

Call for Proposals for the Second Round of Mini-Projects in the Sci-Phy-4-Health CDT Programme

This is the call for proposals for mini-projects in the Sci-Phy-4-Health Centre for Doctoral Training. We request proposals for projects that could be undertaken by our first year students during the second round of their research. The project duration is approximately 12 weeks full-time, to include 1 reading week and 1 write-up week.

Mini project 2 commences the week commencing 8th May 2017. Student project assessment/submission will be early September 2017.

The submission deadline for proposals by Academic staff is **Friday 17th March 2017**.

Getting Involved for the First Time

If you are new to the CDT and mini project proposal/supervision process, you may find it useful to receive guidance regarding the structure and content of the proposal, and to identify co-supervisors from other schools to support your ideas. Please contact the nearest member of our Operations Team for support as soon as possible if you would like to submit a proposal and are unsure where to start.

Our Operations Team members are as follows:

Dr Hamid Dehghani, Computer Science: h.dehghani@cs.bham.ac.uk

Dr Iain Styles, Computer Science: i.b.styles@cs.bham.ac.uk

Dr Rob Neely, Chemistry: r.k.neely@bham.ac.uk

Dr Francisco Fernandez-Trillo, Chemistry and Pharmacy: F.Fernandez-Trillo@bham.ac.uk

Dr Pola Goldberg Oppenheimer, Chemical Engineering: P.GoldbergOppenheimer@bham.ac.uk

Dr Steve Thomas, Cardiovascular Sciences: S.Thomas@bham.ac.uk

Sci-Phy-4-Health mini-project proposal and supervision process

The Sci-Phy programme combines the physical sciences, computer science, and engineering with biomedicine to break down the boundaries between these disciplines. Students on our interdisciplinary training will develop underpinning new physical science research to address three key UK healthcare challenges:

- Rebuilding the ageing and diseased body
- Understanding cardiovascular disease
- Improving trauma and emergency medicine

Research projects must involve the development of physical and computational sciences applied to one of these three healthcare challenges.

Project areas included in the initial proposal, which build on our skills established in PSIBS and our EPSRC portfolio are as follows:

- Labelling Therapeutic Cells
- Devices that differentiate sterile and non-sterile inflammation
- Metal implants
- Ceramic & Polymeric Biomaterials
- New microscopies for studying cell adhesion and signaling in vascular disease
- Nano-compounds and methods to explore flow in confined spaces in teeth under repair, and in blood circulation

- Supramolecular recognition of key nucleic acid targets
- Novel Size-Selected Metal Nanoprobes
- New frontiers in optical imaging

- Statistics and Data Analysis for Characterisation, Knowledge Mining and Discovery

Research projects must involve physical and computational sciences and must be applied to one of these biomedical challenges. The goal is for the students to learn core theoretical, analytical and experimental skills across the life sciences, physical sciences and computer science. All mini-projects must be co-supervised by 3 supervisors (a physical scientist, a computer scientist and a biomedical scientist). The addition of an industrial partner is highly encouraged.

Each mini-project can focus on one or more of these disciplinary areas. Members of the Sci-Phy operations team and steering committee will be able to help you to identify suitable partners for a project: if you have an idea but need support then please do contact us as soon as possible.

The Sci-Phy Steering Committee, which includes a representative from EPSRC will review all proposals to ensure they are appropriate within the remits of CDT.

Once approved, there will be an opportunity for all the supervisors to make flash presentations of their proposals to the students. The students will then make informed decisions about the projects with guidance from the Steering Committee where necessary. The flash presentation will consist of 3 minutes and 3 slides per project. (*Proposed date – During the morning of Wednesday 5th April 2017 - TBC*)

How to submit a project:

A PDF, doc or docx file to a.m.smith.2@bham.ac.uk with the proposal covering a single side of A4 outlining:

- Supervisors name and affiliations (3 Named Supervisors plus relevant expertise)
- Project title
- Project aims (including relevance to the healthcare challenges, max 500 words)
- Methodology (max 150 words)
- Likely scientific outcomes in the time period (max 100 words)
- Training outcomes (techniques, skills etc. max 100 words)
- Outline of the three disciplinary elements contribution to the project (max 100 words)
- Background references (max 3)
- Please also note the relevance to EPSRC section for completion on page 2

Submission deadline: **Friday 17th March 2017.**

PLEASE NOTE: If you wish to have previously approved proposals considered for the second round of projects, you must resubmit them to be included in this round.