GRADUATE OPPORTUNITIES IN HYDROLOGY!

How does water move through natural and agricultural landscapes?

What influences water and environmental quality across scales?

Can communities and technology connect to solve water quality problems?

Interested? Email Steve W. Lyon (lyon.248@osu.edu) Associate Professor SENR

We're growing!
Dr. Steve W. Lyon's lab at Ohio State University is recruiting MSc and PhD graduate students to join our team and investigate how working landscapes influence water resources across scales.

As population centers expand and become more interlaced with agrarian landscapes, ecosystems and the services they provide are pushed to the limits. The complexity and multitude of land-water interactions has (so far) limited our mechanistic understanding of agricultural intensification impacts on both water quality and quantity across scales. A lack of understanding limits our ability to sustainably manage both land and water resources. There is thus a need to identify the underlying physical processes and patterns determining how working landscapes and water interact.

What are we looking for?
We want highly motivated and enthusiastic candidates with an interest in join a diverse team targeting the intersection of observations and models to describe land-water interactions! Applicants should have a strong quantitative background in disciplines such as hydrology, earth/environmental sciences, agricultural/environmental engineering, or related fields.

POSTDOCTORAL POSITION ON LAND-WATER INTERACTIONS IN WORKING LANDSCAPES

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Motivation
As population centers expand and become more interlaced with agrarian landscapes, ecosystems and the services they provide are pushed to the limits. The complexity and multitude of land-water interactions has (so far) limited our mechanistic understanding of agricultural intensification impacts on both water quality and quantity across scales.

In connection with Dr. Steve W. Lyon's recent move to Ohio State University, this postdoctoral research position will investigate how changing landscapes (both natural and anthropogenic induced) influence water resources across scales. The primary focus area will be the working landscapes of Ohio where there is clear societal need for scientifically informed strategies to improve water quality and limit nutrient transport. The position will tackle this need head-on by utilizing multiple methods (e.g. hydrological tracers, novel technologies, physical models, remote sensing) for identification and representation of dominant hydrological processes under climate and development regimes.

Duties
The postdoctoral researcher will help develop and support collaborative research focusing on quantifying how water moves through fields and catchments in working landscapes. This involves a combination of coordinated field monitoring of water flow pathways (using both hydrometric monitoring and chemical tracers) and model development informed by real-world observations. As a key member of Dr. Lyon's newly established group at Ohio State University, there is flexibility in the research tasks and approaches. Central to success in this position is the willingness to take a leadership role in defining and implementing research across Ohio's agricultural lands. The postdoctoral researcher is expected work collaboratively in this exciting landscape drawing upon existing expertise and data while at the same time generating new observation platforms. This position offers great opportunity to lead research development, publish scientific output, grow your network, and gain experience in proposal writing!

Qualifications
This position needs a highly motivated candidate with an interest in the intersection of using observations and models to describe land-water interactions. Applicants should have a PhD in quantitative disciplines such as hydrology, earth/environmental sciences, agricultural/environmental engineering, or related fields. Previous experience in either instrumentation/water sampling or model development beyond the use of existing models is required. Excellent communication skills in English (both written and oral) are expected. The applicants are expected to have strong quantitative and programming skills (Matlab, R, Python or other programming languages) for data analysis, statistical exploration, and model implementation.

Location
The position is based in Wooster, Ohio at Ohio State University's Ohio Agricultural Research and Development Center (OARDC) working in the School of Environment and Natural Resources (SENR). The SENR seeks to create science-based knowledge and foster environmental sustainability through teaching, research and outreach. By integrating the natural and social sciences, SENR promotes discovery and leadership through a comprehensive approach to better understand and address environmental and natural resource challenges locally, regionally and globally. This directly connects to OARDC's mission to enhance the well-being of the people of Ohio, the nation and world through research on foods, agriculture, family and the environment.