National Aeronautics and Space Administration

Astrophysicist

Dr. David Koch

Astrophysicist

NASA Ames Research Center

I think of ideas for space missions and search for Earth-sized planets around other Sun-like stars.

Areas of expertise:

- Extra solar planet detection
- Spaceflight scientific instruments and missions

How I first became interested in this profession:

In addition to always liking mathematical problems, I leaned toward scientific research as a child because my father was a professor of biochemistry. When I was in college, at the time of the Apollo program, I got to work in a space physics lab, which was very exciting for me.

What helped prepare me for this job:

A strong background in math and physics and the ability to write computer programs have been very useful to me.

My role models or inspirations:

My father, a research scientist, was a role model for me, as were the professors I've worked with.

My education and training:

- B.S., Applied Mathematics and Engineering Physics, University of Wisconsin-Madison
- M.S. and Ph.D., Physics, Cornell University

My career path:

- Senior scientist at American Science and Engineering for six years
- Astrophysicist at the Smithsonian Astrophysical Observatory for 12 years
- Astrophysicist at NASA Ames Research Center for 12 years

What I like about my job:

As a research scientist, I get to pick and choose the research that I do. If I don't like what I'm doing today, I can do something different tomorrow. I study what is interesting to me. Also, the goal of any research scientist is to learn something new about the universe that was never known before. It's exciting to be the first one to know something new. Afterwards, it may turn out to be important enough to become part of the human knowledgebase for future generations.

What I don't like about my job:

I spend a lot of my time carrying out requirements of my job that have nothing to do with accomplishing scientific goals.

My advice to anyone interested in this occupation:

Get a good education in math and physics. You should also have a knack for knowing what makes things work. Try taking things apart and putting them back together to see how they work. To be a research scientist, you need to be a tinkerer.

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
- 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
- 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.