“When I contemplate the immense advances in science and discoveries in the arts which have been made within the period of my life, I look forward with confidence to equal advances by the present generation, and have no doubt they will consequently be as much wiser than we have been as we than our fathers were . . .”

—THOMAS JEFFERSON, MARCH 3, 1818

“Science is more essential for our prosperity, our security, our health, our environment, and our quality of life than it has ever been before.”

—PRESIDENT BARACK OBAMA, 2009
INTRODUCTION

Science and technology make fundamental contributions to the security, economic, health, and cultural foundations of modern societies. In order for the State Department to pursue effectively its mission to “create a more secure, democratic, and prosperous world for the benefit of the American people and the international community,” an appreciation and understanding of science and technology must be integral to the formulation and implementation of government policy. The articulation of “accurate science for statecraft” to policy makers has become an essential element in establishing effective international relationships in the 21st century.

Recognizing this need, the Secretary of State announced, on October 8, 2003, the Jefferson Science Fellows (JSF) program at the U.S. Department of State. This program, which now includes the U.S. Agency for International Development (USAID), serves as an innovative model for engaging the American academic science and engineering communities in U.S. foreign policy.

PROGRAM DESCRIPTION

Tenured, or similarly ranked, academic scientists, engineers and physicians from U.S. institutions of higher learning, who are U.S. citizens, are eligible to apply for the Jefferson Science Fellowship. Each Fellow will spend one year at the U.S. Department of State or USAID in Washington, D.C. The assignments may be coordinated with the relevant U.S. embassy overseas. All JSF assignments will be designed through a consultation that considers both the interests and expertise of the Fellow and the needs of the hosting office. Following the fellowship year, the Jefferson Science Fellow will return to his/her academic career, but will remain available to the U.S. government as an experienced consultant for short-term projects.

TERMS OF THE JSF AWARD

Since the JSF program is a collaborative effort between the U.S. academic community, the U.S. Department of State, and USAID, financial and institutional support for the program is shared among these partners.

During the one-year assignment at the U.S. Department of State/USAID, the salary and benefits of the Fellow will be paid by the academic institution at which the appointment is held. The academic position of the Fellow, together with all the rights and privileges associated with that position, will be maintained during his or her assignment at the U.S. Department of State/USAID.

The Jefferson Science Fellow will be paid a per diem of up to $50,000 by the U.S. Department of State/USAID to cover local living expenses for a full year. In addition, $10,000 will be made available to the Fellow for travel associated with their assignments at the U.S. Department of State/USAID. Travel support may also be provided by the Fellow’s office or bureau.

MEMORANDUM OF UNDERSTANDING (MOU)

To formalize the respective responsibilities of the partnership, a JSF MOU must be executed between the participating academic institution at which the applicant holds a tenured, or similarly ranked, position and the U.S. Department of State. Currently, over 125 universities have MOUs in place. To determine if your university currently holds an MOU with the U.S. Department of State, or to initiate a new MOU, contact the National Academies’ Jefferson Science Fellows program office at jsf@nas.edu or 202-334-2643.

THE SELECTION PROCESS

Panels selected by the National Academies conduct a review of all application packages and a group of finalists are invited to Washington, D.C. for interviews with the JSF Selection Committee. The JSF Selection Committee includes former Jefferson Science Fellows and representatives from the
U.S. Department of State, USAID, the U.S. academic community, and professional scientific and engineering societies. This committee will make final decisions on awards.

**SELECTION CRITERIA**

Accepted applications are limited to scientists, technologists, engineers, and physicians holding a tenured, or similarly ranked, academic appointment at a U.S. college or university. Eligible applicants will be evaluated using the following criteria:

- Stature, recognition, and experience in the national and international scientific or engineering community.
- Ability to rapidly and accurately understand scientific advancements outside his or her discipline area and to effectively integrate this knowledge into U.S. Department of State/USAID policy discussions.
- Ability to articulate science and technology issues to non-specialist audiences.
- Interest and experience in policy issues, and open-mindedness toward policy discussions at the U.S. Department of State/USAID.

Those individuals offered JSF awards must successfully complete and maintain security clearances required for them to undertake their duties within the U.S. Department of State/USAID.

**APPLICATIONS**

An online application and detailed instructions on the application process are available on the JSF website: [www.nas.edu/jsf](http://www.nas.edu/jsf).

A complete application package consists of the following: biographical information; a Curriculum Vita; a Statement of Interest; two Essays; and three to five Letters of Recommendation.

In the Statement of Interest, the applicant should explain what benefits he/she hopes to derive for him/herself and his/her university, if selected for the program, and also indicate any knowledge he/she might have of the U.S. Department of State or the U.S. Agency for International Development and possible contributions he/she might make to different bureaus and offices therein.

In the Essays, the applicant is asked to demonstrate his/her knowledge and understanding of the impact of science, technology, and engineering on foreign policy decision making; to discuss major advances in his/her fields of expertise that have had significant societal impact on an international scale; and to identify issues in science and technology that have not received sufficient attention by U.S. foreign policy makers.

**PROGRAM DATES**

For the 2014 program year, the following schedule will apply:

- **January 13, 2014** Application deadline
- **February/March 2014** Interviews of finalists and selection of awardees
- **July 14–18, 2014** JSF Placement week in Washington, D.C.
- **August 11, 2014** JSF Fellows report to the Office of the Science and Technology Adviser

For a list of the 2013 Jefferson Science Fellows, please view our website at: [www.nas.edu/jsf](http://www.nas.edu/jsf).
Profiles of Past Jefferson Science Fellows

**Dr. Melba Crawford, 2004 (School of Civil Engineering, Purdue University)**

Dr. Crawford divided her time between the International Organization Affairs Bureau (IO) and Intelligence and Research (INR). For IO, Dr. Crawford served as the Science Committee Coordinator for the U.S. National Commission to UNESCO, advising on U.S. priorities and objectives in re-establishing close linkages to the UNESCO science section. She also served as an advisor for the joint NASA/UNESCO project on the preservation of bioregions and World Heritage sites. Dr. Crawford’s focus with INR was on disaster mitigation and she was a delegate to the World Conference on Disaster Reduction in Kobe, Japan. Since completing her tenure, Dr. Crawford has served on an advisory committee to the South African Department of Science and Technology for capacity building in space technologies and remote sensing applications, assessing educational programs and recommending potential opportunities for advancing networks of universities.

**Dr. Osama O. Awadelkarim, 2006 (Department of Engineering Science and Mechanics, Penn State)**

At the U.S. Department of State, Dr. Awadelkarim worked in the Office of Public Diplomacy and Public Affairs at the Bureau of African Affairs and the Office of Science and Technology Cooperation in the Bureau of Oceans and International Environmental and Scientific Affairs. Dr. Awadelkarim focused on promoting collaboration between African, Arab, and Moslem scientists and U.S. scientists, and toured a number of African and Islamic countries where he spoke at universities, scientific seminars, and educator workshops. Notably, Dr. Awadelkarim participated in meetings that led to the conclusion of science and technology agreements between U.S. government agencies and their partners in Africa and the Islamic World. Upon completing his fellowship, Dr. Awadelkarim has worked as a Science and Technology Senior Consultant for the U.S. Department of State from July 2007 to present. Dr. Awadelkarim is currently focusing on sharing Penn State’s experiences in nanotechnology workforce development with several countries in East Africa and the Middle East.

**Dr. Puru Jena, 2007 (Department of Physics, Virginia Commonwealth University)**

Dr. Jena worked extensively on the Washington International Renewable Energy Conference (WIREC) organized by the Bureau of Oceans, Environment, and Science. He was in charge of coordinating the R&D sessions for the WIREC conference, a high-level gathering with over 9000 participants, for which he recruited speakers, panelists and moderators from academia, industry, and government laboratories. Dr. Jena edited a conference report that was distributed worldwide, and an abridged version of this report, emphasizing R&D needs in renewable energies, has appeared in a number of scientific and engineering bulletins and journals. Following his tenure, Dr. Jena has continued to assist the State Department by regularly lecturing on Nanoscience and Technology issues at the Foreign Science Institute, serving on the Presidential Bilateral Russia-USA Commission on Nano(Energy), and by inviting State Department officials to lecture students at Virginia Commonwealth University on science policy and climate negotiations.

**Dr. Timothy DeVoogd, 2008 (Department of Psychology, Cornell University)**

Dr. DeVoogd worked in the Office of Diplomacy and Public Affairs in the Bureau of Western Hemisphere Affairs, where he improved science and technology ties between U.S. and Latin American countries through a variety of methods. Dr. DeVoogd created and implemented a Western Hemisphere science website that allows for exchanges of ideas, equipment, and event announcements in the region; he pushed for more access to scientific journals, websites, and magazines in Chile; he helped devise an engineering accreditation program to be used throughout the western hemisphere; and he supported several initiatives in Paraguay, Ecuador and Colombia. Since his year at the State Department, DeVoogd has remained active in science policy. He has consulted with scientists and engineers in Colombia, Paraguay, El Salvador, Cuba, Chile, Uruguay, Mexico and Costa Rica, and spent the 2012 spring semester doing a Fulbright Senior Fellowship in Bogota on “US Scientific Policy since WWII.”

**Dr. Douglas Laube, 2010 (Obstetrics and Gynecology, University of Wisconsin School of Medicine and Public Health)**

Dr. Laube worked with the USAID Office of Population and Reproductive Health, Bureau of Global Health (GH/PRH) on the expansion of global services materials in Post Abortion Care [PAC], contraceptive provision, and maternal health risk from such disorders as post-partum hemorrhage, unsafe abortion, pre-eclampsia/eclampsia. Additionally, he was involved with assessing morbidities accruing from the lack of provision of quality women’s reproductive health care, including fistula and female genital mutilation. The MCH office also works to develop programs for health care providers in education and incentives designed to diminish the abuse of pregnant women and provide them with longer term reproductive options through contraception. Dr. Laube continues to support the initiatives of USAID’s Global Health Initiative through his work in helping to include the American College of Obstetricians and Gynecologists with other professional organizations in the recently formed Global Development Alliance entitled “Survive and Thrive.”
Profiles of Past Jefferson Science Fellows

Dr. Deborah Lawrence, 2009 (Department of Environmental Sciences, University of Virginia) Dr. Lawrence worked as the scientific advisor on forests and climate in the Office of Global Change at the U.S. Department of State where she also supported the office of the Special Envoy for Climate Change. She focused on international negotiations and bilateral efforts to reduce emissions from deforestation and degradation (REDD) in tropical forests. She served on the U.S. delegation to the United Nations Framework Convention on Climate Change, the World Bank Forest Carbon Partnership Facility, the Group on Earth Observations and its Forest Carbon Task. Prof. Lawrence also served on a USAID assessment on REDD programming in Southeast Asia. Since 2010, she has been a consultant to the U.S. Forest Service and USAID. She serves on the steering committee of SilvaCarbon, an interagency program of the U.S. Government on forest carbon management, measurement and monitoring.

Dr. Wayne Pennington, 2009 (Department of Geological and Mining Engineering and Sciences, Michigan Technological Institute) Dr. Pennington worked in the Office of Infrastructure and Engineering within the Bureau of Economic Growth, Agriculture, and Trade at USAID, and after the new Office of Science and Technology was created in spring of 2010, shared his appointment in that office. While he worked on issues relating to earthquake hazard in Afghanistan and science and engineering projects in Pakistan, the M7.0 Haiti earthquake occurred in January, and affected much of what he did after that date. He coordinated scientific and engineering teams heading to the Haiti, presented talks for non-technical audiences on the seismology of Haiti, and co-organized a workshop on informing Haiti’s reconstruction with science and engineering. He continues to work with USAID on technology for civilian-military approaches to emergency response and disaster risk reduction.

Dr. Darin Toohey, 2011 (Atmospheric and Oceanic Sciences, University of Colorado Boulder) Dr. Toohey worked in the Office of Economic Policy in the Bureau of East Asian and Pacific Affairs (EAP/EP). He served as a U.S. Delegate in Malaysia for the APEC Energy Working Group and at the 10th APEC Energy Ministerial Meeting in St. Petersburg, Russia, where he covered issues related to energy, environment, and “green growth” (climate-friendly, low carbon and energy efficient technologies). Dr. Toohey organized a high-level policy dialogue on open governance chaired by Secretary Clinton at the APEC Concluding Senior Officials Meeting in Honolulu, and he conducted a workshop on the use of remote sensing observations for climate change adaptation for the APEC Industrial Science and Technology Working Group in Singapore. Following his year in Washington, Dr. Toohey hopes to remain active in international policy issues related to energy and air pollution in the Asia-Pacific region.

Dr. Raj Khosla, 2012 (Department of Soil & Crop Sciences, Colorado State University) served as a senior science advisor in the Bureau of East Asia and Pacific Affairs, Office of Economic Policy. Dr. Khosla was appointed as the Lead U.S. Government representative on the Policy Partnership on Food Security (PPFS) for the Asia-Pacific Economic Cooperation (APEC). In that capacity he represented the U.S. at the formal APEC PPFS meetings in Indonesia, Singapore, and Japan and engaged in discussion among 21 APEC economies. Dr. Khosla also co-chaired the PPFS Working Group 1 along with Japan and Russia, and developed a long term strategic plan called “Roadmap towards 2020” to establish a secure food system within APEC by 2020. In addition, he chaired and led a multi-regional APEC-ASEAN Food Security Policy Dialogue in Medan, Indonesia. Dr. Khosla plans to continue his engagement with PPFS in APEC during the China host year in 2014 and beyond.

Dr. Jean Ristaino, 2012 (Department of Plant Pathology, North Carolina State University) served as a senior science advisor in the Bureau of Food Security, Office of Agriculture Research and Policy (BFS/ARP). She helped launch the Borlaug Higher Education Agriculture Research Development Program and conducted a country-wide needs assessment of agricultural research capacity in Bangladesh. Dr. Ristaino worked with the Association of Public and Land Grant Universities (APLU) and the Board for International Food and Agricultural Development (BIFAD) on human and institutional capacity development and implementation of BIFADS’s review of the Cooperative Research Support Program (CRSP). She also provided technical analysis of emerging plant disease threats and helps review progress in the research portfolio in BFS/ARP. Finally, Dr. Ristaino served on an Interagency Working Group on the National Plant Genome Initiative and helped write the strategic plan. She continues to work on a portfolio of issues including human and institutional capacity development in Feed the Future countries.

Profiles of all past Fellows can be found online at: www.nas.edu/jsf.
For additional information on the Jefferson Science Fellows Program, contact us by email at jsf@nas.edu or by telephone at (202) 334-2643.

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