

Cultured meat as a protein alternative to address food security and climate change



Dr Marianne Ellis

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**5 March 2020, Thursday
10.00am**

**BTI Boardroom
Level 6, Centros**

Hosted by Dr Kelvin Ng

Please note that all interested attendees will need to register and fill up the declaration form at this link: <https://form.gov.sg/5e54e1a295e4da0011ee8b64>

Due to current COVID-19 situation, we are limiting the number of attendees at the seminar. Attendance will be by pre-registration only. We seek your understanding to only extend the invitation to 2 members from your team (including yourself). Thank you.

Seminar Abstract

Cellular agriculture is the production of agricultural products using cell culture, and cultured meat is a cellular agriculture product. The motivation for a meat alternative is based on concerns about sustainability, low-nutrition related diseases, foodborne illnesses, animal welfare due to intensive farming methods, and the impact of the conventional meat production methods on the environment. There is also the opportunity for farmers to get more product per animal. While the cost of production is currently high, a well-designed bioprocess has the potential to create sustainable affordable cultured meat with the potential to be one of the foods to address global food security issues.

Chemical engineering enables scientific discoveries to be produced affordably, safely, and with consistent high quality. In this talk Dr Ellis will explain how a bioprocess, and in particular the bioreactor, can be customised for cultured meat. Alongside the technical aspects she will touch on the wider considerations of introducing cultured meat as a protein alternative. Work will be presented on tissue engineering aspects, i.e. scaffold development for cultured meat constructs; media formulation in the context of bioprocess design; and early conceptual bioprocess design towards achieving value on the 'triple bottom line' - people, planet and profit.

About the Speaker

Dr Marianne Ellis is a Senior Lecturer in Biochemical Engineering at the University of Bath and a chartered engineer. She is also currently Head of the Department of Chemical Engineering. She has previously held a prestigious Royal Academy of Engineering/The Leverhulme Trust Senior Research Fellow, and has been selected as an EPSRC Rising Star for leadership in the engineering and physical sciences. Marianne is an expert in the design of bioprocess design for tissue engineering applications, particularly scalable bioreactors for cell expansion. Her early work was in regenerative medicine and cell therapies. While she still does some work in this area, as well as having a start up in organoid expansion for cancer drug discovery, Cellesce Ltd, her interests in the environment and food led her to move her expertise into cultured meat, growing muscle cells to be used as a protein source. For this work too she co-founded a company, Cellular Agriculture Ltd.