Federal Innovation

Programs, resources, opportunities

Marketplace – 2019

Marc Violante Wisconsin Procurement Institute

Wisconsin Procurement Institute
A Procurement Technical Assistance Center (PTAC)

Resources, Requirements & Regulations

- Know your requirements
  - Statement of work
  - Commercialization plan – start with the end in mind
  - Documentation requirements
  - Document storage
  - Security requirement (CUI, Export Control, other)
  - IP agreements & Federal notifications
  - Required submittals
  - Understand at least on a conversational level – the Federal False Claims Act
  - Others

Requirements, Regulations & Resources

- Know your regulations
  - As an example – Contract costs – FAR Part 31 | Grants: OMB Circular
  - Let's say you have taken a long flight – booked first class and had a beer
  - OK if the business has no issue but if the customer is the federal government …
    - Three elements
      - Allowability
      - Allocability
      - Fair and reasonable
- These ideas can impact both direct costs and indirect costs
- Activity outside of the regulations can create – unallowable costs

Requirements, Regulations & Resources

- Know your resources
  - Agencies – Help Desk
  - Resources - **Department of Energy (DOE) Phase 0 Assistance Program**
  - GSA – Phase III Pilot (expected end date Sep 2019)
  - SBA/SBIR.gov
  - WEDC
  - WPI
  - Primes – BAE Systems – as an example
    - BAE Systems is committed to transitioning SBIR technologies to our customers through technology insertion and new product introduction.

SBIR / STTR – funding and effort

- Solicitations – specific topics, promote primary research**
  - Phase I - $150,000 – competed – typically 6 months
  - Phase II - ~ $1,000,000 – competition requirements met by Phase I – 2 years
  - Phase IIb – additional funds but not SBIR designated funds
  - Phase III - Commercialization – governmental/military/commercial
  - IP – SBIR recipient retains rights with proper submissions, Government has perpetual license

**AFWERX Program

Phase III – value proposition

- The right to sole-source contracts;
- Exemption from SBA size standards for a procurement;
- No limits on the dollar size of a Phase III procurement;
- A right to the Phase III mandate, by which the SBIR firm has a right to be awarded a future Phase III award to the greatest extent practicable;
- The right to receive subcontracts for Phase III work on a sole-source basis; and
- The ability to pursue research, research and development, services, products, production, or any combination of those under a Phase III

Resources – maximize your effort for success

- Identify your resources
- Take time to develop relationships
- Create internal assessment of strengths and weaknesses
- Develop draft compliance program/guide
- Identify gaps
- Highlight key resource needs
- Meet with & utilize all resource providers
- Expand network
- Get connected – stay connected

Wisconsinctc@uwex.edu

@wisconsinctc
@uwideadvance

Center for Technology Commercialization

WEDC Support to access $3.7 billion SBIR Program

SBIR Ready

- Reduces barriers to vetting an idea for SBIR funding. $1500/team
- Targeted to new grant writers, early-stage technologists, and small businesses.
- https://www.wisconsinsbir.org/SBIR-Ready

CTC Micro-Grants

- Supports proposal and business plan preparations with experienced professionals.
- Up to $9,000 available for WI small businesses.
- https://www.wisconsinsbir.org/microgrants

CTC Panel Reviews

- Simulates the rigor of an SBIR review panel.
- Prepares applicants to address potential proposal challenges before submission.
- https://www.wisconsinsbir.org/reviewpanels

SBIR Advance & Ideadvance

- Funds business development activities up to $75,000 and $100,000 with SBIR award.
- Programming to help you compete for lucrative Phase 2.
- Ideadvance!!!---Different from SBIR support- but also grants to small businesses!!!!
- http://bit.ly/sbiradvance;uwideadvance.org

Key Drivers

- SBIR/STTR programs
  - Tapping into the talents and innovation of the small business community
  - Providing access to funding, opportunities and ownership of resulting IP
  - End goal research for commercialization not research for research purposes
- Other Innovation initiatives
  - Growing need for solutions
  - Staff efficiencies
  - Budgets
  - Time constraints – length of normal developmental cycle

Common Denominators

- Know and understand the specific requirements of each program
- For example –
  - Both the SBIR and STTR programs – focus on research conducted by small businesses
  - However, the STTR program requires the small business to partner with one of three types of research institutions
  - Unsolicited proposal can be submitted but FAR 15.6 addresses specific requirements
  - Also, submitting an unsolicited proposal without protecting one's IP would not be advised
  - The proposal will likely be viewed as a "gift" of information to the government to use as seen fit
- CRADAs are different from OTAs etc
- Challenges are also unique

SBIR/STTR

- The Nation's largest source of early stage/high risk funding for start-ups and small business
- Restricted to U.S. based small businesses (maximum of 500 employees)
- 11 Agencies participate in the SBIR program
- 5 Agencies participate in the STTR program
- Designate R&D topics and accept/review proposals
- Innovative research that will meet the objectives of the Agency are selected for funding
- Award criteria –
  - Small business qualifications – degree of innovation, technical merit, future market potential (commercialization)

SBIR Mission and Program Goals

- **SBIR Mission and Program Goals**
- The mission of the SBIR program is to support scientific excellence and technological innovation through the investment of Federal research funds in critical American priorities to build a strong national economy.
- The program's goals are four-fold:
  - Stimulate technological innovation.
  - Meet Federal research and development needs.
  - Foster and encourage participation in innovation and entrepreneurship by women and socially or economically disadvantaged persons.
  - Increase private-sector commercialization of innovations derived from Federal research and development funding.

Participating Agencies

- Department of Defense (DoD) – Services/Components
- Department of Education
- Department of Energy
- Department of Health and Human Services
- Department of Homeland Security
- Department of Transportation
- Environmental Protection Agency
- National Aeronautics and Space Administration
- National Institute of Standards - DOC
- National Oceanic and Atmospheric Administration - DOC
- National Science Foundation
- US Department of Agriculture

Chemical and Biological Defense (CBD) - example

- **Participates in both SBIR and STTR**
- Goal - address chemical and biological defense technology gaps confronting DoD and to include technologies that will also have high commercialization potential in the private sector (detection & identification, protection, decontamination and others)
- Technologies developed under the SBIR program have the potential to transition to the Joint Program Executive Office for Chemical and Biological Defense, or JPEO-CBD
- 1 in 10 Phase I proposals generally are selected – max value $150,000 / 6 months effort
- Approximately 50% of Phase I awardees receive a Phase II contract
- Three periods for a Phase I recipient to submit a Phase II proposal

STTR program

- Developed after the SBIR program
- Modeled on the SBIR program
- Key difference – facilitate the transfer of technology developed by a research institution through the entrepreneurship of a small business concern (SBC)
- Research institutions include –
  - Universities
  - Federally Funded Research and Development Centers (FFRDCs)

SBIR/STTR – 3 phases

- Phase I is the concept phase. It lasts six to twelve months and supports exploration of the technical merit or feasibility of an idea or technology.
- Phase II awards may last for up to two years and expand upon the Phase I results. During this time, the R&D work is performed.
- Phase III is the period during which Phase II innovation moves from the laboratory into the marketplace. No SBIR funds support this phase. The small business must find funding in the private sector or secure it from other non-SBIR Federal Agency funds that can fund continued development.

Key elements of success

- Understand the proposal evaluation criteria
  - Be able to convey a burning desire to conduct innovative research and development
- Develop a proposal preparation schedule
- Build a winning team
- Using consultants & subcontractors to enhance your team
  - Review agency definitions
  - STTR subcontracting is mandatory
  - SBIR allows for up to 33% sub K Phase I and 50% sub K Phase II – to consultant and/or subcontractor
- When the agency clearly defines the problem
- Phase I Commercialization plans
  - Fully address the commercialization (creating a viable product) of the research

Using subcontractors / consultants

- Follow agency requirements
- Understand how to calculate allowable percentages of participation
- Understand allowable profit/fee amounts
- Be prepared to provide the role of the subcontractor/consultant in the work plan
- Be prepared to provide bios for “key/senior” members of the project team
- Be prepared to provide letters of support/commitment/collaboration
- Agencies that use grants also expect separate budget for consultants & subcontractors
- **Understand rules of host organization** – lab/university
- **Discuss and agree on IP issues**
- **Allow time to identify and develop relationships**
- Don’t overlook citizenship requirements***

Contracts vs Grants –

- Distinctions established by The Federal Grant and Cooperative Agreement Act of 1977
- Grants –used to accomplish a public purpose
  - advance a national objective
  - Address a public problem
  - Stimulate a particular activity
- Grants offer
  - Flexibility
  - Allow considerable latitude of the Principle Investigator
- Contracts are more demanding
- Agency goal, normally to procure a good or service – direct benefit to the government

Contracts vs Grants – Agency usage

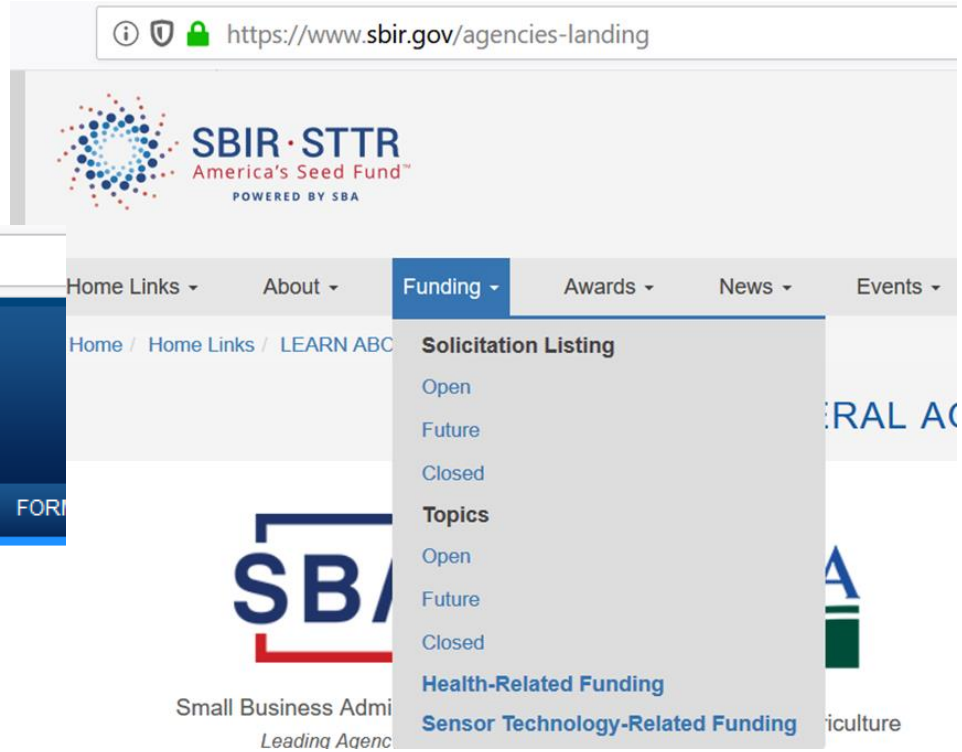
- Agencies using contracts –
  - DoD, NASA, DHS, DOT, EPA
- Agencies using grants
  - USDA, DOE, NSF, NOAA
- Agencies using both contracts and grants
  - Department of Health and Human Services
  - Department of Education

Program benefits

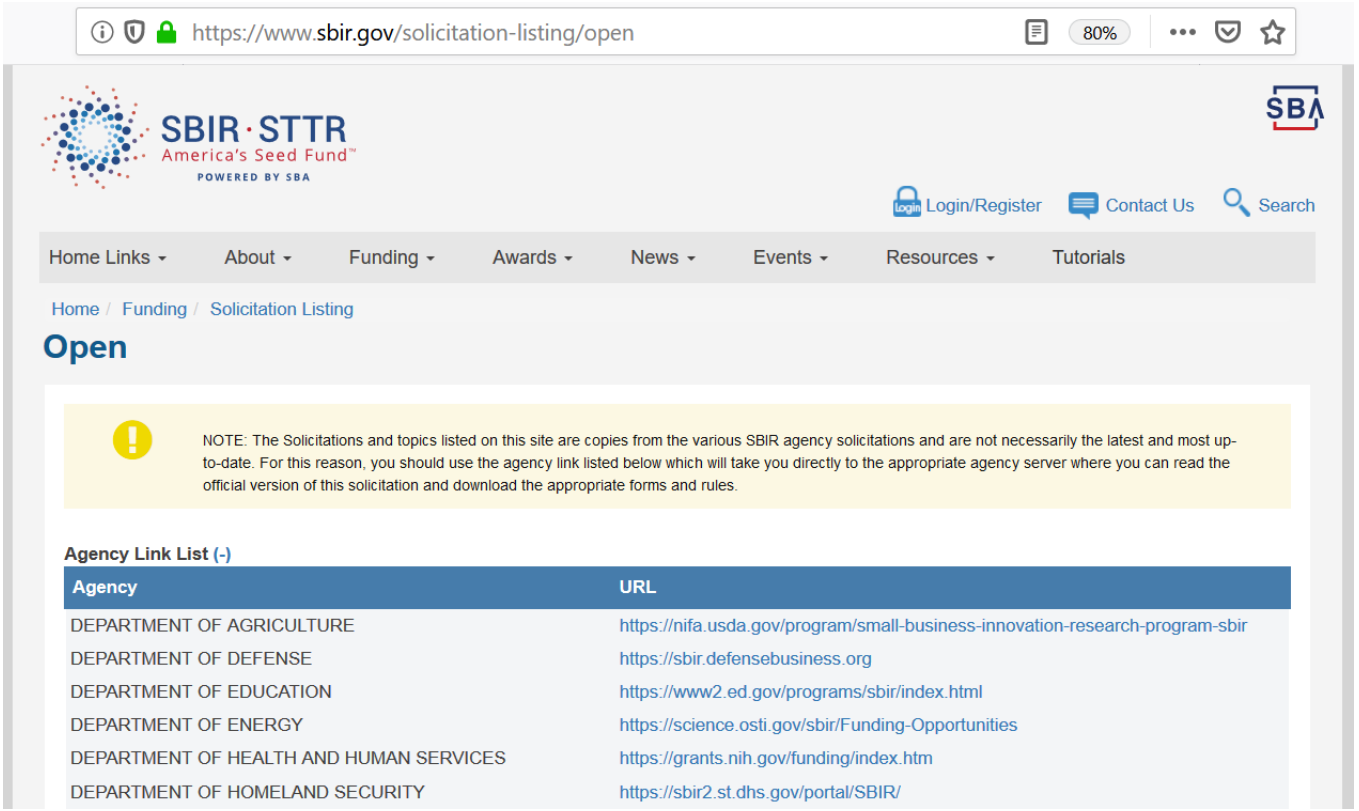
- Being recognized as a SBIR awardee
- Receiving funding to conduct and further research in an area of interest
- Possibility of receiving follow-on funding
  - Phase II
  - Phase IIb
- Ability to retain rights to Intellectual Property
- Commercializing the technology and benefitting from product development/sales

Finding Opportunities

FBO – https://www.fbo.gov (soon to be incorporated into SAM.gov



SBIR Solicitations - Open



Cooperative R&D Agreements

- CRADA - Army
- Written agreement between one or more federal laboratories and one of more non-federal parties
- The government, through its labs provides –
  - personnel, facilities, equipment or other resources with or without reimbursement (but not funds to non-federal parties)
- The non-federal parties provide –
  - personnel, funds, services, facilities, equipment or other resources to conduct specific research or development efforts that are consistent with the mission of the laboratory.
- Authority - CRADAs are authorized by 15 U.S.C. 3710a. The governing regulation is AR 70-57, Military-Civilian Technology Transfer, dated 26 February 2004.

CRADA – overview (DOE)

Step	National Laboratory	Both	Industry Partner
1		Researchers discuss ideas, identify mutual interest, draft scope of work	
2	Determine contract considerations		Identify corporate support
3	Develop Joint Work Statement (JWS). Send draft CRADA to Industry Partner	Draft Statement of Work w/milestones, etc.	
4	Submit JWS to DOE Operations Office		Review draft CRADA
5	DOE Operations Office approval of JWS	Review of CRADA documents and complete negotiations	
6	Develop and distribute final CRADA	Review final CRADA	
7	Obtain Laboratory, DOE Operations, and DOE HQ approval (if needed) of CRADA		Approve final CRADA
8		Execute CRADA	

https://www.energy.gov/eere/amo/action-steps-cooperative-research-and-development-agreement-crada

OTA – Other Transaction Authorities

- DoD normally obligations funds to buy goods and services
- Under certain circumstances DoD can enter into an other transaction (OT) agreement
- OT agreements generally exempt from federal procurement laws and regulations
- Exemption create flexibility in contract constructions re: terms – amend/exclude
- OT agreements also can be structured as JV's, partnerships, consortia or multiple agencies
  - Joining to fund
- OT agreements are legally binding – agreement is used to distinguish from traditional K
- Used to attract non-traditional contractor
- Establish pool of resources
- Tool to invest in technology and influence the direction of technology development

https://crsreports.congress.gov/product/pdf/R/R45521 - DoD's authority

OT Authorities – typical uses

1. conduct research
2. develop prototypes
3. contract for follow-on production of a successful prototype project

Intellectual Property

- The Bayh-Dole Act—formally known as the Patent and Trademark Law Amendments Act, governs intellectual property rights for inventions made with federal government support (Title 35, Chapter 18 (§200 et seq.)). Under the act, the federal government retains certain rights in inventions produced with its financial assistance.
  - iEdison.gov
  - https://invention.nasa.gov - New Technology Report (NTR) / NASA Form 1679 (NF-1679) – Disclosure of Invention and New Technology (Including Software):
- iEdison (which stands for Interagency Edison) helps government grantees and contractors comply with a federal law, the Bayh-Dole Act. Bayh-Dole regulations require that government funded inventions be reported to the federal agency who made the award.
- iEdison is interagency because it provides a single interface for grantees and contractors to interact with any participating agency.

Current trends

- Unsolicited proposals – ancient, proposal after Revolutionary War to “mass produce” and standardize flintlock rifles
- OTA – original authority granted to NASA in response to Sputnik
- SBIR program –
  - Original concerns in 1970’s about the U.S. losing competitiveness in an era of increasing globalization
  - 1982 SBIR was created through the Small Business Innovation Development Act
- Today
  - Seeing an wide array of initiatives and changes
  - Air Force and Navy – relooking at SBIRs
  - New commands and programs created
  - Greater need for solutions = more opportunities

Developing stories

SBIR

Blockchain

Challenge.gov

Artificial Intelligence

Natural Language Processing

Other Transaction Authority (OTA)

STTR

Data

Self-driving Vehicles

Army Futures Command

Machine Learning

Cooperative Research and Development Agreements (CRADAs)

Now's the time to do business with the Air Force

- Through a competitive awards-based program, the Small Business Innovation Research Program (SBIR) program enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization.
- AFWERX, in partnership with Air Force Research Lab (AFRL), and the National Security Innovation Network (NSIN), developed the SBIR Open Topics (AF193-CS01 and AF193-DCS01), to increase the efficiency, effectiveness, and transition rate of the SBIR program.
- Since the introduction of the Open Topic in late 2018 through August 2019, we have received more than 2900 submissions, awarded more than 900 contracts worth a combined total of approximately $220 million.

Pro Bowl awards 190 SBIR contracts in 10 days

- In tune with that legacy, a group of 20 hand-picked contracting officers issued 190 Small Business Innovation Research contracts worth a combined total of approximately $73 million in a little over one week during an event called Pro Bowl at AFWERX Austin from Feb. 25 to March 2, breaking the previous record of 104 contracts in the same time period.

https://www.afwerx.af.mil/stories/sbir-contracting-pro-bowl.html

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Our New Science, Technology Assessment, and Analytics Team

Posted on January 29, 2019 by WatchBlog

Today we launched a new Science, Technology Assessment, and Analytics (STAA) team, expanding our work on cutting-edge science and technology issues.

STAA will focus on:

1. Technology assessments and technical services for the Congress,

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https://blog.gao.gov/2019/01/29/our-new-science-technology-assessment-and-analytics-team/

- Defense Innovation Marketplace - https://defenseinnovationmarketplace.dtic.mil/
- Defense Innovation Initiative
- Defense Innovation Unit - https://www.diu.mil/
- DoD – Artificial Intelligence Strategy - *https://media.defense.gov/2019/Feb/.../SUMMARY-OF-DOD-AI-STRATEGY.PDF*
- Army Futures Command (DII) - https://www.army.mil/article/209932/army_futures_command_aims_to_tap_into_innovative_culture_in_austin_and_beyond
- 75 Innovation Command - https://www.usar.army.mil/75thIC/Photo-Page/igphoto/2001632411/
- AI Next Campaign - https://www.darpa.mil/work-with-us/ai-next-campaign -- DARPA announced in September 2018 a multi-year investment of more than $2 billion in new and existing programs called the "AI Next" campaign.
- Department of the Navy – Innovation Vision - https://www.secnav.navy.mil/innovation/Documents/2015/04/SECNAVInnovationVision_Module1_HiRes.pdf
- Naval Agility - https://www.secnav.navy.mil/agility/Pages/default.aspx
- Air Force Innovation Challenge - https://www.hanscom.af.mil/News/Article-Display/Article/1734059/inaugural-vice-chiefs-challenge-seeks-game-changing-innovations/
- Defense Intelligence Agency - http://www.dia.mil/Business/Innovation/
- Health.mil - https://www.health.mil/Military-Health-Topics/Research-and-Innovation/Innovation
- Coast Guard Innovation Program - https://www.dcms.uscg.mil/cg9/rdt-e/innovation/
- Department of Energy - https://www.energy.gov/science-innovation/innovation
- Oak Ridge National Laboratory - https://innovationcrossroads.ornl.gov/
- NSA Innovation Programs - https://www.nsa.gov/business/programs/programs-for-innovation/
- Department of Transportation – Center for Accelerating Innovation - https://www.fhwa.dot.gov/innovation/
- Other Transaction Authority (OTA)
- Cooperative Research and Development Agreements (CRADAs)

Google search: innovation site:.gov or .mil

Army's Future Command

- In slightly more than a year, the Army's newest major entity, Army Futures Command, has grown from a staff of a dozen soldiers to taking on a combined force of 26,000 people.
- The new command has coordinated the work of the Army's cross functional teams that run areas from network to future helicopters, long-range fires and navigation.

Army Futures Command

- part of the military's efforts to restructure how it researches, develops and acquires new equipment.
- The plan is to realign the Army's modernization priorities under a new organization that will implement cross-functional teams that correspond with its top six modernization priorities:
  - Long-Range Precision Fires,
  - Next-Generation Combat Vehicle,
  - Future Vertical Lift,
  - the network,
  - air-and-missile defense
  - soldier lethality.

https://www.defensenews.com/land/2018/02/08/army-futures-command-might-be-in-a-city/

Defense Innovation Unit

- ACCELERATING COMMERCIAL TECHNOLOGY FOR NATIONAL SECURITY
- We're a fast-moving government entity that provides recurring revenue to companies to solve national security problems.
- **TAP INTO A $100+ BILLION MARKET**

We're contracting with companies offering solutions in a variety of areas – from autonomy and AI to human systems, IT, and space – to solve a host of defense problems.

https://www.diu.mil/

The Bots are coming

THE BOTS ARE COMING. NO, IT'S NOT THE NEW "TERMINATOR" movie or an update of "I, Robot," but the next software tool coming to an agency near you. These Bots won't take over the world, but they will help your agency do its job. Have you or your staff ever been overwhelmed with too much mundane, repetitive work? Has that work prevented you from getting to the important, creative and analytic work that could significantly help your organization? Well, Bots are here to help.

Lockwood is the Robotic Process Automation program manager for the Defense Logistics Agency at Hill Air Force Base in Utah.

https://www.dau.edu/library/defense-atl/DATLFiles/Sept-Oct_2019/DEFACQ%20Sept_Oct2019.pdf page 11

What is RPA? A revolution in business process automation

- Emerging technology
- Used to streamline enterprise operations and reduce cost
- RPA can help businesses –
  - Automate mundane rules-based business processes
  - Enables business uses to devote more time to serving customers
  - Focus on other high-value work
- RPA tools – configure software (1 or many)
  - Automated response to email & more complex
  - Bank deployed 85 bots to run 13 process, handled 1.5 million requests per year – added capacity equal to 200 full-time employees at 30% of recruiting staff

https://www.cio.com/article/3236451/what-is-rpa-robotic-process-automation-explained.html

Robotic Process Automation

- Folk hero John Henry beat the steam-powered drill
- Different results for Defense Information Systems Agency
  - Audit support documentation research – “Race the Bot”
  - 15 minutes
  - Human (better employee) – retrieved 2 documents
  - The “Bot” = 150
- Currently 21 federal agencies using the technology
- Deloitte’s Center for Government Insight estimated
  - RPA could save $41.1 billion within five to seven years
- Deployment is somewhat slow
- USPS is an early adopter | GSA test software 10 seconds – human 15 minutes
- USPS GSA and DISA have plans to expand their use of RPA

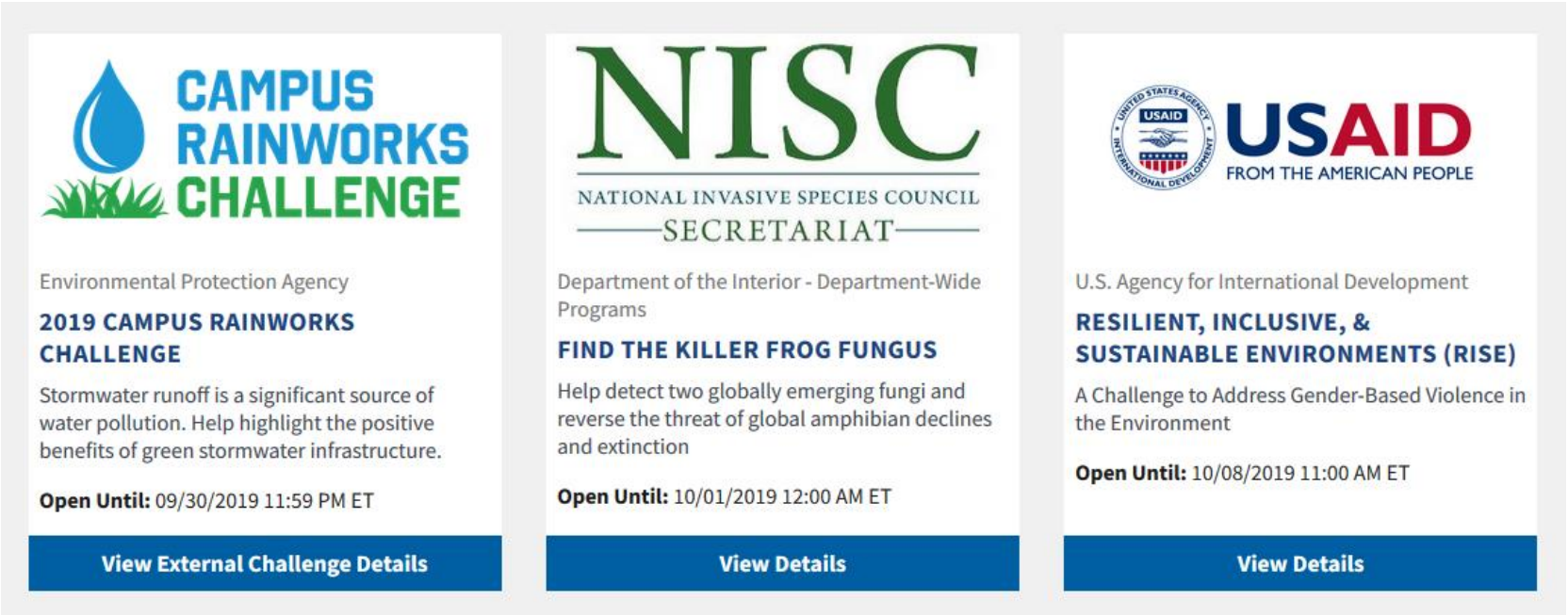
https://gcn.com/articles/2018/04/24/agency-rpa.aspx

Other headlines

- URL – AI.gov launches
- AI – Lawmakers Propose $2.2 Billion to Advance AI Over the Next Five Years
- Self-driving trucks begin mail delivery test for U.S. Postal Service
- Welcome to the U.S. Emerging Citizen Technology Atlas
- 21st Century Integrated Digital Experience Act (IDEA)
  - Save Money
    - 23,000 different federal forms used inside the federal government
    - 11.4 billion hours of paperwork annually
- Unmanned aircraft could transport packages across tough terrains and inform future initiatives to introduce autonomous vehicles. (USPS)
- NSF Sets AI Research Program Expected to Award $120M in Grants
- Pro Bowl awards 190 SBIR contracts in 10 days – AFWERX
- Innovation acceleration: Navy speeds up contracts for small business partners

Challenge.gov

- Here, members of the public compete to help the U.S. government solve problems big and small. Browse through challenges and submit your ideas for a chance to win.



https://www.challenge.gov/

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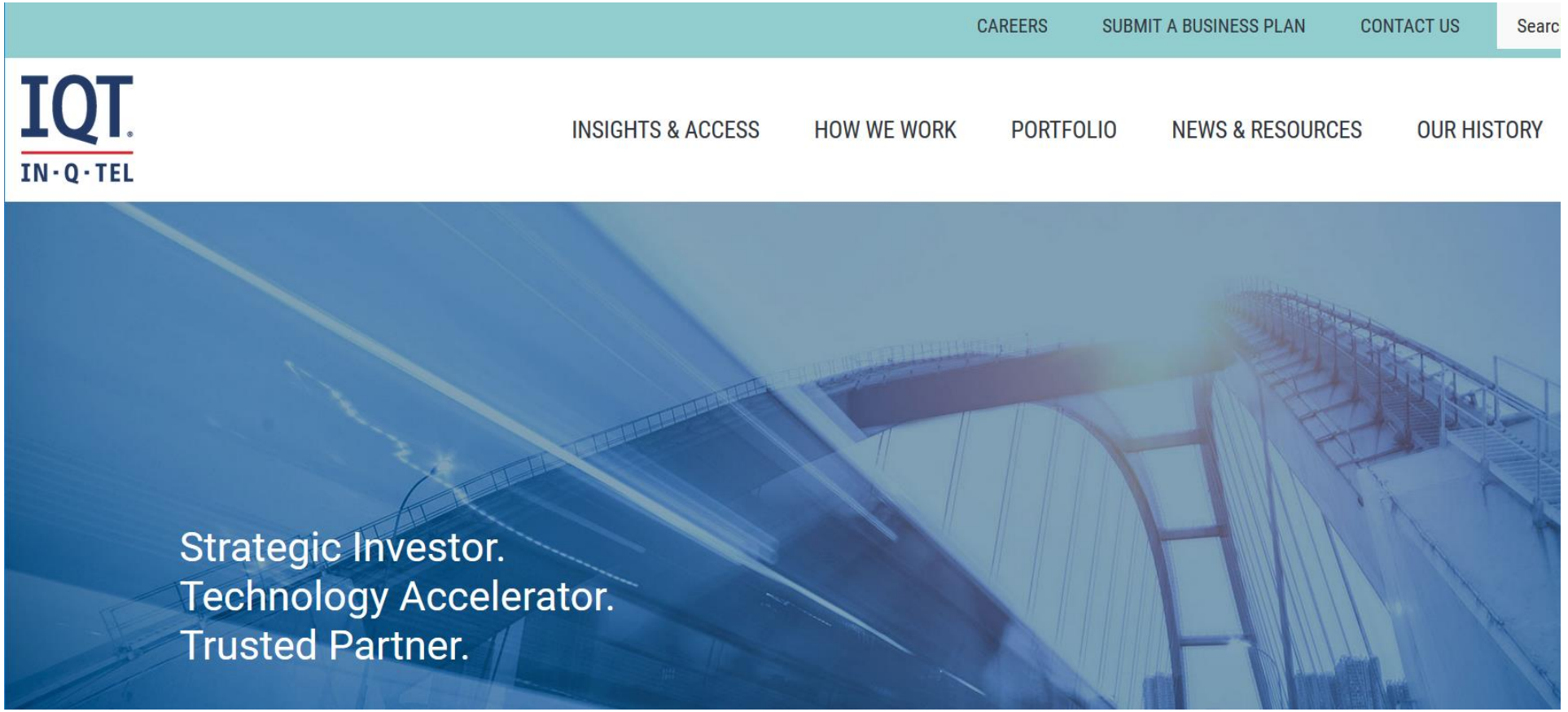
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