

**Hearing on the Nomination of:  
Tara O'Toole  
To be Under Secretary of the  
United States Department of Homeland Security  
Before the United States Senate Committee  
On Homeland Security and Government Affairs**

**June 10, 2009  
342 Dirksen Senate Office Building**

**Mr. Chairman, Senator Collins, and Members of the Committee, I am honored to appear before you today as President Obama's nominee for the position of Under Secretary of Science and Technology for the Department of Homeland Security. I am greatly humbled by the privilege of being chosen by the President and by Secretary Napolitano to be nominated for this important post. I am also honored to appear before this Committee, which has long provided distinguished leadership in the complex and ongoing efforts to address the nation's many homeland security challenges.**

**At this point, I would like to recognize my partner, Dr. Liza Solomon, my niece, Sarah Hallonquist, and the colleagues and friends who join me here today.**

**Mr. Chairman, when this Committee wrote the Homeland Security Act of 2002, you recognized that the application of science and technology would be fundamental to the success of the new Department of Homeland Security's "ability to organize and coordinate the Federal government's ability to prevent, prepare for, and, if necessary respond to and recover from terrorist attacks and natural disasters, while also strengthening the capabilities of state and local governments, first responders and the private sector."**

**The Act established the position of Under Secretary for Science and Technology and charged the Under Secretary with broad responsibilities to conduct basic and applied research and technology development, testing and evaluation to serve the DHS mission. The history of the Committee since 2002 shows that it has repeatedly returned to the topic of how science and technology can be used to advance the goals of the Department as well as national homeland security priorities.**

**Similarly, Secretary Napolitano has identified Science and Technology as being among her top priorities. She has noted in Congressional testimony that better science can improve our understanding of and means of detecting and countering emerging threats, and that better technologies can expand DHS capabilities, help protect the interests of private citizens, and improve the management of and response to disasters. Indeed, the Secretary has said that "It is difficult to think of an area of DHS operation where a greater use of cutting-edge technology would not improve capabilities."**

**Thus I come before you today, with excitement and gratitude for this opportunity to help reduce the country's vulnerability to terrorist attack and to enhance our capacities to mitigate the consequence of such attacks and other disasters by mobilizing the creative energies and inventiveness that have been an American hallmark since Ben Franklin flew his kite in a lightning storm.**

**I am a physician by training. I have practiced internal and occupational medicine, and have served in government at the Congressional Office of Technology Assessment and as an Assistant Secretary for Environment Safety and Health at the Department of Energy. For the past decade, I have helped found and have led, managed and been accountable for two university-based think tanks devoted to biosecurity and to the prevention, preparedness and response of man-made and naturally occurring disease epidemics.**

**Over the course of my career in universities, government and non-governmental organizations, my work has encompassed the study and management of a broad range of "threats", and focused particularly on risks associated with nuclear and biological weapons, radiation, and toxic chemicals, and on what could go wrong in complex, human-built systems. I have had hands-on experience with many of the critical infrastructures and systems that US homeland security policies and practices must protect and render resilient from attack or natural disasters.**

**I share Secretary Napolitano's belief – which I know this Committee has long championed – that the federal government cannot execute a coordinated, fully functioning homeland security strategy without the skills, expertise and willing collaboration of state, local and tribal governments, and the private sector.**

**Through my work on biodefense, nuclear safety and other types of technology-related disasters, I have developed an understanding of the homeland security challenges facing state and local officials and first responder communities. I have also worked directly and at length on efforts to effectively engage the private sector in efforts to improve disaster preparedness and response.**

**As this Committee knows well, the responsibilities of the DHS Directorate of Science and Technology cover a broad spectrum of technical and operational problems. While I do not claim to have deep expertise in all of these areas, I am confident that my background and experience equip me to lead the Directorate and to serve the research and development needs of the Department and of the country.**

**If confirmed, I will work closely with the Committee to identify and answer the science and technology needs of the Department and its operational components, and to collaborate with colleagues in other federal agencies to serve the strategic homeland security research and development priorities of the country as a whole.**

**My priorities, if confirmed, would be as follows:**

- **Continue to strengthen relationships between the S&T Directorate and the managers and operators of the Department’s operational components, including first responders. I would build on the sound foundation of the Integrated Product Teams (IPT) process to create technological solutions which answer the top needs of the DHS operational components.**
- **Increase the portion of the S&T budget devoted to basic science and innovative research to seek radical, innovative solutions to particularly difficult problems of high importance**
- **Build on the accomplishments of the S&T Directorate to create a longer-term, strategic approach to R&D within the Directorate and across the Department as a whole.**
- **Invest in and encourage the Directorate’s engagement with the wider community, including other government agencies, the private sector, universities and additional “communities of interest”.**

**If confirmed, I would pursue four priorities. First, I will seek to strengthen, standardize and expand the living connections and collaborations between the S&T Directorate and its customers: the DHS operating components – ICE, CBP, the US Coast Guard, NPPD, etc. - and first responders.**

**The May 2009 Defense Advanced Research Projects Agency Strategic Plan states “Transitioning technology – moving technology from research into use – is a contact sport. It is done by personal contacts between people.”**

**Under the leadership of the former Under Secretary, Admiral Jay Cohen, S&T established the Integrated Project Team (IPT) process to create these essential connections. If confirmed, I will work to expand and deepen the relationships between S&T and the Department’s Operating Components and first responders, and to integrate a disciplined process of technology development into the Department’s acquisition process.**

**To realize the Secretary’s goal of using cutting-edge technology to improve DHS operations it is essential to create vibrant connections between the actual “users” of technologies and R&D professionals charged with developing, prototyping and overseeing the testing of possible technology solutions. Detailed understanding of the operational problems to be solved allows scientists and engineers to focus their know-how and imagination on the proper target. Ongoing, up-close involvement with the development and evaluation of new technologies enables operators and future users of the technologies to believe in and actively support their operational development and eventual deployment.**

**An enhanced IPT process for setting research and development priorities which clearly identifies operational requirements and incorporates disciplined, independent testing and evaluation of new technology, can also substantially enhance the effectiveness and efficiency of the Department’s major acquisition projects and contribute to realizing the Secretary’s vision of “one DHS”.**

**My extensive experience creating and working in multi-disciplinary teams of technical and scientific professionals, both at the Department of Energy and at the Center for Biosecurity will be useful in forging dynamic connections between S&T and the rest of the Department, connections which are key to successful technology transition.**

**Secondly, if confirmed, I would consider investing a greater portion of the budget in longer-term, innovative projects which, if successful, could change the playing field or provide solutions to difficult, high-priority problems.**

**The Defense Science Research Agency (DARPA) has become renowned for its success in mining fundamental research and leading-edge discovery projects for “high payoff” ideas which DARPA then transitions into new - sometimes incremental, sometimes revolutionary - military capabilities.**

**While I believe that DHS’ operational needs continue to demand significant investments in near-term technology development, I am persuaded that the S&T enterprise would benefit from additional investments in fundamental scientific discovery, as well as from a more active management approach that would set meaningful project milestones and then sustain, cancel or rethink projects based on whether milestones are achieved.**

**Third, if confirmed, I will work with this Committee and with my colleagues in DHS to further develop a strategic, five year approach to R&D, both within the Directorate and across the Department. I believe the ongoing Quadrennial Homeland Security Review (QHSR), which the Secretary has underway, will provide an essential foundation for such a strategy, and I hope to become actively engaged in the QHSR, if confirmed.**

**I recognize that this Committee has expressed great interest in the development of a strategic approach to homeland security research and development that would encompass investments by the Departments of Defense and Health and Human Services as well as DHS. I agree that such a strategy could be of value to the nation. If confirmed I will also endeavor to persuade my colleagues in other federal agencies to collaborate in establishing a more strategic plan for R&D work associated with major problems of common interest. I believe my past experience leading interagency efforts as well as the Center for Biosecurity in working collaboratively with many diverse stakeholders will serve me well in such efforts. I want to assure the Committee that, should I be confirmed as Under Secretary, I will continue the ongoing efforts among these three agencies to facilitate sharing of technologies of common interest and to avoid duplication and waste.**

**Fourthly, if confirmed I would seek to focus more of the Directorate’s R&D resources on understanding how we might make the American people and our communities more resilient to disasters, whether natural or man-made.**

**This Committee has been especially vigilant in making sure the people on the front lines of responding to disaster have the tools they need to protect us. The S&T Directorate has made significant commitments to serving the needs of traditional first responders, including the establishment of the Tech Solutions program and an IPT dedicated to first responder needs. To create the vision of “a fully functioning homeland security strategy that is deserving of the respect of American citizens” which the Secretary articulated in her confirmation testimony before this Committee, a vision I know the Committee shares, and indeed inaugurated, we must actively engage all levels of government, the great companies, universities and non-governmental organizations of private sector – and the American people themselves.**

**We can use science and technology to assist the American people – as individuals, as employers, as volunteers or community members – to help prevent and better prepare for the unexpected and to foster a more rapid recovery from calamity. The social sciences have much to teach about how we might mitigate the psychosocial impacts of grave events, how we could better construct public-private sector collaborations or improve recovery from disaster.**

**Before closing, I would like to thank the family, friends, colleagues and teachers, foremost among whom were my parents, for all they have done to enrich my life and expand my understanding of what is possible.**

**Members of the Committee, the consequences of new technologies are famously unpredictable. I sit here today in part because of the surprise launch of the Soviet satellite, Sputnik, in 1957 and the subsequent investments the US made in science education. Those investments brought teachers, science fairs, and advanced placement science courses to my small, public high school in Massachusetts and essentially launched me into college and medical school.**

**In the end, Sputnik catalyzed the US triumphs in space and a new era of achievement in American science and technology. I believe it is possible to use science, technology and American ingenuity to better understand, prevent, and if necessary, respond to terrorist attacks and natural disasters. I would be honored to be a part of this effort.**

**I am deeply honored to appear before you today in consideration of serving as Under Secretary of the Department of Homeland Security. I regard public service as one of the great privileges of democracy, and if confirmed I am committed to working with the leadership and members of this Committee to serve the interests of the United States and its people. I am happy to answer any questions you might have.**