



ROYAL SOCIETY TE APĀRANGI

Ngā Ahurei hou a Te Apārangi
New Fellows' Seminar Information

Rāpare 13 Huitanguru 2020

Thursday 13 February 2020

NGĀ AHUREI HOU A TE APĀRANGI

NEW^o
FELLOWS

Professor Nicola Dalbeth FRSNZ, University of Auckland

Joint damage in gout: Strategies for prevention

Advanced imaging studies and laboratory research have demonstrated how monosodium urate crystals cause joint damage in gout. In clinical trials, long-term urate-lowering therapy can prevent this joint damage. Nicola will discuss the new strategies needed to ensure equitable access to effective therapy that can prevent the consequences of poorly controlled gout.



Dr Philip Barnes FRSNZ, NIWA

Tectonically active continental margins

Convergence between the Pacific and Australian tectonic plates results in deformation across New Zealand and the surrounding seafloor. Our active continental margins are shaped by the colliding plates, along with faulting, earthquakes, uplift, subsidence, and sedimentation. Philip will discuss the significant advances in understanding these processes and their associated geohazards.



Professor Valery Feigin FRSNZ, Auckland University of Technology

Can we stop the stroke tsunami? Mitigating the barriers, amplifying the facilitators

Valery's presentation will demonstrate the growing burden of stroke in New Zealand and worldwide and review the currently used strategies for primary stroke and cardiovascular disease prevention. It will also outline a new, award-winning, internationally endorsed and potentially highly effective population-wide motivational strategy developed by AUT for primary stroke and CVD prevention.



Professor Philip Seddon FRSNZ, University of Otago

How to catch an ostrich using a net and a sock with a hole in it: New tools for the future of biodiversity conservation

Philip is a reintroduction biologist concerned with the science and practice of conservation translocations, releasing organisms to establish new populations. He explores the risks of new forms of translocation, including moving species outside historical ranges in response to climate change, but also the application of new technologies for de-extinction and synthetic biodiversity conservation.



Professor Brendan Hokowhitu FRSNZ, University of Waikato

Indigenous studies: A new world

Brendan is a leading thinker in the nascent field of Indigenous studies. By re-centring Indigenous knowledge generally, Brendan's work on masculinities, sport sociology, critical theory, and film and media studies has challenged many dominant and limiting truths about Māori and Indigenous peoples.





Dr Kelvin Berryman FRSNZ, GNS Science

From hazard, to risk, to resilience

Kelvin's work seeks to quantify natural hazards (particularly earthquake and tsunami), and landscape change as a product of geological processes and climate variation over periods of many thousands of years and to then communicate this knowledge in terms of risk (to lives and livelihoods) to policy makers and the public.



Dr Mark Sagar FRSNZ, Soul Machines

Facing the future

Mark's work has focussed on the computational modelling of the face — how it appears and moves, how muscles create form and how the nervous system creates expressive behaviour in face-to-face interaction and social learning. His company Soul Machines aims to humanise AI, re-imagining how we collaborate with technology.



Professor Merryn Gott FRSNZ, University of Auckland

Why dying is an equity issue

Merryn directs the Te Ārai Palliative Care Research Group. The group uses creative research methods to make visible the role of social factors such as cultural identity, gender and age in determining the end of life experiences of people with life-limiting illness and that of their family/whānau.



Associate Professor Selina Tusitala Marsh FRSNZ, University of Auckland

Weaving a poetry korowai for the Prime Minister

Tusitala (Samoan for storyteller), ends with 'ala', the proto-Polynesian word for 'path'. By growing a Pasifika poet-scholar's way of doing critical and creative work, Selina cuts paths through un-poetic environs, enacting the Samoan concept of 'Va' to nurture and adorn people, spaces and places through the transformative power of poetry — like she did recently when weaving 165 women's voices into the world's first poetry korowai at an honouring ceremony for Prime Minister Rt Hon Jacinda Ardern.



Professor Jillian Cornish FRSNZ, University of Auckland

From milk to the military

Investigating bone biology has led to tissue engineering of the skeleton. Jillian studies a potent bone-active growth factor lactoferrin, a multifunctional milk protein, which can build new bone and is anti-microbial and currently being investigated to prevent biofilm implant-related infection in orthopaedic injuries.

Professor Elaine Reese FRSNZ, University of Otago

Taking the long way

A 20-year longitudinal study led by Elaine traces the stories that individuals tell about their lives from toddlerhood to young adulthood, and how those memories relate to their wellbeing. Parents play a pivotal role through the way they talk about memories – both their children’s memories and their own.



Professor Ronald Fischer FRSNZ, Victoria University of Wellington

Mapping culture in human minds

Humans are unique amongst animals in showing extreme cultural sophistication and diversity. Ronald’s research focusses on documenting and exploring the origins and consequences of human cultural diversity. This quest raises fascinating problems, including what is ‘culture’, and how cultural activities both facilitate and undermine our health and wellbeing.



Professor Rewi Newnham FRSNZ, Victoria University of Wellington

The perennial power of pollen

Rewi studies past and present environmental change, mainly through pollen analysis (palynology). This includes reconstructing New Zealand’s past climates and their controls and links to global climate change, determining human and volcanic impacts on the environment, tracing sea level and lake history and contemporary effects of pollen on human health.



Professor Tim Mulgan FRSNZ, University of Auckland

Cosmic purpose and future people

Tim develops a new understanding of our place in the universe, and explores its implications for our obligations to future people. He argues that, while humanity is incidental to the purpose of the universe, safeguarding the human future is our only hope of achieving anything of cosmic significance.



Professor Caroline Crowther FRSNZ, University of Auckland

Prevention of cerebral palsy in preterm babies – the ongoing magnesium sulphate research journey

Cerebral palsy remains the most frequent cause of severe motor disability in childhood with preterm birth a principal risk factor. Cumulative research over the last 25 years has shown antenatal magnesium sulphate prior to very preterm birth to be one of the very few interventions to prevent cerebral palsy, Caroline will explain.





Professor Astrid an Huef FRSNZ, Victoria University of Wellington

Infinite-dimensional algebras from dynamical systems

Astrid studies dynamical systems, mathematical objects intended to model the way things change, and their abstract generalisations. They can be studied in a variety of ways, and Astrid uses the techniques of infinite-dimensional algebra and analysis which arose in the study of algebras of physical observables in quantum mechanical systems.



Professor Anne-Marie Brady FRSNZ, University of Canterbury

Magic weapons: Developing a resilience strategy to deal with the Chinese Communist Party's (CCP) political interference activities in New Zealand

Anne-Marie's ground-breaking research into CCP political interference activities demonstrates the important role of the academic as "critic and conscience" in a modern democracy. Anne-Marie is a specialist of Chinese politics (domestic politics and foreign policy), polar politics, Pacific politics, and New Zealand foreign policy.



Professor James Crampton FRSNZ, GNS Science and Victoria University of Wellington

A glorious residue: Life on Earth

Living biodiversity is the glorious residue of evolution and extinction summed over hundreds of millions of years. James' research seeks to reconcile "instantaneous" evolutionary and ecological processes observed in the living biota today, with long-term patterns and processes inferred from the remarkable fossil record of life on Earth.

NGĀ AHUREI HONORE A TE APĀRANGI NEW HONORARY FELLOW



Distinguished Professor John Dudley Hon FRSNZ, University of Bourgogne-Franche-Comté

Stability and instability in light and nature

John studies unusual kinds of nonlinear waves that can be either infinitely stable or completely chaotic. He studies stable waves in lasers and optical fibres, looking to develop practical light sources for industry. His studies of unstable waves focus on understanding destructive rogue waves on the ocean's surface.



He korimako tangi ata.

The bellbird that heralds the dawn.
The long awaited call signalling a new day.

TE HŌTAKA THE PROGRAMME

STREAM ONE

| Time | Room - Aronui Lecture Theatre | Topic |
|----------------|---|------------------------------|
| 1.30 pm | Nicola Dalbeth, University of Auckland | Gout prevention |
| 1.45 pm | Philip Seddon, University of Otago | Conservation |
| 2.00 pm | Brendan Hokowhitu, University of Waikato | Indigenous studies |
| 2.15 pm | Kelvin Berryman, GNS Science | Natural hazards |
| 2.30 - 3.00 pm | Kai paramanawa a te ahiahi Afternoon tea | |
| 3.00 pm | Selina Tusitala Marsh, University of Auckland | Poetry |
| 3.15 pm | Jillian Cornish, University of Auckland | Bone biology |
| 3.30 pm | Ronald Fischer, Victoria University of Wellington | Human cultural diversity |
| 3.45 pm | Caroline Crowther, University of Auckland | Prevention of cerebral palsy |

TE HŌTAKA THE PROGRAMME

STREAM TWO

| Time | Room - Kete o te Wānanga | Topic |
|----------------|---|----------------------------------|
| 1.30 pm | Philip Barnes, NIWA | Tectonics |
| 1.45 pm | Valery Feigin, AUT | Stroke Prevention |
| 2.00 pm | Mark Sagar, Soul Machines | Computational modelling |
| 2.15 pm | Merryn Gott, University of Auckland | Palliative care |
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| 2.30 - 3.00 pm | Kai paramanawa a te ahiahi Afternoon tea | |
| | | |
| 3.00 pm | Elaine Reese, University of Otago | Autobiographical memory |
| 3.15 pm | Rewi Newnham, Victoria University of Wellington | Environmental change |
| 3.30 pm | Tim Mulgan, University of Auckland | Cosmic purpose and future people |



Ko te pae tawhiti, whāia kia tata;
ko te pae tata, whakamaua kia tīna.

Seek out distant horizons and
cherish those you attain.

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