Evaluating the 2019 NAPA Report on S&T Policy Assessment and Resources for Congress

Zach Graves & Daniel Schuman | December 3, 2019

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NAPA Report Summary

Congress directed that the Congressional Research Service engage an external entity to create a report on science and technology (S&T) expertise and capacity in Congress. This requirement, embedded in the FY 2019 Legislative Branch Appropriations bill,[1] arose from a bipartisan effort by Rep. Tim Ryan (D-Ohio) and then-Legislative Branch Appropriations Subcommittee chairman Kevin Yoder (R-Kans.), and was subsequently supported in the Senate. In early 2018, we both advocated for a study to be undertaken, and one of us testified[2] in favor of the study. As a result, CRS awarded a contract to the National Academy of Public Administration (NAPA),[3] which produced a report in October 2019.[4]

NAPA was instructed to meet three goals:[5]

1. Produce a report detailing the current resources available to Members of Congress within the Legislative Branch regarding science and technology policy, including GAO.

2. 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).

3. Address whether the creation of a separate entity would duplicate services already available to Members of Congress.

With respect to Congress's S&T support capacity, the NAPA report identified a gap in "horizon scanning"—that is, identifying emerging trends and opportunities. The report also identified modest gaps (which are partially served by current entities) in the areas of short-to-medium-term studies and analysis, external expert networking, and consultative services. After documenting these gaps, the report set forth three primary options for addressing them:

1. ***Enhance Existing Entities:*** Enhancing the capabilities of existing Legislative Branch support agencies, including GAO and CRS, including potential changes to current models.

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[1] Joint Explanatory Statement for H.R. 5895, 115th Congress.
https://www.appropriations.senate.gov/imo/media/doc/Joint%20Explanatory%20Statement%20H.R.%205895.pdf.
[2] Zach Graves, "Testimony before the U.S. House of Representatives, Committee on Appropriations, Legislative Branch Subcommittee," R Street Institute, April 17, 2018.
https://www.rstreet.org/2018/04/17/zach-graves-testimony-before-the-u-s-house-of-representatives-committee-on-appropriations-legislative-branch-subcommittee/.
[3] NAPA has a history of working on this issue, having authored one of the early reports to Congress on technology assessment in 1970.
[4] "Science and Technology Policy Assessment: A Congressionally Directed Review," National Academy of Public Administration, October 31, 2019.
https://www.napawash.org/uploads/Academy_Studies/NAPA_FinalReport_forCRS_110119.pdf.
[5] Note that this list and the three subsequent numbered lists below quote directly from the NAPA report's executive summary, pp. viii-xi.

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

Importantly, NAPA did *not* evaluate whether to restart OTA as currently authorized. Instead, the authors of the NAPA report assumed the technology assessment function would be covered by GAO's STAA program. The new agency proposed in NAPA's option #2 would be oriented to addressing identified gaps for short- and medium-term analysis (1-12 months) and horizon scanning, and would "serve all Members and staffs of Congress" rather than just committees.[6]

These options were evaluated based on three criteria, identified by NAPA:

1. ***Desirability:*** How well does it meet customer needs?

2. ***Feasibility:*** How difficult it is to implement? [Includes startup costs and time to full implementation.]

3. ***Viability:*** How likely is it to succeed in the long term? [Includes political durability and potential to duplicate work done by other entities.]

Based on those criteria, the three options were scored by NAPA as follows:[7]

Options Scorecard			
Option	**Feasibility**	**Viability**	**Desirability**
Option #1: Enhance Existing Entities	High	High	Medium
Option #2: Create a New Agency	Medium	Low	High
Option #3: Enhance Existing Entities and Create an Advisory Office	Medium	High	High

Given this analysis, NAPA recommended the third option, enhancing existing entities and creating a new advisory office. In pursuit of this recommendation, NAPA called for the following specific actions:

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[6] NAPA, p. 46.
[7] NAPA, p. 43.

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 [the NAPA] 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. 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 [National Academies of Science, Engineering, and Medicine] ex officio member with the objective to limit duplication and coordinate available resources to most benefit the Congress.

Takeaway Points From the NAPA Report

Congress's S&T capacity gap is broader than TA

The NAPA report does a good job of addressing the first goal of the study—detailing the current resources available to Congress—particularly with respect to framing the context of Congress's historic decline of staff capacity and expertise.[8] Additionally, the report correctly frames the challenge as not just building expertise in support agencies like OTA, CRS, or GAO but also developing absorptive capacity in committees and personal offices, and changing political structures and incentives to promote more thoughtful deliberation. (The concept of "absorptive capacity" is discussed in the recent Belfer Center report.[9]) Thus, creating capacity for technology assessment is a necessary but not sufficient condition to address Congress's broader S&T expertise gap. More S&T experts, and staff to support and make use of them, are needed across the institution in various roles.

Congress needs a funding increase to boost S&T capacity

While the politics of the 302(b) allocation for the legislative branch are challenging, particularly for conservatives, it is increasingly clear that Congress needs a substantial boost to augment the

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[8] To understand Congress's drastic expertise and capacity decline since the 1990s, see: Zach Graves and Daniel Schuman, "The Decline Of Congressional Expertise Explained In 10 Charts," *Techdirt*, October 18, 2018. https://www.techdirt.com/articles/20181018/10204640869/decline-congressional-expertise-explained-10-charts.shtml.

[9] Laura Manley, Ash Carter, et al., "Building a 21st Century Congress: Improving Congress's Science and Technology Expertise," Harvard Kennedy School, September, 2019. https://www.belfercenter.org/publication/building-21st-century-congress-improving-congresss-science-and-technology-expertise.

number and quality of full-time equivalent (FTE) staff across its support agencies, committees, and personal offices.

New authorizing legislation and hearings are needed

The NAPA report acknowledges that much can be done with existing authorities and through the appropriations process, but also recommends comprehensive new authorizing legislation and related hearings to educate Members and communicate the importance of S&T issues to the public. We agree.

GAO will play a prominent role

GAO has recently scaled up its capacity for technology assessment and other S&T functions to advise Congress. Future discussions of augmenting congressional S&T capacity, including reviving OTA, must include a prominent role for GAO to help fill this gap. This is also appropriate for GAO, as oversight of federal programs and expenditures increasingly requires scientific and technical insights. And STAA is already doing important work beyond the scope of OTA's mission.[10]

We also agree with NAPA that some STAA products could benefit from a more intensive expert-review process, and broader stakeholder engagement in the S&T community. That said, we think they deserve high marks so far for outreach and transparency.

While there is some uncertainty whether GAO's culture will be able to adapt to effectively cover the full range of OTA's work (particularly that part concerning non-technical values and horizon scanning), GAO should be given the opportunity to succeed—including additional resources and potentially new authorizing legislation (which NAPA suggests). Along these lines, we think there are valuable lessons from the "Center for Scientific and Technical Assessment" proposal from former Reps. Rush Holt and Amo Houghton, which sought to adapt OTA structural features onto a GAO-based technology assessment unit.[11]

What Needs Additional Evaluation

Insufficient analysis on reviving and modernizing OTA

As mentioned above, none of the options presented by NAPA explicitly includes the possibility of reviving OTA, and the report assumes that STAA will be the primary entity serving this function. NAPA may have considered revising OTA as part of its deliberations, but those deliberations do not appear in the report. This is unfortunate, as the desirability of reviving OTA is clearly a live issue in Congress. In particular, there has been recent congressional interest in pursuing a hybrid approach

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[10] See, e.g., Dan Lips, "Modernizing oversight to improve government efficiency and accountability," Legbranch.org, November 26, 2019.
https://www.legbranch.org/modernizing-oversight-to-improve-government-efficiency-and-accountability/.
[11] See: H.R.4670, 108th Congress. https://www.congress.gov/bill/108th-congress/house-bill/4670; Also see the subsequent 2005 draft, which incorporated feedback from then-Comptroller General David M. Walker:
https://github.com/zachgraves/futurecongress/blob/master/CSTA%20draft%202005.pdf.

that includes both OTA and STAA.[12] Additionally, while there is still some anxiety among Republicans about OTA, the political factors that led to its defunding are largely no longer relevant.

Underdeveloped political landscape analysis

A fundamental weakness of the NAPA report is how it assesses the political landscape. While NAPA was not explicitly directed by Congress to evaluate political considerations for building S&T capacity, political considerations are built into the report's analysis anyway, in the form of the "viability" and "feasibility" factors used to evaluate the different options. It is worth looking closely at each of these factors, to see what the report's analysis missed. Notably, there is a lack of detail regarding resource requirements and no analysis of broader legislative branch appropriations questions. Also,

On feasibility

Per NAPA, "feasibility" is determined by startup and implementation costs, as well as time to implementation.[13] Here is how the report estimates those costs for each of the three options under consideration:

> **Option #1: Enhance Existing Entities:** High feasibility. $1-2 million cost.
>
> **Option #2: Create a New Agency:** Medium feasibility. $8-10 million cost.
>
> **Option #3: Enhance Existing Entities and Create an Advisory Office:** Medium feasibility. $8-10 million cost.

These funding thresholds seem arbitrary and lack explanation in the report. Looking closely, these numbers also don't seem to match up to real-world details. The resources needed to expand capacity at GAO and CRS (options #1 and #3) will significantly exceed $1-2 million. The strategic plan for GAO's STAA program alone describes a planned increase from 70 FTE staffers to 140 FTE staffers in the coming years, increasing the program's salary and benefits cost from $15 million to $30 million annually.[14]

To suggest, as the NAPA report seems to do, that the STAA program as it currently exists can fill the gap for technology assessment left by OTA's defunding is a mistake. Given that about a third of STAA's FTE staffers are dedicated to technology assessment, doubling the program's staff would still leave it short of OTA's capacity: OTA had a permanent staff of 143, with another 60 or so contractors and a budget of $37 million in today's dollars. To approach OTA's capacity for

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[12] See: "Technology assessment: Legislative activity," FutureCongress Wiki.
https://github.com/zachgraves/futurecongress/wiki/Technology-assessment:-Legislative-activity.
[13] NAPA, p. 42.
[14] "GAO Science, Technology Assessment, and Analytics Team: Initial Plan and Considerations Moving Forward," Government Accountability Office, April 10, 2019.
https://www.gao.gov/pdfs/about/GAOScienceTechPlan-2019-04-10.pdf.

technology assessment—not to mention to fill the other gaps the NAPA report identifies—STAA would need a more significant expansion of resources than the NAPA report calls for. (We do not opine on whether the staff size is appropriate to meet today's needs.)

If you add the proposed Office of the Congressional S&T Advisor on top of the STAA (per option #3), that is another $5 million in initial costs.[15] Even without a similar capacity increase at CRS, NAPA appears to have significantly underestimated the costs of enhancing existing entities and thus the political feasibility of doing so. This is to say nothing of the suggested improvements in absorptive capacity among committees and personal offices, which would likely be quite costly. Kicking the can down the road to another study to determine right staffing levels—as the NAPA report does—further undermines the report's feasibility analysis.

Also insufficiently considered in the NAPA report: The type of legislative action that would be required to implement each of the options. *Appropriations* bills are enacted annually to fund the legislative branch; they also provide a regular vehicle for small changes. By comparison, *authorizing* language is enacted infrequently and involves a different set of committees (and is thus more politically challenging). Pursuing new authorizing legislation (as would likely be required by options #2 and #3) could entail a long and onerous process. (By way of comparison, the passage of OTA's authorizing bill took nearly a decade from its initial conception.) Appropriators have shown some interest in expanding STAA and in reimagining OTA. But it is unclear how they would view OCSTA (or any other new entity) that would be created by a different set of committees with different priorities from the Members who requested the NAPA report.

On viability

Per NAPA, "viability" entails political resilience as well as potential for duplication of work done by other entities. On political resilience, one of the perceived weaknesses of OTA was its lack of support among rank-and-file Members of Congress, since it primarily served committees. Yet the NAPA report recommends that GAO continue to use its existing congressional protocols for requesting technology assessments—meaning that STAA will continue to primarily work for committees, rather than meet broader congressional demand for S&T analysis. This risks creating the same vulnerability for STAA as beset OTA. It would have been beneficial for NAPA to give greater consideration to ensuring that all Members of Congress are able to benefit from STAA's expertise, including mechanisms by which Members can have their requests addressed (even if focused on quick turnaround and short- and medium-term products).

With respect to duplication, while the NAPA report looks at the work of the National Academies of Science, Engineering, and Medicine, it does not sufficiently consider other external sources of S&T expertise. As discussed below, we are also concerned that the report treats different kinds of expertise functions interchangeably.

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[15] NAPA, p. 55.

In addition, the NAPA report does not consider how a legislative agency's governance can be structured to shield S&T analysts from political criticism. OTA was governed by a bipartisan, bicameral board that signed off on all technology assessments and acted as a barrier against attacks on the agency. While this structure ultimately failed to prevent the defunding of OTA, it did create a base of bipartisan support that nearly saved it. On the other hand, a small office like OCSTA is unlikely to build a broader support base than OTA, and may be even more politically vulnerable without such a bipartisan governing structure. STAA may also benefit from a bipartisan governing board, even if it were more advisory than OTA's (see footnote 11).

Missing critical analysis of CRS

The NAPA report recommends beefing up CRS in several areas. However, the report does not assess CRS's current capacity for S&T work versus the volume and type of congressional demands. Additionally, while the report does a good job reviewing literature and documenting stakeholder perspectives about GAO's institutional and cultural challenges, there is no similar analysis of challenges at CRS—despite growing concerns about CRS's management and the changing nature of its analytic culture.

On the management challenges, the R Street Institute's Kevin Kosar, who served at the agency for a decade, has described CRS's culture as "remarkably risk-averse," and increasingly politicized, which has led to a loss of talent.[16] With respect to its analytic culture, CRS's Susan Thaul testified earlier this year about a watering-down of CRS reports and a downgrading of expertise for those who work at the service.[17]

> Management fear of Member objections overrode the nonpartisan, expert analysis and judgment of their analysts…. In some cases, analysts are prevented … from synthesizing new perspectives on issues, and are told to instead focus only on what others have said.

This trend runs counter to the idea that CRS can take a stronger leading role in science and technology analysis. In addition, Dr. Thaul raised the alarm on hiring at CRS. "[T]here has been an increasing trend away from more experienced and mid-career hires who may have substantial experience in the industries, organizations, and agencies that are the focus of congressional actions." Other experts on CRS, such as Louis Fisher, submitted testimony on how CRS has transmuted its policy of nonpartisan advice to neutrality, which, in his view, has undermined its analytical capabilities.[18]

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[16] Kevin Kosar, "Why I Quit the Congressional Research Service," *Washington Monthly*, January/February 2015. https://washingtonmonthly.com/magazine/janfeb-2015/why-i-quit-the-congressional-research-service/.
[17] Susan Thaul, "Written Statement to the Committee on House Administration at its hearing on 'Oversight of the Congressional Research Service,'" June 20, 2019. https://docs.house.gov/meetings/HA/HA00/20190620/109663/HHRG-116-HA00-Wstate-ThaulPhDS-20190620.pdf.
[18] Louis Fisher, " Statement to the Committee on House Administration at its hearing on 'Oversight of the Congressional Research Service,'" July 20, 2019. https://www.legbranch.org/app/uploads/2019/06/Fisher-testimony-Oversight-of-CRS-06-20-2019.pdf.

Clearly, not all reports—or analysts—are created equal. A short briefing paper from a senior specialist with decades of experience is far different from an early-career analyst performing an uncritical literature review and summary. At OTA, the process of long-form technology assessments created a deep level of in-house staff expertise that made possible a much higher quality of consultative expertise, as well as the ability to produce high-quality briefing papers with a quick turnaround. Unfortunately, the NAPA report seems to treat analytic products of similar length interchangeably, and overlooks the cultural and management problems at CRS. This also calls into question whether NAPA's taxonomy of S&T advice is overly focused on factors such as the number of pages and time frame for delivery. There are additional factors that are important to Congress, such as authoritativeness, relevance, and focus.

It would be prudent to have a more detailed understanding of CRS's institutional challenges prior to making a significant new investment in CRS. For instance, should resources be focused on increasing the number of FTE staffers? Or improving the seniority and tenure of analysts? Are there cultural and management issues that should be addressed first?

Coordination among advisory agencies

The NAPA report raised questions about how CRS, GAO, and the National Academies could coordinate approaches to issues of congressional interest. This subject could have used additional exploration. We note, for example, that NAPA appears to have had difficulty getting the full picture of CRS's work: "Because the CRS's work in response to congressional requests is largely confidential, our analysis of the CRS's consultative and quick turnaround products and services was constrained."[19] A more thorough understanding of the confidential requests made to CRS could have helped inform the kinds of outputs NAPA would like to see from a new S&T-focused entity. We cannot help but wonder whether the OCSTA, the coordinating office proposed by the NAPA report, would encounter difficulty in collaborating with CRS management.

Making expertise customer-oriented

Unaddressed by the report is the congressional user's perspective when requesting science and technology assessments and attempting to find information about final reports. If various analyses are conducted by CRS, GAO, and OCSTA, where do you look to find that information? Do they reference each other? Is there a unified web page that pulls together all the reports? Should STAA or CRS have a "Wikipedian in Residence"?[20] Should it make use of blogs, social media, and podcasts? In addition, how are these products requested? Does the staffer have to know which agency to contact or is there a one-stop shop that sorts it out? More thought must be placed into generating a seamless user experience for staff to ask questions and find resources.

Learning from international models

NAPA briefly and superficially mentioned some of the OTA-like entities that exist internationally and support their local parliaments. It would be worth addressing U.S. participation with

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[19] NAPA, p. 31.
[20] "Wikipedian in Residence," Wikimedia Outreach Wiki. https://outreach.wikimedia.org/wiki/Wikipedian_in_Residence.

international bodies (such as through the EPTA Network) that also engage in this work, including learning from their experiences and collaborating on joint projects.[21]

Insufficient detail about institutional design for OCSTA

With respect to the NAPA report's proposed recommendation to create a new coordinating and horizon scanning entity, the report's authors leave out many critical features of how it would work. A number of questions need to be resolved before the viability and usefulness to Congress of the OCSTA proposal can be established:

- ***How will OCSTA pick topics?*** While OTA had a bipartisan, bicameral Technology Assessment Board, CRS responds to individual Member requests, and GAO has its congressional protocols, it is unclear how OCSTA would determine the topics for its horizon scanning work. Lack of congressional buy-in for such a new agency may prove to be a political liability that pushes it either into political peril or to extreme risk aversion.

- ***How will OCSTA integrate new resources into committees?*** NAPA proposed that its newly created OCSTA would play a role in placing staff inside congressional committees and would apparently serve as a funding mechanism. In theory, this could be a welcome way to get around limited committee allotments, but in practice it raises additional questions. The current technology fellows on Capitol Hill are used unevenly, with some committees making use of the fellows' expertise and others marginalizing them. How would OCSTA hire for fit with a committee and make sure a given fellow would be able to become a trusted member of the team and stay in place long enough to do productive work? How many committees would be served? Could these fellows be placed elsewhere? What would it cost? Who pays?

- ***How will OCSTA engage in horizon scanning?*** OCSTA's use of contractors to conduct horizon scanning—as proposed by the NAPA report—is concerning. This suggestion could lead to inconsistent analysis over time, the possibility of insufficient expertise in meeting the needs of Congress, a disconnect between analysts and the offices they serve, and potential funding limitations undermining the scope and rigor of the work product. The report does not sufficiently explore these tradeoffs.

- ***What would new authorizing legislation look like?*** While the NAPA report outlines a pilot for OCSTA starting with 10 FTE staffers and $5 million, it gives few details as to the office's oversight, statutory powers, or mechanism to coordinate with other support agencies or fellowship programs.

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[21] European Parliamentary Technology Assessment (EPTA) Network. https://eptanetwork.org/about/about-epta/members-and-projects; Notably, STAA is an associate member.

- ***Is OCSTA the right place for horizon scanning?*** If OCSTA's primary role is a coordinating entity, it's not clear that it—in the form imagined in the NAPA report—should take on the horizon scanning function (and its political liability).

Additional Resources

- Zach Graves and Daniel Schuman, "Fact Sheet: The Office of Technology Assessment," Lincoln Network and Demand Progress. https://lincolnpolicy.org/wp-content/uploads/2019/12/TA.pdf.

- Adam Keiper, "Science and Congress," *The New Atlantis*, Fall 2004-Winter 2005. https://www.thenewatlantis.com/publications/science-and-congress.

- Zach Graves and Daniel Schuman, "Science, Technology, and Democracy: Building a Modern Congressional Technology Assessment Office," Harvard Ash Center, Winter 2019-2020 (forthcoming).

- Zach Graves and Tony Mills, "Reviving Expertise in a Populist Age," *The New Atlantis*, Fall 2019. https://www.thenewatlantis.com/publications/reviving-expertise-in-a-populist-age.

- Peter Blair, *Congress's Own Think Tank.*

- M. Granger Morgan and Jon Peha, *Science and Technology Advice for Congress.*

- "Science & Technology Assessment Forum," Google Groups. https://groups.google.com/forum/#!forum/revive-ta.

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