

Newly Agreed and Forthcoming Workshops

Below are details of provisionally agreed workshops which aim to explore cutting-edge issues in research through cross-departmental collaboration. For further details regarding each workshop, click on the title of the workshop. You will also be able to find contact details for the leader of each workshop should you wish to register your interest.

Climate Change and Arctic and Alpine Environments

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Date of workshop: to be confirmed

Workshop Leader: [Professor Alexander Milner](#)

As the evidence for human induced climate change becomes clearer, so too does the realization that its effects will have significant implications for physical and ecological systems. Some regions are more vulnerable than others, both to the expected changes and to the consequences they will have for ways of life. Arctic and Alpine regions are some of the most sensitive and vulnerable environments to this change. Arctic areas in particular, and alpine areas to a lesser extent, also have potential positive feedbacks to climate change due to their large storage of carbon, thereby enhancing these effects. Evidences of glacial retreat, permafrost reduction and changes in snowfall regimes have already been observed in many Arctic and Alpine regions, which will have many significant implications. For example, snowmelt is already occurring earlier in mountain areas, with potential reductions in glacial runoff, will influence agriculture, water resources, forestry, power generation and tourism. These effects then have significant implications for associated mountain and native communities including services like transport infrastructure, construction, water supply and food resources. An interdisciplinary and integrated examination of present and future effects is necessary to mitigate impacts to ecosystems and society in these sensitive environments.

Within the University and across a number of Schools, there are various staff who work or have interests in these regions but have never communicated or had interdisciplinary discussions.

The aim of the workshop would be to provide a forum to examine common interests and develop possible strategies for funding calls related to these environments. Although there are universities in the UK (e.g. Sheffield) that have interests in the Arctic areas, there is no one group combining both these environments and working across a variety of disciplines as occurs in the US (e.g. INSTAAR – Institute of Arctic and Alpine Research). This would be a unique opportunity to see if Birmingham can fulfil such a role within the UK academic environment and is truly interdisciplinary. This would link to International agendas in Arctic and Alpine environments, which are generating a large degree of interest both within funding activities (NERC, EU – recent USA/UK workshop on Arctic collaboration in Cambridge) but also strategy approaches to mitigating potential effects and addressing inter-disciplinary research (e.g. the International Arctic Science Committee (IASC) and associated Arctic Climate Impact Assessment).

Internal attendees

David Hannah, Martin Widmann, Ian Fairchild, Chris Bradley, Nicholas Ketteridge, Stefan Krause, Bill Bloss (GEES), Scott Hayward, Roland Brandsetter, and Jeff Bale (BioSciences), David Haughton and Stuart Eggington (Physiology), John Bridgeman, Cynthia Carliell Marquet, David Chapman and Chris Rogers (Civil Engineering) and Chris Baker (Transport). Socio-economic interests would also hopefully be addressed by interested parties within UoB and Allan and Hill (external attendees).

External attendees:

Cyan Ellis-Evans – Head of the Arctic programme for BAS, Martyn Tranter (University of Bristol), Philip Wookey and Andy Hodson (University of Sheffield) Tristram Irvine-Flynn (University of Aberystwyth), Andrew Allan (University of Dundee), Margo Hill (University of Geneva).

Diagnosing Complex Environmental Stressors (DiCES): from science to policy and implementation

Date of workshop: to be confirmed

Workshop Leader: [Professor Mark Viant](#)

A major challenge in the regulatory control of environmental quality is the rapid and accurate diagnosis and prognosis of the impact of a wide range of environmental stressors. For the past 10 years Birmingham has pioneered the development of Environmental Genomics as a novel strategy to address this challenge and we have established an interactive network between the international community of regulators, industry and academics to take this ahead. These molecular approaches have revolutionised our understanding of living organisms and their interactions with the environment. The approaches are now sufficiently well established in their delivery that we are at the threshold of optimum timing for implementation into environmental monitoring.

The remaining challenge of translating the basic “omic” science into practical monitoring is that industry and governmental agencies will only regulate upon the biological effects of environmental stressors as mandated by existing legislation. Yet the latter within Europe is based largely around crude tools for measuring stress. This is particularly evident in the legislation for monitoring stressor impacts on the biodiversity of plants and animals (under the EU Water Framework Directive; WFD) and in the assessment of chemical toxicity (under the EU Registration, Evaluation, Authorisation & Restriction of Chemical Substances; REACH). The considerably more informative knowledge obtained using genomic tools, i.e. diagnosis of qualitative and quantitative impact of multiple stressors as subtle early warning systems, and associated cost benefits and potential to reduce animal testing, remain untapped.

The discussion is timely because the genomic approaches have only just matured to a level where it is no longer necessary for end-users to understand the complexities of the technologies. Instead, the advanced computational algorithms can be embedded within “black-boxes” that yield simple and defined predictive outputs upon which regulators can act.

Within the School of Biosciences there is an extensive and committed focus on the application of genomics (including transcriptomics, metabolomics and computational biology) for probing the stress responses of aquatic organisms to multiple environmental stressors and identifying adverse outcome pathways. This team has made significant progress in demonstrating these approaches to end-users, via NERC KT and current research funding to support the development of predictive modelling, from the EA, NERC and Defra.

There is now an opportunity to link the science to internal and external policy and regulatory expertise, thus to translate these diagnostic tools into routine environmental assessment through regulatory practice. Clearly, fundamentally new thinking is required to develop the appropriate mechanisms for this translation. We propose not only to engage with academics, industry and government involved in *regulatory practices* (e.g. for WFD, REACH), but importantly with academics and government departments involved in the *development of environmental legislation for the future*. The involvement of academic lawyers with considerable interest in the proactive (or anticipatory) development of policy is essential, as opposed to traditional reactive regulation to a new problem. In addition we will build in important *ethical issues*, e.g. what is the significance of the new knowledge of the environment revealed by genomics measurements and what is the proportionate response? How do we measure the value of genomics knowledge vs. that from traditional measurements, either purely in financial terms or in alternative non-economic values? These issues must be addressed to facilitate practical implementation.

The aims of the workshop will be:

1. To more fully define the problem considering the views of key stakeholders at national, European and international levels
2. To identify the national and EU bodies that currently exist, or should exist, to take these issues forward
3. To identify mechanisms for knowledge exchange between these groups
4. To define what investments are required to deliver this as an IAS theme. Other specific outputs include to build cases to create *new Chairs* in Environmental Law (Birmingham Law School) and Environmental Ethics (Public Health), and to initiate applications to the NERC and the EU for policy funding.

Internal contributors

Kevin Chipman (Biosciences)

F rancesco Falciani (Biosciences)

John Colbourne (Biosciences)

Scott Hayward (Biosciences)

Jean McHale (Law)

Clare Mclvor (Law)

Angus Dawson (Primary Care Clinical Sciences)

David Hunter (Philosophy)

David Hannah (GEES)

Jon Sadler (GEES)

Existing external links to regulatory and policy issues (EA, Cefas, Defra and HSE in UK, and internationally the OECD and JRC).

Industrial input will be from major companies such as AstraZeneca, and SMEs such as the environmental consultants APEM.

A critical parliamentary input will also be secured involving the UK Office of Science and Technology (POST) and the European counterpart STOA. We are aided strongly here through the dialogue already established with Malcolm Harbour (European Parliament) who we will include.

We will also engage with a representative from the Knowledge Transfer Partnerships.

Synthetic Biology for a Sustainable Energy Future

Date of workshop: to be confirmed

Workshop Leader: Dr [Peter Lund](#)

The aim of the workshop will be two fold:

1. to discuss the science and techniques behind microbial strain engineering to produce valuable chemicals in carbon neutral or carbon negative ways and
2. an exploration of some of the legislative and public awareness issues about developments in this field of biology. It thus will bring together workers in several quite diverse fields including biosciences, chemical engineering and chemistry, mathematics, philosophy and law.

The workshop will be a chance to report on progress to a wider audience and to look at ways that the University of Birmingham might continue to be involved with it in the future.

Synthetic biology is a priority area for funding at the moment and UoB has a very active synthetic biology community. The workshop will provide a real opportunity to showcase some of the work that is done here and to build stronger links across the relevant disciplines, which will be very valuable in attracting future funding. It will bring together academics who have been working on the project (from India, the USA and the UK), plus additional experts in the field, plus additional academics from UoB who have or who may be developing interests in the areas of synthetic biology for biotechnological purposes, and the legal and social consequences of these developments.

Other internal attendees:

Prof Tim Dafforn (Biosciences)

Prof Jeff Cole (Biosciences)

Prof Lynne Macaskie (Biosciences)

Dr Tim Overton (Chemical Engineering)

Dr Sara Jabbari (Mathematics)

Prof Heather Widdows (Philosophy)

Prof Jean McHale (Law)

Dr Sheelagh McGuinness (Law)

Innovation in Professional Education and Training

Date of workshop: to be confirmed

Workshop Leader: Professors [Kathy Armour](#) and [Jon Glasby](#)

There are many research intensive Universities that have a long and proud tradition of providing professional education. The University of Birmingham, for example,

undertakes professional education and training in fields ranging from social work and education to nursing, medicine, pharmacy and physiotherapy, to sports coaching and health management. The University was one of the first in the country to offer a social work degree programme, and has been training future practitioners since 1908. Teacher training programmes are well established and have consistently been recognised as 'outstanding' by OFSTED. This activity has recently taken a new turn with the successful proposal to create a University secondary school that will act as a teacher training hub.

Nurses and other allied health professionals have been trained by the University for many years. The Health Services Management Centre teaches the National Management Training Scheme for future NHS leaders. This scheme consistently features at or near the top of national graduate scheme league tables. Recently, this group has also won the contract to deliver a new suite of leadership development programmes for an estimated 9,000-10,000 senior leaders. In all these examples, however, there have been ongoing debates about the appropriate links between academic programmes, professional training and employers, and also challenges in bridging the gap between research/practice and academic/professional expertise.

The history of and commitment to professional training at Universities such as Birmingham are not in question, and it is clear that some of the provision is of very high quality. Yet, ongoing changes in higher education mean that current approaches to professional training may need to evolve, particularly in research-intensive universities such as those in the Russell Group.

The issues to be confronted are not entirely new, but they have been brought into sharp relief by the recent increases in student tuition fees and the threats to professional bursaries and other educational funding streams, particularly for those in the public sector. Moreover, a growing emphasis on employability and meeting the specific needs of the workplace is raising age-old questions about the relative value of 'academic learning' and 'practice application' (albeit placing them in a false dichotomy). Finally, for academic staff working in research-intensive universities, the challenges of delivering high quality (and time-intensive) professional education while developing research of international quality is becoming increasingly challenging.

Against this background, an internal workshop of colleagues from health services management nursing, physiotherapy, education, pharmacy, social work and sport coaching met to explore two key questions:

- What is the future for professional education and training in research-intensive universities;
- Is there scope for greater sharing of expertise and inter-professional learning?

To build on this workshop and to explore the key issues with external academic and policy partners, this event will focus on the theme of 'Innovation in professional education and training', with a specific focus on three themes:

- Use of technology and new forms of delivery;
- Relationships with external partners;
- Inter-professional education.

The external participants will be invited as follows:

- Each representative from an internal professional group will invite up to key stakeholders from national professional bodies, policy, local services and research;
- Keynote inputs will be provided by Professor Bill Stewart and a colleague, University of Illinois Urbana-Champaign and Jo Lenaghan, Director of Strategy for Health Education England;

The aim of the workshop will be to identify and share good practice across professional groups in the context of the three workshop themes, and to draft both a Position Statement and an Action Plan on the future of professional education/training

Considering Operation Trojan Horse and its impacts in the city of Birmingham

Workshop Leader(s) : [Dr. Chris Allen \(/staff/profiles/social-policy/allen-chris.aspx\)](/staff/profiles/social-policy/allen-chris.aspx) (School of Social Policy)

What began with the publication of an anonymous - and widely acknowledged as fake - letter alleging an 'Islamist plot' to take-over a number of schools in the city of Birmingham, the fallout from and legacy of 'Operation Trojan Horse' is likely to be significant. This workshop seeks to consider these three broad themes - extremism and how best to tackle it, the scrutiny of Muslim communities, and the impact on cohesion in the city - from a collaborative and cross-disciplinary point of view. Recognising the social, political and cultural salience of the issues to the city of Birmingham - and indeed beyond - this workshop aims to reflect the urgent nature of the unfolding events. Creating a shared space that is both 'safe' and neutral, the workshop will allow for informed, critical and at times difficult discussions to be had. As well as helping to identify solutions to some of the 'problems', the workshop will also create space for new collaborations to be explored and considered, within the University but more importantly with external stakeholders outside it too.