

Opening the Black Box: Applying for Government Jobs

Jennifer Pearl

Applying for a government job can be daunting—even for me, someone who has spent years working in the federal sector. The government job application process can seem like a black box, and the complexity of various rules and designations can be overwhelming. At the same time, there are extremely rewarding opportunities for mathematical scientists in the federal sector that can have a huge impact on key challenges for our country. Here are some high-level tips on how to navigate this landscape. As with most job searches, a two-pronged approach is useful: information gathering by looking online coupled with conversations with individuals who actually work at target organizations.

Most federal government jobs—positions in the government where the person hired is to be a federal employee—are posted officially in at least two places: on www.usajobs.gov and on the agency website for the agency where the position is posted.

First, let's talk about USAjobs. The USAjobs site has an overarching search function right on top, and a quick search for "math" gives hundreds of posted jobs in diverse agencies such as the Air Force, Department of Energy, Bureau of Labor Statistics, Food and Drug Administration, Department of Veterans Affairs, Federal Aviation Administration, Federal Bureau of Investigation, National Oceanic and Atmospheric Administration—and the list goes on. See the screen shot in Figure 1. Now unfortunately, not all of these will really be for mathematicians or statisticians—some will only have *math* as a keyword somewhere in the job description and may not actually be applicable at all. Also, some postings may be a "Public Notice" or other designation and not actually delineate a particular job, so careful attention to detail is required. On a quick review the day I searched, only about 20 of the 300+ listings were actually jobs geared for professional mathematicians or statisticians.

The screenshot shows the USAJOBS search interface. At the top, the USAJOBS logo is displayed. Below it, there is a search bar with the keyword 'math' entered. To the right of the search bar, there is a location filter set to 'City, state, zip, or country'. Below the search bar, it indicates 'Viewing 1 - 10 of 314 jobs' and a 'Sort by' dropdown menu set to 'Relevance'. A 'Save this search' button is visible. The first job listing is for 'Mathematics' at the 'U.S. Air Force - Agency Wide', Department of the Air Force, Schriever AFB, Colorado. It starts at \$50,598 (GS 9-15) and offers multiple appointment types and schedules. The second job listing is for 'MATHEMATICIAN' at the 'U.S. Air Force - Agency Wide', Department of the Air Force, Multiple Locations. It starts at \$41,365 (GS 7-15) and offers multiple appointment types and schedules. Both listings include a clock icon and the text 'Open 01/01/2019 to 12/31/2019'.

Figure 1.

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Mathematics

DEPARTMENT OF THE AIR FORCE
U.S. Air Force - Agency Wide

Overview Locations Duties Requirements Required Documents Benefits How to apply

Overview

Open & closing dates

01/01/2019 to 12/31/2019

Pay scale & grade

GS 9 - 15

Appointment type

Multiple Appointment Types

Service

Competitive

Salary

\$50,598 to \$157,663 per year

Work schedule

Multiple Schedules

This job is open to



The public

U.S. citizens, nationals or those who owe allegiance to the U.S.

Clarification from the agency

This public notice is to gather applications that may or may not result in a referral or selection.

Apply

Figure 2.

And there are other jobs for which mathematical scientists would be great candidates but which don't come up in this kind of search.

So USAjobs is an imperfect tool, but it is a system that must be navigated. Use the filters to help narrow down the choices. Clicking on a particular job will lead to a full description of the position, including eligibility (see the screen shot in Figure 2). Applicants can develop profiles, save searches, and receive notification when jobs matching their specifications are posted.

A key aspect of applying to government jobs is the eligibility criteria—some positions will be open to the public, and some will be open only to veterans or to individuals who have prior government experience. The Air Force job noted above is open to the public. The eligibility statement is the real deal—it is not worth applying unless the eligibility is met. The closing date is also the real deal: late applications are not usually accepted.

Further investigation of the position page will lead to information that describes the job duties, requirements, and how to apply. The most competitive applicants generally follow the instructions exactly, with cover letters that are detailed, long, and address all of the requirements. Oftentimes, a button to "Apply" is located on the right side of the page.

Federal jobs are also usually posted on the website of the agency where the position is housed, and the best way to find those agency-specific websites is often by searching online for "jobs at NIH" to find <https://hr.nih.gov/jobs> or "jobs at NSA" to find <https://www.intelligencecareers.gov/nsa/index.html> or "jobs at NSF" to find <https://beta.nsf.gov/careers/openings>. There will be some duplication between USAjobs and the agency-specific sites, but you also might find unique opportunities on either one. Again, the eligibility, qualifications, and closing

dates are serious. Pay close attention and adhere to them. Finally, employment-related search engines, like Indeed, also comb through government job postings, and they are often a good source of federal positions.

A government job is not the only path to the federal sector. For example, organizations that receive government contracts often hire mathematicians (for example, Booz Allen Hamilton, <https://www.boozallen.com/>; SAIC, <https://www.saic.com/>; and MITRE, <https://www.mitre.org/>). There are several fellowship programs to bring new talent to support the federal sector, and applications from mathematicians are welcome and encouraged for many of these. The government's Presidential Management Fellowship (<https://www.pmf.gov/>), the Science & Technology Policy Fellowships program (<http://www.stpf-aas.org/>) run by the American Association for the Advancement of Science, the Christine Mirzayan Fellowship (<https://sites.nationalacademies.org/pga/policyfellows/>) run by the National Academies, and the Zintellect (<https://www.zintellect.com/>) database of opportunities offered by Oak Ridge Associated Universities are good places to start.

Now, reading a website (that is not always easy to navigate) generally does not tell you everything you might want to know about working at a government agency. To augment the online searching, it is usually exceedingly helpful to have a conversation with a person who actually works at the agency of interest. Mathematical scientists in the federal sector go to conferences regularly, and that is a great opportunity to make connections, ask what it is like, and request a phone call or follow-up discussion. Professional societies such as the American Mathematical Society, through its BIG Career Development initiatives, or the career resources of the Society for Industrial and Applied Mathematics or the Mathematical Association of

America are also good launching pads. Don't be afraid to reach out and request a conversation.

In a nutshell, my advice is to make enough contacts so that when you do apply for a job, you can ask a neutral but knowledgeable party to read over your materials before you submit. And have patience with the online systems: consider them a "necessary evil" to get you where you want to be. Good luck!



Jennifer Pearl

Credits

Author photo is by Kat Song, AAAS.

Early Career Paths at Los Alamos National Laboratory

Mary Frances Dorn, Daniel O'Malley, Harsha Nagarajan, Navamita Ray, and Andrew Sornborger

We represent a selection of early career staff at LANL with backgrounds in mathematics. There are many possible paths to a position at LANL. The lab has very active graduate research and postdoctoral programs, and it is not uncommon for graduate students to become postdocs, who can then be "converted" to staff. Conversion from being a postdoc is not the only route to a position at LANL, nor is it a guarantee, but most of us did postdocs here before becoming staff. Being a postdoc here also gives you an idea of whether you'd like living in northern New Mexico, a

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rugged, beautiful, and somewhat remote area. It is important to say here that citizenship is not a requirement for many of the positions at the lab. The lab historically and currently welcomes investigators from all over the world.

LANL offers a broad spectrum of mathematical challenges that are largely problem driven. Particularly to those who feel that academic mathematics can be stove-piped, with a focus on deep but not necessarily broad expertise, the LANL environment gives the flexibility to move and grow in many different directions. The lab encourages a team-based approach to problems, which not only enhances the breadth of our approach to solving problems, but also gives team members access to new fields. From the outside (academia), however, it can be difficult to see how fields map between academia and the lab. This is one of the reasons that having interaction with the lab as a graduate student or postdoc can be helpful in understanding if the environment would be a good match for you.

An important advantage of working at the lab is our high visibility both in academia, as well as in industry and the government. Because of its mission-driven projects, LANL, and more broadly the Department of Energy Laboratories, help set research directions that are picked up by researchers in academia. For this reason, many lab staff have worked at LANL for a number of years, then have transferred into academia after having set the agenda for their field of expertise.

Below, we will share some of our experiences, opinions, and reflections in order to give the reader a feel for our own early career experiences.

Mary Frances Dorn: I joined the Statistical Sciences Group at LANL as a staff member straight out of a PhD program in statistics at Texas A&M University. I got into mathematics in college because I enjoyed problem solving, and at LANL I've found an endless supply of interesting, challenging, and consequential problems. These days, I spend most of my time modeling extreme weather events and their impacts on energy infrastructure, improving estimates of uncertainty for material equations of state, and developing statistical methods for nuclear proliferation detection.

I work in a well-established group of statisticians whose collective areas of statistical research include reliability, design of experiments, computer model calibration, Bayesian methods, spatio-temporal modeling, statistical learning, and more. It's a bit like an academic department, but every member of the group is first and foremost engaged in interdisciplinary collaboration and applying statistical methods to real (and often messy) problems. Nobody works in a silo, and I can always find a colleague to brainstorm a problem. The research environment is definitely more collegial than competitive, and my fellow early career staff and I receive lots of informal mentoring from senior group members. There is more than one model for being successful as a statistician at LANL, and I would encourage any students