



Policy Approaches to Furthering Synthetic Biology

Dr. Thomas Reiss, Fraunhofer Institute Systems and Innovation Research

1



Background considerations



- 1) **Interdisciplinarity:**
Funding approaches for SB need to consider the highly interdisciplinary character of SB and should be designed as cross-border activities supporting the integration of expertise from all involved disciplines and their synergetic potential.
- 2) **Collaboration among funders:**
Funders across Europe could get together to support interdisciplinary science for which the expertise is scattered in Europe.
- 3) **Broad field delineation:**
The European SB community has a broad view on the field delineation of SB. SB results can also serve in basic science to get insight into the origin of life and the understanding of life processes.
- 4) **Knowledge translation:**
Translation of scientific results into commercial products is often hindered due to inefficient linkage between the public and the commercial sector. This should be addressed by specific translational initiatives.

2





Development of SB in 4 dimensions



- 1) Engineer and study biosystems
- 2) Development of technologies and methods
- 3) Applications
- 4) Public dimension

3



Funding instruments



- 1) Evolutionary funding:
 - Funding of projects which are designed to contribute to a certain desired outcome e.g. the provision of efficient energy systems.
 - Selection on basis of an assessment of the project's contribution to the outcomes rather than the *ex ante* assessment of the technology (by an international panel).
 - Advantage: The evolutionary funding approach supports creativity and helps to draw also conclusion from approaches that do not succeed (tolerance to mistakes).
- 2) Raise industry's interest for Synthetic Biology by joint projects between industry and academia
- 3) Interdisciplinarity of funding organisations:
shared budgets and interdisciplinary strategy development could assist to overcome disciplinary borders within funding agencies

4





Funding instruments (2)



- 4) EUROCORES activities
- 5) European consortium in SB
 - an interdisciplinary network of competence
 - shared DNA analysis and synthesis capacities,
 - shared computational facilities
 - a validated registry
 - assessed manpower for an infrastructural measure: 5-6 persons
 - attached to a European research institute such as the EMBL

5



Organisation of Funding



1. Coordination of EU and national activities:
make best use of synergies and complementarities
2. Interdisciplinarity

6





Topics for funding



1. the funding of platforms of technologies and methods
2. basic research
3. ELSA research

7



Legislative and social measures



- 1) shared understanding of standardization of parts and devices
- 2) the clarification of IP and open source issues
-> establish an international task force
- 3) raise community awareness (e.g by a participative approach)
- 4) provide adequate education in SB
 - Integrate SB in existing curricula
 - Develop new curricula
- 5) Foster interdisciplinarity
 - establish interdisciplinary criteria for evaluating academic success in SB would be very important

8





Thank you very much
for your attention !

9

