

MBI® Programme 2015-2016

UCL ADVANCED CENTRE FOR
BIOCHEMICAL ENGINEERING



Principles of Fermentation Processes
5-7 October 2015

Rapid Fermentation Process Design: From Development to Manufacture
26-28 October 2015

Downstream Processing – From Cell to Column
16-19 November 2015

Downstream Processing – Chromatography
30 November-3 December 2015

Current Challenges in Mammalian Cell Processing
25-27 January 2016

Quality by Design for Effective Bioprocess Characterisation and Validation
22-25 February 2016

Cell and Gene Therapy Manufacturing
1-3 March 2016 (Cell Therapy Catapult, London)

Design of Experiments for Bioprocess Optimisation
7-9 March 2016

Industrial Biotechnology: Biocatalysis through to Synthetic Biology
18-20 April 2016

Analytical Data Analysis for the Bioprocessing Industry
25-28 April 2016 (CPI, Darlington)

Stem Cell Training Course: Human Pluripotent Stem Cells in Culture
25-27 April 2016

Vaccines Bioprocess Development and Commercialisation
17-19 May

Bioprocess Design & Economic Evaluation
6-9 June 2016

Bioprocess Facility Design
27-30 June 2016

Single Use Technology for Rapid Manufacturing
11-13 July 2016

All courses held at the department of Biochemical Engineering, University College London unless otherwise specified.

For up-to-date information on all MBI® courses, visit
www.ucl.ac.uk/mbi



Industrial Biotechnology: Biocatalysis through to Synthetic Biology

Integrating Biocatalysis and Synthetic Biology into Sustainable Chemical Manufacturing Processes

18-20 April 2016



MBI® Awards

2012 IChemE Award for Training Innovation

2014 UCL Life Learning Enterprise Award for CPD and Short Courses



Industrial Biotechnology: Biocatalysis through to Synthetic Biology

This unique module will introduce options for integrating biocatalysis and synthetic biology into chemical manufacturing processes. We will demonstrate successful commercial examples, and illustrate opportunities for sustainable manufacturing.

In this module a series of lectures, problem solving case studies and workshops will provide close interaction with key academic and industrial experts, enabling you to:

- Strengthen your knowledge in biocatalysis, and whole biotransformation processes, from fermentation to product
- Understand the range of chemical conversions accessible by biocatalysis, and examples of successful industrial applications.
- Discover the industrial potential of synthetic biology
- Explore the challenges and options for large scale biocatalysis/

biorefining process development

Who should attend?

The course is designed for individuals working in any of the following industries where biocatalysis and synthetic biology are important: Fine and speciality chemicals, pharmaceuticals, personal care products, diagnostics as well as sustainable processing in the, biorefining, biofuels and bulk polymer sectors.



Day 1

- Biorefining Principles and Challenges
- Biological process kinetics and operation
- High throughput fermentation and biocatalytic process development
- Practical Considerations in Biocatalytic Process Development
- Case Study: Process Development
- Successful and emerging enzyme chemistries
- **Social networking dinner organised for delegates and speakers.**

Module Leader

Prof Paul Dalby
UCL

Day 2

- Synthetic biology and biocatalyst engineering
- Enzyme discovery and metagenomics
- Chassis selection and host cell engineering
- Practical enzyme characterisation
- Industrial availability in enzyme production
- Scale-up challenges
- Case study: discovery to manufacture
- Process economics and sustainability

Industrial Expert Speakers Include

CPI and a range of industrial experts will be involved in delivery of lectures and case studies.

Day 3

- Sustainable chemistry and biobased products
- Biorefining Principles and Challenges
- New technologies to support biorefining
- Synthetic biology in industry
- Case study: synthetic biology options – process vs. biological solutions
- Market analysis of the biocatalysis and biorefining sector

UCL Experts

Dr Frank Baganz
Prof Gary Lye
Prof John Ward
Dr Brenda Parker

**For further information and bookings please contact:
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Please note the agenda maybe subject to change.