Title:

HydroShare: A Platform for Collaborative Data and Model Sharing in Hydrology

Abstract:

This presentation describes the HydroShare web based hydrologic information system operated by the Consortium of Universities for the Advancement of Hydrologic Science Inc. (CUAHSI). HydroShare users share and publish data and models in a variety of flexible formats, in order to make this information available in a citable, shareable and discoverable format for the advancement of hydrologic science. HydroShare includes a repository for data and models, and tools (web apps) that can act on content in HydroShare and save results back into the repository. This presentation will focus on the key capabilities of, and concepts behind HydroShare that support web based collaborative research that is open and enhances reproducibility and trust in research findings, through sharing of the data, models and scripts used to generate results. I will also describe work in progress to advance HydroShare using JupyterHub to provide flexible and documentable analyses and to serve as a gateway to high performance computing. For this workshop I will address the question of what I would like and why from a digital data resource and repository, giving my ideas about the need for a platform for collaboration and computation that integrates data storage, organization, discovery, and programmable actions through web applications (web apps) and that allows researchers to easily employ services beyond the desktop to make data storage and manipulation more reliable and scalable, while improving ability to collaborate and reproduce results.

Bio:

David Tarboton is a professor of Civil and Environmental Engineering, Utah Water Research Laboratory, Utah State University. His research focuses on advancing the capability for hydrologic prediction by developing models that take advantage of new information and process understanding enabled by new technology. He is principal investigator for the National Science Foundation project for the development of HydroShare, a collaborative environment for sharing hydrologic data and models operated by the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI). He has developed a number of models and software packages including the TauDEM hydrologic terrain analysis and channel network extraction package and Utah Energy Balance snowmelt model. He has been on the faculty at USU for 28 years where he teaches Hydrology and Geographic Information Systems in Water Resources.