

SYNTHETIC BIOLOGY MEETS BIOMEDICINE: KNOWLEDGE REGIMES AND THE GOVERNANCE OF NEW INTERFACES BETWEEN SCIENCES, ENGINEERING, AND HEALTH TECHNOLOGIES

Renan Gonçalves Leonel da Silva

Health Ethics and Policy Lab, ETH Zürich

Alessandro Blasimme

ETH Zürich

Jane Calvert

University of Edinburgh

Abstract:

Synthetic biology has been claimed as an international scientific and technological endeavor oriented to reveal basic operating physical-chemical principles of Life, as well as a multidisciplinary domain of Sciences and Engineering aimed at increasing experimental control over biological processes or assembling biological processes from scratch. Over the last decade, Synthetic Biology has called the attention of researchers from different domains of humanities and social sciences to analyze its evolution as a field, its organization and disciplinary configuration, governance, future expectations, social, ethical, and legal implications, etc. This multi-disciplinary work has advanced the understanding of cultural and political aspects of Synthetic Biology. In recent years, new technological developments in the fields of Physical and Macromolecular Chemistry, Biochemistry, Nanotechnology, Materials Sciences, Optics and photonics, Molecular Systems Engineering, Regenerative Medicine and Nanomedicine have considerably expanded the prospect of harnessing synthetic biology in terms of biomedical applications. This EASST Open Panel aims to be a space of dialogue between researchers interested in the clinical translation of synthetic biology in its different organizational configurations, epistemic dimensions and intersectoral activity. Questions to be pursued in this panel include, but are not limited to: what is new in the applications of synthetic biology into biomedical research? What knowledge regimes are emerging in this field? Under what governance tools and infrastructures is synthetic biology being placed? How could Science and Technology Studies (STS) frame contemporary dislocations of expertise in synthetic biology into different domains of Sciences, Engineering and Health Technologies? How are these movements reconfiguring institutions, knowledge regimes and producing new arrangements in this field internationally? How are ethical, legal and regulatory regimes in biomedicine and health being adapted to support the research and development in this field?

Key words:

Synthetic Biology; Biomedicine; Health