

STATEMENT OF
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HOUSE DEFENSE APPROPRIATIONS SUBCOMMITTEE
ON
WORKFORCE DEVELOPMENT
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INTRODUCTION

Chairwoman McCollum, Ranking Member Calvert, and distinguished Members of the Committee thank you for the opportunity to share my experiences and industry perspective on the challenges facing the future of the defense workforce.

During my nearly 40 years of service, I witnessed firsthand the vital role a strong defense industry has on ensuring our warfighters have the equipment and support needed to never be in a fair fight. We were secure in knowing the best and brightest minds our country has to offer were working to ensure our success. Previous generations mustered in times of need to support the defense industry. Today, American national security faces many threats, including a critical shortage of skilled, educated and cleared personnel to work in the defense ecosystem. We face competitors who have focused on Science Technology, Engineering, and Mathematics (STEM) education and training and built-out their manufacturing capabilities over the last few decades with an eye to supplant us. While our organic manufacturing base has atrophied and society messaged to our youth that skilled-labor jobs are somehow second class, many of our STEM-focused students have targeted the civilian tech sector rather than the defense industry. These factors and others are causing gaps in the future of our workforce with which we must contend. And, without comprehensive investments in all of our nation's human capital, its young people, changes in policy, and scaling of successful workforce programs, we won't be able to fill these gaps much less ramp up expeditiously in times of national need.

Issues Facing the Defense Workforce

In many ways the defense sector mirrors the workforce challenges faced by the greater organic industrial base—unmet demand for STEM educated talent, increasing shortages in skilled

personnel who can build the systems we need to stay competitive, uneven access for all of America's talent pools, and the adjustments to the evolving work environment that the COVID crisis has accelerated.

Last year, NDIA's annual Vital Signs report on the health and readiness of the defense industrial base highlighted some of the issues facing the defense workforce. The gap in US-based human capital was reported by 18% of our companies as the most vulnerable part of their supply chain. When asked to identify the difficulty of finding workers for STEM-related positions, 82% rated it as "somewhat" or "extremely difficult," while 32% said it was extremely difficult to find cleared workers.

As a trade association, NDIA represents the interests of defense companies of all sizes and sectors, with the majority of our membership comprised of small businesses. Adverse impacts to small businesses are felt throughout the supply chain. As these companies seek to transition ideas to capabilities, they face a marketplace where demand is outstripping the supply of STEM talent. Coupled with the competition for new talent, companies cannot afford to lose current talented, highly skilled employees, their most coveted asset, to other sectors or to retirement.

Issues facing the defense industry parallel some in other industrial sectors, but a few components impact the defense industry more than others. The so-called "valley of death" is one example often cited that is particularly challenging for small, innovative companies. Defense work can be inconsistent for small business innovators, which poses challenges to keeping their workforce intact while remaining reliable participants in government contracts. Their highly specialized workforces can be at risk when they are required to staff up and then slow down due to contract delays, to include things like Continuing Resolutions. High-tech innovators need consistency to keep their highly trained workforce intact. They are challenged when competing for labor with

other sectors, and often with competitors, also experiencing personnel shortages. When government work slows down, companies are forced to figure out how to retain their workforce in lulls. Keeping the workforce engaged by providing paid access to training is one way to keep the workforce engaged. Another issue is addressing the contract rates not matching competitive salaries in the highly skilled workspace. It is a challenge for small businesses to retain their workforce when they cannot compete with the pay scales of high-tech commercial corporations.

On the vocational side, we have spent decades as a society selling a four-year degree as the ultimate path to opportunities and career success. While true this is a great path, it is not the lone path. The push for college for all has had the unintended consequence of messaging that skilled careers are somehow second class. That could not be further from the truth. For many with the talent and desire, noble, skilled careers can be both lucrative and fulfilling with the added benefit of not being crushed with student debt.

Another challenge for companies looking for skilled workers are the requirements levied on the types of certifications, qualifications, and workforce conditions for DoD employers which make it a challenge for companies to stay cost competitive. This is not to say all the requirements should be reduced. Rather, it requires an in-depth look at the types of programs that can be put into place so small business employers do not bear the brunt of the cost for this investment.

As I noted before, the defense industrial base has workforce challenges similar to the rest of industry, but unique to our sector is the often-required security clearance. The security clearance process can be a high and sometimes impossible hurdle to clear for many highly qualified candidates. This barrier is particularly detrimental for small companies who find it difficult to first find the right talent and then can ill-afford to pay them while waiting the months it often

takes to get them cleared to work on a classified contract. This prevents many small businesses from entering and remaining part of the defense ecosystem.

Following serious clearance delays and extended timelines, the government has gone to great lengths revamping the system. This is both welcome and heartening. But, there are still fundamental challenges the criteria and process place on defense contractors as they try to hire-on new talent requiring innovative solutions to address exclusionary background issues. These include access to an underutilized immigrant workforce and legal matters from the past use of marijuana, which is now legal in many states. This complicating factor makes the defense industry less appealing or unattainable to many talented people and can be a barrier to entry for both companies and to individual workers.

NDIA's Defense Workforce Project

We believe finding solutions to the defense workforce challenge is fundamental to the National Defense Industrial Association's (NDIA) mission—to work with you and your esteemed colleagues, the Pentagon, academia, and the companies and hundreds of thousands of individual members of the defense industrial base—to ensure this generation and the next have the trained, educated, and clearable defense workforce necessary to protect our nation.

We need a whole of nation approach to tap into all of America's talent pools, increase the number of both skilled workers and STEM graduates while increasing interest in the defense sector as a career pathway. To support this mission, NDIA established the multi-year Defense Workforce Project, known as DWP, in response to the increasing challenges our industry has in getting the right workers with the right capabilities on payroll and delivering for our warfighters and to identify how we can right the ship.

The defense workforce faces diversity and inclusion issues, lagging production of skilled workers through trade school and apprenticeship programs, STEM education limitations, difficulty recruiting and retaining advanced degree and highly skilled personnel, and many issues relating to hiring and retaining a highly cleared workforce. Through the DWP, NDIA is holding its initial Defense Workforce Summit this year on December 9th, with the initial goals to analyze vulnerabilities and identify critical issues by convening multi-sectoral working groups to develop recommendations that speak to the needs and realities of policymakers in Congress, the executive branch, and, importantly, industry as well.

We will disseminate findings and recommendations through targeted communications channels and measure impact and adaptively manage the project. It is vital at the outset to identify where we can make the most significant, fastest difference toward strengthening the defense workforce. Some criteria we are weighing include the maturity of how long the issues have hampered the workforce; does the problem lend itself to a multi-sectoral, team-based approach; are there interested stakeholders willing to lean-in to support recommendations; will the effort fill a gap or need; and is this need addressed elsewhere. These objectives include identifying best practices and programs for scaling nationally, finding awareness and recruitment opportunities, estimating the cost of workforce investments, and developing continuity for outreach operations to deliver the goals set forth by the DWP. Our focus is to help ensure the defense industrial base has a robust, ready, and cleared defense workforce for 2040, capable of equipping our nation's warfighters to face both impending and unforeseen challenges.

Talent Pools

Diversity and Inclusion

To compete and win in great power competition, America needs to draw the best from across all its talent pools. As a nation, we are blessed with a diverse and talented population. As our Vital Signs report shows, there is a need for diversity within the defense sector; this is not just diversity of race and gender but also a diversity of thought. Studies show the most successful teams leverage diversity by approaching a problem set from various angles and developing better decisions and solutions. Looking at the present defense workforce, strides have been made but work remains. For instance, the current cybersecurity workforce does not represent the demographics of the U.S. Recent surveys estimate that two-thirds of cybersecurity professionals are male, and only 26% identify as underrepresented minorities. In STEM education at the Masters of Science level, African Americans only represent approximately 2.4% of the computer science graduates, and women represent only about 27%. To diversify the workforce, we must address access and the underrepresentation of women and minorities pursuing degrees in computer engineering and computer science. A particular focus is necessary for recruiting a diverse workforce, including women, minorities, individuals with disabilities, and veterans, for hard-to-fill positions within government and industry.

In addressing talent pools, we must factor in inclusion to the overall talent acquisition process. It's not just about training and educating more people from under-represented communities but also ensuring they can see themselves as part of the national security enterprise. Our industry is looking at ways to increase interest in the defense workforce by those not traditionally inclined to enter the sector, including recruitment incentives, educational and technical skills training, and workforce development which provide long-term benefits for the defense workforce. While

delivering investments in education and training inclusive to our many varied communities is deeply needed, so too is exposure to the opportunities and sense of mission provided by the defense industrial base. The bottom line is non-traditional pools of talent often don't know of or don't consider jobs in this sector. So, even for those who have made it through an all too narrow education and training pipeline, too few look to careers providing our servicemembers with the capabilities to defend our nation and its interests. A start to addressing this challenge is early and continued exposure from early education through skilled training programs and college education so this sector is seen as both an opportunity and a place where they can make a difference.

Military Education/Skillbridge/Veteran and Spouse Programs

Having served with thousands of great Americans in uniform, I know personally the skills our service members possess and the tremendous impact they can have after service transitioning their skillsets to the private sector or as government civilians. That includes participation in the defense workforce where veterans are a unique opportunity and one we need to further leverage.

One challenge to entry into the defense workforce is a propensity to enter, often from a lack of knowledge of the defense sector. Propensity is shown to come from environmental influences, learning experiences, expectations, interests, and past performance. Veterans and military family members tend to serve and work with the military due to their exposure to the services and having an insider perspective on the positive and negative experiences that come with the proximity to the services available. The cascading effect leads them to be more inclined to seek employment in the defense sector mitigating the propensity challenge.

Veterans transitioning also have an established skillset and have undergone the clearance process. Their familiarity with the sector and understanding of the priorities of the warfighter supports looking at ways to improve the transition from active duty to the defense workforce. Identifying opportunities within the transition process to educate servicemembers on defense industry pathways, whether that is in skilled careers, STEM, or management, would provide an established population with increased opportunities.

Today, this is often limited to the Skillbridge program for those transitioning members able to match with job training for civilian opportunities at the end of their military service. This program, at its best, is a win-win for the company, which is provided a skilled trainee at no cost to them, and the service member, who receives new skills and learns how to transition their military training and expertise into the civilian sector. Today there are nearly 1,300 organizations listed for military members to choose from, but that's out of around 300,000 companies doing business with the Department of Defense. NDIA itself saw challenges in quickly becoming an authorized organization in a timely manner when we identified a member interested in participating in Skillbridge. Due to timing issues, she ultimately had to go elsewhere as we worked through the process. The other issue with Skillbridge is approval remains at the commander's discretion. And, because they often do not have someone to backfill a position, they have little incentive to allow their service member to participate. Fixing this disincentive and expanding the program to where it is the default for transitioning veterans vice a little-known option would be a boon to the defense workforce.

Veteran Readiness and Employment, formerly known as Vocational Rehabilitation, is another avenue where the government could support the pathway to the defense sector with veterans looking to receive job training and education.

Supporting pathways mid-career by allowing for a rotational workforce is another possibility. Efforts to allow active-duty personnel the opportunity to take a leave of absence to go-to industry for a year and then return to the DoD with renewed skills provides a win-win for the service and the industry partner. Often, we only see this at the O-6 (Colonel/Navy Captain) level with the opportunity for Top Level School training during an apprentice type of education within a Fortune 500 company or during Skillbridge. A mid-career opportunity benefits the servicemember with new skills they can bring to their service, helps industry with its knowledge, and provides civilians who haven't experienced the military a better understanding and connection to the end-state customer—the warfighter.

Military Spouse Pathways to the DIB

We believe it is also worth examining spouse employment in the defense sector. We plan to take a closer look in the future at opportunities to collaborate with government programs focused on helping military spouses. For example, My Career Advancement Account Scholarship funding focuses on healthcare, but this could be expanded to include defense sector career pathways. I know from personal experience that our spouses need portable careers. Working to identify positions that remain telework-based provides an opportunity to help spouses remain employed, which supports retention of the military member. An area Congress could assist with is again related to clearance; if a military member is already cleared, the process for their spouse should not require reinventing the wheel. Continuing to support the Military Spouse Employment Partnership is another example of a successful partnership with DoD and companies.

STEM Education Pathways

Educational opportunities are crucial to supporting our workforce today and into the future. We know the United States is educating and graduating too few academically prepared students to address workforce needs in STEM-related careers. The demographics of STEM graduates do not reflect the demographics of the country as a whole. To address future workforce needs, we must address the imbalance in representation in the STEM workforce and increase writ-large the number of academically prepared students at the K-14 level in STEM. Investment is needed to develop youth inclined towards STEM programs, not just by piquing their interest at an early age but by continuing to communicate with the students as they matriculate to university STEM programs including through non-traditional pathways.

Our STEM Pathways Working Group stresses the importance of getting an early start to gauge interest and skill for STEM and cyber-related positions. This is currently being done at many colleges with camps for middle and high school students. We believe agencies' collaborations with STEM camps at universities across the country provide an opportunity to reach the next generation, establish interest, and identify those with a skillset early on. This is being done exceptionally well by NASA and some of the intelligence agencies.

The DWP participants are developing recommendations for policies and practices to increase the numbers and diversity of domestic graduates who are academically prepared to address challenges requiring an understanding and application of STEM fundamentals. One overarching goal will be determining the investments needed to ensure all students and learners have access to and are included in programs that academically prepare students for STEM careers.

NDIA supports the establishment of a coalition by Congress to promote educational opportunities for individuals in the defense industrial base, as included in the House's FY22 NDAA. Ensuring the alliance consists of industry and government contractors' input will be the key to meeting the legislation's intended impact.

As a subset of STEM, the cyber workforce is particularly challenging. The investment in digital transformation and industry 4.0 lags other industrial sectors. A 2019 workforce study estimates that the global cybersecurity workforce needs to grow by 145% to meet the current needs for cybersecurity training professionals. The same report noted that in the U.S. alone, the cybersecurity workforce gap was nearly 500,000. Of the existing cybersecurity workforce, approximately 75% of U.S. workers have at least a B.S. degree, and more than one-third hold an M.S. or Ph.D. degree.

The cyber workforce poses particular challenges due to the necessary security clearances. Recruitment of cyber inclined individuals needs to begin at the high school and even middle school level. Investments in opportunities for this age group can help foster interest in cyber and defense-related careers at an earlier age, helping increase the propensity for those not otherwise considering national security as their focus.

NDIA worked closely with the Cyberspace Solarium and agreed with the findings to involve universities and local colleges to expand cyber-oriented education opportunities. One option may be a rotational workforce, aligning with the pending legislation in the House and Senate, which allows cyber-related positions with opportunities within government and the civilian sector to gain new skills and explore growth opportunities.

Skilled Careers (Career and Technical Education (CTE))

An area too often overlooked is Career and Technical Education, known as CTE, which is an optimal way to create career pathways into the defense industry early. However, we do not see many substantive national approaches, at least ones that are widely known. Programs are localized and are based on relationships built by regional recruiters and supported by state and local government resources. To broaden this pathway requires changing the conversation to recognize college is not the best path for everyone. Counselors, coaches, parents, and teachers need to be informed that a skilled career is a valid path, either as a steppingstone or a long-term career.

Historically, apprenticeships were more commonplace. By bringing back and expanding these opportunities, we can increase interest in defense manufacturing programs and help fill the growing gaps in the workforce. Our near-term objective is to capture and document regional programs and develop best practices that can be replicated, adapted, and scaled at the national level. We perceive there is an eagerness at the federal level, including with proposed legislation to support the expansion of these programs. The DWP Skilled Careers working group addresses the decreasing number of welders, electricians, machinists, and other qualified vocational workers. The goal is to identify areas where the government can encourage the pursuit of these vocational occupations and industry is incentivized to expand its programs.

Addressing the Future of the Workforce and Where Government Can Help

Addressing the litany of issues facing the defense workforce is not a quick fix. DWP's focus is on maintaining a robust, ready, and cleared workforce for 2040 and beyond. This requires thinking beyond today's needs to the future skills and jobs that may not exist today.

Recognizing opportunities for artificial intelligence and machine learning and how they will impact the workforce includes identifying current and possible future issues that could negatively impact the supply chains. This requires a whole of nation approach to both protect and promote American industry to support our warfighters.

A partnership between government and industry is necessary for generational impacts to ensure the future of the workforce. Collaboration is underway in these very halls with the establishment of the Defense Workforce Innovation and Industry Caucus, established with support from both sides of the aisle, in recognition of the need for an open line of communication between lawmakers and the defense industry to educate members and staff on defense industry workforce challenges.

Supporting the future of the defense workforce is a work in progress, and we do not currently know the appropriations necessary to fund these projects. Still, we are confident investments will be essential for the future security of the defense workforce, and we thank you in advance for recognizing this issue and for your support.