National Aeronautics and Space Administration

Astrophysicist
Planetary Scientist

Dr. Mary Urquhart
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Planetary Scientist

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I use computers to simulate reactions between martian rock, hot water, and gases, which produce new types of rock. Computer modeling is very useful for studying things that are very big, very small, very far away, or that take a long time to change.

Areas of expertise:

- Geosciences
- Astrophysics
- Computer modeling
- Education

How I first became interested in this profession:

One of the most important requirements for being a scientist is simple curiosity. Most young children are naturally curious, and many like to solve puzzles. I was no exception. I went into science because I wanted to understand everything I could about how the natural world works.

What helped prepare me for this job:

I always wanted to be a scientist. In the fourth grade I started going to the planetarium every week after school. For the first time, I had a glimpse at the wonders of the universe. Planets, stars, nebulae, and galaxies all seemed so beautiful, almost magical. A door opened for me, and I began to look through my parents' science books. I found I had a passion for geology, and wanted to know why rocks look the way they do.

My role models or inspirations:

My parents are both chemists, and they were both graduate students when I was in elementary school. They taught me that curiosity is a good thing and that learning is a lifelong process.

My education and training:

- B.S., Geophysics and B.S., Physics (specializing in Astrophysics), New Mexico Institute of Mining and Technology
- M.S. and Ph.D., Astrophysical, Planetary, and Atmospheric Science, University of Colorado

My career path:

- Six months as a National Research Council postdoctoral associate at NASA Center for Mars Exploration, Mountain View, CA
- One year as a Caltech Postdoctoral Scholar at NASA's Jet Propulsion Laboratory, Pasadena, CA
- One year as an intern at the U.S. Geological Survey, Menlo Park, CA

What I like about my job:

One important quality of scientists is curiosity. Another is the joy of solving problems. The best part of my job is that I get paid to learn, and sometimes learn something that no one before me has ever known.

What I don't like about my job:

I am not fond of paperwork, especially filling out forms. Finding funding for research can be difficult and discouraging.

My advice to anyone interested in this occupation:

Science isn't all in books. It's about discovering new things and looking at the world in new ways. I have a learning disability and had trouble learning to read, but I didn't give up. When I learned to read, I read everything I could, from science fiction and fantasy books to science textbooks. With effort, you can learn to overcome many problems. The choice is yours.

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.asmusa.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
- Earth to Orbit: Engineering Design Challenges
  http://eto.nasa.gov/
- 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
- 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/

Please take a moment to evaluate this product at:
http://ehb2.gsfc.nasa.gov/edcats/educational_topic

Your evaluation and suggestions are vital to continually improving NASA educational materials.
Thank you.