Statement of

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Introduction

Madam Chairman Hagan, Ranking Member Portman, distinguished members of the Committee, thank you for the opportunity to discuss my Agency's collaborative efforts on cyber research and development. First, I want to take this opportunity to thank you for the support this Committee – and the Congress – has given us.

Overview of Cyber Research and Development

Throughout the past six decades, NSA Research has delivered deep and important science that has enabled many Intelligence Community breakthroughs. Our legacy extends from cryptology to high performance computing. We were early pioneers in fields ranging from computer science to digital communications. Today we find ourselves developing new science in such diverse fields as data storage, microelectronics, and cloud computing. We have extremely deep expertise in Science, Technology, Engineering, and Mathematics – the so-called STEM – disciplines especially as they relate to our core missions: Signals Intelligence and Information Assurance. With this diversity of skills and depth of experience, we find ourselves at the center of a number of government-wide cyber activities. We are a core member of the Department of Defense Cyber Network Operations Science and Technology Steering Council and its Priority Steering Committee. NSA Research is a co-chair of the Office of Science and Technology Policy Special Cyber Operations Research and Engineering (SCORE) Interagency Working Group and we are an active member on the Intelligence Community's Cyber Security and Information Assurance interagency working group. We participated in the Assistant Secretary of Defense (R&E) Cyber workshop series crafting the DoD-wide cyber vision, thrusts and roadmaps. The SCORE committee coordinates cyber research across all Federal departments and ensures that the Comprehensive National Cybersecurity Initiative unclassified research efforts are integrated into an overall cyber research and development plan.

NSA Research also has a leadership role in the non-government cyber R&D community. For example, we are members on the Joint Advisory Committees of MIT Lincoln Labs and CMU Systems Engineering Institute and sit on the cyber advisory board for the University of Maryland. We also participate on evaluation boards for Department of Energy National Laboratory cyber-related internal research proposals.

NSA commitment to growing the quality and quantity of U.S. science, technology, engineering, and mathematics students is a model for government. We work with universities in many ways, ranging from our Center of Academic Excellence program, which identifies and supports

excellence in information assurance and cyber network operations, to direct program support and curriculum discussions. We sponsor and support events such as the "Capture the Cyber Flag" inter-university competitions, involve student interns in our research, and maintain a strong grants program. Nevertheless, the U.S. is neither graduating nor recruiting to government sufficient numbers of computer scientists to meet the demand. Indeed, in 2010 there were only 726 Computer Science PhDs awarded to U.S. citizens. Of them, only 64 elected to join government[1]. This is an area where we need to redouble our efforts to attract the nation's best and brightest to government service.

As my colleagues here today can and will attest, cybersecurity demands tremendous diversity of thinking and broad collaboration. We understand, together, the need to not only deliver immediate capabilities, but to invest in long-term disruptive innovation. NSA is a leader in this regard and will continue to outpace much of industry and academia for years to come. Our talented and dedicated workforce is our strength, your support crucial, and the common purpose shared by colleagues here today the path to success.

We have tremendous offensive and defensive capabilities in cyberspace. Maintaining that advantage, growing it, and ultimately providing mastery over cybersecurity is our contract with the nation. I look forward to sharing with you specifics of our strategy in closed session.

I welcome your questions. Thank you.

[1] Computing Research Association, Taulbee Survey Report 2009-2010.