



Mary Hogan

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I study marine bacterial communities. Bacteria grow everywhere on Earth including extreme environments (such as very cold or very hot temperatures, very low moisture, very high pressure, very high salinity, no sunlight, or no oxygen). I work with a variety of instruments and equipment to measure the chemicals that are both used and produced by bacteria during their growth processes: oxygen, carbon nitrogen, and methane. I also participate in the operation of a simulated habitat. In this habitat we have samples of a marine bacterial community collected from a high salinity pond in Guerrero Negro, Baja, Mexico. Since we can't stay at the field site indefinitely, we have brought samples back with us and are attempting to duplicate the microbial ecosystem in our habitat here at NASA Ames. Since bacteria have been here the longest and developed optimum strategies for living in the most diverse environments known, they may provide the best source or indication of what to look for as evidence of past or present life elsewhere.

Areas of expertise:

- Microbiology
- Marine Science

How I first became interested in this profession:

I grew up in the mid-Hudson Valley of New York. What got me involved in science is that I'm just plain nosy. I wanted to know how things worked. The weirder the better—that's what grabbed me. In 4th grade we got to eat seaweed and in 10th grade we got to see how cow's lungs worked. Of course some of it could be a little dull—just ask my high school physics teacher who threw chalk at me to keep me awake. But physics did explain some of the most inexplicable things, like how planes fly and boats float.

What helped prepare me for this job:

My education includes an A.A.S. in Medical Laboratory Technology from Orange County Community College of Middletown, NY, a B.S. in Biology from Ramapo College of Ramapo, NJ and an M.S. in Marine Science from the University of California, Santa Cruz. I have worked in a variety of laboratories that mostly had a connection to microbiology.

My role models or inspirations:

Because I love to read, I have a few literary heroes. Reading C.S. Lewis "The Narnia Tales" and T.H. White's "The Once and Future King," I was hooked on reading fantasy, which is a way to cultivate your ability to dream and your imagination. Current favorite authors of mine are Orson Scott Card, J. Gregory Keyes and George R. R. Martin. I like to read sci-fi, fantasy and history. Books are great teachers.

My education and training:

- A.A.S. in Medical Laboratory Technology from Orange County Community College, Middleton, NY
- B.S. in Biology from Ramapo College in Ramapo, NJ
- M.S. in Marine Science from the University of California, Santa Cruz

My career path:

- I have worked in a variety of microbiology labs: twelve years at Avon, Inc.; six years at the University of California, Santa Cruz; and three years in the Stable Isotope lab at UCSC
- Astrobiology Institute, NASA Ames Research Center

What I like about my job:

When asked, 'What would be your perfect job', my answer always included working outside. My work in marine science has allowed me to be outside in some of the most wonderful places, including the California coast, the Pacific Ocean, the Arabian Sea and this summer I visited Yellowstone National Park to investigate thermal springs and the bacteria that live within them.

What I don't like about my job:

I get frustrated when I can't figure out why an instrument isn't performing as it should.

My advice to anyone interested in this occupation:

My advice to students is to try new things, find what interests you and have some fun. If you think science might be for you, try to get involved in activities with your school or town that have a scientific connection. And if you find out that it's not what you want to do, keep searching. Talk to people working at things you like. Read as much as you can about them, the things you like and also the things you don't—you never know what could be hiding there. Never stop learning!