

MechBio2025

Viewpoint Room, UQ

Wed Nov 5th

Coherent
SCIENTIFIC

9.30

REGISTRATION

9.45

WELCOME

Session 1

9.55

A/Prof Sam Stehbens, AIBN, UQ

The Mechanobiology of Melanoma: Understanding How Tumour Cells Survive Metastasis

10:20

Dr Christanny Schmidt, AIBN, UQ

Cytoskeletal-Golgi Crosstalk During Cellular Migration Through Confined Environments

10:40

Dr Yuanyuan (Emily) He, Otago Uni

TRPV4 Channel Activity is Modulated by the Cytoskeleton and Δ N-TRPV1

11:00

MORNING TEA

Keynote

Chair: Prof Alpha Yap

11:30

Prof Julia Yeomans, University of Oxford

Active Matter meets Mechanobiology: evading the decay to equilibrium

Session 2

12:20

Dr Dietmar Oelz, UQ

Mechanochemical ab-initio Axis Formation in Hydra Spheroids

12:40

Sponsor Talk: Coherent Scientific

High volume nanomechanical mapping of cell cultures using AI driven segmentation

12:55

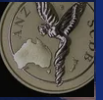
LUNCH & POSTERS

MechBio2025

Viewpoint Room, UQ

Wed Nov 5th

ANZSCDB
Australia and New Zealand Society for
Cell and Developmental Biology Inc.



Session 3

- 14:00 **A/Prof Kate Poole, UNSW**
Force Sensing via Ion Channels in Pancreatic Cancer Cells
- 14:25 **Dr Charles Cox, VCCRI**
Piezo Channel Auxiliary Subunits in Sensory and Non-sensory Cells
- 14:50 **Dr Zijing Zhou**
TMEM63 Proteins act as Mechanically Activated Cholesterol
Modulated Lipid Scramblases Contributing to Membrane
Mechano-resilience

15:10

AFTERNOON TEA

Session 4

- 15:40 **Prof Kathryn Stok, Uni Melb**
From In Vivo Insights to In Vitro Impact - Reproducibility and
Standardisation in Mechanobiology
- 16:05 **A/Prof Vijay Rajagopal, Uni Melb**
Cellular Digital Twins for Mechanobiology Research

16:30

CLOSE

- 18:30 **Conference Dinner**
The Greek Club
29 Edmondstone Street
South Brisbane QLD 4101

MechBio2025

Viewpoint Room, UQ

Thur Nov 6th



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

9.30

WELCOME

Session 1

9.35

Prof Alvaro Sagasti, UCLA

Myosin Activity Regulates Cortical Tension in Epithelial Cells to Promote the Formation and Patterning of Labyrinthine Microridge Protrusions

10:00

Dr Renee Chow, ARMI, Monash

Using Zebrafish as a Model to Tackle Calcific Valve Disease

10:25

A/Prof Navid Bavi, UCLA

Molecular Mechanism of Prestin-mediated Electromotility

10:45

MORNING TEA

Keynote

11:15

Prof Edouard Hannezo, IST

Robustness of Morphogenesis via Mechano-chemical Feedbacks

Session 2

12:05

Dr Peter Newman, Garvan

May the Highly Resolved Force Be With You

12:25

Dr Sami Al-Izzi, UNSW

Capillarity Reveals the Role of Capsid Geometry in HIV Nuclear Translocation

12:45

LUNCH & AGM

MechBio2025

Viewpoint Room, UQ

Thur Nov 6th



Session 3

14:15

A/Prof Yu Suk Choi, UWA

Attachment Issues: The role of tumor microenvironment and adhesion dependency in cancer metastasis

14:40

Prof Michael Samuel, UniSA

Understanding the ECM Structural Characteristics that Promote Tumour Progression and the Mechanisms by Which They Are Established

15:05

Dr Manijeh Khanmohammadi, Baker Institute

Tuning Macrophage Responses Via Matrix Stiffness and Tensile Force

15:25

AFTERNOON TEA

Session 4

15:55

Prof Travis Klein, QUT

Bioreactors for Dynamic Mechanical Stimulation

16:20

Dr Peter Su, UTS

The Interplay of Physical, Chemical and Biological Dynamics in Living Cells

16:45

Prof Sara Baratchi

Dissecting Biomechanical Drivers of CAVD Using Bioengineered Human Valve Models

17:10

PRIZES & CLOSE



Active Matter Symposium

Viewpoint Room, UQ

Fri Nov 7th

9:00 **Alpha Yap & Richard Morris**
Welcome and Introduction: What is Active Matter (2.0)?

9:30 **Julia Yeomans**
Stress and shape misalignment in active cell layers

10:10 **Joe Pollard**
From monolayers to many layers

10:30 **MORNING TEA**

11:00 **Mat Simpson**
Mechanics of tissue growth and deformation

11:30 **Doug Brumley**
Three-dimensional active transport by ciliary arrays on coral surfaces

12:00 **Ben Fulcher**
Quantifying the dynamical signatures of life

12:30 **LUNCH**

13:30 **Edouard Hannezo**
Active matter models of collective cell migration

14:10 **Julia Eckert**
Bridging 2D and 3D: Detecting Nematic Patterns in Tissue Surfaces

14:30 **Alvaro Sagasti**
Squeezing through the skin: intra-epithelial migration disperses cells through an epithelium

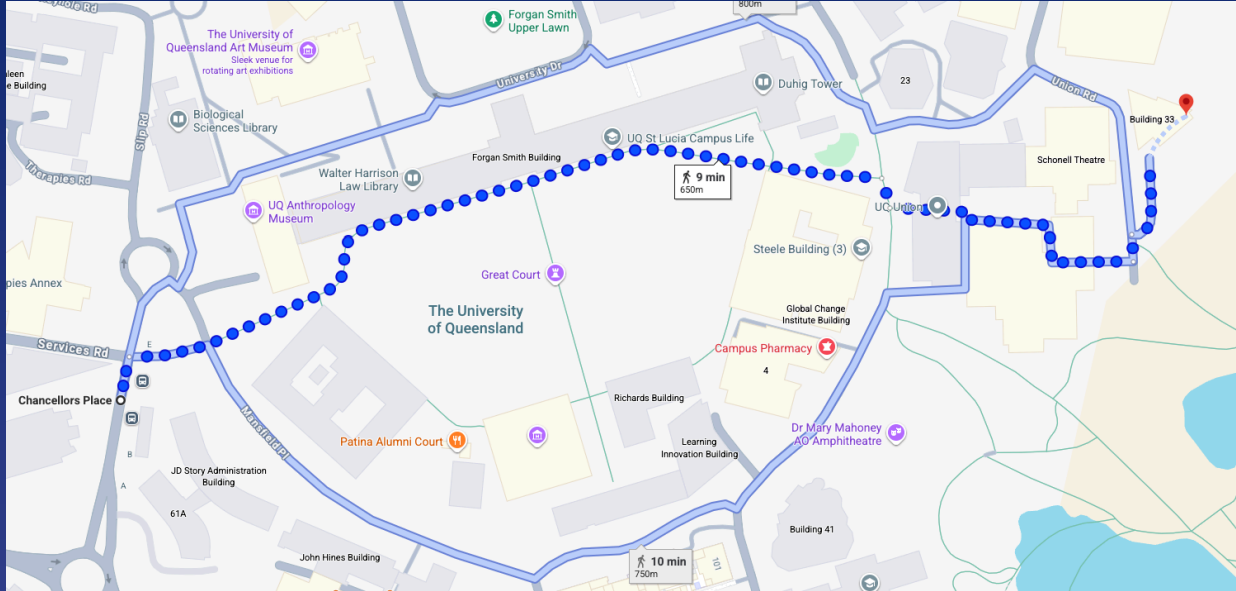
15:00 **CLOSE**

Directions to the Viewpoint Room

Building 33, UQ, Saint Lucia

From Brisbane's CBD, the 192, 411, 412 and 66 all head directly to UQ. There are two Bus Terminals on the St Lucia Campus: Chancellor's Place and UQ Lakes.

Walk from Chancellor's Place bus stops

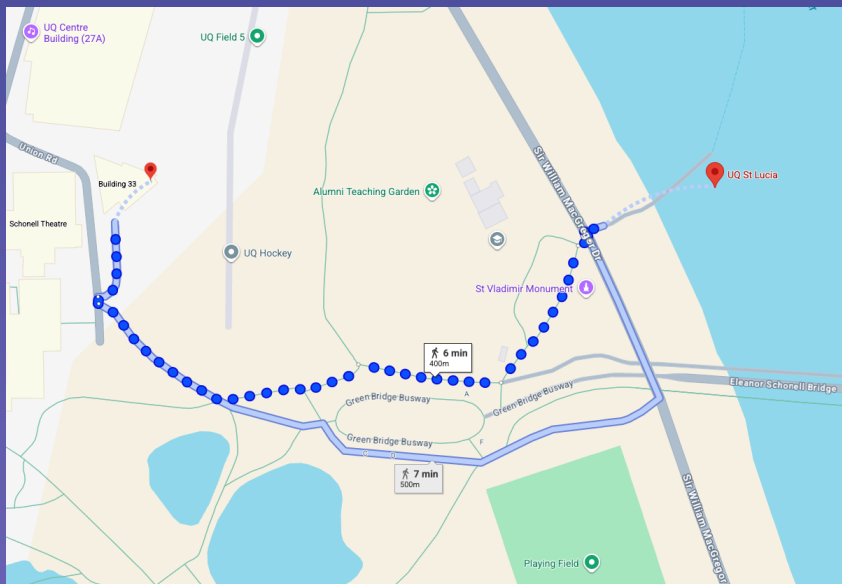


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journey



Walk from UQ lakes

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Walk from Citycat Ferry