DATA AND SCIENCE FOR DECISION MAKING IN TRANSBOUNDARY WATERS IN LATIN AMERICA AND THE CARIBBEAN (LAC)

Building Capacity on Scientifically Robust Tools and Methodologies for IWRM in La Plata Basin: Data Access

First edition

Buenos Aires, Argentina

Panelists

Sean McCartney

Sean McCartney is a Senior Scientific Analyst working at NASA's Goddard Space Flight Center. He is currently supporting NASA's Applied Remote Sensing Training (ARSET) program. ARSET builds the skills to acquire and use NASA satellite and modeled data for decision support in Water Resources, Disasters, Health & Air Quality, and Land. Prior to his role with ARSET, Sean was the Food Security Coordinator for the NASA-wide Food Security Office and the Center Lead for the NASA DEVELOP National Program. He graduated with a B.A. in Geography from Humboldt State University and holds a M.S. in Geographic Information Science for Development and Environment from Clark University.

Venkat Lakshmi

Venkat graduated from University of Roorkee in 1987 with a Bachelor degree in Civil Engineering and a Doctorate in Civil and Environmental Engineering in 1996 from Princeton. He worked at NASA Goddard Space Flight Center 1996-1999 as a research scientist in the Laboratory for the Atmospheres.

His areas of research interest are catchment hydrology, satellite data validation and assimilation, field experiments, land-atmosphere interactions, satellite data downscaling, vadose zone and water resources.

He is currently the John L Newcomb Professor of Engineering in the Department of Engineering Systems and the Environment at the University of Virginia. He has served as Cox Visiting Professor at Stanford University 2006-2007 and 2015-2016 and Program Director for Hydrologic Sciences at the National Science Foundation (2017-2018).

Venkat is a fellow of the American Society of Civil Engineers (ASCE) and Geological Society of America (GSA) and he has over 160 peer-reviewed articles and 560 presentations and thesis supervisor for 25 graduate students. He is currently is serving as editor for Vadose Zone Journal and the founding editor-in-chief of Remote Sensing in Earth System Science (Springer Journals). He has served on the National Academies Panel for the Decadal Survey of Earth Observations from Space (NASA) and as chair of the planning committee for Groundwater Recharge and Flow: Approaches and Challenges for Monitoring and Modeling Using Remotely Sensed Data (NGA). He is currently serving as a member of the Water Science and Technology Board, National Academy of Sciences and member of the Earth Science Advisory Committee for NASA. He is the President-Elect of the Hydrology Section of the American Geophysical Union.

Perry Oddo

Perry Oddo is a research scientist with Science Systems and Applications Inc. (SSAI) at NASA's Goddard Space Flight Center, working at the intersection of data science, decision-making, and remote sensing. He joined Goddard's Hydrological Sciences Laboratory in 2017 after receiving a degree in Geosciences from Pennsylvania State University. While his research spans disciplines, he maintains a strong interest in applications that connect science to end-users. Past projects have included developing solutions for near real-time flood impact assessments and flood forecasting using deep learning algorithms. He is currently working to develop an International Water Strategy for the Applied Sciences Water Resources Program. This initiative is designed to help leverage the breadth of NASA's modeling and observation capabilities when dealing with complex, transboundary water issues.

John Bolten

John is Chief of the Hydrological Sciences Laboratory, NASA Goddard Space Flight Center, and he is serving as Associate Program Manager of Water Resources for the NASA Applied Sciences Program. He is also leading NASA's International Water Strategy. His research focuses on the application of satellite-based remote sensing and land surface hydrological modeling for improved ecological and water resource management. He is involved in several water resources management efforts addressing flood monitoring, flood damage assessment, and agriculture drought forecasting and mitigation.

John Eylander

Mr. Eylander is a research physical scientist with expertise in building and leading research and development programs that integrate weather, hydrology, and terrain data into decision support systems. His technical background is focused on weather, surface hydrology, land surface modeling, land-atmosphere interactions, high performance computing and satellite remote sensing. Mr. Eylander blends his technical knowledge and program management skills to develop and manage interdisciplinary research programs focused on solving national and international problems aimed at better accounting for weather, hydrology, and terrain processes in decision making and solving big-data challenges. Mr. Eylander leads numerous multi-organization programs, has a history of developing and transitioning integrated products supporting decision making for international diplomacy initiatives as well as supporting multi-service components of the Department of Defense. Mr. Eylander leads the US State Department sponsored Interagency Science and Applications Team, co-leads program development within ERDC's Military Hydrology Group, and has successfully directed multiple successful research efforts within ERDC including the Army Terrestrial Environmental Modeling and Intelligence System (ARTEMIS) and Total Watershed Decision Support (TWDS) initiatives. Sponsorship for Mr. Eylander's programs come from a variety of sources, including the US Army, US Air Force, Office of the Secretary of Defense, Army Small Business Innovative Research program office, NASA, US State Department, and other customer sponsored programs. Mr. Eylander's collaborators include researchers from across multiple US Government organizations, including NASA, NOAA, NSF, and USGS, multiple academic institutions private sector companies. John is a member of several national and international committees and collaborates internationally on technical aspects of land data assimilation and hydrologic modeling. Mr. Eylander is currently a Doctoral candidate at the South Dakota School of Mines and Technology focusing on assimilating global satellite observations of land surface temperature into a global land modeling system to improve land surface energy budget analyses.

Prior to joining ERDC, Mr. Eylander was the Chief Technology Officer for the formerly named Air Force Weather Agency (AFWA; now 557th Weather Wing) 16th Weather Squadron. At AFWA, Mr. Eylander was the lead technical expert for AFWA's numerical weather prediction system, leading system improvements, implementation and sustainment via an integrated team of military, civilian, and contractors. Mr. Eylander led all externally funded research and development conducted by other US Government Laboratories (NASA, NCAR) and contracted efforts, led the strategic development and integration of NASA's Land Information System into AFWA operations and led all improvements to AFWA's $200M cloud analysis and prediction system, the Cloud Depiction and Forecast System-Version II. Prior to working for AFWA, Mr. Eylander supported NASA Goddard Space Flight Center Sea Ice climate research team.

In his spare time, Mr. Eylander is active in the community volunteer for a number of organizations. He volunteers his time in local boards and committees supporting local conservation and K-12 education programs, has chaired the Grantham School Board and lead the fundraising for and development of the Grantham community Outdoor Classroom initiative.

Maíra Bezerra

Dr. Maíra Ometto Bezerra is an Ecohydrologist and Director of Healthy Watersheds at the Moore Center for Science with Conservation International (CI). Her work at CI explores integrated watershed management via the application of the Freshwater Health Index in basins worldwide as well as analysis of water-related benefits from nature-based solutions. Maíra holds a Ph.D. in Environmental Sciences from the University of Maryland, a MS in Environmental Sciences from the University of Sao Paulo and a BS in Agricultural Engineering from University of Sao Paulo. Maíra is originally from Brazil and is mother of two beautiful and strong toddlers.

Nima Pahlevan

Nima Pahlevan is a remote sensing scientist with Science Systems and Applications Inc. (SSAI) at the Terrestrial Information Systems Lab of NASA Goddard Space Flight Center (GSFC). Formerly trained in geospatial engineering and remote sensing, Pahlevan earned a Ph.D. in Imaging Science from the Rochester Institute of Technology (RIT). Prior to joining GSFC in 2014, Pahlevan finished a two-year postdoctoral term working on in situ and satellite-based ocean color measurements at the University of Massachusetts Boston. His main area of research lies within the aquatic remote sensing domain with a focus on algorithm developments, atmospheric correction, calibration/validation, impacts of climate variability on water resources, harmful algal blooms (HABs), and relevant applied science practices. Pahlevan is a member of Landsat, PACE, and Terra/Aqua/SNPP Science Teams, participates in GEO AquaWatch activities, and contributes to the Surface Biology Geology (SBG) pre-formulation studies.

Daniel Maciel

Daniel is an Environmental Engineering and PhD candidate working with remote sensing techniques focused on water quality parameters retrieval.

Ibrahim Mohammed

Dr. Ibrahim N Mohammed is a senior research scientist in the Hydrological Sciences Laboratory at Goddard Space Flight Center, National Aeronautics and Space Administration. Dr. Mohammed's research interests span physical and statistical hydrological modeling and their relationship with climate, land cover, as well as integrating and synthesizing water related science and engineering research activities to meet the growing demands for integrated professional data analyses. In addition, his research is engaged with the development of web-based decision support system tools to facilitate satellite earth observation data access. Studying human and natural systems interaction with their associated impacts on water production and the biodiversity of freshwater ecosystems meet Dr. Mohammed's research goals. Dr Mohammed joined the Experimental Program for Stimulating Competitive Research program at the University of Vermont as a Post-doctoral Associate after obtaining his Doctorate degree. Dr. Mohammed received M.S. and Ph.D. degrees in Civil and Environmental Engineering from Utah State University. Dr. Mohammed received his B.S. Honors from University of Khartoum, Sudan.

Pedro Coli

Pedro Coli is an engineer specialized in water and sanitation, with a focus on water resources simulation, climate change, water governance and development of decision support systems. He is an expert in the design of capacity building programs for institutional strengthening in water resources management and has experience in the development and implementation of models for hydrological simulation of watersheds.

Prior to joining RTI in 2019, Pedro worked at the Inter-American Development Bank, where he promoted the development and implementation of innovative models to support integrated watershed management in Latin America and the Caribbean. His experience in the region spans more than 15 countries and includes projects to strengthen water security in the face of current and future challenges related to water scarcity, growing demand, and climate change.