USU to Lead $4M Collaborative Water Research Initiative
| College of Engineering

Matt Jensen

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News Release – LOGAN, UTAH, Sept. 27, 2017 – Utah State University hydrologists are revolutionizing the way scientific data is stored and shared among scientists around the globe.

Quick Read

• Hydrologists at USU will lead a $4 million NSF-funded project to improve an online system that helps scientists share water research data.

• The system, known as HydroShare, functions like a social media hub where researchers can share their latest scientific data and models. USU’s Dr. David Tarboton will lead the effort involving collaborators at nine other universities and institutions across the U.S.

• In the coming days, HydroShare will be used to archive flooding and precipitation data from Hurricanes Harvey and Irma.

USU’s Dr. David Tarboton will lead a $4 million National Science Foundation-funded collaborative effort aimed at improving HydroShare – an online database system that simplifies the storage and sharing of hydrological data and models.
USU's Dr. David Tarboton will lead a collaborative $4 million NSF-funded project aimed at improving HydroShare. (Matt Jensen/USU)

“HydroShare is an online system for the scientific community that allows us to easily and freely share products from our research,” said Tarboton, a professor of civil and environmental engineering and a leading hydrology expert who helped create HydroShare. “We’re interested in sharing not just the scientific publication summarizing a study, but also the data and models used to create that study.”

Tarboton says sharing scientific data helps researchers collaborate and improves the quality of data and scientific knowledge. Enhancing HydroShare’s capabilities, he added, will help hydrologists and a broad community of earth-science researchers transform data sharing techniques and accelerate the pace of discovery. Improvements to HydroShare include enhancements to data sharing tools and new features that enable its 1,000-plus users to develop their own unique apps to access HydroShare resources.

“HydroShare represents the latest thinking in collaborative hydrology research,” said Tarboton. “This program and its improved capabilities will serve a diverse community of researchers ranging from hydrologists and environmental engineers to aquatic ecologists.”

HydroShare will play an important role in understanding the devastating flooding events from Hurricanes Harvey and Irma. Tarboton and collaborators at The University of Texas at Austin will use HydroShare as a key resource for understanding how such large and sustained flooding and rainfall events occurred and how critical infrastructures should be designed to better withstand extreme weather events.
HydroShare allows earth-science researchers to upload and share data and models.

Tarboton and Dr. Shaowen Wang (University of Illinois) and Ray Idaszak (University of North Carolina at Chapel Hill) are the principal investigators overseeing three collaborative NSF grants totaling $4 million. USU's grant is for $2.76 million.

Wang's team will focus on innovating cyberGIS (geospatial information science and systems based on advanced computing and cyberinfrastructure) capabilities to advance geospatial big data and computing frontiers of the next-generation HydroShare.

Idaszak's team at UNC's Renaissance Computing Institute, known as RENCI, provides data management infrastructure and development expertise.

Other investigators include Jeff Horsburgh (USU), Tony Castronova and Martin Seul (Consortium of Universities for the Advancement of Hydrologic Science, Inc.) Jon Goodall (University of Virginia), Martyn Clark and David Gochis (National Center for Atmospheric Research), Alva Couch and Richard Hooper (Tufts University), Bart Nijssen and Christina Bandaragoda (University of Washington), Dan Ames (Brigham Young University), Yan Liu (U. of Illinois), Chris Calloway and Hong Yi (UNC RENCI) and Alisha Sarang-Sieminski (Olin College).

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