**Senate Armed Services Committee**
**Advance Policy Questions for Dr. Aprille Joy Ericsson**
**Nominee to be Assistant Secretary of Defense for Science and Technology**

## Duties and Qualifications

**What is your understanding of the duties and functions of the Assistant Secretary of Defense for Science and Technology (ASD(S&T))?**

It is my understanding that the Assistant Secretary of Defense for Science and Technology (ASD(S&T)) is a direct report to the USD(R&E). The ASD(S&T) reports to the Under Secretary of Defense for Research and Engineering (R&E) and is one of three assistant secretaries in the office of the USD(R&E) and works to ensure the United States maintains an enduring technological advantage over peer adversaries. The ASD(S&T) is responsible for the oversight of and advocacy for the Department of Defense's S&T enterprise, including workforce and laboratory and test infrastructure policy, Federally Funded Research and Development Centers, and University-Affiliated Research Centers. The ASD(S&T) office also oversees a broad portfolio of S&T programs along four lines of effort: foundations or basic research, futures or critical technologies, research protection, and information management. These programs include: Basic Research, Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR), and Manufacturing Technology, which is comprised of the Department's nine Manufacturing Innovation Institutes. Furthermore, the ASD(S&T) office is responsible for technology and program protection. The USD(R&E) has identified fourteen critical technology areas, and the ASD(S&T) has responsibility for four "emerging" areas, which are Advanced Materials, Biotechnology, FutureG, and Quantum Science.

Additionally, the ASD(S&T) chairs the S&T Executive Committee (EXCOM) composed of the S&T executives from the Services and Agencies. The S&T EXCOM provides a forum to unify and coordinate the DoD's S&T strategy, budget, and execution decisions. Through the S&T EXCOM, USD(R&E) oversees, coordinates, and aligns investments to maximize the Department's resources, avoids unnecessary duplication, and creates future capabilities.

**What background and experience do you possess that qualify you to perform these duties?**

Throughout my professional career at NASA, I have led teams and collaborated with US Government, industry, and international stakeholders to tackle the most pressing technological challenges of our time. I will bring that same know how to the toughest technological challenges our warfighters are facing in the battlefield. I have contributed to ground-breaking discoveries such as incorporating pioneering detector systems, cryogenic refrigerators, and optical mirror mechanisms into space missions like the James Webb telescope that enabled scientists to peer into the far reaches of the universe and see the first moments of our universe forming. Additionally, I oversaw efforts by NASA to develop novel technologies to accurately map the surface of the Moon; high resolution mapping can widely benefit our troops in unknown terrain.

My broad experience and technical knowledge closely align with the Department's critical science and technology areas. I will ensure that OASD(S&T) supports technology-informed concept development, facilitates rapid prototyping and experimentation, and champions innovative technologies to cross the "valley of death(s)" and transition into programs for the Services.

I am also very familiar with the tools the ASD(S&T) has to leverage some of government's most important partners: industry. Through the SBIR/STTR program, the ASD(S&T) oversees the Department's efforts to harness small business industry innovation and helps transition promising technologies from industry, small businesses, and non-profit business, typically academia into strategic capabilities for the Department. In my current position, I lead the proposal review, selection process, progress assessment, and policy enforcement for participants in the SBIR/STTR program. This unique experience prepares me to streamline the Department's efforts with small businesses and to ensure industry partners understand the breadth of opportunities they have to work with the Department. I will be able to strike a balance between facilitating small business innovation while also adhering to the guidelines needed to protect these companies from encroachment by foreign adversaries.

Next, I am passionate for and developing our S&T talent pipeline and workforce. My global STEAM (Science, Technology, Engineering, the Arts, and Mathematics) outreach has focused on the need to inspire and hire the next generation of engineers and scientists. My service as a spokesperson for NASA has broadened the world's scientific knowledge and extended America's partnerships with industry, academia, other government agencies and allied partners. I've been equipped with lessons learned and STEM education strategies through mentoring diverse cohorts of students and interns, teaching K-12, collegiate professorship, board membership, and chair leadership. I envision that the Department will further benefit from my broad and all-encompassing recruitment strategies to attract and retain the best and brightest for our essential military workforce. My alliances with NASA centers, FFRDCs, UARCs, other government agencies, academia, and professional organizations across the globe have given me the insight to identify innovation, creativity, and ingenuity and lends me access to a network with an arsenal of subject matter experts from various disciplines and affiliations.

Lastly, I have abided by and enforced rules and regulations (e.g. ITAR) for maintaining the security of our data and technology and the safety of people and hardware. Due to the competition-sensitive nature of my role as NASA's New Business Lead, I scrutinize the sharing of cost-estimates, unpatented designs and concepts, partnering agreements, and collaborators' track-records and affiliations. If I am confirmed I will remain vigilant and maintain those same practices in the Department.

**Relations with Congress**

**What actions would you take to create a productive and mutually beneficial relationship between the office of the ASD (S&T) and Congress generally, and this Committee, in particular?**

If confirmed, I am committed to maintaining a close working relationship with Congress in general, and this Committee, in particular. I will make myself and my staff available to you and your staff when requested. I will also commit to regular briefings and updates on the programs, activities, and initiatives being undertaken by the S&T office and will seek out regular interaction with you and your staffs. Lastly, I will ensure timely transmittal of all reporting requirements and make my team available to address any follow up questions concerning those reports.

If confirmed as the ASD(S&T), implementation of these actions would contribute to building a positive and productive relationship between the Office of the ASD(S&T) and the SASC, ultimately fostering collaboration for the benefit of our national defense and security.

## Office of the Assistant Secretary of Defense for Science and Technology

**The position of the Assistant Secretary of Defense for Science and Technology was created in the FY23 NDAA, but the structure and functions of the office are based on an internal reorganization by the Under Secretary for Research & Engineering (USD(R&E)).**

**If confirmed, what is your vision for the ASD(S&T) office?**

The United States must leverage the expertise of our workforce and the strength of our partnerships to maintain our technological superiority. I am committed to supporting the development of the necessary technologies to protect and empower our nation's warfighters. My long-standing experiences leading teams to tackle generational challenges will help achieve this vision. My vision necessitates fostering a culture that promotes collaboration, innovation, commitment, continuous learning, and requires the formulation and enforcement of the Department's critical technology protection policies. To effectively implement any vision, one needs to have the entire buy-in of the workforce. Together the ASD(S&T) office teams will review measurable milestones with thorough assessments and make tough decisions about the goals and future of its projects. We will divest when necessary to make room for critical technologies.

As we move forward with a vision to implement our mission, evaluation, and risk assessment of each our basic research and developing technologies must be completed to realize the proper balance between government and commercial capabilities. For instance, although hypersonic technology and quantum science have no near-term commercial market, these critical technical areas need immediate attention. Understanding the rapid growth of the commercial space sector is a great example of how the Department can incorporate innovative commercial capabilities and production processes.

**Could you explain the major functions that will be assigned to you, if confirmed, and the relationship you will foster with the Deputy Assistant Secretaries under you?**

If confirmed, my major function will be oversight and policy leadership across the Department's science and technology program, spanning the full ecosystem from basic research to advanced development. Within this portfolio I will have responsibility for many programs including foundational building blocks such as the DoD laboratories, Federally Funded Research and Development Centers, university research and STEM programs, research and program protection, the Small Business Innovation Research/Small Business Technology Transfer Program, manufacturing technology, and future focused critical technologies from quantum to biotechnology. My responsibilities will include providing oversight and building policy improvements to protect the Department's S&T investments. In my leadership capacity, I will be focused on working with the military services and agencies to develop future S&T strategies and ensure S&T investments across the Services and within my portfolio are complementary and make progress towards Department-wide technology goals. Developing strong and collaborative relationships with the Deputy Assistant Secretaries is of the utmost importance to meet and exceed our S&T program goals. I will work to empower, enable, and align each Deputy Assistant Secretary to ensure we are rowing in the same direction.

**If confirmed, what recommendations, if any, would you make regarding changes to the organization, management, and resourcing of this office to better execute its duties and responsibilities?**

The USD(R&E) recently reorganized the whole organization to increase efficiency and establish clear lanes for potential ASD positions should Congress provide these ASDs in statute. This overarching structure was approved by the Deputy Secretary of Defense. Further, my goal is to set a 100-day review of the office before I make any moves to change or alter current structures. At this time, I believe it would be premature to describe any further changes until after confirmation and after I have some experience being in the role and seeing how the organization functions.

**Are there other resources, including staffing billets, that you believe the ASD(S&T) office requires to achieve its mission?**

I appreciate this question and am comforted to know that the President's budget adequately funds the mission for ASD(S&T). Whether there are sufficient billets will be something that I will need to address once I am confirmed and have the opportunity to review the organization and its functions.

**If confirmed, how would you ensure effective collaboration between your office, the other Assistant Secretaries within USD(R&E), the components within the Office of the Under Secretary of Defense for Acquisition and Sustainment, and the military services?**

I am pleased to understand that there is already a regular tag-up among the three heads of each ASD office, and I look forward to continuing or increasing this partnership. Fortunately, the

ASD(S&T) has a formal role on many of the councils and working groups run by the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)) including the Industrial Base Council, the Biodefense Executive Committee, and several high-level manufacturing committees. In addition, S&T routinely engages on many areas of mutual interest regarding program protection, small and nontraditional innovation business efforts, critical technology areas like biotechnology, etc. Formal connection with the Services and Agencies is facilitated through the S&T Executive Committee (EXCOM) that the ASD(S&T) chairs, which provides a regular engagement, including an annual program review, with senior S&T leaders to work on collaboration and elimination of duplication. Additionally, I look forward to personal office calls and engagements with the many leaders across the military services, A&S, my future ASD colleagues in R&E, etc. Should any specific topic of concern or interest come up, I look forward to working through them with my future counterparts.

**In the organizational chart for the USD(R&E), the Defense Technical Information Center (DTIC) is overseen by the ASD(S&T). How would you describe the functions and value of DTIC to the Department of Defense (DOD?) Can you provide some examples of how DTIC is supporting the Department and the research enterprise?**

The Defense Technical Information Center's (DTIC) most critical function is as the repository for all Department funded S&T information (e.g., reports, papers) up to SECRET/NOFOREIGN level. DTIC also maintains updated budget information and descriptions of on-going research efforts. One of DTIC's major contributions to the research enterprise is that it allows anyone in the research enterprise to perform a full literature search before any new S&T program is started, providing the researcher with an understanding of what has been done before, which significantly reduces duplication. DTIC also now publishes journals on selected topics (e.g., hypersonics) that can be done at the Controlled Unclassified Information (CUI) level thereby providing researchers a peer reviewed outlet for publication that protects their efforts.

**If confirmed, what recommendations would you have for improving the operations of DTIC, as well as how to improve its integration to better support the functions of the Department and the research enterprise?**

SASC language in the FY 2021 and FY 2022 NDAAs pointed out significant concerns with how DTIC was performing its mission. This interest to see improvements in the organization led to an external study and the USD(R&E)'s plan to modernize the effort. Early in calendar year (CY) 2022, the USD(R&E) approved modernization plan was sent to Congress outlining the steps to be taken to address the concerns raised by both Congress and the study's findings. DTIC is well underway to implementing that plan, including moving capabilities to a secure cloud and making use of commercial services for important items such as search capabilities. As I understand it, DTIC support to DoD is being dramatically improved and I am certainly interested in ensuring that these improvements continue.I look forward to coming back to this committee to present the progress the team is achieving in this area.

**In the organizational chart for the USD(R&E), the Joint Hypersonics Transition Office (JHTO) is overseen by the ASD(S&T).**

**How would you describe the functions and value of JHTO to the DOD? Can you provide some examples of how JHTO is supporting the Department and the research enterprise?**

The Joint Hypersonics Transition Office (JHTO) was established in the FY 2020 NDAA to develop a roadmap for hypersonic programs, establish a university consortium to do foundational and applied hypersonic research and development, and support the hypersonic workforce. Since then, the JHTO has established the University Consortium for Applied Hypersonics that enables the best and brightest researchers to conduct hypersonics research at the protected CUI level, greatly increasing the number of students and professors who can support the US development program. JHTO works with the Principal Director of Hypersonics to establish a S&T roadmap and coordinate the S&T community's leap-ahead technology program. Additionally, the JHTO has established a robust workforce program that is enhancing existing STEM efforts with a focus on hypersonics.

**If confirmed, what recommendations would you have for improving the operations of JHTO, as well as improving its integration to better support the functions of the Department and the research enterprise?**

I understand that the JHTO has worked hard over the last year to become more fully integrated into the hypersonics enterprise. Currently the office is getting high marks from the community for its critical role in university research and S&T coordination and the statutorily required quarterly reports to Congress should highlight this progress. I am certainly committed to providing any additional support if the integration of JHTO warrants it and I look forward to coming back to this committee to present the progress the JHTO team.

## Major Challenges and Priorities

**What are the major challenges facing the science and technology enterprise, in your view?**

The S&T enterprise faces quite a few challenges. First, it is vital that the Department works to ensure that critical warfighting S&T technologies developed by the DoD, its performers, and commercial companies, can be rapidly transitioned to field items that improve Defense capabilities. Secondly, I am very focused on the need to preserve and enhance our S&T workforce, especially in emerging technical areas critical to DoD (e.g., quantum, biotechnology, futureG, advanced materials, and AI). Third, it is vital that the Department and Congress partner in updating our degraded DoD laboratory infrastructure so that the best scientists and engineers have the facilities to do cutting edge work. And last but not least, balancing technology protection with technology progress is a constant challenge and focus of the S&T enterprise as well as this office. I look forward to supporting the community-wide discussion, policy development, and resulting policy implementation on this topic.

**If confirmed, what would you do to address each of these challenges?**

For the first concern of rapidly transitioning S&T technologies, the Department can work more closely with technology stakeholders to ensure S&T investments are better aligned with their needs. To address this, I would take advantage of existing efforts in S&T, such as the current ManTech and SBIR Phase IIIs efforts, and partner with complementary efforts inside of A&S and the other R&E ASDs to build partnerships with the Service acquisition offices and bring S&T efforts up to high enough maturity levels that the services can understand how these technologies can be militarily useful. Secondly, for the S&T workforce, I believe we need to increase our STEM efforts such as the Science, Mathematics, and Research for Transformation (SMART) program, and gear these scholarships toward specific critical technologies of need. For infrastructure investments, we must advocate even more strongly through the budget process to secure resources for upgrading our aging DoD laboratory and testing facilities. Lastly, we must continue to assess the efficacy of the steps that have been put in place to protect our technology while still taking advantage of our important partnerships, and as necessary, adjust our policy and practices.

**If confirmed, what broad priorities would you establish that you believe should be addressed by your office? What recommendations would you make regarding priorities to the USD(R&E)?**

The portfolio for the ASD(S&T) is a broad role of oversight and fostering the Department of Defense's Science and Technology (S&T) enterprise. Along with the other responsibilities of the role, I would prioritize three specific areas of focus:

- Workforce Development: The Department must attract and develop STEM talent from a wide variety of sources, including international students, HBCUs and MSIs. Our nation's diversity is an enduring advantage, and we should ensure innovative students have an opportunity to share their talent to support technological breakthroughs at the Department.
- Partnerships with Small Businesses: The development of critical and emerging technologies by small businesses is another vital contribution to the technological capabilities of the Department. If nominated for the ASD(S&T) position, I would prioritize providing support and streamlining SBIR/STTR processes to ensure we create a transparent and efficient process for small businesses. I would work with my team to balance due diligence requirements and rapid integration of industry innovation while securing these investment secrets.
- Development of Quantum and Hypersonic: The United States is in a defining decade for technologies such as quantum and hypersonic/anti-hypersonic capabilities. These two technologies do not have many apparent commercial applications, and, therefore, the Department must oversee their rapid development and defense applicability. We envision winning the race to beat our peer competitors and delivering on our quantum technology investments with realized applications in computing and sensors.

**In your view, which technologies do you consider the highest priorities for DOD to develop based on their ability to contribute to the Department's mission in the short- and longer-terms?**

The USD(R&E) has a published a list of 14 critical technologies areas (CTAs), which she has used to identify the highest priority technologies for DoD. As the ASD(S&T), I will have responsibility for a subset of these CTAs which she has termed the "emerging" technologies that are aimed at longer-term capabilities. Hypersonic and quantum are two CTAs that I believe have a significant potential payoff for the Department's future warfighting capabilities.

**If confirmed, how would you connect the Office of the Secretary of Defense's technology strategies and plans with the efforts of other military services and combatant commands?**

R&E hosts the annual S&T program review in January and each Service and Agency presents their efforts as they line up with the Department's technology strategy.
The combatant commands are invited to this review, but I also look forward to engaging with, and visiting, if possible, each combatant command to understand their specific technology needs.

**What scientific fields do you consider the most important for shaping and developing new technologies, concepts, and capabilities that will be the most relevant for future warfighting and defense missions?**

It is difficult for me to single out any particular set of scientific fields as most significant scientific advances come from the intersection of multiple scientific fields. I am proud to have contributed to ground-breaking discoveries such as incorporating innovative detector systems into the James Webb telescope. And as I mentioned before, I am very interested in hypersonics and quantum, and look forward to how investments in those two areas will affect military missions like future energetics, cyber, etc.

**In your view, are there any technology areas that should be added or removed from the current list of DOD's modernization priorities? If so, please explain your rationale.**

From a technology point of view, the establishment of the 14 priority areas was done fairly recently and I believe all remain relevant. That said, I agree with the USD(R&E) that these CTAs should be reviewed from time to time and will work with the Under Secretary to support her assessment.

**<u>Investment in Science and Technology</u>**

**If confirmed, what metrics would you use to assess the suitability of the portfolio of investments made under the defense science and technology (S&T) program to include the magnitude and diversity of the investments?**

If confirmed as ASD(S&T), I look forward to reviewing the portfolio of S&T investments across both R&E and the Department. I believe that the metrics we use to assess appropriateness of

investments will depend on the maturity of the S&T program. For basic research, the DoD program should be breaking new ground that has the potential to be disruptive and change accepted paradigms. These programs should be very diverse. As programs get closer to development and prototyping, they should be measured on how well they align with enhancing specific DoD capabilities. As S&T projects becomes more mature, they should become more focused. I believe the President's budget provides a reasonable range of investments across the maturity scale and will look forward to participating in the next budget year review.

**In your view, should the Secretary of Defense's Defense Planning Guidance include guidance on minimum funding levels for the science and technology programs of the Military Departments? Please explain your answer.**

As the Defense Planning Guidance is classified, I recommend we differ discussion on this to other venues.

**Do you believe that the Defense Planning Guidance should include guidance on minimum investment levels for the research and testing infrastructure of the Military Departments? Please explain your answer.**

As the Defense Planning Guidance is classified, I recommend we differ discussion on this to other venues.

**What role should the ASD(S&T) play in the detailed development and coordination of Military Department and Defense Agency/Field Activity S&T investment strategies, programs, and budgets, in your view?**

The ASD(S&T) is responsible for developing and updating annually the S&T investment strategy and coordinating that strategy with the Services and Defense Agencies through the S&T Executive Committee (EXCOM). Specific programs and budgets for the Agencies, Field Activities, and Military Departments are set within their own processes, and ASD(S&T) is responsible for ensuring that those budgets are in line with the National Defense Science and Technology Strategy and that the programs are making progress towards the Department's goals.

**What role should the ASD(S&T) play in the development and coordination of Military Department research and test infrastructure investment strategies, programs, and budgets, in your view?**

While specific programs and budgets are developed by the Military Services, ASD(S&T) provides guidance for DoD's Science and Technology Reinvention Laboratories and advocates within the budget process for improvements to science and technology infrastructure. The ASD(S&T) works with the Director of the Test Resource Management Center (TRMC), also within the Office of the USD(R&E), to ensure that TRMC's testing infrastructure plans and requirements take into account future S&T test plans and requirements.

**What S&T areas, if any, do you consider underfunded by the DOD?**

I believe that the President's budget supports appropriate investments in S&T areas, and if confirmed I look forward to chairing the S&T EXCOM to work with my colleagues across the Department to ensure the most strategic alignment of investments possible.

**In your judgment, will the lack of funding in these areas affect the Department's ability to meet the threats of the future? Please explain your answer.**

Increases in S&T funding would certainly improve future capabilities. While the President's budget is developed by understanding the balance between future risk and near-term threat, we must continue to invest in science and technology research that seeds the development of future defense technologies for years to come.

**If confirmed, what factors would you consider in assessing whether the Department's S&T investment strategy strikes the appropriate balance between funding innovative, disruptive technologies and addressing near-term operational needs and military requirements?**

If confirmed, I will work with my counterparts across the Department's innovation ecosystem to ensure our S&T investments are well-balanced between near-term operational requirements and long-term deep tech investment. Factors that I would consider are aligned with the National Defense Science and Technology Strategy and might include metrics on successful transitions across the 14 Critical Technology Areas, transitions from SBIR/STTR projects to Phase III SBIR/STTR awards, and technology transfer from Service laboratories to industry.

**In your view, what are the critical legacy technology areas where DOD has needs that may not be met by industry or academia and we should be maintaining steady, sustaining investments to ensure warfighting capability?**

There are many legacy technologies that are very specific to DoD and would not advance without DoD support. Energetics for munitions and propulsion, material systems for armor, technologies for precision navigation and timing (PNT), and sensors that operate in extreme conditions such as those required for hypersonic vehicles are examples of those technologies.

Even in technology areas that have a large commercial driving force, there are facets that require investment. Quantum technology is a good example, with large commercial incentives for quantum computing, but very little commercial research into area of quantum sensors and clocks needed for DoD applications.

**If confirmed, how would you ensure the Department's leadership is aware of successful efforts resulting from investments in science and technology programs that support defense missions?**

If confirmed, I will examine what is currently being done and look for other mechanisms within the Department to raise the awareness level of the excellent work our S&T workforce is doing to support the warfighter. I would highlight efforts that are aligned to the National Defense Science

and Technology Strategy at every opportunity both within the Department and across the interagency.

**Basic Research**

**Given the continuing nature of basic research and the broad implications and applications of discovery-focused and innovation-focused sciences, what criteria would you use to measure the success of DOD basic research programs and investments, if confirmed?**

I believe the best way to judge the current success of the program is through the quality and innovative nature of the research as judged by publications and the citations of the research.

The fact that basic research has historically been a critical enabler of the most important breakthroughs in military capabilities (e.g., ground penetrating radar, lasers, and the field of quantum science) give us encouragement that the program is sound.

**What concerns do you have, if any, about current levels of funding for Department of Defense basic research? How would you plan to address those concerns, if confirmed?**

The current level of funding is approximately 2% of the DoD topline budget, and if confirmed, I believe my role would be to ensure that this level is maintained.

**If confirmed, what steps, if any, would you take to increase efforts in unfettered exploration, which has historically been a critical enabler of the most important breakthroughs in military capabilities?**

I also agree that the basic research program has been a critical enabler and believe currently it is sufficiently well aimed at "unfettered exploration." Through ASD(S&T)'s oversight for the Department's basic research program, we will work with the Services and Agencies to ensure that facet of the program is not diminished.

**Research Security and Program Protection Planning**

**If confirmed, how would you ensure that DOD's basic and applied research programs are executed in a manner consistent with National Security Decision Directive 189 and National Security Presidential Memorandum 33?**

USD(R&E) recently published a memo to the Services and Agencies that delineates very clearly how to execute fundamental research in accordance with NSDD-189 and NSPM-33. That memo included an oversight responsibility for ASD(S&T). If confirmed, my office will be responsible for monitoring compliance for each Service and Agency.

That memo and supporting documentation are on DoD's publicly facing website to ensure complete transparency across the community.

**What efforts would you make, if confirmed, to enable the Department to benefit from open innovation in fundamental research, while protecting such research from undue foreign interference?**

The guidance in the memo described above was developed to ensure the proper balance between open innovation and protection. Monitoring the effectiveness of that guidance will be one of my priorities if I am confirmed.

**If confirmed, what are your ideas for working with the academic community to limit undue foreign influence on university research programs, and limit unwanted foreign access to research expertise and results without creating an undue burden on the open and collaborative nature of the research community?**

I believe the only way to succeed in this task is through open dialogue. The Department is actively engaging the academic community to explain the processes the Department has put in place. In addition, to increase transparency, the Department posted these processes on a publicly facing website. If confirmed, I would expand the discourse across the country with seminars and presentations in academic fora.

I will also ensure that we are taking every opportunity to make the academic community aware of the various ways foreign entities try to effect undue influence to help them detect and thwart those threats within their own systems.

**In your view, what steps could the ASD(S&T) put in place to ensure that regulations pertaining to Department-funded university research are consistently applied and monitored by DOD, and ensuring they are well understood by the university community?**

The Department has put in place and published guidance that is available on its publicly facing website and has conducted seminars across the country to ensure the guidance is understood. If confirmed, I will monitor the effectiveness of the basic research program and the protections that the DoD has put in place and will not hesitate to make changes if necessary.

**If confirmed, what steps would you take to protect U.S. research and intellectual property from undue foreign influence without unreasonably singling out researchers from certain nations?**

The guidance put in place to protect U.S. research from undue foreign influence does not delineate researchers as risk, but rather looks at overall connections within the research effort and identifies issues that need to be mitigated. It does not call out individual researchers to prevent unreasonably singling out researchers from certain nations or of certain heritage, and if confirmed, I remain committed to this policy.

**In your opinion, are there ways to better coordinate and streamline the research security guidance to universities and the Program Protection Planning carried out by the**

**government? For example, are there data sharing systems to improve visibility for academia, industry and the government?**

I understand the Department has made all of its guidance available publicly to ensure transparency. In addition, the Department is working with the White House Office of Science and Technology Policy and other agencies to ensure that guidance provided to the academic community is consistent across all branches of the government. At this time there does not appear to be any data sharing systems that would currently serve that purpose. However, if confirmed, it is an area I will consider exploring to further coordination amongst academia, industry, and government.

**In your view, should the Department of Defense provide funding to institutions which host a Confucius Institute or any institute so defined in Section 1044 of the FY24 National Defense Authorization Act?**

Providing funding to such institutions is prohibited by statute. The Department has no plans or desire to fund institutions that host a Confucius Institute or any such institution.

**Do you commit to supporting regular updates of the list of foreign entities that have been confirmed as engaging in problematic activity as described in Section 1286 of the Fiscal Year 2019 National Defense Authorization Act, as amended?**

If confirmed, yes, I am committed to supporting regular updates of the Section 1286 list.

**Expanding the DOD Academic Research Base**

**If confirmed, what steps would you take to increase DOD research engagement with Historically Black Colleges and Universities and other Minority-Serving Institutions?**

In FY24, the Department increased funding for the HBCU/MI program in the President's Budget by nearly 300%. With strong Congressional support, these investments have led to an extremely robust HBCU/MI program. I understand the current focus is on maximizing the return on those resources, through centers of excellence, internships, and scholarships. Outreach is a critical aspect of this effort to ensure we reach underserved communities. If confirmed, I will continue to look for engagements that can promote our goals and increase engagement with HBCUs and MIs.

**If confirmed, what steps would you take to increase DOD engagement with universities participating in the Defense Established Program to Stimulate Competitive Research?**

If confirmed, my intent would be to increase outreach and program awareness though targeted visits and opportunistic presentations at every university engagement in a DEPSCoR state. Suggestions for specific engagements are welcome.

**If confirmed, what steps would you take to increase the funding for, and quality of, fundamental research at defense laboratories?**

While I believe the funding level in the President's budget is at an appropriate level, if confirmed I expect to consistently evaluate the quality of research, to include the basic research at the defense laboratories. Additionally, I plan to constantly monitor the STEM workforce and laboratory infrastructure to ensure that the defense laboratories have the funding, personnel, and facilities to fulfill the critical role they play within the DoD research and development enterprise.

**If confirmed, what would you do to expand DOD's academic research base to include more researchers from the social sciences, medical sciences, management and business schools, and other disciplines relevant to defense missions?**

If confirmed, I would continue on-going discussions with the Services, Agencies, and international partners on the value of expanding the DoD academic base within these fields.

**Science and Technology Activities of Civilian Agencies**

**Do you believe that Department of Defense and other national security missions benefit from robust funding for scientific research in civilian agencies? Please explain your answer.**

Absolutely. If confirmed, I plan to continue to enhance our connections to other research agencies, including though joint programs. For example, last year the DoD contributed to a focus area on an NSF program call for AI. The ASD(S&T) office also work closely with Department of Energy laboratories, leveraging their fundamental work for DoD research and development.

**What is your understanding of how the following civilian science agency activities support Department of Defense missions?**

- **National Science Foundation basic science funding**
  - NSF is critical for underpinning the entire academic community and students in a broad range of scientific disciplines. This allows DoD to use this community to support high risk research focused on DoD needs. I also understand that the DoD and NSF have funded joint research programs.

- **National Aeronautics and Space Administration (NASA) hypersonics and other space research and NASA testing facilities**
  - The DoD makes significant use of NASA testing facilities, including an on-going project with the Joint Hypersonics Transition Office in ASD(S&T).

- **National Institutes of Health medical research and vaccine development activities**

- NIH's research is relevant to very specific DoD focus areas, particularly efforts supported by the Defense Health Agency and with the Chemical-Biological research program at the Defense Threat Reduction Agency.

- **National Institute of Standards and Technology cybersecurity, quantum science, and manufacturing research programs**
  - The Department makes use of NIST's capabilities in each of these areas, and also in 5G/FutureG. There are programs on quantum clocks that involve their Boulder facility, and NIST leads US government participation in international standards setting bodies vital to 5G/FutureG standards. In addition, the Department's Manufacturing Innovation Institutes are well connected to NIST's Manufacturing Extension Partnership program and the Manufacturing USA network.

**If confirmed, how would you work with other federal agencies and the Office of Science and Technology Policy to improve coordination of research activities and harmonization of research funding decisions?**

There are many opportunities that already exist to coordinate research across the Federal Government. USD(R&E) has regularly scheduled meetings with OSTP, in which ASD(S&T) is a participant, and S&T leads R&E's senior staff level engagements with the NEC. S&T also works with the NSC on important focus areas like Biotechnology and Quantum. ASD(S&T) supports several Interagency Policy Committee (IPC) sub-committee meetings on S&T related topics. If confirmed, I will ensure we maintain strong participation in these engagements with OSTP, the NEC, the NSC, and IPCs, and will look for others potential beneficial partners, to include outreach to other federal agencies in areas of mutual interest.

**Emerging Technology Areas**

**The ASD(S&T) is responsible for four of the 14 critical technology areas of the Department: Advanced Materials, Biotechnology, FutureG/5G, and Quantum Science.**

**Please describe what you believe are the main challenges and opportunities for the Department in each of the aforementioned four categories? Please be detailed in your description.**

- Advanced Materials: My understanding is that there is no shortage of new materials available which we can and should continue to leverage, but the challenge is that it takes 10-15 years to qualify them for use. If confirmed, I see an opportunity to develop a plan, in concert with the Services, to drastically reduce this timeline.
- Biotechnology: I understand that the Department has published a strategy for biomanufacturing that calls for expanding the bioindustrial manufacturing base for critical materials and precursors at the scale necessary to support the Department's operational needs. I believe a key challenge and opportunity for the upcoming year is to ensure that the

biomanufactured capabilities that result from this effort have definitive Department customers.

- 5G/FutureG: I understand that the 5G research efforts are winding down and the program is being transferred to the Chief Information Officer within the Department. Those efforts have successfully implemented secure connectivity and resiliency against adversarial activities to ensure 5G communication technologies and networks can be effectively used for military applications. The Department has an opportunity to get ahead of the implementation of the next generation wireless cellular network by ensuring security technologies and international standards are compatible with Department needs. The biggest challenge we face is helping others understand that a secure and Department compatible FutureG will not be developed commercially without Department support.
- Quantum: The ASD(S&T) quantum program is accelerating and demonstrating quantum sensors (e.g., for navigation and timing, magnetometers) in military relevant operational environments to establish the value to the Department of these technologies. One of the biggest challenges is developing a domestic supply chain of high performance, integrated components that can be acquired at affordable cost to enable scale-up of those devices.

**If confirmed, how would you coordinate research across the military departments to reduce duplication and synchronize the investments being made outside of the Office of the Secretary of Defense (OSD)?**

I understand that each of the critical technology areas has a senior official, aPrincipal Director, who is responsible for developing technology roadmaps and leading technology development within that area for the Department, including coordination across all of the Military Departments and Agencies. If confirmed, my top priority to reduce duplication and synchronize Department-wide investments would be to ensure this coordination is done effectively. Additionally, as the ASD(S&T) I have an additional mechanism through oversight of the Department's Reliance 21 program, which provides similar roadmaps, assessments, and recommendations to leadership on other S&T focus areas. I understand that the Reliance 21 program has traditionally been very successful in coordination of the Department's S&T though technical reviews and communities of interest.

**If confirmed, how would you integrate industry, academia, and international investments in S&T and R&D for these disciplines into your strategic investment decision process?**

If confirmed, I plan to continue leveraging the Principal Directors who were hired because they are world class experts who have a deep understanding of the technology and investment landscape. Each Principal Director is required by statute to produce roadmaps to chart out the necessary strategic investments. I plan to use this input along with information from other priority areas to make recommendations on strategy investments for the organization.

**In your opinion, how should the Department be integrating ethical, legal, and societal implications considerations up front in the formulation of new research programs?**

In my opinion, the Department should be integrating clearly ethical, legal, and societal implications (ELSI) considerations up front in the formulation of new research programs. From what I have reviewed so far, I believe the Biotechnology program is an example of the ideal way to integrate ELSI into research program strategies.

**If confirmed, how would you work with other parts of the Department to inform operational users on the possibilities in each of the four technology areas to improve the chances of future transitions by creating a demand signal early for the technology and research from these programs?**

If confirmed, one of my first priorities will be to engage with each of the combatant commands – describing our program and understanding their views on their operational needs. I believe combining their feedback with opportunities the Principal Directors are uncovering should provide a strategy for effective engagement with operational users.

**Technology Strategy**

**What weaknesses, if any, do you perceive in the current defense S&T strategic planning process?**

Based on what I understand about the S&T strategic planning process, I cannot identify any particular weaknesses, but if confirmed I look forward to assessing and seizing opportunities to strengthen the defense S&T strategic planning process in the future.

**What do you believe to be the key attributes of a good technology strategic plan and how could these attributes be carried through effectively to the DOD programming and budgeting purposes?**

In my opinion, I believe a good technology strategic plan clearly describes intended outcomes. These could be specific Department capabilities or, in the case of basic research, new scientific paradigms. The plan should then identify how we get there through technical programs that can achieve those outcomes. If done correctly, the strategy plan would provide a methodology by which to evaluate the overall S&T program, yielding priorities for budgeting.

**If confirmed, how would you ensure reliance on technology strategic plans as foundational elements of the budget, planning, and programming process?**

From my perspective, strategic plans provide clear outcomes and identify approaches to achieve those outcomes. If confirmed, I would use that information to ensure our budget, planning, and programming process achieves the outcomes outlined in our technology roadmaps and the National Defense S&T Strategy.

**Technology Transition**

**How would you assess the effectiveness of current transition processes and systems?**

It is my experience that transitioning research and development into applications is, even in the best cases, a difficult endeavor. Within the Department, this is compounded by the need to transition rapidly in order to stay ahead of our adversaries. Fortunately, over the past several years, OSD, the Services, and the sub agencies have put in place myriad programs aimed at accelerating that transition, with RDER as an example within the R&E ecosystem. If confirmed, I would begin by assessing effectiveness of those programs and approaches put into place in recent years to specifically increase transition.

**In your view, what challenges exist in technology transition in DOD?**

From my perspective, there are of several acquisition related challenges that make inserting new technology difficult. However, I see two major challenges for the S&T community. First, technology development, especially in later stages, is often not sufficiently informed by the capability needs of the transition partners. Second, technology development is often devoid of considerations of how the technology can be cost-effectively scaled for application.

**What would you do, if confirmed, to address each of these challenges?**

My plan, if confirmed, is to engage directly with combatant commands as well as the Department and Service acquisition executives to understand their major technology shortfalls and how the Department's S&T program should more effectively mitigate them. I also look forward to strengthening connections between emerging technologies and the defense industrial base, through S&T programs like the Manfacturing Innovation Institutes, to enable the existing industrial base to be part of the solution.

**As compared to other technologies, do you believe that a different methodology is needed to transition software capabilities from research to operational use?**

From my perspective, many of the same challenges for hardware (user requirements, etc.) are also relevant for software transition. However, the insertion of new software brings unique constraints, challenges, and opportunities and therefore may require a tailored approach to ensure effective transition of software capabilities from research to operational use, which I look forward to examining, if confirmed. I look forward to working with other organizations within R&E such as the Systems Engineering and Architecture, Developmental Test Evaluation and Assessment, and the Principal Director for Advanced Computing and Software on this issue.

**What is your understanding of the role of the ASD(S&T) in facilitating communication between technical communities, acquisition personnel, and end users to support or speed technology transition?**

I believe that facilitating communication between technical communities, acquisition personnel, and end users to support or speed technology transition is exactly the role of ASD(S&T) and if confirmed, I will work with my colleagues in R&E and A&S and put in place processes to ensure that I am successful in that role.

**What are your views as to whether DOD's approach to, and processes for, funding technology transition must be changed? What sort of changes, if any, would you recommend, if confirmed?**

I believe the funding for programs that have been put in place over the last several years should go a long way to improve technology transition. If confirmed, I will review those approaches to determine whether they are sufficient or whether more is needed.

**International Research Cooperation**

**In your view, how should increased globalization of defense technology affect the Department of Defense's research and technology development and investment strategy?**

In my view, globalization should have a positive effect on the Department's research and technology because international peers are developing technology and workforces that the Department can then leverage. However, globalization also means our adversaries have access to these technologies and talent. If I confirmed, I look forward to ensuring both perspectives are reflected in our research and technology development and investment strategy.

**What do you perceive to be the most significant obstacles to effective international research and development cooperation, and, if confirmed, how would you address those obstacles?**

From my perspective, the most significant obstacle to international research and development cooperation is information sharing. For example, ITAR and Export Control regulations create barriers that increase the length of time to put agreements in place. If confirmed, I look forward to exploring opportunities to strengthen information sharing while maintaining compliance with regulatory requirements.

**How would increased international technology cooperation and procurement of foreign goods and services affect our domestic defense industrial base, in your opinion?**

Increased international technology cooperation has the potential to be a win-win for both parties. For example, sharing the burden of pre-competitive research serves both parties' industrial base. The effect of procurement of foreign goods and services is a more nuanced and complex topic that I look forward to working on with my future colleagues at OUSD(A&S).

**What best practices should govern Departmental monitoring and assessment of the research capabilities of our global partners and competitors, and of the global commercial sector?**

From my perspective, continuous Departmental monitoring and assessment of the research capabilities of our global partners, competitors, and commercial sectors requires close coordination with the Intelligence Community and the Services, which each have a global office established to understand the technology landscape. I look forward to leveraging and

strengthening our relationship with both as well as tapping into our own vigilant workforce to ensure we stay on top of evolving research capabilities on the global stage.

**Small Business Issues**

**If confirmed, how would you work to ensure that the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) program is an integral part of DOD modernization strategies and activities?**

While I believe there is already an understanding of the importance of both programs in bringing to DoD the ideas from our small business entrepreneurs, if confirmed, I look forward to bolstering that understanding and highlighting the value the program has provided and can continue to provide to the DOD's modernization strategies.

**If confirmed, how might you modify the SBIR/STTR program to improve the transition of S&T capabilities into acquisition programs?**

I believe that over the past several years, efforts have been put in place to take better advantage of the SBIR/STTR program. In another R&E office, the Accelerate the Procurement and Fielding of Innovative Technologies (APFIT) program was set up to expeditiously transition technologies, especially from small businesses. Within the ASD(S&T) organization, there is a program to supplement SBIR Phase II's or fund Phase III's on the condition that a potential technology transfer target supports the effort. Additionally, other parts of the Department also use a portion of their SBIR/STTR funding for commercialization activities. That said, if I am confirmed I will evaluate the efficacy of what we have in place and see if there is more we can do to increase transition successes.

**If confirmed, how might you modify the SBIR/STTR program to improve its ability to attract non-traditional defense contractors, such as small startup companies, as participants?**

If confirmed, I will conduct a detailed review of how the SBIR/STTR program is working and institute changes within my purview and recommend legislation for any issues we cannot address through improved policy. My understanding is that there are already a significant number of non-traditional defense contractors and start-up companies participating in the Department's SBIR/STTR program. Therefore, I would hope to strengthen current approaches and continue to institute practices that will reduce barriers to entry with the support of OUSD(A&S)'s small business program.

**If confirmed, what steps would you take to improve DOD's consideration of intellectual property rights as an incentive for small business to engage with the Department?**

If confirmed, I look forward to identifying areas where the Department can improve consideration of intellectual property (IP) rights as an incentive for small businesses. My current understanding is that the Department actively is looking for opportunities to leverage Government Purpose Rights, which are more favorable to small businesses compared to

Unlimited Rights. In circumstances where standard IP agreements may be a barrier, I believe those should be handled on a case-by-case basis and be communicated as such to the small business.

**What emphasis would you place, if confirmed, on participation by the acquisition community in setting research priorities for the SBIR program and in incorporating new technologies and methods into existing programs of record?**

My understanding is that the Services and agencies already encourage and have participation from the acquisition community in setting research priorities for the SBIR program, which is necessary input for incorporating new technologies and methods into existing programs of record. If confirmed, I look forward to continue exercising a balanced approach to setting research priorities. However, I would caution and advocate for a balanced approach to setting research priorities, for fear of losing the ability of the small businesses to offer innovative and disruptive technology and capability to the Department.

**Based on your experience at NASA, are there other ways that you think DOD could be leveraging the SBIR/STTR program to enhance its mission?**

In my current position, I lead the proposal review, selection process, progress assessment, and policy enforcement for participants in the SBIR/STTR program. This unique experience prepares me to streamline the Department's efforts with small businesses and to ensure industry partners understand opportunities to work with the Department. I will be able to strike a balance between facilitating small business innovation while also adhering to the guidelines needed to protect these companies from encroachment by foreign adversaries.

**Defense Laboratories**

**What is your overall assessment of the technical capabilities and quality of Defense laboratories relative to their peers at the Department of Energy, and in Federally Funded Research and Development Centers (FFRDCs), industry, and academia—both foreign and domestic?**

My current assessment, without more indepth review, is that the Defense laboratories and centers are constructed to support the specific needs of the Service to which they belong. They focus on technologies and testing that directly support the very specific capabilities required by the Services. The Department's laboratories and centers provide high quality, technical support tailored to develop within the unique operating constraints of their respective Service. If confirmed, I look forward to working within my organization and with DoD S&T and laboratory leadership to ensure the Department continues to lead in technical talent and strengthens our technical infrastructure.

**What do you believe to be the most effective management and human resources approaches for personnel at these defense laboratory facilities?**

The Science and Technology Reinvention Laboratory (STRL) designation was created so that the Department could provide management and human resources opportunities that would mirror more closely commercial practices thereby making DoD laboratories more competitive in the marketplace. The flexibilities derived through the various STRL authorities over the past 30 years have enabled the defense laboratories to maintain their relevance and ability to support their parent Service. However, my understanding is there are still limitations in salary and other amenities that need to be overcome to better attract the technical talent the Department requires.

**If confirmed, would you support increased delegation of operating authority to lab directors? Please explain your answer.**

I look forward to learning more about the value of increased delegation of operating authority to lab directors. At this time, I understand that the operation authority for the lab directors comes from the Services and not the OSD so, if confirmed, I would have to work with the Services to be able to respond further to the committee on this concern.

**If confirmed, what specific steps, if any, would you take to improve the quality, technical capabilities, and mission performance of the Defense laboratories?**

If confirmed, I look forward to ensuring our funding aligns with the technical infrastructure requirements needed to continue to deliver superior and forward looking capabilities for the warfighter.

**Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs)**

**In your opinion, what role do the FFRDCs play in the defense research ecosystem? How would you characterize the value of such organizations to DOD?**

I believe that the FFRDCs play an important and unique role in the DOD's ecosystem by meeting specialized engineering, research, development, or other analytic needs that require an independent and unbiased viewpoint.

**If confirmed, what suggestions would you make to better utilize FFRDCs across the Department?**

Before I offer specific suggestions, I believe it is important to work with the primary sponsor of each FFRDC and understand their views on how they currently leverage FFRDCs and how we can collaboratively identify opportunities to optimize FFRDC utilization across the Department.

**In your opinion, how do the UARCs differ in role and purpose from FFRDCs, defense labs, and defense contract research organizations?**

UARCs are university organizations that maintain essential research, development, and engineering "core" capabilities of particular importance to DoD. Through UARCs, the

Department has assured access to the top academic researchers who have significant expertise and experience in a particular defense related competency (e.g., nanotechnology, electronic warfare, hypersonics). In contrast, FFRDCs, defense labs and contract research organizations cannot afford to have concentrated expertise in particular competencies and cannot serve as the preservation of the research capability for DoD.

**In your opinion looking across the full landscape of current UARCs, do you see any major technical discipline or research capability gaps that are not being currently addressed and would therefore benefit from a dedicated UARC? Are there any UARCs that in your opinion have outlived their useful purpose?**

I understand that UARCs are assessed every five years for efficacy and continued relevance, which enables the Department to identify outdated technical disciplines and where there may be capability gaps. For example, I understand this approach highlighted a gap that was quickly filled in autonomous systems, trusted autonomy, and human machine interfaces. If confirmed, I look forward to participating in this approach and ensuring we have a robust and future-forward UARC ecosystem.

**How do the UARCs help with STEM and workforce development that supports DOD?**

My understanding is that, as with all university research, UARCs are training students and post doctorates in fields of direct and critical interest to the DOD.

**If confirmed, what suggestions would you make to better utilize UARCs across the Department?**

While I am of the belief that the UARCs are being well utilized by the Department, if confirmed, upon deeper review of current processes, I look forward to identifying opportunities to strengthen and optimize our working relationship with UARCs.

**Workforce Issues**

**What is your perception of the workforce challenges confronting the DoD research enterprise?**

From my perspective, the workforce challenges faced by the Department's research enterprise are not different from those faced by the private sector or any other government science agency, like NASA. There is a constant competition for talent, with the DoD facing challenges to accessing this talent due to salary caps and other benefit limitations.

**What is your understanding of how the personnel authorities applicable to the Office of the USD(R&E) compare to the human resources flexibilities available to the DARPA and the Defense laboratories? Should these flexibilities be expanded to apply also to the Office of the USD(R&E) and other research and engineering components of the DOD? Please explain your answer.**

My understanding is the personnel authorities applicable to the USD(R&E) are different from those applicable to DARPA and the Defense laboratories. The USD(R&E) falls under the AcqDemo personnel system vice the LabDemo systems operated at the Defense laboratories. Over the period of many years, the flexibilities offered under both of these systems are converging and being in one system vice the other does not seem to be a barrier for the office of the USD(R&E). If confirmed, I look forward to conducting an indepth review as to whether these flexibilities should be expanded.

**With a view to improving productivity, performance, and mission accomplishment, how would you work with the personnel policy and management communities in the Office of the Secretary of Defense and the Military Departments to enhance the human resources flexibilities available to DOD labs, test ranges, and other research and engineering components of the DOD?**

My understanding is that the USD(R&E) is already working very closely with OUSD(P&R) and the Military Departments on human resource flexibilities for the DoD labs, test ranges, and other research and engineering components of the DoD. If confirmed, I would ensure that we maintain those strong connections.

**How would you work with DOD labs, test range, and other research and engineering components of DOD to maximize utilization of human resources flexibilities currently in place or newly authorized?**

If confirmed, I would ensure that my organization continues its connectivity to the Military Departments and other parts of OSD to ensure that any flexibilities that are available or are introduced are well understood across the research and engineering enterprise. It is my understanding that my organization currently does this through the various Laboratory Quality Enhancement Panels (LQEPs), particularly the LQEP focused on Personnel.

**What is your assessment of the diversity of the workforce comprising the research and engineering organizations of the Department of Defense?**

The portfolio for the ASD(S&T) is a broad role of oversight and championship of the health of the Department's Science and Technology (S&T) Enterprise. If confirmed I would work to assess the diversity of the Department's STEM workforce and collaborators.

**How do you think improvements in workforce diversity would improve the productivity, performance, and mission accomplishment of such organizations? Please explain your answer.**

The Department must attract and develop STEM talent from a wide variety of sources, including international students, Historically Black Colleges and Universities (HBCUs) and other Minority Serving Institutions (MSIs). Our nation's diversity is an enduring advantage, and we should

ensure students have an opportunity to leverage their talent to support technological breakthroughs at the Department.

The vision I laid out above enables innovative scientific breakthroughs as well as the ability to leverage these investments to train the next generation of technologists—a cadre of preeminent scientists and engineers who reflect our Nation's diversity of mind and body, all striving to protect our nation. If confirmed, my vision would be impactful to the S&T enterprise by improving, effectively and efficiently utilize/maximize the taxpayers' dollars, and to best support the warfighter to maintain deterrence or, if necessary, fight and win America's wars.

**What steps, if any, would you take, if confirmed, to increase diversity in the research and engineering organizations of the Department of Defense?**

I am passionate about the development of our S&T talent pipeline and workforce. My global STEAM (Science, Technology, Engineering, the Arts, and Mathematics) outreach has focused on the need to inspire and hire the next generation of engineers and scientists. My service as a spokesperson for NASA has broadened the world's scientific knowledge and extended America's partnerships with industry, academia, other government agencies and allied partners. I've been equipped with lessons learned and STEM education strategies through mentoring diverse cohorts of students and interns, teaching K-12, collegiate professorship, board membership, and chair leadership. I envision that the Department will further benefit from my broad and all-encompassing recruitment strategies to attract and retain the best and brightest for our essential military workforce. My alliances with NASA centers, FFRDCs, UARCs, other government agencies, academia, and professional organizations across the globe have given me the insight to identify innovation, creativity, and ingenuity and lends me access to a network with an arsenal of subject matter experts from various disciplines and affiliations.

**Some research and engineering organizations, including DARPA and DIU, have different challenges in increasing diversity due to their need for more experienced, mid-career talent. In your view, are their meaningful steps these organizations can and should take to improve diversity notwithstanding?**

If confirmed, I look forward to working with DARPA, DIU, and others in engaging in global STEAM (Science, Technology, Engineering, the Arts, and Mathematics) outreach, as I have outlined above.

**Science, Technology, Engineering, and Mathematics (STEM) Education**

**Do you agree with the premise that the Department of Defense specifically, and the nation as a whole, are facing a crisis in STEM education?**

Yes, I agree that the Department of Defense and the nation as a whole are facing a crisis in STEM education. The Department and the nation at large are in a global race for talent and increasing the STEM literacy across the nation is extremely important.

**In your view, how have deficiencies in STEM education affected the Department's ability to execute its missions?**

My understanding is that it has not yet impacted the Department's ability to execute its mission. However, I understand there are several STEM areas for which the Department is having trouble meeting its need and I would anticipate that as the current workforce retires, we will start to see an impact in the Department's ability to maintain its technological advantage over its adversaries.

**What role do you think the Department should play in supporting STEM education writ large?**

The Department needs to, and in fact does, have a very active role in supporting STEM education. Each Service, Agency and OSD component has active STEM programs. The ASD(S&T) has a significant number of programs in place to support STEM education including the Science, Mathematics, and Research for Transformation (SMART) scholarship program. SMART is a scholarship for service program with excellent success rates that places STEM scholars directly in DoD laboratories.

**What role should the Department play in supporting STEM education opportunities for service members?**

The Department has a role in supporting STEM education opportunities for dependents of service members. However, my understanding is that education for service members themselves is not within the purview of R&E.

**What role should the Department play in supporting STEM education opportunities for dependents of service members?**

The Department supports STEM education opportunities for dependents of service members as the DoD has long supported the National Math and Science Initiative in implementing advanced STEM curricula in schools local to communities that have a high percentage of service member's dependents.

**What role should the Department play in other K-12 STEM educational activities?**

While I acknowledge that the Department's primary focus to date is on undergraduate and graduate education, I understand that K-12 is a a critical foundation and funnel into higher education. I hope to develop K-12 educational efforts to reflect its long-term value to the Department.

**Manufacturing**

**What role should DOD play in investing in manufacturing innovation and ensuring that the resultant innovations are adopted into defense industry and the organic industrial base?**

From my perspective, the Department should continue to play a significant role in manufacturing innovation focused on both defense and organic industrial base to ensure availability of domestic sources for critical products that are necessary for the warfighter. If confirmed, I would ensure that the OSD Manufacturing Technology Program, to include the Manufacturing Innovation Institutes, continues to strengthen and positively influence defense industry and the organic manufacturing industrial base.

**What is your assessment of the performance and impacts of the DOD Manufacturing Technology program, including the Manufacturing Institutes? How are these institutes linked with the research and testing organizations in the Department?**

My current assessment, without a more indepth review, is that the Manufacturing Innovation Institutes (MII) have been especially effective in driving manufacturing advances in areas such as additive manufacturing and biofabrication. The Services' and OSD Manufacturing Technology programs are well coordinated and well connected to the DoD research enterprise. A significant portion of the MIIs' efforts are working with DoD research institutions to develop solutions to specific defense manufacturing problems.

**Social Science and Management Research**

**In your view, how would increases in DOD-funded research in the social, information, and management sciences benefit defense missions?**

Increases in DOD-funded research in the social, information, and management sciences is critical to maintain our technology advantage. To that end, I understand the ASD(S&T) Basic Research program is currently funding Minverva, a fundamental social science effort. If confirmed, I plan to to work with the Services and Agencies to make a case that an increased investment is required to strengthen the Department's collective science and technology posture.

**Do you have specific ideas for enabling engagement between the DOD science and technology community and outside academic experts in areas such as business, management, and public administration, to perform research, participate in personnel exchange programs, and provide technical expertise to support the Department's efforts to improve its management and business practices?**

Given the importance of this topic, before I can answer, I will have to review carefully what is being done currently to improve those practices and then see if there are areas the S&T community can support. The application of AI may be one area for engagement, if it is not already being leveraged to its greatest extent.

**Sexual Harassment**

**In responding to the 2018 DOD Civilian Employee Workplace and Gender Relations survey, 17.7 percent of female and 5.8 percent of male DOD employees indicated that they had experienced sexual harassment and/or gender discrimination by "someone at work" in the 12 months prior to completing the survey.**

**What is your assessment of the current climate regarding sexual harassment, gender discrimination, and other harassment in the Office of the ASD(S&T)?**

Since I am not currently in the OASD(S&T), I have unfortunately not been privy to the 2018 survey or the current climate regarding sexual harassment, gender discrimination, and other harassment in the Office of the ASD(S&T). I take these matters seriously. It concerns me to hear that any DOD personnel have experienced sexual harassment or gender discrimination by "someone at work." However, I understand that the 2023 Civilian Employee Workplace and Gender Relations survey closed at the end 2023. I look forward to reviewing the outcomes of this survey and will lean on its findings to gain a better understanding of the current climate regarding sexual harassment, gender discrimination, and other harassment in the Office of the ASD(S&T).

If I am confirmed, I will look to understand the climate and to assess whether any progress has been made since the survey was deployed 5-years ago; review the organization's discrimination and harassment policies; evaluate the effectiveness of the organization's strategies to prevent and address harassment and discrimination, including reviewing and discussing the organization's prevention strategies, complaint data, and corrective action with appropriate personnel; evaluate the organization's feedback channels; and use all available resources to assess whether harassment is still occurring, or is perceived to be tolerated. I will also work with the Office of Human Resources, Under Secretary Shyu, and key staff members from the OASD(S&T) to eradicate this unlawful behavior and to create a more productive, healthy, and respectful work environment.

**<u>Congressional Oversight</u>**

**In order to exercise legislative and oversight responsibilities, it is important that this committee, its subcommittees, and other appropriate committees of Congress receive timely testimony, briefings, reports, records—including documents and electronic communications, and other information from the executive branch.**

**Do you agree, without qualification, if confirmed, and on request, to appear and testify before this committee, its subcommittees, and other appropriate committees of Congress? Please answer with a simple yes or no.**

Yes

**Do you agree, without qualification, if confirmed, to provide this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs such witnesses and briefers, briefings, reports, records—including documents and electronic communications, and other information, as may be requested of you, and to do so in a timely manner? Please answer with a simple yes or no.**

Yes

**Do you agree, without qualification, if confirmed, to consult with this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs, regarding your basis for any delay or denial in providing testimony, briefings, reports, records—including documents and electronic communications, and other information requested of you? Please answer with a simple yes or no.**

Yes

**Do you agree, without qualification, if confirmed, to keep this committee, its subcommittees, other appropriate committees of Congress, and their respective staffs apprised of new information that materially impacts the accuracy of testimony, briefings, reports, records—including documents and electronic communications, and other information you or your organization previously provided? Please answer with a simple yes or no.**

Yes

**Do you agree, without qualification, if confirmed, and on request, to provide this committee and its subcommittees with records and other information within their oversight jurisdiction, even absent a formal Committee request? Please answer with a simple yes or no.**

Yes

**Do you agree, without qualification, if confirmed, to respond timely to letters to, and/or inquiries and other requests of you or your organization from individual Senators who are members of this committee? Please answer with a simple yes or no.**

Yes

**Do you agree, without qualification, if confirmed, to ensure that you and other members of your organization protect from retaliation any military member, federal employee, or**

**contractor employee who testifies before, or communicates with this committee, its subcommittees, and any other appropriate committee of Congress? Please answer with a simple yes or no.**

Yes