



Biometeorologist



Nancy Kiang

**Terrestrial Biometeorologist/
Biogeochemist**

**NASA Goddard Institute for the Space
Studies**

In my work, I study the ways that living things (the biosphere) and the atmosphere interact with each other, focusing on life on land. Through photosynthesis and the evaporation of water from plant leaves, seasonal cycles of growth and decay, and occasional big events like fires, the biosphere on Earth exchanges heat, water vapor, carbon dioxide, methane, nitrogen in different forms, and many other compounds with the atmosphere. These exchanges result in the biosphere actively controlling the climate of the Earth. If we understand this better, we can predict weather better, and we can also try to figure out how these exchanges could be different for life on another planet.

My areas of expertise

- Earth System Science

How I first became interested in this profession

When I first started graduate school at Berkeley, I was interested in solving environmental problems. While taking courses and learning more about the science, I got interested in Earth System Science. I was particularly intrigued by courses that provided a global understanding and touched upon the Earth's history. I have always had a love of astronomy as a kid, so when I graduated, I was very happy to be able to put together Earth Science with searching for life on other planets.

What helped prepare me for this job

My schooling, of course, trained me for a lot of what I do. What was most important to learn was not just the technical skills, but also the ability to be an independent researcher, pursuing the unknown out of your own curiosity, and realizing that no one else can give you the answer. However, you can and must talk to many people and play your ideas off of them, as well as gain knowledge from their special expertise that you might have trouble figuring out on your own. If you would like to pursue research in science, it is important that you not be afraid to ask questions and find a good mentor or two who can help you figure out the foundations you need to pursue your interests.

My role models or inspirations

The best role models for me were not only intellectually excellent but also personally wonderful people who could balance their family with a very busy job and manage their laboratories well, respecting everyone as individuals. These included not only professors but also co-workers at previous jobs before I went to graduate school.

My education and training

- Degree in Computer Science from Stanford University
- Ph.D. in Biometeorology, University of California at Berkeley

My career path

- Global scale modeling at the Goddard Institute for Space Studies

What I like about my job

Anything I like to read, from Einstein to Asimov, is fair game for an idea. I never feel narrowly focused, but I get to work with astronomers, biologists, and climate scientists. I can work at home or in a nice café. They give away fun toys at AbSciCon, an astrobiology conference.

What I don't like about my job

I always feel as though I don't know enough.

My advice to anyone interested in this occupation

Learn the fundamental sciences well (math, physics, chemistry, biology) and find a summer course or job at beautiful place like Woods Hole Marine Biological Laboratory or a NASA summer camp where you can have a hands-on project to work on with fun people. When you go to graduate school, find an advisor who has a happy group of people who like to interact a lot with each other.