Interagency S&T Collaboration

A Must to Meet Priority Goals

GPS. The Internet. Port screening devices. Breakthrough innovation often occurs when one federal agency builds on the work of another. Yet chances for these types of breakthroughs are frequently missed because the importance of developing and leading interagency science and technology (S&T) teams is often overlooked. By promoting information sharing and broader adoption while minimizing duplication of effort, these groups can be the Trump administration's best chance of successfully meeting its technological innovation goals.

A Case for Action

Even though "all science is interdisciplinary" (Paul Lauterbur's 2003 Nobel Lecture), federal S&T efforts are often planned and managed in isolated stovepipes. This isolation is further magnified within oversight bodies in the White House and Congress, which also focus on an agency-specific basis. While a relatively small number of high-priority cases are coordinated by the National Science and Technology Council (NSTC), the vast majority of federal research managers aren't expected, or even encouraged, to work with their peers in other agencies.

This stovepiped approach may be understandable for most federal activities. However, it runs contrary to typical scientific evolution, where current discoveries serve as the foundation for future research. For example, it is generally known that today's ubiquitous GPS was originally created by the DoD. Early attempts failed because the individual satellites could not keep accurate time, a problem solved by switching to NIST-developed atomic clocks. Today's Internet similarly originated within the DoD as an internal network. It did not truly take off until the NSF used the concepts to connect five university-based supercomputer centers, which quickly grew to nearly a hundred within a year. Finally, the technology behind the TSA's screening devices at airports would not have been possible without a DoD-Treasury partnership to develop a means to screen incoming shipping containers for smuggled drugs.

> **"The most impactful interagency S&T groups are those where its individual members view the success of the group as a critical step for their own agency's success. That level of buy-in creates significant opportunities, and should be a fundamental goal for anyone leading interagency initiatives."**
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> –DUANE BLACKBURN, FORMER OSTP ASSISTANT DIRECTOR

The majority of the S&T spectrum is either application-agnostic or would benefit from cross-domain (i.e., cross-agency) collaboration. This is easily understood for basic and applied research, but applies to advanced development and standards more often than most realize. For example, a decade ago multiple federal agencies were independently developing fingerprint sensor requirements for

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their operational systems. They shifted gears and developed a single specification that met everyone's needs. This resulted in industry being able to provide devices with greater functionality at less cost. Today, the military and intelligence communities are developing intelligence, surveillance, and reconnaissance capabilities that could also benefit a wide range of other activities, such as climate change analysis, crop maximization, and rural planning.

Understanding the Problem

Each federal agency has its own statutory authority, work culture, reporting chain, and oversight bodies within the White House and Congress, and no single directive or reorganization can overcome these silos. An interagency team, however, can create connections and spark collaboration between the silos, thus achieving the desired end state. Formal coordination through the NSTC is absolutely required for the federal research community to be able to meet President-elect Trump's priority innovation needs. Informal coordination is simply a good business practice that the administration should encourage because the resultant benefits will outweigh the cost of the investments—both for individual agencies and for the federal government as a whole.

Interagency leaders must grasp that their true hammer is their influence rather than their authority. Even in the rare cases when the President establishes an interagency group and tasks someone to lead it, the other members of the team still report to their agencies and not to the interagency lead. They have supervisors who are expecting them to represent their agency and its interests, not to be a conduit for interagency demands. Interagency leaders must convince these individuals that the interagency-developed path is the best approach for their agencies as well, and should use their influence over the group's meetings and deliberations to reach this goal.

Areas of Opportunity for the New Administration and Agency Leaders

In recognizing that science and technology innovation often requires interagency collaboration, the incoming administration should consider the following ideas:

- **Strategically prioritize interagency leadership.** Identify areas where technological innovation is critical and foster collaborative efforts. For the past three administrations, this has been managed by the NSTC with varying degrees of success. To achieve its primary objectives, the Trump administration should continue using the NSTC or establish an alternative NSTC-like function.
- **Encourage interagency collaboration at all levels within the Executive Branch.** Many innovation topics don't rise to a sufficient level of priority to warrant NSTC attention, but would still benefit from interagency collaboration. Incoming agency leadership should establish an expectation that their staff will exchange information and collaborate with their peers in other agencies on a regular basis.
- **Celebrate interagency advancements.** Individuals and research programs that break through their silos and achieve success should be identified and celebrated as exemplars for the remainder of the federal research community to follow.

For further ideas about applying the guidance in this paper to your agency's particular needs, contact federaltransition@mitre.org.