MONASH University

Engineered Biological Models and Systems
"Not just another seminar"

10th-11th October 2022

This is *not just another seminar*…. Join us at this free two-day event to discover all the exciting advances at the interface of biomedical science and bioengineering.

Monday 10th October, 9.30- 16.30

9.30 am – 12 pm Cell encapsulation, microgels and bioprinting	Learn about 3D cell encapsulation of cells in scaffolds and hydrogels and how these are used to build complex tissues. This session will include scaffolds, hydrogels, microgel assembly and bioprinting. **Lab tours and demos:** Encapsulate cells in a 3D gelatin hydrogel, learn how cells can be encapsulated in tiny microgels for tissue assembly, see tissue bioprinting in action.
Lunch	
1 – 2 pm Animal models and protein expression	Discover how in vivo models are being used to assess therapies to improve wound healing, bone, muscle and cardiac repair. Learn about methods and capabilities in protein expression to generate the biofunctionality needed in your system.
2 – 4.30 pm Microfluidic devices and sensors	Uncover the latest developments in microfluidic devices and sensors and how they can be used to interrogate biological systems. **Lab tours and demos:** Discover a lightsheet microscope that fits on a slide! See how microfluidic devices can be used for single-cell encapsulation and cell sorting. Learn how a tiny chip can be used to detect bacteria and monitor their effects on mammalian cells.

Tuesday 11th October, 9.30- 16.00

9.30 am – 12 pm Organoid Program	Discover how cutting-edge techniques are used to generate 3D "mini-organ" models to study development and disease. **Lab tours and demos:** Get up close and personal with some organoids, learn about the materials used to grow them, visualise their structures under a microscope.
Lunch	
1 – 4 pm Micro/nano fabrication	Immerse yourself in the tiny world of micro and nano fabrication. Discover the capabilities, and hear about the systems being developed at Monash. How can these tiny structures influence cell and tissue development, or be used to control or detect biological processes? **Lab tour:** Visit the Melbourne Centre for Nanofabrication (https://nanomelbourne.com) to see the cutting edge-tools and capabilities right on our doorstep.

Register at

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