



## DIAGNOSIS OF PLANT VIRUSES AND VIROIDS USING A BIOINFORMATICS TOOLKIT

**When:** Tuesday 30 August 2022 from 8.30 am to 12.00 noon

**Venue:** AgriBio, Victoria

**Training:** Hands-on Bioinformatics training workshop

### Background

- High throughput Sequencing (HTS) technologies are transforming the way how plant viruses and viroids of biosecurity concern are diagnosed worldwide. We developed [VirReport](#) an open-access end-to-end bioinformatics workflow implemented using nextflow to enable its use in diverse types of compute infrastructure from a laptop to a supercomputer and the cloud. More, recently we implemented **GA-VirReport** using the Galaxy Australia analytical environment.
- HTS is expected to become a standard routine method used for post entry quarantine testing and this workshop provides participants an opportunity to gain new skills through a familiar web-based diagnosis environment.

### Workshop Scope

- Participants get hands-on training on the use of small RNA-seq HTS data for the diagnosis of plant viruses and viroids using GA-VirReport. Participants will run through established pipelines from processing of raw HTS data, QC filtering and trimming, de novo genome assembly, sequence similarity against a curated virus and viroid database (PvirDB), reporting and assessment of detections.
- A demonstration on the use of VirReport, a nextflow-based pipeline that enables reproducible processing of large number of samples will be also featured.

### Targeted audience

Plant pest diagnosticians within the NPBDN

### Prerequisites

- A Galaxy Australia user account and familiarity with basic functions
- Bring your own laptop

### Number of participants

The training will accommodate 20 participants. Selections will be on a first come basis.

### Workshop facilitators

- **A/Prof. Roberto Barrero**, PhD, Roberto is a Senior Bioinformatics Solutions Architect at the Queensland University of Technology. [roberto.barrero@qut.edu.au](mailto:roberto.barrero@qut.edu.au)
- **Dr. Ruvini Lelwala**, Ruvini is a Bioinformatics Research Associate at Queensland University of Technology. [lelwala.lelwala@qut.edu.au](mailto:lelwala.lelwala@qut.edu.au)
- **Dr. Marie Emilie Gauthier**, Maely is a Research Fellow in Bioinformatics at the Queensland University of Technology. [marieemilie.gauthier@qut.edu.au](mailto:marieemilie.gauthier@qut.edu.au)

**Short Survey (2 min):** Please provide short responses <https://forms.office.com/r/9CcJpcB4jT> by Friday 19 August 2022.