Are you intrigued by extreme biology? Are you curious about how the brain regulates physiology to allow mammals to probabilistically choose to enter and wake up from torpor, an extreme state of “suspended animation”? Are you ready to explore the power of mathematics to iteratively drive biodiscovery?

We are looking for a motivated and resourceful candidate excited by novel questions, hands-on in vivo neuroscience experiments and mathematical modelling. Apply to the SWBio DTP and select our PhD project. You will collect physiological data to build predictive mathematical models, which we will use to test hypotheses through neural circuit level interventions in mice to identify the mechanisms and decision making around this extreme biology.

You join an established team who will support you to develop as a neuroscientist with mathematical modelling expertise or a mathematician bridging numbers and neurons to unveil life and near death decisions."

Main Supervisor: Carla Frare, Wellcome CDA Fellow, School of Physiology, Pharmacology & Neuroscience, University of Bristol, Bristol, UK.

Second supervisor: Dr Hermes Gadelha, Senior Lecturer in Mathematical and Data Modelling, School of Engineering Mathematics and Technology, University of Bristol, Bristol, UK.

Where to Apply: https://www.swbio.ac.uk/

Project: https://bpb-eu-w2.wpmucdn.com/blogs.bristol.ac.uk/dist/f/373/files/2025/11/swbio-26-project-92.pdf