

PFR SPTS No. 24211

## **Travel support for visiting researchers in 2022–23 and seminars in which PFR Marlborough staff participated**

Rob Agnew & Marlborough staff

June 2023

---

### **1 Travel support for Claire Grose to attend the 18<sup>th</sup> Australian Wine Industry Technical Conference in Adelaide**

With financial assistance from Marlborough Research Centre (MRC), Claire Grose was able to attend the 18th Australian Wine Industry Technical Conference from 26 – 29 June 2022 in Adelaide to present a poster “Producer friendly colour analysis of Pinot noir berries”, while also attending an extensive programme of plenary sessions, workshops and trade exhibitions showcasing wine tech innovation.

### **2 Travel support for visiting French PhD researcher Malo Tardif to travel to PFR Ruakura**

French PhD candidate Malo Tardif spent 6 months at the New Zealand Institute for Plant and Food Research (PFR) in Marlborough from October 2022 until March 2023, undertaking data collection and image analysis work for the detection of grapevine trunk disease. With financial assistance from MRC, Malo was able to travel to PFR Ruakura to spend a week with staff working on multi-spectral image analysis.

## 3 Details of public seminars held at the Marlborough Research Centre involving PFR staff

### 3.1 Grapevines, phenology and climate change

---

**Date:** 30 January 2023

**Speakers:** Dr Iñaki Garcia de Cortazar-Atauri and Dr Amber Parker

#### 3.1.1 Title and overview of Inaki's presentation

##### **Lessons learnt from climate change impacts on grapes in France**

Inaki's presentation focussed on the main results from the LACCAVE project, completed in 2021, which defined a French national strategy to adapt the wine sector to climate change.

#### 3.1.2 Biography

Dr Iñaki Garcia de Cortazar Atauri is the Head of the AgroClim Unit at INRAE in Avignon, France. His research activity covers several fields: 1) evaluation/development of phenological process-based models for perennial and annual crops; 2) the development of agronomic indicators in order to define strategies to adapt cropping systems to climate change; 3) development of biophysical databases related with the climate; 4) work on crop modelling using the STICS crop model, as a reference for crop ecophysiology topics and to study climate change impacts on grapevine. He is currently the national coordinator of the TEMPO network, which is the national network of phenology observatories (network supported by the Ministry of Research) (<https://tempo.pheno.fr>).

For the last 20 years he has been involved in different projects within the wine sector in France to explore and define the impacts of and adaptation strategies to climate change.

#### 3.1.3 Title and overview of Amber's presentation

##### **Flowering: Climate change and variability**

Amber's presentation explored some of the findings relating to advances in flowering and the consequences for future grape and wine production, as well as a deeper dive into flowering variability within plants, shoots and clusters.

#### 3.1.4 Biography

Dr Amber Parker is a Senior Lecturer in Viticulture at Lincoln University, New Zealand. She completed her PhD at Lincoln University in collaboration with Bordeaux Sciences Agro-ISVV-Ecophysiology and Functional Genomics of Grapevines, France. She next worked as a scientist in grapevine modelling at PFR, then started at Lincoln University in 2015. Her research focusses on phenological modelling and understanding environmental drivers of phenology, investigating the effects of source-sink modifications of the grapevine on phenology and asynchrony of fruit composition, and understanding impacts and adaptations for viticulture in the context of climate change. She also has a keen interest in developing and implementing precision agriculture techniques in viticulture.

## 3.2 Climate change and energy

---

**Date:** 8 May 2023

**Speakers:** Dr James Renwick, Victoria University and Paul White, GNS Science

This seminar was organised directly between the speakers and the MRC without PFR involvement. However, PFR staff subsequently met with both speakers after the event and PFR staff met formally with Paul White from GNS on 12 May to discuss their respective research programmes. PFR arranged for copies of both speakers talks to be uploaded to the MRC website.

### 3.2.1 Title and overview of James' presentation

#### **Climate change: The science**

James is a member of the Intergovernmental Panel on Climate Change (IPCC). He presented information from the sixth assessment report of the IPCC – Working Group 1, The Physical Science Basis.

He gave an overview of the factors driving climate change and then presented examples of recent climatic events, both in New Zealand and overseas, that have been exacerbated by climate change factors. He presented some stark facts about what is at stake if global warming is not able to be limited to a 1.5°C rise in temperature.

### 3.2.2 Title and overview of Paul's presentation

#### **Energy: CO<sub>2</sub>**

Paul presented information with regards to both the New Zealand and global energy supply. He then detailed the dependence that countries have on fossil fuels to supply energy to their citizens. The wealthier countries have a much greater dependence on fossil fuels per capita than poorer countries. He presented data detailing how some countries have reduced their dependence on fossil fuels. Data for New Zealand indicated that 87% of the electrical energy is produced from renewable sources and 13% from fossil fuels. However, fossil fuels still provide 60% of New Zealand's total energy requirements. Paul presented challenges that New Zealand faces in order to reduce its reliance on fossil fuels.

## 4 Presentations by PFR staff to groups in Marlborough

Date	Presenter	Audience	Title of presentation
11 Jul 2022	Rob Agnew	University of the Third Age (U3A)	Marlborough Grape & Wine Research
Sep 2022	Damian Martin	Guest Lecture. Nelson-Marlborough Institute of Technology / Te Pukenga, Blenheim	New Zealand Pinot noir regionality
Sep 2022	Damian Martin	Marlborough AgriTech Ecosystem hui. New Zealand Wine Centre, Blenheim	Digital Viticulture Systems
Sep 2022	Damian Martin	New Zealand Wine Research Centre, Marlborough	The Experimental Future Vineyard
14 Nov 2022	Malo Tardif	Visiting PhD researcher presentation to Marlborough staff	Past and current research
4 Apr 2023	Victoria Raw	Lincoln University Viticulture & Oenology Marlborough field trip	NZW VineFacts Newsletter: a weekly heads up for the New Zealand wine industry on climate and grapevine phenology
25 May 2023	Rob Agnew	Seddon Lions Club	Seasonal weather overview and Marlborough's changing climate
31 May 2023	Dion Mundy	Marlborough Winegrowers winter pruning seminar. Talk given with Jessica Wilson, viticulturist at Whitehaven Wine company. Talk repeated to five different groups on the day.	Industry best practice for grapevine trunk disease management

## 5 Presentations by PFR staff at national and international seminars

Date	Presenter	Audience	Title of presentation
27 Jun 2022	Claire Grose	13 <sup>th</sup> Australian Wine Industry Technical Conference	Producer friendly colour analysis of Pinot noir berries
Jul 2022	Damian Martin	IVES Conference Series, Terclim, Bordeaux, France	Grape berry size is a key factor in determining New Zealand Pinot noir wine composition
Jul 2022	Damian Martin	NZ Winegrowers' Pinot noir Programme Workshop - Quality Indicators. Online	Quality indicators for Pinot noir wine and juice
Sep 2022	Damian Martin	Symposium-Advancing Viticulture and Wine Related Research. Eastern Institute of Technology / Te Pukenga, Taradale	Grape berry size is a key factor in determining New Zealand Pinot noir wine composition
Sep 2022	Junqi Zhu	Invited speaker at 7th International Plant Phenotyping Symposium, Wageningen, The Netherlands	Towards developing a digital twin of perennial horticulture production and supply chain systems
Sep 2022	Junqi Zhu	Invited speaker at Crops In Silico Symposium (online)	Simulating organ biomass variability and carbohydrate distribution in perennial fruit crops
18 Nov 2022	Junqi Zhu	Invited speaker for Science and Technology Innovation China Seminar on Disaster Prevention and Mitigation of Wine Grapes in the Eastern Foothills of Helan Mountains and Grape Disaster Prevention and Mitigation Technology and Talent Training Conference, NingXia Meteorological Bureau	Advances in grapevine modelling

Date	Presenter	Audience	Title of presentation
25 Nov 2022	Malo Tardif	PFR Data Science group meeting, Auckland	An innovative two-stage methodology for the automatic diagnosis of vine dieback diseases by proximal sensing and artificial intelligence
10 Aug 2022	Dion Mundy	New Zealand Plant Protection Society Annual Conference	The potential economic costs of grapevine trunk disease to New Zealand.
28 Nov 2022	Rob Agnew	New Zealand Society of Soil Science Annual Conference	Mineralisation of nitrogen from grape marc
28 Nov 2022	Victoria Raw	New Zealand Society of Soil Science Annual Conference	The influence of soil class and deficit irrigation on the production of Marlborough Sauvignon blanc
28 Nov 2022	Junqi Zhu	New Zealand Society of Soil Science Annual Conference	Modelling grape growth and water use in relation to leaf-to-fruit ratio and water stress
30 Nov 2022	Dion Mundy	Online presentation to technicians, advisers and vineyard owners in Chile	Cultural management of botrytis bunch rot of grapes
16 Feb 2023	Malo Tardif	Invited speaker at machine learning seminar, Hamilton	Automatic diagnosis of a multi-symptom grapevine disease by decision trees and Graph Neural Networks
17 Feb 2023	Malo Tardif	Presentation to PFR staff in Hamilton	Automatic diagnosis of a multi-symptom grapevine disease by decision trees and Graph Neural Networks
18 Apr 2023	Junqi Zhu	AS18000 Program 2023 Team Forum, Bargara, Queensland, Australia	Quantifying the effects of carbon status on berry growth using process-based models
27 Apr 2023	Dion Mundy	IPEN Webinar	Forging pathways to impact, simple tips and tricks to create ripples of impact
May 2023	Damian Martin	Presentation to the Australian Wine Research Institute. Online	The Experimental Future Vineyard
May 2023	Damian Martin	BRI Pinot noir programme workshop Marlborough	Ideal vines and ideal wines
12 Jun 2023	Damian Martin	BRI Pinot noir programme workshop Martinborough	Ideal vines and ideal wines
14 Jun 2023	Damian Martin	BRI Pinot noir programme workshop Cromwell	Ideal vines and ideal wines
19 Jun 2023	Junqi Zhu	Invited speaker for international symposium on smart and ecological agriculture. Yang Zhou Agricultural University	Towards developing a digital twin of perennial horticultural systems
28 Jun 2023	Claire Grose, Jacqui Todd, Katrina Fletcher Sam Brown	Online seminar to wide audience	Adding value to Marlborough waste streams using insect bioconversion

## Report for:

Marlborough Research Centre Trust

Project #2

### DISCLAIMER

The New Zealand Institute for Plant and Food Research Limited does not give any prediction, warranty or assurance in relation to the accuracy of or fitness for any particular use or application of, any information or scientific or other result contained in this report. Neither The New Zealand Institute for Plant and Food Research Limited nor any of its employees, students, contractors, subcontractors or agents shall be liable for any cost (including legal costs), claim, liability, loss, damage, injury or the like, which may be suffered or incurred as a direct or indirect result of the reliance by any person on any information contained in this report.

### LIMITED PROTECTION

This report may be reproduced in full, but not in part, without the prior written permission of The New Zealand Institute for Plant and Food Research Limited. To request permission to reproduce the report in part, write to: The Science Publication Office, The New Zealand Institute for Plant and Food Research Limited – Postal Address: Private Bag 92169, Victoria Street West, Auckland 1142, New Zealand; Email: SPO-Team@plantandfood.co.nz.

### PUBLICATION DATA

Rob Agnew & Marlborough staff. June 2023. Travel support for visiting researchers in 2022–23 and seminars in which PFR Marlborough staff participated. A Plant & Food Research report prepared for: Marlborough Research Centre Trust. Milestone No. 95992. Contract No. 40821. Job code: P/413003/04. PFR SPTS No. 24211.

**KEYWORDS:** Marlborough Research Centre, national and international seminars, grapevines, phenology, climate change.

### Report prepared by:

Rob Agnew  
Scientist, Viticulture and Oenology  
June 2023

### Report approved by:

Damian Martin  
Science Group Leader, Viticulture and Oenology – Sustainable Production  
June 2023

## For further information please contact:

Rob Agnew  
Plant & Food Research Marlborough  
PO Box 845, Blenheim 7240  
NEW ZEALAND  
Tel: +64 3 984 4310  
DDI: +64 3 984 4320  
Email: Rob.Agnew@plantandfood.co.nz