

Hon. Derek Kilmer, Chair
Hon. William Timmons, Vice Chair
Select Committee on the Modernization of Congress
164 Cannon House Office Building
Washington, DC 20515

Re: Hearings on Building Congressional Capacity for Science & Technology Policy

Dear Chair Kilmer, Vice Chair Timmons, and Members of the Committee:

The Committee has scheduled two hearings on building science and technology (S&T) capacity in Congress. The first, *Improving the Lawmaking Process & Evidence Based Legislating*, is tentatively set on June 30, 2021, and the second, *Expanding Science & Technology Policy Expertise*, is set on October 4, 2021. At the first of these, the Committee is expected to consider “the need for impartial scientific/technology analysis in Congress and [a] look at reestablishing an office to provide members, committees, and staff with timely, impartial analyses of complicated scientific and technological issues.”

This follows on recommendations by the Committee at the end of the 116th Congress to:

Reestablish an improved Office of Technology Assessment (OTA) to study and recommend emerging technologies, provide nonpartisan information and policy analysis to Member offices, support legislative branch agencies in their examination of new technologies, focus on general oversight and policy, and facilitate peer reviews of potential new technologies.¹

In recent years there has been increasing attention to the support available to Members of Congress to evaluate science and technology policy questions:²

- The House Science and Technology Committee held a hearing entitled *Experts Needed: Options for Improved Science and Technology Advice for Congress* in December 2019.
- The National Academy of Public Administration issued a report at the request of Congress on *Science and Technology Policy Assessment* in October 2019,³ which was summarized and critiqued by Daniel Schuman and Zach Graves.⁴
- Daniel Schuman at Demand Progress and Zach Graves at the Lincoln Network co-authored a report through the Harvard Kennedy School Ash Center entitled *Science, Technology, &*

¹ [Final Report](#), The Select Committee on the Modernization of Congress (H. Rept. 116-562).

² See: [Legislative History of Technology Assessment in the US](#), Daniel Schuman and Zach Graves, Future Congress.

³ [Science and Technology Policy Assessment: A Congressionally Directed Review](#), National Academy of Public Administration.

⁴ [Evaluating the 2019 NAPA Report on S&T Policy Assessment and Resources for Congress](#), Daniel Schuman and Zach Graves.

Democracy: Building a Modern Congressional Technology Assessment Office, which evaluated the options for building a modern OTA and was published in January 2020.⁵

- Harvard's Belfer Center has issued several reports, including *the Congressional Futures Office*,⁶ and *Building a 21st Century Congress: Improving Congress's Science and Technology Expertise*,⁷ both issued in 2019.
- Congress has taken steps to expand resources for S&T at support agencies. This includes new investments in GAO and also encouraging CRS to expand its capacity.

The Office of Technology Assessment, which provided science and technology support to Congress, was defunded in 1995, primarily for short-term political reasons. Over the years there have been efforts to reestablish and modernize the OTA through authorizing legislation. In addition, the Appropriations Committees have received numerous requests to restore its funding; they funded the Government Accountability Office in 2019 to create the Science, Technology Assessment, and Analytics Team, which performs some of the work undertaken by OTA but has a fundamentally different governance structure and less direct relationship with Congress.

Where there is general agreement:

- There is a need for investment in greater science and technology policy capacity to support Members of Congress. This includes support agencies, committees, and personal offices.
- That the GAO's STAA, as presently constituted, is not sufficient to provide the full range of science and technology policy support desired by Congress.
- Congress should establish a new entity to promote coordination and absorptive capacity, as discussed in the NAPA report.

Key points for consideration:

- How can Congress best leverage existing agencies and resources and promote better coordination amongst them?
- What resources and authorities does STAA need to better serve Congress through its Technology Assessment work and Innovation Lab?
- If Congress establishes a new entity how should it be structured?

Potential witnesses (emails available upon request):

⁵ [*Science, Technology, & Democracy: Building a Modern Congressional Technology Assessment Office*](#), Daniel Schuman and Zach Graves, Harvard Ash Center.

⁶ [*The Congressional Futures Office*](#), Justin Warner and Grant Tudor, Harvard Belfer Center.

⁷ [*Building a 21st Century Congress: Improving Congress's Science and Technology Expertise*](#), Mike Miesen, Laura Manley, et. al., Harvard Belfer Center.

- **Peter Blair**, George Mason University (former OTA and former NASEM; regarded as a top expert on OTA)
- **Robert Cook-Deegan**, Professor, ASU's School for the Future of Innovation in Society (former OTA, former NASEM, and on GAO's Polaris Council)
- **Kathryn Wagner Hill**, Director, Center for Advanced Governmental Studies at Johns Hopkins University (governance policy expert and former OTA)
- **Marjory Blumenthal**, Senior Policy Researcher RAND Corporation (S&T expert, former head of PCAST, former OTA, and member of GAO's Polaris Council)
- **Mahmud Farooque**, Associate Director, Consortium for Science, Policy and Outcomes (CSPO); Clinical Associate Professor, School for the Future of Innovation in Society (SFIS); Arizona State University (expert on participatory S&T)
- **Marcia McNutt**, President, National Academy of Sciences (NRC transformation effort)
- Additional experts listed in **Appendix III**.

Contact information:

We welcome the opportunity to discuss this further. Please contact: Zach Graves, Head of Policy, Lincoln Network (zach.graves@joinlincoln.org); Daniel Schuman, Policy Director, Demand Progress (daniel@demandprogress.org).

Appendix I: Key dates for Congressional technology assessment:

- 1960s: Need for a technology assessment capability first discussed and developed in the House Committee on Science and Astronautics.
- 1972: OTA authorized ([P.L. 92-484](#)).
- 1973: Initial appropriations for OTA for FY74 ([H.R. 6691](#)).
- 1995: OTA defunded in FY96 appropriations package ([P.L. 104-53](#)).
- 2001: GAO technology assessment pilot created in FY02 appropriations ([H. Rept. 107-259](#)).
- 2004: Reps. Rush Holt (D-NJ) and Amo Houghton (R-NY) lead a (unsuccessful) proposal to expand GAO's pilot with additional features from OTA ([H.R. 4670](#) and [later draft](#)).
- 2006: House Science Committee hearing on S&T advice for Congress ([transcript](#)).

- 2007: Permanent TA function in GAO is established through FY08 appropriations.
- 2018: Report language to elevate GAO's TA program and have NAPA undertake an assessment of Congress's S&T capacity gaps.
- 2019: GAO announces formation of STAA as its 15th mission team in January; SCMC recommends reviving and modernizing OTA in July; NAPA publishes its [report](#) in October; House Science Committee holds a [hearing](#) on S&T advice for Congress.

Appendix II: Office of Technology Assessment Fact Sheet

About OTA

- OTA was authorized by the Technology Assessment Act of 1972 ([2 U.S.C. §§ 471-481](#)) to provide Congress with reliable, unbiased information about technology—especially its economic, social, political, physical, and health implications. OTA received its first appropriation in the FY 1974 appropriations [bill](#), and its last in the FY 1996 appropriations [bill](#) (to close down the office). While its funding was stopped, its authorization was never repealed.
- In 1995, OTA had a \$22 million budget (\$37 million in 2019 dollars) and around 200 staff. By comparison, in FY 2019, CRS received \$125 million (543 employees) and GAO received \$589 million (3,250 employees).
- OTA [produced](#) nearly 750 technology assessments, background papers, and other materials over its life. These covered many topics, including healthcare, education, defense, telecom, computing and information technology, biotechnology, space, and energy.⁸
- OTA studies were typically initiated by requests from committee chairs. They were approved by its bipartisan, bicameral oversight board made up of six Republicans and six Democrats.
- OTA's work provided policy information and analysis. It did *not* build, test, or deploy information technology or digital services, and it did not play a technology support role for the legislative branch.

OTA's value proposition

- OTA focused on producing “technology assessments”—multi-disciplinary, expert-reviewed studies that informed policymakers about the probable short and long-term effects of emerging and established technologies, and the tradeoffs of different policy approaches. This made its reports distinct from CRS products, which focus on short responsive issue briefs and summaries of existing literature.

⁸ See: [OTA Archive](#), FAS.

- OTA's role was to empower legislators with information to make value choices. It provided information about where consensus existed and where open questions remained, and it evaluated the implications of different policy approaches. It did not make policy recommendations.
- Full OTA studies took an average of 18 months to complete. The agency convened experts on a topic, surveyed the relevant research, and evaluated the resulting information to provide a book-length analytical product.
- At least as important as the reports it generated was OTA's "shared staff" model—where its staff were available to work informally with congressional staff. This provided Members of Congress with access to expert networks beyond the institution, as well as deep in-house expertise on a wide variety of issues.

What was OTA's practical effect?

- OTA filled a gap in congressional expertise on scientific and technical issues, providing Congress with an objective source of information based on an understanding of Congress's unique needs and operations. While it would be impossible to calculate all of OTA's impacts on policy, this included [advancing](#) the adoption of spectrum auctions at the FCC, leveraging medical advances to reduce Medicare costs, deregulating the nuclear power industry, and others recorded [here](#).⁹
- OTA's assessments routinely supported policymakers as they evaluated federal S&T programs and expenditures, leading to significant cost savings. This included a study of the Social Security Administration's IT strategy, which led to \$368 million in savings; and raising red flags about the Synthetic Fuels Corporation, worth at least \$60 billion in savings. OTA's work also contributed to the adoption of spectrum auctions at the FCC, which have generated billions in revenue.

OTA's defunding

- OTA was defunded in November 1995. The primary motivation was to give the new Republican majority moral authority to make deeper cuts elsewhere in government. Its defunding came as part of a series of deep budget cuts to Congress, including cutting thousands of staff from GAO and congressional committees. OTA was viewed as providing useful information, but some viewed its work as "nice to have" not a "need to have." Here's how the conservative Heritage Foundation [advocated](#) for its defunding at the time: OTA did "good work and useful work" but killing it "will make the job of eliminating other government functions far easier."
- OTA's defunding was enabled by its political vulnerability and utility as a symbol to fiscal conservatives, but it was not done purely along partisan lines. In 1995, OTA had strong

⁹ See: [OTA Legislative Impact Summary](#), OTA.

supporters on the right such as Sens. Chuck Grassley (R-IA) and Ted Stevens (R-AL), and strong critics on the left such as Sen. Harry Reid (D-NV). There were several close [votes](#) on saving it.

- While short-term political symbolism was by far the primary reason for OTA's elimination, other reasons were proffered. Those included a suspicion that OTA was biased toward particular ideologies or approaches to problem-solving, or against programs supported by some members of Congress. These criticisms (and others) are explored in detail [here](#).

Appendix III: Additional recommendations for potential witnesses

- **Rep. Mark Takano**
- **Former Rep. Rush Holt**
- **Zach Graves**, Head of Policy, Lincoln Network
- **Daniel Schuman**, Demand Progress
- **Tom Kalil**, Chief Innovation Officer Schmidt Futures
- **Gerald Epstein**, Distinguished Research Fellow, Center for the Study of Weapons of Mass Destruction National Defense University
- **Robert M. Friedman**, VP for Policy and University Relations, J. Craig Venter Institute
- **Dan Chenok**, Executive Director, Center for the Business of Government IBM
- **Laura Manley**, Harvard Belfer Center
- **Darlene Cavalier**, Professor of Practice, Arizona State University
- **M. Anthony Mills**, Resident Scholar, American Enterprise Institute
- **Kevin Kosar**, Resident Scholar, American Enterprise Institute
- **Chris Tyler**, Director of Research and Policy, Department of Science, Technology, Engineering and Public Policy, University College London

Appendix IV: Additional topics for consideration

How to better leverage existing agencies and resources

- **Request protocols:** Should technology assessments and other forms of S&T analysis and advice be made available in response to requests from all Members of Congress, solely from Committee chairs/RMs, or a mix?

- How should responsibilities be handled between support agencies (e.g. GAO and CRS)?
- How do we improve Congress's ability to utilize congressionally-chartered entities, particularly NASEM and the NRC, for S&T advice?
- How do we improve the user experience for congressional staff seeking expert resources on S&T, considering the different areas resources are spread across? Should Congress create a streamlined intranet portal for S&T requests?

Governance issues for STAA and the Innovation Lab¹⁰

- Whether making the STAA more independent of GAO would address the institutional and cultural challenges that arise at GAO?
- Should STAA have a separate line item and congressional budget justification? Or statutory research independence like CRS has with the Library?
- Should STAA have an advisory Technology Assessment Board of Members of Congress, like the former OTA or the CSTA [proposal](#)?
- Should STAA have outreach offices in House and Senate office buildings?
- Should the Innovation Lab take on a broader role in providing technical advice and analytics on Legislative branch technology, similar to the proposed Congressional Digital Service?
- What new authorities for hiring, IT, and acquisitions would enhance the Innovation Lab?

Establishing a new S&T coordinating entity or other capabilities

- Should Congress establish an additional office, such as the one proposed by NAPA?
- How would the role of this entity be defined so as to augment rather than duplicate existing resources? Should its primary function be horizon scanning, coordination and network building, or something else?
- How should any such entity be structured and overseen? Does it make sense to establish an entity that serves the whole Legislative branch or would it make sense to start by creating an entity that serves the House only?
- How can Congress best leverage participatory research methodologies for getting insight into constituents' views to augment and inform its S&T advice?¹¹

¹⁰ See: [Recommendations to Strengthen GAO's STAA](#), Zach Graves, Lincoln Network.

¹¹ See: [Reinventing Technology Assessment](#), Richard Sclove, Wilson Center.

Appendix V: Comparison of STAA and OTA

	STAA	OTA
Governance structure	Resides in GAO. Director(s) report to COO and Comptroller General.	Independent. Director reports to a bicameral, bipartisan Technology Assessment Board (TAB) of 6 Senators and 6 Representatives.
Leadership	Two co-managing directors appointed by the Comptroller General. Indefinite term.	Director appointed by TAB. 6 year term.
Authorities	STAA functions such as hiring, contracting, acquisitions, publication, IT, and congressional relations go through GAO bureaucracy for approval. GAO overall has unique powers related to oversight of federal programs.	Director has broad authorities for hiring, acquisitions, contracting, etc. TAB has final approval on publication of major reports and can make new rules and procedures for the organization as they deem necessary.
Standing advisory committee	Polaris Council composed of 27 members from the S&T community.	Technology Assessment Advisory Council (TAAC) composed of 10 members from the S&T community, the CRS director, and the Comptroller General.
Report request process	GAO congressional protocols and CG's authority . Prioritizes committee requests but has worked with individual Members.	TAB approval . Prioritizes committee requests.
Research methodology	GAO Technology Assessment Design Handbook and GAO Yellow Book .	OTA Orange Book (1986); Draft OTA Handbook (1982).
Staff	104 FTE (January 2021).	143 staff (statutory limit) plus numerous project-based contractors.
Scope of work	Broader focus than OTA. <ul style="list-style-type: none"> • Technology assessments, other S&T reports, and informal advice to Congress • Oversight and performance audits of federal S&T programs • Data analytics and oversight technology (Innovation Lab) • Technical best practices for federal agencies 	Narrowly focused. <ul style="list-style-type: none"> • Technology assessments, other S&T reports, and informal advice to Congress • Limited oversight-related work.