

Chapter 5

Career Opportunities in the Government Sector

Kristin M. Omberg*

Center for Integrated Nanotechnologies, Materials Physics & Applications
Division, Los Alamos National Laboratory, PO Box 1663, Los Alamos,
New Mexico 87545

*E-mail: komberg@lanl.gov

A 2010 survey of American Chemical Society (ACS) members indicated that nearly 10 percent were employed by federal, state or local government entities. ACS members work for a wide range of different government and government-affiliated organizations, including the United States Congress and the Congressional Research Service; the federal agencies; the National Academies of Science and Engineering, Institute of Medicine and National Research Council; and state and local government bodies including those concerned with environmental and public health. These ACS members live all over the United States, and perform a wide range of job functions, including policy analysis and program management; research and development; quality assurance and quality control functions; and sample analysis activities. This article presents a brief overview of opportunities available in the government sector, with links to additional information for those interested in more detail.

Introduction

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members live all over the United States, and perform a wide range of job functions, including policy analysis and program management; research and development; quality assurance and quality control functions; and sample analysis activities. Salaries and benefits are typically competitive with the broader marketplace, and foreign nationals may be eligible to apply, particularly for entry-level positions. This article presents a brief overview of opportunities available in the government sector, with links to additional information for those interested in more detail.

Career Opportunities in the United States Congress

Science, technology, engineering, and math (STEM) professionals can add tremendous value to the legislative process by serving as interns, fellows, or staffers in Congressional offices. There are even a few STEM professionals who have been elected to the United States (US) Senate and House of Representatives (though, in the opinion of the author, not enough!). Congressional staff may support a personal office (the office of an individual Senator or Representative) or a Committee (for example, the US Senate Committee on Commerce, Science & Transportation or the House of Representatives Committee on Science, Space & Technology). Staff positions are exciting and fast paced, changing sometimes daily as different legislation is introduced for consideration. They require general STEM knowledge and training, strong communications skills, flexibility, and the ability to multi-task.

Personal office staff have the opportunity to interact regularly with both their Member (the Senator or Representative whom they serve) and the people whom their Member represents. One of the most important duties of a Member is to listen, and respond, to his or her constituents; all of the staffers in a personal office support the Member in this vital work. Personal office staff usually work on multiple issues of interest to the Member's District or State simultaneously, and must be able to advise the Member on policy alternatives that are sound and supportable, but also best represent a wide range of constituent views. Constituent concerns may be scientific in nature, but they may be economic, religious, ethical, or driven by any number of other factors. STEM professionals in personal offices have a unique opportunity to view current issues—including science policy issues—through a wide range of perspectives, and advise their Member on the best courses of action for all.

Committee staffers typically work in a more circumscribed set of areas, as Committees specialize in particular types of legislation (whereas individual Members attend to all legislation brought to the floor). For example, the House Committee on Science, Space & Technology and the Senate Committee on Commerce, Science & Transportation regularly authorize the programs executed by the National Science Foundation (NSF) and the National Aviation & Space Administration (NASA), as well as other Agencies' scientific activities. Authorization bills define the priority areas upon which the agencies will focus in upcoming years, so staffers on these oversight committees specialize in staying abreast of specific scientific programs at these agencies and their progress.

One of the easiest ways to find out about opportunities for STEM professionals in Congress is to contact your own Congressional Delegation. Senators and Representatives are often looking for volunteers at the State or District and National levels, and these (usually unpaid) positions (even short-term ones) provide great conduits to paying jobs. Job postings for both paid and unpaid positions can also be found at www.senate.gov and www.house.gov.

STEM professionals with advanced degrees are eligible to participate in a number of paid Science Fellowship programs. Almost 50 STEM professionals each year work on Capitol Hill through programs administered by the American Association for the Advancement of Science (AAAS; see fellowships.aaas.org for more information). The American Chemical Society (ACS) sponsors two Congressional Fellowships under the AAAS umbrella; more information on these positions is available at www.acs.org/content/acs/en/policy.html. These programs provide a fantastic opportunity for STEM professionals to participate in the policy process and determine whether this is their long term career path.

Career Opportunities in the Congressional Research Service

The Congressional Research Service (CRS) is a branch of the Library of Congress that provides in-house research reports on policy topics under consideration in the current Congress. It employs researchers in a wide range of areas, including STEM professionals.

Recent CRS reports relevant to science policy have included “Science, Technology, Engineering, and Math (STEM) Education: A Primer,” published August 1, 2012; “Rare Earth Elements in National Defense: Background, Oversight Issues, and Options for Congress,” published March 31, 2011; and “Oil Spills in U.S. Coastal Waters: Background, Governance, and Issues for Congress,” published April 30, 2010. Although the CRS does not make these reports publicly available on its website, many reports can be found at second-party sites such as www.opencrs.com or www.fas.org/sgp/crs/row/. Employment opportunities at CRS can be found online at its official site, www.loc.gov/crsinfo.

Career Opportunities at the Federal Agencies

There are many positions in federal government agencies staffed by STEM professionals. The US Departments of Agriculture, Defense, Energy, and Homeland Security; the US Environmental Protection Agency (EPA); NASA; the National Institutes of Health (NIH); the National Institute of Standards & Technology (NIST); NSF; the Patent & Trademark Office; the Chemical Safety Board; and the intelligence agencies (among others) all employ individuals with STEM degrees.

STEM opportunities at the federal agencies fall into two general categories: policy & program management, and research & development. Policy staffers analyze and implement legislation and policy. For example, EPA has responsibility for implementing the Clean Air Act; the Department of Homeland Security (DHS) oversees many chemical safety programs; and the Department of the

Interior oversees the extraction of natural resources and minerals from Indian and non-Indian federal lands. All these issues require the insights of STEM professionals for effective policy implementation.

Program management staffers oversee the execution of a variety of federally sponsored programs, including research and development activities. At the Defense Threat Reduction Agency, which is part of the Department of Defense (DOD), STEM professionals oversee research portfolios focused on, for example, the development of new materials, sensors, and therapeutics to support the warfighter. At the Department of Energy (DOE), STEM professionals oversee research portfolios relevant to energy and defense issues, such as the development of sustainable energy technologies. At the NIH, STEM professionals oversee research in many areas related to developing a greater understanding of all things health. And at the Federal Bureau of Printing & Engraving (part of the Department of the Treasury), among other things, STEM professionals implement and manage quality assurance and control programs to determine the acceptability of raw ingredients and materials required to (literally) make money. STEM professionals bring critical perspective to these positions because they understand the associated scientific challenges, and can determine how these challenges may impact the agencies' priorities.

Postings for program & policy management positions at the federal agencies can be found at www.usajobs.gov, the federal employment website. In addition, specific agencies, such as NSF, offer temporary or rotational opportunities that are often publicized on their websites. The AAAS also administers a one- to two-year fellowship program that places STEM professionals with advanced degrees in policy & program management positions at a variety of federal agencies, including the EPA, DOD, DHS, NSF, the Department of State and the US Agency for International Development (see fellowships.aaas.org for more information). And the U.S. Office of Personnel Management sponsors the Presidential Management Fellows program. Its new "STEM track" places recent recipients of advanced degrees in two-year rotational assignments designed to encourage a new generation of federal leaders (<http://www.pmf.gov/>). All these positions provide exceptional opportunities for STEM professionals, many of whom come from more traditional research & development backgrounds, to get a feel for what it is like to have a career in program & policy management.

Another, slightly different opportunity for STEM professionals is the US Patent & Trademark Office (USPTO). The USPTO employs about 2500 STEM professionals as Patent Examiners, who determine whether an invention is patentable. Patent Examiners specialize in particular areas, and there is a great need for trained STEM professionals to participate in this important process.

A number of federal agencies also have in-house research & development capabilities targeted toward their particular mission. For example, DOD employs researchers who work on issues critical to sustaining US defense capabilities; NIST (which is part of the US Department of Commerce) employs researchers who work on improving standards to facilitate commerce. The agencies' research laboratories fall into two broad categories: government-owned, government-operated (GOGO), and government-owned, contractor-operated (GOCO). GOGO employees are direct employees of the federal government.

DOD, EPA, NASA, and NIST are among the federal agencies with GOGO research & development components. Job opportunities at GOGO laboratories are posted at www.usajobs.gov.

GOCO laboratories are managed by a contractor, but perform research & development largely in support of federal agencies. GOCO laboratories may be referred to as Federally Funded Research & Development Centers (FFRDCs), which are research & development organizations that receive more than 70 percent of their funding from the federal government (usually one agency). DOE's National Laboratories are a prominent example of a GOCO system; they are principally funded by DOE or the National Nuclear Security Administration, but also perform work for other national security customers (including DHS and DOD). The Jet Propulsion Laboratory at Caltech, sponsored by NASA, and Lincoln Laboratory at the Massachusetts Institute of Technology, sponsored by multiple agencies, are also well known GOCO entities. Opportunities at GOCO laboratories are usually posted at each individual laboratory's website; for example, opportunities at Los Alamos National Laboratory can be found at www.lanl.gov.

Many federal agencies, and GOGO and GOCO laboratories, offer internships and fellowships for STEM professionals. Postings can be found at www.usajobs.gov (for GOGO positions), or an individual GOCO laboratory's website. Some of these opportunities are paid; all provide a wonderful opportunity for an individual to develop a network inside the agency or laboratory.

Career Opportunities at the National Academies of Science & Engineering, Institute of Medicine, and National Research Council

The National Academies of Science & Engineering, Institute of Medicine, and National Research Council are private, non-profit entities chartered by Congress to provide "independent, objective, and non-partisan advice with high standards of scientific and technical quality" on matters of national and global importance. While the Academies are not part of the federal government, they are commissioned by federal agencies, Congress and private entities to perform studies on critical issues in science, engineering and medicine that impact the government's effectiveness or ability to execute its mission. The studies are performed by panels of volunteers, typically highly esteemed STEM professionals with expertise in particular areas relevant to the study. The studies are facilitated by in-house staffers, many of whom are also STEM professionals. The staffers identify and organize expert panels, and facilitate their research, meetings, report production, and peer review. The National Academies Press makes most of its reports and committee proceedings available to the public; many are available for free download at www.nap.edu. Job postings are listed at www.nationalacademies.org/humanresources.

The National Academies also sponsor internships for STEM professionals interested in investigating public policy opportunities. The Christine Mirzayan Science & Technology Policy Graduate Fellowship Program is a 12-week

program that allows graduate or professional school students and recent graduates to engage in studies throughout the Academies, and to develop skills in the science policy area. The Lloyd V. Berkner Space Policy Internships provide “promising undergraduate and graduate students with the opportunity to work in the area of civil space research policy” in concert with the National Academy of Science’s Space Studies Board. The Public Interfaces of the Life Sciences Internship Program for undergraduate and graduate students “seeks to provide a real-world experience in science communication, science journalism, and science policy.” Information on these programs, as well as other internship opportunities, is available at www.nationalacademies.org.

Career Opportunities in State and Local Governments

A variety of opportunities are available for STEM professionals in state and local governments, in many of the same areas as those at the federal level. Many states and major metropolitan areas have Departments that oversee environmental concerns, such as a Department of Environmental Health or Management. STEM professionals in these organizations may implement state or local policies (for example, policies dealing with air pollution) or may work in analytical laboratories (for example, analyzing air samples for contaminants). State and local Health Departments frequently employ STEM professionals in policy & program management, as well as in analytical laboratories. And STEM professionals can play important roles in state Departments of Education, as much of the education policy in the US is set at the state (not national) level. Postings for state or local positions can be found at individual entities’ websites.

Salary and Benefits

Salaries for government employees are usually easy to benchmark, as there is much public information available. Congressional salaries are set by individual offices, and range between \$38,000 (entry level) to a maximum of \$172,000. Members of Congress earn upwards of \$174,000.

Federal salaries and benefits are set by the Office of Personnel Management (www.opm.gov). Federal employees may be General Schedule (GS) employees or part of the Senior Executive Service (SES; a higher level of career federal employees with advanced skills). Entry level positions for new PhD scientists are usually leveled at GS-12; in 2013, the salary for a GS-12 was about \$75,000 per year. The maximum salary for an SES is about \$180,000 per year. More complete salary schedules can be found at www.opm.gov/policy-data-oversight/pay-leave. Federal benefit packages are often extremely attractive, and may include recruitment, relocation, and retention incentives, including student loan repayment. More information on benefits can also be found at www.opm.gov/policy-data-oversight/pay-leave.

Salaries and benefits at GOCO and FFRDC laboratories are set by the management contractors. They are generally competitive with federal and market salaries for comparable jobs. Information on GOCO and FFRDC salaries and

benefits can be found at the individual laboratories' websites. State and local salaries and benefits are also set by the individual states and local entities.

A less obvious benefit of government employment is the ability to live in a variety of different physical locations. While it is true that many government opportunities for STEM professionals are centered in the greater Washington, DC area, government positions are located all over the United States. The EPA maintains facilities in Cincinnati, Ohio and Research Triangle Park, North Carolina. NIST has laboratories in Germantown, Maryland and Boulder, Colorado. DOE and the National Nuclear Security Administration maintain laboratories and facilities in more than a dozen states, including California, Idaho, Illinois and Tennessee. And the Agricultural Research Service, the research arm of the US Department of Agriculture, has laboratories in almost every state in the US. Opportunities are also available for federal employees to move between agencies and locations, so an entry level position in one location or agency may well provide an avenue for a transfer to another.

Conclusions

Many opportunities are available for ACS members interested in pursuing a career in the government sector. STEM professionals may find employment in a wide range of government or government-affiliated organizations. Positions may be located anywhere in the US, and may involve policy analysis & program management; research & development; quality assurance and quality control functions; or sample analysis activities. Salary and benefit packages are usually competitive with the general marketplace, and employment in one government entity or location may open up opportunities for employment in another.

Although many government positions require US citizenship, it is not a requirement for all opportunities. Entry level positions, in particular, may be open to foreign nationals. Citizenship requirements are usually specified in job postings.

A final opportunity that has not been covered elsewhere in this article is ACS's Science Policy Fellowship. ACS sponsors one Fellow annually to work in ACS's Office of Public Affairs (OPA). OPA handles ACS's government relations work, including interactions with the federal agencies, Congress, and other scientific societies. This Fellowship allows ACS members with advanced degrees to work with experienced ACS staff to provide information to policy-makers on the role of science in public policy; present specific policy recommendations on issues affecting ACS members; and inspire ACS members to engage in the policy process. OPA staffers handle a range of issues of interest to ACS members, including federal funding for scientific research; STEM education; and environmental policy.