MRes in Synthetic Biology

Organiser: Prof John Ward

“The 21st Century will be the age of Biology”

Synthetic Biology is brand new discipline which takes the knowledge and understanding we now have of the individual parts of biological systems and uses these in a defined way to design and build novel artificial biological systems.

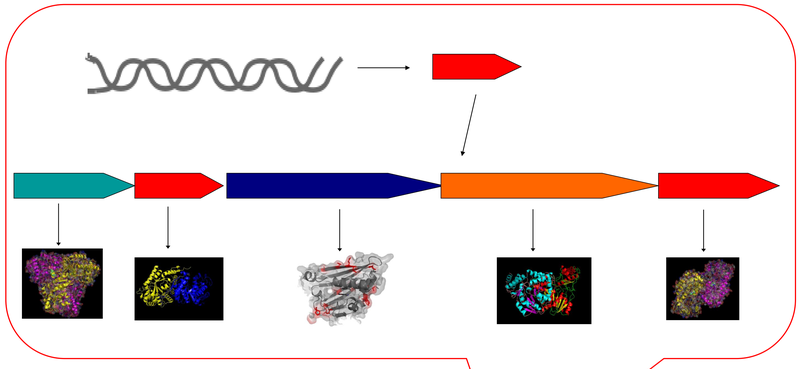
Traditional biology has sought to understand existing biological systems and Synthetic Biology takes these natural systems to design and build new biological devices using simple ‘components’. The aim is to build novel genetic constructs or devices, metabolic pathways, diagnostic or electronic devices and whole cells and organisms.

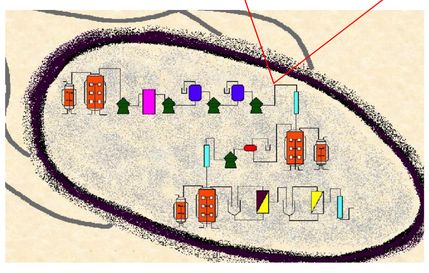
Course Outline
Taught: 60 credits

Synthetic Biology - 30 credits

Research Skills - 15 credits

The Scientific Literature - 15 credits





Course Outline
Research Project: 120 credits

- **Jan-Aug full-time**
  ~15,000 word dissertation and viva

The course is very multidisciplinary and project topics are available across the UCL Faculties in SMB, Chemistry, Biochemical Engineering, Maths, Computer Science, Physics and Electronic Engineering.

Examples of Past research projects

Construction of a synthetic plasmid genome.
Designing bacterial coat proteins with novel functions.
Designing new mamalian cell oscillators.
Gibson assembly - an alternative to BioBricks.
Synthetic gene networks for bioprocess control: The Pavlon.
How does a new research field emerge? The case of synthetic biology.
New oxygenases for modifying alkaloid pathways.

- **Entry requires a 2:1 degree in Bioscience, Engineering, Chemistry, Maths, Computer Science or related field**
- **BBSRC studentships available for suitably qualified UK and EU candidates.**

https://www.ucl.ac.uk/biosciences/masters/mressb