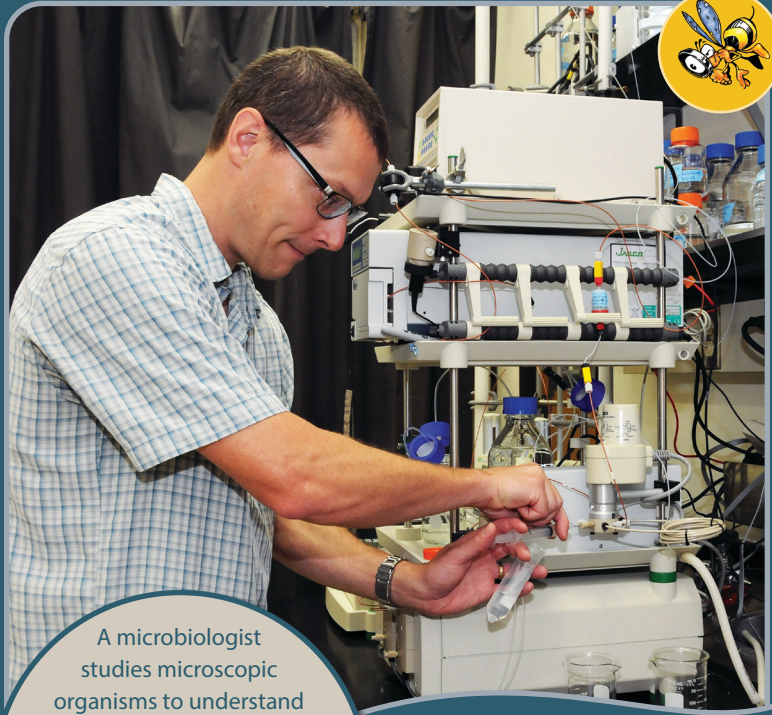

A microbiologist studies microscopic organisms to understand how these organisms live and how they interact with the environment. Microscopic organisms are so small that microbiologists must use microscopes to see them.

Dr. Franz Josef St. John

Microbiologist

Ph.D., University of Florida

USDA Forest Service scientist

Dr. Franz Josef St. John

Important Scientist Characteristics:
In addition to being naturally curious and being interested in the use of the 'scientific method' to solve problems and answer questions, there is a constant need for a scientist to think critically about their research hypothesis and results.

Example of a simple research question I have tried to answer:
How do the enzymes produced by microorganisms break apart the sugars of which wood fibers are made?

Technology or equipment used in research:
One of the methods my laboratory uses to understand bacterial enzymes is x-ray crystallography. X-ray crystallography holds the enzymes in a crystallized pattern. These crystals may diffract the x-ray. To diffract light is to cause bending of light around an object. If enzymes do diffract the x-rays, a three-dimensional model of the enzyme can be made and used to study it in close detail.

Most Exciting Discovery
I have been working to identify new enzymes using computer tools. In doing so, we have discovered a new type of enzyme which may contribute to changing wood fibers into fuels and chemicals. Enzymes are a part of cells, and they help living things carry out chemical processes.

When did you know you wanted to be a scientist?
I was always interested in science. It just seemed like the natural path. My studies in microbiology were partly by chance. I was fortunate that early in my academic career, I was able to get involved in a microbiology laboratory and gain this experience.

http://www.fpl.fs.fed.us/people/bios/employee_level_bio.php?alias=fjstjohn