****

**The Faculty of Computing, Engineering and the Built Environment (CEBE) is making major investments in growing the quality and volume of research across its two constituent Schools (Schools of Engineering and the Built Environment, and Computing and Digital Technology) through investments in academic staff and researchers, doctoral students and new labs, workshops and equipment.**

The [Water, Environment and Communities Research Centre](https://www.bcu.ac.uk/computing-engineering-and-the-built-environment/research/water-environment-and-communities) is located in the Faculty of Computing, Engineering and the Built Environment (CEBE) and based at our City Centre Campus. The Centre undertakes applied research on a range of contemporary themes relating to water and the environment reflecting the diversity and interdisciplinary nature of issues concerning the development of resilient communities. The Centre undertakes a portfolio of applied interdisciplinary research, knowledge exchange, education, community engagement and advice for decision makers and policy makers at all levels. The Centre’s work embraces and integrates local, national and international perspectives on water, focusing on environmental challenges towards sustaining resilient communities.

We have a range of PhD studentships now available across the range of disciplines represented in the centre. There are a limited number of funding opportunities available with some studentships including full scholarships while others having partial or self-funding options. Funding will be determined based on the strength of the candidate and quality of the proposal. Some of these projects also include support from our collaborating organisations.

**ASSESSING THE POTENTIAL OF USING NEW TECHNOLOGIES TO SUPPLEMENT FLOOD WARNINGS AND EXPOSURE ASSESSMENT IN AREAS AT RISK OF SURFACE WATER FLOODING**

**How to apply**

**The closing date for applications is 23.59 on Sunday 1 December 2019.**

To apply, please complete the [project proposal form](http://www.bcu.ac.uk/Download/Asset/1c822112-124b-e911-818d-005056831842) , **ensuring that you quote the project reference,** and then complete the [online application](https://www.bcu.ac.uk/courses/bsbe-research-degrees-phd-2018-19)  where you will be required to upload your proposal in place of a personal statement.

You will also be required to upload two references, at least one being an academic reference, and your qualification/s of entry (Bachelor/Masters certificate/s and transcript/s)

For international applicants, a valid English language qualification, such as International English Language Test System (Academic IELTS) or equivalent with an overall score of 6.5 with no band below 6.0, must be submitted with your application.

These studentships come with full fee waivers for both UK and international candidates. There will also be the opportunity for some paid teaching work of up to 180hrs per academic year. Exceptionally strong candidates may also be offered a bursary. Final funding arrangements will be determined based on the strength of the candidate and quality of the proposal. Some of these projects also include support from our collaborating organisations.

You can find further details on studying for a PhD and details of how to apply [here](https://www.bcu.ac.uk/courses/bsbe-research-degrees-phd-2018-19)

**Project title: ASSESSING THE POTENTIAL OF USING NEW TECHNOLOGIES TO SUPPLEMENT FLOOD WARNINGS AND EXPOSURE ASSESSMENT IN AREAS AT RISK OF SURFACE WATER FLOODING**

**REF: CEBE-FLOWAR**

**Contact:**

The successful candidate will be supported by an interdisciplinary research team, consisting of Prof Wenyan Wu, Wenyan.wu@bcu.ac.uk, Dr Emma Bergin of Flood Re, emma.bergin@floodre.co.uk (industrial adviser) and Dr Florimond Gueniat, Florimond.Gueniat@bcu.ac.uk. For further information please contact the Director of Studies, Prof Wenyan Wu, Wenyan.wu@bcu.ac.uk.

**Overview:**

There exists today a great many more data sources for flood monitoring and advances in technology which are now making it feasible for data to be used in a more dynamic way for flood forecasting. Historical approaches to forecasting flood extents have traditionally relied heavily on modelling approaches, which are frequently difficult to fully validate. Advances in drone technologies and other in-situ water sensors are expanding rapidly in terms of their usability and reliability. This project is jointly sponsored by BCU and FloodRe as industrial partner, who specialise in modelling improved spatial flood footprints to assist with loss estimation.

This proposed research project aims to evaluate the reliability of the new technologies, such as low cost sensors with Drone and Satellite image and its potential to assimilate data in with other data. The study will assess the potential for improved spatial flood footprints to assist with loss estimation and consider in more detail the benefits to the local community through an improved view of localised flooding. The research project will pilot within the Midlands region as Birmingham was subject to intense surface water flooding in May 2018 and is known to be at risk from flooding.

**Person specification:**

MSc or equivalent professional or research experience in remote sensing, robotics Electronic, Computing, Control Engineering, and computational computing or closely related fields and have knowledge of sensor technology and wireless sensor network, image processing, communication and IoT technology.

**References:**

Fava, M. et al, (2018) Flood modelling using synthesised citizen science urban streamflow observations, early view

Ochoa‐Rodríguez, S, Wang, L.P., Thraves, L., Johnston, A. and Onof, C. (2015) Surface water flood warnings in England: overview, assessment and recommendations based on survey responses and workshops, Journal of Flood Risk Management, 11/1

Speight,L. et al, (2016) Developing surface water flood forecasting capabilities in Scotland: an operational pilot for the 2014 Commonwealth Games in Glasgow, Journal of Flood Risk Management, 11/2