



GUATEMALA

Principal Investigator: Dr. Rolando Cifuentes

Internship Title: Plant Protection Program to Promote Plant Growth and Identify Strategies Against Pests and Diseases.

Time Period: June to August. Ideally in June or July

Project Background: The project “Promoting technology for horticulture production as adaptation to climate change in Guatemala” seeks to evaluate and select the best agricultural practices to guarantee horticultural sustainability, adequate and efficient management of soils and water, achieving greater productivity, better health and quality of the soil, better quality of products, better income and better nourished families. The study will be in the central and western highlands of Guatemala and includes horticultural crops that are locally produced. For the Trellis Fund Fellowship Program, this project contemplates the participation of graduate students to collaborate in particular activities like:

- Participation in field sample collection and evaluations (UVG Altiplano Campus, Sololá)
- Insects identification, detection of bacteria and fungi by Microbiology and virus analysis by Molecular Biology (UVG Central Campus, Guatemala City).
- Compile photographic content and record symptoms for the elaboration of the IPM illustrated manual (UVG Central Campus, Guatemala City).
- Soil bacteria identification by Microbiology (UVG Central Campus, Guatemala City).
- Molecular characterization of isolated native bacteria (UVG Central Campus, Guatemala City).
- Sequencing analysis of native bacteria to determine their species (UVG Central Campus, Guatemala City).
- Accompaniment in the installation and maintenance of artisanal fermenters for the soil microorganism’s propagation evaluations (UVG Altiplano Campus, Sololá)

Research Question(s) or Specific Issues to be Addressed	Range of Acceptable Disciplines	Deliverables
What are the main pests and diseases present in crops?	Plant pathology Entomology Plant virology	Generate databases of pests and diseases
What are the main strategies that can be implemented against pests and diseases?	Molecular biology Microbiology with specialty in soil micro-organisms Integrated pest and disease management	Design an IPM illustrated manual Generate databases of soil microorganism’s information
What are the soil microorganisms that promote plant growth?	Illustrated design	Microorganism isolated