Science Societies

Soil Physics and Hydrology Division award winners

October 17, 2022

The Soil Physics and Hydrology Division of SSSA is pleased to announce the winners of two awards: The Robert Luxmoore Student Travel Award and the division's Early Career Award.

Robert Luxmoore Student Travel Award

The Robert Luxmoore Student Travel Award is designed to support travel of students to the SSSA Annual Meeting Annual Meeting. This award is supported by a generous bequest made by Robert Luxmoore to the Soil Physics Mentoring Fund, which has been established through the Agronomic Science Foundation and is administered by SSSA.

The 2022 winners of the award are Tiantian Zhou (University of California–Riverside) and Chihiro Naruke Dixon (Utah State University).

Tiantian Zhou

Tiantian Zhou

Tiantian Zhou is currently a fourth-year Ph.D. student in Environmental Sciences at the University of California–Riverside (UCR) under Professor Jirka Šim□nek. The topic of her Ph.D. research is the development and applications of the transport model for soil water stable isotopes considering fractionation. In this research, she adapted the HYDRUS-1D model, a numerical model widely used to simulate variably saturated water flow and solute transport in porous media, by including an option to simulate isotope fate and transport while accounting for evaporation fractionation. She also quantified the impacts of considering evaporation fractionation on parameter estimation and identification of the spatio-temporal origin of root water uptake. Before coming to UCR, she received her

bachelor's degree in Hydrology and Water Resources Engineering at the Taiyuan University of Technology (TUT) and her master's degree in Physical Geography at the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR, CAS).

Chihiro Naruke Dixon

Chihiro Naruke Dixon

Chihiro Naruke Dixon is a Ph.D. student in the Department of Plants, Soils and Climate at Utah State University (USU). She was born and raised in the Chiba prefecture in Japan and finished her master's degree in Soil Science at Mie University in Japan. She came to USU in 2017 as a graduate student to further pursue her study of agricultural and environmental processes using measurements and instrumentation focusing on hydraulic and thermal properties in soils under the supervision of Dr. Scott Jones. The project that she was initially involved in at USU was to develop and apply soil heat pulse sensors to soil property and process determination. This work was published in *Agricultural and Forest Meteorology* in 2021, and a second manuscript is in review. For the past two years, she has worked on her Ph.D. for a project that has allowed her to apply her understanding of the principles of soil physics and biometeorology coupled with soil water transport processes to optimize water delivery to roots based on the evapotranspirative demand. She is combining her experience with heat pulse sensors and adding water content and matric potential instrumentation to monitor the root zone in order to understand the

operating characteristics of the porous plant growth medium. She is also utilizing a numerical model (Hydrus 1D/2D) to optimize soil properties from measured data and to subsequently simulate water uptake based on plant root distribution and density, which changes over time. Using a numerical model, she can simulate the earth's gravitational influence and turn gravity off to assess the effects of weightlessness on water distribution and other processes. "I believe that one day an automated plant growth system like the one we are developing will travel to the moon and Mars, and future astronauts will enjoy harvesting fresh vegetables during space travel," she writes.

Early Career Award

Salini Sasidharan

Salini Sasidharan

Dr. Salini Sasidharan, Assistant Professor and Sustainable Groundwater Management Engineer within the Department of Biological & Ecological Engineering at Oregon State University, received the Early Career Award from SSSA's Soil Physics and Hydrology Division. Sasidharan is an emerging young scientist in the critical areas of environmental science and engineering and has great enthusiasm for working on multi-beneficial research that integrates the natural ecosystem, engineering, industry, and community. This includes groundwater quantity and quality management, sustainable irrigated agriculture, and resilient urban and rural water resource infrastructures. Her research focuses on various challenges of

multi-beneficial managed aquifer recharge (MAR), including vadose zone monitoring, water quantity, water quality (virus, bacteria, nitrate, and emerging contaminants), alternative water sources and recycling, clogging, engineering designs of the infrastructure, flow and contaminant transport numerical modeling, subsurface characterization for MAR site selection, and regulatory standards for sustainable groundwater management. In addition, Sasidharan currently serves as Chair for the Lower Umatilla Basin Groundwater Management Area, Oregon, and Social Media Editor for the *Soil Science Society of America Journal*.

More careers and education

Back to issue

Back to home
