



Astrobiologist



Brad Bebout

Astrobiologist

Biogeochemist

Marine Microbial Ecologist

NASA Ames Research Center

I am interested in all aspects of the ecology of microorganisms, how they survive in the sometimes harsh environments where they live, as well as how they affect our environment on Earth (and they do have a big effect). I maintain a research laboratory, and do research both in the lab, and on the field. One of the favorite parts of my work involves creating newer and better "gizmos" to measure biological and chemical processes in microbial communities. That means that I spend a fair amount of my time trying to make the gizmos work for our applications. I work in the Exobiology Branch at Ames. Scientists in the Exobiology Branch are interested in all sorts of questions about the origin and evolution of life on Earth, and possibly on other planets.

Areas of expertise:

- Microbial Ecology
- Microbial Mats
- Ecology of Nitrogen Fixation

How I first became interested in this profession:

I originally got interested in Marine Sciences as a direct result of SCUBA diving. I started undergraduate school at the University of Nevada, Reno, but I got so involved with SCUBA diving in the Monterey Bay that I transferred to the University of California at Santa Cruz (so I could go diving more often). I took a lot of classes in marine biology, did a senior project in marine biology, and ended up going to graduate school at the University of North Carolina at Chapel Hill, which has a program in Marine Sciences. My Masters thesis work was about the role of marine fungi in feeding salt marsh snails. My Ph.D. work was on microbial mats.

What helped prepare me for this job:

How did I end up as a NASA scientist? Sometimes, I am not even sure myself. My real training is in the field of marine sciences, but I came to work at NASA because many of the areas that I had been studying were of great interest in NASA's efforts to understand the evolution of life on Earth.

My role models or inspirations:

When I was eight years old, my dad joined the United States Agency for International Development (USAID) and we traveled and lived all over the world. I think that time abroad was very important in the way that I think about almost everything, and I really appreciate having had the opportunity to see so many things.

My education and training:

- B.S. in Marine Biology, University of California, Santa Cruz
- M.S. in Marine Sciences, University of N. Carolina, Chapel Hill
- Ph.D. in Marine Sciences (Microbiology), U. of N. Carolina, Chapel Hill

My career path:

- Two years at the Max Planck Institute for Marine Microbiology, Germany
- Two years at the University of Maryland's Horn Point Lab, on the Chesapeake Bay, MD
- Research Scientist, Astrobiology Institute, NASA Ames Research Center

What I like about my job:

The best part of my job is that I get to spend my time trying to find out things that no one has ever found out before. I also enjoy making and using newer and better "gizmos" to measure processes in microbial communities. That means that I spend a fair amount of my time trying to make the gizmos work for our applications.

What I don't like about my job:

I suppose that the thing I like least about my job is the paperwork that is required by it, including the process of producing papers about our research. This writing takes a lot of time to do, and that is time that I can't use to find out new things. Of course, communicating our results is one of the most important parts of the scientific process, and so this is a part of my job that I am also most interested in improving upon.

My advice to anyone interested in this occupation:

My advice to anyone interested in pursuing a career in science (or in anything else as far as I can tell) is the same advice that my parents gave me: "Do what you love, and everything will work out for the best." You know what, they were right! I am extremely fortunate to have a job doing what I love to do: finding out things that no one has ever found out before. If I can do it, I think that anyone can.