Views on the World Radiocommunication Conference 2023

Committee

Liese van Zee

Chair

LIESE VAN ZEE is a professor of astronomy at Indiana University, and has been on the IU Astronomy faculty since 2001. She received a B.S. in Astronomy and Chemistry from Haverford College in 1991, an M.S. in Astronomy in 1994, and a Ph.D. in Astronomy in 1996 from Cornell University. She was a Jansky Postdoctoral Fellow at NRAO-Socorro and a Research Associate at the Herzberg Institute of Astrophysics. Dr. van Zee is working on several projects related to understanding the links between elemental enrichment, gas distribution, and kinematics in star forming galaxies. Her work focuses on both the star formation history and the evolution of dwarf galaxies (including stellar population models and regulatory mechanisms for star formation) as well as the elemental enrichment of spiral and irregular galaxies.

Nathaniel Livesey

Vice Chair

NATHANIEL LIVESEY is an atmospheric scientist and the principal investigator (PI) for the Microwave Limb Sounder (MLS) instrument on the Earth Observing System Aura spacecraft at NASA’s Jet Propulsion Laboratory. His research interests are centered on space-based microwave observations of the chemistry, hydrology, and dynamics of Earth's atmosphere. Most of his work has focused on the MLS experiments both on Aura and the earlier Upper Atmosphere Research Satellite (UARS) launched in 1991. Before becoming Aura MLS PI, he was responsible for the MLS 'retrieval' algorithms. These convert the raw observations of the microwave signature of the atmosphere into measurements of atmospheric composition, temperature, humidity, and cloud ice. He received his B.A. and D.Phil. in physics from Oxford University, England, in 1991 and 1995, respectively.

Nancy L. Baker

Member

Dr. Baker is a meteorologist for the Naval Research Laboratory's Marine Meteorology Division.
Nancy L. Baker is a meteorologist and head of the Data Assimilation Section, Marine Meteorology Division of the Naval Research Laboratory (NRL). She has worked for the Navy since 1985, and has extensive experience with data assimilation, observation quality control, global and mesoscale reanalysis and data impact studies, and observation adjoint sensitivity. Her implementation of satellite radiance observations for the Navy's global forecast model (NOGAPS) using NRL's 3D-VAR analysis (NAVDAS) produced significantly improved forecast skill. Dr. Baker is well respected in the data assimilation community, and serves as the technical liaison to the Joint Center for Satellite Data Assimilation (JCSDA) for the Navy. Dr. Baker leads several projects as the principal investigator, and collaborates with JCSDA partners and its international counterparts. She has published numerous journal articles and technical papers. In 2000, she received her Ph.D. in meteorology from the Naval Postgraduate School.

Darrel Emerson

Member

Darrel Emerson is retired from three decades of work at the National Radio Astronomy Observatory (NRAO), where he was a radio astronomer and assistant director. Dr. Emerson served on CORF from 1996 to 2005, and also served on the NRC committee that authored the 2010 report, Spectrum Management for Science in the 21st Century. Through his position with NRAO he attended annual meetings of the International Radio Consultative Committee Study Group 7, the World Administrative Radio Conferences, and other conferences as a U.S. representative. He retired from NRAO in 2012, but from 2012 he has been a consultant to CORF, and is an adjunct Astronomer at Steward Observatory, University of Arizona in Tucson. He received his B.A. in Natural Science (Physics) from Oxford University in 1969, and a Ph.D. in Radio Astronomy from the University of Cambridge (UK) in 1973.

Dara Entekhabi

Member

DARA ENTEKHABI (NAE) is currently a professor with the Department of Civil and Environmental Engineering and the Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology. He is the Science Team lead for the National Aeronautics and Space Administration's Soil Moisture Active and Passive (SMAP) mission that was launched January 31, 2015. His research includes terrestrial remote sensing, data assimilation, and coupled land–atmosphere systems modeling. Prof. Entekhabi is a fellow of the American Meteorological Society, the American Geophysical Union and Institute of Electrical and Electronics Engineers. He received his B.S. (1983) and M.S. degrees (1985, 1988) in geography from Clark University, Worcester, MA and his Ph.D. degree (1990) in civil and environmental engineering from the Massachusetts Institute of Technology (MIT), Cambridge, MA. He is a member of the National Academy of Engineering. He has previously served on an Academies' committee.

Philip J. Erickson

Member

PHILIP J. ERICKSON is an assistant director at Haystack Observatory, a multidisciplinary radio and radar remote sensing observatory which is a subsidiary of the Massachusetts Institute of Technology and is engaged in radio astronomy, geodesy, and atmospheric science studies. He also holds the appointment of principal research scientist at MIT. Dr. Erickson has more than 30 years of studies and over 90 refereed publications in basic and applied space weather; atmospheric and ionospheric physics; radar and radio signal processing; nonlinear radiation belt particle acceleration; and radio science including scattering from plasma irregularities at VHF frequencies and above. He directs the Atmospheric and Geospace Sciences group at MIT Haystack, co-leads the extensive Haystack education and public outreach effort, and is the lead principal investigator for the U.S. National Science Foundation supported Millstone Hill Geospace Facility which includes a large aperture high power UHF ionospheric radar system. Dr. Erickson is the principal investigator for the forthcoming NASA funded Auroral Emission Radio Observer (AERO) cubesat, which will study the radio aurora at HF frequencies from a low altitude polar Earth orbit using an advanced vector electromagnetic sensor from MIT Lincoln Laboratory. Dr. Erickson received the Ph.D. in space plasma physics from Cornell University and has spent his entire professional career at MIT Haystack. He is a member of multiple science working groups for NASA's Van Allen Probes mission and has served as a chair for the Solar, Heliophysics, and Ionospheric working group at the Murchison Widefield Array large radio telescope, a co-editor for the forthcoming AGU Major Reference Volume on space weather, an associate editor for Journal of Geophysical Research-Space Physics, and a member of the scientific organizing committee for numerous conferences including NASA's Measurement Techniques in Solar and Space Physics (MTSSP) and the International Symposium on Equatorial Aeronomy. Dr. Erickson has been an organizer and chair for many sessions at both the International Radio Science Union and the American Geophysical Union. He is also on the scientific steering committee for the HamSCI citizen science collective, a national effort using the efforts of more than 700,000 US radio amateur efforts for professional research. He has not previously served on an Academies' committee.

Tomas E. Gergely

Member

Dr. Gergely served at NASA Headquarters as Deputy Director of NASA’s solar physics program (1985). From 1986 to 2012 he was Program Manager for Electromagnetic Spectrum Management at the National Science Foundation (NSF), where he was responsible for ensuring access of the U.S. scientific community to the radio spectrum, and in particular for the protection of radio astronomy observatories from interference. Dr. Gergely retired from the NSF in December 2012 but was retained as a part-time expert on radio spectrum issues until the end of December 2014. Since 2017 he has been a consultant to the Committee on Radio Frequencies (CORF) of the National Academies. He served on U.S. delegations to eight World Radiocommunication Conferences (WARC-87, WARC-92, WRC-95, WRC-97, WRC-00, WRC-03, WRC-07 and WRC-12. During the period 2000 - 2012 he chaired U.S. Working Party 7D, the group dealing with radio astronomy within the International Telecommunication Union (ITU). He received NSF’s Meritorious Service Award in 2000, for his work on the reallocation of the radio services in the 71-275 GHz range at WRC-00. He received the degree of Licenciado in Physics from the School of Exact and Natural Sciences of the Universidad de Buenos Aires (1967) and was awarded the Ph.D. in Astronomy from the University of Maryland (1974).

Kelsey Johnson

Member

KELSEY E. JOHNSON is a professor in the Department of Astronomy and the director of the Echols Scholars (honors) Program at the University of Virginia (UVA). She is also currently the president of the Astronomical Society of the Pacific (ASP), and director of the Dark Skies Bright Kids program (DSBK). Johnson’s research spans galaxy evolution, with a focus on ancient star formation in the universe, for which she utilizes observing facilities across the electromagnetic spectrum, but with a particular focus on long-wavelengths (radio, millimeter, submillimeter). Previous to her faculty appointment at UVA, Dr. Johnson was an NSF Fellow and a Hubble Fellow. In 2016 she was appointed by the White House Office of Science and Technology Policy to the Astronomy and Astrophysics Advisory Committee, and in 2017 she was elected to the board of the American Astronomical Society. Johnson’s research has received awards including the NSF CAREER Award, a Packard Fellowship, and an NSF Distinguished lectureship. Johnson has also won several teaching awards, including the "All University Teaching Award”, and the “Z-Society Distinguished Professor” award. She was elected to the UVA Academy of Teaching, and she was recently named as one of four “ACC Distinguished Professors” in the Atlantic Coast Conference of universities. She received an inaugural “Public Service” award from UVA for her work promoting science literacy through the Dark Skies Bright Kids program. She earned her Ph.D. in astrophysics from the University of Colorado.

Karen Masters

Member

Dr. Masters is an Associate Professor in Astronomy and Physics at Haverford College. In her research Prof. Masters seeks to use large surveys (both in optical and radio wavelengths) to understand how galaxies in our Universe form and evolve. She is a frequent 1.4 GHz/21cm line observer at the Green Bank Observatory, and has also been awarded time at JVLA and GMRT. She is the Project Scientist for the successful, Galaxy Zoo project (www.galaxyzoo.org) - one of the most productive citizen science projects in existence which crowdsources the morphology of galaxies. Dr Masters is also a spokesperson for the fourth phase of the Sloan Digital Sky Survey (SDSS-IV; www.sdss.org). Previously, Dr. Masters was on the faculty at Portsmouth University in the UK, where she was originally hired as a postdoc (2008), then promoted to assistant professor in 2014, and Associate Prof in 2015 before moving to Haverford in 2018. Her PhD is in Astronomy from Cornell University (2005), during which time she observed with both the Arecibo Radio Telescope abd Palomar 200inch (optical). Dr. Masters was the 2014 “Women of the Future” in Science (a UK based award) and also one of the BBC 100 Women of 2014. She is a member of the AAS (American Astronomical Society) Education Committee and Nominating Committee, and has served on the Royal Astronomical Society Patrick Moore and Annie Maunder Medals panel.

Mahta Moghaddam

Member

Dr. Mahta Moghaddam is the holder the Ming Hsieh Chair, Professor of Electrical and Computer Engineering, and Director of New Research Initiatives at the University of Southern California (USC) Viterbi School of Engineering. She is also the 2020 President of the IEEE Antennas and Propagation Society and the co-director of the USC Center for Sustainability Solutions. Dr. Moghaddam's research interests are in variety of topics related to applied electromagnetics, including the development of advanced radar systems for environmental sensing and subsurface characterization, software-defined radar, mixed-mode high resolution medical imaging techniques, and autonomous sensor webs for remote sensing data collection and validation. Each of these areas requires the development of state-of-the-art sensors as well as novel signal processing and physical models to characterize the sensors and their interaction with their intended environments. She has led numerous multi-disciplonary projects in these areas and has been a member of the science teams of several NASA missions. Dr. Moghaddam received the B.S. degree from the University of Kansas, Lawrence, in 1986 and the M.S. and Ph.D. degrees from the University of Illinois, Urbana-Champaign, in 1989 and 1991, respectively, all in electrical and computer engineering. She is a Fellow of IEEE and a member of the National Academy of Engineering.

Scott N. Paine

Member

SCOTT N. PAINE is an astrophysicist in the Radio and Geoastronomy division of the Smithsonian Astrophysical Observatory at the Center for Astrophysics | Harvard & Smithsonian in Cambridge, MA. He has been affiliated with the Submillimeter Array radio interferometer on Maunakea, Hawaii, since its original development and construction. His research interests include advancing instrumentation and techniques for radio astronomy, and measuring, understanding, and statistically characterizing radiative properties of the Earth's atmosphere having broad importance for optimizing astronomical observations, remote sensing, and modeling of the Earth's climate system. He earned his Ph.D. in physics from the Massachusetts Institute of Technology. He has not previously served on an Academies' committee.

Frank K. Schinzel

Member

FRANK K. SCHINZEL is an associate scientist at the National Radio Astronomy Observatory (NRAO) and adjunct professor at the University of New Mexico (UNM), Department of Physics & Astronomy. At the NRAO, Dr. Schinzel is a member of the telescope facing science support group in the division for VLA/VLBA Science Support. He has contributed to the development and execution of the Very Large Array (VLA) sky survey, particularly leading polarization calibration, science verification, and characterization of the S-band radio frequency interference environment. He is also primarily responsible for the scientific operation of the VLA low band system that consists of a 230 - 470 MHz and 54 - 86 MHz receive system, working with technical staff addressing instrumental issues, as well as supporting scientists who use the system. Starting in 2018, he is also the primary liaison between NRAO and UNM on an NSF funded project to integrate the Long Wavelength Array stations in New Mexico with the VLA at 76 MHz. His research interests include radio frequency instrumentation, the physics of relativistic outflows, and the nature of unidentified gamma-ray objects. Previously, Dr. Schinzel was a postdoctoral fellow at the University of New Mexico in the Department of Physics and Astronomy, where he supported commissioning of the first Long Wavelength Array (LWA) station and led construction of the second LWA station in New Mexico, while also supporting the NSF funded large aperture experiment to detect the dark ages. He earned his Ph.D. in natural sciences from the University of Cologne, Germany, for research conducted at the Max Planck Institute for Radio Astronomy. He served on various NSF and NASA scientific panels and is a member of the LWA time allocation committee, as well as member on a few NRAO internal committees. He has not previously served on an Academies' committee.

Gail Skofronick-Jackson

Member

Dr. Gail S. Jackson is Chief of the Mesoscale Atmospheric Processes and the project scientist for the Global Precipitation Measurement mission at NASA’s Goddard Space Flight Center. As the project scientist for the Global Precipitation Measurement (GPM) mission Dr. Jackson directs and coordinates all science team activities for GPM retrieval algorithms, ground validation, and both pure precipitation science and application science investigations. Dr. Jackson was a key developer and lead of the GPM falling snow algorithm. Dr. Jackson provides a critical link between the project engineers/mission operations and the scientists using data. She is a member of the American Meteorological Society, American Geophysical Union, and an Administrative Committee Member of the IEEE Geoscience and Remote Sensing Society. Dr. Jackson earned her B.S. at Florida State University and her Ph.D. in 1997 at the Georgia Institute of Technology in electrical engineering

Gregory Mack

Staff Officer