



Plant Health Diagnostics

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Description of Committed Responsibilities of the Undergraduate Student Intern:

students will learn skills necessary to properly diagnose plant health problems caused by abiotic and biotic causes. The interns will learn and practice techniques used to diagnose problems caused by the major groups of plant pathogens including fungi, bacteria, and viruses, and will carry out specialized tests such as microscopy, isolation of plant pathogens, enzyme-linked immunosorbent assay, and polymerase chain reaction.

Week	Topic
1	Microscopy: use and handling of dissecting and compound microscopes Microscopic slide preparations. Media preparation and pouring plates. Work on unknown samples.
2	Isolation of plant pathogen, baiting and other techniques. Work on unknown samples.
3	Single spore isolation of plant pathogens and quadrant streaking for bacterial plant pathogens. Work on unknown samples.
4	Long term and short term storage of plant pathogens. Work on unknown samples.
5	Enzyme-Linked Immunosorbent Assay. Work on unknown samples.
6	Tissue-Blot Immunoassay. Work on unknown samples.
7	DNA extraction and Quantification. Work on unknown samples.
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9	Conventional PCR and Gel-electrophoresis. Work on unknown samples.
10	Sequencing and gene editing of unknown isolates.