

## 2019 Myrtle Rust Science Symposium

### Convenor and Speaker bios

Find out more about our great speaker line-up at the 2019 Symposium, important members of Aotearoa's myrtle rust community.



#### **Rob Beresford**

Rob is a Principal Scientist at Plant & Food Research in Auckland, with 40 years research experience. His specialisation is plant disease epidemiology and modelling and effects of climate and weather on disease outbreaks. He has pioneered development of weather data networks and decision support tools for disease risk management in New Zealand's fruit and vegetable industries. These include development and implemented of numerous disease forecasting models, including the Myrtle Rust Process Model. He is also an expert in management of crop diseases and fungicide resistance.



#### **Emma Bodley**

Emma has been the Botanical Records and Conservation Specialist at Auckland Botanic Gardens for the last five and a half years. She has been involved with the myrtle rust response from the day it arrived in New Zealand. She was trained in myrtle rust surveillance in Taranaki and since then has been involved in decisions regarding threatened species conservation, seed banking, revegetation and day to day management of infected plants.



**Angus Carnegie**

Angus is a Principal Research Scientist with the NSW Department of Primary Industries and Adjunct Professor at Southern Cross University based in Sydney, Australia. His primary roles include forest health and biosecurity surveillance, pest and disease impact and management research, and providing operational and policy advice on forest health and biosecurity to industry and governments. He is Deputy Chair of the National Forest Health and Biosecurity Subcommittee and Coordinator of IUFRO Working Party Forest Health in Southern Hemisphere Plantations.

Angus was involved at the coal-face with the myrtle rust emergency response in Australia, and subsequently with research monitoring the impact on native flora as well as plant industries; this involves collaborations across Australia and internationally. He was a member of the New Zealand Myrtle Rust Technical Advisory Group following the detection of myrtle rust on Raoul Island in 2017.

**David Chagné**

David is a Science Group Leader at Plant & Food Research. His group's research focuses on the application of molecular genetics and genomics to explain the genetic control of important characters in plants, pathogens and animals. David has co-led the sequencing of the mānuka and myrtle rust genomes, and catalogued DNA variations in the mānuka genome across the motu in collaboration with Māori stakeholders in the honey industry and Landcare Research - Manaaki Whenua.

He is a project leader in the Ministry of Business, Innovation and Employment SSIF (Strategic Science & Investment Fund) platform Genomics Aotearoa.



**Soonie Chng**

Soonie is a Plant Pathologist at Plant & Food Research. Soonie's research expertise is in arable and vegetable pathology, with a primary focus on the management of both airborne and soilborne diseases, such as cereal rust diseases.

Her recent research includes a trans-Tasman collaboration determining New Zealand cereal rust pathotypes, development and co-innovation of a risk predictor tool for root rot of peas with a vegetable processing company, and the development of ramularia leaf spot management strategies with the cereal industry. Lately, her research focus has expanded to include control of myrtle rust.

**Matt Dolan**

Matt is the Chief Executive of New Zealand Plant Producers Inc., the peak body representing the nursery industry. Prior to this role, Matthew worked at Horticulture NZ overseeing their agricultural practice and sustainability programmes.

Matt has been involved in the development of industry programmes for sustainability, food assurance and social practice in horticulture in New Zealand and Europe. Matt is currently leading the development of a biosecurity certification scheme for the nursery industry.

**Heidi Dungey**

Heidi specialises in tree breeding and genetic resource characterisation for forestry species including but not exclusive to radiata pine, Douglas-fir, cypresses, eucalypts and redwoods. Her research encompasses quantitative and ecological genetics and breeding, including the application of new technologies in tree breeding programmes and propagation research. As leader of Scion's Forest Genetics research programme, Heidi works closely with New Zealand seed producers, forest growers, iwi and government departments to develop/co-develop tangible research pathways and outcomes.



**Murray Fea**

Murray joined the Auckland Council Biosecurity Group in December 2018 after completing a doctorate in evolutionary biology/reproductive ecology of insects. Prior to this, Murray had worked as a compliance officer and track ambassador for the Waitakere Ranges kauri dieback controlled areas, and carried out myrtle rust street surveillance during the response period through AsureQuality.

**Stuart Fraser**

Stuart is a Forest Pathologist at Scion, Rotorua. His research focuses on disease epidemiology and management, diagnostics of fungal pathogens, and pathogen adaptability. Stuart leads research on myrtle rust and control of needle diseases of pine. Before joining Scion in 2017, he completed a Postdoc at the Forestry and Agricultural Biotechnology Institute, South Africa, working on forest rusts, including myrtle rust. Prior to this, he gained his PhD in 2015 from the University of Aberdeen, Scotland, where he worked on variation in host susceptibility to dothistroma needle blight of pine.

**Beccy Ganley**

Beccy is the Plant Pathology Science Group Leader at Plant and Food Research. She has been involved in myrtle rust research since 2010, when the pathogen was first reported in Australia, assessing the biosecurity risk this disease could pose to New Zealand.

During the incursion response Beccy was part of the Technical Advisory Group, and also was on-ground at Te Puke. Since then she has led surveillance research and been heavily involved in susceptibility testing of New Zealand myrtles and research into the role of endophytes and other control methods for long-term management of this disease.



**Andrea Grant**

Andrea Grant is a social scientist and completed a PhD at Charles Sturt University in communicating biosecurity risk. She has a multidisciplinary background in social studies of science, natural resource management and rural sociology.

Andrea has conducted research with communities and the public sector in areas of floodplain management, conservation and disaster volunteering, agricultural and conservation biosecurity and climate change adaptation. She has presented her work at several international conferences and published as an interdisciplinary researcher in *Rural Sociology*, *Environment and Planning C*, *Systemic Practice and Action Research*, and *Forests*.

**Ken Hughey**

Ken is the Chair of the Myrtle Rust Strategic Science Advisory Group. He is also a member of the Kauri Dieback SSAG. Since 2014, Ken has been on a three-day per week secondment from Lincoln University to the Department of Conservation (DOC) as Chief Science Advisor. In this role, Ken takes a broad overview of science issues relating to DOC's responsibilities and advises the department's Director-General about preferred ways forward.

**Melanie Mark-Shadbolt**

Mel is the Director Māori, New Zealand's Biological Heritage Ngā Koiora Tuku Iko. She works on strategic priorities and building strategic links with Māori and indigenous researchers, groups and entities and helps to develop and embed the principles of Vision Mātauranga into the Challenge. Mel is also the Ministry for the Environment's Kaihautu Chief Māori Advisor, and Chief Executive of Te Tira Whakamātaki.





**Alby Marsh**

Ngā Puhi, Ngāti Ranginui, Ngai Te Rangi, Ngāti Hine, Te Rarawa

As the Māori Relationship Manager at Plant and Food Research, Alby is responsible for connecting Māori and science by raising the level of understanding of the benefits of research, science and technology. He also has responsibility to grow PFR's relationship with iwi.

Alby was the Project Leader for MPI-commissioned research project Te Ao Māori – Myrtle Rust. He is the Project Leader of Engagement for Resilience in Indigenous Communities – Australian Plant Biosecurity Collaborative Research Centre, and the Project Leader 'Māori solutions to biosecurity threats and incursions to taonga species – myrtle rust Biological Heritage National Science Challenge.

**James McCarthy**

James is a researcher at Manaaki Whenua – Landcare Research. A terrestrial ecologist, he has a particular interest in forests. His research is primarily focused on using field-collected data and spatial/GIS (geographic information system) methods to predict how forests might respond to various threats, such as diseases like myrtle rust. James also uses these methods to produce species range maps that indicate where species might be present across landscapes with the aim of supporting their conservation and management.

**Jayanthi Nadarajan**

Jayanthi is Science Team Leader for the Germplasm Conservation Team at Plant & Food Research. She previously worked with the Royal Botanic Gardens Kew, UK and has been involved in various large scale seed conservation research programmes internationally.

Her research involves developing efficient conservation techniques such as seed banking and cryopreservation for endangered, threatened and rare crop and wild species germplasm. Her particular interest is in optimising storage of problematic (recalcitrant) desiccation sensitive seeds that are not storable under conventional seed bank condition.



Jayanthi is the project leader for the Ministry of Business, Innovation and Employment SSIF (Strategic Science & Investment Fund) for Nationally Significant Databases and Collections at Plant and Food.

### **Grant Pearse**

Grant Pearse is a researcher at Scion Research in Rotorua. His research experience includes applications of remote sensing for forest mensuration, forest health and emerging technologies such as UAVs. He has experience with a range of remote sensing technologies including lidar, hyperspectral and multispectral sensors. Recently, Grant's research has focused on exploring applications of data science approaches such as deep learning to remotely sensed data.



### **Mahajabeen Padamsee**

Mahajabeen is a Research Mycologist at Manaaki Whenua – Landcare Research, and the Programme Leader for [Beyond Myrtle Rust](#). After moving to Manaaki Whenua to undertake post-doctoral research on New Zealand's rust species, Mahajabeen's interests expanded to include investigating interactions between the pathogen which causes kauri dieback, and fungi in New Zealand's native forests.



### **Hayley Ridgway**

Hayley is a senior scientist and the team leader of Microbial Systems for Plant Protection at Plant & Food Research. She joined the organisation after 19 years with Lincoln University where she was an Associate Professor in plant microbiology.

Hayley's area of research is on microbial ecology of plants. Like animals, they are hosts to a large and complex community of microorganisms that can be both beneficial and detrimental to plant growth and health. The ancillary genomes provided by the millions of microbes inhabiting plants shape their ecological success.



**Grant Smith**

Grant is a Principal Scientist/Program Leader at Plant and Food Research where he is leading several myrtle rust research projects, including the MBIE-Catalyst *Myrtle Rust: a significant threat to Australasia and the Pacific* programme; and *Novel mitigation technologies* in the MBIE-Endeavour Program, *Beyond Myrtle Rust: Towards Ecosystem Resilience*.

The plant resistance information and the pathogen genome form the basis of research that has been initiated in *Beyond Myrtle Rust* to understand how this pathogen causes disease in mānuka and ultimately develop novel control options to target this disease process.

**Bec Stanley**

Bec is the curator of the Auckland Botanic Gardens and is presenting at the symposium in her role as the New Zealand convener of Botanic Gardens Australia NZ, the network which represents the interests of botanic gardens in Australia and New Zealand. Bec is a botanist specialising in threatened plant management and biosecurity. She is committed to strengthening the role botanic and public gardens as well as the amenity horticulture sector in research and conservation in Australasia.

**Julia Soewarto**

Julia is originally from New Caledonia where she completed her PhD on myrtle rust ecological impacts and on disease management through the development of genetic markers linked to the resistance. Julia joined the Forest Protection team at Scion in 2018 as a post-doctoral scientist specialised in myrtle rust. She is involved in several research areas of the Catalyst and MPI programs, including the surveillance of myrtle rust, the characterisation of the fungal communities associated with Myrtaceae species and the testing of key Myrtaceae species against overseas strains of myrtle rust that could possibly enter to New Zealand.





**Fiona Thomson**

Fiona is the Department of Conservation's Project Manager for myrtle rust in the National Operations Group. She has a background in plant and seed ecology, and a strong interest in biosecurity and monitoring. Fiona leads the team focusing on advising DOC staff on how to report myrtle rust and how to work in areas where myrtle rust is present. The team coordinates the DOC Myrtaceae Germplasm collection work and contributes to strategic thinking on monitoring, surveillance and myrtle rust management. They are also in the process of developing guidelines and standard operating procedures for Department staff.

**Peri Tobias**

Peri is a researcher and academic based at the University of Sydney. She has worked in horticulture, arboriculture and environmental management at local government level, predominantly managing threatened species and biodiversity. Her research since 2011 has focused on the fungal pathogen that causes myrtle rust. Her PhD thesis investigated resistance in an Australian host plant, the lilly pilly.

Since 2017, Peri has worked closely with New Zealand researchers to understand the genetics of the myrtle rust pathogen, building a strong collaboration between Australia and New Zealand to tackle this invasive fungal pathogen.

**Nick Waipara**

Nick is a member of the Myrtle Rust Strategic Science Advisory Group and the Kauri Dieback SSAG. He is also part of the Strategic Leadership Team at the Biological Heritage Science Challenge Ngā Koiora Tuku Iho, providing advice and facilitating Vision Mātauranga principles and concepts, Māori research priorities and methodologies. He also leads Plant & Food Research's Epidemiology and Disease Management team.



**John Walsh**

John Walsh is Director Readiness & Response Service at the Ministry for Primary Industries (MPI). He has had significant involvement with myrtle rust since its detection in mainland New Zealand in 2017. John sat on the Myrtle Rust Response Governance Group and more latterly has been chair of the Myrtle Rust Long Term Management Group. In his role John has been involved in a range of other biosecurity responses and issues, including leading the development of the [Ko Tatou – This is Us](#) programme aimed at engaging all New Zealanders in biosecurity.

**Katrin Webb**

Katrin has recently started with the Department of Conservation as the Principal Advisor, Science Investment – Threats, which covers myrtle rust amongst others. Before this, she spent her science and working career at Scion. Katrin has been involved with Myrtle Rust since New Zealand went into preparedness through involvement in Scion's Forest Health Lab Diagnostics service and was the Programme lead of MPI's Research programme - Building engagement and social licence, Improving Management tools and approaches and Evaluation of Impacts and Responses.

**Simon Wegner**

Simon is a social scientist specialising in behavioural sciences and policy with a focus on how people respond to environmental threats and the management tools used to address them. His current research focuses on public involvement in efforts to control myrtle rust and kauri dieback, and on wildfire risk perception and mitigation among residents in the urban fringe. He also has experience in central government with freshwater policy implementation and regional engagement.

