



# Meet the Scientist!



Plant pathologists study plant diseases. A plant disease is the interaction between plants, their pathogens (viruses, bacteria, nematodes, and fungi), and the environment.

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<http://www.naturalinquirer.org>

### Important Scientist Characteristics:

I think creativity, careful observation, and critical thinking are valuable skills to have as a scientist. Studying math and biology is important to understanding complex ecological interactions. It is also very important to not be afraid to try new things and to communicate well with others.

### Example of a simple research question I have tried

**to answer:** How are tree diseases changing? How are new diseases affecting cultivated plants? We discovered that a fungus introduced from Asia in the 1900s has mutated. The fungus causes the white pine blister rust. The mutated disease is infecting cultivated black currants and native eastern white pines that were once disease-resistant.

### Technology or equipment used in research:

We use many types of technology for forest pathology studies. We use Global Positioning System (GPS) units to locate plots in the field and geographic information systems (GIS) for study site selection. Forest measurement tools, microscopes to observe pathogens and plant cells, and DNA extraction techniques are used for pathogen diagnoses.

### Most Exciting Discovery

We calculated the amount of tree death that a disease would need to cause in order to make a forest become unhealthy. Specifically, we were studying American beech forests affected by an exotic insect and disease. The insect and disease is called beech bark disease.

### When did you know you wanted to be a scientist?

I have always loved trees and enjoyed being outside. When I was 10, my father gave me a microscope and I had fun looking at things through it. In college, I studied forestry and took an integrated pest management class. That class helped me decide that I wanted to be a pathologist.

[http://www.researchgate.net/profile/Isabel\\_Munck](http://www.researchgate.net/profile/Isabel_Munck)