



Revolution, Regulation & Responsibilities

Technology & Democracy in the 21st Century

2010-2011 series

» **Revolution:**

The range, scope and magnitude of emerging technologies promise to transform society in ways that have previously been unimaginable. From nanomedicine and acute delivery of medicine in the human body to advances in biotech and the creation of new biological systems; from neuroscience increasing our understanding of brain function to IT helping us to map and imitate brain function, as well as posing fresh questions over privacy and surveillance, as these technologies evolve and converge it will without doubt transform our understanding of what it means to be human.

» **Regulation:**

But with this transformation comes scientific uncertainty and regulatory disruption. Fear and risk have to be mitigated against a backdrop of advancement in science and technology which currently cannot be fully explained or predicted. Existing regulatory systems are disrupted by the pace of new technologies resulting in legislative frameworks becoming redundant and to regulatory “disconnection”. A vast new landscape is opening up before us but there are no well worn templates to help us frame the future. As Justice Michael Kirby notes ‘We are experts without a great deal of expertise’.

» **Responsibilities:**

Therefore the need is great for a diverse range of stakeholders and representatives to gather together to engage with each in order to craft new models of policy making, governance and regulation which will connect as well as hopefully evolve with technology. Models which offer enough protection to manage the risks involved without being too excessive and stifling innovation and the potential social and economic benefits.

*In response to this, BioCentre invites you to its 2010-11 series of symposia, **Revolution, Regulation and Responsibilities: Technology and democracy in the 21st Century**. The series will seek to initiate dialogue on questions pertaining to technology and democracy and the ethical, legal and social implications which arise as a result.*

3

Exploring Synthetic Biology

Wednesday 20th April 2011, 2pm

Charles Darwin Conference Centre, 12 Roger Street, London WC1N 2JU

Often referred to by the media as "extreme engineering" and "biotechnology on steroids," synthetic biology represents a shift from merely seeking to understand biological systems to actually creating new ones.

Advances in this emerging technology unite multidisciplinary research and is driven by engineering and science. However, as with any new technology there are profound ethical, social and regulatory implications. Whilst there is agreement across the board that regulation will play an integral and necessary part in the maturity of synthetic biology, there is a diversity of opinion with regard to the scope and structure of such governance.

To what extent would the application of synthetic biology result in new manipulative possibilities for the human project in terms of the design and creation of life? Making alterations to natural life involves a certain degree of risk. At this time scientists do not yet understand how to synthesize organisms with predictable replication and mutation properties. Given how versatile microbes can be in adapting to the alterations carried out by human interventions, if mistakes are made then they will be replicated and may quickly become uncontrollable and unmanageable. What happens if redesigned bacteria and viruses are loosed into the environment? What would be the impact on the environment?

Likewise, there is the obvious attraction to terrorists of being able to radically alter and modify viruses and bacteria given the fact that it is relatively inexpensive to do. Coupled with this is the fact that as synthetic biology develops calls are being made to make synthetic biology 'open source'. This would effectively mean that instructions for creating synthetics would be available via the Internet. In turn this makes the potential for synthetic biology-enabled bioterrorism far more likely.

Join us at this symposium, co-hosted with [The Biochemical Society](#), where we will seek to assess the impact and future implications surrounding synthetic biology through short expert presentations, panel and Q&A discussions.

Speakers include:

- **Dr. Jim Haseloff**, Haseloff Labs, University of Cambridge
- **Dr. Catherine Rhodes**, Institute for Science, Ethics and Innovation, University of Manchester
- **Melanie Duffield**, Team Leader - Advanced DNA and Protein Technologies, Defence Science & Technology Laboratory (an agency of the UK Ministry of Defence)
- **Alexandra Daisy Ginsbery**, artist/designer involved in the ethical, social and cultural implications of synthetic biology.
- Representative from the **environmental and ecology community** (tbc shortly)



All symposia are free to attend **but RSVPs are required.**

To RSVP: [e: info@bioethics.ac.uk](mailto:info@bioethics.ac.uk) | [t: 0207 227 4706](tel:02072274706) | [w: www.bioethics.ac.uk](http://www.bioethics.ac.uk)