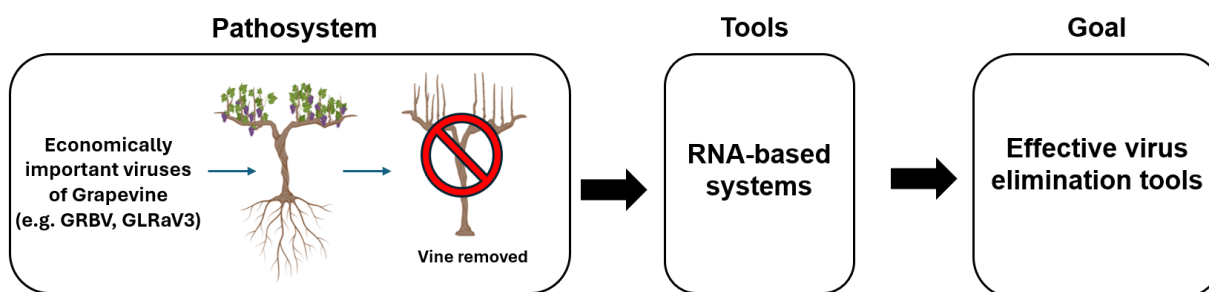


## M.Sc. position at Sidney Laboratory - Centre for Plant Health in North Saanich

**Position:** One M.Sc. position is available to study and optimize RNA-based antiviral therapy for viruses infecting grapevines in the laboratory of Dr. Basudev Ghoshal, Research scientist at Agriculture and Agri-Food Canada, Adjunct Professor at University of British Columbia, and Adjunct Assistant Professor at University of Waterloo and University of Victoria. The position will be available from May 2025.

**Research Project:** Viruses remain one of the major threats to the grapevine industry in Canada. The current treatment method for a virus-infected plant in the field is removing the whole plant, which has a substantial adverse economic impact. In parallel, viral disease spread in the field is restricted by using pesticides to manage insects that transmit these viruses. In the current wake of climate change, there is a need for alternatives to pesticides. Therefore, it is necessary to explore, develop, and evaluate new antiviral strategies that can act as biopesticides. Recently, novel technologies such as RNAi and CRISPR have proven effective against many plant viruses. However, several challenges remain to be addressed, such as efficient delivery of the antivirals to the plants. This research project aims to evaluate new RNA-based therapies against economically important grapevine viral diseases in Canada with the long-term aim of developing RNA-based vaccines for plants or new in-field crop treatment approaches.



**Figure.** Overview of the research project.

**Work Location:** The selected candidate will conduct research at Sidney Laboratory Centre for Plant Health in Dr. Basudev Ghoshal's Laboratory of Molecular Plant Virology. The Sidney Laboratory Centre for Plant Health ([The Sidney Laboratory - inspection.canada.ca](http://TheSidneyLaboratory-inspection.canada.ca)) is Canada's only post-entry quarantine (PEQ), research and diagnostic facility for virus testing of all fruit-bearing trees, grapevines, and small fruit (e.g., berries). The laboratory is getting a state-of-the-art research facility ([Renewing the Sidney Centre for Plant Health - inspection.canada.ca](http://RenewingtheSidneyCentreforPlantHealth-inspection.canada.ca)).

### Details about the Ghoshal Lab:

- [Ghoshal Lab: Molecular Plant Virology Laboratory \(ghoshalmpvlab.com\)](http://GhoshalLab:MolecularPlantVirologyLaboratory(ghoshalmpvlab.com))
- [Dr. Basudev Ghoshal | Directory of scientists and professionals \(science.gc.ca\)](http://Dr.BasudevGhoshal|Directoryofscientistsandprofessionals(science.gc.ca))

**Applicants:** Highly motivated independent students interested in working at the interface of foundational and applied science to develop plant vaccines or crop treatment approaches that have an impact on Canadian Agriculture are strongly encouraged to contact Dr. Basudev Ghoshal. Canadians, Permanent residents, and people residing in Canada (with valid study and work permits) are eligible to apply.

### Requirements:

- Experience in biology/plant biology/ tissue culture,
- Experience in molecular biology/biochemistry.
- Growth mindset
- Willingness to learn

### Potential areas of growth and skillset development for the selected candidate:

- Knowledge about cutting edge tools such as RNAi and CRISPR
- Molecular biology techniques such as cloning, PCR
- Next generation sequencing techniques and Plant Tissue Culture
- To support lab members reach their life goals, we also emphasize on developing soft skills (e.g. Time and priority management).