

2021 Accessible Science Panel Discussion

AGU 2021 Fall Meeting – New Orleans

Monday, 13 December – 9:15 am – 10:45 am CT

Convention Center – Great Hall, First Floor – Prow Main Stage

Join Randy Fiser, AGU CEO, and Peter Schlosser, Vice President and Vice Provost of the Julie Ann Wrigley Global Futures Laboratory at Arizona State University and Chair of the AGU Development Board, and corporate leaders, and scientists to discuss and explore environmental issues (including wildfires, hurricanes, etc.) and how Earth and space scientists can work together with local communities and partners to create innovative solutions with global impact.

Panelists

- **Peter Schlosser, PhD** – Vice President and Vice Provost, Julie Ann Wrigley Global Futures Laboratory at Arizona State University; Chair, AGU Development Board
- **Laney Chouest, MD** – Edison Chouest Company; Curious Person
- **Calvin Mackie, PhD** – Founder, STEM NOLA; Mentor; Entrepreneur
- **Vernon Morris, PhD** – Director & Professor School of Mathematical & Natural Sciences Arizona State University; Senior Sustainability Scientist at Julie Ann Wrigley Global Institute of Sustainability at Arizona State University; Member, AGU Diversity and Inclusion Advisory Committee
- **Raha Hakimdavar, PhD** – Director of Space Sciences, Ball Aerospace
- **Robert Weiss, Dr. rer. nat.** – Professor of Natural Hazards, Virginia Tech

Panelist Biographies

Peter Schlosser, PhD – Vice President and Vice Provost, Julie Ann Wrigley Global Futures Laboratory at Arizona State University; Chair, AGU Development Board



Peter Schlosser is the vice president and vice provost of the Julie Ann Wrigley Global Futures Laboratory at Arizona State University. He is the University Professor of Global Futures and holds joint appointments in the School of Sustainability, the School of Earth and Space Exploration in the College of Liberal Arts and Sciences, and the School of Sustainable Engineering and the Built Environment in the Ira A. Fulton Schools of Engineering. The laboratory has been launched to harness the innovative capacity of academia and develop options for sound management of the planet. Professor Schlosser joined ASU in 2018.

Professor Schlosser is one of the world's leading earth scientists, with expertise in the Earth's hydrosphere and how humans affect the

planet's natural state. He comes to ASU from Columbia University where he was the Maurice Ewing and J. Lamar Worzel Professor of Geophysics and Chair of the Department of Earth and Environmental Engineering, Professor of Earth and Environmental Sciences, and the deputy director and director of research at the Earth Institute. He also was a member and the founding chair of the Earth Institute faculty and a member of the senior staff at the Lamont-Doherty Earth Observatory. His prior positions included a professorship at the University of Heidelberg and a visiting professorship at the University of Washington-Seattle.

His research interests include studies of water movement and its variability in natural systems (oceans, lakes, rivers, groundwater) using natural and anthropogenic trace substances and isotopes as 'dyes' or as 'radioactive clocks.' He also studies ocean/atmosphere gas exchange; reconstruction of continental paleotemperature records using groundwater as archive; anthropogenic impact on natural systems and sustainable development as academic discipline. His research adds to the basic understanding of ocean circulation and the ocean's role in climate. The same principles are used to investigate groundwater flow in shallow and deep aquifers, providing results that are relevant for environmental risk and impact studies. He has published more than 180 articles in leading journals.

He is a member of the German National Academy of Sciences, an elected fellow of the American Association for the Advancement of Sciences, the American Geophysical Union, and the Explorers Club.

Laney Chouest, MD – Edison Chouest Company; Curious Person



Dr Laney Chouest is a former family practitioner who worked in his family business full time for 25 years. The Edison Chouest Offshore company in Galliano, LA is known to many AGU members as the owner-operator of the deep submergence support ship, Laney Chouest, that supported USN submersibles Sea Cliff and Turtle in the 80's. The NSF icebreakers Palmer and Gould are additional ships that with which Dr Chouest was involved. He built NOLA Motorsports Park and continues his interests in science and STEM today.

Calvin Mackie, PhD – Founder, STEM NOLA; Mentor; Entrepreneur



Dr. Calvin Mackie is an award-winning mentor, inventor, author, former engineering professor, internationally renowned speaker, and successful entrepreneur. His message as a mentor, author, speaker, and entrepreneur continues to transcend race, gender, ethnicity, religion, and time. A lifelong resident of New Orleans, Dr. Mackie graduated Morehouse College earning a degree in Mathematics in 1990, graduating Magna Cum Laude and a member of the prestigious Phi Beta Kappa National Honor Society. He was simultaneously awarded a Bachelor's degree in mechanical engineering from

Georgia Tech, where he subsequently earned his Master's and Ph.D. in Mechanical Engineering in 1996. Following graduation, he joined the faculty at Tulane University, where he enjoyed a respected academic career for twelve years, before refocusing his career on entrepreneurship, consulting and professional speaking.

Mackie has won numerous awards including the 2003 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring in a White House ceremony. In 2013, Dr. Mackie was awarded the highest honor bestowed upon a Morehouse College graduate, A Candle in the Dark's "Bennie" Award for his many academic, professional, and entrepreneurial achievements. Dr. Calvin Mackie received the 2019 Congressional Black Caucus Foundation Board's Chair (CBCF) Phoenix Award. The Phoenix Award is the highest honor presented by CBCF. It recognizes individuals whose extraordinary achievements strengthen communities and improve the lives of individuals and families, nationally and globally.

Following the catastrophic Hurricanes Katrina and Rita in 2005, former Louisiana Governor Kathleen Blanco appointed Dr. Mackie to the thirty-three-member board of the Louisiana Recovery Authority (LRA). In 2009, then Louisiana Lt. Governor Mitch Landrieu appointed Dr. Mackie to the Louisiana Council on the Social Status of Black Boys and Black Men. Recently, Louisiana Governor John Bel Edwards appointed Mackie to the Coastal Protection and Restoration Authority Board (CPRA).

In 2014, Dr. Mackie founded STEM NOLA, a non-profit organization created to expose, inspire and engage communities in the opportunities in Science, Technology, Engineering and Mathematics (STEM). To date, STEM NOLA has engaged over 50,000 K-12 students in hands-on project-based STEM activities.

In addition to STEM NOLA, Mackie serves as the President and CEO of the Channel ZerO Group LLC, an educational and professional development consulting company he founded in 1992.

Dr. Mackie's is the author of two award-winning books: *A View from the Roof: Lessons for Life and Business* and *Grandma's Hands: Cherished Moments of Faith and Wisdom*. Dr. Mackie is a devoted husband to his wife, Tracy, and father to his two sons, Myles Ahmad and Mason Amir.

Vernon Morris, PhD – Director & Professor School of Mathematical & Natural Sciences Arizona State University; Senior Sustainability Scientist at Julie Ann Wrigley Global Institute of Sustainability at Arizona State University; Member, AGU Diversity and Inclusion Advisory Committee



Dr. Morris joined Arizona State University as Professor of Chemistry and Environmental Sciences and Director of the School of Mathematical and Natural Sciences at the New College of Interdisciplinary Arts and Sciences in July 2020.

Previously, Dr. Morris was a Professor in the Department of Chemistry and Director of the Atmospheric Sciences Program at Howard University. He was the Principal Investigator and Founding Director of the NOAA Cooperative Science Center in Atmospheric Sciences and Meteorology (NCAS-M). This multidisciplinary research and education organization is a thirteen-member academic research consortium that NCAS-M partners with NOAA's National Weather Service (NWS), the National Satellite and Environmental Data Service (NESDIS), and Oceanic and Atmospheric Research

(OAR) to advance scientific knowledge about the world's atmosphere and societal responses to weather, climate, and air quality phenomena.

Dr. Morris also founded the HU Graduate Program in Atmospheric Sciences (HUPAS). HUPAS is the first PhD-degree granting Atmospheric Sciences program at any minority-serving institution and is a national leader in the production of minority PhDs in its field. Under his guidance, over 50% of the African American and 30% of the Hispanic American PhDs in Atmospheric Sciences produced from 2006 to 2018 in the United States graduated from this program. 97% of the program's alumni are working in their respective fields across federal agencies, the private sector, and academia.

Dr. Morris' research focuses on the chemical evolution of atmospheric particulate during transport and residence times in the lower troposphere and the implications to aerobiology, climate, and cloud processes. He has served as Chief Scientist for eleven trans-Atlantic science expeditions (the AERosols and Ocean Science Expeditions – AEROSE) aboard the National Oceanic and Atmospheric Administration (NOAA) class-1 research vessel, the Ronald H. Brown. Each time he led an international team of scientists in a multidisciplinary study of the influences and life cycle of atmospheric particles emitted from the Saharan Desert on the regional atmosphere and ocean. The AEROSE data represent the most extensive set of in situ observations of Saharan Air Layer in the Tropical Atlantic. These data have been used for improved satellite retrievals, data assimilation for hurricane and tropical storm forecasts, validation of NOAA, DoD, and European numerical weather prediction models, and improved parameterizations for global forecasts.

Beginning with an NSF CAREER award in 1997, Dr. Morris has raised over \$60M in research funding as principal investigator. He has contributed to an additional \$30M in awards as co-

principal investigator, coordinated the establishment of memoranda of understanding with nine academic and research institutions in six different countries in Africa and Southeast Asia, and helped guide the success of multiple federally-funded research centers.

Dr. Morris is passionate about broadening the participation of underrepresented groups in science, technology, engineering, and mathematics (STEM). He has guided the research for more than 150 students at the graduate, undergraduate, and high school levels. His successful hands-on outreach programs and informal science education/exposure projects have reached over 50,000 students worldwide. Among the most notable are the network of high school weather camps (<http://ncas.howard.edu/outreach-programs/weather-camp/>), that managed camps in Puerto Rico, Washington, D.C., Jackson, Mississippi, and El Paso, Texas for eighteen years and provided nearly 800 students from underserved populations entry into career opportunities in atmospheric sciences.

While in Washington, DC, Dr. Morris sponsored a series of “Community Science Fests”. This program is a model for bringing science to communities or subpopulations that are not traditionally exposed to such opportunities. Engaging and immersive hands-on activities designed to show students from elementary school through high school are conducted in a variety of settings. Most often, these events are brought to the community of the students comprising the audience. The events are open but the venues are selected to ensure that underprivileged children have full and direct access to science, that their parents have access to scholarship and program information for their children, and that linkages are provided for return events, open forums, tutoring, and academic reinforcement. He has also conducted these programs in Brazil, Barbados, Uruguay, the Philippines, Ethiopia, and Sudan.

Dr. Morris has won numerous academic and scientific honors and awards including being recognized as one of the 50 Most Influential Blacks in Science and Technology in 2011, inducted as a History Maker in Science in 2012, winning the NOBCCHE Henry Cecil McBay Outstanding Teacher Award (2012), becoming a Fulbright Specialist Award (2013), and in 2016 being elected a Fellow of the American Meteorological Society. He has served on a variety of boards and councils and currently serves on the EPA Clean Air Act Advisory Committee, NSF Committee on Equal Opportunities in Science and Engineering (CEOSE), the American Geophysical Union's Diversity and Inclusion Committee, the UCAR Board of Trustees, and the Council of the American Meteorological Society.

Raha Hakimdavar, PhD – Director of Space Sciences, Ball Aerospace



Raha Hakimdavar is the Director of Space Sciences at Ball Aerospace, where she leads strategic engagements with the government and broader space sciences community. Previously, Dr. Hakimdavar was a hydrologist and acting national program lead in remote sensing research at the U.S. Forest Service where, among other efforts, she implemented novel approaches to assess forest and aquatic resilience under a changing climate. She led research on the integration of Earth observations into the UN Sustainable Development Goals and coordinated Earth science research and applications across NASA during her Presidential Management Fellowship appointment at the NASA Goddard Space Flight Center. Hakimdavar served as a consultant for UN Environment and the World Bank in the Caribbean, where she notably helped establish

the first fully integrated hydro-meteorological network to support disaster risk reduction, agroforestry, and hydropower development in the South Department of Haiti.

Dr. Hakimdavar earned a B.S. in civil engineering from California State Polytechnic University and a M.S. and Ph.D. in civil engineering with an emphasis on hydrology from Columbia University. She was a visiting scholar at the Delft University of Technology in the Netherlands through a NAF-Fulbright research fellowship, was awarded an NSF IGERT Fellowship for interdisciplinary research, and won the KLM Airlines Sustainability and Innovation award for her work and research on hydro-ecology. Dr. Hakimdavar is an adjunct professor in water and climate science at Georgetown University's School of Foreign Service.

Robert Weiss, Dr. rer. nat. – Professor of Natural Hazards, Virginia Tech



Dr. Weiss' research is in the intersection between coastal geosciences and coastal engineering. For the past 15 years, he has been developing computer codes together with students and collaborators to study the impact of coastal hazards, such as tsunamis and coastal storms, on the physical environment at the coast. More recently, Dr. Weiss has become also interested in how climate-change impacts, such as sea-level changes, alter coastal systems and then study how the tsunami impact, for

example, evolve due to the changes in the coastal system. For this research, Dr Weiss employs Monte-Carlo type frameworks, requiring significant high performance computing resources.

Serving as the founding director of Virginia Tech's Center for Coastal Studies and the federally-funded graduate education program in Disaster Resilience and Risk Management, Dr. Weiss aims also at building interdisciplinary capacity to better understand the cascading impact of natural hazards and how they become disasters.