, National Energy Technology Laboratory

Dr. Nathan Weiland is a Senior Fellow at the National Energy Technology Laboratory (NETL), where he works to build and sustain world-class competencies in energy conversion engineering and hydrogen production and utilization. From 2014 to 2020 he was a research engineer in NETL's Systems Engineering & Analysis group, where he performed systems studies of supercritical CO2 power cycles and oxy-fuel magneto-hydrodynamics (MHD) power plants. Dr. Weiland was a research professor at West Virginia University from 2008-2014, where he worked with NETL on low-NOx hydrogen combustion, coal/biomass co-gasification, ash deposition processes in gasification systems, oxy-combustion plasmas for MHD power, and chemical looping combustion. He has received a B.S. (Purdue University), M.S., and Ph.D. (Georgia Tech) in Mechanical Engineering.

Naomi Halas

Stanley C. Moore Professor of Electrical and Computer Engineering, Rice University

Naomi J. Halas is the Stanley C. Moore Professor of Electrical and Computer Engineering at Rice University, where she also holds faculty appointments in the Departments of Physics, Chemistry, Materials Science and Nanoengineering, and Bioengineering. She received her B. S. Degree in Chemistry from La Salle University and her PhD in Physics from Bryn Mawr College. She was a graduate fellow at IBM Yorktown for her PhD research and a postdoctoral fellow at AT&T Bell Laboratories prior to joining Rice. She is author of more than 350 refereed publications, has more than 20 issued patents, and has presented more than 600 invited talks. Two companies have been founded based on her research: Nanospectra Biosciences (Photothermal Cancer Therapy, in clinical trials) and Syzygy Plasmonics (Low-temperature Photocatalysis for sustainable fuels). She has been awarded the Frank Isakson Prize and Julius Lilienfeld Prize of the American Physical Society, the R. W. Wood Prize of the Optical Society of America, the American Chemical Society Award in Colloid Chemistry, and the Spiers Medal of the Royal Society of Chemistry. Halas has been elected to the National Academies of Sciences and Engineering (U. S.), the Royal Society of Chemistry (U. K.), and the American Academy of Arts and Sciences.

John (Jianli) Hu

Chair Professor and Director of Shale Gas Center, West Virginia University

Dr. John Hu is a Chair Professor and the Director of Shale Gas Center at West Virginia University. Before joining WVU, John led innovation efforts at Koch Industries, BP Oil, and Pacific Northwest National Laboratory. He undertakes DOE funded research projects in partnering with U.S. national laboratories and industrial companies. His research interests span across the fields of reaction engineering, surface chemistry, plasma, and microwave-initiated catalytic reactions. He has been granted 32 U.S. patents and published over 150 journal and conference papers.

Ian Duncan

Research Scientist, Bureau of Economic Geology, Jackson School of Geosciences, The University of Texas at Austin

Dr. Ian Duncan is a research scientist at the Bureau of Economic Geology at the University of Texas at Austin. His current research focuses on the scientific, environmental, and public policy aspects of unconventional natural gas production, the water-energy nexus, and carbon capture and storage. He has a particular interest in risk analysis, decision making, and legal/regulatory issues related to fracking, CO2 sequestration, CO2-EOR, and energy production. He has presented Congressional Testimony to the House Natural Resources Committee June 12, 2008, on: "CO2 Enhanced Oil Recovery: A Key Bridge to Large Scale CO2 Sequestration"; House Committee on Energy and Commerce July 24, 2008, on: "Carbon Sequestration: Risks, Opportunities, and Protection of Drinking Water"; and to the House Committee on Energy and Commerce March 10, 2009, on: "Carbon Sequestration Risks, Opportunities, and Learning from the CO2-EOR Industry". He also has participated in a number of External Review Boards including Co-Chair ASME External Review DOE's Carbon Sequestration Research Programs (2010); Chair, External Review Panel Burger CO2 Injection Project, Battelle Memorial Institute (2009); Governor's External Review Panel Commonwealth of Pennsylvania CO2 Sequestration (2008); External Review CO2 Sequestration Research Program Los Alamos National Laboratory (2007).

L.-S. Fan

Distinguished University Professor and C. John Easton Professor in Engineering, Department of Chemical and Biomolecular Engineering, Ohio State University

L.-S. Fan is a Distinguished University Professor and C. John Easton Professor in Engineering in the Department of Chemical and Biomolecular Engineering at The Ohio State University. His research fields are in particle technology and multiphase reaction engineering. He is an inventor of eight clean fossil energy conversion processes including OSCAR, CARBONOX, pH Swing, Calcium Looping, Hydrogen Looping, Syngas Looping, Coal-Direct Chemical Looping and SULGEN Processes for CO2, SO2, and NOx emission control and electricity, syngas, hydrogen, chemicals, or liquid fuels production. He has also invented the commercially used electrical capacitance volume tomography for three-dimensional multiphase flow imaging. Professor Fan is the Editor-in-Chief of Powder Technology and has authored or co-authored 460 journal papers, 60 patents, and six books including the most recent textbook (2021) "Dynamics of Multiphase Flows" by Cambridge University Press. He was named as one of the "One Hundred Engineers in the Modern Era" by the AIChE in its centennial celebration in 2008. Professor Fan is a Member of the U. S. National Academy of Engineering, the National Academy of Inventors, Academician of the Academia Sinica, and a Foreign Member of the Chinese Academy of Engineering, the Australia Academy of Technology and Engineering, the Indian National Academy of Engineering, and the Mexican Academy of Sciences.

Massood Ramezan

Senior Program Director, KeyLogic

Massood Ramezan has over thirty-five years of diverse experience in energy related research & engineering, technical project management, strategic planning, energy technology assessment, process evaluation and due diligence analysis, and technical consulting in the areas of advanced energy systems and environmental control technologies. Massood earned his B.S., M.S., and Ph.D. all in Mechanical Engineering from West Virginia University, Morgantown, WV. He is a registered Professional Engineer.

Dan Williams

Managing Director, Wabash Valley Resources LLC

Dan serves as the Managing Director for the Wabash Valley Resources clean hydrogen project using gasification technology in West Terre Haute, Indiana. In this role, he directs all aspects of the project from a commercial and technical prospective. Dan is an accomplished engineering and operations manager, with experience in syngas projects in North America and Asia. He has previously worked for ConocoPhillips and CB&I, focusing on gasification technology for nearly 10 years, and has experience in ammonia and urea production.

Horst Hack

Technical Executive, Generation Sector, Electric Power Research Institute

Mr. Horst Hack is a Technical Executive in the Generation Sector at the Electric Power Research Institute (EPRI). He is currently leading a multi-year US Department of Energy-funded project on gasification of coal and biomass for net-negative power and hydrogen production, with $11.7 million in work scope. Mr. Hack is also the principal investigator on a crushed-rock thermal energy storage project, aiming to demonstrate the technology at the pilot scale. He has been responsible for technical project management on the Advanced Ultrasupercritical (A-USC) Component Test (ComTest) Project, including $27 million in scope. His other responsibilities have included supporting oxy-combustion process development to enable carbon capture and storage (CCS), and participation in a hydrogen creation roadmap effort as part of EPRI's Low Carbon Resources Initiative (LCRI).

George Booras

Technical Executive, Electric Power Research Institute

Responsibilities include managing engineering and economic evaluations of advanced power generation and bulk energy storage technologies, including integrated coal gasification combined-cycle (IGC C), ultra-supercritical pulverized coal, natural-gas-fired combined-cycles, and novel power cycles incorporating carbon capture and sequestration (CCS). Mr. Booras managed EPRI's Gasification Users Association (GUA) and was responsible for production of the Coal Fleet User Design Basis Specification for IGCC Power Plants. He is the author of EPRI's annual report on Updated Cost and Performance Estimates for Advanced Fossil Technologies Including CO2 Capture. He has been responsible for developing the cost and performance data for the fossil power generation technologies in EPRI's Technical Assessment Guide.

Su Yan

Assistant Professor of Electrical Engineering, Director of Graduate Studies, Howard University

Dr. Su Yan received his Ph.D. degree in electrical and computer engineering from the University of Illinois at Urbana–Champaign, Urbana, IL, USA, in 2016 and is currently an Assistant Professor in the Department of Electrical Engineering and Computer Science at the Howard University, Washington, DC, USA. Dr. Yan has worked in the area of computational electromagnetics and multiphysics for more than 15 years and has published over 100 papers in peer-reviewed journals and conferences, edited one book and two book chapters. His current research focuses on novel simulation and optimization methods for the development and deployment of innovative materials, devices, and systems that foster highly efficient clean energy production and conversion, and clean coal and carbon management with a reduced cost. Dr. Yan is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), a Life Member of the Applied and Computational Electromagnetics Society. He directs the Electrical Engineering Graduate Program in the Department of Electrical Engineering and Computer Science, Howard University.

Rajinder Singh

Deputy Group Leader of Materials Synthesis and Integrated Devices, Materials Physics and Applications Division, Los Alamos National Laboratory

Dr. Rajinder P. Singh is deputy group leader of Materials Synthesis and Integrated Devices (MPA-11) group in the Materials Physics and Applications Division of Los Alamos National Laboratory. He is also co-leader for Carbon Capture and Separations for Energy Applications team. He received his PhD in Chemical Engineering from Colorado School of Mines and worked for Pall Corporation (now Danah er Corporation) in Metal Media Development group before joining LANL. Raj's primary research is focused on advanced materials' design and development for separations and catalytic applications. He has 15 plus years of experience in membrane materials and industrial deployment platform (hollow fiber and thin film composites) development for applications in air separation, carbon capture, hydrogen production, high salinity brine treatment, and power plant water utilization. Raj has worked several DOE-FE, EERE, ARPA-E, State of Wyoming, US-China, and LDRD funded projects in collaboration with industry, academia, and national laboratories. Currently, Dr. Singh is leading DOE funded projects on the development and demonstration of carbon hollow fiber membrane technology for applications in high purity oxygen production and H_2 production from hydrocarbon fuel derived synthesis gas.

Christina Wildfire

Researcher, National Energy Technology Laboratory

Christina Wildfire has served as a researcher at NETL since 2016 Research scientist with an emphasis on microwave chemistry. Currently, she is leading the research for low pressure ammonia synthesis using a microwave reactor with ARPA-E and scaling microwave CO2 conversion to produce blue hydrogen. She also investigates the interactions and mechanisms of materials in a microwave field to aid in mate rials synthesis/processing and microwave reactions. Dr. Wildfire's research interests include material synthesis, catalysis, microwave reactions, and scale-up. She has published 34 peer-reviewed journal publications and conference proceedings. Dr. Wildfire received her BS and MS in Mechanical Engineering from Mercer University in Macon, GA and her PhD in Material Science from West Virginia University in Morgantown, WV.

Josh Stanislowski

Director of Energy Systems Development, Energy and Environmental Research Center

Joshua J. Stanislowski is the Director of Energy Systems Development at the EERC, where he leads a multidisciplinary team of scientists and engineers focused on research, development, and commercialization of innovative energy technologies as they relate to coal utilization and emissions, carbon management, and alternative fuels and renewable energy. Prior to his current position, he served as a Principal Process Engineer in the Energy Systems Development group at the EERC. He holds M.S. and B.S. degrees in Chemical Engineering from the University of North Dakota.

Mr. Stanislowski's principal areas of interest and expertise include coal and biomass gasification systems with an emphasis on novel syngas cooling, cleanup, and separation technologies. He has worked extensively with hydrogen separation membrane systems and liquid fuels catalysis. He is proficient in process modeling and systems engineering including techno-economic studies using Aspen Plus software. He has significant experience with process engineering, process controls, and project management.

Panel Session 3: Advanced Pathways

The Honorable Paul Tonko

U. S. Representative (D-NY)

Congressman Paul D. Tonko is a sixth-term member of the U.S. House of Representatives, representing New York's 20th Congressional District in the Capital Region, including the cities of Albany, Schenectady, Troy, Saratoga Springs, and his hometown of Amsterdam.

Throughout his career, he has been a champion for the working class, advancing policies that create jobs, provide economic opportunity, and ensure senior citizens can retire with dignity.

Tonko is a member of the Committee on Energy and Commerce and was elected by his peers to serve as chair of the Subcommittee on the Environment and Climate Change, where he oversees a wide range of issues including clean drinking water, regulation of toxic substances and national climate action. In addition, he was appointed to join the Committee on Natural Resources and to continue his service on the Science, Space, and Technology Committee where he has been a longtime advocate for scientific integrity and public research. Read more about Paul Tonko.

Sanjeev Mukerjee

Distinguished Professor, Department of Chemistry and Chemical Biology, Northeastern University

Dr. Sanjeev Mukerjee is a College of Science, Distinguished Professor in the Department of Chemistry and Chemical Biology (Northeastern University); where he has been since September of 1998. He also heads the center for Renewable Energy Technology at Northeastern University (NUCRET) and its subset the Laboratory for Electrochemical Advanced Power (LEAP). This center aims at enhancing education and research on all aspects of renewable energy and green chemistry with special emphasis on selective charge transfer at electrochemical and photo-electrochemical interfaces. His research on charge transfer dynamics at both two and three dimensional electrochemical interfaces encompasses materials development, in situ synchrotron spectroscopy and electro-analytical methods. Peer reviewed publication currently number 185, with an H-factor of 81. The current projects in the group include materials development for new electrocatalysts, polymer electrolyte membranes and high energy density (and capacity) cathode materials for aqueous and non-aqueous storage cells. Fundamental understanding of structure property relationships is in concert with applications.

Sossina Haile

Walter P. Murphy Professor, Materials Science and Engineering, Northwestern University

Sossina M. Haile is the Walter P. Murphy Professor of Materials Science and Engineering at Northwestern University, a position she assumed in 2015 after serving 18 years on the faculty at the California Institute of Technology. She earned her Ph.D. in Materials Science and Engineering from the Massachusetts Institute of Technology in 1992. Haile's research broadly encompasses materials, especially oxides, for sustainable electrochemical energy technologies. Amongst her many awards, in 2008 Haile received an American Competitiveness and Innovation Fellowship from the U.S. National Science Foundation, in 2010 the Chemical Pioneer Award of the American Institute of Chemists, in 2012 the International Ceramics Prize of the World Academy of Ceramics, and in 2020 the Turnbull Award of the Materials Research Society. She is a fellow of the Materials Research Society, the American Ceramics Society, the African Academy of Sciences, and the Ethiopian Academy of Sciences, and serves on the editorial boards of *Annual Review of Materials Research*, *Joule*, and *MRS Energy and Sustainability*.

Shannon Boettcher

Professor, Department of Chemistry and Biochemistry, University of Oregon

Shannon Boettcher is a Professor in the Department of Chemistry and Biochemistry at the University of Oregon. His research is at the intersection of materials science and electrochemistry, with a focus on fundamental aspects of energy conversion and storage. He has been named a DuPont Young Professor, a Cottrell Scholar, a Sloan Fellow, and a Camille-Dreyfus Teacher-Scholar. He is a 2019 and 2020 ISI highly cited researcher (top 0.1% over past decade). In 2019 he founded the Oregon Center for Electrochemistry and the nation's first graduate program in Electrochemical Technology. In 2021, he was named one of ten finalists for the Blavatnik National Award in Chemistry.

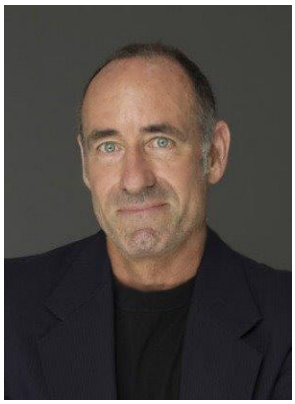
Alan Weimer

Clark Professor, Chemical and Biological Engineering, University of Colorado

Alan (Al) W. Weimer is Clark Professor of Chemical and Biological Engineering at the University of Colorado (CU), joining the faculty in 1996 after a 16-year career with the Dow Chemical Company (Dow). He has received numerous awards for his particle research including the 2017 AIChE Lifetime Achievement Award for Particle Technology. He co-founded ALD NanoSolutions as a spin-off from his lab in 2001, merged in January 2020 with Forge Nano to commercialize Particle Atomic Layer Deposition, a technology invented in his lab. He is recipient of the Dow Chemical Company 1995 Excellence in Science Award for the invention and commercialization of advanced non-oxide materials. He is named inventor on 42 issued U.S. Patents, has directed the research of 34 Ph.D. students, and published 225 peer-reviewed journal articles. He is an Inventor of the Year at both CU and Dow. He received a 2005 DOE Hydrogen Program R&D Award.

Eric McFarland

Founder and Chief Technology Officer, C-Zero; Professor, Department of Chemical Engineering, University of California, Santa Barbara



Professor Eric McFarland studied Nuclear Engineering and received his Ph.D. from the Massachusetts Institute of Technology. Since 1991 he has worked in catalysis and reaction engineering in the Department of Chemical Engineering at UCSB. His work is both fundamental and applied. McFarland has always worked closely with industry, and he continues to serve as a Board member and advisor for several chemical technology companies. He is the founder and Chief Technology Officer of C-Zero, a new company developing technology to use fossil resources for hydrogen production without carbon dioxide emissions.

Pin-Ching Maness

Principal Scientist, Emeritus, Bioenergy Science and Technology Directorate, National Renewable Energy Laboratory

Pin-Ching Maness joined NREL since 1982 and has been pivotal on developing various renewable energy technologies including improving biological hydrogen production both via dark fermentation of waste biomass and via photosynthetic reactions capturing the energy in sunlight. She also led several synthetic biology projects by constructing robust microbial hosts and probing design principles that underpin the valorization of CO2 to high-value products. She served as the Group Manager of the Bioenergetics Group until her retirement in 2020. As an Emeritus, she continues to be involved in proposal and program development at NREL.

Bruce Logan

Kappe Professor of Environmental Engineering, Department of Civil and Environmental Engineering, Penn State

Professor Logan is the Kappe Professor Professor of Environmental Engineering the Department of Civil & Environmental Engineering, and he is also the Director of the Consortium for Integrated Energy Systems at Penn State. His research is focused on renewable energy production and the development of an energy sustainable water infrastructure, desalination, and more recently green hydrogen gas from water electrolysis. Dr. Logan is a member of the US National Academy of Engineering (NAE), the China Academy of Engineering (CAE), and a fellow of AAAS and several other professional organizations.

Jennie Huya-Kouadio

Energy Services Division, Strategic Analysis Inc.

Mrs. Huya-Kouadio has 9 years of experience in hydrogen and fuel cell techno-economic analysis. Her most recent work involves Design for Manufacture and Assembly (DFMA) costing analysis of energy systems; polymer electrolyte membrane (PEM) fuel cell systems for automotive and truck application s and PEM electrolyzer systems. Mrs. Huya-Kouadio also provides support to the Department of Energy, Energy Efficiency and Renewable Energy Office for Hydrogen Analysis (H2A) production work in emerging technologies such as photoelectrochemical (PEC) hydrogen production.

M.S., Mechanical Engineering, University of Maryland, 2012

B.S., Mechanical Engineering, University of California Santa Barbara, 2007

Elizabeth Connelly

Energy Technology and Transport Analyst, International Energy Agency

Elizabeth Connelly is an analyst in the Energy Technology Policy division of the International Energy Agency (IEA). Her work includes transport scenario modelling, life cycle assessment, and techno-economic analysis. She currently serves as the desk officer for the Advanced Fuel Cell Technology Collaboration Programme. Before joining the IEA, Elizabeth worked at the National Renewable Energy Laboratory on projects supporting hydrogen infrastructure and systems analysis, as well as the H2@Scale initiative. Elizabeth has a PhD in Systems Engineering from the University of Virginia.

Frances Houle

Deputy Director, Liquid Sunlight Alliance; Deputy Director, Science and Research Integration, Joint Center for Artificial Photosynthesis; Senior Scientist, Chemical Sciences and Molecular Biophyisics and Integrated Bioimaging Divisions, Lawrence Berkley National Laboratory

Dr. Houle is Deputy Director of the Liquid Sunlight Alliance, Deputy Director for Science and Research Integration of the Joint Center for Artificial Photosynthesis, and Senior Scientist in the Chemical Sciences and Molecular Biophysics and Integrated Bioimaging Divisions at Lawrence Berkeley National Laboratory. She has received numerous awards including the 2009 American Vacuum Society John A. Thornton Memorial Award and Lecture, the 1999 American Institute of Chemical Engineers Northern California Section Research Project of the Year, and the 1998 IBM Environmental Affairs Excellence Award. She is a Fellow of the American Physical Society and Fellow of the AVS, and member of the American Chemical Society and the Materials Research Society. She has been active in professional service and is currently Director of the Materials Research Society and 2021 Chair of the Ethics Committee of the American Physical Society, in addition to serving as guest editor, and as a member of an EU H2020 scientific advisory committee. She has over 160 publications and 28 issued U.S. patents and is co-author of the open-access stochastic reaction-diffusion simulation code *Kinetiscope*.

Tom Jaramillo

Associate Professor of Chemical Engineering, of Photon Science; Senior Fellow, The Precourt Institute for Energy

Recent years have seen unprecedented motivation for the emergence of new energy technologies. Global dependence on fossil fuels, however, will persist until alternate technologies can compete economically. We must develop means to produce energy (or energy carriers) from renewable sources and then convert them to work as efficiently and cleanly as possible. Catalysis is energy conversion, and the Jaramillo laboratory focuses on fundamental catalytic processes occurring on solid-state surfaces in both the production and consumption of energy. Chemical-to-electrical and electrical-to-chemical energy conversion are at the core of the research. Nanoparticles, metals, alloys, sulfides, nitrides, carbides, phosphides, oxides, and biomimetic organo-metallic complexes comprise the toolkit of materials that can help change the energy landscape. Tailoring catalyst surfaces to fit the chemistry is our primary challenge.

Ellen Stechel

Co-Director, ASU LightWorks; Professor of Practice, Molecular Sciences; Senior Sustainability Scientist, Julie Ann Wrigley Global Futures Lab; Fellow in the Institute for the Future of Innovation in Society

Dr. Stechel is Co-Director, ASU LightWorks; Professor of Practice, Molecular Sciences; Senior Sustainability Scientist, Julie Ann Wrigley Global Futures Lab, and Fellow in the Institute for the Future of Innovation in Society. She holds a Ph.D. in Chemical Physics from the University of Chicago and is a fellow of the American Chemical Society. She has built and coordinated research programs at a national laboratory, in the automotive industry; at a U.S. government agency; and now in academia. Her current research focuses on materials and systems design for concentrating solar technologies for hydrogen from advanced water splitting, producing sustainable liquid hydrocarbons from carbon dioxide, clean water, renewable ammonia, and for thermochemical energy storage. Dr. Stechel holds numerous positions of an advisory or editorial capacity, nationally and internationally, and has authored or co-authored over 100 peer reviewed articles.

Tony McDaniel

Principal Member, Technical Staff, Sandia National Laboratories

Dr. McDaniel is a Principal Member of the Technical Staff at Sandia National Laboratories and holds a PhD in Chemical Engineering from the University of California, Los Angeles. His research experience spans a range of topical areas important to functional materials and their application to developing technologies for energy storage and conversion. These include complex oxides used in the production of hydrogen by thermochemical water splitting and high temperature electrochemical processes. He has authored or coauthored over 100 peer reviewed papers and technical reports. Dr. McDaniel is the Solar Thermochemical Technology Lead for HydroGEN Advanced Water Splitting Materials Consortium (h2awsm.org), which is a US Department of Energy—Energy Materials Network dedicated to advancing the technology readiness level of renewable hydrogen production. Through HydroGEN and other programs, he manages multidisciplinary teams comprised of US National Laboratories and Universities in collaborative R&D settings focused on developing and demonstrating technologies for sustainable solar fuels.

Huyen N. Dinh

Director, HydroGEN Energy Materials Network; Group Research Manager, National Renewable Energy Technology Laboratory

Dr. Huyen N. Dinh (she/her) is the director of HydroGEN Energy Materials Network, a multi-lab consortium focused on accelerating water splitting materials R&D for renewable hydrogen production. Huyen is the manager for the Electrosynthesis and Fuel Storage Science and Engineering Group in the Chemistry and Nanoscience center at the National Renewable Energy Laboratory (NREL) and the Electrons to Molecules lead for NREL Materials, Chemicals, and Computational Science Directorate. At NREL, Huyen is also a co-lead of the newly formed Asian Employee Resource Group (ERG), has been active in the Women's Network ERG for many years, and has won many awards for her service to the laboratory and mentoring students. These volunteer activities are part of her on-going work towards a diverse, equitable, and inclusive workplace. Huyen has more than 22 years of experience in renewable hydrogen production, direct methanol, hydrogen polymer electrolyte membrane, and zinc/air fuel cells at national laboratories and in industry.

Kristin Persson

Director, Molecular Foundry, Lawrence Berkeley National Laboratory

Kristin Persson uses atomistic and first-principles computational methods coupled with high-performance computing technology and machine learning to advance materials for clean energy production and storage. She is also the Director of the Materials Project (www.materialsproject.org) which is a multi-national effort to compute the properties of all inorganic materials and provide the data and associated analysis algorithms free of charge. The ultimate goal of the initiative is to drastically reduce the time needed to invent new materials to serve societal needs, in particular advancing clean energy solutions. Within the Persson group, we leverage the software and data infrastructure of the Materials Project together with our expertise in materials informatics to study the physics and chemistry of materials particularly for energy production and storage applications. Current focus areas include design of novel photocatalysts, multi-valent battery electrode materials, Li-ion battery electrode materials, polar materials, and liquid electrolytes for Li energy storage solutions and beyond.

Panel Session 4: Deployment and Financing

The Honorable Greg Pence

U. S. Representative (R-IN)

U.S. Representative Greg Pence represents Indiana's 6th District, where he lives with his wife Denise in Columbus. He is a proud husband, father, grandfather, Marine officer, and small businessman who will ensure Indiana's 6th District continues its strong tradition of leadership in Congress.

Joining the Marine Corps in 1979 in his hometown of Columbus, Pence considers his role in Congress as a new opportunity to serve the community, state, and country that he loves. Pence understands that the 6th District needs a leader who will prioritize constituents and ensure Hoosiers always have a seat at the table.

Pence serves on the House Energy and Commerce Committee, Subcommittee on Energy and Subcommittee on Consumer Protection and Commerce in the 117th Congress. Read more about Greg Pence.

Jigar Shah

Director, Loan Programs Office, US Department of Energy

Jigar Shah was most recently co-founder and President at Generate Capital, where he focused on helping entrepreneurs accelerate decarbonization solutions through the use of low-cost infrastructure- as-a service financing. Prior to Generate Capital, Shah founded SunEdison, a company that pioneered "pay as you save" solar financing. After SunEdison, Shah served as the founding CEO of the Carbon War Room, a global non-profit founded by Sir Richard Branson and Virgin Unite to help entrepreneurs address climate change. Originally from Illinois, Shah holds a B.S. from the University of Illinois-UC and an MBA from the University of Maryland College Park.

Vanessa Chan

Chief Commercialization Officer, U.S. Department of Energy; Director of the Office of Technology and Transitions

Dr. Vanessa Z. Chan is the Chief Commercialization Officer for the Department of Energy and Director of the Office of Technology Transitions. In this role she is responsible for all commercialization activities across DOE, the 17 National Laboratories, and the Department's other research and production facilities across the country.

She is an innovator who has worked across a wide range of ecosystems, from academia to Fortune 1000 companies to startups. She has two decades of experience helping organizations grow at the interface of technology and business, across a diverse set of industries. Read more about Vanessa Chan.

Wahleah Johns

Senior Advisor, Office of Indian Energy Policy and Programs

Wahleah Johns is Senior Advisor for the U.S. Department of Energy (DOE) Office of Indian Energy Policy and Programs. She is responsible for upholding and advancing the Office of Indian Energy's mission to maximize the development and deployment of energy solutions for the benefit of American Indians and Alaska Natives.

Johns is a member of the Navajo (Dine) tribe and comes from northeastern Arizona. Her background is in renewable energy and community organizing, having co-founded Native Renewables, a nonprofit that builds renewable energy tribal capacity while addressing energy access. Her work with the Black Mesa Water Coalition and Navajo Green Economy Coalition has led to groundbreaking legislative victories for groundwater protection, green jobs, and environmental justice. In 2019, she was awarded the Nathan Cummings Foundation Fellowship.

Johns is deeply honored to work with the Office of Indian Energy to help native communities lead the way in the transition to clean energy.

Tony Reames

Senior Advisor, Office of Economic Impact and Diversity, US Department of Energy

Tony G. Reames was most recently a professor of environment and sustainability at the University of Michigan, where he established the Urban Energy Justice Lab to conduct research and develop solutions on the production and persistence of racial, income, and geographic disparities in energy access, affordability, decision making, and participation. Reames served as a commissioned officer in the U.S. Army Corps of Engineers and worked in both the private and public sectors as a licensed professional engineer. He earned a B.S. in Civil Engineering from North Carolina Agricultural & Technical State University, a Master of Engineering Management from Kansas State University, and a Ph.D. in Public Administration from the University of Kansas.

Bernd Heid

Senior Managing Partner, McKinsey

Bernd Heid is a Senior Partner with McKinsey & Company and is based in Cologne, Germany. Bernd joined the firm in 2000 and is the global leader of the McKinsey Hydrogen Service Line, where he has led numerous projects along the full hydrogen value chain. He leads McKinsey's work on the partnership with the Hydrogen Council, where he co-authored, among others, the "Hydrogen Scaling-up report", the "Cost Roadmap", and the "Hydrogen Investment Tracker" and also leads the firm's Future of Mobility collaboration with the World Economic Forum. In addition, he is a member of the Leadership group of McKinsey's Sustainability Practice leading McKinsey Platform for Advanced Climate Technologies globally. Bernd holds a Master's degree in mechanical engineering and studied at the RWTH Aachen and the Massachusetts Institute of Technology as well as holds a Master of Business Administration from Northwestern University, Kellogg School of Management.

Alex Klaessig

Senior Director, IHS Markit Hydrogen and Renewable Gas Forum

Alex Klaessig is a Senior Director of the IHS Markit Hydrogen and Renewable Gas Forum. Mr. Klaessig researches the intersection of energy, economics, and environment; with a focus on hydrogen and decarbonization. Mr. Klaessig also has a decade of experience studying the impact of environmental regulation on the electric power sector for IHS Markit's North America power market practice. Previously, Mr. Klaessig worked as a consultant at Abt Associates. He modeled the economics proposed rulemakings and supported the US Environmental Protection Agency's Office of Compliance. Before consulting, Mr. Klaessig worked at the US Environmental Protection Agency. He holds a BS in Chemical Physics from the University of Delaware and an MPP in Energy Policy from American University.

Sunita Satyapal

Director, Hydrogen and Fuel Cell Technologies Office

Dr. Sunita Satyapal is the Director for the U.S. Department of Energy's (DOE's) Hydrogen and Fuel Cell Technologies Office within the Office of Energy Efficiency and Renewable Energy and Program coordinator for the DOE Hydrogen Program. She is responsible for $150 million per year in hydrogen and fuel cell research, development, demonstration, and deployment activities. She has two and a half decades of experience across industry, academia, and government, including at United Technologies managing research and business development, and as a visiting professor. She has served as the Chair – is currently the co-Chair – of the International Partnership for Hydrogen and Fuel Cells in the Economy, a partnership among over 20 countries to accelerate progress in hydrogen, and co-leads hydrogen efforts within the Clean Energy Ministerial and Mission Innovation. She received her Ph.D. from Columbia University and did postdoctoral work in Applied and Engineering Physics at Cornell University. She has numerous publications, including in Scientific American, 10 patents, and a number of recognitions including a Presidential Rank Award.

John T. Litynski

Deputy Director for Advanced Fossil Technology Systems, Office of Fossil Energy, U.S. Department of Energy

John currently serves as the Deputy Director for Advanced Fossil Technology Systems in the Department of Energy's Office of Fossil Energy. He previously served as the Program Manager for Carbon Capture at Department of Energy, the Technology Manager for Carbon Sequestration at the National Energy Technology Laboratory and as a senior team lead on environmental compliance and assessment with the U.S Army. He has over 20 years of experience working on environmental compliance and technology development for the energy industry and Department of Defense. He received his B.S. in Civil Engineering from Virginia Polytechnic Institute and State University and M.S. from Johns Hopkins University in Environmental Engineering and Science. Read more about John T. Litynski.

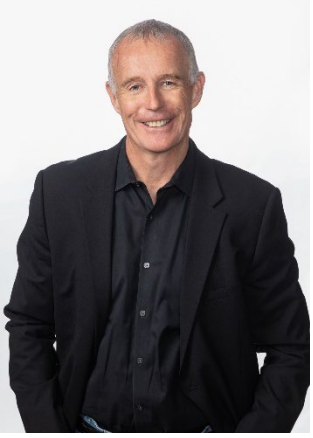
Representative Melissa Ballard

Representative for House District 20, Utah House of Representatives

She serves on the National Advisory Board for Western States Hydrogen Alliance and worked extensively across state lines to connect hydrogen producers and manufacturers with consumers. She is the Co-Founder of the Salt Lake CAP Head Start Advisory Board supporting hundreds of at-risk children whose families live below the poverty level. She has served as a volunteer and organizer for Utah schools, Boy Scouts of America for ten years, and lectured extensively for the Utah Music Teachers Association. She has been the recipient of the Heart and Hand Award in 2007.

In 2018, Melissa was elected to serve as the Representative for House District 20 in the Utah House of Representatives. During her time in the Utah House, Melissa has served on the Higher Education Appropriations Committee, Public Education Committee, Transportation Committee, Chair of the Utah Marriage Council, and the Utah Education Commission. She has been a strong advocate and sponsor of legislation on education funding transparency, government efficiencies, opening up hydrogen as an energy in Utah, water usage, telehealth, Legacy Highway, and recognizing women in Utah as the first to vote in the entire nation.

Mike Hopkins



Mike Hopkins is an entrepreneurial cleantech CEO and thought leader in the fields of energy transition, energy storage and hydrogen.

He currently leads Bakken Energy, a clean energy infrastructure company working to transform the energy industry in North Dakota.

Prior to becoming CEO of Bakken Energy, Mike served as CEO of Ice Energy, a pioneering thermal energy storage business that now operates as Thule Energy Storage.

Before leading Ice Energy, Mike practiced law for 18 years as a partner with Bennett Jones LLP, a preeminent Canadian law firm recognized internationally as a leader in the fields of energy and climate change. He helped his clients successfully develop and finance over $12 billion of power projects in the US, Canada, Australia, and the UK.

Mike sits on various for profit and not-for-profit boards, including the Board of Plus Power, a leading battery storage developer, Nelumbo, a cutting edge nanotechnology company and the Committee for

Alicia Corbell

Dean, School of Energy, San Juan College

Alicia Corbell joined San Juan College in 2009 bringing with her an understanding of industry expectations and the opportunities that result from strong collaborations and partnerships. Ms. Corbell has served San Juan College in a variety of roles and is currently the Dean of the School of Energy. Under her guidance, the School was named by Governor Lujan-Grisham as the state's Center for Excellence for Renewable Energy and Sustainability. In addition to increasing enrollment, augmenting programs, and expanding corporate training, she continues to build solid alliances based upon the core strengths of the School. In addition to San Juan College, Dean Corbell sits on the Executive Board of Four Corners Economic Development and is the Chief Executive Officer of Four Corners Innovations. Her resume includes employment with the Federal Reserve Bank as well as a successful career at the Williams Companies.

Mike Lewis

Senior Researcher, Austin Center for Electromechanics, University of Texas

Michael Lewis is a senior researcher at the University of Texas at Austin's Center for Electromechanics with over 20 years of experience in advanced research and technology development with a focus on alternative fuels and renewable energy for transportation and stationary power applications, including hydrogen power and energy systems. His team has developed, built, and tested fuel cell hybrid vehicles ranging from small utility trucks to transit buses, to medium and heavy duty trucks. Beyond vehicles, his team has also investigated materials based hydrogen generation technologies, alternative storage vessel designs, and the use of linear motor driven compressors and expanders for hydrogen fueling. Mr. Lewis is currently leading UT's efforts on the DOE H2@Scale in Texas award that will demonstrate renewable pathways for hydrogen production and enable cost effective hydrogen for transportation and industrial applications. In addition, this project will also study the opportunities for a hydrogen energy economy in Texas and the Gulf Coast region.

CJ Stewart

Crow Tribal Member

CJ is a Crow Tribal member, Member of the Big Lodge Clan and Child of the Greasy Mouth Clan. Currently serves as the Crow Nation Energy Director. Worked in his private practice as an Energy Consultant for Indian Energy Development and Infrastructure, going on 5 years as a Crow Tribal entrepreneur. He is also a Board Member and Co-Founder of the National Tribal Energy Association, or NTEA. CJ Stewart served 2 terms as a Senator for the Crow Legislative Branch. There, he served as Chairman of the Natural Resource & Infrastructure Development Committees for 8 years, through 2015. He was instrumental in the passage of Coal Development Deals, with Cloud Peak Energy for Big Metal and with Westmoreland Coal for Tract 1. After serving on the Crow Nation Legislature, CJ served as the Crow Nation Energy Advisor & Legislative Liaison in 2016.

CJ was previously appointed to serve on Congressman Ryan Zinke's Natural Resource Advisory Committee for the 114th Congress. He was later voted by the Natural Resource Advisory Committee to serve as the Vice Chairman in 2014. In 2013 CJ Stewart was the First Native American to be appointed on the Montana Coal Board, by Governor Steve Bullock. There he served as Vice Chairman.

Sanjay Shrestha

Sanjay Shrestha joined Plug Power as Chief Strategy Officer in 2019. Prior to joining Plug Power, Mr. Shrestha served as the CIO of a global solar IPP and President Sky Capital Americas since 2015. Under his leadership, Sky Capital America built and acquired over 100MW of operating solar assets and secured pipeline over 100MW. He also sourced various types of financing solutions to support this growth including project debt, construction equity and long-term equity. He brings almost two decades of experience in the broader clean tech sector to our team. Before global solar IPP, he led the renewables investment banking effort at FBR Capital markets. During 2014, and under his leadership, the firm was ranked among the top renewable energy underwriters in the U.S.

Danielle Merfeld

Vice President and Chief Technology Officer, GE Renewable Energy

As Chief Technology Officer of GE Renewable Energy, Danielle leads technical efforts to develop differentiated products and services across the broadest renewable energy portfolio in the industry, including onshore wind, offshore wind, solar PV, batteries, hydro, and grid solutions. She also champions sustainability efforts across the business and serves as co-leader of the GE Women's Network. She was elected to the National Academy of Engineering in 2021.

Danielle received her B.S. degree in Electrical Engineering from the University of Notre Dame, and Ph.D. in Electrical Engineering from Northwestern University. Danielle is on the Board of Trustees at the University of Notre Dame and serves on the boards of Texas A&M University's Smart Grid Center and Advanced Energy Economy. Danielle is also an Ambassador to the Clean Energy, Education and Empowerment (C3E) initiative representing the United States.

Perry Babb

CEO & Chairman, KeyState

Mr. Babb has 40 years of business development experience, having established 3 successful companies, and 3 NGO's, encompassing work in the USA and 13 countries.

After the collapse of Soviet Communism and the catastrophe in Eastern Europe, Perry founded and directed an international aid, missions and economic development organization, Global Strategic Alliance, which for the next 20 years assisted doctors and hospitals, built children's homes, engaged in small business training and development, judicial reform, public policy development and leadership training. Strategic analysis and problem solving stills were develop during these hard years.

In 20O5, Mr. Babb formed Keystone Business Support which grew to include a graphics design firm, construction company and property management company.

As the Shale Gas Revolution shifted gears, Mr. Babb Co-Founder Fleet Energy America, Inc. to develop downstream uses for natural gas, including CNG and LNG production and fueling infrastructure and was an early advocate of renewable natural gas.

Neri Askland

Vice President, Development and Production International, Equinor

Neri Askland took up the position of Vice President in DPI in 2018 (Development and Production International). He came from the position of Vice president Middle East and Country Manager UAE, which he held from 2010, and prior to that he has had several senior positions in Project and Business Development in the company.

Mr. Askland holds an MBA from BI in Norway and NTU in Singapore. He joined Equinor ASA in 1997, prior to that he worked 10 years in the contracting industry (Kvaerner, Fabricom and Aker). He has extensive project and business experience from a range of positions in the international portfolio, which have included expat assignments in UAE, Venezuela, Iran, Tanzania, and US.

Sonal Jessel

Director of Policy, WE Act for Environmental Justice

Sonal Jessel is the Director of Policy at WE ACT for Environmental Justice. She is responsible for advancing the organization's policy agenda at the local, state, and national levels, in addition to leading our New York City policy initiatives and the Northern Manhattan Climate Action (NMCA) Plan. Prior to joining WE ACT, she conducted research in energy insecurity, housing, and public health at Columbia University, and coordinated clinical trials at Weill Cornell Medicine. Sonal has an MPH in Population and Family Health with a concentration in Climate and Health from Columbia University's Mailman School of Public Health, and a BA in Organismal Biology from Pitzer College, in California. Her interest is focused on the intersection of environmental and social justice, health, and policy.

Monique Fridell

Originator and Deal Team Leader, Loan Programs Office and US Export Import Bank, US Department of Energy

Monique Fridell is a senior international banking transactor with diverse asset class experience in project finance, debt capital markets, and emerging markets venture capital/private equity. After working for international money center banks and a multilateral development bank, in recent years Monique has focused on execution of project financings in the renewable energy, power, O&G and commercial space sectors as an originator and deal team leader at the US Department of Energy's Loan Programs Office and US Export Import Bank. Monique holds an MBA and a BA from The American University in Washington, DC. She is Brazilian-American and is fluent in Portuguese, French and Spanish.

Jennifer Chang

Vice President and Senior Analyst, Moody's Global Project and Infrastructure Finance

Jennifer Chang is a Vice President – Senior Analyst in Moody's Global Project and Infrastructure Finance. She is a senior lead analyst for new power project finance and is also the Public Power Sector Lead. Her portfolio spans a range of infrastructure sectors including transportation, social infrastructure, and power projects in the Americas. Jennifer launched the Infrastructure in Emerging Markets' series, and is the author of several reports, including Hydrogen for the US Power Sector, PPPs, power and drillship transactions including special comments on airport concessions, express tolled lanes, credit enhancements and power project carbon transition.

Andrew Joynt

Senior Director, Global Infrastructure and Project Finance, Fitch Ratings

Andrew Joynt leads the North American Energy and Industrial team within Fitch Ratings' Global Infrastructure and Project Finance Group. Mr. Joynt and his team assess credit risk for project finance transactions in various sectors including renewables, traditional thermal power, natural gas liquefaction, innovative biotechnologies, and emerging battery applications. This includes numerous credit assessments as part of the DOE Loan Guarantee program over the past decade. He has published numerous rating criteria, special reports and sector outlooks related to the project finance industry. Mr. Joynt joined Fitch in 2011 and earned a BA in economics from Vanderbilt University.

Karl Nietvelt

Chief Analytical Officer, Infrastructure Ratings, S&P Global

Karl Nietvelt is Chief Analytical Officer for Infrastructure Ratings at S&P Global, overseeing analytical quality and research across global infrastructure, utility, and project finance ratings.

He has accumulated over 20 years of credit expertise in the field of power & gas, commodities, and transport infrastructure.

Karl also leads S&P Global Ratings' efforts on ESG in Ratings and the Energy Transition (authoring our most recent report The hydrogen-economy-hot-air-or-future-reality).

He is based in Paris and has a master's in finance and engineering degree.

Vishal Shah

CEO and Managing Partner of Hydrogen Technology Ventures

Vishal is CEO and Managing Partner of Hydrogen Technology Ventures. Working closely with our strategic partners Vishal leads HTV's investment and development efforts and advises our partners on strategy. Vishal spent his career focused on transformative businesses as analyst, investor, advisor, and operator. He founded and led the clean energy equity research practice for Lehman Brothers/Barclays Capital and was the top ranked equity analyst for 8 years. Vishal also founded and led the ESG investing practice for Deutsche Bank, well before ESG investing became mainstream and was a regular speaker at various sustainability roundtables and investment conferences. Prior to founding HTV, Vishal was a partner at Hudson Sustainable Investments, a private equity firm focused on clean energy sector.

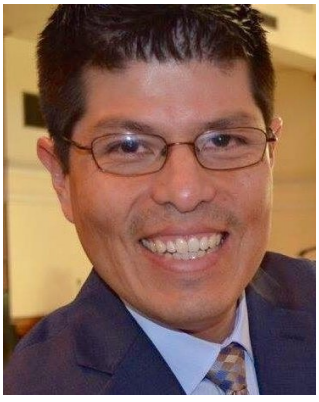
James West

Senior Managing Director, Evercore ISI

James West is a Senior Managing Director at Evercore ISI responsible for the research coverage of the Sustainable Technologies & Clean Energy and Oil Services, Equipment & Drilling industries consisting of detailed fundamental research on companies involved in Solar and Wind Power, Battery and Power Storage Technologies, Hydrogen and the drilling and production of oil and natural gas. Prior to joining Evercore ISI, Mr. West was a Managing Director and Senior Research Analyst at Barclays and Lehman Brothers for a combined 15 years. Mr. West is consistently top ranked in Institutional Investor. Prior to joining Lehman Brothers, Mr. West worked at Donaldson, Lufkin & Jenrette. Mr. West received his B.A. in Economics and a minor in History from the University of North Carolina at Chapel Hill.

Edward Rios

Hydrogen Economy and STEM Outreach, Office of Technology Transitions, U.S. Department of Energy



Edward Rios brings a combination of technical and financial expertise that gives him a unique perspective on how an innovative energy technology can be successfully deployed on a commercial scale, a perspective that meshes well with OTT's mission. He currently serves as OTT's hydrogen and nuclear sector lead where he engages with internal and external stakeholders making them aware of OTT's programs and resources. He also focuses on OTT's STEM outreach efforts by maintaining and promoting OTT's University Toolkit, a resource available to any U.S. college or university that wants to strengthen their relationship with DOE. Finally, he is working to engage the philanthropic/foundation community to find areas where DOE could partner with them to further invest in DOE's cleantech portfolio.

Brian Mahar

Stakeholder Engagement and Communications Lead, Loan Programs Office, U.S. Department of Energy

Brian leads stakeholder engagement and communications at the U.S. Department of Energy's Loan Programs Office (LPO) to generate greater awareness of the role LPO can play in financing transformative clean energy and transportation projects. Previously, he helped launch and build LPO's Outreach and Business Development efforts to attract new applicants for high impact energy infrastructure projects. Since 2013 he has led LPO public relations efforts to shine a light on the program's overall success.

Prior to joining LPO, Brian led the solar energy and energy efficiency practice at Tigercomm, a clean economy marketing and communications firm. Through his career, Brian has worked with a variety of energy sectors, including solar, wind, fuel cells, vehicle technologies, advanced fossil energy and nuclear power. He has worked with companies from start-ups to global corporations to leverage media relations and marketing to build markets and grow sales.

Brian began his career as a legislative and communications aide to U.S. Representative John B. Larson (CT) and the U.S. House Democratic Caucus. He has a Bachelor of Arts in Government from the College of William & Mary.

Jennifer States

Jennifer brings 20 years of renewable energy and clean tech experience in industry, non-profit, government and research environments. She is Vice President, Projects and Strategy for Washington Maritime Blue, a cluster organization for maritime innovation and sustainability. She leads collaborative efforts and Joint Innovation Projects as part of implementing the Blue Economy strategy for Washington State. She's also supported development of the new Blue Sky Maritime Coalition and serves on its Board of Directors. Previous experience includes DNV, Port of Port Angeles, Pacific Northwest National Laboratory with assignments at DOE, JUWI wind development company and serving as a City Councilor in Sequim, WA.

Marilyn Kray

Vice President, Nuclear Technology and Strategy, Exelon Generation

Marilyn Kray is responsible for leading major initiatives related to current and advanced reactor designs to create growth opportunities that leverage Exelon's nuclear operations competency. These initiatives include pursuing operational service agreements both domestically and internationally as well as engaging with advanced reactor developers to evaluate potential business opportunities and future deployment of the technology. She previously served as President of NuStart Energy Development, LLC an industry consortium formed to develop the process for preparing the Combined Operating License applications for the first new nuclear plants to be constructed in the US in over 30 years.

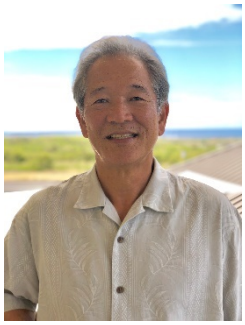
Talia Martin

Tribal DOE Program Director, Shoshone-Bannock Tribes

Talia is a Shoshone-Bannock Tribal member and serves as the as the Program Director of the Shoshone-Bannock Tribes Tribal Department of Energy, since 2015. She oversees the Energy Resources Program which is responsible for developing a tribal energy strategy and implementing renewable energy technologies for the Fort Hall Indian Reservation. As the Tribal DOE Director, she serves as a tribal liaison for government to government functions and the administrator of the Agreement in Principle, between the U.S. Department of Energy – Idaho Operations and the Shoshone-Bannock Tribes of Fort Hall, ID. She participates at the national, state, and local level as a technical representative on Shoshone-Bannock Tribes' interest in nuclear energy and legacy waste environmental clean-up issues. She is a member of the Nuclear Energy Tribal Working Group (NETWG) and Co-Chair of Tribal Issues on the States and Tribes Government Working Group (STGWG). She contributes to her community by participating as a board member on the DOE-EM Idaho Clean-up Project Citizens Advisory Board and as a Treasurer for the Chief Tahgee Elementary Academy School Board. Talia received a bachelor's degree in Chemistry and Master of Science in Pharmaceutical Chemistry, both from the University of Kansas (KU). Prior to KU, she attended Haskell Indian Nations University in 2003, where she received an Associate of Science in Natural Sciences.

Riley Saito

Energy Specialist, Research and Development, County of Hawaii



Riley has 20+ years working in the renewable energy sector and has spent the past 3 years in the role of Energy Specialist with the County of Hawaii, Research and Development. He has helped shaped Hawaii's clean energy future through legislation, policy, and business development initiatives. Riley's vision for the future is to develop a net-zero carbon-free economy and reduce dependence on fossil fuels.

Mason Murphy

Program Manager, Energy and Environmental Sciences Program, the Confederated Tribes of the Umatilla Indian Reservation

Mason Murphy is the Program Manager for the Energy and Environmental Sciences Program for the Confederated Tribes of to the protection, preservation, and perpetuation the Umatilla Indian Reservation (CTUIR), responsible for the oversight and implementation of policies and activities relating of CTUIR First Foods. Mason provides detailed analysis and recommendations regarding proposed energy projects and environmental activities or plans that have the potential to affect CTUIR First Foods. Mason leads the development of the CTUIR strategic energy plan and energy feasibility studies. Additionally, he supervises the development, review, and implementation of environmental clean-up, remediation, restoration, or mitigation planning documents. Prior to his role as Program Manager, Mason worked as a Scientist I for CTUIR and helped develop and implement quality systems for the Umatilla laboratory, resulting in National Environmental Laboratory Accreditation. He received his Bachelor of Science degree in biochemistry from the University of Oregon. He currently serves on the Pendleton school board and the Department of Energy Hanford Advisory Board.

Janice Lin

Founder and Chief Executive Officer, Strategen; Founder and President, Green Hydrogen Coalition

Janice Lin is the Founder and Chief Executive Officer of Strategen and the Founder and President of the Green Hydrogen Coalition. Janice has over 25 years of strategy experience and has distinguished herself as a leading clean energy changemaker and visionary. Janice co-founded and for a decade served as Executive Director of the California Energy Storage Alliance, where she helped create the world's most robust energy storage market. Janice is an internationally recognized thought leader in energy storage and grid decarbonization and won the 2019 Cleanie Award for Entrepreneur of the Year. In 2019 Janice launched the Green Hydrogen Coalition, an educational non-profit dedicated to facilitating policies and practices to advance the production and use of green hydrogen in all sectors where it will accelerate the transition to a carbon free energy system.

Scott Schoenfeld

General Manager, Fenix Marine Services

Scott Schoenfeld brings over 25 years of ports and maritime industry expertise to his current role as General Manager of Fenix Marine Services. Scott has performed as executive and operations management at eight container terminals around the globe in multifaceted capacities with various business models. Scott has managed large capital projects, executed port terminal operator acquisitions, and specializes in startup and turn around terminals. As COO of Port Newark Container Terminal, Scott executed a significant turnaround and thereafter oversaw substantial physical and financial growth. Scott began his ports career with Maersk and later APM Terminals, spending 10 years managing operations and terminals in the U.S., Europe, South East Asia, and North East Asia. Scott ended his time with APMT as operations manager and then general manager of the Yokohama, Japan facility, which boasts the highest crane productivity in the world. In addition, Scott was a Ports Investor for Babcock & Brown's North American infrastructure group, Pacific Rim Port's Director for CH2M Hill, and a Merchant Ship's Officer. Scott earned a BS in Business Administration from the California Maritime Academy and completed the 2 year APMT Magnum Executive Management program.

Martin Adams

General Manager and Chief Engineer, Los Angeles Department of Water and Power

Martin Adams is the General Manager and Chief Engineer of the Los Angeles Department of Water and Power, the nation's largest publicly-owned utility. He took over the leadership role in July 2019 after three years as the agency's Chief Operating Officer, overseeing the City's water and power systems.

He leads an organization of more than 11,000 employees delivering water and power to the 4 million residents of Los Angeles. Mr. Adams has over 36 years of experience with at LADWP, where he started in 1984 as an entry level engineer in the Water System, eventually leading that organization as the Senior Assistant General Manager of Water. During the course of his career, Mr. Adams worked throughout the Water System and was directly involved with the planning and implementation of major changes to water storage, conveyance, and treatment facilities to meet new water quality regulations. He has spent almost half of his career in system operations, including ten years as the Director of Water Operations in charge of the day-to-day operation and maintenance of the Los Angeles water delivery system, including the Los Angeles Aqueduct and other supply sources, pump stations, reservoirs, water treatment, and management of Water System properties.

Maryam Brown

President, Southern California Gas Company

Maryam Brown is president of Southern California Gas Company (SoCalGas), a Sempra regulated California utility.

Previously, Brown was vice president of federal government affairs for Sempra.

Prior to joining Sempra in 2016, Brown served as the senior energy and environment counsel for the Office of the Speaker of the U.S. House of Representatives. From 2011 to 2012, she was the energy chief counsel for the U.S. House Committee on Energy and Commerce. From 2010 to 2011, she was policy counsel for the U.S. Senate's Republican Policy Committee. Before that, she was manager of public policy and strategic planning for ConocoPhillips.

Brown serves on the board of directors of the California Chamber of Commerce and the California Business Roundtable. She holds both a bachelor's degree in mechanical engineering and a law degree (Order of the Coif) from Louisiana State University.

Craig Scott

Director of Advanced Technologies, Corporate Strategy & Planning, Toyota North America

Mr. Scott is Director of Advanced Technologies, Corporate Strategy & Planning at Toyota Motor North America. Within his role in the Advanced Technologies Group, Craig is responsible for planning and development for alternative fuel vehicle programs including the Toyota Mirai fuel cell vehicle and Project Portal, the world's first OEM-produced Class 8 heavy duty fuel cell truck. Previously he managed vehicle programs including Prius, Scion iQ EV, and the Toyota i-Road urban mobility vehicle. In addition to vehicle development, Craig also oversees all U.S. hydrogen infrastructure planning and implementation activities. He is responsible for the development of proprietary research work related to global energy issues and sustainable transportation systems. Prior to Toyota, Craig was an assistant portfolio manager with Pacific Investment Management Company in Newport Beach, California.

Mr. Scott has a BS in Finance and Japanese Studies and an MBA in Strategy and Finance from the University of Southern California.

Kate Gordon

Senior Advisor to the Secretary of Energy

Kate Gordon has spent the past two decades working at the intersection of climate change, energy policy, and economic development. Most recently, Gordon served under California Governor Gavin Newsom as the Director of the Governor's Office of Planning and Research and Senior Policy Advisor to the Governor on Climate. Trained as a community organizer, and later in law and regional economic development, her focus has long been on bringing diverse groups together to work toward a more sustainable, inclusive economy. Prior to being appointed OPR Director, Gordon was the founding director of the Risky Business Project, which focused on quantifying the economic impacts of climate change on key U.S. regions and sectors. Gordon has served in senior leadership positions at several nonpartisan think tanks including the Henry M. Paulson Institute, the Center for the Next Generation, the Center for American Progress, and the Center on Global Energy Policy at Columbia University. Gordon got her start on energy and climate issues working at the national Apollo Alliance, where she ultimately served as co-Executive Director until the merger with the Blue-Green Alliance in 2011. Under her leadership, the Apollo Alliance drafted key parts of the American Recovery and Reinvestment Act of 2009 (ARRA), including the Advanced Manufacturing Tax Credit, and partnered with the AFL-CIO to draft "just transition" proposals for several key energy and climate bills.

Anthony Rogers-Wright

Director of Environmental Justice, New York Lawyers for the Public Interest

Anthony Karefa Rogers-Wright serves as NYLPI's Director of Environmental Justice. In this capacity, he guides and coordinates the organization's EJ strategy, litigation, organizing and advocacy initiatives. Prior to joining NYLPI, Anthony was the Policy Coordinator and Green New Deal Policy Lead with the Climate Justice Alliance, where he assisted with developing and promulgating local, State, and federal organizing and policy strategy for the alliance's 74 grassroots, frontline-led organizations across the country.

A veteran of social justice campaigns, Anthony helped lead the effort to make the former Colorado Health Insurance Cooperative the first health insurance provider in the state's history to remove transgender exclusions from all their policies in 2012. He has acted as a policy advisor for numerous candidates for elected office including Senator Elizabeth Warren's presidential campaign in 2020, and Senator Bernie Sanders's presidential campaigns in 2020 and 2016 when he represented the campaign during testimony to the DNC Platform Committee. Anthony was selected as one of the Grist.org "50 Environmentalists You'll Be Talking About" in 2016.

Anthony has written numerous articles discussing the axiomatic nexus of the climate crisis and racial injustice and has spoken on the subject at universities throughout the U.S. and in Europe. Anthony serves on the Board of Directors of Friends of the Earth, Backbone Campaign, and Center for Sustainable Economy, as well as the Advisory Committee for Evergreen Action, and is blessed to be the father of his energetic and very loquacious 6-year-old son, Zahir Cielo (aka "Bean").

He received his B.A. in Environmental Science and Policy, and his master's degree in Community Development, Environmental Science, and Public Policy from Clark University in Worcester, MA.

Rachel Fakhry

Senior Policy Analyst, Natural Resources Defense Council

Rachel Fakhry is a senior policy analyst with the Natural Resources Defense Council in Washington, DC. Her work is focused on analyzing and advocating for federal and state deep decarbonization pathways and analyzing the role of green hydrogen as a vehicle to achieving climate targets. She also works on analyzing the impacts of federal environmental regulations and designing next generation federal carbon pollution limits on existing and new power plants. She leads NRDC's hydrogen work and engages with international and domestic stakeholders on designing the policy and regulatory frameworks that would both leverage the technology's potential to support the deep decarbonization of the economy and internalize the guardrails that are critical to avoid unintended consequences from an overeager switch to hydrogen. Previously, Fakhry worked on supporting strong federal energy efficiency policies and defending the U.S. Department of Energy's clean energy budget. She holds a bachelor's degree in Civil and Environmental Engineering from the American University of Beirut and a master's degree in Energy and Environmental Policy from Stanford University.