



Design Engineer



Peter Gage
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I am an onsite contractor at NASA Ames Research Center. I work on design systems for thermal protection of atmospheric entry vehicles. This means that I work with NASA engineers to predict how hot a Space Shuttle or a Mars probe will get. I use computers and the internet to share this information with other design team members around the country. By doing a good job of sharing information in the team, we can design the best and safest vehicles.

My areas of expertise

- Thermal Protection Systems
- Entry Vehicles

I was interested in airplanes as a teenager and made several balsa wood model airplanes. I also became interested in boats and sailing in my late teens. Odd jobs around the house also gave me some familiarity with tools and how things work and break. As a teenager, I was not really interested in computers. Back then, I thought they were mainly for games and for typing (there was no internet). But I still remember how excited I was when I realized a computer would save me hours of calculations after one of my college experiments. Suddenly I was ready to learn programming!

What helped prepare me for this job

I did not really do any special activities that prepared me for my career. In high school, I did not specifically take classes geared towards engineering, but I took a lot of math and physics classes which prepared me somewhat. I thought about studying history at college but decided that I wanted to make things instead of just writing about them. Now that I do research, I have a good combination of learning about interesting science, designing, and writing papers about my work.

My role models or inspirations

There was an assumption with my family that everyone would go to college. We were expected to do homework every night. I did not really have anyone encouraging me to go into engineering specifically. My father did medical research, and he seemed to always have interesting work to do. That helped me to consider a research related career. My mother encouraged me to stick with aerospace engineering even when it took me a long way from Australia. I am incredibly lucky that my wife likes learning and understanding, so she is enthusiastic about the work I do.

My education and training

- Received a masters and doctorate at Stanford University

My career path

- In college I studied engineering
- Designed small engines for unmanned aircrafts
- Taught mechanical and aeronautical design at a university in Australia
- Returned to the U.S. to work on spacecraft design at NASA Ames Research Center

What I like about my job

It is fascinating to study vehicles and how they work. It is difficult to decide how to build spacecraft because we don't know precisely what conditions they will have to endure (because we haven't been there before!). This is hard work so it is exciting when a design works.

What I don't like about my job

The negative aspect of my job is that designs sometimes don't work perfectly. This is quite frustrating, but it increases the excitement when our predictions turn out to be right.

My advice to anyone interested in this occupation

If you are interested in a career in engineering, people always recommend math and science classes. They are certainly important, but liberal arts classes are important too. Most engineering employers list communication skills as a top priority. Engineers are involved in all high technology, and they help to shape our lives. If you are fascinated by how things work and are put together, then engineering may be for you. It may not be the best financial choice, but it can be very rewarding.

How I first became interested in this profession