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LETTER TO THE PRESIDENT  
Expanding STEM Talent in the Federal Workforce

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Executive Office of the President  
President's Council of Advisors on  
Science and Technology

OCTOBER 2024



EXECUTIVE OFFICE OF THE PRESIDENT  
PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY  
WASHINGTON, D.C. 20502

President Joseph R. Biden, Jr.  
The White House  
Washington, D.C.

Dear Mr. President,

Our discussions with stakeholders, reinforced by PCAST's experiences across most of our study topics, indicate that the federal government is facing a critical shortage of personnel in Science, Technology, Engineering, and Mathematics (STEM) fields, jeopardizing its ability to accomplish its mission across a broad range of essential sectors.<sup>1, 2</sup> PCAST supports recent actions by the Office of Personnel Management (OPM) and the Office of Management and Budget (OMB) to [improve the federal hiring experience](#). For the federal workforce writ large, and for the federal STEM workforce in particular, it is urgent that these reforms to hiring practices be adopted and that additional improvements be implemented to ensure that the federal government has the personnel it needs to deliver services now and prepare for America's future needs.

Rapid advances in technology dictate that expertise within the federal STEM workforce must be constantly refreshed in order to have the state-of-the-art capabilities needed to support America's innovation ecosystem and serve the public efficiently. Strengthening the federal STEM workforce is equally critical to ensuring the nation's security and economic prosperity. STEM professionals are required in every government agency in order for all sectors of the U.S. to remain at the cutting edge in a science- and technology-driven world. A highly capable federal STEM workforce enhances public services, enables more effective policymaking, and drives research and development, all of which are essential for addressing complex and urgent challenges such as climate change, cyber-physical security, and public health crises.

Recent efforts of your Administration have shown that it is possible for the federal government to bring in exceptional talent. Consider the AI Talent Surge, part of the [Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence](#) (AI EO). The AI and Tech Talent Task Force noted in [their April 2024 report](#) that in the five months following the AI EO more than 170 AI positions had been filled, and as of July 2024, over [200 AI positions had been filled](#) with hundreds of additional hires in process. Through this effort and other programs highlighted below, government has brought in the skills and passion needed for effective public service. Now we must scale this urgency and energy across more agencies and more categories of STEM personnel.

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<sup>1</sup> The U.S. Office of Personnel Management has extended direct hire authority for STEM personnel through 2028. To authorize direct hire authority, OPM must find a "critical hiring need" or "severe shortage of qualified candidates" which were first identified when the authorities were created in 2018. The United States Office of Personnel Management. (September 2024). [Extension and Amendment of the Government-wide Direct Hire Appointing Authority for Scientific, Technical, Engineering and Mathematics \(STEM\) Positions, Acquisitions, and Cybersecurity and Related Positions](#).

<sup>2</sup> National Science Board. (August 2023). [STEM Workforce Shortages Across the Federal Government](#).

Executive Branch agencies – including those outside the “traditional” STEM agencies (e.g., Department of Energy (DOE), National Aeronautics and Space Administration (NASA), National Institutes of Health (NIH), National Oceanic and Atmospheric Administration (NOAA), National Science Foundation (NSF)) – are grappling with a STEM talent shortage, exacerbated by the diffusion of computing and digital technologies into everyday business operations, the growing need for data-driven risk assessments and program evaluations, and the increasing centrality of science and technology to policymaking in all areas of federal jurisdiction.<sup>3, 4</sup> From the economy to transportation to international relations, there is widespread demand and urgent need for skilled STEM professionals across the entire federal government.

Multiple authoritative calls for action have highlighted the need for a strengthened federal workforce and recommended actions to mitigate it. For example, the [Government Accountability Office \(GAO\)](#), the [National Academy of Public Administration](#), and the [National Academies of Science, Engineering, and Medicine](#) have all issued reports identifying a number of persistent challenges, such as lengthy time-to-hire, inadequate pay scales, and limited career development opportunities. GAO’s [May 2024 letter](#) directing the Office of Personnel Management (OPM) to prioritize the unfulfilled previous recommendations, including “making hiring authorities more effective” and “addressing critical skills gaps” is a helpful step. Several agencies have responded to these findings with promising initiatives and pilot programs (see examples in boxes on the following pages), but these efforts are not being taken up at the scale and scope needed.<sup>5</sup> Significant barriers still impede recruitment, development, and retention of STEM talent in the federal workforce.

PCAST has concluded that it is essential to continue sounding the alarm and action must be taken.

Now is the time to challenge the status quo and innovate recruitment and hiring processes to address the federal STEM talent crisis. The good news is that there are substantial opportunities to expand talent pools, particularly among first-generation college students and groups that are underrepresented in STEM fields. In addition, reskilling current federal employees in STEM-adjacent fields and bringing experienced top talent from industry and academia into government for short- and long-term tours of duty could significantly enhance the federal workforce, aiding in meeting national priorities and serving the public. (See Appendix B for some example mechanisms.) This letter offers PCAST’s findings, insights, and recommendations to this end. Our focus is to build on existing efforts to make significant, near-term progress in addressing the federal STEM workforce talent needs.

## *Findings*

PCAST’s examination revealed several critical issues impacting the federal STEM workforce. Among the most pressing is the age profile of the workforce. In 2023, only 7.4% of federal employees were

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<sup>3</sup> The U.S. Government Accountability Office noted in July 2020 the [need for improvements in the federal IT workforce](#). The federal Chief Information Officers Council has also [prioritized workforce improvement](#).

<sup>4</sup> The Biden/Harris Administration [issued guidance](#) to increase the effective use of evidence to improve policy, program, budget, operational, and management decision-making, which requires STEM expertise.

<sup>5</sup> IT workforce shortfalls are the best documented. A shortfall of nearly 40,000 public sector cyber jobs was noted in the 2022 State of the Federal Cyber Workforce report. Department of Veterans Affairs, Federal Cyber Workforce Management and Coordinating Working Group. (September 2022). [State of the Federal Cyber Workforce: A Call for Collective Action](#).

under the age of 30 vs 19.8% in the U.S. workforce overall.<sup>6</sup> The STEM workforce is younger, but the federal government is still lagging demographically with 10.2% of the federal STEM workforce<sup>7</sup> under 30, while 20.2% of U.S. science and engineering (S&E) workers<sup>8</sup> with a bachelor's degree or higher are under 30. This demographic imbalance poses a significant challenge for talent development and succession planning. It also represents substantial risk to the future capacities of the executive branch well beyond traditional STEM agencies, affecting all entities that rely on scientific expertise for input to a wide variety of policy decisions and implementation as well as for technical expertise and business operations, from the Departments of State to Treasury to Health and Human Services and more.

The slowness and complexity of the federal hiring process is one of the biggest barriers to progress, with particularly severe impacts on early-career hiring. People trying to launch their careers cannot be expected to wait 80-100 days for a position to be confirmed, especially when the private sector can make a firm offer “on the spot” and bring new employees aboard within days or weeks.<sup>9</sup> The prospective early-career federal hire also faces the risk of being rejected by an opaque first-round screening process that relies strongly on rigidly mechanical requirements such as keywords or overly-specific qualifications rather than a holistic assessment by a qualified subject matter expert of an applicant’s experience, skills, and expertise.

Consultations and personal experience of PCAST members suggest that certain federal agencies, particularly those related to defense and homeland security, make ambitious use of special authorities to improve the recruitment and hiring of STEM talent.<sup>10</sup> These measures include higher pay, recruitment bonuses, shortened hiring timelines, flexible work locations, and less burdensome conflict-of-interest procedures. Many civil, non-defense agencies are reluctant to use these authorities, however, even when authorized.<sup>11</sup> The complexity and fragmentation of [hiring authorities](#) across the federal government may be a factor. There are [hundreds of different hiring authorities](#), each often narrowly constrained to apply to only specific types of candidates and/or applicable to a small number of positions.<sup>12</sup> When flexible hiring authorities already exist, agency leaders should provide explicit encouragement to their human resources (HR) staff to use them to improve STEM talent recruitment and retention. If agency HR experts are concerned that an authority may not apply, agency leadership should work with OPM to determine what authorities are appropriate. Explicit support by agency senior leadership, such as chief operating officers, and

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<sup>6</sup> Partnership for Public Service. (2023). [A Profile of the 2023 Federal Workforce](#).

<sup>7</sup> Based on November 2023 data from the Enterprise Human Resources Integration-Statistical Data Mart, which includes anonymized records for the Federal civilian workforce, with the exclusion of employees at some agencies, such as intelligence agencies. These Federal workforce statistics are different from those reported by the Bureau of Labor statistics, whose data are derived from the U.S. Census.

<sup>8</sup> National Center for Science and Engineering Statistics. (February 2021). [National Survey of College Graduates](#).

<sup>9</sup> The U.S. Office of Personnel Management has produced a [Time to Hire Dashboard](#) indicating that the average time to hire in 2023 was 101 days.

<sup>10</sup> For instance, there are dozens of “direct hire” authorities but most are specific to a job category, e.g. cybersecurity, IT, or medical; or are specific to an agency, e.g. VA or DOE.

<sup>11</sup> See for example, U.S. Government Accountability Office. (December 2017). [Federal Pay: Opportunities Exist to Enhance Strategic Use of Special Payments](#).

<sup>12</sup> It is unclear whether a single, comprehensive, explanatory list of current hiring authorities is publicly available, making it difficult to ascertain what hiring authorities are applicable.

incentivizing the time-consuming and often thankless work of agency HR professionals could help ensure previously unused hiring authorities are embraced.<sup>13</sup> In cases where agencies lack access to appropriate authorities, we urge OPM to grant the hiring authority access that agencies urgently request to help empower their future efforts.

Recruitment and hiring processes can be improved in several ways: clearly segmenting agency talent needs (e.g. by degree level, skills, or job function) to reach the most appropriate candidates), using “pooled/shared” hiring (to efficiently fill similar positions across multiple units),<sup>14</sup> and better sharing of information on qualified candidates.<sup>15</sup> These approaches would enable sharper definition of the skills needed for various roles, a better understanding of the role prospective employees are interested in playing (e.g. a full career vs. “tour of duty”), and more targeted outreach and marketing. Remedies and recruitment approaches for different types of positions will likely differ significantly; for example, filling the numerous technology roles appropriate for individuals with professional certificates or associate degrees rather than higher-level technical qualifications would be well suited for the “pooled hiring” approach, whereas a more segmented and tailored approach is needed for highly specialized STEM roles.

Existing pilot programs in several agencies provide useful models for change. Examples include the Pathways Program, developed by OPM (see sidebar), the [AI talent surge](#), and the Department of Energy’s [Clean Energy Corps](#). These efforts have shown encouraging results and could be spread to other agencies and STEM disciplines. The shift towards skills-based hiring approaches appears promising and should be expanded, building on efforts already encouraged by [2022 guidance from OPM](#), including increased partnership between HR and subject matter experts in the hiring process, as

### ***Pathways Program***

The Pathways Program was established in 2012 to enhance the Federal Government’s ability to recruit students, recent graduates, and advanced degree holders to temporary positions in the civil service, typically with the opportunity to convert to a term or permanent position upon completion of one of three tracks.

- Internship – gives students at qualifying educational institutions a paid opportunity to explore careers in Federal service while still in school.
- Recent Graduates – provides recent graduates from qualifying institutions a one- to two-year opportunity at Federal agencies.
- Presidential Management Fellows – a competitive two-year fellowship for advanced degree holders that is meant to train the next generation of government leaders.

[Pathways was recently updated](#) to ease requirements for interns to convert into permanent positions, increase starting salaries for recent graduates, and expand opportunities for individuals without college degrees.

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<sup>13</sup> The White House Office of Management and Budget; U.S. Office of Personnel Management. (August 2024). [Improving Federal Hiring Experience](#).

<sup>14</sup> U.S. Office of Personnel Management. (2024). [Streamline the hiring experience through the use of pooled/shared hiring actions](#).

<sup>15</sup> U.S. Office of Personnel Management. (2023 December). [New Talent Pools \(Shared Certs\) Feature for USAJOBS’ Agency Talent Portal](#).

exemplified in the [Subject Matter Expert-Qualification Assessment](#) (SME-QA) initiative within the U.S. Digital Service ([USDS](#)), and recommended in the [OMB/OPM improving federal hiring memo](#). Additionally, the Biden/Harris Administration's focused effort to support the responsible implementation of emerging AI technology at federal agencies, including the AI EO that initiated the

AI hiring surge,<sup>16</sup> could serve as a template for other STEM disciplines such as materials science, engineering, geographical sciences, oceanography, biomedical technology, etc. For instance, the processes recommended by OPM's [Assess](#) effort could be used beyond talent surge hiring.

### ***U.S. Digital Corps***

The U.S. Digital Service (USDS) brings early-career technologists into the federal government for 2-year fellowships. The Pathways Recent Grad Program, launched in 2021, has infused software engineers, data scientists, product managers, scientists, designers and cyber experts into key agencies. Of the [2022 U.S. Digital Corps \(USDC\) Fellows cohort](#), 97% served a full two-year term, and 95% of those individuals plan to stay in the civil service – an impressive retention rate that suggests the esteem these early-career professionals have for public service, even in fields with high demand and higher pay in the private sector.

USDC Fellows have contributed to high-impact Artificial Intelligence (AI) projects that have enhanced the State Department's ability to carry out its diplomatic mission. Over USDC's three cohorts, the Department has hosted 10 Fellows across its Bureaus of Diplomatic Security and Consular Affairs, as well as within its Center for Analytics (CfA). Data science and AI Fellows supported CfA in creating an AI-powered data collection management tool (DCT) to assist with the production, research, and fact-checking of annual congressional reports on international religious freedom and human trafficking– a tool estimated to save 30,000 hours of staff effort each year.

USDC Fellows also assisted with the creation of a new AI tool, "North Star," that analyzes media stories in more than 200 countries and over 100 languages, with estimated time savings of 180,000 staff hours per year, enabling American diplomats to spend more time engaging in-country partners instead of on media monitoring and translations.

### **Attracting, Developing, and Retaining Early-Career STEM Talent**

To attract early career professionals interested in long-term civil service positions, the federal hiring process must be revised to substantially reduce the time it takes to recruit and hire. Expansion of internship programs leading to pre-qualification for permanent federal employment would go a long way towards this goal. In addition to existing internship programs, new programs could be modeled on the [Defense Civilian Training Corp](#) pilot program (DCTC), which is designed to develop talent, including STEM skills, with expedited hiring for positions requiring security clearances.

Better marketing of federal STEM career opportunities is also essential to overcome the stereotype of the federal government as a "staid bureaucracy." A mission-focused career developing and deploying leading scientific research and technologies, such as those found in agencies like NASA and NOAA, is attractive to many people, some as an early career move and others as a mid-career change.

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<sup>16</sup> The White House. (2023 October). [Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence](#). The AI EO called for use of hiring mechanisms under existing authorities, including: the general Direct Hire authority (5 USC 3304), "existing pay flexibilities or incentive pay programs," and "agency-led pooled hiring under the Competitive Service Act of 2015 (Public Law 114-137)".

Early recruiting efforts, e.g., starting more than a year ahead of graduation from higher education degree courses, could help the government compete with private sector employment. Vital strategies include introducing first-year students to federal STEM careers, conducting targeted outreach to

***Clean Energy Corps: DOE Surge Hiring to Implement the Bipartisan Infrastructure Law***

The Bipartisan Infrastructure Law (BIL; [Infrastructure Investment and Jobs Act of 2021](#), P.L. 117-58) established historic funding for improving United States infrastructure and competitiveness. The Executive Branch set a goal of hiring 5,800 individuals to implement BIL provisions (a goal [surpassed by October 2023](#)).

To build the workforce necessary to implement its part of these major efforts, the Department of Energy (DOE) initiated a surge hiring program, the Clean Energy Corps (CEC). Under authorities provided by Congress, the CEC team created an agency-specific applicant portal through which applicants could submit their resumes into a DOE BIL database for potential candidates to fill critical needs via direct hire. DOE hiring managers could query the database to quickly identify qualified applicants for any position. Through this effort, DOE rapidly and legally hired more than 1,000 employees necessary to manage BIL funding and implementation. These employees are providing the critical functions of ensuring federal funding is spent in alignment with the authorities provided by Congress across 70+ programmatic provisions.

This approach could potentially be used by other agencies with direct hire authorities to more rapidly meet critical workforce needs. OPM has established a similar functionality via USAJOBS, the [Agency Talent Portal](#).

diverse communities of students, developing programs that pay for training in return for a certain period of public service (e.g., 1:1 programs), and offering versatile internship programs that readily convert to permanent positions.<sup>17</sup> Expanding and leveraging programs like the [OPM-led Students & Recent Graduates Program](#) within the Pathways program, and the [Presidential Management Fellows Program](#) would enhance opportunities to build a robust federal STEM workforce for the future. Collaborations with high schools, Historically Black Colleges and Universities (HBCUs), and Minority-Serving Institutions (MSIs) would also valuably expand the federal talent pool and enhance recruitment efforts. The new Regional Innovation Engines established by NSF and the Department of Commerce's Regional Technology and Innovation Hubs, which involve multidisciplinary efforts and public-private partnerships with a range of educational institutions, may also provide valuable recruiting opportunities. Finally, in agencies such as DOE and NASA, their Federally Funded Research and Development Centers and National Laboratories

have excellent STEM expertise which could be leveraged as pathways to recruit talented early career STEM workers to federal service. In addition, it is common at agencies like NSF, DOE, and NASA to have individuals from academia and nonprofits on temporary tours of duty. These are usually mid-career professionals, but temporary service pathways could provide a useful opportunity to recruit permanent federal STEM talent into an agency.

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<sup>17</sup> A [recent update](#) to the Pathways Program will allow interns to convert to permanent positions after completing 480 internship hours and also expands the ability of agencies to convert outstanding interns to permanent positions after just 320 hours.

## *Attracting Mid-Career, Seasoned STEM Professionals for Federal Tours of Duty*

A frequently-cited barrier to bringing mid-career and seasoned professionals into government for temporary, fixed-term “tour-of-duty” assignments is the requirement that they divest fully from all personal investments. This limits the breadth of professionals who might contribute via programs such as the [Presidential Innovation Fellows Program](#), the [Intergovernment Personnel Act \(IPA\) Mobility Program](#), and the Department of Defense (DoD) [Cyber IT Exchange Program](#). PCAST acknowledges the intent and desirability of mitigating conflicts of interest, but notes that this could be achieved by less onerous means, for instance the “blind trust” method and recusals for specific issues or actions. Other significant impediments, such as speed-to-hire, salary level, and relocation obligations, could be addressed through special hiring authorities and flexible duty stations as appropriate.

### *Recommendations*

**RECOMMENDATION 1:** *Expediently adopt initiatives that have been piloted by OPM, including leveraging the processes developed for the [AI Talent Surge](#), and maximize the use of existing hiring flexibilities at scale across all agencies.<sup>18</sup>*

**RECOMMENDATION 2:** *Modernize recruiting and accelerate hiring processes. Existing hiring efforts can be enhanced by differentiating and professionalizing STEM marketing and recruiting, and upskilling agency human resources offices through training or staff rotations with OPM or successful specific programs like the U.S. Digital Service. Consideration should be given to implementing “pooled hiring” approaches and the use of the [Subject Matter Expert-Qualification Assessment](#) hiring process.*

**RECOMMENDATION 3:** *Agencies should ambitiously expand use of the Pathways Program and the expedited hiring path it offers to expand pre-qualified candidate pools. Leverage the NSF Regional Innovation Engines and Department of Commerce Regional Technology and Innovation hubs, as well as intramural agency research labs, to develop internships that introduce students at all levels to federal job opportunities that build on the expertise they gain in the hub setting.*

**RECOMMENDATION 4:** *Leverage the less onerous conflict of interest mitigation approaches used in some defense-related agencies to lower barriers to bringing on seasoned experts for tours of duty.*

**RECOMMENDATION 5:** *Designate a senior or executive leader at each agency to identify and reduce headwinds to staffing progress, partnering with OPM, agency human resources, and other stakeholders as needed. These leaders should provide incentives to their HR personnel, plus “top cover” for stepping outside the standard paths and processes for hiring, and report expeditiously to the agency head on progress made.*

**RECOMMENDATION 6:** *Direct OPM to create a comprehensive repository of hiring authorities and programs, including descriptions and informational resources, to facilitate continued sharing of*

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<sup>18</sup> The U.S. Office of Personnel Management [authorized government-wide](#) direct hire authority for several personnel categories, as well as the use of Excepted Service Schedule A appointments under 5 CFR 213.3102(i)(3) to hire temporary staff for the AI talent surge. OPM also [issued pay flexibility, incentive pay, and leave and workforce flexibility](#) programs to attract AI and AI-enabling talent.



*successful initiatives and best practices government wide. This could form one important data base from which federally sponsored researchers (perhaps through NSF or NIH) could investigate what practices and authorities help create a robust, diverse, and effective federal STEM workforce.*

In conclusion, addressing the STEM talent concerns in the federal workforce is imperative to ensure our government can fulfill its mission across numerous critical sectors. PCAST offers our findings and recommendations to significantly accelerate progress in recruiting, developing, and retaining the STEM talent necessary to meet the nation's needs.

Sincerely,  
The President's Council of Advisors on Science and Technology

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# About the President's Council of Advisors on Science and Technology

The President's Council of Advisors on Science and Technology (PCAST) is a federal advisory committee appointed by the President to augment the science and technology advice available to them from inside the White House and from the federal agencies. PCAST is comprised of 27 of the Nation's thought leaders, selected for their distinguished service and accomplishments in academia, government, and the private sector. PCAST advises the President on matters involving science, technology, and innovation policy, as well as on matters involving scientific and technological information that is needed to inform policy affecting the economy, worker empowerment, education, energy, the environment, public health, national and homeland security, racial equity, and other topics.

For more information about PCAST see [www.whitehouse.gov/pcast](http://www.whitehouse.gov/pcast).  
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## Appendix A. External Experts Consulted

PCAST sought input from a diverse group of additional experts and stakeholders. PCAST expresses its gratitude to those listed here who shared their expertise. Their willingness to engage with PCAST on specific points does not imply endorsement of the views expressed herein. Responsibility for the opinions, findings, and recommendations in this letter and for any errors of fact or interpretation rests solely with PCAST.

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# Appendix B. Currently Available Federal Re-skilling and Tour-of-Duty Mechanisms

## Federal Re-skilling Programs

### Examples of Federal Re-skilling and Up-skilling Programs<sup>19</sup>

- The [AI Training Series for Government Employees](#), offers three specialized tracks (acquisitions, leadership and policy, and technical) to any Federal employee with a .gov or .mil email address, with the goal of educating employees on relevant aspects of AI.
- The DoD's [Civilian Leader Development and Broadening Programs](#) are a set of programs that align with the DoD's strategy of developing civilian leaders and broadening the skills of their employees.
- The [Federal Cyber Defense Skilling Academy](#) is a three-month training program offered by Cybersecurity and Infrastructure Security Agency (CISA), to which any full-time federal employee may apply. The program is made up of four training pathways that teach students foundational cybersecurity skills: cyber defense analyst, cyber defense forensics analyst, cyber defense incident responder, and vulnerability assessment analyst.
- The Department of State's [Foreign Service Institute](#) offers linguistic, leadership, and other training opportunities for diplomats and Federal employees.
- The [Warrior Training Advancement Course](#), offered by the Veterans Benefits Administration (VBA), is an education program to provide new skills to Wounded Warriors and transitioning service members that are still on active duty. Participants who successfully complete the program have access to employment opportunities at VBA Regional Offices across the country.
- The [White House Leadership Development Program](#) is a one-year fellowship for senior-level Federal employees to grow their leadership skills as they work on challenges that require the coordination of several Federal agencies to succeed.

## Tour-of-Duty Mechanisms

### Examples of Tour-of-Duty Mechanisms<sup>20</sup>

- The [AAAS Science & Technology Policy Fellowships](#) is a one-year, full-time Federal Government placement program for STEM PhD graduates.
- The [Boren Awards](#) is a language program for U.S. undergraduates and graduate students who study critical languages and immerse themselves in the culture of another country for 2-12 months. Boren award recipients are required to work in the Federal Government for at least one year after graduation.
- The [Charles B. Rangel International Affairs Fellowship Program](#) supports scholarship for a two-year policy master's degree and two summer internships, in exchange for a five-year service commitment as a Foreign Service Officer for the State Department.<sup>21</sup>

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<sup>19</sup> This is not an exhaustive list of re-skilling nor up-skilling programs, but is representative of the types of programs the Federal Government offers employees. Examples are listed alphabetically.

<sup>20</sup> This is not an exhaustive list of Tour-of-Duty Mechanisms, but provides examples for mechanisms that offer individuals temporary assignments in the Federal Government. Examples are listed alphabetically.

<sup>21</sup> The main difference between the Pickering and Rangel Fellowships is the requirement for one of the summer internships. Rangel fellows are required to do a domestic internship on Capitol Hill, while Pickering Fellows do their internship at the State Department.

- The [CyberCorps: Scholarship for Service](#) provides up to three years of support for undergraduate or graduate cybersecurity education, in turn for which recipients work in the Federal Government for a duration related to the period of the scholarship.
- The [DoD Highly Qualified Experts Program](#) is an appointing authority that allows the DoD to temporarily bring individuals with specialized knowledge, skills, or experience into the Department.
- The [Foreign Affairs Information Technology Fellowship](#) provides scholarship for two-years towards an IT-related undergraduate or graduate degree and two summer internships, in exchange for a five-year commitment as a Diplomatic Technology Officer in the Foreign Service.
- The [Intergovernment Personnel Act \(IPA\) Mobility Program](#), which allows for temporary assignments between the Federal Government and state and local governments, colleges and universities, Indian tribal governments, federally funded research and development centers, and other approved organizations,
- The [John S. McCain Strategic Defense Fellows Program](#) is a 12-month leadership development program that recruits advanced degree graduates into the DoD for a career track toward senior leadership.
- The [Payne Fellowship](#) provides scholarship for a two-year policy master’s degree and two 10-week summer internships, in exchange for a five-year service requirement to the USAID Foreign Service.
- The [Post-Secondary Student Hiring Authority](#) allows agencies to hire post-secondary students on a temporary or term basis into positions in the competitive service.
- The [Presidential Innovation Fellows](#) program, which pairs innovators from the non-governmental organizations with top civil servants to better drive change,
- The [Presidential Management Fellows](#) Program, which is a two-year fellowship for advanced degree holders that is meant to train the next generation of government leaders,
- The [Senior Executive Service \(SES\)](#) includes managerial, supervisory, and policy positions in the executive branch. Temporary appointments include SES Noncareer appointments, SES Limited Term appointment, and SES Limited Emergency appointment.
- The [SMART \(Science, Mathematics, and Research for Transformation\) Scholarship Program](#) is a DoD academic scholarship program for STEM undergraduate and graduate students, that guarantees post-graduation employment with the DoD.
- [Special Government Employee](#) is a category of employees that provides temporary service in the executive branch often due to their specialized expertise or perspective.
- The [Thomas R. Pickering Foreign Affairs Graduate Fellowship Program](#) provides financial assistance for a two-year graduate program and two summer internships, in exchange for a five-year service commitment as a Foreign Service Officer to the State Department.
- The [White House Fellows Program](#) is a one-year, full-time opportunity to work with White House Staff, Cabinet Secretaries, and other senior-level policymakers.
- Public-private talent exchange programs
  - a. The DoD [Cyber Information Technology Exchange Program](#), which provides for the temporary exchange of DoD and private sector employees who work in information technology.
  - b. The [Department of Homeland Security \(DHS\) Loaned Executive Program](#) allows for executive-level private sector employees to serve as employees of DHS to work on homeland security challenges.

- c. The VHA [Executive Management Fellowship](#) is a 12-month long program that exposes U.S. Department of Veterans Affairs (VA) healthcare professionals to clinical practices in industry.
- d. ODNI's [Intelligence Community Public-Private Talent Exchange](#) allows for the exchange of Intelligence Community personnel and private sector employees, with pilot exchange programs for AI/ML, data management, economic security and federal intelligence, human capital, and space.
- e. The DoD [Public-Private Talent Exchange](#) Program enables the temporary assignment of a private sector employee to a DoD organization or vice versa.