Synthetic Biology in Question:
Assessing the role of human and social scientists

Biological Futures in a Globalized World
Working Conference

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Over the last decade, engineers, social scientists, funders and the media have helped establish synthetic biology as a new brand name and program for bio-engineering, one that promises the routine engineering of living systems and the standardized design of biological technologies. The success of this process is evident in substantial commitments of dedicated funding and in the creation of synthetic biology institutes at elite research universities such as UC Berkeley, MIT, Cambridge and the Imperial College London, among others. Claims to a transformation of biological practice and thereby a re-imagined future of health, wealth, and security have been critical to these successes, as is the broad reach of 'synthetic biology' which, as an umbrella term, brings together widely diverse research programs, from projects dedicated to the modularization of genetic circuits to the biological synthesis of complex organic compounds and fuels.

Also crucial in securing this competitive advantage has been the sustained engagement of scholars from the human and social sciences with synthetic biology. Serving as advisors, observers, and participants, these scholars have helped proponents frame questions about ethics, openness, and security that are now constitutive of synthetic biology's self-definition. The articulation of a socially, humanly compelling vision of a transformative science/technology that strategically includes discourses of responsibility – the focus of attention for many social and human scientists – has been coupled to the demonstration of scientific or technological advance in the justification of major new initiatives in biology and engineering. This raises serious questions about the dynamics of new engineering and scientific subfields, and also about the ethics, governance, and truth-claims that are made in the name of emerging technologies.

Given this appraisal, we submit that it is time for anthropologists, philosophers, historians and others who have actively engaged synthetic biology of take stock of their participation in its formation. The focus is not on the merits of synthetic biology as such, but on the social and philosophical dimensions of its development and on the participation of anthropologists, historians, and philosophers in this process. Our purpose is ultimately forward-looking: to draw out lessons learned from recent experience; to articulate what it is that humanists and social scientists who engage an emerging field like synthetic biology want to achieve, or can hope to achieve; and to explore both conceptual and pragmatic questions about how to realize these goals. With these objectives in mind, the program is organized around three thematic, seminar-style working sessions:

1) **Critical genealogies**: a reflective appraisal of the ways in which philosophers, anthropologists, social scientists and others have engaged synthetic biology and the role they've played in its formation.
2) **Synthetic biology as a brand**: an appraisal of the diverse factors that now constitute synthetic biology and condition its future, for example: discursive framing; funding; politics; technical practices drawn from engineering, computing, and the life sciences.
3) **Constructive engagement**: a forward-looking assessment of lessons learned, with focus on key concepts and questions that can fruitfully inform the work of humanists and social scientists engaging science and engineering.

Each session will open with three brief introductory statements (10-15 minutes) by presenters who have been asked to reflect on the roles they themselves have played in the consolidation of synthetic biology as well as on the broader implications of their experience. The majority of the time allotted for each session will be devoted to sustained discussion of themes raised by the presenters. This is a working meeting; participation is by invitation. That said, we urge everyone who attends – presenters and non-presenting participants alike – to play an active role in discussion. Background material representing the interests and experience of all participants is available on request from:

Suzanne Long, BFGW Program Coordinator: suzelong@uw.edu / 206-221-5714 (afternoons)

*An initiative of the **Center for Biological Futures** at Fred Hutchinson Cancer Research Center, and the **Simpson Center for the Humanities**, University of Washington*

WORKSHOP PROGRAM
All sessions will be held at the Simpson Center for the Humanities / Communications 202

Tuesday, November 13

10:00-12:30: Critical Genealogies
A reflective appraisal of the ways humanists and social scientists have engaged synthetic biology and the role they've played in its formation.

Mark Bedau (Philosophy and Humanities, Reed College): "How Emergence Drives Synthetic Biology's Science and Epistemology, and Ethics And Social Policy"
Gregory Kaebnick (Hastings Center): "Synthetic Biology: Biotechnology or Social Movement?"
Gaymon Bennett (CBF, Fred Hutchinson Cancer Research Center): "From Bioethics to Human Practices: Designing an Experiment for Synthetic Biology"

12:30 – 2:00: lunch – at the Simpson Center

2:00-4:30: Synthetic Biology as a Brand
A critical assessment of the diverse factors that now constitute synthetic biology and condition its future (e.g., discursive framing; funding; politics; technical practices drawn from engineering, computing, and the life sciences)

Bernadette Bensaude Vincent (Philosophy of Science and Technology, Université Paris 1): "What Kind of Discipline is Synthetic Biology?"
Roger Brent (Basic Sciences, Fred Hutchinson Cancer Research Center): "On the Birth of a Brand and Present Inputs to Its Institutionalized Nativity"
Andrew Ellington (Biochemistry, University of Texas): "Synthetic Biology and Biodefense"

4:30 – 6:30: Informal discussion groups – coffee in the atrium at Paccar Hall

6:00 – 9:00: all participants' dinner – Sitka and Spruce
1531 Melrose Avenue Seattle, WA 98101 / (206) 324-0662

Wednesday, November 14

9:30 – 12:00: Constructive Engagement
A forward-looking assessment of lessons learned, with a focus on key concepts and questions that can fruitfully inform the work of humanists and social scientists who engage the sciences and engineering.

Maureen O'Malley, University of Sydney: "Synthetic Biology as Heuristic"
Samuel Evans, University of California at Berkeley: "Recognizing that STS Knowledge is Co-produced with the Social Order Being Studies"
Claire Marras (Social Science, Health, and Medicine, King's College London; Center for Synthetic Biology and Innovation): "Divergent Expectations: Social Scientists Enrolment in UK Synthetic Biology

12:30 – 2:00: lunch - at the UW Club