



# Research Scientist



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The main focus of my work is on the topic of astrobiology—the search for life in the universe. Over the last two years, I worked at Montana State University as the NASA CERES Astrobiology Project Coordinator. This summer I moved to Tucson, Arizona, where I now work as a Research Scientist for the Conceptual Astronomy and Physics Education Research (CAPER) team in the Department of Astronomy at the University of Arizona. I spend the majority of my time teaching courses, conducting research into student beliefs and learning difficulties, and on developing new activities to help students learn about astronomy and physics.

### Areas of expertise:

- Astronomy and physics education research
- Physics, earth & space science curriculum and course development
- Faculty/teacher professional enhancement programs
- K-14 public outreach
- Online course development and instruction

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

When I was younger, I liked taking things apart to learn how they worked. In high school, I focused on auto shop instead of science and math. I then worked as an auto mechanic, and started racing cars and motorcycles, but realized I could not make a living as a professional racer. In my early twenties I decided to go back to school and fell in love with physics. I was amazed that there was a subject that described how the entire physical world around me worked. Studying physics helped me understand how my race cars and motorcycles operated. The best part of learning physics was working in groups with other students. Along the way, I also discovered astronomy. My career was set; I was going to get a Ph.D. in Physics and teach.

### What helped prepare me for this job:

The years I spent working on cars and motorcycles were extremely valuable. To be successful in repairing machines you must become an expert problem solver. You develop the ability to think of a system both in terms of its separate components and as group of interconnected processes. These skills are tremendously valuable when thinking about the physical relationships studied in physics and astronomy. My experience as a technical writer was also very valuable because success in science involves your ability to communicate complex ideas clearly and effectively.

### My role models or inspirations:

I am inspired by people who have a strong sense of commitment to their beliefs, and who have the passion and will to carry out their dreams. My first physics teacher has always served as my role model for teaching; he was the best. I also admire Leonardo da Vinci, Albert Einstein, and Richard Feynman.

### My education and training:

- A.A., Bellevue Community College
- B.S., Physics and Astronomy, University of Washington
- Ph.D., Physics, University of Maine

### My career path:

- Three years as technical writer for Genie Industries, Redmond, WA
- Four years as research and lead graduate teaching assistant at the University of Maine
- Two years as instructor in the Physics Department, Montana State University
- Two years as project coordinator for NASA CERES Astrobiology Project at Montana State University

### What I like about my job:

Personal freedom!! Overall, I like everything about my job. I feel lucky to be a scientist. I have the opportunity to work with a wide variety of intelligent, passionate, and very interesting people, while also having the chance to be creative and think very deeply about cutting-edge topics at the horizon of scientific discovery. For myself, the most exciting and rewarding part of my job is the opportunity to work with students—sometimes as their teacher, and other times as a researcher, trying to uncover the difficulties they have when learning about physics and astronomy.

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

I find that having to continuously look for funding for my research takes me away from my work. I would also like to see that more of our national budget is dedicated to educational efforts in science.

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

Find a topic that excites you, and then pursue your dreams with passion and dedication. Believe in yourself, and don't worry about what other people think, and your dreams can come true.

## 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>
- 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>
- Student's Guide to Astrobiology  
<http://www.astrobiology.com/student.html>
- Tech-Interns.com  
<http://www.tech-interns.com/>

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Thank you.

