

America @ 250: Redesigning the Scientific Enterprise

Shaping a new vision for how American science serves the nation

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**Consortium for Science,
Policy & Outcomes**
at Arizona State University

Rethinking the Role of Science in Society

A 25+ year journey ...

- The **Consortium for Science, Policy & Outcomes (CSPO)** is dedicated to enhancing the contribution of science and technology to society's pursuit of equality, justice, freedom, and improved quality of life.
- CSPO is a **platform for dialogue** and a **testbed** for new approaches to S&T policy
- CSPO has been creating **knowledge** and **methods**, cultivating **public discourse**, and **fostering policies** to help decision makers and institutions grapple with the immense power of science and technology as society charts a course for the future.
 - **Real Time Technology Assessment (RTTA)**
 - **Reconciling the Supply of and Demand for Science (RSD)**
 - **Public Value Mapping (PVM)**
 - **Anticipatory Governance (AntGov)**
 - **Participatory Technology Assessment (pTA)**



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The Current Moment in American Science Policy

The making of a crisis / crises ...

- ▶ **Department of Government Efficiency**
System-level dismantling of federal scientific capacity and advisory structures.
- ▶ **Compact for Academic Excellence in Higher Education**
Using funding as a political instrument to reshape research universities.
- ▶ **Deregulation and Oversight Rollbacks**
Weakening the guardrails that ensure research integrity and public accountability.



Key turning points in S&T policy

Our present was not preordained. Alternative pathways abound.

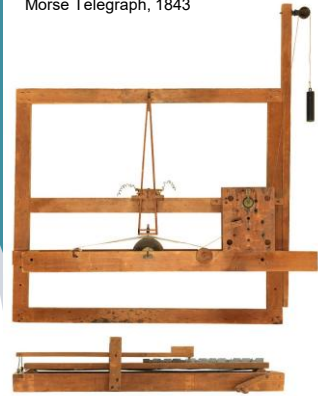
1770—mid-19th century:

- **US Constitution:** Article 1, Section 8, Clause 8: Congress shall have Power ... to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.
- Era of independent inventors / hybrid scientist-technologists = practical bent; science follows engineering and tech advances, leading to new applications and new K
- Federal funding for surveying, collecting, tech clusters (Hamilton, *Report on Manufactures*)
- James Smithson: "Increase and diffusion of knowledge..."

1862:

- **Morrill Act:** establishes land-grant college system / American engineering education
- **Science in service of communities**
 - Support farmers with practical knowledge for mechanized / industrialized era
 - Educate children of farmers (ag employment 1880 = 51% of US working population; today = 1.5%)
 - Extension as 2-way relationship (mitigating diffusion challenges)

Morse Telegraph, 1843



Lincoln Milling Machine, 1861



Key turning points in S&T policy (2)

Our present was not preordained. Alternative pathways...

WWII and after:

Issue	Vannevar Bush	Harley Kilgore
Control	Scientists	Politicians (+ business, farmers, labor)
Planning & Funding	Serendipity and curiosity; peer judgment; fund stars	Orient to national needs; geographical distribution
Research	Basic	Basic and Applied
IP	Evolving views	Government control

1980s + 1990s:

- Bayh-Dole: Universities as sources of start-up firms / regional economic engines
- Universities and post-cold war globalization

2000 – 2025

- “Translational” science: ARPA-E; ARPA-H; etc. and NSF-TIP
- A new era of national systems for research & innovation
 - How do we design for responsiveness to policy & public?



The Response Landscape and Gaps

Engaging Government, Non-Government, University & Philanthropic Leaders ...

Landscape:

- Reinstate: Use legal avenues and non-federal support to reinstate staff and programs, and outreach strategies to regain trust;
- Reform: Adapt and focus on reorganization, experimentation, and increased public-private partnerships;
- Redesign: Reset the social contract for science with systemic redesign, beginning with science's goals, governance, and public purpose.

Gaps:

- Historic tensions that underpinned the evolution of the US scientific enterprise for the past 250 years,
- Direct engagement on science and technology futures with scientists, communities, stakeholders, and the broader democratic public, and
- Collaboration and coordination among disparate S&T efforts aimed at responding to current crises and opportunities.



Participatory Technology Assessment [pTA]

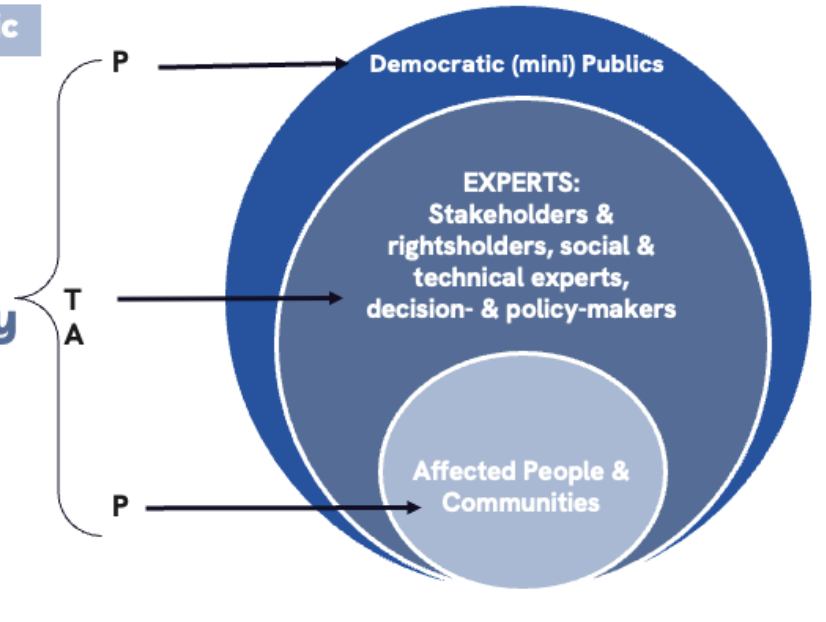
A proven, reflexive, adaptable, replicable, scalable model for innovating with the public

- ▶ An engagement model that seeks to improve the outcomes of science and technology decision-making through dialogue with informed publics and communities.
- ▶ pTA engages groups of non-experts who are representative of the general population who - unlike political, academic, and industry stakeholders - are typically not represented in science and technology related decision-making.

I. Expert + Public

Technology Assessment (TA) vs. Participatory Technology (pTA)

Adapted from
NASEM



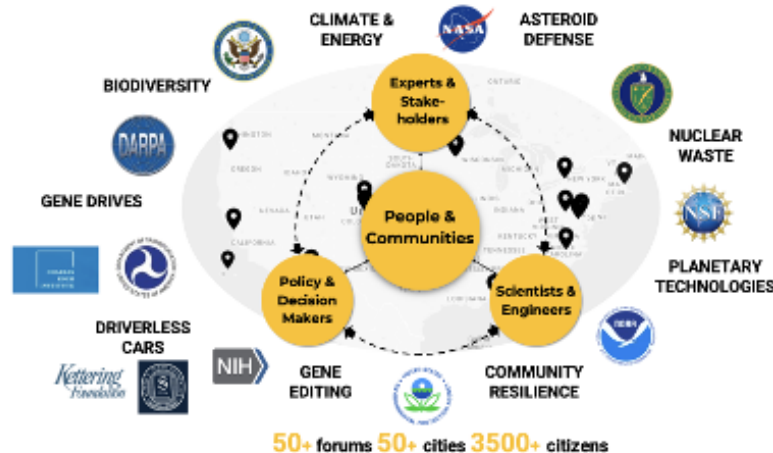
Expert and Citizen Assessment of Science and Technology

Independent, non-partisan, interdisciplinary, distributed, and agile

II. INTEGRATED 3-PHASE MODEL WITH ADAPTABLE APPLICATIONS



15+ Years, \$6+ Million in Sponsored Projects



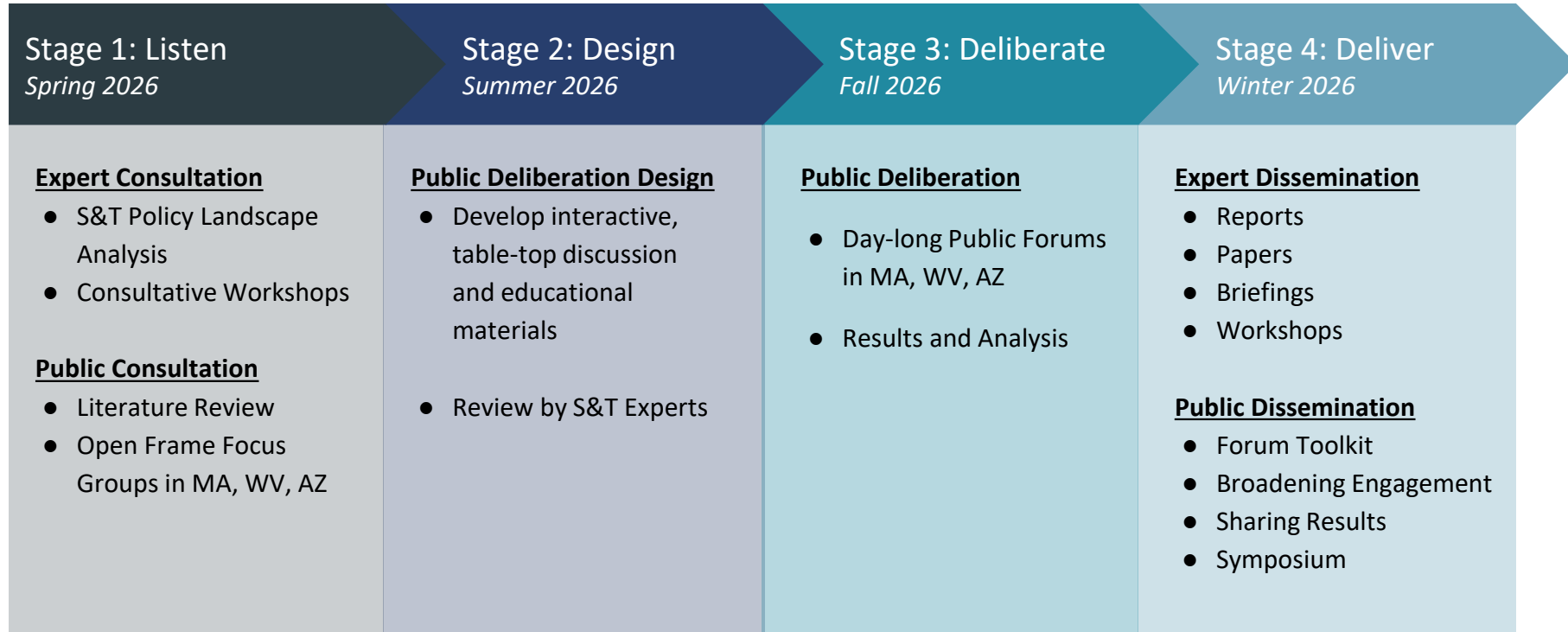
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The CSPO additions ...

- ▶ **Identify and assess the needs, opportunities, and challenges** within the U.S. scientific enterprise through literature reviews, expert consultations, and stakeholder workshops.
- ▶ **Explore and map informed, deliberated public values** through direct engagement with communities, stakeholders, and a representatively diverse public in Massachusetts, West Virginia, and Arizona.
- ▶ **Coordinate and integrate the results of expert and public engagement** with ongoing efforts to address current crises in science, technology, and innovation through collaborative partnerships, interactive workshops, briefings, reports, publications, and social media.
- ▶ **Create and disseminate content, guides, protocols, and learning materials** to expand the initiative's deliberative and integration components for other states, regions, and organizations.



A Participatory Technology Assessment of the American Scientific Enterprise – *A Phased Engagement*



Project Timeline

Winter 2026:

Pre-work analysis & expert consultation

Spring 2026:

Open Framing

Summer 2026:

Forum Development

Fall 2026:

Forum Events & Data Analysis

Winter 2026/27:

Results Dissemination

Activity	Start	End
Landscape Analysis, Interviews, Workshops	Jan '26	Mar '26
Literature Review, Open Frame Focus Groups	Jan '26	Apr '26
Expert Design Workshop	May '26	June '26
Forum Design & Planning	Jul '26	Aug '26
Forum Implementation	Sep '26	Oct '26
Results & Analysis	Nov '26	Dec '26
Dissemination & Integration	Jan '27	May '27





Partner with us

<https://cspo.org/research/america250/>



Strategic partners are sponsors, advisors, and scholars who will provide overall guidance and direction during the project.

Community partners are associations, networks, and local academic and nonprofit organizations that will support the implementation of the project's community, stakeholder, and public engagement activities, including expert consultations, interviews, workshops, and forums.

Collaborative partners are regional and national organizations in the public, private, non-profit, and philanthropic sectors leading one or more of the reinstate, reform, and redesign initiatives to address current challenges and opportunities concerning the U.S. scientific enterprise.