

Interesting MS/PhD jobs for geoscientists

We surveyed scientists with the following questions:

1. Job title
2. 1 sentence description.
3. Best 3 things about job
4. Worst 3 things about job
5. We also have email addresses for these jobs, so you can request them ([nmm63 at cornell.edu](mailto:nmm63@cornell.edu))

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Section I

A 1.. senior science writer, university public relations

2) I write press releases about new scientific results coming out of Caltech, and I co-produce a 1.5-minute radio segment on quirky science called "the Loh Down on Science."

3) best 3 things: learning new science all the time and stretching myself outside my comfort zone. having a short deadline so things stay fresh and get done quickly so I can sleep feeling like I've accomplished my job. Meeting new and interesting people who do fascinating things.

4) worst 3 things: a) I get the sinking feeling that I serve a self-selected audience: people read about science because they're already interested in it. I am not changing minds. b) Fairly inflexible schedule: I work 8 to 5, 5 days a week. I get 15 vacation days a year and that's that. There are institute holidays, but it's not like in academia where you can sort of set your pace. c) I don't necessarily see how to make progress in this job. The variation is on a weekly basis in that your stories change on that timescale. There isn't much upward mobility. I could apply to be a science writer in other venues, like for magazines with increasing exposure (Discover, Popular Science, Nature, etc) but these jobs are really competitive. d) I'll add a 4th drawback: I still want to do science but I can't find a way to be a scientist and a writer at the same time. I believe there is too much compartmentalization in the job world.

B. 1. Program Officer, National Research Council (The National Academies)

2. My job is to "shepherd" NRC studies -- these are reports that are written by volunteer experts on scientific/technical/health policy issues.

3. Best 3 things about job -- (1) Working one-on-one with world-renowned experts -- these are the folks that literally "wrote the book" in their fields. (2) Seeing the reports that I've worked on make a difference (e.g., new laws, new funding) (3) Getting to dabble in a lot of different fields - I'm a biological oceanographer, but I've worked on a range of ocean issues, from fishing to tsunamis, and even worked on agricultural studies!

4. Worst 3 things about job -- (1) The flip-side of dabbling in a lot of different fields is that I don't feel like an expert in anything anymore. I'm not as deeply entrenched in the cutting-edge science of any one topic like I was in graduate school. Jack of all trades... (2) A lot of my job is just paperwork and herding cats. Nothing to do with science... (3) I sit at a desk all day -- I miss the ocean :)

C. 1. Title: Program Manager Atmospheric Study Group

2. Brief description: mix of applied work (air quality and meteorological consulting), research, model development, and teaching to professionals and governmental agencies

3. Best 4 things about the job:

- varied and challenging(see description!)
- great colleagues (most have a MSc or Ph.D. and all are fun people to work with)
- flexible (work in main office or ... about anywhere in the world)
- travel opportunities (consulting, teaching, conferences)

4. Worst 3 things about the job:

- can't think of any

D.1. title: Research Development Facilitator

2. 1 sentence description.:

I help various PIs with grant and manuscript submissions - everything from project management to editing / proofreading to writing parts of the text.

3. Best 3 things about job

1) I get to spend all day reading, thinking and writing about science, which is my passion! The field is closely related to my postgraduate training and I feel like I'm really using my education and research experience.

2) Variety - I work with several PIs and physicians and have lots of different projects on the go at once.

3) I'm the first person to play this role in my department so to some extent I can shape the job definition myself. If all goes well I may be able to hire others and build a team.

4. Worst 3 things about job

1) Deadlines deadlines deadlines... several PIs all applying to the same grant competition and all leaving everything to the last minute!

2) the fact that no-one else has done this job before means that my job description is really vague, no-one is 100% sure of what my role is, and it's possible that I can get stuck with some of the jobs that no-one else wants! I do sometimes feel a bit isolated too (i.e. I'm not part of the student / postdoc clique and I'm not part of the PI clique either). I have met some people in other departments though and I'm actively working on building my network.

3) grant funded job = uncertainty... I have to prove my worth to the department and then, if they want to keep me, they have to find the money!

E. 1. title Research Physical Scientist

> 2. 1 sentence description.

Global atmospheric chemistry modeling to examine global air pollution and linkages with climate and the biosphere

> 3. Best 3 things about job

- flexibility (especially now that I have a 6-month old)

- freedom (to pursue interests + no grant-writing required for salary)
- opportunities to work with colleagues / post-docs / graduate students

> 4. Worst 3 things about job

- government bureaucracy
- not as much interaction with students as at a university
- budget, particularly regarding travel (see first point)

F. 1. Program Director at NSF

2. Am involved in the peer reviewing, decision making, management and reporting aspects associated with research proposals submitted to the National Science Foundation (NSF), broadly in the areas of science, technology, engineering and mathematics (personally have been involved in programs in Ocean Sciences and Atmospheric Sciences).

3. Best 3 things about job

Being involved in the scientific endeavours of absolutely some of the best scientific researchers in the nation and the world.

4. Worst 3 things about job

Not being able to always support the best ideas some of these same people.

G. 1. Title Environmental Engineer

2. 1 sentence description.

Implement regulations to protect underground sources of drinking water (write permits, help draft regulations, etc)

3. Best 3 things about job

- * Work with others that have a sincere concern for our environmental.
- * Lots of room to grow (air, water, soils) - if you get bored, tackle another topic. Gaining experience in different programs is highly encouraged.
- * Family friendly and workplace flexibility - 4/10 (get every Friday off) and telecommuting

4. Worst 3 things about job

- * I have on several occasions found myself in a situation where I am bound by regulations to require something of the regulated party to do something that is absolutely nonsensical and counter to common sense.
- * There may be some jaded people who have just simply lost interest and are not pulling their weight and brings down moral. In the private sector, they would have gotten the boot.
- * Commute

Right now there are a lot of opportunities at the EPA because of retirement. Look into the FCIP program. Federal Career Internship program (particularly for Master students).

H. 1. Title: Scientist, National Center for Atmospheric Research

2. 1 sentence description.

Conduct atmospheric-science-related research funded by National Science Foundation and external grants, conduct activities (workshops, model development, etc.) that support university research community

3. Best 3 things about job

time and flexibility to do research, opportunities to collaborate with many colleagues, encouragement to pursue interdisciplinary research

4. Worst 3 things about job

administrative overhead and pressure to fill many roles, institutional hierarchy and conservatism, missing some benefits of university environment (e.g., teaching and many students)

I. 1. Title Associate Editor, high impact science journal

2. 1 sentence description.

Editor responsible for handling manuscript submissions to the journal Nature in the fields of climate sciences, physical oceanography, atmospheric sciences and glaciology.

3. Best 3 things about job

- The opportunity to read cutting-edge research in a wide range of fields
- The opportunity to use a range of skills (assessing research, communicating science, commissioning and editing pieces etc.)
- The satisfaction of seeing papers that you've guided through the review process published.

4. Worst 3 things about job

- Responsibility of ensuring the publication of the highest-quality research
- The hours can be fairly long

J. Geology Professor at community college

2. 1 sentence description.

Teaching full time at a community college

3. Best 3 things about job

1. Students are fun
2. Decent schedule

3. Opportunity to focus on teaching technique and being appreciated for it
4. Worst 3 things about job
 1. Students are a pain; complaints, etc
 2. Repeating material can be a challenge
 3. Bureaucracy in the community college system

K.1. CEO of private company

2. Provides scientific analysis of climate change impacts to clients that include cities, states, industry, and non-profit groups
3. Best three things about the job - flexible work schedule; interesting and varied projects; and being able to do something concrete to help the planet
4. Worst three things about the job - all work is deadline-based so still have to pull the occasional all-nighter! Other than that it's good.

L. 1. Scientific Programmer

2. 1 sentence description.

I write and test code that adds new capabilities to existing models with diverse applications in atmospheric chemistry.
3. Best 3 things about job
 - Learning about and contributing to study of diverse topics (I find this interesting & stimulating).
 - Being able to help collaborators use a model I've developed to do their own science (I find this very rewarding).
 - No teaching.
4. Worst 3 things about job
 - Job security depends on tenure-track scientists having models to develop and grants to pay for it
 - Scattered publication record and non-standard career path mean that outsiders don't know how to evaluate one's status / worth as a scientist.
 - I regret not having the opportunity to do fieldwork

M. 1. title IGBP: executive officer

2. 1 sentence description.

Coordinate international Earth system modeling communities: physical and biological, humanities and social sciences including AOGCM, carbon cycling, integrated assessment, energy modeling, anthropological, archaeological from young scholar/scientists, academic and research institutions
3. Best 3 things about job

- a. Participate in contributing to directions of where the next generation of inter and trans-disciplinary science is headed.
- b. Meet and work with the best of the best researchers in the world. It is truly an honor to work with the leaders of various scientific communities.
- c. I get paid to learn and lots of travel.

4. Worst 3 things about job

- a. Lots of travel. Not much of a home life
- b. Have to release any illusions of a personal research agenda. Must be able to step outside of my own research box and be willing to both communicate with and across many other disciplines that may not be easily translated into my own personal scientific 'jargon'. e.g., different scientific communities do not necessarily share the same language.
- c. interdisciplinary and certainly, international global environmental change activities are not well supported in the US. This isn't too tough though, there are lots of opportunities in Europe for this (at least in this decade).

N.1. title Global Warming Scientist for environmental group

2. 1 sentence description.

Provide scientific expertise for the National Wildlife Federation's activities on global warming, in particular the impacts on wildlife, options for reducing greenhouse gas emissions, and management strategies for helping wildlife cope with unavoidable climate changes. My responsibilities include researching, writing, and reviewing various reports and other materials on global warming; making presentations to a broad range of audiences about the science of global warming and response options; doing some original, applied research (typically 1-2 scientific papers a year); staying up on the latest scientific advances on global warming and helping convey that information to my colleagues; interacting with the media.

3. Best 3 things about job

- Get to feel like I'm making a difference in the world by interacting with policymakers, activists, industry, and government officials.
- Lots of opportunities to interact with other people, most who are incredibly passionate about their work.
- Have a wide range of tasks and subject matter interests, so I don't get bored.

4. Worst 3 things about job

- Often am the only or one of only a couple scientists in many settings, so occasionally I feel like a fish out of water. I miss having regular conversations and time to think primarily about science.
- Sometimes I feel spread too thin, with not enough time to delve deeply into a topic and understand it completely. My job is to know a little bit about a lot of things.
- Working at an NGO, I feel like I need to be extra vigilant to maintain my credibility.

O. 1 title: project/program manager for a non-profit research institute

2. Establish and prioritize research directions/fields in air quality, health, and climate issues for the next 5 years... fund and manage projects (choose researchers, write proposals, give 'pitch' presentations)... act as a scientific resource for power companies on upcoming regulations, current state of science... do personal research (data analysis, not measurements)

3. working with very smart, experienced, and influential colleagues; having many benefits of both academia and consulting; able to continue to publish

4. \$\$ is more limited than ideas; lot of paperwork; I miss using instrumentation myself

P. Climate consultant at consulting company

We don't have details yet on this, but rumors abound of new opportunities in consulting at 'management' consulting companies in climate research specifically. We'll try to get some info (or send it if you have some!).

Q. Job Title: Legislative Assistant / Congressional Science Fellow

Job Description: Serve as a policy advisor for a member of Congress on a portfolio of issues (see 3b).

Three best things about job:

- a) Waking up every morning knowing that you are actually in a position to help affect real change in the world. Your boss's vote counts for a lot; your vote recommendations and work on legislation makes a real difference in peoples lives. I've done more to help deal with climate change in the last four months than in 7 years of graduate school.
- b) Finally being able to step back from the narrow focus of academia and keep an eye on lots of issues (farm bill, army corps, biofuels, climate change, endangered species).
- c) Knowing that there are very few scientists who work on the Hill - making your expertise both valued and critical to the development of good policy.

Three worst things about the job:

- a) Very long, and sometimes unpredictable hours for big chunks of the year.
- b) Very hectic - sometimes in a fun way - but, there's always more to do than you have time for.
- c) Change is hard and slow.

5) See <http://fellowships.aaas.org/>

I should add that these fellowships are a fantastic way to start out any career in science policy.

S.1. title: air quality consultant

2. 1 sentence description.

Support industry clients with their air quality management needs in the areas of: ambient measurements, air quality modeling and compliance tracking.

3. Best 3 things about job

- Collaborative and social work environment
- Advancement potential is independent of a person's highest degree level
- In my personal experience, greater appreciation for work-life balance and more objective performance standards

4. Worst 3 things about job

- Rapidly changing priorities and a work environment that includes regular interruptions and shifting deadlines
- Much of the time, even when I'm doing modeling or other "scientific" activities I feel more like I'm doing paper work than research
- Being innovative and cutting edge in the consulting world is about delivering the best products and service to your clients, not necessarily staying on top of scientific discoveries. In fact much of the science we apply is very out of date because it often needs to go through a regulatory review period which is very time consuming

Section II: General advice:

There is a decent book on this topic called *Alternative Careers in Science: Leaving the Ivory Tower* edited by Cynthia Robbins Roth. It consists of essays from a variety of Ph.D. level scientists who are working in a diverse array of non-academic settings. Some of these options are not such a natural fit for someone in geosciences (in particular, there is a bit of a biotech bias to the book), but I still feel it's a good way to give young scientists a good idea of the range of opportunities that may be available to them.

General ideas:

- program manager at Federal agency (e.g. NSF, NOAA, NASA), doles out research dollars, sets program directions
- staffer on Capitol Hill, options include Committee staff (e.g. House Science committee) or personal staff for a member who is interested in science issues
- staffer for the National Research Council of the National Academy of Sciences (helps write important reports advising on national science issues)
- scientist at an NGO (typically advocacy groups, e.g. Natural Resources Defense Council, The Nature Conservancy, etc. also could be a policy group like the Brookings Institute)
- staffer at a scientific society organization (e.g. American Meteorological Association, AGU, AAAS, etc.).
- policy advisor in an agency (different than program manager, doesn't manage budgets but helps to chart course and respond to congress requests etc. at the agency level). Typically at higher levels of departments, like headquarters.
- staff scientist doing science at a government agency-- think NASA, Fish and Wildlife, USGS, USDA, NOAA, NIST, EPA, DOE labs. these are often not in Washington, DC, but in labs throughout the country
- private consulting firms -- these often hire scientists especially if they have a specific portfolio in an area (e.g. climate change). Some examples are SAIC, Stratus Consulting.

I got some responses about people who went into reinsurance industry, or consulting, especially recently, on climate change related issues. Companies like McKenzie consulting are hiring.