

How to Get Started in Public Interest Tech

Recommendations for Recruiting Early-Career Tech Talent



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Introduction

Much like the popularization of “[public interest law](#)” in the 1960s and '70s, the possibility of a career in “public interest technology” is rapidly winning over the hearts and minds of [university students](#) seeking to make an impact in their professional lives, both here at Georgetown University and around the country.

While some have indicated that the public interest technology movement is currently going through its “[tween years](#),” we wanted our Beeck Center Capstone Project to take on a topic that will be important for the sustainability of the field as it ages — recruitment of young technologists.

Because so much of the creation and eventual institutionalization of federal digital teams was prompted by crisis, it required the deployment of existing top talent from Silicon Valley and across the agencies. So, it makes sense that those leaders had little time to turn their attention to training or creating pathways for the next generation.

Currently, recent graduates are often encouraged to start their careers in the private sector and circle back to government through the tour of civic service model offered by programs like the [Presidential Innovation](#) and [Management](#) fellowships, [TechCongress fellowships](#) [Code for America fellowships](#), [New Sector RISE fellowships](#), or other similar programs. But, the government’s need for technical skill is rapidly outpacing this approach, and entry-level job seekers may not necessarily want to start in the private sector and come into public interest and public service through a fellowship — they are seeking careers where they can start and grow in civic organizations.

According to a [2017 NextGov Survey](#), there are four times as many government IT specialists over the age of 60 as there are under 30. In California, 38% of current Government IT employees are at retirement age or will be within five years. While recruiting top tech talent requires government agencies to compete with well-resourced private sector recruitment teams, organizations like [Coding it Forward](#) have proven that younger generations have a strong interest in doing meaningful work and using their technical skills for good.

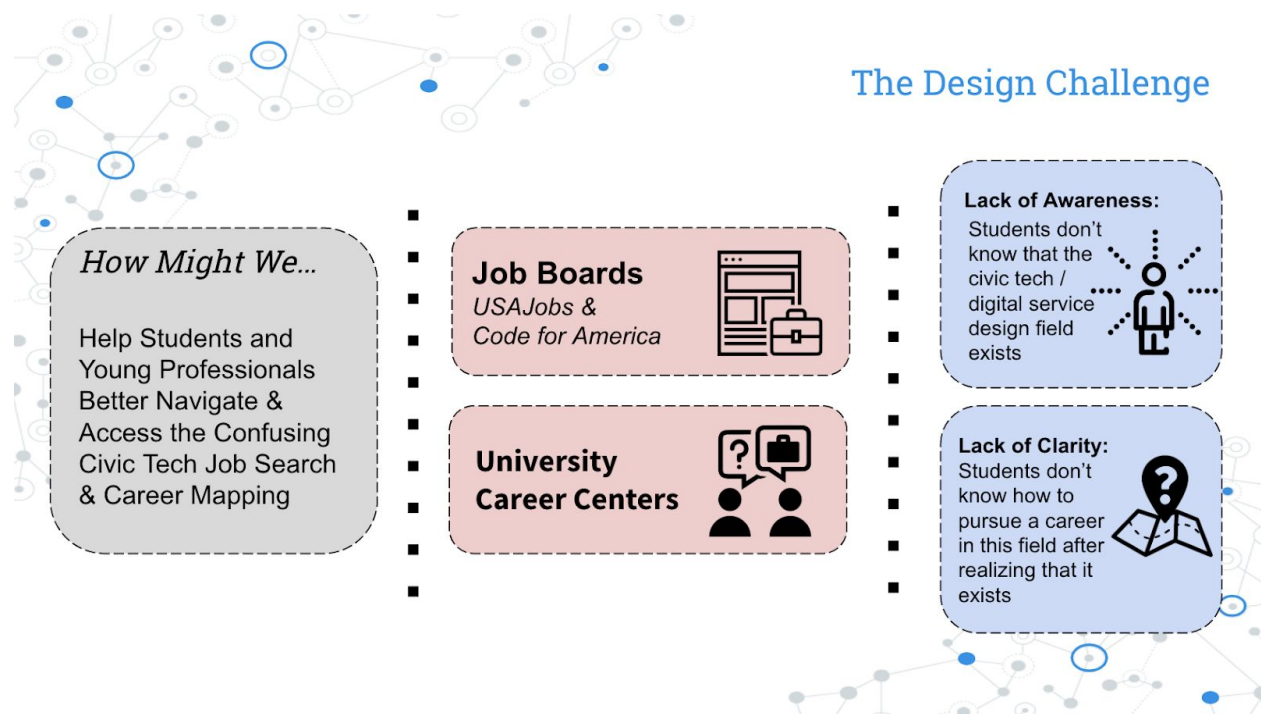
Our approach

In this report, we hope to combat the mischaracterization that younger generations are ill-equipped or disinterested in taking over from an aging federal workforce. Instead, we are operating under the proven assumption that there are thousands of early career people looking to be hired who are falling through the cracks of a broken recruitment process.

We know that our project will not be able to fully address everything: the budgetary constraints that prevent agencies from developing long-term hiring places; the lure of a higher salary, loaded benefits packages, and clear career ladders in the private sector; or the antiquated slowness and inflexibility of the existing government hiring process (we know that others are already working on many of these challenges).

The Design Challenge

Recognizing that the government hiring process was not something that we could fix overnight, we decided to focus our capstone on stakeholders who we had access to and some degree of agency over their piece of the puzzle. More specifically, we wanted to talk to representatives from various job boards including [Code for America](#), [USAJOBS](#), and [Design Gigs for Good](#) and university career advancement centers.



In order to fully understand the barriers that we would have to design around, we put together a list of the major problems facing young people wanting to get into this line of work:

1. Lack of awareness and direction

Students are often introduced to civic tech by happenstance. They have one interesting class, internship, or conversation that exposes them to the work that technologists and designers are undertaking in the public sector, but there is very little clarity about what to do next.

2. Not enough exposure to public sector opportunity early in career

While private sector organizations invest thousands of dollars into intensive, multi-year recruitment initiatives on campuses across the country, government agencies and public sector organizations have fewer resources for recruiting and lack the same level of brand recognition.

3. Existing public interest technology resources require too much insider knowledge

While plenty of resources exist across the internet for people looking to do good with their technical skills, they are often located in places where newcomers might not know to look (Code for America, various Twitter/Medium pages, listservs, etc.).

4. Government and non-government organizations don't always know how to leverage tech experience

Sometimes government agencies and non-profits or NGOs don't always know how to make use of technical skills, which often means that jobs simply don't exist or that the folks who do get hired struggle to explain their work to or get support from.

5. There is no standardization of job titles or qualifications

The keywords and occupational titles that a technologist might use in a private sector job search are not always the same on USAJOBS — for example, a human-centered designer might be referred to as a human factors or behavioral sciences analyst.

6. Government doesn't recognize non-academic credentials

We've also found that government agencies often pass up on qualified talent due to undue burden restrictions, which can get in the way of designers submitting portfolios, or applicants who lack certain academic credentials get filtered out — often times by hiring managers who don't fully understand the requirements of the position.

Recommendations

Recommendation 1: *Start with the Job Boards*

Recognizing that the government hiring process was not something that we could fix overnight, we decided to focus our capstone on stakeholders who we had access to and who had some degree of agency over their piece of the puzzle.

We decided to start with job boards since they are an obvious entry point for newcomers starting their civic tech journey. Our user-experience research was prompted by the belief that job boards can be doing more to orient potential recruits and build up interest in the absence of well-resourced public sector recruitment strategies.

Categories need more context

A major barrier facing the public interest technology recruitment pipeline is that new job seekers often lack context for what a career might look like. While countless resources and university partnerships have been developed by organizations like Code for America and New America, newcomers don't always know where to find them or that they exist.

Being that job boards and postings are often the most public facing or frequently used pages on a website, we believe that job boards can function as translators between public interest tech organizations and job seekers. One strategy that is frequently employed to organize job postings is using occupation titles.

In order to provide newcomers more context for what these titles look like in the civic tech ecosystem, we propose that ***each occupational title category comes with definitions or even examples of what the role might look like in this space*** — the [USAJOBS data science page](#) is a good example of this. Based on the occupational titles used on the Code for America public interest technology job board, we've included potential definitions and examples to provide job seekers with more context ([Appendix 1](#)).

We also think that users could benefit from getting **information about why certain job postings are tagged with certain occupation titles.**

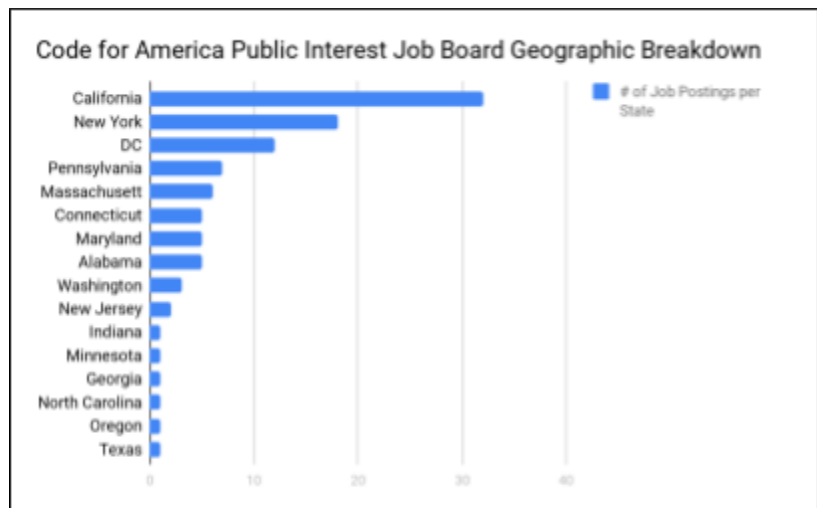
We also know that sometimes job boards like Code for America’s public interest job board alter job titles or posting language, so that users are able to better understand the requirements. But when users click on the application link, it takes them to another page with the original language. **A pop-up explaining the lack of consistency** would help to reduce confusion.

Representation

As young people start their careers, location and work environment have major influence on their decision making, as does the makeup of the staff. According to [Glassdoor](#), “A full two-thirds (67%) of active and passive job seekers said that a diverse workforce is an important factor when evaluating companies and job offers.”

Something we appreciated about the Code for America and USAJOBS data science job board pages is that they prominently feature civic technologists with diverse backgrounds.

Demonstrating the importance of diversity and representation in the civic tech community is and will continue to be important for recruiting efforts.



Data accessed via Code for America Public Interest Job Board, available at jobs.codeforamerica.org.

We also want job boards to emphasize geographic diversity. Currently, many of these job boards recruit predominantly from large cities, like San Francisco, New York City, and Washington, D.C. This is largely due to the concentration of jobs that exist in these cities: According to the [Brookings Institution](#), “San Francisco, Seattle, San Jose, Los Angeles, and Austin captured 34 percent of all new digital services job growth between 2015-2017.” While the geographical distribution of jobs is a larger and more complex issue than we could address in a few weeks, we believe that **job boards should be doing more outreach to organizations and local governments in smaller, less well-represented cities to promote more geographic diversity across their postings.**

Pathways

A common misconception that students and entry-level job seekers have is that their career paths have to be linear. This belief makes the blurred boundaries of public interest technology especially overwhelming. Because there are so many ways to use technical skills in government or to support public interest projects, there is no formal “pipeline” or “pathway” for newcomers to follow.

While most existing civic tech job boards cater strongly to mid-career professionals or those already integrated into this ecosystem, an **“are you new here?” or “are you just starting out?” pop-up** offering links to existing resources, a disclaimer that the job board doesn’t have a large selection of entry level positions, and recommendations for other places to look (i.e. a fellowships page) could really help new users. **Note:** another approach would be to tag fellowships in the existing [Code For America civic fellowship spreadsheet](#) as “entry-level.”

We have also found that a sense of community is immensely important to maintain the interest of people who have just discovered the field of civic tech. So, when we refer to providing links to existing resources, this includes **instructions for how to access online communities** such as [CFA’s discourse page](#) or [Github](#), Slack workspaces like [CFA’s](#) or [Design Gigs for Good](#), and event pages like [GovTech](#). Providing links to channels that promote newcomers sharing stories, introductory resources, and advice could dramatically reduce the barrier to entry and level of intimidation many feel when they enter this space.

While combing through various job boards, we have also realized that while we cannot always help that government technologist job postings are vague and rapidly transforming, **values** are something that the civic tech community has worked diligently to cultivate (e.g. [CFA & 18F](#)). They are constant and characteristic of the movement’s vision, and **making them visible, front-and-center** is key to outlining where the priorities of the public interest tech community lie, which might serve as a useful recruitment tool.

Furthermore, giving job seekers the **option to filter jobs in various ways** would reduce confusion. Filters might include full-time or part-time, salary, private or public, or level of government and would allow job seekers to have a more customizable experience.

Recommendation 2: *Career Guide*

As a current student and recent graduate, we have had firsthand exposure to the private sector's university recruiting apparatus. We've seen them at career fairs, campus events, career service centers, and doing on-site interviews. Career ladders for jobs across the private sector are outlined for students as early as their freshman year, whereas public sector organizations are unable to provide the same level of clarity and often lack the same level name recognition amongst top recruits.

In order to help university students have an earlier introduction to public interest technology as an option, we developed a "[How to get started in public interest tech](#)" resource for students, faculty, career centers, and relevant campus organizations to pass onto students who express an interest in using their technical skills for social good. We not only wanted to make something that a student could understand, but also a guide that faculty or career service professionals could read through to know whether they could recommend public interest tech to their students.

We used recruitment materials from a dozen different civic tech and digital service organizations to put together a list of the most common civic tech roles, scraped 91 job postings on Code for America's job board using an open source word analytics software to put together the most frequently requested skills, and interviewed current practitioners to develop a better understanding of what civic tech work looks like and the pathways to it.

Knowing that professors often do a lot of the labor of connecting interested students with civic tech resources, we included a customizable page where universities can detail local resources (e.g., classes, clubs, local organization, internships & fellowships, etc.)

This guide was designed to introduce, entice, and break down what we think a student would need to "get started in public interest tech." Pulling from our learning experiences here at the Beeck Center as well as our own time as university students and newcomers to the civic tech space, we wanted to create something that addressed questions we still have about this still-developing space. We don't expect our guide to have all the answers, but we hope that it will help provide more clarity for students kick-starting their journey to understanding the civic tech and digital services movement.

Recommendation 3: *The Government's Role*

We were unable to connect with representatives from government agencies, like the federal Office of Personnel Management, due to our project's timeline. However, based on the insights and recommendations we collected throughout our research, we have compiled a list of changes that we believe should be made on the government side.

1. Communicate investment in skills training

Government agencies looking to recruit top tech talent should think more intentionally about how to convince young people that working in the government will help them to hone their skills and develop new qualifications. It is becoming less reasonable to assume that young recruits intend to become career civil servants, so they need to know that a stint in government will make them a more desirable candidate during their next career shift.

2. Increased career fair presence

While national security organizations like the CIA, VA, and various military branches make an effort to have strong name recognition on campuses, other departments will need to do more to maintain relationships and develop their pitch. We are particularly fond of models like [OPM's 2017 Federal Cyber and Tech Hiring](#) fair where more than 2,500 job seekers were able to speak directly to hiring managers from 33 federal agencies, some of whom had been authorized to make on-the-spot offers.

Given that recruitment can be expensive, we think that career centers could do more to build the prestige of a government jobs (especially amongst technology and design students) (e.g., listing them in career center fact sheets).

3. Extend Federal Scholarship Programs to Tech, Design, and Management Degrees

In the same way that the federal government offers university scholarships in exchange for military service, non-military agencies should benefit from scholarships geared towards tech, design, and product management students. A potential model was proposed by Rep. Will Hurd (R-TX) and Rep. Ruben Gallego (D-AZ) in 2017 through the introduction of [Modernizing Government Technology Act legislation](#).

As the cost of [tuition and student loan debt skyrockets](#) and in the face of a potentially looming recession, scholarship money in addition to a guaranteed job is a promise that will surely help government agencies compete with the allure of Silicon Valley.

4. Build more USAJOBS microsites

Microsites like the USAJOBS pages for [data science](#) and [cybersecurity](#) provide specific direction for federal job seekers with in-demand technical skills. While we would like to see more of these sites made in their current form (e.g., user researchers and software engineers), we also believe that they could be used to further standardize job posting language across agencies.

For example, during the creation of [cybercareers.gov](#), OPM sent out a [memo](#) stating that due to the Federal Cybersecurity Workforce Assessment Act of 2015, the federal government would be responsible for [identifying and coding unfilled cybersecurity](#) positions. OPM could use a similar model to take stock of all the different titles being used to describe UX/UI design or software engineering. In the short term, this information could be used to help guide job seekers to further investigate postings that they normally would have passed over. In the long term, OPM could work with agencies, universities, and industry to establish rules about what qualifications must be present in order for a certain job title is to be used. **Note:** we acknowledge that there might be some pushback from existing employees who were hired into technology positions before the standards were set, so perhaps job standardization could include a grandfather clause.

5. Extend direct hiring permissions

In order to compete with the nimble recruitment practices of the private sector, we'd like to see further research on the impact of extended direct hiring permissions for technologists and designers across the agencies. [\(This model has already been tested to recruit short-term cybersecurity experts.\)](#) Our hypothesis is that direct hiring permissions would make the recruitment process faster, ensure that those who understand the requirements of the job have more of a say, and bring in temporary hires who could prove the value of a more long-term hiring strategy for technical talent.

6. Consider resume books

We also think that government agencies should look into adopting some of the lower cost recruitment techniques used by the private sector, such as resume books. Resume books are collections of resumes compiled by a university based on a particular semester and industry (e.g. Spring 2019 Finance Internship) that are then sent to employers seeking interns and/or full-time employees. While this would shift the burden of filtering through and reaching out to desirable applicants to government hiring managers, it would increase the number of applicants as well as the likelihood of finding someone who fits the qualifications of the posting.

Conclusion and next steps

Knowing that we took on a problem that is impossible to fix in a summer, there are a number of next steps we have identified.

First, more data collection from students like us about the pathways that they have taken and the resources that they have used to break into the civic tech community could inform these organizations and leaders as they hire and promote hiring. The pain points that we've compiled are strongly influenced by our own experiences, and we know that we are not totally representative of our intended user base.

Second, interviews need to be conducted with representatives from OPM who are familiar with the 2018 [“Guidance for Identifying, Addressing and Reporting Cybersecurity Work Roles of Critical Need Memo”](#) and the actions that were taken to implement direct hiring procedures and organize existing cybersecurity jobs. They would give us a better sense of what efforts are currently being pursued to expedite the recruitment of technologists and designers. Information that we'd want to learn more about are the political roadblocks to simplifying the government hiring process and how job titles and listings are created.

Third, more interviews should be conducted with career center advisors about what resources they provide to students who come to them with an interest with civic technology. While we were able to speak to the representatives from the Georgetown Cawley Career Center, we know that other centers will have other techniques that we can learn from. We also think that it would be useful to talk to representatives from Handshake (a popular university job board) about how they can better categorize civic tech opportunities on their platform.

Finally, user-testing of the layout and content in the student guide is needed. We conducted a brief beta test with our Beeck Center colleagues (n=16) and received the following feedback:

- **Audience:** This guide draws tech people into politics, but what about drawing policy people into tech? // Is a guide the best way to communicate this information?
- **Collaboration:** Could it be crowdsourced, so others could make suggestions?
- **Graphics:** Content should be more digestible, less text heavy.
- **Content:** Could there be an explanation for some of the buzzwords mentioned? Could occupation titles be tied to personas and specific examples of civic tech jobs? What are adjacent fields or job titles? Could this be aligned with the Beeck Passport Project?
- **Accessibility:** How do we account for access+equity in civic tech recruitment? How about access to adequate tech (i.e. digital portfolios)?

Overall, many resources have been created to bridge the gap between young people and public interest tech jobs, and we hope that our research furthers the mission of supporting career service professionals, job boards, recruiters, and students alike.

Appendix

Data Science

- I. **Definition:** Data scientists are analytical data experts who analyze and interpret structured and unstructured digital data by using scientific methods, processes, algorithms and systems. They use advanced analytics technology, like machine learning and predictive modeling, to solve complex problems or assist an organization in its decision-making.
- II. **Useful resources/case studies:**
 - A. [How the federal government uses data-driven tools to combat climate change](#)
 - B. [The journey of Priyanka Oberoi, Data Scientist in the Commerce Data Service](#)
 - C. [Examples of how data scientists play an important role in the social impact space](#)
 - D. [A collection of case studies in data science](#)
 - E. [USAJOBS data science microsite](#)
- III. **Other names**
 - A. Data Ecologists, Data and Analytics Manager, Data Architect, The Business Analyst, Data Engineer, Database Administrator, The Statistician, Data Visualizer, Mathematician, Machine Learning Scientists, Actuarial Scientist, Business Analytic Practitioners, Software Programming Analysts.

Project/product manager

- I. **Definition:** Project managers, or PMs, are organized, goal-oriented, and passionate change agents that are in charge of planning, procuring, and executing a project in any undertaking that has a defined scope, start, and finish, regardless of the industry to drive results.
- II. **Definition:** Product managers, or PMs, are professionals responsible for the development of products through interdisciplinary thinking and collaboration with engineering design, and strategy teams to own the business strategy behind a product, specify its requirements, and manage the launch features.
- III. **Useful resources/case studies:**
 - A. [Case study on executing projects through iteration and adaptation \(Agile methodologies\)](#)
 - B. [What goes into improving a process through project management](#)
 - C. [18F product guide](#)
 - D. [How product management transforms businesses](#)

Content strategist

- I. **Definition:** Content strategists are inbound marketers that plan, develop, and manage written or digital content that uses data, research, and psychology to engage users.
- II. **Useful resources/case studies:**
 - A. [What is a content strategist?](#)
 - B. [What skills does a content strategist need?](#)
 - C. [How content strategy impacted gov.uk](#)
- III. **Other names**
 - A. Head of content, Digital content manager, Web writer, Web editor

Analytics/software engineer

- I. **Definition:** Software engineers are professionals who enable users by applying engineering principles and systematic methods to develop programs and operating data, as well as applying design, development, maintenance, testing, and evaluation of software.
- II. **Useful resources/case studies:**
 - A. [Software developers' role in Healthcare.gov](#)
 - B. [A path from software engineering to US Digital Services](#)
 - C. [Day in the life](#)
- III. **Other names:**
 - A. Programmer; computer programmer; coder; engineer; applied scientist; technologist; computer user.

Designer

- I. **Definition:** Designers are intentional creators that use planning and technical logic to deliver user-centered experiences for audiences through collaboration with agency partners, product managers, engineers, and other designers.
- II. **Useful resources/case studies:**
 - A. [Designers working with digital services](#)
 - B. [Four examples of design in government](#)
 - C. [Conversations as a designer in government](#)
- III. **Other names:**
 - A. User researcher, design strategist, service designer, user experience designer, user interface designer, interaction designer, product designer, illustrator, graphic/communication designer.