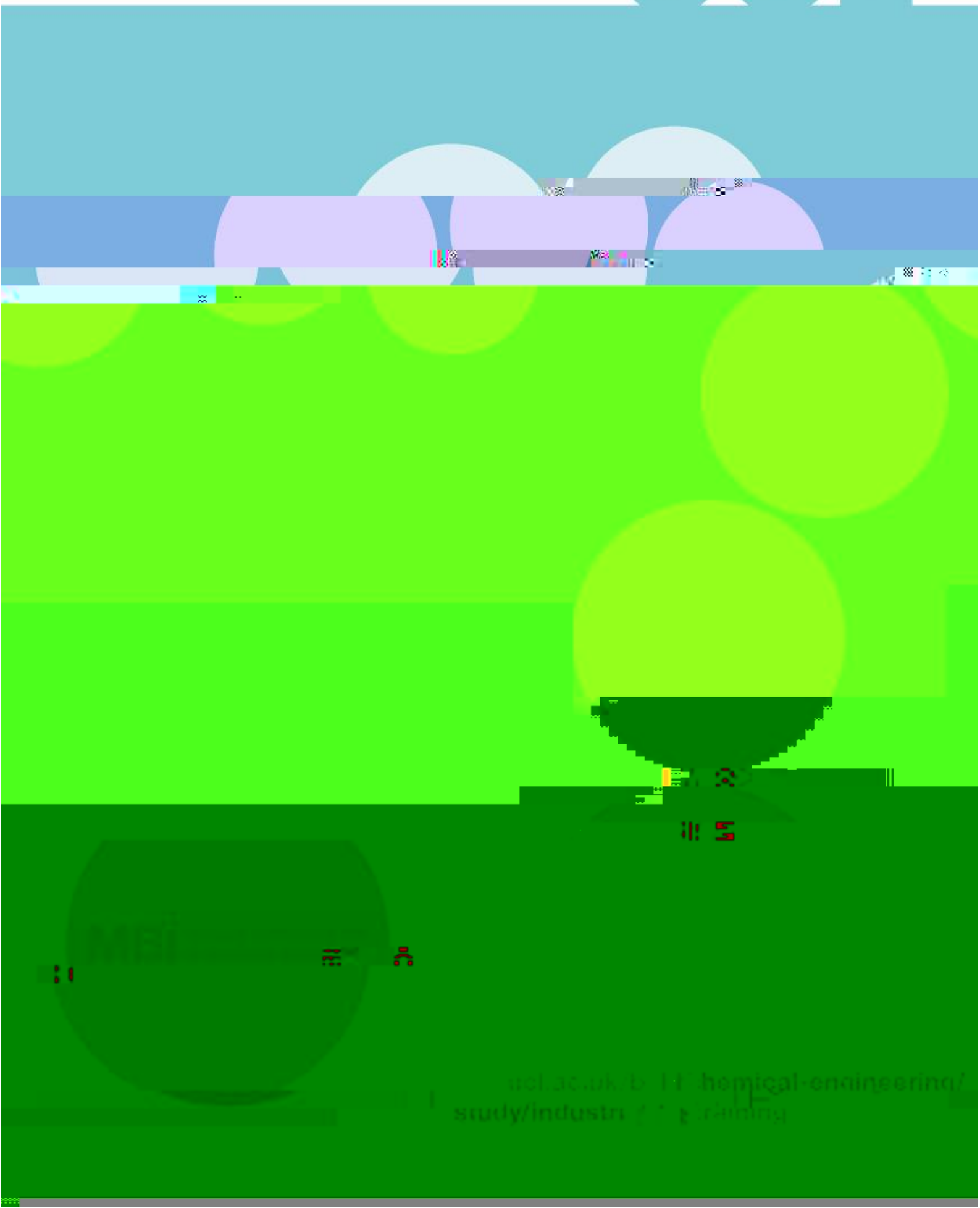
BIOCHEMICAL ENGINEERING

UCL



Vaccine Bioprocess Development and Commericialisation

18 20 June 2024

Welcome to the MBI Vaccine Bioprocess Development and Commericialisation module.

This module is an end-to-end course that seeks to instruct in the various stages of vaccine development and commercialisation. As many vaccines are administered to healthy individuals the regulatory requirements shape development unlike any other biopharmaceutical.

Tuesday, 18 June 2024

9.15am
Registration

9.45am
Introduction to UCL and the MBI Training Programme
Stefanie Frank and Olivia Festy, UCL

10.00am
Introduction to Vaccine Bioprocess Development
Barry Buckland, BiologicB.LLC

Following a survey of the main different vaccine technology platforms examples will be given for specific case studies. Gardasil® vaccine for prevention of cervical cancer is a great example of a Virus Like Particle (VLP) vaccine. Rotateq® vaccine for prevention of Rotavirus infection is an example of a live virus vaccine. Flublok quadrivalent is a protein-based vaccine for protection against Influenza. For protection against COVID-19 both the Moderna mRNA vaccine and the Pfizer mRNA vaccine are great examples.

11.00am
An international academy-industry partnership to advance sustainable vaccine manufacturing
Martina Micheletti, UCL

Abstract

12.00pm
Break

12.20pm
Lessons from the MIT Consortium on Adventitious Agent Contamination in Biomanufacturing
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required to evaluate the immunogenicity and quality of vaccines. There is a hierarchy of standards based on traceability, with the WHO International Standard being the highest order of standards and the primary calibrant. The use of reference materials and reporting results relatively to a common standard enhances reproducibility and comparability of the results within the same laboratory. Calibration of the in-house reference material against the WHO International Standard and/or sharing of the same reference material allows for harmonisation of data among different laboratories globally, through the use of the same unit system, usually the International Units. Having a common language when evaluating the immune responses elicited by vaccines among clinical trials increases comparability of the results, improve confidence during the regulatory evaluation of the data, and also may lead to the identification of correlate of protection.

4.15pm
Break

4.35pm
How mRNA complemented the bioprocessing industry of viral vaccines; and what the future holds

José Castillo, Qantoom Biosciences

This presentation delves into the transformative journey of viral vaccine bioprocessing, tracing its evolution over recent decades and spotlighting the profound impact of COVID-19 on vaccine manufacturing methodologies, particularly through the advent of mRNA vaccine technologies.
We will begin with a comprehensive overview of traditional viral vaccine production and the technological strides that have shaped the landscape of immunization.
This segment aims to provide a solid foundation in understanding the key biological and engineering principles that have governed vaccine development historically.

5.35pm
Close

5.35pm
Close

6.30pm
Dinner

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