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**HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
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**“Science and Technology Policy Assessment: A Congressionally Directed
Review”**

Good morning Chairwoman Johnson, Ranking Member Lucas, and members of the Committee. I am Michael McCord, and I served as a member of a five-person Panel of Fellows of the National Academy of Public Administration (the Academy) that prepared a report on science and technology assessment resource support to Congress. I testify today in my role as a Fellow of the Academy and member of the Panel that prepared this report. My colleagues on the Panel were our Panel chair, Elizabeth Fretwell, James Hendler, David Rejeski, and Kathleen Peroff. Our report was submitted on October 31, 2019 and was made public on the Academy web site on November 14, 2019.

In addition to being a fellow of the Academy, I am the director of civil-military programs for the Stennis Center for Public Service, a bipartisan and bicameral agency of Congress devoted to promoting public service and the professional development of congressional staff; and also an Adjunct Research Staff Member at the Institute for Defense Analyses (IDA). The report and testimony I am presenting today are the recommendations of NAPA and not of the Stennis Center or IDA. I would also note that a separate division of IDA than the one I am employed by provides science and technology support to the President’s Council of Science and Technology Advisors, but that has no bearing on my testimony today. Finally, I will note that NAPA fellows like myself are not employees of the Academy and receive *de minimus* compensation only for those few days we meet together in person as a panel.

Thank you for the opportunity to appear before you to discuss the report’s findings and recommendations.

The Academy is a non-profit, independent organization of top public management and organizational leaders who tackle the Nation's most critical and complex public management challenges. The Academy, like the National Academy of Sciences with which this committee is very familiar, is chartered by Congress under Title 36 of the United States Code. The Academy is a nonprofit, nonpartisan organization focused on improving governance, public administration, and therefore policy outcomes at the federal, state and local levels. With a network of more than 900 distinguished Fellows and an experienced professional staff, the Academy is uniquely qualified and trusted across government to provide objective advice and practical solutions based on systematic research and expert analysis. Established in 1967 and chartered by Congress in 1984, the Academy continues to make a positive impact by helping federal, state, and local governments respond effectively to current circumstances and changing conditions.

The exponential rate of change in science and technology in the 21st century brings enormous prospects and complex challenges for both individual citizens, and for those with responsibility to evaluate how these changes might impact society as a whole. In this context, the Congress needs to improve its capacity to deal with science and technology-related issues.

In the conference report to accompany the Fiscal Year 2019 Legislative Branch Appropriations bill, Congress directed the Congressional Research Service (CRS) to contract with the Academy to conduct a review to include the following.

- Detail the current resources available to Members of Congress within the Legislative Branch regarding science and technology (S&T) policy, including the Government Accountability Office (GAO);
- Assess the potential need within the Legislative Branch to create a separate entity charged with the mission of providing nonpartisan advice on issues of science and technology, such as the former Office of Technology Assessment (OTA); and
- Address whether the creation of a separate Legislative Branch entity would duplicate services already available to Members of Congress.

To undertake this review, the Academy formed a Panel of five distinguished Academy Fellows. The Panel was supported by a professional study team. In conducting our review, our Panel and study team staff interviewed numerous experts in this field inside and outside the legislative branch, including all of my fellow witnesses for this hearing. A complete list of those we interviewed is included in our full report which I ask be made part of the record of this hearing.

The Panel's approach to this research was guided by the following features:

- Adopt demand-driven solutions
- Create a taxonomy of congressional needs for S&T policy resources
- Consider refunding of OTA that is tailored to fill demand gaps
- Consider how existing legislative branch providers can enhance or expand S&T support
- Apply best practices in institutional design
- Devise decision-making criteria
- Consider actions to enhance Congress' absorptive capacity

The Panel's report provides context for understanding congressional needs, including an overall decline in staff and time devoted to S&T and other policy issues. The report further provides a taxonomy of congressional needs for S&T policy resources and an inventory and analysis of these resources that are available to Congress from agencies within the Legislative Branch. The inventory is assessed against the taxonomy to identify gaps.

The report identifies six types of S&T-related support products and services that Congress requires in order to more effectively conduct its work: quick-turnaround support, networking support, consultative support, and three types of reports: short- to medium-term reports, technology assessments and horizon-scanning reports. These types of products and services are summarized in the following Table.

Taxonomy of Congressional Science and Technology Support Needs

Category of Support	Summary of S&T Support Demand From Congress	Approx. Timeframe	Approx. Product Length	Current Providers
Quick Turnaround	Questions that require a prompt response with facts, figures, and descriptions; for example, a legislative correspondent working to respond to a constituent’s inquiry or a brief overview of key S&T issues	one hour to three weeks	one to five pages	CRS
Networking	Access to a wide array of outside S&T experts embracing academia, industry, and non-profit segments	on-going	NA	Modest gap
Consultative	Readily available, consistent consulting with experts who provide more personal assistance to Members and staffs who can provide clear recommendations, if requested	on-going	NA	Modest gap CRS, but desire for additional S&T consultation
Report: Short-to Medium-Term	Studies and analyses of S&T trends that can be completed relatively quickly to allow critical issues to be addressed; provide detailed summaries of policy issues with original information gathered from stakeholders in all sectors, including government, nonprofit, industry, and government; these types of reports lay out options to deal with the challenges or leverage the opportunities; they are generally peer-reviewed from outside experts	one to twelve months	three to twenty pages	Modest gap ¹ with CRS and GAO seeking to respond
Report: Technology Assessment	Detailed research into the impact of S&T trends and provide avenues to mitigate the challenges and take advantage of opportunities; this type of study has a formal methodology that must be followed and are peer-reviewed by outside experts, going through a high degree of scrutiny before release	twelve to twenty-four months	fifty to 200 Pages	GAO
Report: Horizon Scanning	Identify emerging S&T technology trends and the opportunities and issues that might result from them in future	six to eighteen months	twenty to sixty pages	Gap

Table 1. Taxonomy of Congressional Science and Technology Support Needs (prepared by Academy)

¹ While the Panel notes a “gap” in this category, it recognizes that both the CRS and the GAO offer medium-term resource support to Congress as requested. Even so, neither agency expressly stresses this segment of resource support as its principal focus, but rather as an ancillary focus in response to occasional demand. Thus, the Panel notes it this way.

In comparing present supply and demand of S&T resource support for Congress, the Panel finds a modest gap in the areas of networking, consultative support, short- and medium-term S&T-related reports. That is, congressional clients expressed a desire for greater support in these categories. Also, the Panel finds a gap in S&T horizon scanning; no agency expressly claims responsibility for preparing horizon scanning reports as distinct products for Congress.

The report presents the following three options for addressing the identified gaps:

1. Enhance Existing Entities: Enhancing the capabilities of existing Legislative Branch support agencies, including GAO and CRS, including potential changes to current models.
2. Create a New Agency: Creating a separate agency to fill any existing gaps, with attention given to avoiding duplication of effort.
3. Enhance Existing Entities and Create an Advisory Office: Both enhancing existing entities and creating an S&T advisory office, led by a Congressional S&T Advisor, which focuses on strengthening the capacity of Congress to absorb and utilize science and technology policy information provided by GAO, CRS and other sources.

Each option is evaluated and ranked low, medium or high with respect to each of the following criteria:

- Desirability: How well does it meet customer needs?
- Feasibility: How difficult is it to implement?
- Viability: How likely is it to succeed in the long term?

Desirability is given greater weight than feasibility and viability. This weighting reflects the Panel's view that an option that maximizes S&T support resources available to Congress will be more likely to succeed.

Recommendations

Based on its assessment of the options, the Panel recommends *Option 3: Enhance Existing Entities and Create an Advisory Office*. This option has four key components for increasing congressional capacity and capabilities.

1. CRS enhances and expands its quick-turnaround and consultative services in S&T-related policy issues.
2. GAO further develops the capability of its Science, Technology Assessment, and Analytics (STAA) mission team to meet some of the supply gaps identified in this report (i.e., Technology Assessments, short-to-medium term reports, and networking) and make appropriate changes in its organization and operating policies to accommodate the distinctive features of technology assessments and other foresight products.
3. Congress creates an Office of the Congressional S&T Advisor (OCSTA), which would focus on efforts to build the absorptive capacity of Congress, to include supporting the recruitment and hiring of S&T advisors for House and Senate committees with major S&T oversight responsibilities. Every major committee should have at least one S&T advisor. OCSTA would also be responsible for horizon scanning.
4. Congress creates a Coordinating Council to be led by the Advisor and includes representatives from GAO's STAA, CRS, and a NASEM *ex officio* member with the objective to limit duplication and coordinate available resources to most benefit the Congress.

The Panel recommends that Congress conduct a thorough, independent, and nonpartisan review to evaluate the performance of the option. This review would take place 24 months after implementation. Congress should provide CRS and GAO resources and authority to build the capabilities needed to carry out the roles embodied in the recommended option.

During the course of this study, it became clear that improving the capacity of Legislative Branch entities to provide S&T policy resources is only part of the equation. In addition to the four recommendations above that speak to the resources available to the Congress, success will

depend also on the ability of Congress to absorb and utilize the S&T policy information provided by these entities whatever option is chosen. Toward this end, the Panel makes recommendations to strengthen the absorptive capacity of Congress in the following three areas: (1) committee structure and activities; (2) attraction and retention of S&T talent to congressional staff; and (3) proceedings – debate and deliberation.

Finally, the Panel recommends that Congress codify the recommended actions, both to enhance the capabilities of GAO and CRS and to improve its own absorptive capacity. The enhancement of CRS and GAO capabilities can be accomplished within existing statutory authorities and Congress can take the steps to improve its staff capacity without new authorizing legislation. However, the Panel recommends that Congress enact new authorizing legislation not only to codify the recommended actions, but also to provide for a deliberative hearing process and congressional floor debate, which would both educate and engage Members on these vital issues and announce to the public at large its commitment to keep the country and congressional policy-making on the cutting-edge of S&T issues.

In summary, even the most proficient of experts are challenged by the rapid advances and increasing complexity occurring in science and technology during this century. Faced with this dynamic environment, Members and staff of the United States Congress need responsive access to the best scientific and technical expertise as they make policy, conduct oversight, and interact with constituents. Furthermore, they need to proactively understand how developments in science and technology create social changes that demand a public policy response. The Panel's recommendation addresses these needs and calls for a timely review to ensure that any course corrections can be identified and actions taken in order to best harness and address the S&T developments proliferating around us. We commend the committee for holding this hearing and we look forward to working with you going forward, should you so desire, as you conduct oversight and prepare to legislate to move the Congress forward on this important issue.