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Chairwoman McCollum, Ranking Member Calvert, and distinguished members of the House Defense Appropriations Subcommittee, thank you for this opportunity to share my thoughts with you today about the very important topic of workforce development.

I appreciate your interest in the workforce development challenges our industry faces and I am honored to be here representing Huntington Ingalls Industries' Newport News Shipbuilding division.

My name is Xavier Beale. Since 2018, I have served as vice president of trades for Newport News Shipbuilding (NNS), based in Newport News, Virginia. In this role it is my responsibility to provide and prepare a capable production and maintenance workforce to perform the critical work we do in support of our United States Navy.

Equally important, I represent the interests of thousands of our nation's skilled craftswomen and craftsmen.

This is important to me because I have walked in their shoes. In 1991, I started my shipbuilding career as a pipefitter, and my father still works as a welder to this day. I've also worked on behalf of my fellow shipbuilders in various capacities within our Human Resources division – with an aim to ensure all shipbuilders and future shipbuilders are afforded an opportunity to learn, grow and reach their full potential.

Outside of Newport News Shipbuilding, I served in the Virginia Army National Guard and worked in behavioral health, so I bring a unique perspective and healthy respect and knowledge of the importance of workforce development not only to Newport News Shipbuilding but also the larger maritime industrial base.

I've shared my perspective in our region as a member of the Virginia Board of Workforce Development, the Virginia Foundation for Community College Education board of directors, the Local Initiatives Support Corporation, Hampton Roads local advisory council and Hampton Roads Community Action Program's board of directors.

I'd like to start off with a brief overview of Huntington Ingalls Industries, our parent company, as well as share a little background about our Newport News Shipbuilding division.

I understand that Chairwoman McCollum and several subcommittee members recently visited Naval Base Kitsap and Puget Sound Naval Shipyard. While we are a company that supports our United States Navy, your experience at the public naval shipyards is similar to what you would see at Newport News Shipbuilding. Both private and public shipyards have similar needs and face similar challenges.

Today I will focus on our challenges, what is working well for us, and finally, I will discuss several recommendations and opportunities for your consideration.

Huntington Ingalls Industries

First, who we are.

Huntington Ingalls Industries, or HII, is America's largest military shipbuilding company and defense technologies provider. Headquartered in Newport News, Virginia, we employ approximately 44,000 workers at our facilities throughout the United States and around the world. We also provide a wide variety of products and services to the commercial energy industry and other government customers, including the Department of Energy.

Huntington Ingalls consists of three operating divisions: Newport News Shipbuilding which I will discuss in more detail below, Ingalls Shipbuilding, and our Technical

Solutions Division. All three divisions of our company face similar challenges in the attraction, development, and deployment of their respective workforces. Before a detailed discussion of Newport News Shipbuilding's workforce development posture, I would like to highlight briefly some of the unique aspects of the workforce needs at Ingalls Shipbuilding and Technical Solutions Division.

Ingalls Shipbuilding

Ingalls Shipbuilding is located in Pascagoula, Mississippi on 800 acres of land along the Pascagoula River. Employing 11,500 employees, Ingalls is the largest manufacturing employer in Mississippi and a major contributor to the economic growth of Mississippi and Alabama. Ingalls is the largest supplier of U.S. Navy surface combatants, and has built nearly 70 percent of the U.S. Navy fleet of warships.

On average, Ingalls hires over 2,000 new employees each year. Over the next two years, Ingalls will need to hire over 6,000 new employees to support production needs.

To meet this ever increasing workforce demand, Ingalls has developed a "grow your own" approach to workforce development by creating awareness at the earliest stages of learning with K-12 partnerships, particularly, in high schools across the Gulf Coast region; providing and supporting pre-hire, unpaid training to the unemployed and under-employed; hiring of entry-level employees at competitive wages which includes paid training and upward mobility of wages post-training.

Technical Solutions Division

Comprising more than 7,000 professionals worldwide, Huntington Ingalls Industries' Technical Solutions division provides mission-critical national security solutions to government and commercial customers worldwide. The needs of these government and commercial customers are diverse and unique, and therefore so are the skill sets required to meet our customers' requirements. One of the most urgent issues facing this part of our business is the development of a sustainable source of cleared, cyber

professionals to meet the emerging needs of our customers. We appreciate the Subcommittee's focus on this critical issue and we are supportive of efforts to grow the cyber workforce throughout both government and industry. In other parts of our business, Technical Solutions has implemented best practices from Newport News Shipbuilding's Apprentice School and trades training programs to create similar pipelines of talent acquisition and development for the performance of work in support of the Department of Energy Weapons Complex, including at Los Alamos National Laboratory in New Mexico. Workforce and talent development is a key enabler of mission success for Technical Solutions Division and will continue to be a priority for our business.

Newport News Shipbuilding

Newport News Shipbuilding was founded 135 years ago and is a division of Huntington Ingalls Industries. At Newport News, we design, build, maintain and inactivate nuclear-powered aircraft carriers and submarines. Our facility spans 550 acres and we are the Navy's sole designer, builder, and refueler of aircraft carriers, and one of two companies able to build nuclear submarines. Currently, we are building the new Ford-class aircraft carriers and Virginia-class fast-attack submarines, and performing Refueling and Complex Overhaul (RCOH) on Nimitz-class aircraft carriers.

The ships we build carry out some of our country's most important missions, and there is no other place in the world capable of doing the work we do.

At 25,000 strong, we are the largest industrial employer in Virginia. Many of our shipbuilders are third, fourth and even fifth generation, and we boast more than 1,000 master shipbuilders, a title we give to our employees who have worked at Newport News for 40 or more consecutive years.

As Virginia's largest industrial employer, we are the heart of Hampton Roads and a bedrock for our community and state. But shipbuilding is the ultimate national effort with

a national impact. In fact, there are over 2,500 supplier businesses from across all 50 states employing several thousand workers who help us build and maintain our nuclear Navy fleet.

Today, we are working on 37 ships and supporting the Department of Energy's Kesselring site, which trains the sailors who operate nuclear-powered ships. In fact, Newport News Shipbuilding is busier now than at any time over the last four decades.

How we accomplish our work is also undergoing a transformation. We are moving from traditional paper blueprints to digital formats, making work easier to understand and visualize. Additionally, we use technologies like robotics, laser scanning, augmented reality and additive manufacturing – or 3D printing – to build ships.

Our Integrated Digital Shipbuilding initiative—or iDS—is the future of shipbuilding. Not only does it enable cost savings, improved predictability, and ultimately lower lifecycle costs for Navy ships, it also enables an inexperienced workforce by accelerating their journey to proficiency. We believe there is a role for expanded federal investment in iDS given its potential across the nuclear shipbuilding enterprise, from new design and construction in the private shipyards and our supplier base all the way through the ship's operation and maintenance lifecycle overseen by the Navy and the public shipyards.

Our Workforce Development and Hiring Challenges

While this digital transformation and our workload are good news, they also present significant challenges in terms of hiring a skilled workforce.

Over the last five years, Newport News Shipbuilding has hired more than 17,000 people, and we will need to hire an additional 7,000 over the next 5 years, of which 50% will be within skilled trades.

Being a Navy contractor adds additional requirements that challenge an already strained labor pool. Our contracts require that applicants be U.S. citizens, pass a background check and hair follicle drug screening, and a physical agility test before they are hired. These requirements alone significantly limit the available talent we can hire.

And while the work we do is rewarding and allows us to play a significant role in our nation's defense, we grapple with a widespread devaluing of technical education and manufacturing jobs. Competition for employees is fierce. Not only are we competing against companies that offer remote work options, we are competing with a society that does not naturally gravitate to shipbuilding as a "first option" for their children.

In Hampton Roads, we have numerous ship repair and public yards ramping up their workforce as they take on greater ship repair and overhaul work. An off-shore wind manufacturing hub is being established that will compete for similar talent, and significant road and tunnel construction projects are drawing from the same limited pool of skilled laborers. But, Hampton Roads is not unique – there are many regions within the U.S. that have an insufficient supply of skilled trade workers to meet the maritime industrial needs.

To meet our hiring goals, we partner with more than 20 veterans' organizations and local military installations to hire veterans. We recognize the skill, leadership and strong work ethic that our transitioning service members offer to the private sector. We also work with several programs to recruit people that are differently abled.

And like other companies, we take our recruiting efforts on the road. We developed a mobile recruiting center by outfitting a trailer that showcases our Integrated Digital Shipbuilding efforts to demonstrate to students from K-12, community colleges and four-year college campuses what a career in today's shipbuilding industry looks like. By bringing shipbuilding to them, it helps us change the narrative and combat the stereotypes that may be associated with manufacturing.

And since no one shows up at Newport News Shipbuilding with a degree in shipbuilding, we make significant investments in the training and development of our people. As such, we:

- Spend over 100 million dollars on workforce training and development each year.

- Operate The Apprentice School, which for more than a century has served as a key component of our workforce development effort. Over the years the school has evolved into a leadership academy, and offers registered apprenticeships in 19 shipbuilding trades and eight optional advanced programs, accredited associates degrees and accredited engineering degrees.

- We also provide a robust trades training program and partner with area high school CTE programs, and community colleges. Through a partnership with local Virginia community colleges and the Virginia Ship Repair Association, we've helped to develop a pre-hire training program in 7 different trades that creates a skilled talent pipeline for the Hampton Roads maritime industrial base. Again, we are committed to driving solutions that will improve not just the health of Newport News Shipbuilding but the entire maritime ecosystem.

We also understand the need to build a workforce pipeline that will help sustain our business for future decades, and we believe in starting early.

So we partner with our area school systems, and through a program we call Shipbuilders Educating and Engaging Kids, or SEEK. We send our shipbuilders into Pre-K through 12th grade classrooms to expose students, parents and teachers to our company and the opportunities that a shipbuilding career offers.

We also have a program at the shipyard we call GEMS. The acronym stands for "Girls with Engineering Minds in Shipbuilding." It is an after school program in underserved

middle schools geared toward girls who are interested in pursuing engineering and other STEM careers. In 2019, we added a similar program for at-risk boys called YME - or Young Men in Engineering.

To educate our new workforce, we must reshape how we are training our shipbuilders to ensure they are equipped to work in a digital world. Four years ago, Newport News Shipbuilding teamed with Old Dominion University (ODU) to create the Virginia Digital Shipbuilding Workforce Program. Under this initiative, ODU is incorporating aspects of digital shipbuilding into engineering and design and IT courses while also looking to more effectively incorporate digital components into trades training programs.

We are also modernizing our curriculum to include more digital content at The Apprentice School, and we recently established Youth Builders, a pre-apprenticeship program designed to strengthen high school students' readiness to succeed in our apprenticeship program.

We've also partnered with the City of Newport News and Old Dominion University on a new state-of-the-art facility within Brooks Crossing, which is a new development in Newport News' Southeast community, an urban, low-income community not far from the shipyard.

A portion of the building is used by our shipbuilders to implement new digital technologies into our engineering and manufacturing processes. But the best part is the first floor of the building, where kids in the Southeast community are introduced to STEM-related jobs and fields of study. It's a wonderful opportunity for us to grow and develop a new generation of engineers, scientists and mathematicians.

While all of these efforts have worked well for us, rightsizing the talent pipeline is not something Newport News Shipbuilding can do alone. It takes partnerships at the regional, state, and federal levels; innovative programs; and financial investment.

We believe effective workforce development starts with public school curriculum.

Over the years, K-12 education has been standardized around core subjects with the goal of getting students into colleges. Until recently, career and technical education was marginalized or removed from many secondary schools.

If students are going to choose to enter Career and Technical Education (CTE) training programs in high school, they need to be exposed to and sold on these career pathways as early as middle school.

In Hampton, Virginia, the public schools have transformed their four high schools into 16 academies focused on 41 career pathways. Students begin learning about careers in middle school to inform which academy they choose to attend in high school.

In Danville, Virginia, and surrounding counties, public schools have implemented the Great Opportunities in Technology and Engineering Careers (GOTEC) Career Connections program that gives middle school students hands-on engagement with equipment like welding simulators, CNC machining simulators and robotics through a gamified curriculum. Although the program is still in its infancy, it is not only causing students to think about high school CTE programs, it is also diversifying the students who pursue trades careers by attracting more women.

A recent grant awarded under the Defense Manufacturing Community Support Program will allow for GOTEC Career Connections to be piloted in two school systems in Hampton Roads.

Regional Training Centers in defense manufacturing hubs are also an effective approach to workforce development.

Too often, schools all want to build the same training centers and offer the same programs. Each public school division and community college wants its own training centers even if they serve the same metro area and are only a few miles apart. Regional training centers are more cost-effective in that they can serve multiple age groups and draw from the entire region.

A regional training center does not prohibit schools from having in-house training, but it provides an overall hub around which all training is based. The regional center can monitor employer demand signals, standardize curricula around employer needs and create clear pathways from high school to community college to employment within their specific region.

In addition to Danville's GOTEC Career Connections program, the community offers a regional training center that reaches their high schools, community colleges, and higher education centers. Led by the Institute for Advanced Learning and Research (IALR), the regional training center is made possible by more than $80 million in investment in workforce development facilities and equipment – largely financed through tobacco settlement funds, local community foundations, and economic development funds.

Thanks to support from the Department of Defense's Industrial Base and Sustainment (IBAS) office, IALR recently developed the Accelerated Training in Defense Manufacturing (ATDM) program to allow the defense industrial base to leverage its training infrastructure. Newport News Shipbuilding provided curriculum development support and will have participants in the program's pilot cohort.

Training programs must be accessible and affordable.

One of our most successful short-term training programs at Newport News Shipbuilding is our Marine Trades Training (MTT) program that provides students with two to three weeks of pre-hire training before they join the company. But even this program has barriers to access.

The program requires students to be in the training facility for over eight hours per day and many people in low-wage jobs cannot afford to be without an income during the training period. Transportation, childcare and other basic needs also prevent some potential trainees from seeking workforce development opportunities.

Newport News Shipbuilding is seeking to address these challenges by partnering with our local workforce council and community colleges to develop HR STRONG--the Hampton Roads Skilled Trades Rapid On-ramp Network for Growth. This program will

enhance the MTT program with level 2 and level 3 training and provide eligible trainees with a stipend and wrap-around services while they complete training.

We have also taken advantage of two state funded programs in Virginia that remove cost barriers for trainees. The New Economy Workforce Credential Grants and the new "Get a Skill, Get a Job, Give Back," or G3 program will pay for most, if not all, costs for non-credit workforce credential training programs at Virginia community colleges.

In recent months, federal stimulus programs like the CARES Act have provided funding to make training programs, such as MTT, more accessible to underserved populations, but those initiatives are not permanent.

And programs such as HR STRONG, G3, and the New Economy Workforce Credential Grants are ripe for replication and additional funding from federal, state, and private sources.

Workforce development collaboration across the regional defense industrial base would pay dividends.

As I mentioned earlier, Hampton Roads has a robust defense industry. The region's military bases, original equipment manufacturers (OEM), shipbuilding and repair facilities and suppliers all share similar workforce needs but tend to work independently to address their challenges.

We've seen examples in places like New England and Philadelphia where a regional approach among the defense industry has worked well. For example, the Southeastern New England Defense Industrial Alliance (SENEDIA) leads regional submarine workforce development efforts by leveraging established pipelines in Connecticut and Rhode Island, sharing best practices, and supporting the development of similar pipelines in Massachusetts and New Hampshire. They have an enviable record of success with nearly 4,000 trainees placed into jobs in the regional industrial base to date.

A similar initiative is currently being established in the Philadelphia area to align existing workforce development pipelines in support of growth in federal work at the Philly Shipyard.

We believe there's potential for this same synergy in Hampton Roads where we have several strong organizations seeking to address the region's workforce development challenges. The Hampton Roads Workforce Council, the Maritime Industrial Base Ecosystem, and the Virginia Ship Repair Association are all good partners serving valuable roles, but none has been able to take on the centralized coordination role that has proven successful in New England.

The Way Ahead

There's no doubt major hurdles exist to building the maritime workforce that our shipyard—and our maritime industrial base—will need to ensure long-term success. But these hurdles are not insurmountable, as evidenced by some successful efforts being pursued across the country that are worthy of emulating and expanding.

But industry – and individual businesses – cannot do it alone. With that in mind, here are five ways you can help us be more successful:

First, be our ambassador for standardized curricula.

All Navy shipyards have needs for craft workers with similar skillsets. Some have unique needs – for example, our workforce at NNS has to be trained up to Navy Nuclear standards. But the basics are the same across industry.

Can the Navy work to develop standard pre-hire curricula that can be adopted and credentials that can be awarded in all Navy communities? Standardized curricula can be easily shared and implemented in communities around the country. And credentials tied to existing Navy technical publications will help our hiring and training offices identify the right candidates for a given job and determine what level of training is needed after joining the company.

Second, incentivize collaborative approaches in regions and government.

The examples I mentioned earlier in New England and Danville, Virginia, demonstrate that good things can come from a regional approach. Grants, tax credits, and other incentives at both the state and federal levels can encourage a joint regional effort.

In the same vein, consider cross-agency coordination. Multiple federal agencies, such as the Department of Labor and the Department of Education, have a role in workforce development and each makes grant programs available every year to support different aspects of workforce development. By coordinating their programs with the Department of Defense, grant programs could better address the needs of the defense industrial base.

Third, develop a dedicated source of workforce development funding that meets maritime defense needs.

Over the past few years, the Department of Defense's Industrial Base Analysis and Sustainment (IBAS) office has been DoD's primary mechanism for workforce development investment. IBAS has invested in strong programs, including some that I mentioned earlier. We recognize that the Subcommittee's strong support for IBAS in previous appropriations bills has been a key enabler of these investments, yet additional funds and guidance are still needed for capital, curricula, and staff if we are going to be successful in meeting our maritime workforce development challenges. Recognizing that all defense contractors, including the supply base, have significant workforce development needs, we should look to dedicated sources of funding in those regions. Perhaps this could entail including a workforce development incentive in all contracts or developing a new workforce development line item in the Department of Defense or the Department of the Navy's budget.

Because of the strong Subcommittee support in previous defense appropriations bills, there have been recent submarine and destroyer contracts which included funds that shipbuilders can designate to key suppliers to help build their capacity and infrastructure. Similar funds could be established to improve the capacity of workforce partners.

Fourth, support greater access to training for underserved populations.

The lesson we have learned from our Marine Trades Training program is that just because training is made available does not mean that everyone can access it. In fact, some who stand to benefit the most from learning a trade experience the greatest barriers to access such as lack of transportation, child care, or sufficient financial resources to allow them to enroll in training programs.

Long-term, federal subsidies to assist with these needs – like those provided during the pandemic through the CARES Act – would make such programs more robust and accessible.

And finally, support digital innovation at all levels of the defense industrial base.

At Newport News Shipbuilding, we are well into our digital transformation. But soon, we will need all of our subcontractors and suppliers to work from the same technology, and not all of them are prepared for that.

We need the support of the Subcommittee and Navy to help to ensure suppliers are ready for this transformation in their infrastructure, equipment and workforce. Our partners at Old Dominion University's Digital Shipbuilding Workforce Program are well-positioned to partner and share training best practices.

At a time when we need to rebuild the defense industrial base, we cannot afford to lose existing contractors and suppliers because they are not keeping up with the digital transformation that is underway.

Conclusion

In the Department of Defense's fiscal year 2020 Industrial Capabilities Report to Congress, it refers to the defense industrial workforce as "an endangered species." The report identifies human capital as a specific risk to the shipbuilding industry, stating that "in addition to the challenges found in other manufacturing sectors throughout the U.S., shipbuilding has unique challenges, such as too few replacements for retiring workers, insufficient labor mobility, the perception of unattractive physical working conditions, and the cyclical nature of shipbuilding."

There is a great need for increased federal investment in workforce development to support the overall growth of shipbuilding talent. The stakes are significant in light of the U.S. Navy's requirements for the capabilities this workforce provides. In an economy used to point and click shopping, these are capabilities that are developed and delivered over years, and the workforce must be nurtured and maintained. With your help, and the partnership of other local, state and federal allies, the defense industrial workforce will prosper, and be in a better position to provide the support our Navy needs, and our nation deserves.

I'm excited for what the future holds, and appreciate being here to address the specific opportunities and challenges ahead.