

THE UOA MECHANOBIOLOGY INTEREST GROUP (MiG)
Annual Mechanobiology Symposium

December 9, 2010

In his seminal thesis, *On Growth and Form*, D'Arcy Wentworth Thompson detailed the relationship between form and function of living organisms: Physical forces and principles of physics are responsible for the morphological development of living things. This thesis, considered as important as Darwin's theory of evolution, has seen new light in the emerging field of mechanobiology. New discoveries are now being made on how mechanical stimuli plays a critical role in regulating cell function, tissue formation and organ function.

Mechanobiological processes occur at multiple spatial and temporal scales: at the molecular, cellular, tissue, organ, organ system levels and from embryogenesis, childhood through to processes involved in aging. Understanding how mechanobiological processes work involves a multiscale and multidisciplinary approach and the integration of several disciplines including biology, physics and engineering.

The University of Auckland Mechanobiology Symposium is organised as a local effort to contribute to the world-wide development of this field of science. The participants of this symposium represent multidisciplinary research groups that are collectively focussed on a range of important aspects of mechanobiology.

For example, the Primary Cilia research group from the Department of Anatomy studies the problem at the cellular level, the Biomaterials research group from the Faculty of Engineering is actively involved with the tissue level microstructural biomechanics, and the Bone Research group, a result of collaboration between the Faculty of Health Sciences and the Auckland Bioengineering Institute, applies basic science research to the design and development of bioreactors to optimise tissue engineering of bone tissue.

The University of Auckland Mechanobiology Symposium is, therefore, designed to provide a platform for different research groups to present their recent research findings and spark-off some new and exciting research collaborations.

In New Zealand, we reside amongst esteemed scientists and engineers with a deep interest and commitment to mechanobiology research. Therefore, this year we have opened the symposium to include our colleagues from other universities in New Zealand.

On behalf of the organisers of this symposium, the Department of Anatomy and Physiology, the Department of Chemical and Materials Engineering, and the Auckland Bioengineering Institute, we welcome you to a day of learning and insight into this exciting field of research.

Co-chaired by:

Dr Ashvin Thambyah
Department of
Chemical and Materials
Engineering, Faculty of
Engineering.

Dr Sue R. McGlashan
Department of Anatomy with
Radiology, Faculty of
Medical and Health
Sciences.

Dr David Long
Department of
Engineering Science and
Auckland Bioengineering
Institute.

<u>PROGRAMME</u>	
Thursday 9th December 2010	
Location: Owen Glen Building, 12 Grafton Road, Room: OGGB5/260-051	
09.00	Opening and Welcome: Dr Sue McGlashan
09.10	<u>Invited Speaker 1:</u> Tim David, University of Canterbury
09.30	<u>Invited Speaker 2:</u> David Long, University of Auckland
09.50	<u>Invited Speaker 3:</u> Denis Loiselle, University of Auckland
10.10	<u>Invited Speaker 4:</u> Marie Ward, University of Auckland
10.30-11.00	MORNING TEA
11.00	<u>Invited Speaker 5:</u> Elwyn Firth, Massey University
11.20	<u>Invited Speaker 6:</u> Neil Broom, University of Auckland
11.40	<u>Invited Speaker 7:</u> Ashvin Thambyah, University of Auckland
12.00	<u>Invited Speaker 8:</u> Piaras Kelly, University of Auckland
12.20	<u>Invited Speaker 9:</u> Tony Poole, University of Otago
12.40	<u>Invited Speaker 10:</u> Sue McGlashan, University of Auckland
13.00-14.00	Lunch
14.00	<u>Invited Speaker 11:</u> Mervyn Merrilees, University of Auckland
14.20	<u>Invited Speaker 12:</u> Jill Cornish (unconfirmed), University of Auckland
14.40	<u>Invited Speaker 13:</u> Michelle Dickinson, University of Auckland
15.00	<u>Invited Speaker 14:</u>

	Iain Anderson, University of Auckland
15.20	<u>Invited Speaker 15:</u> David White, AUT, Auckland
15.40	Tea-break
16.00-17.00	<i>5 minute Student presentations.</i> [12 short talks]
17.00-18.30	<i>POSTER SESSION with Drinks and Nibbles</i>
18.30	Closing

