



# Astrophysicist/ Engineer



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I'm an engineer. The group I work with does work with both the International Space Station (ISS) and the Space Shuttle. I'm working on a 3D simulator of one of the labs on the ISS. Scientists will be able to prepare a science experiment, practice it with the simulator, and save it to be used by the astronauts for training. Then the astronauts can show up, watch the scientist's version of the experiment, and practice it themselves. There's also a 2D simulator that they can bring up to the ISS with them. They can use it for review before actually running the experiment. Others in my group are working to improve the docking between the ISS and the Space Shuttle.

### Areas of expertise:

- 3D simulation
- Earth atmosphere studies
- Astrophysics
- Physics
- Astronomy

### How I first became interested in this profession:

When I was in junior college, I had no idea what to do for a career. I liked English, Shakespeare, Photography, Ceramics, and Math. Science was ok, but not my favorite. One of my friends talked me into taking a basic astronomy course, even though I didn't need it to graduate. I fell in love with the class (My friend dropped it). I knew after taking that class that I wanted to learn everything I could about astronomy.

### What helped prepare me for this job:

When I finished my bachelor's degree, I applied for a job at NASA Ames as a contractor. I was hired by the Earth Science Department and worked with a group studying the Earth's atmosphere. After a couple of years, I applied for a civil servant position (which means I work for the federal government rather than a company) as an engineer at NASA Ames. That was only 6 months ago. I'm still figuring out how to do my new job, and it's been fun learning a whole new field.

### My role models or inspirations:

I have lots of role models. My parents, who taught me the importance of family and the value of hard work. My sister, because she is one of the most capable people I know. My husband, because he is so easygoing, loves science, and laughs all the time. Dr. Adrienne Cool, an astrophysicist, has been one of my role models for years. She helped me learn how to do research, which is a lot different from studying books about science. It's also much more fun. Dr. Tim Castellano is an astronomer I know. He came back to college and became an astronomer after he'd already had a career in a different field. Dr. Yvonne Pendleton is an excellent astronomer at NASA Ames. She spends a lot of time teaching children about astronomy, which I believe is just as important as learning astronomy for yourself.

### My education and training:

- B.S., Astrophysics, San Francisco State University
- Engineering Studies, Stanford University

### My career path:

- Contractor, working on Earth's atmosphere studies at the Earth Science department, NASA Ames Research Center
- Aerospace engineer at NASA Ames, working on a 3D experiment simulator for the International Space Station (ISS)

### What I like about my job:

I like the challenge of discovering new things. It's both fun and frustrating, exciting and irritating, to figure out how to make a computer program do what you want, and to analyze data and find out something you didn't know before. But the best feeling in the world is when you finally figure out a problem you were are working on. You feel relieved and thrilled all at once.

### What I don't like about my job:

It takes a long time to learn something new, and that's hard for me, I like instant answers (those don't happen very often).

### My advice to anyone interested in this occupation:

Adrienne Cool has a sign above her desk at San Francisco State University that says: "Think, think, read, think, read, think." This is what it takes to understand and do science. Also, choose a career that you love. Have you heard that before? Probably, but that's because many people don't follow the advice and then regret it. There are parts of science that I find really hard, but I always stuck with it. Mostly because I love it, and also because I'm super-stubborn.

## Additional Resources:

- American Institute of Biological Sciences  
<http://www.aibs.org>
- American Physiological Society  
<http://www.faseb.org/aps>
- American Society for Biochemistry and Molecular Biology  
<http://www.biophysics.org/biophys/society/biohome.htm>
- American Society for Microbiology  
<http://www.asmsusa.org>
- Astrobiology Summer Academy  
<http://academy.arc.nasa.gov/>
- Biotechnology Industry Organization  
<http://www.bio.org/welcome.html>
- Earth to Orbit: Engineering Design Challenges  
<http://eto.nasa.gov/>
- Education Pays Calculator  
<http://www.educationpays.org/calc.asp>
- Graduate Student Researchers Program  
<http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Graduate.Student.Researchers.Program.Brochure/.index.html>
- MATHCOUNTS Competition  
<http://mathcounts.org/>
- Minority University Research and Education Programs  
<http://mured.nasaprs.com/>
- NASA Cooperative Education Program for college students  
<http://spacelink.nasa.gov/Educational.Services/NASA.Education.Programs/Student.Support/NASA.Cooperative.Education.Program/.index.html>
- NASA Jobs  
<http://nasajobs.nasa.gov/>
- NASA Office of Life and Microgravity Sciences and Applications  
<http://www.hq.nasa.gov/office/olmsa/>
- NASA SHARP Internship Program for high-schoolers  
<http://www.mtsibase.com/sharp/>
- NASA Student Employment  
[http://nasajobs.nasa.gov/stud\\_opps/employment/index.htm](http://nasajobs.nasa.gov/stud_opps/employment/index.htm)
- NASA Student Involvement Program student contests  
<http://www.nsip.net/index.cfm>
- Order NASA career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE.  
<http://core.nasa.gov>
- Revolutionary Vehicle Concepts and Systems student competition  
<http://avst.larc.nasa.gov/competitions.html>
- Student's Guide to Astrobiology  
<http://www.astrobiology.com/student.html>
- Tech-Interns.com  
<http://www.tech-interns.com/>

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