



Senior Scientist for Vision Research



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Senior Scientist for
Vision Research

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In order to understand how the human visual system works, I design experiments, set up lab equipment, collect and analyze data, write papers, and communicate with other scientists; I then use this knowledge to make technology that can “see” like humans do. I develop computer models that can judge visual quality in the same way as the human eye.

Areas of expertise:

- Visual perception
- Human technology

How I first became interested in this profession:

I came to Columbia University with the idea that I wanted to be a fiction writer. I believed that studying psychology would give me a good understanding of people, which might be helpful as a writer. As I progressed in my coursework, I became more interested in the scientific aspects of psychology, so I decided to train as a scientist instead.

What helped prepare me for this job:

Knowing how to write and speak effectively has been very useful in carrying out my project ideas. I started with a good liberal arts education and a solid background in mathematics. Most importantly, I've always had a basic curiosity and a liking for figuring out mysteries, as most scientists do. In growing up I used to take things apart to see how they worked, and I don't believe I've ever lost my childhood ability to be inquisitive and to wonder.

My role models or inspirations:

My father is my role model and my inspiration. He had to leave college during the Great Depression, but he taught himself science by reading books he was able to get his hands on. In college I was influenced by my psychology professors—they seemed to be having a lot of fun. They weren't the dull scientists I had always pictured. They were very smart, and they gave me a sense that what they did was honorable and interesting.

My education and training:

- Ph.D., University of Pennsylvania
- Undergraduate at Columbia University, New York

My career path:

- Two years as a research scientist at Stanford University
- Eight years as a research psychologist at NASA Ames
- Ten years as a senior scientist at NASA Ames

What I like about my job:

I like the freedom to choose my own projects. I also like to spend most of my time thinking, and putting together the pieces of the puzzle; in addition, I get to interact with a large community of great scientists.

What I don't like about my job:

Like any job, this one comes with responsibilities that take time away from what I like to do best, which is research.

My advice to anyone interested in this occupation:

Think about how light interacts with matter, and how your brain utilizes the visual input allowing you see. Don't forget to take LOTS of math in school.

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>
- 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>
- 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.

