**PhD Research Projects**

**Supervisor: Adrian Ely**

Biotechnology regulation and governance in China

China's role as a source of innovation in the biosciences has changed dramatically in the past decade, with internationally-recognised firms emerging in genomics, transgenic seeds/ food and stem cell research and therapies. At the same time social media and other channels are for the first time enabling societal debate around these and other directions for innovation, and citizens and stakeholders are voicing conflicting views around their implications for China and the world. In response, policy is in some cases shifting away from narrow technocratic decision-making to broader approaches to innovation governance, whilst regulatory implementation at different levels remains a challenge. I would welcome PhD applications from Mandarin-speaking students wishing to research these phenomena and/ or to compare them with recent trends in Europe.

The role of innovation in pathways towards sustainable food security

Trends in crop productivity, inequitable distribution (for food and fuel) and the clear links between industrial agriculture and the transgression of various 'planetary boundaries' point to the need for radical transformations in global and local agri-food systems. Proponents varyingly point towards agroecological, biotechnological and social innovations - either as silver bullets or more realistically as contributions to wider systemic change. The policy challenges associated with supporting, co-ordinating and steering these different directions of innovation are embedded within political struggles for control and ownership. I would be interested in supervising well-qualified students wishing to examine some of these policy challenges, in particular with respect to the contested role of emerging biotechnologies in Europe, China or East Africa.

Innovation for Sustainable Agri-Food Systems in the Brighton-Lewes Downs Biosphere

With others at Sussex (including in the Sussex Sustainability Research Programme) I am interested in how science, technology and innovation can support more sustainable human-environment interactions within our local UNESCO Biosphere (<http://www.unesco-mab.org.uk/brighton--lewes-downs-biosphere.html>).

I'm also keen to engage with local civil society organisations and, given my specific interest in food, have been working with the Brighton and Hove Food Partnership to explore approaches to monitoring the impact of a 'city-wide approach to food' in the city. I'm interested in continuing this collaboration and would welcome doctoral students who are interested in basing their project in this area, in particular in order to:

- explore ways in which the sustainable development goals, targets and indicators can translate to changes at the level of Brighton and Hove's agri-food system;

- operationalising poverty as a cross-cutting issue in sustainable urban food systems (using Brighton & Hove as a case);

- move beyond individual indicators (e.g. around health, diet, source of foods) in order to appreciate transformations at the systemic level;

- explore the constraints to agricultural innovation for sustainability faced by local farmers, and how policy might help to overcome these;

The Biosphere Research Working Group has developed a wider research and monitoring strategy for 2017-19, available here:

<http://www.thelivingcoast.org.uk/admin/resources/biosphere-research-monitoring-strategy-2017-19-approved.pdf>