Postdoctoral Research Opportunity: Modeling low-order aquatic systems and flow variability at watershed scales

We are excited to share a postdoctoral research opportunity to model and characterize streams and their associated dynamic flows. This competitive postdoctoral opportunity is with Oak Ridge Institute for Science and Education and is located at US Environmental Protection Agency’s Office of Research and Development in Cincinnati, Ohio. Application period ends at 3:00 PM ET on January 10th, 2020. Please share with those who may be interested. https://www.zintellect.com/Opportunity/Details/EPA-ORD-NERL-SED-2019-14

Overview
The EPA’s Office of Research and Development (ORD) in association with the Oak Ridge Institute for Science and Education (ORISE) announces a postdoctoral research opportunity collaborating with a team of EPA/ORD research scientists to model and characterize the spatial and temporal variability of surface water flows across multiple landscape settings in the U.S.

The extensive stream and interacting riparian network play an integral part in maintaining clean and plentiful water for aquatic ecosystems and human beneficial uses. Yet modeling streamflow across the network is difficult as variable factors including precipitation, physiography and contributing area change in time and space, and gaged data to calibrate and verify model response is often limited. Recent advancements in remote sensors, data processing capacities, and statistical approaches may allow for bridging past technological barriers to improve simulations of surface water flows. The improved model outputs advance both the underlying scientific understanding of hydrology as well as aquatic resource management by providing a baseline for mapping flow permanence across local, state, and regional-scale watersheds.

The focus of this research will be to apply ensemble watershed hydrological modeling approaches, in coordination with field and remotely sensed data, to improve surface flow estimates across multiple stream networks. A primary goal of the research is improved lateral and longitudinal mapping of flow permanence in low-order stream systems and associated riparian wetlands. The work will initially concentrate on selected watersheds within the conterminous United States where field and/or remotely sensed validation data are available.

The preferred candidate will have a Ph.D. and experience in hydrology, environmental engineering, environmental science, ecology, geography, geology, or a related discipline. S/he will have experience in (1) numerical catchment-scale rainfall-runoff models (e.g., TOPMODEL, HBV, FLEX-Topo, others) or a combination of rainfall-runoff models (e.g., using the MARRMoT toolbox or others); (2) GIS/remote-sensing software and applications; (3) watershed hydrology; and (4) scripting (e.g., R, Python, MATLAB) languages.

The candidate is expected to join our productive and driven research team of watershed hydrologists and systems ecologists for a one-year postdoctoral research appointment. The position is expected to be extended for up to a total of three years, contingent on sufficient advancement and Congressional funding.

This opportunity is open for US citizens, permanent residents, and foreign nationals residing in the US for at least 3 years. For application and position information:

Feel free to reach out with any questions: Dr. Jay Christensen (christensen.jay@epa.gov), Dr. Heather Golden (golden.heather@epa.gov), and/or Dr. Charles Lane (lane.charles@epa.gov).