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WOMEN VETERANS IN STEM: RECOMMENDATIONS TO STRENGTHEN THE PIPELINE FROM SERVICE TO STEM

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Executive Summary

While many programs and support services exist for veterans, very few are tailored to women veterans, and there is no system in place to unify these resources in a cohesive and effective way. As a result, the needs of women veterans are often overlooked.

In March 2021, Education Development Center (EDC) led a virtual convening on recruiting and retaining women veterans in the STEM workforce, particularly those from populations currently underrepresented in STEM. The convening was funded by the National Science Foundation (NSF), as part of NSF's [INCLUDES](#) program, and by a generous gift from the Boeing Corporation. The event capped an 18-month effort to map the current landscape of women veterans' support services. In addition, the event provided an opportunity to engage experts in relevant fields in identifying strategies to strengthen existing services and develop new programs to effectively engage, train, and retain women veterans in the STEM workforce.

Prior to the convening, EDC worked with an advisory board comprising women veterans, representatives from nonprofits and federal agencies that serve veterans, universities, STEM professionals, and STEM industries to develop a series of "[state of the state](#)" [white papers](#). The series began with an [introduction](#) to the topic and then addressed four critical areas: [transition services](#), [STEM workforce development](#), [STEM education](#), and [health and well-being](#).



The Convening and Recommendations

Participants concurred that careers in STEM are an excellent choice for women veterans, and research substantiates this. Women veterans in STEM jobs earn 54% more than peers in non-STEM jobs and 13% more than non-veteran women in STEM (Maury et al., 2018). Further, many women veterans have the expertise and skills to enter and succeed in the STEM workforce.

Participants considered key aspects of recruiting, training, and retaining women veterans in the STEM workforce. The following three urgent, unmet needs emerged from these discussions:

- » **Navigating services.** Upon re-entry into civilian life, women veterans are tasked with locating resources to make their transition successful. Through word of mouth and the Internet, they learn that a large number of services exist but have different aims and reach. How, then, can they determine which are available, accessible, and most appropriate for their needs? This is a daunting task. Participants agreed that women service members and veterans would benefit from coordination among key service

providers during the transition process and post-transition, clear communication about services, and improved access to resources and information.

- » **Finding mentors.** Employers or higher education institutions lead most mentoring programs. Yet women veterans who are transitioning from service to school or to STEM careers need a different kind of mentoring. Participants agreed that women veterans need peer mentors in the STEM field who can share their experiences with career pathways, professional development, and STEM higher education and workplaces. Women service members and veterans would benefit from information about how to contact and network with peer mentors and membership organizations that can provide such mentors.
- » **Educating employers.** Many STEM employers overlook the potential of women veterans. Participants reported that employers don't understand the military's terminology related to occupations—military occupational specialty codes—which could clarify women veterans' STEM expertise. Participants also noted that employers see military service as a gap in employment or irrelevant work experience rather than recognizing women veterans' STEM and employability skills. Participants agreed that there is a pressing need to educate employers about the myriad benefits of hiring women veterans in STEM positions and to advise them on strategies for recruiting and retaining women veterans.

This report offers actionable recommendations that employers, policymakers, federal agencies, higher education institutions, and professional organizations can take to strengthen the pipeline from service to STEM for women veterans.

Convening participants felt strongly that our country needs a national resource clearinghouse and technical assistance center to serve women veterans. They envisioned that the center would fill the following gaps:


- » Consolidate information about services and resources available to women service members and veterans and provide advisory services for these women.
- » Provide technical assistance to STEM industry employers and institutions of higher education on how they can better recruit and retain women veterans.

We called upon convening participants to make ambitious and ground-breaking recommendations to work towards the goal of supporting women veterans and developing stronger pathways from service to STEM careers. The result was the genesis of our moonshot idea—a National Center for Women Veterans in STEM. The center would address participants' recommendations, which fall into five topic areas:

- » Mentoring: Tapping the Power of Women Veterans
- » Expanding Networking Opportunities
- » Building Strong Systems to Support Transitions
- » Engaging Higher Education and Employers
- » Partnering with the Department of Defense to Change Culture

More information about these topic areas and related recommendations can be found in the ***Women Veterans in STEM Convening Proceedings: Strengthening the Pipeline from Service to STEM*** (available on our website).

Next Steps



We aim to act on participants' guidance and make meaningful progress toward strengthening the pipeline from service to STEM for women veterans. First, we will form an alliance that engages key stakeholders, including women veterans. Together, we will design, launch, and sustain a national clearinghouse and technical assistance center that will make it easy for women service members and veterans to search for and access services. Initially, we will focus on propelling women veterans' pursuit of STEM careers. Ultimately, we plan to widen the center's scope to provide holistic support for women veterans during their transition to civilian life and post-service journey.

We are pursuing funding to achieve this goal and scale the recommendations presented in this report. We are also working to inform federal, state, and municipal policymakers and leaders on policies and practices to improve services for women veterans.

Recommendations

A significant opportunity exists to facilitate resource sharing and access, and to address duplication and gaps in programs that serve women veterans. Career development programs and policies, in particular, can be strengthened to better serve women veterans. We detail these challenges in our first white paper, [Engaging and Retaining Women Veterans in the STEM Workforce](#), and convening participants agreed that action is needed to address these challenges.



Our moonshot is to launch a National Resource Center for Women Veterans in STEM


Our primary recommendation is to launch a cross-agency initiative to fund and develop a National Resource Clearinghouse and Technical Assistance Center to serve as a hub of information, resources, and services for women service members and veterans.

Participants envisioned that this center would increase the effectiveness, coordination, and cost-efficiency of outreach and services for women service members and veterans. The center would partner with the Department of Defense and other federal agencies, nonprofits, and other key stakeholders to **centralize** a variety of advisory services, particularly for those considering or entering higher education or technical schools/apprenticeships to earn relevant STEM certificates, seeking employment in STEM fields, and in need of mental and physical health services; collaborate with and inform businesses and higher education institutions seeking to attract and retain veterans; and connect government agencies with evaluation services to identify areas of needed improvement in their existing programs for women veterans.

VISION FOR THE NATIONAL CENTER



- ✓ **Use the Youth.gov website and the Women's Education Equity Act Equity Resource Center (WEEA ERC) as models.** The WEEA ERC (1978–2003) was established to bring support and resources to the many exceptional efforts to improve the education of girls and women in the United States. Serving as a bridge between theory and practice over 20 years, the ERC provided training and consultation, conducted research, and marketed education products developed by educators in classrooms, universities, and community organizations. The ERC also provided technical assistance to more than 700 field-based projects and created and published practical, hands-on materials and resources for all levels and ages.
- ✓ **Provide separate portals for four specific audiences:** women service members and veterans, employers, higher education institutions, and organizations (e.g., support organizations and professional associations).
- ✓ **Provide resources and guidance for women service members and veterans** to understand the opportunities and pathways in STEM, and support them in their pursuit of STEM careers.
- ✓ **Provide tailored, customized technical assistance to employers and higher education institutions** on how to better recruit and retain women veterans.
- ✓ **Offer guidance to employers and higher education institutions** on how to establish communities of practice; smaller organizations typically don't have the internal capacity to create and sustain their own robust group.
- ✓ **Mandate a third party to serve as a resource and sounding board** for efforts that support women veterans' employment to improve the quality of programs and support provided.



The remainder of this section offers **31 recommendations** for actions that **employers, policymakers, government employees and agencies, higher education institutions, and professional organizations** can take to **strengthen the pipeline from service to STEM** for women veterans. Throughout this section, we spotlight promising programs and successful strategies to help inspire and inform action.

Policymakers and Government Agencies

The majority of legislation and government-funded programs targeting veterans are not tailored to women veterans. To ensure that women veterans have equal access to services and supports, programs need to be specifically designed to be more inclusive of these service members.

WE RECOMMEND POLICYMAKERS AND GOVERNMENT AGENCIES DO THE FOLLOWING

- ✓ Incentivize equitable hiring practices among those seeking government contracts by adding hiring benchmarks for women veterans.
- ✓ Add an “equity” criterion to the [Department of Labor’s HIRE Vets Medallion Award Criteria](#) to promote hiring and employment that focuses on women veterans.
- ✓ Expand the Work Opportunity Tax Credit criteria for “Qualified Veteran” to include women veterans as one of the targeted groups.
- ✓ Launch coordinated social media campaigns across agencies that promote programs, services, and resources to help women veteran small-business owners.
- ✓ Develop new resources and programs to help women veterans who own small businesses navigate the challenges of obtaining [Veteran-Owned Small Business Certification](#).
- ✓ Set goals within federal, state, and municipal agencies for a percentage or number of contracts to be granted to women veteran-owned businesses to mirror what these agencies do with veterans and service-disabled veterans.
- ✓ Work with state workforce development boards to define preferential hiring language and benefits for companies and municipalities that hire women veterans and contract with women veteran-owned small businesses.

Promising Programs



- Many states have technical assistance centers and support staff to help veteran small businesses register with their state.
- The Small Business Administration helps businesses register for [federal government contracts](#).
- The U.S. Department of Veterans Affairs’ [Women Veteran-Owned Small Business Initiative](#) was created to “equip, empower and educate Women Veteran entrepreneurs for success and economic opportunities” (U.S. Department of Veterans Affairs, n.d.).

Department of Defense

A more positive and inclusive service experience may help women veterans have an easier transition to the civilian world.

WE RECOMMEND THE DEPARTMENT OF DEFENSE DO THE FOLLOWING

- ✓ Build and improve upon military-wide equity and inclusion training.
- ✓ Ensure that transition planning starts long before departure and continues beyond service.
- ✓ Ensure that all service members, independent of their leadership, role, or post, receive the same level of transition support, including post-military career planning (pre-transition), support during the transition, and post-transition resources.
- ✓ Create a transition services office that serves all branches in order to share existing resources and create a consistent transition plan for service members.
- ✓ Encourage veterans to look for companies and organizations that have committed to hiring and retaining veterans.
- ✓ Hire an independent external agency to conduct an assessment of the [Transition Assistance Program](#), with a particular focus on the unique experiences, needs, and challenges of women veterans; how the program has worked and not worked for them; and what improvements they suggest. Translate the assessment findings into actions.

Employers

A Syracuse University study found that during service, veterans develop skills in a number of important domains, including work ethic, discipline, leadership, adaptability, and teamwork (Bradbard et al., 2016). Employers need to know the benefits of hiring veterans in general, and women veterans in particular, and draw on effective recruitment and retention strategies.

RECRUITMENT: WE RECOMMEND EMPLOYERS DO THE FOLLOWING

- ✓ Participate in programs that demonstrate and honor employers' commitments to hiring and supporting veterans; these awards alert veterans that a company cares about supporting service members and could be a great place to start or continue their post-military careers.
- ✓ Offer opportunities that reach out to engage veterans, such as paid apprenticeship or internship opportunities like Amazon's Military Apprenticeship Initiative or Lockheed Martin's Apprenticeship Program.

Promising Programs



- The Department of [Labor's HIRE Vets Medallion Program](#) recognizes a company or organization's commitment to hiring and retaining veterans and offering professional development. Employers must meet a number of criteria, such as the number of new veteran hires and the percentage of employees who are veterans. Companies can apply to receive a HIRE Vets Medallion Award and are then recognized on the program's website.
- VETS Indexes strives to identify the publicly traded companies that are most supportive of U.S. military veterans by measuring their performance on various selection criteria, such as company culture, policies, and reservist accommodations. Employers take a survey and conduct an organizational self-assessment. VETS Indexes then gives the company a 3-, 4-, or 5-star award and shares these rankings on its website.

HIRING: WE RECOMMEND EMPLOYERS DO THE FOLLOWING

- ✓ Connect with some of the many local and national nonprofit organizations that offer support and resources for recruiting and hiring veterans and integrating them into the workplace (e.g., as part of their Veterans Strong initiative, Hire Our Heroes meets with interested employers to create tailored veteran hiring programs).
- ✓ Actively work to include, rather than exclude, applicants with military backgrounds by shifting the hiring focus from years of experience in similar positions and degrees earned to attainment of knowledge and hands-on experience.
- ✓ Train human resources professionals on veteran-specific issues and translating military experience to civilian language.

Successful Strategies



- Create profiles of veterans who made a career switch into STEM careers, and develop career tracks or road maps of their steps to success, recognizing and acknowledging the value of their unique experience; this supports veterans in identifying their career goals and seeing a path to achieve them.
- Use *military skills translators*, tools that allow veterans to enter their experiences and be matched to jobs that fit their skills, such as [Cisco's Talent Bridge for Veterans](#); [Lockheed Martin](#), [Amazon](#), and [Boeing](#) are also leaders in developing and implementing such tools.
- The Society for Human Resource Management offers a [Veterans at Work Certificate Program](#)—a free course for human resources professionals to educate themselves about the needs of veterans in the workplace. [Hire Heroes USA](#) offers training to human resources professionals on veteran hiring and retention.
- Ensure that any recruiting software used by human resources does not inadvertently exclude qualified service members, particularly women.

RETENTION: WE RECOMMEND EMPLOYERS DO THE FOLLOWING

- ✓ Study and learn from companies' successful strategies for recruiting and onboarding veterans; we share some of these strategies at the end of this section.
- ✓ Seek women veterans as advisors to better understand the unique needs of women veterans and to more effectively attract them to and retain them in the workplace.
- ✓ Create an in-house position (e.g., a military relations manager) dedicated to engaging with veteran employees.
- ✓ Offer a workplace affinity group or employee resource group specifically for veterans and/or women veterans.
- ✓ Establish a mentorship program to match women veterans with more senior women veterans; if a mentoring program currently exists, determine if it should be reconfigured for the specific needs of women veterans.

Successful Strategies



- Host networking events to match veteran employees with potential peer mentees.
- Ensure that mentoring programs for women veterans use the latest technology and social networking tools to help these women identify and access mentors.
- Consider partnering with a national networking organization (e.g., LinkedIn, Facebook Groups mentoring program) to streamline the mentor–mentee matching process and broaden the reach and impact of such programs.
- Hire women veterans to provide training to civilian women who want to serve as mentors to veteran mentees.

We recommend that smaller businesses that are not able to engage in these actions connect with organizations that focus on hiring veterans, such as Hire Heroes USA, to learn more about how they can support and develop women veterans.



Promising Practices

- [Lockheed Martin](#) partners with government and private organizations to help service members transition into rewarding civilian careers through professional development. The company also employs [Military Relations Managers](#) to support veterans in transition through the hiring process and at the start of their employment.
- Boeing created the [USO Pathfinder® Transition Program](#) to offer support to active-duty service members and their families throughout their military careers and when they transition out of the service. Service members and their families receive an action plan and tailored professional development. A number of Boeing initiatives focus on both women and veterans, including [Women Make Us Better](#), which is dedicated to increasing the number of women in STEM careers worldwide, and [Supporting Veterans and Their Families](#).
- [Oracle](#) offers several resources for veterans, including the Veteran Guidon Program, an onboarding program that matches new employees with mentors, and the Military Affiliated Veteran Employee Network (MAVEN), an affinity group for employees.

Professional Organizations & Associations

Membership-based professional associations provide members with networking connections, information about job opportunities, and industry insights. These associations are typically well-known within industries but aren't always accessible to newcomers breaking into the field. Professional associations are typically key facilitators of industry-specific conferences and the often-unseen connection between employers in the same sector. Membership in a STEM-focused professional association can be a lifeline to the industry-specific information and resources needed to transition into a STEM career. Increasing access to professional associations would not only benefit women veterans but would also bring valuable insight and perspective to association members.

WE RECOMMEND PROFESSIONAL ORGANIZATIONS & ASSOCIATIONS DO THE FOLLOWING

- ✓ Provide a free one-year membership and/or waived conference registration fees for women veterans transitioning from the military.
- ✓ Partner with women-veteran focused organizations to provide training and resources for members on the strengths that women veterans bring to a professional setting.
- ✓ Form special interest groups for members that focus specifically on women veterans.

Promising Practices



- [IEEE Computer Society](#) has a number of [member communities](#) to facilitate networking and information sharing. Their [Women in Computing](#) community “supports women in tech and offers many initiatives to empower their career development and salary potential.”
- [National Society for Black Engineers](#) has a [Women in Science & Engineering](#) (WISE) special interest group with the mission to “Enlighten, Engage, and Empower not only NSBE women in STEM but foster relationships and collaborate with communities and institutions outside of NSBE.”
- [American Evaluation Association](#) has a [Military Veterans topical interest group](#) that aims to “raises awareness and deepens understanding of the application of evaluation theory, methods, and practice in military, veteran, and national security settings.”

Institutions of Training and Higher Education Institutes

Institutions of training and higher education play a key role in assisting veterans with their transitions to the civilian world. These institutions can offer programs, services, and resources to help ensure that needed support is available to veterans.

WE RECOMMEND INSTITUTIONS DO THE FOLLOWING

- ✓ Create “education tracks,” similar to career tracks, that allow military training and experience to count toward entry requirements.
- ✓ Establish affinity groups for women veterans to network and offer support to one another.
- ✓ Offer specific programs and opportunities in STEM disciplines for women veterans.
- ✓ Set up a mentoring program for current veteran students to help entering students navigate the academic world.
- ✓ Seek women veterans as advisors to better understand the unique needs of women veteran students and more effectively attract them to and retain them in STEM careers.
- ✓ Institute a Veteran Students Center on campus, a dedicated space to coordinate support services and resources for veterans—including meeting space, tutoring, assistance navigating and accessing their GI Bill educational benefits, and other academic services—and to help student veterans with the transition from military to civilian life. The Veterans Education Empowerment Act, bipartisan legislation currently in Congress, would offer grants to universities and colleges across the nation who create such centers (Congress.gov, n.d.).
- ✓ Offer tuition and other scholarships specifically for women veterans.

Successful Strategies



- If a mentoring program currently exists, determine if it should be reconfigured for the specific needs of women veterans.
- Ensure that mentoring programs for women veterans use the latest technology and social networking tools to help these women identify and access mentors.
- Consider partnering with a national networking organization (e.g., LinkedIn, Facebook Groups mentoring program) to streamline the mentor–mentee matching process and broaden the reach and impact of such programs.

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