



Thanks to the SNFS mobility grant out into the wide world

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Topics: Organisation & Staff

Four young researchers from the department SWW received an “Early Postdoc.Mobility fellowship” from the SNSF to broaden their scientific profile abroad: Mariane Schneider, Lena Mutzner, Omar Wani and Matthews Moy de Vitry. The four have already worked together as a team during their doctorate and have published, among other things, a review for the future of water management.

Mariane, what is your doctoral thesis about?

In sewage treatment plants, sensors are usually maintained regularly. Due to high sensor maintenance costs on-site wastewater treatment plants are mostly not monitored at all. In my doctoral thesis, I am looking for ways to derive meaningful information about the biological treatment process from unmaintained, inexpensive proxy sensors.

You have received an "SNSF Early Postdoc mobility" grant. What will you do with it?

I will continue to pursue the goal of my doctorate in Japan in a robotics and machine learning group at the University of Tokyo: To make small sewage treatment plants "autonomous". Changing the field will enable me to learn new methods for filtering out important information from inaccurate data and improving the process control of small sewage treatment plants, for example by making them more energy-efficient.

Lena, what research topic are you working on?

I am interested in innovative solutions for urban water management in cities, which face challenges such as more frequent droughts, floods and water stress. Urban stormwater for example can be rescued by direct groundwater recharge. However, urban stormwater can be contaminated. Especially, polar trace organic chemicals are of emerging concern. I will explore the risks associated with polar trace chemicals and how they affect the efficiency of biochar stormwater treatment systems for direct groundwater recharge in urban areas.

What do you do with your mobility grant from SNFS?

I will transfer to Stanford University to study water reuse applications. The water scarcity in California is driving innovation towards water smart cities. I am looking forward to the stimulating environment. Actually, we were supposed to leave in May. But at the moment we are still waiting for the borders to open.

Omar, what is your research area?

I did my doctoral research in the field of statistical hydrology, with a focus on precipitation-runoff processes. I was mainly interested in improving the accuracy and reliability of hydrological models. Now, in my postdoc, I will be working on the mathematical representation of geomorphological processes in river deltas. The project aims to identify sources of uncertainty and reduce them with the help of satellite and airborne observations.

How will you utilize your mobility contribution?

In the beginning I had difficulties writing a good proposal. It was rejected. But Max Maurer, my supervisor, has been very encouraging and gave me a lot of support to make this project a reality. I revised my proposal, which has now been accepted. I will work in the Division of Geological and Planetary Sciences at the California Institute of Technology.

Matthew Moy de Vitry is currently on holiday and was therefore not available for an interview.

Cover picture: Eawag

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