

OPINION LEADERS

New Zealand Life Sciences Key Opinion Leaders

Showcasing the quality of the
New Zealand Science System

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NEW ZEALAND LIFE SCIENCES KEY OPINION LEADERS

Showasing the quality
of the New Zealand science system.

OCTOBER 2019

BioTech New Zealand engaged BioPacific Partners to undertake a study to identify some of New Zealand's most prominent and compelling key opinion leaders in the life sciences. This involved identifying a broad long list of potential key opinion leaders, determining a short list, and profiling – in detail – the fifteen in this report.

INTRODUCTION

In 2019 BioTechNZ began a project to provide an overview of New Zealand's biotechnology industry and identify New Zealand's strengths in biotechnology in a global context.

The forthcoming *Aotearoa New Zealand Boosted by Biotech – Innovating for a sustainable future* report, due in October 2020, provides information covering what is biotechnology and why is it important for New Zealand and an overview of the New Zealand biotechnology landscape. The information will be used by both government and industry to set policy and strategy.

The first section of this report is an overview of the strengths New Zealand claims to have in the biotechnology sector. This includes drug and vaccine research and development, other therapies for the treatment of disease, and nutraceuticals and bioactives.

This supplementary report is a pilot study, focused on the identification and validation of key opinion leaders in life sciences within New Zealand. Key opinion leaders help to showcase New Zealand's strengths internationally as they emphasise the quality of the science New Zealand can offer.

The research identified 150 key opinion leaders of significance and through a process of shortlisting the following fifteen were selected for profiling in what is hoped to be the first in a series of reports.

NEW ZEALAND LIFE SCIENCES KEY OPINION LEADERS



Professor Mike Berridge



Professor Antony Braithwaite



Dame Margaret Brimble



Professor Charles Eason



Professor Richard Furneaux



Professor Ed Gane



**Professor Sir Peter
David Gluckman**



Professor Parry Guilford



**Distinguished Professor
Jane E. Harding**



Professor Wendy Nelson



Professor Indrawati Oey



Professor Peter Sheperd



Doctor Sean Simpson



**Distinguished Professor
Harjinder Singh**



Professor Merryn Tawhai

**PROFESSOR
MIKE
BERRIDGE**



Healthcare

BSc, MSc (Hons), PhD (Auckland)

Affiliation: Victoria University of Wellington

Mike Berridge completed a doctoral degree in cell biology at the University of Auckland in 1971 exploring the mechanism of action of plant growth hormones. Following postdoctoral research in developmental molecular biology at Purdue University, USA, and experience as a staff scientist at National Institute for Medical Research, Mill Hill, UK, he returned to Wellington in 1976 as the second Malaghan Research Fellow where he established the Cancer Cell & Molecular Biology Research Group and was a founding scientist of the Wellington Cancer & Medical Research Institute, later renamed the Malaghan Institute of Medical Research in recognition of major personal support by Len and Anne Malaghan. His current research interests include cancer cell energy metabolism, the stem cell origins of cancer, gene transfer between cells, mitochondrial genetics and cancer immunotherapy.



Other Activities

As a science communicator, he recently published “The Edge of Life” (2015), and “Sugar, Rum and Tobacco: Taxes and Public Health in New Zealand” with Lisa Marriott in 2017. He is leader of the Cancer Cell Biology group at Malaghan Institute.

Distinctions/Honours

Mike Berridge received a James Cook Fellowship in the health sciences in 2003 and was awarded the Health Research Council Liley Medal for outstanding research on cellular metabolism in 2016. In the same year he was a semi-finalist in the KiwiBank New Zealander of the Year Awards.



ADVISORY POSITIONS

Member of the Biomedical research committee at the Health Research Council of New Zealand

Member of the organising committee of the Queenstown Research Week

KEY FIGURES

Patents: **1**

H-index: **39**

Publications/peer-reviewed articles: **+100**



**PROFESSOR
ANTONY
BRAITHWAITE**



Healthcare

MSc, PhD

Affiliation: University of Otago

Professor Antony Braithwaite is head of the Cell Transformational Unit at the Children’s Medical Research Institute, based at the University of Sydney. He splits his time between Otago and Sydney. Antony completed his Bachelor and Masters of Science degrees at the University of Auckland before embarking on his PhD at the Australian National University. Antony was awarded a Howard Florey Fellowship and worked at the Marie Curie Cancer Research Institute in the UK, before returning to the Australian National University to lead a team studying basic mechanisms in cancer cell formation. In 1996, he took up a personal Professorship in Pathology at Otago. Antony’s research is focused on the regulation of cell proliferation and cell survival and the role played by the tumour suppressor protein.



Other Activities

Antony Braithwaite is principal investigator at Maurice Wilkins Centre for molecular biodiscovery. The Maurice Wilkins Centre produces world class research and makes exciting scientific discoveries. They link New Zealand’s outstanding expertise in biomedical research to develop cutting-edge drugs and vaccines, tools for early diagnosis and prevention, and new models of disease.

Distinctions/Honours

He was elected a Fellow of the Royal Society of New Zealand in 2013 and awarded was awarded a Howard Florey Fellowship as well as a James Cook Research Fellowship in 2015.



ADVISORY POSITIONS

Key player in founding the Institutional Biological Safety Committee

Former member of the HRC Biomedical Research Committee

Former member of the HRC Maori Health Research Committee

KEY FIGURES

Patents: **1**

H-index: **40**

Publications/peer-reviewed articles: **+ 100**



DAME MARGARET BRIMBLE



Healthcare

CNZM, MSc, PhD, FRSNZ, FRSC, FRACI, FNZIC

Affiliation: University of Auckland

Dame Margaret Brimble was born and raised in Auckland, attended the University of Auckland and has done almost all her research in New Zealand. She is Director of Medicinal Chemistry at the University of Auckland. Her team discovered the drug NNZ2566 for Neuren Pharmaceuticals Ltd (ASX) that was successful in phase 2 clinical trials for Rett syndrome and Fragile X Syndrome. NNZ2566 has been named trofinetide by the WHO and has been granted orphan drug and fast track status for these indications. Trofinetide is also currently in phase 2 clinical trials for traumatic brain injury (i.v.) and concussion (oral). Margaret's peptide chemistry laboratory is New Zealand's only laboratory accredited by Medsafe to manufacture peptides under cGMP for human clinical trial, and her team has manufactured five such peptides for the human clinical trial of a melanoma vaccine. She is a passionate advocate for female scientists and regularly spoke to groups of young women to encourage them to consider science as a career. Current research focuses on the synthesis of functionalised peptides designed to adsorb onto the surface of new crystals in order to control their nucleation and growth. Peptides are designed and synthesized to control the shape, size and surface functionality of metal nanoparticles – precious metals intended for catalytic application and iron, intended for magnetic particles useful in medical imaging and diagnostic devices



Other Activities

Dame Margaret Brimble is principal investigator of Maurice Wilkins centre for molecular Biodiscovery and principal investigator of Brain Research New Zealand.

Distinctions/Honours

Amongst many national and international honours, she has been appointed a Dame Companion of the New Zealand Order of Merit, and received the Rutherford, Hector and MacDiarmid medals from the Royal Society of New Zealand (2012), the Royal Society of Chemistry Natural Products Chemistry Award (2010), the RACI Adrien Albert Award for medicinal chemistry (2011), the IUPAC Distinguished Woman in Chemistry/Chemical Engineering Award and was named the 2007 L'Oréal-UNESCO Women in Science Laureate (Asia-Pacific).



ADVISORY POSITIONS

President of the IUPAC Organic and Bimolecular Division

Chair of the Rutherford Foundation

Member of the European Research Council Advanced Grants Panel

KEY FIGURES

Patents: **26**

H-index: **39**

Publications/peer-reviewed articles: **+500**



**PROFESSOR
CHARLES
EASON**



Environment

BSc, PhD

Affiliation: Lincoln University

Professor Eason’s science speciality is toxicology, particularly in relation to drugs and natural compounds. Early in his research career, Professor Eason worked on the development and commercialisation of three cardiovascular drugs in Europe. He moved to Landcare Research in 1990 and began development of more than 15 new devices and toxins for targeting mammalian predators. He continues to be involved with the development and commercialisation of pest control tools and systems with low risk to the environment, low toxicity to birds and low secondary poisoning risk. He is currently involved in the development of new drugs derived from marine algae with European pharmaceutical companies. Appointed a Lincoln University Professor in 2008 he established the Centre for Wildlife Management and Conservation where he led a number of research programmes, and where he still retains links. Professor Eason specializes in leading research groups to achieve significant and tangible outcomes. His private sector experience is a major influence in his current leadership of Cawthron whose researchers excel in freshwater, coastal and marine ecology, algal ecology and technologies, natural compound chemistry and food safety



Other Activities

Professor Eason has been in leadership roles at the Cawthron Institute since 2003, firstly as a board director and then as Chief Executive and Research Director from 2012, leading more than 200 scientists. Under his leadership as Chief Executive, new funding has been secured and new buildings and laboratories built, including the world’s largest mussel hatchery, funded by Sanford, which opened in the Cawthron Aquaculture and Research Park in 2015. These new facilities are allowing Cawthron to build on its expertise in aquaculture breeding, seafood safety, nutraceuticals, and coastal and freshwater ecology

Distinctions/Honours

Charles Eason has been a companion of the Royal Society of New Zealand since 2016 and he received the Royal Society Thomson Medal for Science Leadership in 2017.



ADVISORY POSITIONS

Member of the New Zealand Ecological Society

New Zealand Institute of Directors

British Toxicology Society

KEY FIGURES

Patents: **4**

H-index: **36**

Publications/peer-reviewed articles: **+200**



**PROFESSOR
RICHARD
FURNEAUX**



Healthcare

PhD

Affiliation: Victoria University of Wellington

Richard had post-doctoral positions at the University of Montana (**USA**) and **VUW, before joining DSIR Chemistry in 1980, which** became IRL in 1992 (now Callaghan Innovation). He has led the Carbohydrate Chemistry research team for the last 20 years, which is focused on the rational design and synthesis of drug candidates based on knowledge of the role of carbohydrates in biology, in partnership with World Class Biologists. The flagship project is the collaboration with the biochemist/biology team of Professor Vern Schramm at Albert Einstein College of Medicine in New York, which is focused on inhibitors of carbohydrate and nucleoside processing enzymes for use as pharmaceuticals. He is current director at Ferrier Research Institute.



Other Activities

He has been involved with (and for a year managed) the GlycoSyn business unit at Industrial Research Limited, which undertakes process development and cGMP manufacturing by organic chemical synthesis of small molecule drugs for use in proof-of-concept human clinical trials. Together these units total 55 technical and support staff. He also serves as advisor to Avalia Immunotherapies.

Distinctions/Honours

In 2017, Professor Furneaux was awarded the BNZ Supreme Award at the Kiwinet Research and Commercialization awards. He was awarded the Wellingtonian of the Year Award in Science & Technology (2013), the Thompson Medal in 2012, Hector Medal (2006), the Nufarm Prize for Excellence in Industrial and Applied Chemistry (2004), the New Zealand Science and Technology Medal (1994), the Research Medal from the New Zealand Association of scientists (1990). He became a Fellow of the Royal Society of New Zealand in 1998 and of the New Zealand Institute of Chemistry in 2004



ADVISORY POSITIONS

Deputy Chair, Biomolecular Interaction Centre, University of Canterbury

Associate Investigator, Maurice Wilkins Centre for Molecular Biodiscovery

National representative, International Carbohydrate Organisation

KEY FIGURES

Patents: **21**

H-index: **57**

Publications/peer-reviewed articles: **+225**



**PROFESSOR
ED
GANE**



Healthcare

MBCHB, MD, FRACP, MNZM

Affiliation: University of Auckland

Dr. Gane is Professor of Medicine at the University of Auckland, New Zealand. He trained in hepatology at the Institute of Liver Studies, King’s College School of Medicine, London, where he completed his MD on the pathogenesis of hepatitis C-related liver allograft injury following transplantation for HCV-cirrhosis. In 1998, Dr. Gane was appointed as Chief Transplant Physician for the first New Zealand Liver Transplant programme at Auckland City Hospital. In addition, Dr. Gane runs large Hepatitis Clinics in Auckland and Greenlane Hospitals for patients and a large tertiary Liver Cancer Clinic. In 2000, Dr. Gane became the Ministry of Health Clinical Advisor for the National Hepatitis B Screening and Follow-up Programme. In 2013, Dr. Gane was appointed as Hepatitis C Champion for the Ministry of Health National Hepatitis C Project. He is an investigator for many international clinical trials of therapies for chronic viral hepatitis with particular interest in early phase development of new direct acting antiviral therapies against hepatitis C and hepatitis B. Dr. Gane serves on the editorial committee for several journals.



Other Activities

Ed Gane is Chief Hepatologist, Transplant Physician and Deputy Director of the New Zealand Liver Transplant Unit at Auckland City Hospital.

Distinctions/Honours

In May 2011, Dr. Gane was awarded Member of the Order of New Zealand for Services to Medicine. In 2017, he was awarded the New Zealand Innovator of the Year for his work towards HCV elimination in NZ.



ADVISORY POSITIONS

Executive Committee of the NZ Society of Gastroenterology

Member of several international organisations including APASL, AASLD, ILCA and ILTS.

Chairs the Ministry of Health HCV implementation committee.

KEY FIGURES

H-index: **3**

Publications/peer-reviewed articles: **300**



**PROFESSOR
SIR PETER DAVID
GLUCKMAN**



Healthcare

KNZM, FRSNZ, FMedSci FRS

Affiliation: University of Auckland

Peter Gluckman was originally trained in Dunedin and Auckland as a paediatrician with an interest in endocrinology. Two years later he becomes a postdoctoral fellow and then Assistant Professor at the University of California in San Francisco working on how fetal hormonal systems developed and how growth was controlled. He returned to New Zealand in 1980 to set up a research group funded by the then Medical Research Council. He spent the next 17 years funded on research grants developing a group of more than 60 people focused on developmental endocrinology and neuroscience. Their work both addressed issues of human growth and development and pastoral animal growth and development. In 2001 he helped set up the Liggins Institute in the belief that New Zealand must have critical masses of scientists doing world class research. He has authored both technical and popular science books. He chaired the WHO Commission on Ending Childhood Obesity (2014-2017).



Other Activities

He founded two spin-out companies Neuronz and Endocrinz merged into Neuren Pharmaceuticals Ltd in 2004. Neuren sports a portfolio of drugs aimed at exploiting the therapeutic window for acute events like stroke and head injury, but also chronic conditions like Alzheimer's and Parkinson's disease. He leads the International Network for Government Science Advice as well as leading the secretariat of the Small Advanced Economies Initiative. He is currently co-developing the Centre for Science in Policy, Diplomacy and Society (SciPoDS) as part of the University's Public Policy Institute.

Distinctions/Honours

He has received the highest scientific and civilian honours in New Zealand and numerous international scientific awards. In 2016 he received the AAAS award in Science Diplomacy. He is a Fellow of the Royal Society of London and the Royal Society of New Zealand, a member of the National Academy of Medicine (USA) and a fellow of the Academy of Medical Sciences (UK).

ADVISORY POSITIONS



Honorary chairs in University College London, University of Southampton and National University of Singapore

Chair of the International Network of Government Science Advice (INGSA)

President-elect of the International Science Council (ISC).

KEY FIGURES

Patents: **30**

H-index: **101**

Publications/peer-reviewed articles: **+700**



**PROFESSOR
PARRY
GUILFORD**



Healthcare

KNZM, FRSNZ, FMedSci FRS

Affiliation: University of Otago

Professor Parry Guilford is a Principal Investigator in the Cancer Genetics Laboratory, University of Otago. He completed his MSc at Otago in 1983, and his PhD at Cambridge University in 1989. Professor Guilford's research interests include the genetics of inherited and sporadic cancers, and the development of new cancer diagnostics and therapeutics. Professor Guilford's work in understanding the role of mutations in the CDH1 gene in familial gastric cancer and the subsequent development of a genetic test, has dramatically decreased the mortality from this form of inherited cancer. He received a \$150,000 grant to investigate a device to detect early stage cancer - a development which could be a world first



Other Activities

He is the Director of the Centre for Translational Cancer Research and Research Director of Pacific Edge Biotechnology Ltd. Pacific Edge specialises in the discovery and commercialisation of diagnostic and prognostic technology for the early detection and monitoring of cancer. Professor Guilford is also senior inventor on Pacific Edge patents including its flagship bladder cancer diagnostic test Cxbladder®. This product has recently won the NZ Innovation Awards and has secured significant contracts with healthcare providers in NZ and the USA.

Distinctions/Honours

He is a recent recipient of the Charles Hercus Medal for biomedical research, the HRC Beaven Medal for translational health research, the University of Otago's 2017 Distinguished Research Medal, and is a Fellow of the Royal Society of New Zealand.

ADVISORY POSITIONS

Member of the MBIE Science Board
Member of the HRC Board



KEY FIGURES

Patents: **17**

Publications/peer-reviewed articles: **+82**



**DISTINGUISHED PROFESSOR
JANE E.
HARDING**



Healthcare

BSc, MBChB, FRACP, Dphil

Affiliation: University of Auckland

Jane Harding obtained her medical degree at The University of Auckland. She then trained in fetal physiology on a Rhodes Scholarship, completing her Doctor of Philosophy at the University of Oxford. After specialist training as a Paediatrician in New Zealand, she completed her FRACP in neonatology. Her postdoctoral training was as a Fogarty Fellow at the University of California at San Francisco. She was appointed to the faculty of The University of Auckland in 1989 and was appointed Professor of Neonatology in 1997. She was Deputy Vice-Chancellor (Research) for The University of Auckland from 2008-2015, and is a member of the LiFePATH research group of the University's Liggins Institute. Professor Harding's research activities include clinical as well as basic physiological studies. Her main interests concern the interaction of nutrients and growth factors in the regulation of growth before and after birth, perinatal glucose regulation and the long-term consequences of treatments given around the time of birth.



Other Activities

Jane Harding is a neonatologist (Paediatrician who specialises in the care of newborn babies) and principal investigator of multiple HRC project grants and of the CHYLD Study.

Distinctions/Honours

She was awarded the Health Research Council of New Zealand's Beaven Medal in 2016



ADVISORY POSITIONS

- Health Research Council
- National Health and Medical Research Council of Australia
- Royal Australasian College of Physicians

KEY FIGURES

- Patents: **1**
- H-index: **55**
- Publications/peer-reviewed articles: **+300**



**PROFESSOR
WENDY
NELSON**



Environment

BSc, BSc, (Hons), PhD

Affiliation: University of Auckland

Professor Wendy Alison Nelson is a New Zealand marine scientist and world expert in phycology. She is New Zealand's leading authority on seaweeds. She is particularly interested in the biosystematics of seaweeds/macroalgae of New Zealand, with research on floristics, evolution and phylogeny, as well as ecology, and life history studies of marine algae. Recently she has worked on the systematics and biology of red algae including coralline algae, distribution and diversity of seaweeds in harbours and soft sediment habitats, and seaweeds of the Ross Sea and Balleny Islands. She is programme leader at NIWA in the Coasts & Oceans National Centre in Marine Biological Resources. I also lead the marine biodiversity and biosystematics research group.



Other Activities

Professor Wendy Nelson is currently involved in a number of different projects cataloguing and describing marine algae from around New Zealand. She is also involved in the CARIM (Coastal acidification - rate, impacts and management) research project funded by the Ministry of Business Innovation and Employment. The project is generating new knowledge on ocean acidification, to enhance protection and management of New Zealand coastal ecosystems. In 2015 she led the Royal Society of New Zealand report on the "National Taxonomic Collections of New Zealand."

Distinctions/Honours

In 2008, Nelson was named a Member of the New Zealand Order of Merit for services to the marine environment. In 2016, Nelson won the Royal Society of New Zealand's Hutton Medal, which is awarded for outstanding work by a researcher in New Zealand in the Earth, plant and animal sciences.

ADVISORY POSITIONS



- Member of the New Zealand Conservation Authority for 8 years.
- President of the International Phycological Society.
- Member of the Joint Graduate School in Coastal and Marine Science

KEY FIGURES

Patents: **1**

H-index: **3**

Publications/peer-reviewed articles: **+100**



**PROFESSOR
INDRAWATI
OEY**



Food Science

PhD (Leuven), MSc (Leuven), BSc (Bogor)

Affiliation: University of Otago

Indra is the Food Science Head of Department. She is also actively involved in the teaching and supervising of students. Her research focuses on the development of smart processing strategies using conventional and advanced food technologies to create healthier food products with unique sensory characteristics. Understanding mechanisms and kinetics of enzymatic and chemical reactions during processing and shelf life is a pre-requisite to assure the quality of food products. Also understanding consumer perception and acceptance of food products and processing technologies used are essential to achieve sustainable production and marketability of food products.



Other Activities

Principal Investigator and the Science Board of Food Industry Enabled Technology (FIET) programme, the Principal Investigator of Riddet Institute CoRE and the "Adding Value" theme leader for Agriculture at Otago (Ag@Otago)

Distinctions/Honours

Fellow at the New Zealand Institute of Food Science and Technology

ADVISORY POSITIONS



Professional member of the Institute of Food Technologists (IFT), USA

Member-at-large of the Executive Committee Board of Non-thermal Processing Division at the Institute of Food Technologists (IFT), (2012-2015) USA

KEY FIGURES

Patents: **39**



Publications/peer-reviewed articles: **+200**

**PROFESSOR
PETER
SHEPERD**



Healthcare

BSc (Hons), PhD, FRSNZ

Affiliation: University of Auckland

After graduating from Massey University Peter Sheperd undertook post doctoral research at Harvard Medical School and the University of Cambridge before gaining a tenured position at University College London. In 2004, he moved back to New Zealand from University College London and his research continues to be in the broad area of signal transduction with a particular focus on type-2 diabetes and cancer.

His lab also has a strong focus on scientific outreach. One avenue for this is understanding how they can link their research with high schools to make their research have impact on science education in New Zealand. Another important area of outreach has been in development of research collaborations and partnerships with Māori communities.



Other Activities

He has been involved in a wide variety of collaborative projects in translational cancer research over the years and the NZSO panel deemed that his leadership and expertise in cell signaling to have been essential to many successful anti-cancer drug developments. He founded biotechnology company *Symansis* to develop novel tools for drug discovery, and was co-founder of drug development company *Pathway Therapeutics*. He is deputy director of the Maurice Wilkins Centre. He is an adjunct professor at Fudan University in Shanghai.

Distinctions/Honours

He recently received the New Zealand Society of Oncology (NZSO) 2017 Translational Research Award. The same year, he received the Callaghan Medal of Royal Society of NZ. Prior to this, he was named London Young Biotechnology Entrepreneur of the year in 2002. For a High School Biology Level 2 NCEA text book that he co-authored with Rachel Heeney, he received the CLNZ NZ Educational Book award.

ADVISORY POSITIONS

- Chair of Queenstown Molecular Biology Meetings Society
- Convenor of Queenstown Research Week
- Fellow of the Royal Society of New Zealand



KEY FIGURES

- Patents: **3**
- H-index: **3**
- Publications/peer-reviewed articles: **171**



**DOCTOR
SEAN
SIMPSON**



Environment

MSc, PhD

Affiliation: No affiliation

Dr Simpson was involved in pioneering a biochemical process for ethanol production from hardwood with Genesis R&D Corporation in New Zealand. Dr Simpson has several years experience in bioproducts development and through his career he has worked at Hoffmann La-Roche in Basel, Switzerland, at the Sandoz Forschungsinstitute, Vienna, Austria, and at the Japan International Research Centre for Agricultural Sciences, Tsukuba, Japan. Dr Simpson holds a PhD from York University, UK, and a Masters degree from Nottingham University.



Other Activities

Dr Simpson was previously Director of The ICEHOUSE Limited, and is currently a Director and Chief Scientific Officer of global biofuels leader LanzaTech (that he co-founded). Since its inception in 2005 the company has grown under Dr Simpson's leadership to include scientists from around the world working together in New Zealand. In addition, Sean provided pre-seed funding to assist Avertana company become investment-ready, and joined the Board as the Company's first non-executive Director. He acts as a trusted advisor and mentor to the Avertana executive team. He is also non-executive director at Dotterel, a company that develops noise reduction and audio recording technology for UAVs.

Distinctions/Honours

Sean Simpson received the 2014 NZ Innovator of the Year Award, along with the 2015 US Environmental Protection Agency (EPA) Presidential Green Chemistry Award, the 2013 Kea NZ World Class New Zealander in Science Award, the 2013 Bio Spectrum Asia-Pacific Entrepreneur of the Year Award, the 2011 NZBIO Young Biotechnologist of the Year, and the 2011 Ernst and Young Entrepreneur of the Year, New Zealand.



ADVISORY POSITIONS

Member of the Banz Liquid Biofuel Interest Group - Committee

KEY FIGURES

Patents: **+200**

H-index: **14**

Publications/peer-reviewed articles: **+20**



**DISTINGUISHED PROFESSOR
HARJINDER
SINGH**



Food Science

PhD FRSNZ, FIAFoST, FIFT

Affiliation: Massey University

Harjinder Singh leads the Massey Institute of Food Science and Technology and is a world-renowned food scientist, honoured for his outstanding scientific achievements, his international profile and his academic leadership and commitment to Massey University and the wider scientific community. He received his PhD in Food Science and Technology from University College Cork, Ireland in 1986 and has been with Massey University since 1989. His research has focused on food colloids, food ingredient functionality, functional foods and food structure-nutrition interface. He is one of the highly cited researchers in Agricultural Sciences. He is co-inventor of several patents forming the basis of several commercial innovations. He has mentored 35 PhD students and 25 postdoctoral researchers from around the world, and has received more than \$40 million in research funding from both NZ and international food companies and government organisations. He sits on the editorial boards of 7 food journals. He has served on several national and international committees, playing a significant role in food strategy development and implementation.



Other Activities

He is director of the Riddet Institute, a National Centre of Research Excellence in food science and nutrition.

Distinctions/Honours

His international standing and outstanding contributions to food science have been recognised by several prestigious awards: the William Haines Dairy Science Award (USA) and the Marschall Rhodia International Dairy Science Award (USA), Massey University Research Medal, JC Andrews Award and the Shorland Medal. He is an Elected Fellow of the Royal Society of New Zealand and of the International Academy of Food Science and Technology (2006). In 2012, he was the co-recipient of the Prime Minister’s Science Prize, the highest science honour in New Zealand



ADVISORY POSITIONS

- Elected Fellow of Royal Society of New Zealand (2002)
- Elected Fellow of the International academy of Food Science and Technology, (2006)
- Elected Fellow of the United States Institute of Food Technologists (2015)

KEY FIGURES

- Patents: **12**
- H-index: **88**
- Publications/peer-reviewed articles: **+300**



**PROFESSOR
MERRYN
TAWHAI**



Healthcare

PhD

Affiliation: University of Auckland

Merryn Tawhai graduated from the University of Auckland with a PhD in Engineering Science in 2001. She is Director of the Medical Technologies Centre of Research Excellence (MedTech CoRE) and also the Deputy Director of the Auckland Bioengineering Institute (ABI). At the ABI Merryn has established a research programme in applied computational physiology of the lung. She was the inaugural Maurice Paykel Postdoctoral Fellow and has been a recipient of RSNZ Marsden, National Institutes of Health, Health Research Council of New Zealand, and MBIE grants. Merryn's current research is focused on the development of integrative computational models of the pulmonary system and their application in understanding structure-function interactions in normal physiology and in the pathophysiology of pulmonary disease. She has particular interest in the application of computational modelling to improving clinical diagnosis and monitoring of pulmonary disease, particularly in the older lung.



Other Activities

Merryn Tawhai is director of MedTech CoRE and deputy director of the Auckland Bioengineering Institute where she was a fellow from 2002. She is also principal investigator of the Lung & Respiratory System Group. Since 2007, she is also Adjunct Associate Professor at the department of Biomedical Engineering, University of Iowa. She has also been appointed to key journal editorial boards.

Distinctions/Honours

In November 2018, Tawhai was elected a Fellow of the Royal Society of New Zealand. Prior to this, she was awarded the MacDiarmid Medal in 2016. In 2011, she received the most cited article award for 2006-2010, in the Respiratory Physiology & Neurobiology category. She was awarded the TSANZ Boehringer Ingelheim award for best conference presentation on chronic obstructive pulmonary disease in 2005. Her international reputation has been recognised by election in 2018 as a fellow of both the American Institute of Medical and Biological Engineering and International Academy of Medical and Biological Engineering.



ADVISORY POSITIONS

- Panel of Independent Chairs for PhD examinations
- Executive Committee, Auckland Bioengineering Institute
- International organising committee, SPIE Medical Imaging Conference (Biomedical Applications in Molecular, Structural, and Functional Imaging)

KEY FIGURES

- Patents: **1**
- H-index: **36**
- Publications/peer-reviewed articles: **163**



METHODOLOGY

BioPacific Partners was engaged to undertake a study to identify some of New Zealand's most prominent and compelling key opinion leaders in the life sciences. This involved identifying a broad long list of potential key opinion leaders, determining a short list, and profiling the short list.

The initial steps identified 150 opinion leaders in life sciences in New Zealand.

Possible key opinion leaders were identified by:

1. contacting universities for names they had identified themselves.
2. identifying academic participation on investment committees and scientific advisory boards.
3. searching through government institutions, research institutes and university websites for suitable researchers who had been profiled as key opinion leaders.
4. tailored search queries using Google.
5. considering highly cited researchers from New Zealand.
6. conversations with other key opinion leaders and highly networked individuals.
7. BioPacific Partners' previous engagement with researchers.
8. twitter mentions from the Ministry of Health and Royal Society of New Zealand.
9. considering past prize recipients (awarded since 2015), including:
 - Rutherford Medal: recognises eminent research or technological practice by a person in any field of science, mathematics, social science, or technology.
 - Charles Fleming Award for Environmental Achievement: an environmental science award for protection of the New Zealand environment.
 - Hutton Medal: an earth, plant and animal sciences award for outstanding work by a researcher in New Zealand.
 - Leonard Cockayne Lecture Award: Commemorating the life and work of Leonard Cockayne by the encouragement of botanical research in New Zealand.
 - MacDiarmid Medal: scientific research award for outstanding scientific research that demonstrates the potential for human benefit.
 - Thomson Medal: award for outstanding contributions to the organisation, support and application of science and/or technology and/or the humanities in NZ.
 - The Prime Minister's Science Prize: for a transformative scientific discovery or achievement, which has had a significant economic, health, social, and/or environmental impact on New Zealand, or internationally.
 - Hercus Medal: health sciences award for excellence in molecular and cellular sciences, biomedical science or clinical science and public health.
 - Liley Medal: Health Research Council of New Zealand Medal, presented to an individual or team who have had a significant piece of research published in the previous calendar year that has made a significant contribution to health and medical science.
 - Beaven Medal: Health Research Council of New Zealand Medal, awarded to an individual or research team for the successful translation of research into clinical practice, engagement with community and providers of clinical health care, and a commitment to making a difference to health outcomes
 - Callaghan Medal: a communication award, for outstanding contribution to science and/or technology communication, in particular raising public awareness of the value of science and/or technology to human progress.

The list of potential key opinion leaders was screened to remove those not suitable for profiling for various reasons, including those:

- not active in research.
- involved in public scandal.
- retired or deceased.
- falling too far outside relevant life science sectors.

This resulted in a long list of 120 potential key opinion leaders.

The long list was thoroughly examined using inclusion criteria derived from the following sources:

- Key Opinion Leaders in the Healthcare Space: How to Identify and Keep Them Engaged, LinkedIn [Internet]. [cited 2019 May 9]. Available from: <https://www.linkedin.com/pulse/key-opinion-leaders-healthcare-space-how-identify-keep-nina-bressau/>
- How to Be a Great KOL [Internet]. CRSToday. [cited 2019 May 9]. Available from: <https://crstoday.com/articles/2014-feb/how-to-be-a-great-kol/>

From the long list, additional detail on potential key opinion leaders was collected from publicly available sources, including:

- seniority
- area of research and detail on specific expertise area
- whether they are a traditional or digital key opinion leader (or both)
- number of published papers
- detail on projects they have led
- collaborations/partnerships with industry
- engagement of peers through citations
- media engagement
- social media engagement
- experience on scientific advisory boards
- experience working with professional membership organisations
- awards received
- patents granted

In order to determine a short list for this pilot study, we considered those key opinion leaders who:

- were highly cited by their peers in their area of research.
- had suitable engagement with industry.

From this short list, 15 key opinion leaders were selected for detailed profiling in this report. Selection was made from across different universities and research institutes, from areas that align with current global trends in the life science industry.

CONCLUSIONS

Identifying key opinion leaders in the New Zealand biotechnology industry was an important exercise in order to showcase New Zealand's strengths internationally. They help to emphasise the quality of the science New Zealand offers.

Lessons Learnt

Although this work was run as a pilot study to consider the types of key opinion leaders New Zealand has in biotechnology, there were several lessons learnt:

- Auckland and Dunedin contain significant clusters of key opinion leaders, and are the most prominent areas for life science leaders in New Zealand.
- The majority of key opinion leaders identified in this study are working in: cancer, food and nutrition, aquaculture breeding, extracts.
- Some of the recurring expertise areas identified across multiple key opinion leaders and specialist research groups within life sciences that align with global trends include:
 - Aquaculture, seaweeds and algae
 - Asthma and respiratory
 - Bioactives
 - Bioengineering
 - Cancer
 - Epigenetics
 - Food science and food processing
 - Industrial biotechnology
 - Nutrition
 - Peptide therapeutics
 - Type-2 diabetes.

Limitations of this pilot study of key opinion leaders

Without a focus on any specific sector, it is difficult to obtain a comprehensive review of key opinion leaders. Within the limited time and resources for this project, BioPacific Partners developed this snapshot which provides an overview of the types of key opinion leaders New Zealand has across the biotechnology sector.

We have been as accurate as possible with the collection of data in this study, but acknowledge that some data (such as number of patents) may be inaccurate. Our data has been based on publicly accessible information without making direct contact with key opinion leaders.

This study has shown that there are considerably more key opinion leaders that would be equally deserving of being profiled, which we hope a future study will uncover.



BioTech New Zealand (BioTechNZ) vision is to create a healthy, clean and prosperous New Zealand, boosted by biotechnology.

We are a purpose driven, membership-funded organisation. Biotechnology is not a sector, it is a platform technology, therefore our members are diverse, with research and development at the heart of their business. They have the desire to collaborate to maximise the ways biotech can help address many of the world's agricultural, environmental and health problems.

BioTechNZ is a neutral centre of gravity for discussion, debate, policy development and collaboration around biotechnology in New Zealand. We also help raise awareness and increase understanding of biotechnology to enable our nation to embrace the best opportunities biotech offers to us daily, helping us live better, healthier and more productive lives.

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Any opinion and analysis presented in this Briefing Paper are the opinion of the author of the paper, not the opinion of the members of BioTechNZ. Any BioTechNZ information that is to be used in press releases or promotional materials requires prior written approval from BioTechNZ.

BioTechNZ
L1 Building C, 14-22 Triton Drive, Auckland 0632, New Zealand
Ph +64 9 475 0204
www.biotechnz.org.nz

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