

Funded PhD Scholarship in Sociology/ Science & Technology Studies

Frontier bugs: innovation and salvation in biomedical research

Synthetic biology is an emerging techno-scientific field making grand claims towards the novel solution of many medical and healthcare challenges. The field has already succeeded in engineering a more efficient way to produce the chemicals necessary for new anti-malarial drugs. However the field is emerging in a social context where certain conditions and relations can no longer be taken for granted. For example, although the new routes to anti-malarial drugs appear at face value to be an unmitigated good, protest groups have emerged to challenge this and other potential uses of synthetic biology. Studies into the social and ethical implications of the new field suggest that a legacy of prior controversies, especially in the UK, mean that the public are sensitised to scientific claims to be the solution to problems. In particular, the use of 'salvation narratives' - in which science is seen as the only solution - has been heavily criticised by NGOs and others. Alongside this, some early demonstrations of synthetic biology approaches were to re-create pathogens, thereby raising concerns during the field's infancy about the potential directions of the field in the future. Legal scholars have suggested that synthetic biology approaches have an inherent 'dual-use', where research developments may be applied toward both useful and detrimental purposes. As one response to this, research funding bodies have been developing the concept of 'responsible innovation' as being at the centre of how we recognise and manage interventions and exploit the applications potential of innovative research.

This broad context provides a rich environment in which to pose questions about the nature and development of novel approaches to biomedical research and their potential for healthcare applications. The PhD student will approach these questions using sociological and historical approaches to analysis. Through the use of, for example, observational, interview-based and archival research the project will ask the overarching question: are synthetic biology approaches to healthcare-related applications, and the structure of discussions surrounding them, novel?

Changes in how collaborative research toward healthcare application has shifted over time could be explored. The relations between research lab contexts and the contexts of application (e.g. between lab and clinic) could be studied. How debates surrounding synthetic biology and its applications are structured can be compared with debates from previous approaches to the solution of healthcare challenges. In what ways have debates changed over time, and why? Overall, the project will provide a better understanding of the dynamics of biomedical research with implications for both research policy and scientific practice.

The project will be expected to contribute to general theories on the relations between science and society; and to more specific sociological theory on bio-politics and governance of scientific research. New methods of research, combining sociological and historical work may be developed. Emerging findings will be fed back in to associated scientific projects, to facilitate ongoing discussions with the scientists and engineers on notions of innovation and responsibility.

This is a collaborative project between Dr Susan Molyneux-Hodgson (Sociological Studies) and Dr Holger Nehring (History). This project is part of a Cross-Faculty PhD training network funded by the University of Sheffield entitled "Synthetic Biology for Human Health".

Applications are invited from highly motivated and talented students holding, or expecting to obtain, at least an upper second (2:1) or First Class degree in a relevant subject area. Masters qualifications are highly desirable. Please contact Dr Susan Molyneux-Hodgson (s.hodgson@shef.ac.uk) and Dr Holger Nehring (h.nehring@shef.ac.uk).

Information is also available at the following websites:

SATIS (Science and Technology in Society):

<http://www.shef.ac.uk/socstudies/research/centres/satis>

Award details

Each scholarship will cover the cost of UK/EU tuition fees and provides an annual, tax-free maintenance stipend at the standard Research Council rate (£13,590 in 2011-12). The recipient will also receive a Research Training Support Grant of £1000 per year. International applicants will need to pay the difference between the UK/EU and Overseas tuition fees.

Eligibility

- Academic requirements – applicants should have, or expect to achieve, a first or upper second class UK honours degree or equivalent qualifications gained outside the UK in an appropriate area of study. A Masters degree in a relevant area is highly desirable.
- Applicants should be registering on their first year of study with the University for 2012-13.
- Residency restrictions – awards are open to UK, EU and international applicants.

How to apply

- Applicants are advised to contact supervisors to discuss their application
- Complete an application for admission as a postgraduate student - <http://www.sheffield.ac.uk/postgraduate/research/apply>
- On the application form please state you are applying for this project and briefly outline your reasons for doing so.

Applicants may be asked to attend an interview. Interviews are likely to be held on Monday 27th Feb. 2012.