

Innovation, Commercial Technology and the DoD

Sam C. Kidd, Lt Col, USAF (Ret.)

sckidd@hollandhart.com

(307) 778-4230

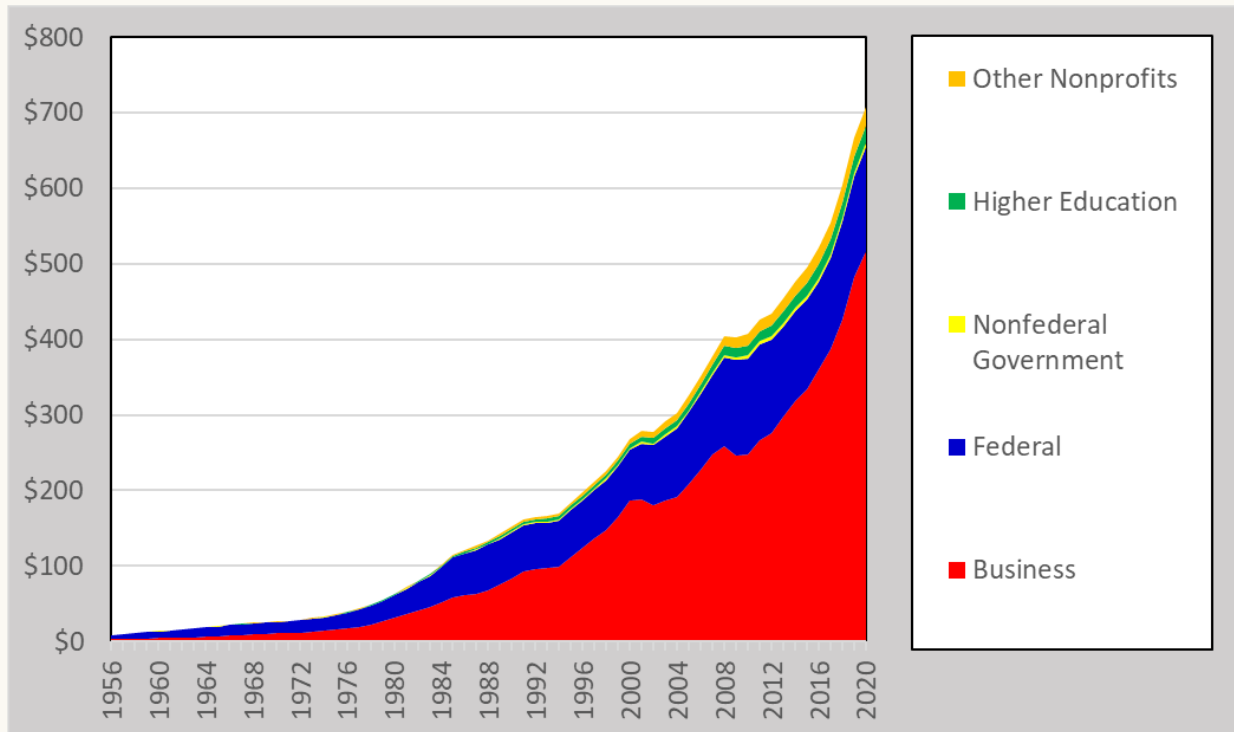
The Problem Set

In our time serving in the Defense Department, we have found that the United States does not have an innovation problem, but rather an innovation adoption problem. That is to say, our Nation leads in many emerging technologies relevant to defense and security—from artificial intelligence and directed energy to quantum information technology and beyond. But the DoD struggles to identify, adopt, integrate, and field these technologies into military applications.

- Atlantic Council Commission on Defense Innovation Adoption
Co-Chairs: Hon. Mark Esper and Hon. Deborah Lee James

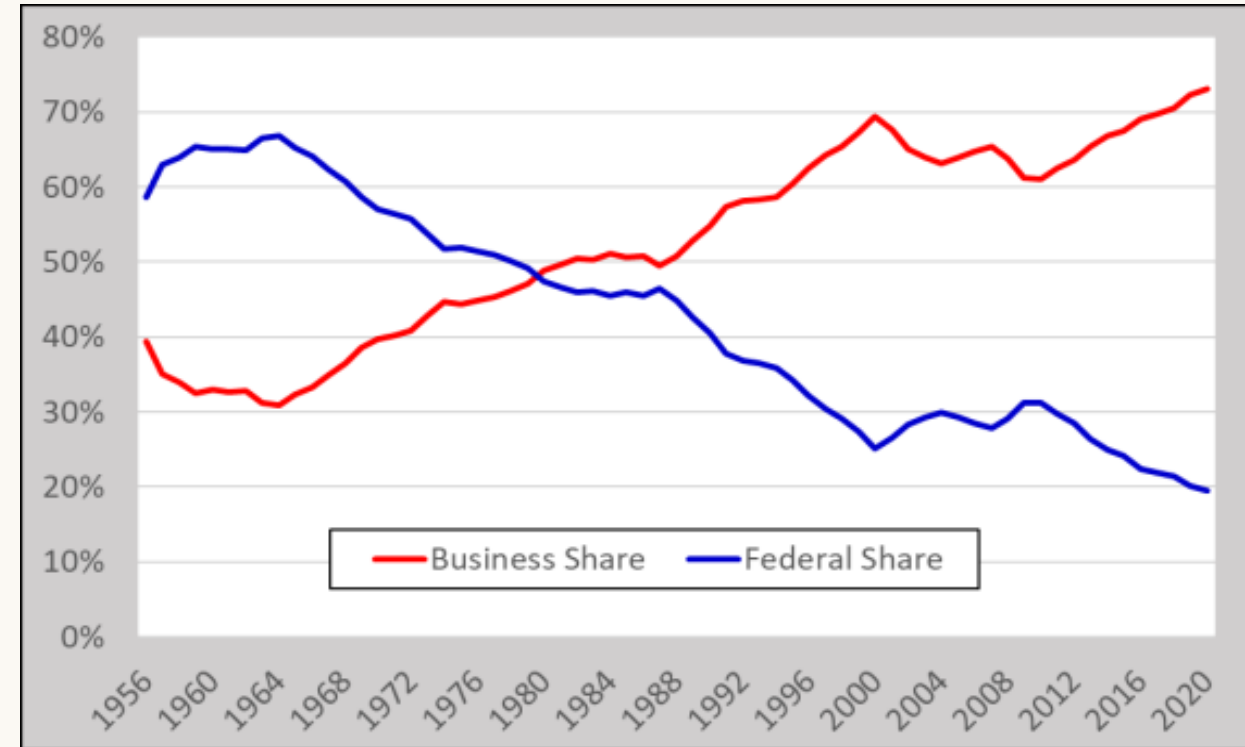
The Problem Set

U.S. R&D Expenditures by Source of Funding, 1956-2020



Source: CRS analysis of National Science Foundation, *National Patterns of R&D Resources: 2019–20 Data Update*, NSF 22-320, Table 6, February 22, 2022, <https://ncses.nsf.gov/pubs/nsf22320>.

Federal and Business Shares - U.S. R&D Expenditures, 1956-2020



Source: CRS analysis of National Science Foundation, *National Patterns of R&D Resources: 2019–20 Data Update*, NSF 22-320, Table 6, February 22, 2022.

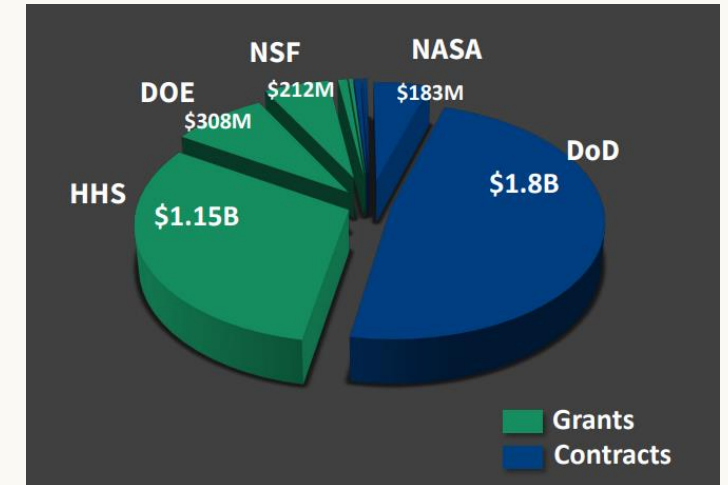
The Solutions?

- Acquisition/Funding Innovation
- Innovation Entry Points

Research and Development



- SBIR – Small Business Innovative Research
 - U.S companies, 500 employees or less
 - \$3.2 Billion FY2019 spend across USG
 - Focused on R&D for dual use technologies
 - Data rights/intellectual property protection for 4+ yrs



Phase I

Concept Development
6 mos – 1 yr
\$50K – \$250,000K

Phase II

Prototype Development
6 mos – 1 yr
\$50K – \$1.5M

Phase III

Commercialization/
Incorporated into
Program of Record
Not SBIR Funding

Research and Development



- STTR – Small Business Technology Transfer
 - Similar to SBIR program but...
 - Requires non-profit research institution partner
 - \$453M FY2019 spend across USG

Research and Development

- Cooperative Research and Development Agreement (CRADA)
 - Flexible way for federal labs to partner with industry
 - Collaborative R&D agreement
 - Does not provide cash
 - Access to personnel, facilities, equipment, intellectual property, or other resources
 - Protections for background IP and IP that is jointly developed

R&D to Prototyping to Production

- Other Transaction (OT) Authority
 - They are what they are not
 - “transactions (other than contracts, cooperative agreements and grants)” for research under 10 U.S.C. § 4021
 - Expanded to be used for prototypes under § 4022(a); and
 - Follow-on production contracts § 4022(f)
 - Flexible and should not be laden with FAR Clauses
 - Limited GAO protest jurisdiction
 - Court of Federal Claims asserted jurisdiction in 2022
 - See *Hydraulics Int’l Inc. v. United States*, 161 Fed. Cl. 167 (2022)

Seeking R&D Solutions

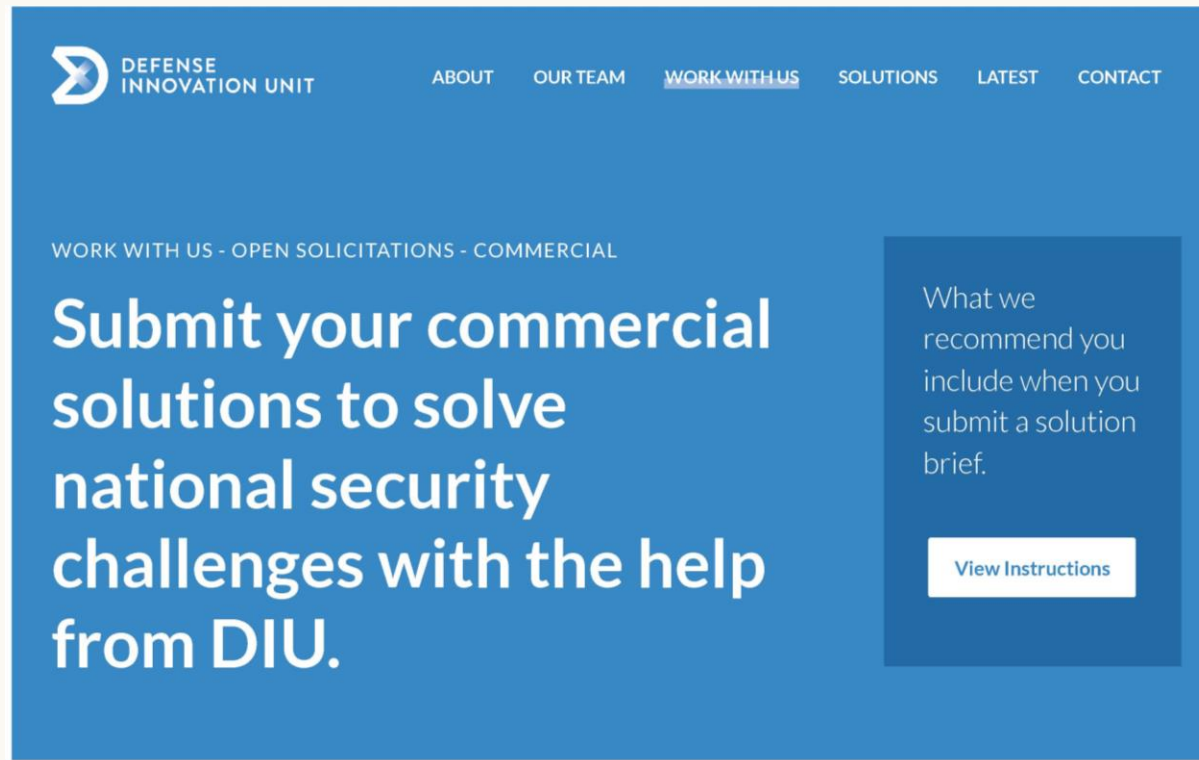
- Broad Agency Announcements (BAAs)
 - Used to acquire basic and applied research
 - Can be scoped very broadly
 - Provides means of introducing new technology/solutions to DoD customers
 - Usually remain open for a specified period of time and proposals are accepted throughout
 - No guarantee of a contract
 - **Merit based selection procedures**

Seeking Commercial Solutions

- Commercial Solutions Openings (CSOs)
 - Used to acquire innovative commercial solutions to meet existing requirements, close capability gaps, or provide potential technological advances
 - Innovation under a CSO means: any technology, process, or method, including R&D and development that is new as of the date of proposal submission or any application of a technology, process, or method that is new as of proposal submission
 - Similar to BAAs
 - Selection based on peer review

Innovation Entry Points

- Defense Innovation Unit (DIU)



Open BAAs:

- Tactical Augmented Reality
- Autonomous Ground Vehicles

<https://www.diu.mil/work-with-us/open-solicitations>

Innovation Entry Points

- Defense Advanced Research Projects Agency (DARPA)



DEFENSE ADVANCED
RESEARCH PROJECTS AGENCY

> [Defense Advanced Research Projects Agency](#) > [Office-wide Broad Agency Announcements](#)

Office-wide BAAs

- Biological Technologies
- Defense Sciences
- Information Innovation
- Microsystems Technology
- Strategic Technology
- Tactical Technology

<https://www.darpa.mil/work-with-us/opportunities>

<https://www.darpa.mil/work-with-us/office-wide-broad-agency-announcements>

Innovation Entry Points

- Defense SBIR/STTR Innovation Portal (DSIP)

The screenshot shows the DSIP homepage with an orange header. The header includes the DSIP logo, the text "Defense SBIR/STTR Innovation Portal" and "Proposal Submissions", and navigation links for "HOME", "TOPIC INFO", and "PROGRAM INFO". A "Login/Register" button is in the top right. Below the header, a welcome message reads "Welcome to the DSIP (Defense SBIR/STTR Innovation Portal)!". The main content is divided into two sections. The "Quick Links <<" section on the left contains six cards: "BAA Schedule" (view active, upcoming, and archived Broad Agency Announcements), "Topics and Topic Q&A (SITIS)" (view available topics and ask questions during Pre-Release periods), "Learning & Support" (view templates, training materials, and FAQs), "Additional Program Info" (access more information on the DoD SBIR/STTR program), "SBIR.gov" (learn more about the overall SBIR/STTR program and search prior awards), and "DSIP Listserv" (sign up for emails about BAA's, new opportunities, and more). The "Active BAAs" section on the right contains four cards showing closing dates: "DoD SBIR 2023.2" (42 days, 23:44:43), "DoD STTR 2023.B" (42 days, 23:44:43), "DoD SBIR 2023.4" (14 Topics Active), and "Air Force X23.6 CSO" (01 days, 23:44:43). Each card has a green bar at the bottom with a downward arrow.

<https://www.dodsbirsttr.mil/submissions/login>

Innovation Entry Points

- Army Research Lab (ARL)

<https://www.arl.army.mil/collaborate-with-us/opportunity/broad-agency-announcement/>

- Air Force Research Lab (AFRL)

<https://www.airforcetechconnect.org/opportunities>

- Navy Research Lab

<https://www.nrl.navy.mil/Doing-Business/>

- SOFWERX

<https://events.sofwerx.org/>

Manufacturing Opportunities

- Defense Logistics Agency (DLA)
 - BAAs for Industry Material Test, Research, and Qualification
 - Seeking domestic producers of materials and restore and stabilize critical material supply chains for mining and refining activities
 - Vendor Opportunities
 - DLA's own Internet Bid Board System (DIBBS)
 - No Bid Solicitation List
 - Value Management Engineering
 - Replenishment Parts Purchase or Borrow

<https://www.dla.mil/Strategic-Materials/Business/Broad-Agency-Announcement/>

<https://www.dla.mil/Small-Business/Vendor-Opportunities/>

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