

TOWARDS A EUROPEAN STRATEGY FOR SYNTHETIC BIOLOGY

TESSY Stakeholder meeting, 10 June 2008, Brussels

VENUE

European Commission
Madou Building, auditorium (groundfloor)
Place Madou 1
1210 Brussels (Saint-Josse-Ten-Noode)

AGENDA

Synthetic Biology is an emerging area at the cross-roads between molecular biology and engineering. While Europe has a long and successful tradition in both fields, disciplinary borders have been hindering their efficient merging. Therefore, a lot of the pioneering work in this nascent area has been done in the US. The NEST Pathfinder Initiative under Framework Programme 6 (FP6) was the first effort to address Synthetic Biology on a European scale. TESSY aims to take this to the next stage: the objective of TESSY's stakeholder meeting is to highlight opportunities and recommendations for different stakeholder groups with a view to advancing Synthetic Biology in Europe.

- 10:00 - 10:10** **Welcome & Introduction**
Sibylle Gaisser, Thomas Reiss, Fraunhofer Institute, Karlsruhe, DE
- 10:10 - 10:50** **Challenges and Perspectives in Synthetic Biology Research**
Vitor Martins Dos Santos, Helmholtz Centre, Braunschweig, DE
- 10:50 - 11:25** **Industrial Synthetic Biology – a glimpse on opportunities, challenges and responsibilities of an emergent industry**
Peer Stähler, febit, Heidelberg, DE
- 11:25 - 12:00** **Synthetic Biology: responding to the social and ethical challenges**
Paul Martin, University of Nottingham, UK
- 12:00 - 12:15** **Synthetic Biology in the EC**
Ioannis Economidis, European Commission, Brussels, BE
- 12:15 - 13:15** **Lunch**
- 13:15 - 13:50** **Roadmap for Synthetic Biology in Europe**
Sibylle Gaisser, Fraunhofer Institute, Karlsruhe, DE
- 13:50 - 14:15** **Policy approaches to furthering Synthetic Biology**
Thomas Reiss, Fraunhofer Institute, Karlsruhe, DE
- 14:15 - 15:45** **Panel discussion on “Boosting Synthetic Biology in Europe – what is needed?”**
The Panel will cover topics such as research funding, interdisciplinary training and academia-industry relationship.
- Moderator: *Astrid Lunke (European Science Foundation, FR)*
Panelists: *Matteo Bonifacio (Bureau of European Policy Advisers, BE)*
 Amanda Collis (Biotechnology and Biological Sciences Research Council, UK)
 Leonard Katz (Synthetic Biology Engineering Research Center, Berkley, US)
 Martin Reddington (Human Frontier Science Program Organisation, FR)
 Luis Serrano (Centre for Genomic Regulation, ES)
 Daniel Vonder Mühll (SystemsX.ch, CH)
- 15:45 - 16:00** **Conclusions and next steps**
Sibylle Gaisser, Fraunhofer Institute, Karlsruhe, DE

Speakers

VÍTOR MARTINS DOS SANTOS – Helmholtz Centre, Braunschweig, DE

Vitor Martins dos Santos graduated in Bioprocess Engineering in 1992 at the College of Biotechnology, Oporto, Portugal, and earned a doctorate on Environmental Bioprocess Engineering at the Wageningen University, The Netherlands. He did a post-doc at the Dept. of Molecular Biology of the Spanish Scientific Research Council (CSIC) in Granada, Spain and moved subsequently to the Division of Microbiology of the National Centre for Biotechnology Research (GBF) (now Helmholtz Centre for Infection Research, HZI) in Braunschweig, Germany. He heads the Synthetic and Systems Biology Research Group at the HZI, where he runs several national and transnational Systems and Synthetic Biology projects focused on the understanding and exploitation of microbial behaviour for industrially and medically relevant applications.

PAUL MARTIN - University of Nottingham, UK

Paul Martin is Reader in Science and Technology Studies and Deputy Director of the Institute for Science and Society, University of Nottingham. He has two main area of research interest. The first is the ethical, legal and social issues associated with emerging medical biotechnologies. In 2005 he was appointed as a member of the Wellcome Trust's Biomedical Ethics Programme funding panel. The other main area of research interest focuses on the commercialisation of biotechnology and expectation dynamics in medial innovation. His research has been published in leading international journals, including, Nature Reviews Genetics, Trends in Genetics, British Medical Journal, Sociology of Health and Illness, Social Studies of Science, Research Policy and Bioethics. He is currently a member of the editorial boards of Sociology of Health and Illness and New Genetics and Society. Dr Martin has previously advised the European Parliament, the Conseil d'Analyse Economique (part of the French Prime Minister's Office) and the Department of Trade and Industry, and in 2004 was commissioned by the Royal Pharmaceutical Society to write a report on the development of genomic medicine. He is currently a member of a BBSRC working group on synthetic biology and has co-authored a review of the social and ethical issues raised by synthetic biology which will be published in June.

PEER STÄHLER – febit biotech GmbH, DE

In April 2005 Peer Stähler was a co-founder of the re-established febit biotech GmbH. Since then he has been responsible for the company's marketing & sales as Vice President of the company. As Chief Scientific Officer he is also in charge of the strategic product planning and, connected with this, of the supervision and coordination of febit's intellectual property, as well as of its further development aimed to protect the company's Biochip Technology by means of registered trademarks and patents. He studied biology at Konstanz University with the main focus on molecular genetics. In his diploma thesis he developed a reporter gene platform for non-invasive monitoring of genetic therapies at the German Cancer Research Centre (DKFZ) in Heidelberg. As a research scientist at Max Planck Institute for Brain Research (MPIH) in Frankfurt/Main, he was involved in different DNA analysis projects in Europe and in the USA. In 1998 he co-founded febit ag and has acted as its Chief Scientific Officer since then.

IOANNIS ECONOMIDIS – European Commission, BE

Ioannis Economidis is born in Cairo, Egypt in 1945. He studied Agronomy and Plant Pathology at the Agricultural University of Athens, Greece (1968) and he has a Ph.D in Biochemical Genetics from the Biology Division of the University of Texas at Austin, USA (1975). His main research interest was protein/nucleic acid interactions in gene regulation. He worked in the National Hellenic Research Foundation (Athens, GR), University of Thessaloniki (GR), Nuclear Research Centre "Demokritos" (Athens, GR), the Worcester Foundation for Experimental Biology (Shrewsbury, MA, USA), the Deutsches Krebsforschungszentrum (Heidelberg, Germany) and the International Institute of Molecular and Cellular Pathology (Brussels, Belgium). In 1987 he joined as scientific officer the General-Directorate for Research of the European Commission and he worked in the interface of issues of Biotechnology and the Environment. He managed activities dealing with the environmental safety of genetically modified organisms, topics related to environmental biotechnology and to microbial molecular diversity. He is representing frequently his service in OECD and other international fora. He is keeping his academic interests by giving graduate courses at the Technical University of Athens and the University of Crete, on the socioeconomic aspects of biotechnology.

Panelists

MATTEO BONIFACIO – Bureau of European Policy Advisers, BE

Since January 1st 2008, Matteo Bonifacio is Policy Adviser at the Bureau of European Policy Advisers on research, higher education and innovation matters. The mission of the BEPA is to provide timely, informed, policy and political advice to the President and Commission Services on issues relevant to the President's agenda and the future of policies in the Union. From October 2005 to December 2007 he was Policy Developer at the European Commission in the Directorate Generale Education and Culture, operating in the unit dealing with school, education and higher education. There he was member of the team in charge for the development of the proposal to establish the European Institute of Technology and has designed and implemented the call for proposals "Pilot projects for cooperation between European Institutes of Technology". He is also researcher in Organization Sciences at the University of Trento, Italy, where he taught Knowledge Management and Learning Organizations. Previously, he has been program manager in ICT projects for the Institute for Scientific and Technological Research in Italy and Senior Consultant in Andersen where he managed projects on organizational design, knowledge management and knowledge technologies.

http://ec.europa.eu/dgs/policy_advisers/index_en.htm

<http://ec.europa.eu/eit/>

AMANDA COLLIS – Biotechnology and Biological Sciences Research Council (BBSRC), UK

Amanda Collis is Head of Tools and Resources, Biomolecular Sciences and Engineering and Biological Systems at the UK's Biotechnology and Biological Sciences Research Council (BBSRC). She joined BBSRC in 1998 and her employment has included two secondments, one to the Houses of Parliament (2001) and one to Research Councils UK (2002/3). Dr Collis has also worked with the Royal Botanic Gardens, Kew and has a background in molecular biology.

<http://www.bbsrc.ac.uk/>

LEONARD KATZ – Synthetic Biology Engineering Research Center (SynBERC), US

Leonard Katz is Research Director at SynBERC, a multi-institution research effort to lay the foundation for synthetic biology. At SynBERC, he heads the Center's Industry Affiliates Program, which aims to accelerate the commercial use of SynBERC's research developments. Previously, Katz was Vice-President, Biological Sciences, of KOSAN Biosciences, Inc. and spent 19 years at Abbott, where he held a series of research and research management positions. Prior to that, he was a Senior Scientist at Schering-Plough, Inc. between 1977 and 1979 and Assistant Professor in the Biology Department at New York University between 1974 and 1977. Leonard Katz's background is in microbiology and molecular genetics.

<http://www.synberc.org/>

MARTIN REDDINGTON – Human Frontier Science Program Organisation (HFSP), FR

Martin Reddington studied biochemistry at the University of Liverpool, UK and obtained a PhD in biochemistry from the Institute of Psychiatry, University of London in 1974. After a brief postdoctoral period at the University of London, he moved in 1975 to the Department of Neurochemistry at the Max Planck Institute of Psychiatry (now MPI for Neurobiology) in Munich, Germany. He transferred to the Department of Neuromorphology in 1977, where he remained until 1996.

In 1996 he took up a position of Director of Fellowships at the Human Frontier Science Program Organization in Strasbourg, France, with responsibility for the postdoctoral fellowship program. From 1997 to 2000 he was Director of Research Grants and played a key role in the transformation of the project grants into a truly interdisciplinary program, as well as the introduction of online grant application submission and review technology. In 2000 he was appointed Director of Scientific Affairs and Communications and is now responsible for scientific issues spanning all the scientific programs and for promoting the HFSP in the scientific community.

<http://www.hfsp.org/>

LUIS SERRANO – Centre for Genomic Regulation (CRG), ES

Luis Serrano is director of the Systems Biology Research Unit at the Centre for Genomic Regulation in Barcelona, Spain. Previously, he spent 12 years at European Molecular Biology Laboratory (EMBL) in Germany, where he held the position of director of the Structural and Computational Biology Programme between 2001 and 2006 and group leader between 1992 and 2001. Serrano is scientific founder and member of scientific advisory boards of several biotech companies. His background is in protein biochemistry.

<http://pasteur.crg.es>

DANIEL VONDER MÜHLL – SystemsX.ch, CH

Daniel Vonder Mühl is Managing Director of SystemsX.ch in Zurich, a Swiss initiative dedicated to promote Systems Biology by combining Switzerland's strengths in genomics and biomedical research with its flourishing core sciences as chemistry, mathematics, physics and engineering. Between 2000 and 2006, he was Head Research Management of the Rectorate at the University of Basel. Vonder Mühl is geophysicist and did a PhD about mountain permafrost at ETH Zurich. He was active as a PI in a number of permafrost research projects, e.g. an interdisciplinary EU-funded project and has been lecturer at ETH Zurich and University of Zurich. In 2001/2002, he did a postgraduate in "University Politics and Research Management".

<http://www.systemsx.ch/>

TESSY Consortium

SIBYLLE GAISSER – Fraunhofer Institute, Karlsruhe, DE

Sibylle Gaiser is Project Manager at the Fraunhofer Institute Systems and Innovation Research in the Competence Center Emerging Technologies and Coordinator of the TESSY consortium. She is a biotechnologist by training and received her PhD in Pharmaceutical Biology in 1998.

THOMAS REISS – Fraunhofer Institute, Karlsruhe, DE

Thomas Reiss is Head of Competence Center Emerging Technologies at the Fraunhofer Institute Systems and Innovation Research in Karlsruhe, Germany. He has research experience for more than 15 years in innovation systems with a special focus in the pharmaceutical, chemical and biotechnology industry, in innovation policies, foresight, evaluation, impact and technology assessment, especially in the life sciences field.

HUBERT BERNAUER – ATG:biosynthetics GmbH, DE

Hubert Bernauer is the founder and CEO of ATG:biosynthetics GmbH, Merzhausen. Previously, he was cofounder and R&D manager in the board of directors of Genescan Europe AG. His background is in genetics, molecular biology, biochemistry, microbiology and organic chemistry. He received his PhD in 1993.

KRISTIAN MÜLLER – University of Freiburg, DE

Kristian Müller is Assistant Professor for molecular biology and protein engineering at the University of Freiburg. His research areas are modular protein engineering, nano structures, and synthetic biology.

ASTRID LUNKES – European Science Foundation, FR

Astrid Lunkes is Science Programme Manager at the European Sciences Foundation (ESF) in Strasbourg. She is a molecular biologist by training and received her PhD in 1995.