Information on Postgraduate Research Scholarship
Ref: FS-ES-04-2027-17

Faculty:	Engineering & Science	**School:**	Engineering
Lead Supervisor:	Dr Ioanna Stamataki		
Project Title:	Numerical reconstruction of extreme flash floods for evacuation planning: the Boscastle case study		
Project Description:	Extreme weather events are becoming more frequent and severe as a result of climate change, with increasing evidence linking global warming to more frequent and intense precipitation. Flash floods are short-duration events, producing rapid, high-velocity flows that can cause significant loss of life and widespread damage. Small, steep catchments are particularly vulnerable due to their fast hydrological response and limited warning times. Despite their severity, flash floods are rarely measured in the field, creating continued uncertainty in flood reconstruction, modelling and risk prediction. They often occur in ungauged catchments or are sufficiently extreme to overwhelm monitoring equipment, leaving limited field observations for reconstructing their development and impacts. Historical evidence can provide valuable information, but uncertainties in rainfall, peak flow and hydraulic conditions make past events difficult to reconstruct reliably. A further challenge is the mismatch between the timescales of the physical and human systems: the time between rainfall and peak flow, the lead time for issuing a warning, the time people take to understand and act, and the time required to reach safety. Hydraulic and evacuation models are usually developed separately, limiting their application to evacuation planning. This PhD will address these challenges by reconstructing the 2004 Boscastle flash flood and investigating how modelled flood timelines can inform evacuation planning and strengthen community resilience. Building on the Royal Society-funded Flash Flood Observatory installed in Boscastle, the research will combine Observatory data with historical evidence, topography and surveyed river geometry to model flood depth, velocity, arrival time and peak flow. Monte Carlo simulations using AutoRamtin will be used to investigate uncertainty in the reconstructed event. The project will then conduct a controlled community evacuation exercise linked directly to the modelled flood timeline. Observations of warning response, delays, route choices and evacuation times will be used to calibrate an agent-based evacuation model and test different warning, population, route-loss and flood-severity scenarios. Hybrid workshops with the Parish Council, Community Emergency Group, residents and emergency practitioners will support interpretation of the results. The research will produce an evidence-based evacuation plan for Boscastle and develop a transferable engineering framework for using extreme-flood reconstructions to support evacuation planning in other small, rapidly responding catchments.		

	This scholarship is awarded competitively, and all applications are carefully reviewed. While we cannot guarantee an offer, we encourage strong candidates to apply.
Duration:	3 years, full-time study 6 years, part-time study

Support available (subject to satisfactory performance):

For Home students

- A full tuition fee waiver at the Home student rate for the duration of the scholarship.

For International students

- 50% tuition fee waiver against the International student rate for the duration of the scholarship.

Important information

- Tuition fees are subject to annual review and may increase during the course of study.
- This scholarship covers tuition fees only and does not include funding for living, accommodation, or maintenance costs.

Person Specification of Essential (E) or Desirable (D) requirements:

Criteria:	**E or D**
Education and Training:	
• 1st Class or 2nd class, First Division (Upper Second Class) honours degree or a taught master's degree with a minimum average of 60% in all areas of assessment (UK or UK equivalent) in a relevant area to the proposed research project	**E**
• For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, if your programme falls within the faculty of Engineering and Science a language proficiency score of at least IELTS 6.5 overall with a minimum of 6.0 in all elements of the test or an equivalent UK VISA and Immigration secure English Language Test is required. Unless the degree above was taught in English **and** obtained in a majority English speaking country, e.g. UK, USA, Australia, New Zealand, etc, as recognised by the UKBA.	**E**
Experience & Skills:	
• Previous experience of undertaking research (e.g. undergraduate or taught master's dissertation)	**E**
Personal Attributes:	
• Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation	**E**
• Able to, under guidance, complete independent work successfully	**E**
Other Requirements:	
• This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA	**E**

• The scholarship must commence before 5th April 2027	**E**
Closing date for applications:	**Midnight UTC on 30th November 2026**
For further information contact:	**Dr Ioanna Stamataki - i.stamataki@gre.ac.uk**

Making an application:

Please read this information before making an application. Information on the application process is available at: https://www.gre.ac.uk/research/study/apply/application-process. Applications need to be made online via this link. **No other form of application will be considered**.

All applications **must include** the following information. **Applications not containing these documents will not be considered.**

- **Scholarship Reference Number (FS-ES-04-2027-17)–** included in the personal statement section together with your personal statement as to why you are applying
- **a CV including 2 referees** *
- **academic qualification certificates/transcripts and IELTs/English Language certificate if you are an international applicant, if English is not your first language or you are from a country where English is not the majority spoken language as defined by the UK Border Agency** *

**upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application, you are encouraged to liaise with the Lead Supervisor on the details above.