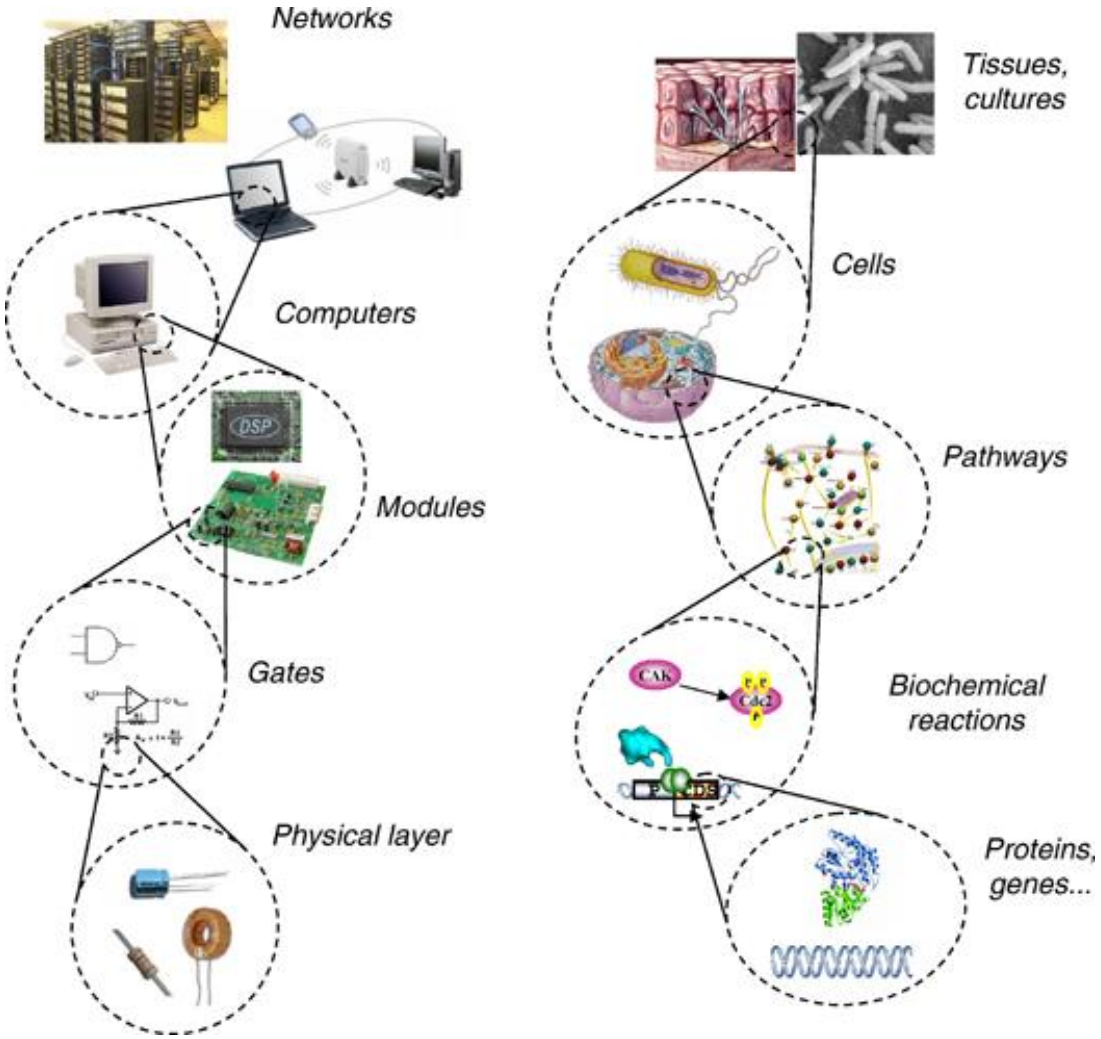
Synthetic Biology

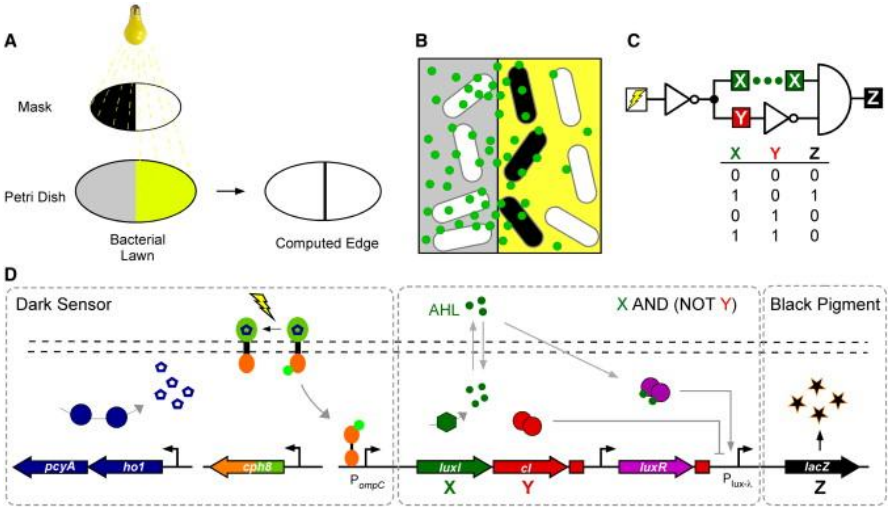
Synthetic biology is the engineering of biology: the synthesis of complex, biologically based (or inspired) systems which display functions that do not exist in nature.

Source: High-level Expert Group European Commission

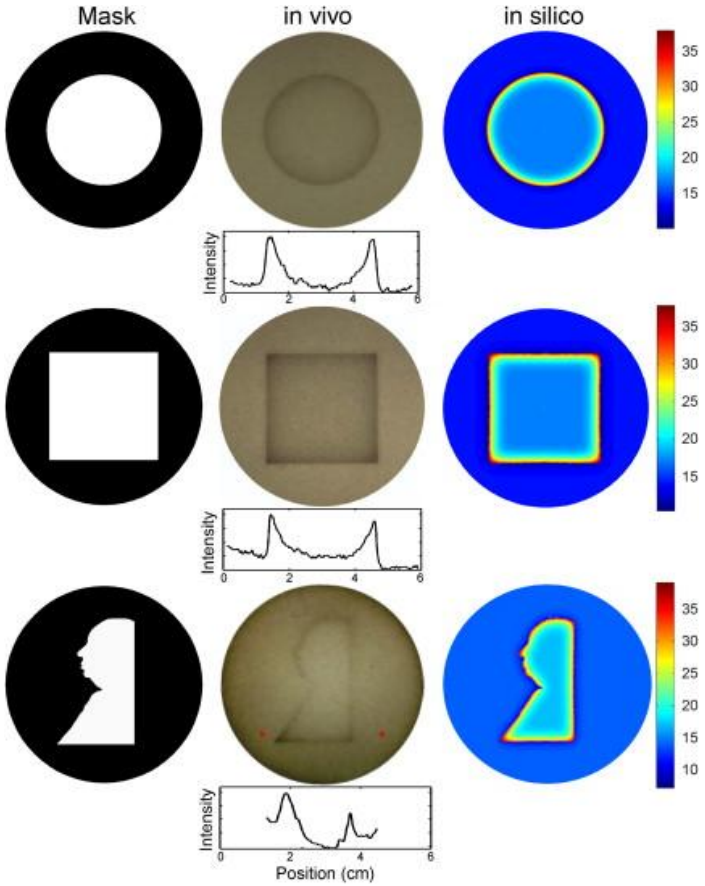
Engineering Biology



Rewriting biology to give new function

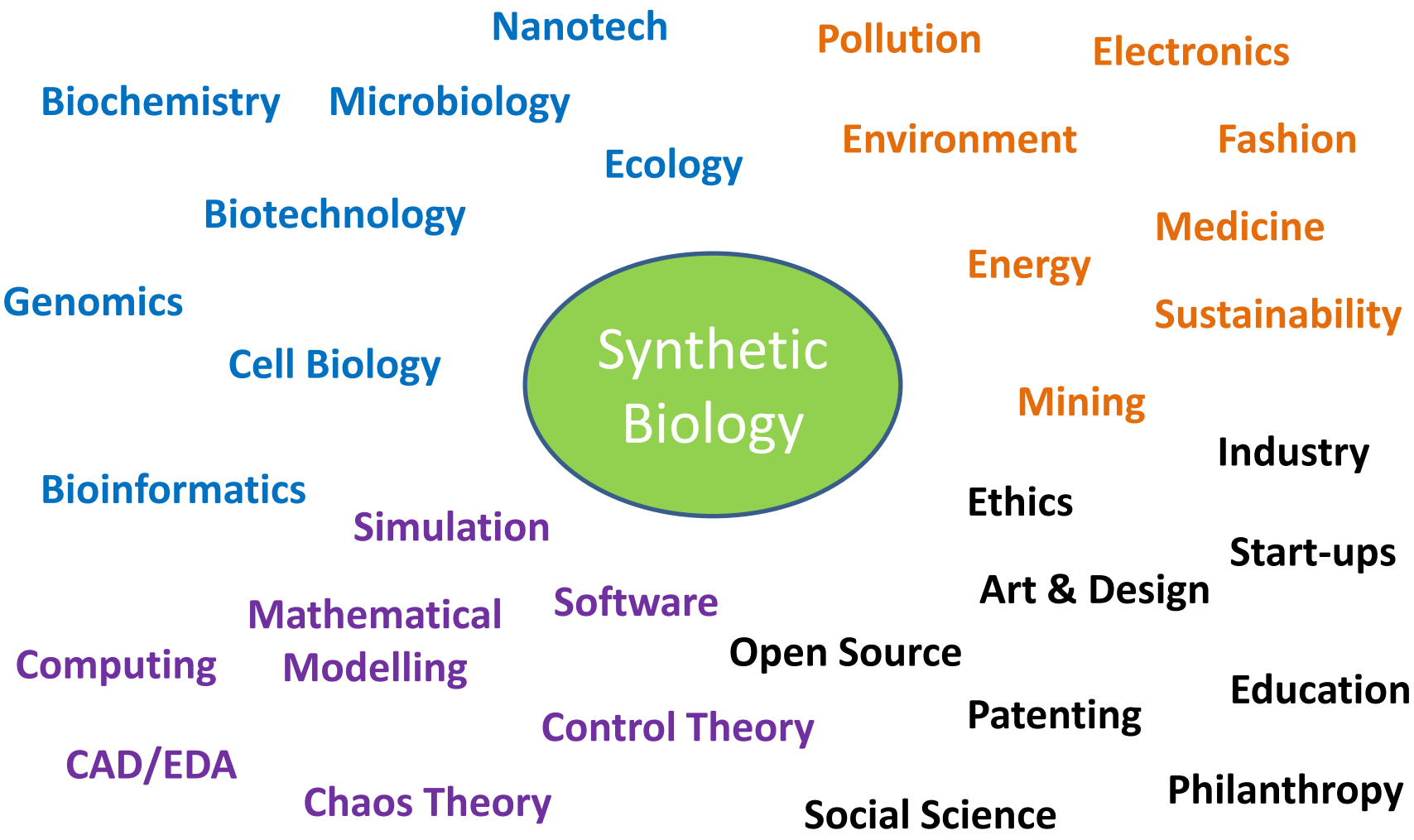


cyanobacter E.coli lambda phage V.fischeri E.coli



Following an abstraction similar to electronic engineering

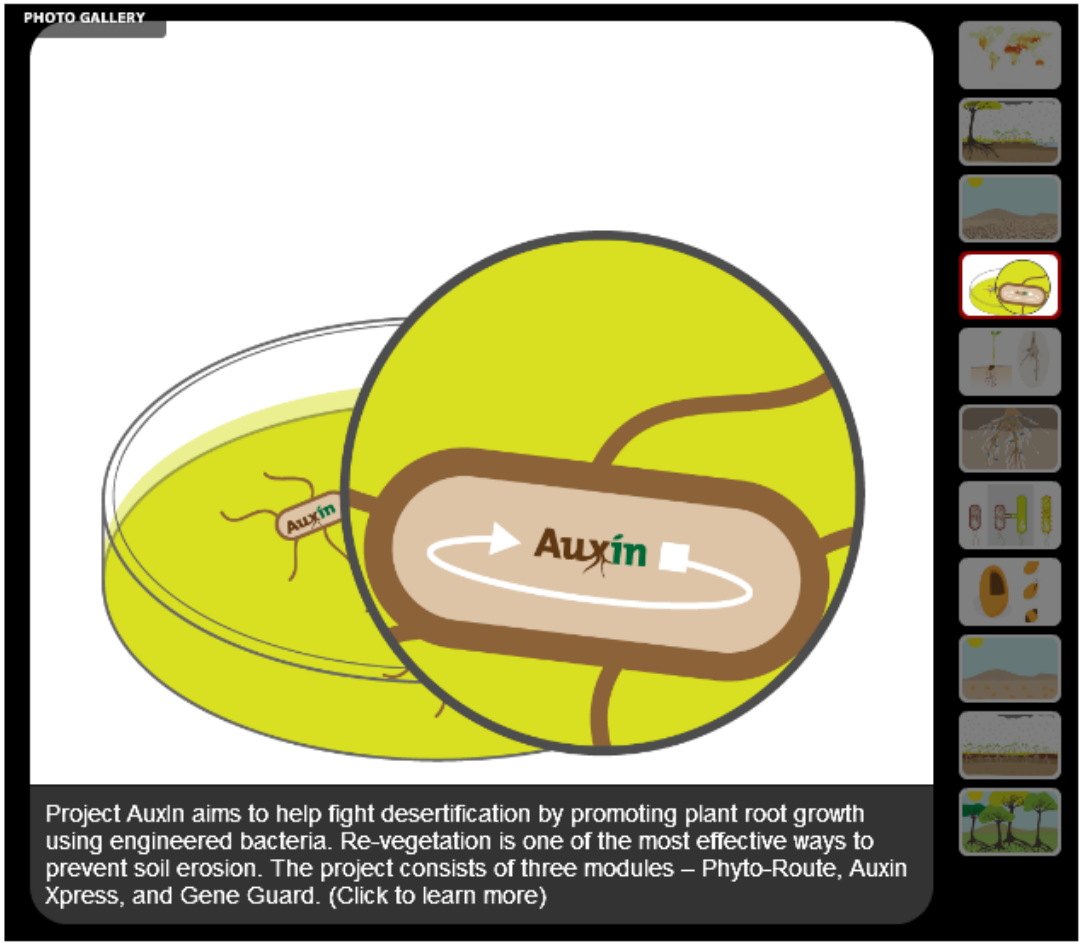
Bringing together disciplines



Auxin

Imperial College London

If you cannot view the photo gallery below, please click here to view our alternative home page or download the Adobe Flash Player here.



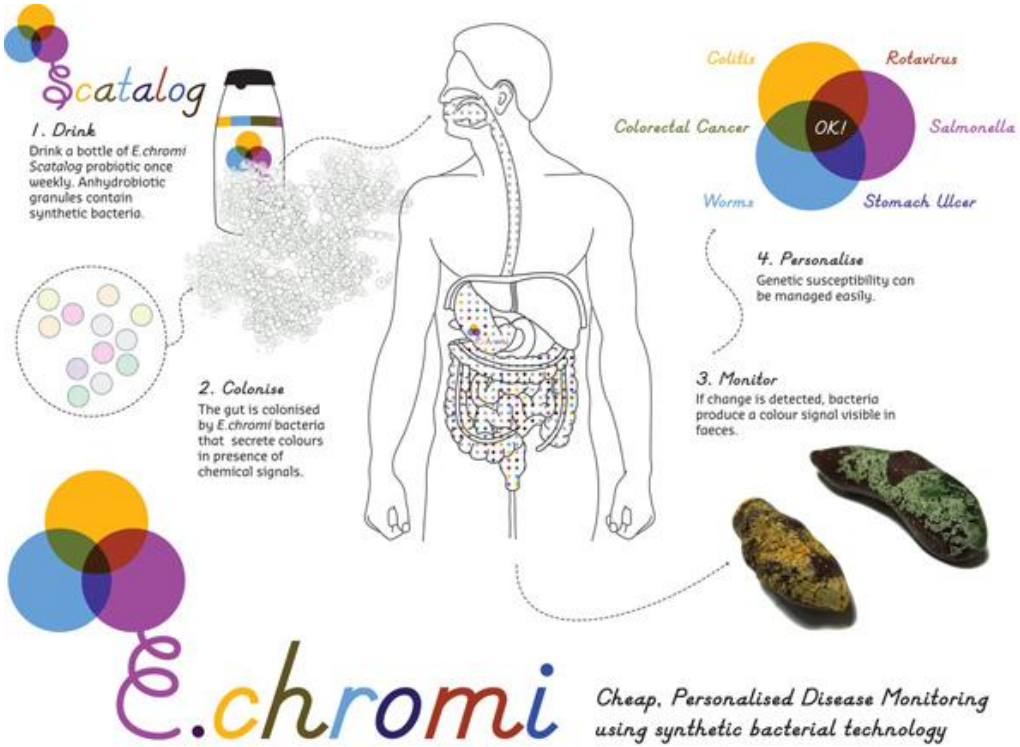
AT A GLANCE

MAIN RESULTS

DATA

Follow us on

What could synthetic biology give us?



With James King and Daisy Ginsberg

Course Structure

Lectures:

- Introductory Biology for Bioengineers OR Introductory Engineering for Life Scientists
- Foundations of synthetic biology
- Applications of synthetic biology

Workshop:

- Ethics of synthetic biology — 25/1

Classes and Coursework:

- Computer modelling project and write-up — Deadline 21/1 (BE) 30/1 (LS)
- Wet-lab practical and data-analysis with questions — Deadline 4/2

Mini-iGEM Project:

- Mixed groups coming up with synthetic biology project idea
- Assessed group write-up of idea, inc. modelling, ethics and more... — 14/2
- Assessed presentation of project — 15/2

Exams:

- Separate exams for Bioengineering and Life Science students

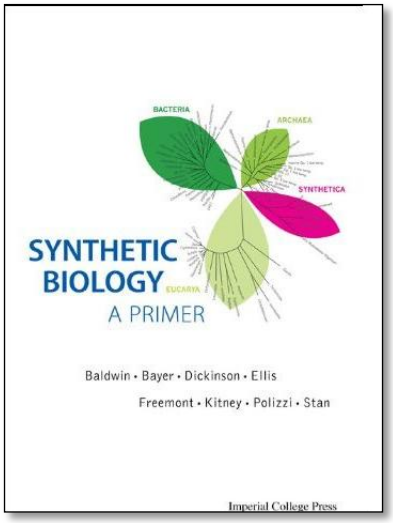
Suggested Reading

Synthetic Biology: A Primer Textbook
http://www.amazon.co.uk/Synthetic-Biology-Paul-S-Freemont/dp/1848168632

The iGEM competition
http://igem.org/Main_Page

The BioBricks Parts Registry
http://partsregistry.org/Main_Page

The Woodrow Wilson Project: synthetic biology 101
http://www.synbioproject.org/topics/synbio101/



David Shukman visits Imperial's Synthetic Biology Centre
http://www.bbc.co.uk/news/science-environment-17511081

Horizon 1 hour special on Synthetic Biology with Adam Rutherford
http://www.bbc.co.uk/programmes/b01b45zh