

## Honorable Heidi Shyu Opening Statement for Senate Confirmation Hearing

Chairman Reed, Ranking Member Senator Inhofe, and Distinguished Members of the Committee, thank you for the honor to appear before you today. I would like to thank President Biden and Secretary Austin for nominating me to the position of the Under Secretary of Defense for Research and Engineering, and this Committee for considering my nomination.

My grandfather, a WWII-era Air Force squadron commander, had the great opportunity to come to the United States for two years of training. To this day, I remember him saying how much he appreciated the generosity of the Americans. My late grandmother who passed away at the age of 103, told me “don’t stop working and make something of yourself.” Both of them were my guiding light.

I came to this country at the age of eleven and half from Taiwan and I am extraordinarily grateful for the tremendous opportunities that I have had in my career. In 2012, I had the honor and privilege to be confirmed as the Assistant Secretary of the Army for Acquisition, Logistics, and Technology. In my five years in the Pentagon, I had the fortune to work with tremendously dedicated military and civilian personnel and with patriotic contractors across the U.S. This was an experience of a life time that I will treasure forever.

Today, I am honored to be considered for the position of Under Secretary of Defense for Research and Engineering. The mission of furthering science, technology, and innovation across the Department of Defense could not be more important than it is today. As Secretary Austin has stated, China is the pacing threat for the U.S. military and the challenges facing our military are both diverse and complex, ranging from sophisticated cyber-attacks, to supply chain risks, to hypersonic missiles, to bio-threats. To address these challenges, the Department must harness our Nation’s incredible innovation to stay ahead of our adversaries.

Thankfully, there is no shortage of innovation. As a Nation, we are able solve incredibly tough problems by working collaboratively towards a common cause. DoD can collaborate more strongly with our Allies and partners to share insights and lessons-learned from our combined exercises and experiments. DoD can also work more closely with the commercial and defense industries, as well as its ecosystem of universities, Government labs, federally funded research and development centers (FFRDCs), and university affiliated research centers (UARCs). By working collaboratively, DoD can address our Nation’s toughest challenges.

When collaborating with the commercial sector in particular, DoD should leverage the commercial sector’s tremendous investments in research and development and accelerate DoD’s ability to incorporate innovative, commercial technologies. Inside the Department, DoD should avoid replicating private sector research and should focus its investments on the innovative technologies that DoD uniquely needs but that the commercial sector is not developing on its own.

DoD should also take steps to change its internal investment strategy. Today, sustainment makes up 70% of total weapon system cost, with development and procurement making up 30%. DoD should strive to flip this ratio and invest more in the development of new technologies than it does in the sustainment of legacy systems. To begin changing this ratio, I believe that several core principles should guide DoD's pivot towards modernization. For example, DoD should:

- Prioritize investments in emerging technologies and capabilities such as artificial intelligences, hypersonics, and synthetic biology;
- Create networked systems-of-systems that collect and share information securely, and are robust against cyber and electronic warfare threats;
- Reduce the military's logistics footprint by developing advanced materials and increasing fuel efficiency;
- Design secure, robust, and upgradable software; and
- Widen the pipeline of STEM talent and ensure that talent is diverse.

Where shifting away from legacy platforms is challenging, DoD should look for opportunities to insert the innovative technologies by leveraging modular open architectures and standard interfaces. Going forward, DoD should shift away from its traditional linear system development process and adopt a nimbler approach to iteratively design, test, and fix systems. By leveraging rapid prototyping, collecting user feedback from testing, incorporating that feedback into digital redesigns, and utilizing advanced manufacturing, DoD can shorten system cycle times, field capabilities more rapidly, and deliver the military advantage that this Nation needs. Flexible contracting approaches will be critical to enabling this approach and, if confirmed, I look forward to addressing contracting issues collaboratively with the Under Secretary of Defense for Acquisition and Sustainment.

Again, collaboration—across DoD, the private sector, and with allies and partners—is what is required to address the tough technical challenges that are facing our military and the Nation. Should I be confirmed, it would be a tremendous honor and privilege to again serve our Nation at the Department of Defense and to shape the Department's research and engineering, ensuring that our warfighters are the best equipped and second to none. Thank you.