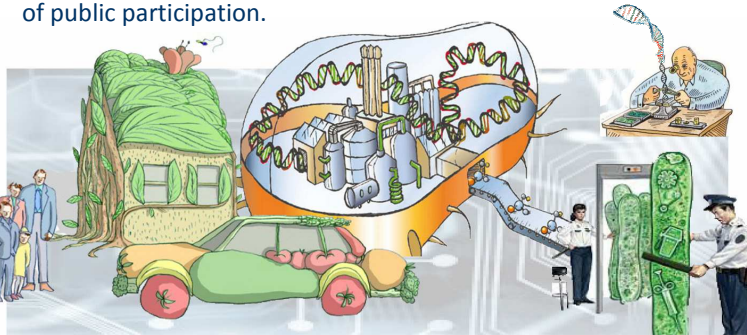


# Worldviews and Values in Synthetic Biology

Université Paris 1 Panthéon - Sorbonne, 6-7 June 2014

The workshop “Worldviews and Values in Synthetic Biology”, co-organised by Paris Sorbonne University and Freiburg University in the framework of the SYNERGENE project, aims to identify the various views and values associated to synthetic biology and to neighbouring research approaches, with a view to bring them into dialogue and to enhance interdisciplinary and public debates on synthetic biology.

SYNERGENE is a 4-year mobilization and mutual learning action plan project (MMLAP) supported by the European Commission under the 7th Framework Programme (<http://synenergene.eu>). The project aims to contribute to Responsible Research and Innovation (RRI) in synthetic biology by establishing an open dialogue between various stakeholders concerning a large spectrum of synbio’s implications, and by exploring possibilities for its collaborative shaping on the basis of public participation.



## Rationale

While synthetic biologists and policy makers care for ethics and call for “responsible research and innovation” in the European community, they are mainly concerned with issues such as risks of bioterrorism and unintentional contamination, or the balance between costs and benefits, and the equitable distribution of goods and harms. So far, synbio’s ethics has been dominated by synthetic biologists’ own way of framing the relevant issues. The Asilomar ideal of self-regulation framed in the early period of genetic engineering tends to prevail in synthetic biology, as though the public were just another major source of risk (the rejection and backlash of synthetic biology).

However, the European Commission urge for multi-stakeholder governance invites to broaden the scope of ethical concerns. Aside from the possible impacts of the promised applications of synthetic biology, the lay public and a number of ethicists are concerned with the human control over living beings, with the relationship of humans to nature that synthetic biology develops. *The project of synthesizing organisms is not value-free and consequently not morally neutral.* It therefore calls for a close examination of the values and meanings embedded in the various research agenda gathered under the umbrella of synthetic biology.

The forthcoming workshop aims at engaging a multi-disciplinary dialogue along two main lines:

► What sort of moral and civic narratives carry the various research agenda included in synthetic biology? Apart from the alleged cognitive or practical benefits expected what is the cultural meaning of the various projects of design? To what extent do they reinforce the modernist worldview of human appropriation and control of nature? To what extent do they undermine alternative worldviews?

► Given the diversity of research pathways gathered under the umbrella of synthetic biology is it still adequate to deal with ‘Synthetic Biology’ as a monolithic block on the one hand facing ‘the Public’ as a coherent and stable entity on the other? How to come up with a more complex cartography of actors and positions on the basis of shared values and worldviews?

Our aim is to better characterize the different approaches, meanings, images, values and value conflicts associated to synbio by various actors with a view to enhance public debates and eventually to bring synbio closer to shared values and public expectations.

## List of speakers

**Geoff Baldwin** (Imperial College London), **Gregory Batt** (INRIA Le Chesnay), **Mark A. Bedau** (Reed College, Portland), **Bernadette Bensaude-Vincent** (Univ. Paris 1 Sorbonne), **Jane Calvert** (Univ. Edinburgh), **Franck Delaplace** (Univ. Evry), **Marc Delcourt** (Global Bioenergies), **Pascal Ducournau** (INSERM, Toulouse), **Margret Engelhard** (Europäische Akademie GmbH), **Thomas Heams** (AgroParisTech), **Sune Holm** (Univ. Copenhagen), **Alfonso Jaramillo** (Univ. Warwick), **Ludovic Jullien** (ENS, Paris), **Sacha Loeve** (Univ. Paris 1 Sorbonne), **Sheref Mansy** (Univ. Trento), **Béatrice de Montera** (Univ. Cath. Lyon), **Martin Müller** (Humboldt Univ. Berlin), **Oliver Müller** (Univ. Freiburg), **Denis Pompon** (INSA, Toulouse), **Benjamin Raimbault** (AgroParisTech), **Winfried Römer** (Univ. Freiburg).

## Practical information :

**Location:** Université Paris 1 Panthéon - Sorbonne, 17 rue de la Sorbonne, Salle Cavailles, stair C. 1<sup>st</sup> floor.  
(Public transports : RER B Luxembourg)

**Friday 6** from 9:15 am to 6:00 pm

**Saturday 7** from 9:15 am to 1:00 pm

## Organisation:

**Sacha Loeve** ([sacha.loeve@univ-paris1.fr](mailto:sacha.loeve@univ-paris1.fr))

**Bernadette Bensaude-Vincent**

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Centre d'étude des techniques, connaissances et pratiques.  
CETCOPRA Université Paris 1 Panthéon - Sorbonne.

In collaboration with **Joachim Boldt** and **Tobias Eichinger**,  
Institut für Ethik und Geschichte der Medizin.  
Freiburg Universität.

**Friday June 6**

09.15 Welcome

**09.30 Introductory session***chair: B. Bensaude-Vincent*

09.30 Bernadette BENSAUDE-VINCENT ▶ Introduction

09.40 Benjamin RAIMBAULT "On the emergence of Synthetic Biology as a techno-scientific field"

09.50 Margret ENGELHARD "Differentiating the evaluation of synthetic biology"

10.00 General discussion

10.30 Coffee break

**10.40 Ways of doing synthetic biology***chair: S. Loeve*

10.40 Sacha LOEVE ▶ Opening remarks from the WV&amp;Vs questionnaire

10.45 Gregory BATT "Cybergenetics: cells driven by computer"

10.55 Marc DELCOURT "Global Bioenergies - An application of synthetic biology: from carbohydrates to hydrocarbons"

11.05 Ludovic JULLIEN "Biology-assisted Chemistry as an attractive paradigm for chemistry"

11.15 Oliver MÜLLER "Engineering, designing, creating. Modes of action in synthetic biology"

11.25 General discussion

12.00 Lunch

**13.30 Engineering complexity?***chair: J. Boldt*

13.30 Joachim BOLDT ▶ Opening remarks from the WV&amp;Vs questionnaire

13.35 Thomas HEAMS "Some reasons why life cannot be engineered"

13.45 Geoff BALDWIN "Building the Industrial Biotechnology Pipeline: an integrated workflow for synthetic biology"

13.55 Alfonso JARAMILLO "Title to be announced"

14.05 Mark BEDAU "How weak emergence drives synthetic biology"

14.15 Béatrice DE MONTERA "The human microbiome, issues and underlying values"

14.25 General discussion

15.10 Coffee break

**15.30 Engaging or designing the public?***chair: T. Eichinger*

15.30 Tobias EICHINGER ▶ Opening remarks from the WV&amp;Vs questionnaire

15.35 Sune HOLM "The Continuity Argument in the Context of Public Debate about Synthetic Biology"

15.45 Martin MÜLLER "The 'Dawn of Digital Life'? – The 'Technoscientific Promise-Economy'"

15.55 Jane CALVERT "Art, design and the future of synthetic biology"

16.05 Sacha LOEVE "Beyond unity: Nurturing diversity in synthetic biology and its publics"

16.15 General discussion

**16.45 Student event***chair: S. Loeve*

How engineering students narrate the engineering of life, its future and debates?

Four scenarios presented by ENPC students (Ecole Nationale des Ponts et chaussées ParisTech).

18.00 Cocktail

**20.00 Public event: 'Nuit des sciences' at the Ecole Normale Supérieure**<http://www.nuit-sciences.ens.fr/presentation.html>**Saturday June 7****09.30 Expanding or blurring the boundaries? Natural/artificial, living/non living, nature/society...***chair: B. Bensaude-Vincent*

09.30 Bernadette BENSAUDE-VINCENT ▶ Opening remarks from the WV&amp;Vs questionnaire

09.35 Denis POMPON "Frontiers and views on metabolic engineering"

09.45 Franck DELAPLACE "On the use of computer language for programming biological function"

09.55 Pascal DUCOURNAU "Title to be announced"

10.05 Sheref MANSY "Building artificial cells to deceive natural cells"

10.15 Winfried RÖMER "Synthetic membrane biology - rebuilding cellular processes on artificial membrane systems"

10.25 General discussion

11.10 Coffee break

**11.30 Feedback session: 3 questions to all participants**

What message do you take home? What part of the discussion opened up new perspectives for you? What was business as usual?

12.30 End of the workshop