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## HARVARD GSAS SCIENCE POLICY GROUP



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## DIVISION OF MEDICAL SCIENCES POLICY PATH

### **HARVARD GSAS SCIENCE POLICY GROUP AND DMS POLICY PATH REPORT ON WASHINGTON, D.C. TRIP APRIL 8-10, 2015**

The GSAS Science Policy Group (<http://projects.iq.harvard.edu/sciencepolicy>) is made up of graduate students interested in the intersection of science and policy. Similarly, the DMS Policy Path is a graduate student-run group under the Division of Medical Sciences at Harvard Medical School. We engage Harvard students in public policy, communication, and funding concerns surrounding the scientific research enterprise in the United States, and serve as an information gateway for graduate students interested in pursuing public policy and government careers after Harvard. Activities include topical discussion sessions and journal clubs, invited speakers, a career panel, and a course on science op-ed writing during January term.

The Washington, D.C. trip is the flagship event of the GSAS Science Policy Group and DMS Policy Path, and accomplishes the following objectives:

- Foster a productive and *ongoing dialogue* between Harvard scientists, agency leaders, and decision-makers in Washington, D.C. about issues in science and public policy.
- Connect students and the Office of Career Services with *career opportunities* for Harvard-trained scientists in public service, and initiate relationships with potential employers.
- Provide an *immersive experience* for students to grasp the science policy landscape in Washington, and identify skills to be successful in that arena.

Twelve students were selected for the 2015 Washington, D.C. trip from over 50 applicants, reflecting a large interest in this area among graduate students from programs across the Graduate School of Arts and Sciences, the Medical School, and the School of Engineering and Applied Sciences. Some were already driven to pursue a career in science policy, and others sought a general understanding of how decisions about science are made in government, or how scientific information is communicated among legislators, staff, scientists, agency leadership, and voters.

The GSAS Science Policy Group and the DMS Policy Path thank all the agencies for hosting our group. Meetings this year included the Harvard Office of Federal Relations, the House Committee on Science, Space, and Technology's Minority Staff, the National Aeronautics and Space Administration (NASA), the Food and Drug Administration (FDA), the National Institutes of Health (NIH) and National Institute of Arthritis, Musculoskeletal, and Skin Diseases (NIAMS), the National Academy of Sciences (NAS), the White House Office of Science and Technology Policy (OSTP), Department of State, Environmental Protection Agency (EPA), and the Department of Defense (DoD).

The group also thanks Professor Bina Venkataraman, Dean David Cardozo, Chelsea Noriega, Lisa Rossini, Dean Garth McCavana, Dr. Laura Stark of the Office of Career Services, and the Harvard Office of Federal Relations for their support and guidance during the planning of the trip. We thank the Graduate School Alumni Association Council Career Committee for feedback and discussion on the Washington, D.C. trip and in compiling this report.

The groups thank all the departments and organizations that agreed to contribute funds. The visit would not have been possible without their financial and organizational support:

Division of Medical Sciences (DMS)  
Harvard University Center for Environment (HUCE)  
Graduate School of Arts and Sciences (GSAS)  
Harvard Integrated Life Sciences Program (HILS)  
GSAS Graduate Student Council (GSC)

Finally, we thank the participants for enthusiastically representing the group and the University and for preparing the summaries of the agency visits.

RACHEL NICOLE COTTON – G1, Immunology, DC Trip Coordinator  
KEN SKINNER – G4, Chemistry and Chemical Biology  
PIERRE BADUEL – G3, Organismic and Evolutionary Biology  
SHAYLA SALZMAN – G2, Organismic and Evolutionary Biology  
JOE VITTI – G3, Organismic and Evolutionary Biology  
TRACY KAMBARA – G3, Biological and Biomedical Sciences  
JOE TIMPONA – G3, Virology  
DANIEL TARJAN – G3, Biological and Biomedical Sciences  
ALICIA DEFRANCESCO – G5, Molecular and Cellular Biology  
ALLISON DEMAS – G5, Biological Sciences in Public Health  
ANDREW GREENSPON – G3, Applied Physics  
JULIA GONSKI – G1, Physics  
LAURA STARK – Harvard University Office of Career Services  
CHELSEA NORIEGA – Harvard Medical School, Division of Medical Sciences



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## REPORTS FROM AGENCY AND OFFICE VISITS

### DEPARTMENT OF DEFENSE (DOD): OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ASD(R&E))

Date: Friday, April 10, 2015, 3:00 pm

Location: The Pentagon

Meeting with: ROBIN STAFFIN, PHD - Director Basic Research

Author: ANDREW (ANDY) GREENSPON

#### MEETING OVERVIEW

In addition to coordinating and supervising all agencies directly concerned with national security and the United States military, the Department of Defense (DoD) also invests in basic and applied scientific and engineering research with applications primarily towards military and defense projects. As Director of Basic Research at the Office of the Assistant Secretary of Defense for Research and Engineering (ASD(R&E)), Robin Staffin is responsible for helping to identify new areas of research investment for the DoD and also for improving policies concerning how DoD invests in research and who they choose to invest in. Dr. Staffin is a particle physicist by training, but has moved between government and academic jobs throughout his career. He played a role in nuclear non-proliferation and test-ban treaties involving Great Britain, France, and Russia among other nations. He also worked in the Department of Energy and helped lead projects at FermiLab and SLAC National Accelerator Laboratory. He advocated strongly for the Superconducting Super Collider particle accelerator in the United States, which was never completed. He flipped between research and policy a number of times, demonstrating the ability of scientists to span a wide range of careers over their lifetime, with each position providing additional expertise for future jobs.

#### IDENTIFYING NEW RESEARCH AREAS FOR INVESTMENT

Dr. Staffin helped identify six primary research areas for DoD investment that are predicted to have significant scientific breakthroughs in the near future:

- Quantum information science
- Cognitive neuroscience
- Metamaterials, plasmonics, engineered materials
- Synthetic biology – convergence of engineering and life sciences
- Nanoscience and nanotechnology
- Big data for social science – Minerva Research Initiative

The Minerva Research Initiative seeks to develop a “deeper understanding of the social, cultural, and political dynamics that shape regions of strategic interest around the world”. The U.S. needs to understand how different environments affect global populations in order to develop better international relations policy and military strategy. This is analogous to how the Navy invested in oceanography research to better understand the environments where battles might take place.

Dr. Staffin believes the challenge of research investment will be to identify what item of these popular research areas will make the extra leap forward, similar to how the Internet had such a broad and deep impact on everything over the past couple decades.

#### DOD HIERARCHY

At DoD, staff members typically work on a specific project for a few years and then move on to another one. The work is *operational*; that is as opposed focusing on high-risk basic science, DoD

tends toward technology development from applied science, engineering research, and elsewhere. Dr. Staffin says that staff members typically gather information on a topic, summarize it, and pass the information up the hierarchy chain to hopefully have input on future research and policy directions. On occasion, there are opportunities to present work directly to the Secretary of Defense or another high-ranking executive if they are visiting your office. These meetings can sometimes lead to your drafting policy memos that are implemented by high-ranking executive members. On occasion, you may use an outside network such as the AAAS fellows to share information and ideas – a unique mechanism to identify redundancies among DoD, National Science Foundation (NSF), and other federal agencies. Of note about the culture at DoD: it's important to work hard but personal loyalty often plays a significant role in getting things done.

Dr. Staffin hopes to identify areas of research that are transforming rapidly and experiencing paradigm shifts, with the goal of breaking from the “cog in the machine” model of his work. There is a big assumption in government and the public that the United States was, is, and always will be the technological leader of the world. However, the political landscape is changing rapidly. There is significantly more enthusiasm for science in other countries, especially China, by both the general public and politicians. China is investing heavily in research now and has “laboratories for scientists, not contract managers.” The U.S. needs to be able to keep up with adversaries working to match us. A dearth of new researchers and policy experts may cost the U.S. in the future.

Historically, DoD researchers and managers would interact with other scientists at conferences. DoD personnel could find new things to fund or develop new collaborations. Currently, DoD personnel and government scientists rarely go to conferences due to travel fund restrictions. As a result, they must find other ways to keep up to date with the big research areas and important discoveries. Dr. Staffin expressed an opinion that DoD has become somewhat of an “ivory tower”, and is hoping that the National Academy of Sciences (NAS) will do a study on this issue in the near future.

## OPPORTUNITIES IN SCIENCE POLICY AND AT DOD

- Do a stint in DoD policy or a research lab to get an understanding of how they operate.
- The AAAS fellowships place a number of recent PhDs at DoD. Dr. Staffin hires some of them every year.
- The Presidential Management Fellows offer a two-year appointment at a federal agency with a possible rotational opportunity at another agency. This fellowship provides many hours of interactive training and the chance for permanent career placement in a government agency afterward. Dr. Staffin recommends this fellowship as a pathway to a permanent position at DoD.
- Take advantage of courses and talks at Harvard's [Belfer Center](#) for Science and International Affairs in the Kennedy School of Government. These talks and courses discuss important topics in science policy and their relevance to international relations.

## **ENVIRONMENTAL PROTECTION AGENCY (EPA)**

Date: Wednesday, April 8, 4:00 pm

Location: 1200 Pennsylvania Ave NW, Washington DC 20460

Meeting with: JOEL D. SCHERAGA, PHD – Senior Advisor for Climate Adaption

Author: SHAYLA SALZMAN

In describing the role of the Environmental Protection Agency, Dr. Joel D. Scheraga underscored that the party line of the EPA is that everything they do has to be grounded in sound science. As a federal agency, the EPA does not and cannot advocate policy measures; rather their role is to inform government. The EPA is tasked with addressing the environmental issues that policy makers delineate; they cannot determine the areas of concern to address but must answer to the call of policy makers.

Dr. Scheraga was very candid and emphasized the importance of working with different perspectives in both policy and in the advancement of science literacy and trust. He suggested that the most important step to take as a graduate student interested in policy is to develop the skill of communicating science in plain English. He also made it clear that scientist want to wait until the science is done to present it and discuss it, but that decisions are made everyday and science needs to be a part of it. It can't wait until you are done and so we need to get comfortable discussing science while it is still in the process. He outlined ways that graduate students and career scientist can get involved in policy through a bottom-up approach. This focuses around getting the public and policy makers aware of the problem, which relies in a large part on science communication. He suggested that you need to increase awareness, change behavior, and then you can think about how to focus behavior to address the outcome of concern.

## ENVIRONMENTAL PROTECTION AGENCY OFFICES

In addition to the federal offices, there are also 10 regional EPA offices and many research laboratories. Most doctoral-level scientists at the EPA work in the office of Research and Development.

- Office of the Administrator
- Office of Administration and Resource Management
- Office of Air and Radiation
- Office of Chemical Safety and Pollution Prevention
- Office of the Chief Financial Officer
- Office of Enforcement and Compliance Assurance
- Office of Environmental Information
- Office of General Counsel
- Office of Inspector General
- Office of Internal and Tribal Affairs
- Office of Research and Development
- Office of Solid Waste and Emergency Response
- Office of Water

## SUGGESTED FELLOWSHIPS

- The American Association for the Advancement of Science Fellowship
- The American Public Health Association Fellowship
- The Oak Ridge Institute for Science and Education Fellowship

## **FOOD AND DRUG ADMINISTRATION (FDA)**

Date: Thursday, April 9, 2015, 1-3 PM.

Location: FDA White Oak Campus, Silver Spring, MD. Building 22

Meeting with:

LAURA JAEGER, PHD - Microbiology Reviewer, Center for Devices and Radiologic Health

CHRIS LEPTAK, MD, PHD - Medical Officer, Center for Drug Evaluation and Research (CDER)

LARRY BAUER, RN - Managing Director, Rare Diseases Program, CDER

HONG VU, PHARMD, MS - Lieutenant, US Public Health Service

SALVATORE PEPE, PHARMD, MS - Lieutenant, US Public Health Service

Authors: ALICIA DEFRANCESCO and DANIEL TARJAN

At the FDA, the group saw a brief introduction to the history of the agency, which first became established in the early 1900s. At that time many “cure-alls” were being marketed to consumers despite no proof of effectiveness, and some were even harmful. In response, the FDA was created by the 1906 Pure Food and Drugs Act. The authority of the FDA has since been expanded, through additional legislation. Contrary to popular belief, the FDA does not regulate price, advertisement, nor how insurance companies should cover drugs or devices. Nutritional supplements are also outside the purview of the FDA. Unlike some other offices that we visited, the staff at the FDA stays mostly the same across different presidential administrations as only the FDA Commissioner is appointed. Much of their budget comes from user fees paid when companies submit applications for the approval of new products.

The group heard from [DR. LAURA JAEGER](#) who works in the CDRH (Center for Devices and Radiological Health) in the Division of Microbiology Devices. There has been rapid growth of *in vitro* diagnostics in recent years, which may soon surpass pharmaceuticals in terms of revenue. Jaeger’s division evaluates chemical, immunological, and nucleic acid amplification methods for detecting infectious diseases such as flu, malaria, and Ebola. They look at the reproducibility, sensitivity, and stability of the diagnostic tools in their intended use setting. The division also does some work to incentivize companies to develop assays for diseases with low prevalence. Additionally they issue conditional approvals for devices during health emergencies. The recent Ebola outbreak was again used as an example to illustrate that when new diagnostics are needed immediately, the FDA may issue a conditional approval to fill that need. Experience in industry is strongly preferred for applicants to positions in this center.

[DR. CHRIS LEPTAK](#) and [LARRY BAUER](#) from the Office of New Drugs (OND) talked about the pathway to approval for new drugs: from Investigational New Drug through clinical trials to fully approved drug. An interesting facet of modern clinical trials is the use of international Contract Research Organizations. The FDA maintains foreign offices to among other tasks monitor trials abroad for compliance with US standards. After approval, companies can file supplements to list additional indications for a drug. Any significant changes in manufacturing need to be approved as well. Side effect (adverse event) monitoring is carried out for the lifetime of a drug as these may take years to become apparent.

Positions at the FDA where Ph.D. scientists would be good candidates include reviewers of pharmacology/toxicology data, and approval of new drugs and biologics. At the FDA we also heard from two officers from the U.S. Public Health Service (PHS). There are around 6700 PHS officers in the US, and over 500 are detailed at the FDA. These officers serve in 13 categories, which include health professionals such as pharmacists, medical doctors, dentists, and optometrists, as well as scientists. These officers serve in many other agencies as well. PHS members can be deployed for medical emergency situations including natural disasters and disease outbreaks. The Ebola outbreak in West Africa was a recent deployment target for the PHS. The PHS includes health science officers who are mostly PhD-trained.

## **HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY – MINORITY STAFF**

Date: Thursday, April 9, 2015, 10-11am

Location: 394 Ford House Office Building

Meeting with: MARCY GALLO, PHD; PAMELA WHITNEY, and CYNTHIA HSU, PHD

Author: RACHEL NICOLE COTTON



The House Committee on Science, Space, and Technology is an authorizations committee that has jurisdiction over much of the non-defense Federal research and development (R&D) portfolio. The Committee has exclusive jurisdiction over the National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), National Institute of Standards and Technology (NIST), and the White House Office of Science and Technology Policy (OSTP). The Committee also has authority over R&D activities at the Department of Energy (DOE), Environmental Protection Agency (EPA), Department of Transportation (DOT), Federal Aviation Administration (FAA), National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), and the Department of Homeland Security (DHS).

The staff and resources of the House Science Committee is dictated by house majority. That is, two-thirds of committee resources and members are of the majority party (Republican), leaving one third of the committee budget and members to the minority party. This means that there is a large turnover in staff whenever the house majority changes. The majority party also controls the hearing schedule, and three of four witnesses for any given hearing. The chairman of the committee is Lamar Smith (R-TX), and the minority ranking member is Eddie Bernice Johnson (D-TX).

Typical responsibilities of party staffers include interacting with stakeholders like non-profit institution and universities, with the goal of translating stakeholder interests and other emerging topics into authorizations legislation. Ideas for authorizations legislation come from many places, however, including staff members, committee members, or members' constituents. For this reason, staff members for congressional committees are, more often than not, technical specialists. Advanced knowledge and prior technical expertise is very high compared to the average congressional office member. With respect to career opportunities for scientists within the House Science Committee, both Marcy Gallo and Cynthia Hsu came through the AAAS Congressional Fellows program. Marcy Gallo has stayed with the committee through both democratic and republican control.

**MARCY GALLO, MS, PHD**, joined the Committee in December 2008 as Professional Staff. She currently serves as the Staff Director for the Subcommittee on Environment, which has jurisdiction over all matters relating to environmental research; Environmental Protection Agency research and development; environmental standards; climate change research and development; as well as oversight over the National Oceanic and Atmospheric Administration and earth science activities conducted at the National Aeronautics and Space Administration. Prior to joining the Committee, Marcy was the American Society for Agronomy – Crop Science Society of America – Soil Science Society of America (ASA-CSSA-SSSA) Congressional Fellow in the office of Senator Joseph I. Lieberman where she worked on environmental and agricultural issues. She holds a Ph.D. in Biology from the University of New Mexico, a M.S. in Biology from the University of Toledo, and a B.S. in Biology from Marietta College.

**PAMELA WHITNEY, MA**, serves as Professional Staff on the Space Subcommittee. In her former position as Senior Program Officer at the Space Studies Board of the National Research Council, National Academies, she directed studies and workshops on international cooperation in space, Earth remote sensing, Mars planetary protection, space policy, astronomy science centers, among other space technology and research topics. Pamela also served as the Executive Secretary of the U.S. national committee to the Committee on Space Research (COSPAR) of the International Council for Science (ICSU). She held previous positions as an analyst at the aerospace consulting firm CSP Associates, Inc., and as a researcher and writer for Time-Life Books, Inc. Pamela holds a B.A. in Economics from Smith College and an M.A. in International Communication from American University. She is a member of Women in Aerospace and a member of the International Academy of Astronautics.

**CYNTHIA HSU, MS, PHD**, is currently a AAAS Congressional Fellow with the Subcommittee on Energy. Before joining the Minority Staff, she was a AAAS Science and Technology Policy Fellow with the Department of Energy, where she focused on issues relating to electric energy grid security and planning. She holds MS and PhD degrees in Agricultural Entomology from Cornell and the University of Minnesota respectively. She is currently sponsored jointly by the American Society of Agronomy, the Crop Science Society of America, and the Soil Science Society of America (ASA/CSSA/SSSA).

## **THE NATIONAL ACADEMY OF SCIENCES (NAS) AND THE NATIONAL RESEARCH COUNCIL (NRC)**

Date: Friday, April 10, 2015, 9-10am

Location: 2101 Constitution Ave NW, Washington, DC 20418

Meeting with: ANNE-MARIE MAZZA, Director of Committee on Science, Technology, and Law

Author: JULIA GONSKI

The National Academy of Sciences is one of three academies that falls under the umbrella organization that is the National Research Council; its sister organizations are the National Academy of Engineering and the Institute of Medicine. All three academies are private, non-profit, and non-federal organizations that serve as advisories to the government on matters of science and technology. Each organization has about 2000 members, who are elected based on research merit in either academia or industry. The main task of the NAS is to answer inquiries made either directly by the federal government or via an agency; the responses typically take the form of topic reports, of which the academy releases about 200 per year.

### **STRUCTURE AND FUNDING**

Within the NAS there are numerous committees, each of which are devoted to specific realms of science; examples include the Committee on International Security and Arms Control, the Geographical Sciences Committee, and the Committee on Science, Technology, and Law. We were fortunate enough to sit down with Anne-Marie Mazza, Director of the CSTL, and hear more about the specifics of the NAS and her particular role in the organization. The Academy overall is governed by a 17 member council, including a President, Vice President, Home Secretary, Foreign Secretary, and Treasurer. All of the 17 council members are elected from within the NAS by majority vote.

The NAS is funded by a variety of institutions within the US Government. Primarily, the organization operates under Department of Transportation and Department of Defense grants. However, it also receives funding from the National Science Foundation, the Environmental Protection Agency, NASA, and the Department of Health and Human Services. In this way, NAS is able to cover a wide variety of topics within science and employ specialists for each one.

### **COMMITTEE ON SCIENCE, TECHNOLOGY, AND LAW (CSTL)**

Anne-Marie gave a thorough overview of the committee and its unique role as a hybridization of science and the legal implications of research and technological work in the United States. Specifically, the CSTL addresses three primary topics:

1. Law in the Lab, i.e. the role of legal involvement in the daily lives of scientists and researchers. Many ethical issues can arise in certain fields, such as synthetic biology, which may require the intervention of the law for mediation.
2. Science in the Courts, which covers the increasingly important role of complicated scientific methods of assessing evidence. DNA and forensics have become extremely technical fields that require extensive study for total comprehension, thus prioritizing scientific experts in many court cases.
3. Public Policy, or the ways in which the legislative process hinges on access to research data, and the role of the public/private sectors in government-funded experiments.

## CAREER OPPORTUNITIES

There are several opportunities for graduate students and recent Ph.D. graduates to find employment within the NRC hierarchy. AAAS fellows may find placement within the NAS or one of the other academies. The NAS has its own program, the Christine Mirzayan Science & Technology Policy Graduate Fellowship, which provides students with funding and placement for 12 weeks within the academy, typically in the spring. Alumni of the fellowship program have moved on to the AAAS Fellowship and careers in science policy, including employment with Congressional committees, federal agencies, and international policy institutions.

## **NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)**

Date: Friday, April 10, 2015, 12:30-1:30pm

Location: NASA Headquarters, 300 E St SW

Meeting with: THOMAS E. CREMINS, Senior Advisor to the Administrator for Strategy and Policy Implementation.

Author: JOSEPH TIMPONA

Mr. Cremins was quite interested as to how the students on the trip became interested in science policy. He also wanted to gain a bit of background on each of us, so this dominated the opening time of the meeting. After talking about our interests, he introduced us to the NASA Space Technology Fellowship Program, which provides funding to Masters and Doctoral students pursuing research that can potentially advance the goals of NASA. This would be a worthwhile fellowship for anyone who is doing research in that area.

The discussion subsequently delved into how global *science* policy may differ from global policy *generally*. The example we discussed was how even though US-Russian ties may seem strained or combative at times, the US is still sending astronauts to the International Space Station on the Russian owned and operated Soyuz spacecraft. This is a highly collaborative effort, and we learned that even when the overall political climate between the US and Russia is adversarial, the scientific climate between the two countries (at least at the level between NASA and the Russian Space Agency) stays amicable. A theme that emerged was thinking about science policy as *diplomacy*. In that context, it is important to consider the background and influencing factors of the environment in which science policy is being done. Mr. Cremins has had to face this challenge often, being instrumental in maintaining the strong relationship with NASA and its Russian counterpart.

Overall, the meeting with Mr. Cremins was very informative and provided great insights into international science policy – something that was quite unique to the NASA visit. Discussions were two-way, and it was easy for people to contribute to the discussions due to Mr. Cremins jovial attitude towards the group.



## **NIAMS OFFICE OF SCIENCE POLICY, PLANNING, AND COMMUNICATIONS**

Date: Thursday, April 9, 2015: 4–5pm

Location: Building 31, 9000 Rockville Pike, Bethesda MD

Meeting with:

ANITA LINDE, MPP - Director, NIAMS OSPPC

STEPHANIE BURROWS, PHD - NIAMS Science Policy Analyst

NANCY A GARRICK, PHD - NIAMS Communications and Public Liaison Branch, Deputy Director

Author: JOE VITTI



The NIH is composed of 27 Institutes and Centers, which collectively employ about 18,000 people on their sprawling 300-acre campus. We visited the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), where we met with Anita Linde, MPP, Director of the Office of Science Policy, Planning, and Communications for NIAMS, along with Dr. Stephanie Burrows, policy analyst, and Dr. Nancy Garrick, Deputy Director of Communications.

Per congressional mandate, the NIH has a three-part mission: to perform biomedical research (with an emphasis on basic rather than translational projects), to train researchers, and to disseminate information to the broader public. The NIH currently oversees a \$31B budget, of which ~80-82% is awarded to researchers based at other institutions ('extramural research'), ~10-12% is spent locally ('intramural'), and the remainder of which goes into research support and administration. Each of the Institutes has its own Office of Science Policy, Planning, and Communications, which are generally independent in their governance but do sometimes contribute to discussions on trans-institute issues (e.g. the stem cell debate during the Bush administration) which are in turn resolved at either the level of the NIH director the level of the Secretary of the Department of Health and Human Services (which NIH is housed under).

The OSPPC plays an important role in the dissemination of research. The team described their office as a 'front door' for stakeholders and interest groups who care about these diseases, and also work closely with both trade press and national press. A major emphasis for the team is making information accessible to a broad range of cultural and linguistic backgrounds, and they shared some examples of literature they create to educate families about musculoskeletal and skin diseases (e.g. a Spanish-language pamphlet featuring a cartoon about a woman who hurts her back at her mother's birthday party and learns about osteoporosis). The OSPPC's second major role

involves developing, implementing, and evaluating the program planning for NIH-funded research, including forming strategic partnerships.

We asked our hosts about career opportunities: they emphasized the AAAS Fellowship, the Presidential Management Fellows Program, as well as job postings on [training.nih.gov](https://training.nih.gov) and on [irp.nih.gov](https://irp.nih.gov). They indicated that it's generally wise to get involved in public service, and in particular to find ways that one's research intersects with the public interest. They also noted that pursuing research could lead to policy opportunities down the road.

## **WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY POLICY (OSTP)**

Date: Wednesday, April 8, 2015, 2-3pm

Location: Eisenhower Executive Office Building

Meeting with:

MEREDITH DROSBACK, PHD - Assistant Director for Education and Physical Sciences

KEI KOIZUMI, Assistant Director for Federal Research and Development

Author: TRACY KAMBARA

The White House Office of Science and Technology Policy was established by Congress in 1976 and serves to advise the President on matters relating to science and technology. It is part of the Executive Office of the President. Its current Director, Dr. John Holdren, also serves as the Science Advisor to the President in addition to co-chairing the President's Committee of Advisors on Science and Technology (PCAST).

Mr. Koizumi described the three broad functions of OSTP, relating to the main responsibilities of its Director. First, OSTP serves as a resource for the President's office, providing information and answers to science and technology queries made by West Wing staff. Second, OSTP is also responsible for formulating and executing government-wide science policies. As part of these efforts to unify science policy within the government, the OSTP Director sits on the National Science and Technology Council (NSTC), which coordinates research efforts and implements policies across all federal agencies that oversee issues related to or involving science and technology. Finally, the OSTP manages PCAST, which acts as an external advisory board to the President. PCAST is comprised of presidentially appointed leaders in science and technology from academic research institutions, industry, and non-governmental organizations. PCAST makes policy recommendations, which OSTP can then help implement.

Mr. Koizumi and Dr. Drosback stated that the biggest challenge for OSTP is balancing the need for long-term initiatives with the timeline of their operating budget, which changes from year to year. Still, they find their daily responsibility as policy entrepreneurs an exciting task. "We look for things that aren't happening but should be, and figure out how to make them happen," said Mr. Koizumi.

OSTP currently has about 100 staff members, including the Office of the Chief Technology Officer. Many staff members have permanent positions in other government agencies and are placed on detail at OSTP for periods of a few months to a year. We met several staff members with advanced degrees, including a clinical psychologist at the NIH, a particle physicist, a marine ecologist, and an engineer from the Air Force. Their current responsibilities at OSTP include event planning, convening and attending meetings, and writing reports to further develop the policy initiatives in their respective portfolios.

Scientists interested in working at OSTP are encouraged to apply for the AAAS Science & Technology Policy Fellowship or the unpaid OSTP internships offered three times per year (<https://www.whitehouse.gov/administration/eop/ostp/about/student>).

## DEPARTMENT OF STATE

Date: April 10, 2015

Location: Harry S Truman Building, 320 21<sup>st</sup> Street NW

Meeting with: GENYA DANA, PHD - Senior Science Policy Officer

Author: PIERRE BADUEL

For our visit to the Department of State, we met with Genya Dana, PhD, Senior Science Policy Officer in the Department of State Office of Science and Technology, and several AAAS fellows from different bureaus. The Office of Science and Technology provides scientific and technical expertise to the bureaus of the Department of State, and is responsible for matters of science, technology, and engineering as they relate to diplomacy. Our discussion focused on the diverse day-to-day activities of the fellows, and their career paths and training prior to taking fellowships at the Department of State.

The AAAS fellows we met represented different bureaus, both functional and regional, and were involved in a wide array of policy issues. Many of the fellows primarily work on policy that is not directly related to science policy; rather, their scientific training is applied to other areas. The core mission of these scientists in the Department is to translate scientific knowledge into a broader perspective. They generate white papers and talking points on the issues at hand, provide scientific context, and supply information to senior leadership making decisions. They all found themselves with a relative freedom (within the range allowed by the clearance office) to promote their own ideas as they write bullet points for speeches of the Secretary or even the Vice-President. Many fellows described being a “go between” for the scientists and policy makers involved in different issues, as well as the challenges of coordinating with different agencies and international counterparts.

In some cases, these science and technology agreements with other countries can be used to overcome political issues and help build relationships and trust, a sentiment echoed in our visit to NASA. However, being driven by the political agenda, the Department is very focused on immediate needs and concerns and as a consequence has little energy devoted to prospective thinking. For example, the Office of Global Change was almost completely focused on the new UNFCCC (the United Nations Framework Convention on Climate Change) agreement in Paris, since the President and the Secretary highlighted it as a major priority. Some fellows described their work as being reactionary, more similar to crisis management in response to events.

As one example of a fellow's experience, [SYDNEY KAUFMAN, PHD](#) described her work as a fellow with the Bureau of Energy Resources. She primarily works on Arctic energy security, including issues related to renewable energy, climate change, and sustainability. A key component of this policy work is the US relationship with Russia in the Arctic. Sidney described the challenge of maintaining a productive working relationship with Russia on the Arctic Council for sustainability issues, while Russian oil and gas companies were being sanctioned for their activities in the region.

As a second example, [VICKY GUNDERSON, PHD](#) is a AAAS fellow with the East Asia and Pacific Affairs Bureau (aka “the China desk”). The bureau oversees bilateral relationships within the region, and Vicky covers policy issues related to energy, the environment, and natural resources. This broad scope can include a variety of topics, such as nuclear negotiations with Iran, air pollution, oil and gas pipelines, and issues related to climate change.

As with many of the agencies we visited, it seems like the AAAS fellowship or other professional society fellowships are one of the most common paths for scientific PhDs to join the agency. There are at least 30 current fellows at the State Department, many of whom continue in government policy work. Most of the fellows pursued post-doc or additional fellowship experience following graduate school before coming to the Department of State.

Their advice to scientists wanting to work in policy:

- You will likely not work on a topic related to your field of study, therefore do not focus on scientific achievements when applying
- Be able to translate your scientific expertise into broader issues, and communicate how it relates to policy
- Practice Science Policy writing, as this will be the core of your work, but also the output (op-eds) that they will take into account when they dig into a subject
- Stay flexible, as scientists have as much to learn in Policy as they have to teach in Science

## **HARVARD UNIVERSITY OFFICE OF FEDERAL RELATIONS**

Date: Wednesday April 8, 2015, 12-1pm

Location: South Capitol Street SW

Meeting with: JON GROTEBOER, Associate Director of Federal Relations

Author: KEN SKINNER

The Harvard Office of Federal Relations graciously hosted the group for lunch upon our arrival in Washington, D.C. The Office maintains a positive relationship between Harvard and the Congressional and Executive branches of government. Issues of primary focus include student financial aid, scientific research, genetic privacy, and other policies at the government and education junction. The Harvard Office of Federal Relations is well-suited to effect change at the interface of Harvard, government, and policy, as more members of Congress attended Harvard University than any other higher education institution, with 47 elected officials on Capitol Hill counted as Crimson alumni.

