Integrating participatory monitoring and citizen science in water security assessment

Applications are invited for a fully funded PhD studentship as part of an international research consortium to enable local knowledge production for water security. The successful candidate will be based in the Hydrology and Water Resources Laboratory at the Department of Civil and Environmental Engineering, supervised by Professor Wouter Buytaert. The project will be co-supervised by Dr Alexandra Collins of the Centre for Environmental Policy at Imperial. Key collaborations include Dr Seifu Tilahun (International Water Management Institute, Ghana) and Dr Fabian Drenkhan (Pontifical Catholic University of Lima, Peru).

Project:

Achieving global water security is one of world's major societal challenges. In many parts of the world, the lack of robust evidence to support decision-making is a major bottleneck. Hydrometeorological monitoring networks are sparse and often suffer from issues with maintenance and data access.

At the same time, advances in environmental sensing and data processing technologies, which are part of a broader "Internet of Things" revolution, create new opportunities and arrangements for data collection. In particular, citizen science and other forms of collaborative and participatory data collection have surged globally, including in lower- and middle-income countries. However, turning the produced data into locally relevant and actionable knowledge, and establishing equitable and fair collaborations, remains a major challenge.

The interdisciplinary PhD project will address this challenge by analysing existing citizen science initiatives and develop and test new technologies and approaches to support data collection, analysis, and integration in decision-making processes. The PhD will leverage the research group's long track record of involvement in participatory monitoring activities, and expertise with a wide range of environmental sensing and internet-of-things technologies.

We are looking for an exceptional candidate with a keen interest in new technologies, experience in international fieldwork, and an ability to engage with a range of stakeholders in culturally diverse settings. We offer a PhD position that tackles a global societal challenge and is embedded in a thriving and dynamic research team with a global network of collaborators in academia, industry, civil society, and international policy.

Requirements:

- A First Class Degree (or international equivalent) in environmental engineering, environmental sciences, or similar
- A Masters level degree qualification
- A genuine enthusiasm and ability for working in a highly collaborative and interdisciplinary research environment.
- Excellent English communication skills, including strong writing abilities and excellent presentation skills.

How to apply:

Applicants are recommended to contact Professor Wouter Buytaert (w.buytaert@imperial.ac.uk) for further details, informal discussions and information about the project.

Applicants wishing to be considered for this opportunity should send the following application documents to Professor Buytaert:

1. Current CV including details of their academic record, and if possible, class ranking

2. Covering letter explaining their motivation, suitability, skills and/or experiences (1 page maximum)
3. Contact details of two academic referees

Application via the Imperial College Registry is not necessary at this stage. Applications will be regularly reviewed until the position is filled.

Administrative questions should be emailed to civilphdadmin@imperial.ac.uk.

Funding:
The studentship will provide funding for 4 years from the start date of the PhD (1 October 2026). The funding includes international tuition fees and a tax-free stipend at the standard UKRI London rate