

# ***Rapid Innovation Fund (RIF) Program***



## **Program Overview**

**March 2016**

**Distribution Statement A. Approved for public release**



# Background

- **Established as the Rapid Innovation Program (RIP) in Section 1073 of the Fiscal Year 2011 National Defense Authorization Act (NDAA)**
  - A competitive, merit-based program
  - Accelerate fielding of innovative technologies into military systems
- **Reauthorized in the FY 2016 NDAA until Sep 30, 2023**
- **Re-designated as the Rapid Innovation Fund (RIF) within the Department of Defense (DoD)**

***Bottom Line Goal: Transition Small Business Technologies into Defense Acquisition Programs***



# Key Requirements



## *Proposals or Projects:*

- **Satisfy an operational or national security need**
  - Accelerate or enhance military capability
  - In support of major defense acquisition program
- **Stimulate innovative technologies**
- **Reduce acquisition / lifecycle costs**
- **Address technical risk**
- **Improve timeliness & thoroughness of test & evaluation outcomes**
- **Can be completed within 24 months of award**
- **Cost is not more than \$3 million**

***Selection Preference to Small Business Proposals***



# RIF Implementation



- **Competitive, Merit-Based Two-Step Process**

- **Step 1:**

- Issue Broad Agency Announcement (BAA) with DoD component requirements
- Industry Response: 3-page White Paper + Quad Chart
- Evaluations are “Go” or “No Go”

- **Step 2:**

- Highest rated “Go” offerors invited to submit full proposals
  - Further competition – invite for proposal DOES NOT guarantee an award
- Highest-rated proposals lead to award

- **Public Notice:**

- Federal Business Opportunities: [www.FedBizOpps.gov](http://www.FedBizOpps.gov)
- Research & Engineering Defense Innovation Marketplace: <http://defenseinnovationmarketplace.mil/RIF.html>



# Elements of a Good Proposal (1 of 3)

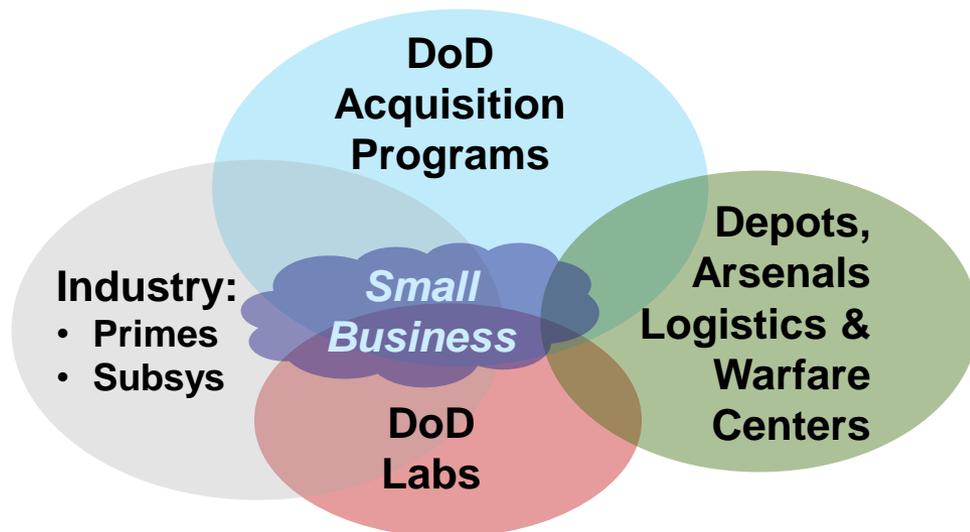


- Responds to a BAA requirement
- Relationship in place with key customers, or otherwise have an ability to reach-out and establish links -
  - DoD acquisition buyers / Program Executive Offices or Program Managers, depots, logistics or warfare centers
  - DoD prime or subsystem contractor who integrates RIF technology
  - DoD laboratory / technology provider

## Selection Preference: Small Business Proposals

### Source Selection Criteria:

1. Contribution to the Requirement
2. Technical Approach / Qualifications
3. Schedule
4. Cost





# Elements of a Good Proposal (2 of 3)



## Technology Readiness Level (TRL)

**6** System/subsystem model or prototype demonstration in a relevant environment

**7** System prototype demonstration in an operational environment

**8** Actual system completed and qualified through test and demonstration

**9** Actual system proven through successful mission operations

• **Maturity Goal: TRL 6 – 9**

• **Low TRL accepted ONLY if:**

- Breakthrough capability or operational game-changer
- Cost neutral to the acquisition program
- Accommodated within program schedule

**4** Component and/or breadboard validation in a laboratory environment

**5** Component and/or breadboard validation in a relevant environment

**Award By Exception**

**Required for Majority of Awards: Facilitates Transition**

*Technology Readiness Assessment Guidance - - <http://www.acq.osd.mil/ddre/publications/docs/TRA2011.pdf>*



# Elements of a Good Proposal (3 of 3)



## RIF White Paper (WP) Submission

### **WHAT TO INCLUDE:**

- Your technology solution
  - How it addresses the RIF requirement
  - Clear, concise synopsis of approach
  - What's innovative – what sets your technology apart from competition
  - Enough technical specification to get tech evaluators 'comfortable'
- Some key data:
  - Pictures & diagrams
  - Key Government contacts that currently relate to this effort
  - Summary of teaming arrangements
  - Any prior testing & summary results

### **WHAT NOT TO INCLUDE:**

- Technology looking for a solution (e.g., unrelated to the requirement)
- Generic company overview (org chart)
- History of the problem
- Testimonials from other industry or lab researchers
- Detailed diatribe of charts and formulas stating why your technology is the best

**When BAA opens, read it, then input, ask questions & prepare a DRAFT WP soonest**

- ***If missing data, update later. DO NOT WAIT UNTIL LAST MINUTE !***
- ***Follow directions / template as provided in the submission portal(s)***



# RIF Demand FY 2011 – 2016



## Summary Data:

- Over \$1.4B Invested (FY11-16)
  - 14 Defense Component Participants (Avg., FY11-16)
  - 11,000+ White Paper Proposals (FY11-15)
  - 771 Proposals (FY11-15)
  - 450 Contract Awards (FY11-14)
- 401 awards to Small Businesses
    - 89% of all awards
  - 266 awards to current or prior Small Business Innovative Research (SBIR) participants
    - 59% of all awards

	FY11	FY12	FY13	FY14	FY15 (Act. or Est.)	FY16 (Act. or Est.)
Appropriated	\$439M	\$200M	\$250M	\$175M	\$225M	\$250M
Available	\$432M	\$187M	\$225M	\$175M	\$225M	\$250M
DoD Participants	7	10	16	19	17	17
White Papers	3,626	2,405	2,763	2,291	1,955	TBD
Proposals	264	124	234	149	186	TBD
Awards	175	86	104	85	~ 95-105	
- Small Biz	93%	90%	85%	86%	TBD	TBD
- SBIR (Current / Prior)	54%	60%	63%	65%	TBD	
Avg. Award (\$M)	2.2	2.1	2.1	2.1	TBD	TBD



# FY 2016: BAA Participation

Over 250 requirements from 17 Defense Activities  
Spanning Over 50 Program Offices



## DEPARTMENT OF THE ARMY

- Acquisition Program Offices
  - Ammunition
  - Aviation
  - Soldier / Soldier Systems
  - Command, Control, Communications – Tactical
  - Intelligence, Electronic Warfare and Sensors
  - Combat Support / Combat Support Systems
  - Missiles & Space Systems
  - Simulation, Training & Instrumentation
- Research & Development Centers / Other Activities
  - Aviation and Missile Research Development & Engineering Center (AMRDEC)
  - Armament Research, Development & Engineering Center (ARDEC)
  - Army Research Lab (ARL)
  - Communications-Electronics Research, Development & Engineering Center (CERDEC)
  - Edgewood Chemical Biological Center (ECBC)
  - Natick Soldier Research, Development & Engineering Center (NSRDEC)
  - Tank Automotive Research, Development & Engineering Center (TARDEC)
  - Defense Forensics & Biometrics Agency (DFBA)
  - Corps of Engineers (COE)

## DEPARTMENT OF THE NAVY

- Acquisition Program Offices
  - Naval Air Systems Cmd. (NAVAIR)
    - F-35 Joint Strike Fighter
    - Tactical UAS Rotary Wing Aircraft
    - Strike Planning & Execution Systems
    - Aviation Anti-Submarine Warfare
    - Aircrew Systems
    - Naval Aviation Training Systems
  - Naval Sea Systems Cmd. (NAVSEA)
    - Aircraft Carriers
    - Integrated Warfare Systems
    - Littoral Combat Ship
    - Ships / Submarines
    - Special Warfare
  - Space & Naval Warfare Systems Cmd.
    - Command, Control, Commo & Integ.
    - Enterprise & Integrated Systems
    - Space Systems
- Marine Corp (MARCOR)
  - Armor & Fire Support
  - Marine Air-Ground Task Force
  - Combat Support Systems
  - Infantry Weapons Systems
  - Intel, Tactical Remote Sensor System
  - Air Command & Control Systems
  - Land Systems
- Other Activities: Naval Surface Warfare Centers, Naval Supply Systems Command, Navy Strategic Systems Programs, Naval Facilities Engineering Command, Bureau of Medicine & Surgery

## DEPARTMENT OF THE AIR FORCE

- Acquisition Program Offices
  - Battle Management
  - Business Enterprise Systems
  - Command, Control, Communications, Integration & Network
  - Fighter / Bomber
  - Joint Strike Fighter
  - Space
  - Strategic Systems
  - Weapons
  - Intelligence, Surveillance Reconnaissance & Special Operation Forces
- Other Activities
  - Air Force Life Cycle Management Center
  - Air Force Test Center
  - Air Force Nuclear Weapons Center Commander
  - Air Force Propulsion Directorate
  - Air Force Sustainment Center

## DEFENSE AGENCIES, OSD ACTIVITIES & COMBATANT COMMANDS

- Chief Information Officer / Defense Information Systems Agency (CIO / DISA)
- OASD(R&E): EC&P, Research, Joint Improvised-Threat Defeat Agency (JIDA)
- Defense Threat Reduction Agency (DTRA)
- Missile Defense Agency (MDA)
- Defense Logistics Agency (DLA)
- National Reconnaissance Office (NRO)
- Combating Terrorism Technical Support Office (CTTSO)
- Joint S&T Office for Chemical and Biological Defense (JSTO / CBD)
- U.S. Africa Command
- U.S. Northern Command / North American Aerospace Defense Command
- U.S. Pacific Command
- U.S. Southern Command
- U.S. Special Operations Command
- U.S. Transportation Command



# Execution of FY16 Funds: \$250M Milestones



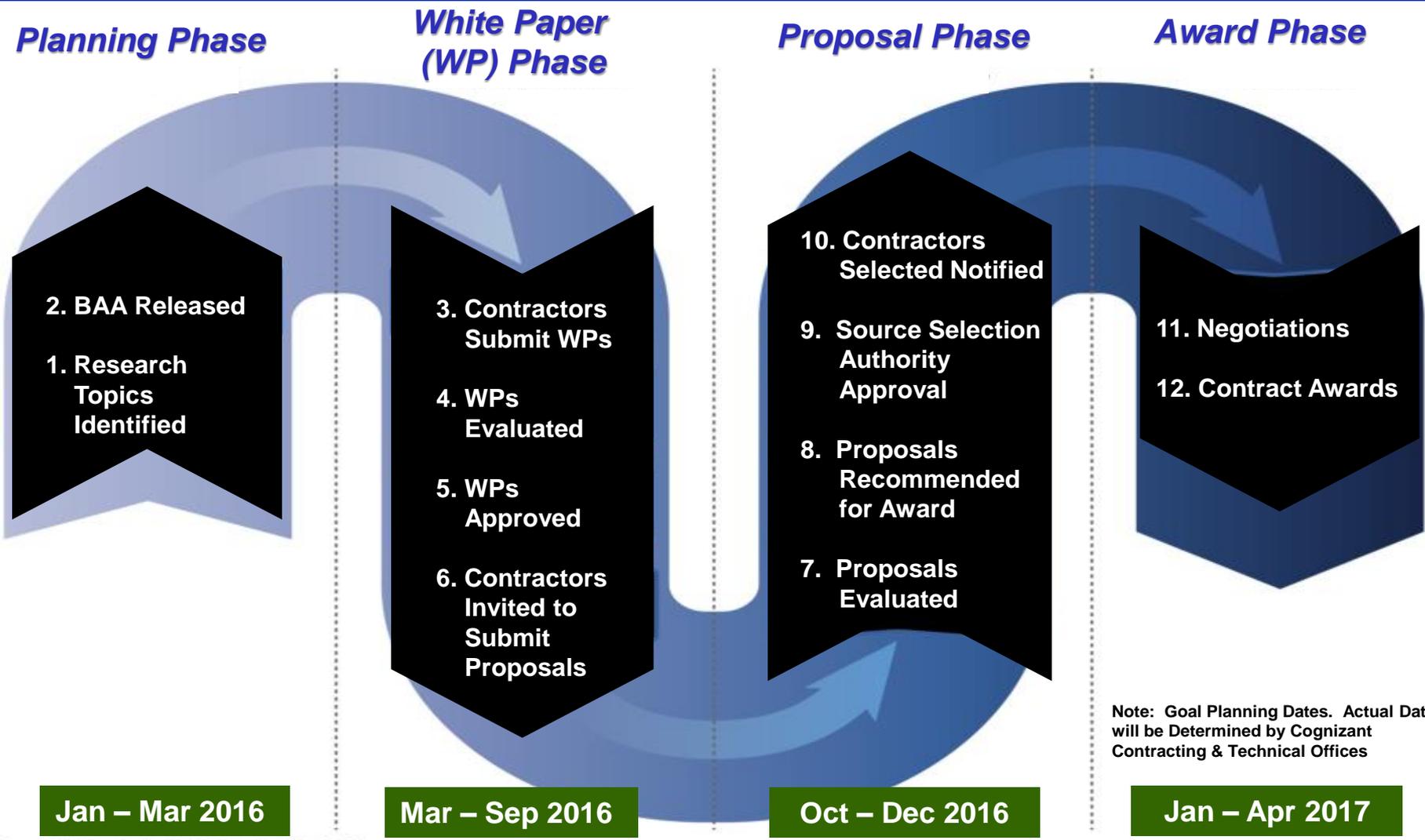
	Target Date	Event / Action	As of: March 1, 2016
2016	February 12, 2016	Requirements from Components, prep DRAFT BAA	
	<i>March 1, 2016</i>	<i>BAA Released in FedBizOpps Hot Link Posted at- <a href="http://www.defenseinnovationmarketplace.mil/rif.html">http://www.defenseinnovationmarketplace.mil/rif.html</a></i>	
	<i>May 3, 2016</i>	<i>BAA Closes: White Papers (WPs) due from offerors</i>	
	NLT September 1, 2016 *	<ul style="list-style-type: none"> <li>Components complete WP evaluations</li> <li>Initial priorities and ranking by Components</li> </ul>	
	NLT September 15, 2016 *	WP notifications, invite full proposals	
	NLT October 14, 2016 *	<ul style="list-style-type: none"> <li>Full proposals due from offerors</li> <li>Components start full proposal evaluations</li> </ul>	
	NLT December 16, 2016 *	Components complete full proposal evaluations	
2017	NLT January 3, 2017 *	Negotiations, start contract awards	
	NLT May 1, 2017 *	FY16-funded RIF contract awards complete	

\* Actual Dates will be Determined by Cognizant Contracting & Technical Offices



# FY16-17 Source Selection Process

## Key Steps & Timeline



Note: Goal Planning Dates. Actual Dates will be Determined by Cognizant Contracting & Technical Offices

Source: GAO analysis of DOD data. | GAO-15-421



# RIF – Project Examples (1 of 2)

## Enabling Technology Insertion & Refresh in Acquisition



- Ongoing Operational Needs:**

- Traumatic Brain Injury (Army & Brainscope): Fielded a pocket-side electroencephalogram used to provide forward-based medical diagnosis of neurological injury compatible with X-ray computed tomography



BrainScopeAhead  
200 Received FDA  
Clearance

- Checkpoint Explosive Detection System (DTRA & Alakai Defense Systems): Demonstrated a smaller, reduced-weight checkpoint detection system that increases stand-off range for detecting explosives, providing safer checkpoint operations



CPEDS-  
Lite  
System

- U.S. Manufacturing:**

- Plasma Electrolytic Oxidation Nano-Ceramic Coating (Air Force & IBC Materials): Demonstrated an improved nano-ceramic coating based on additive manufacturing, increasing the life and wear of missile launcher rails for F-15, F-16, and F/A-18 aircraft, reducing maintenance and downtime costs



Improved coating on  
missile rail surfaces:  
10x improved wear



AMRAAM Missile  
Launcher Rail



# RIF – Project Examples (2 of 2)

## Enabling Technology Insertion & Refresh in Acquisition



- **Logistics Supportability:**

- **Integrally Bladed Rotor Repair (Air Force & Blade Diagnostics):** Production-ready machine that evaluates the vibratory response of integrally bladed rotors, enabling faster damage tolerance assessment and previously classified unserviceable parts to be returned to service for F-119 engine overhaul
- **Wireless Vibration Recorder (Navy & Mide Techology):** A handheld, compact wireless vibration diagnostic tool that records up to four hours of aircraft vibration data, enabling faster maintenance in diagnosing aircraft component failure, shortening downtime and reducing flight costs



Production system to be delivered to Tinker AFB

Out of tolerance damage



- **Commercial Technology for Defense Operations:**

- **Extended Frequency Range Wide Band RF Distribution System (Navy & Out of the Fog Research):** Uses on a shipboard mast-mounted communications component that filters, blanks interfering signals so that very low level power signals of interest can be received
  - Manufactured by a Silicon Valley company and fielded an on Ships Signal Exploitation Equipment (SSEE) antenna



- Dimensions: 3 in. x 1.2 in. x 0.6 in.
- Mass: 40 grams

SSEE High Gain Antenna



Radio Frequency Control Unit (RFCU)



# RIF – Incentivize Productivity in Industry



- Identify what RIF performers are getting from RIF contracts
- Over 90% of RIF awardees indicate RIF helped their business base \*\*
  - 62% had new employee hires
  - 57% said RIF helped transition their technology
  - 52% benefitted from RIF teaming opportunities
  - 38% saw an increase in market sales
- Over 80% note a program like RIF is vital to transition of small business technologies
- Examples:
  - Helped advanced Phase II SBIR-developed technologies, resulting in a finished product for commercial and government sales
  - Ability to get innovation to the DoD faster
    - Large business customers sometimes submit their smaller, supplier-based technologies to the government as an engineering change
    - Could result in additional cost and lead-time for program insertion

\*\* Based on Surveys by Both the DoD & Small Business Technology Council



# Government Accountability Office (GAO) Review



- Initiated by Defense Committees in FY 2014 Senate Bill
- **Purpose:** Assess extent to which DoD --
  - Has established a competitive, merit-based process to award contracts
    - ✓ **Results:** Process is lengthy, but meets objective
  - Has established practices to manage project execution
    - ✓ **Results:** Services & Defense Agencies are successfully monitoring
  - Is meeting objective of rapidly inserting innovative technologies into defense acquisition programs
    - ✓ **Results:** GAO independently assessed 44 projects- 50% transition
- **Recommendations:**
  - Establish overall RIF transition goal
    - ✓ OSD non-concurred
  - Identify & apply factors that contribute to likelihood of technology transition success more consistently across the program
    - ✓ OSD concurred, 'transition practices' published

- GAO Report Available at <http://www.gao.gov/products/GAO-15-421> (May 2015)
- DoD RIF Transition Practices Available at <http://www.defenseinnovationmarketplace.mil/rif.html>, (Additional Resources Tab)



# Additional Resources (1 of 4)

[www.DefenseInnovationMarketplace.mil](http://www.DefenseInnovationMarketplace.mil)



**DEFENSE INNOVATION MARKETPLACE**

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**INVENTING THE ARMY OF THE FUTURE**  
Army releases new S&T video

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Solicitations

- Navy F/A-18 & EA-18G Aircraft Maintenance Support Services
- Navy AWW Test & Evaluation and Engineering Support
- Navy Radiation Detection Systems Support
- Air Force Booster Propulsion BAA
- NGA Business Improvement Open Source Research
- DARPA Robust Inertial Guidance for Munitions: Advanced Inertial Micro Sensor
- Navy Scientific, engineering, and technical support services for Submarine...
- Engineering Support for PALS Systems

Strategic Documents

- Air Force Strategic Master Plan
- Army S&T Overview
- Army Equipment Program 2016

Events

- 2015 Army Industry Day for Automated Tactical Optical Line-of-Sight \*\* Jun 5 \*\*
- Airborne Network Technology Review Days \*\* Jun 9-11\*\*
- 2015 Navy Air Combat Environment Test and Evaluation Facility \*\* Jun 11 \*\*

Better Buying Power 3.0  
Contact Us

**CONNECTING INDUSTRY AND DoD**

The Defense Innovation Marketplace is a communications resource to provide Industry with Improved Insight into the Research and Engineering investment priorities of the Department of Defense (DoD). The Marketplace contains DoD R&E strategic documents, solicitations, and News/Events to better inform Independent Research and Development (IR&D) planning. The IR&D Secure Portal houses project summaries that provide DoD with visibility into the IR&D efforts submitted.

<p><b>NEW BUSINESS OPPORTUNITIES</b></p> <p>Have a solution to a DoD Technology need? Find links to:</p> <ul style="list-style-type: none"> <li>RFIs</li> <li>RFPs</li> <li>Presolicitations</li> </ul>	<p><b>TECHNOLOGY INTERCHANGE MEETINGS</b></p> <p>Technology Interchange Meetings (TIMs) allow DoD and Industry/academia to come together around specific R&amp;E technology challenges and focus areas.</p> <ul style="list-style-type: none"> <li>Weapons Technology (Closed)</li> <li>Human Systems (June 22-26)</li> </ul>	<p><b>STRATEGIC DIRECTION</b></p> <p>Where is the Department of Defense headed? Gain insight by linking to key DoD and Services Information:</p> <ul style="list-style-type: none"> <li>Strategic Documents</li> </ul>
<p><b>LONG RANGE R&amp;D PROGRAM PLAN</b></p> <p>Industry, academia, labs (both corporate and government), FFRDCs and the general public were encouraged to share ideas.</p> <ul style="list-style-type: none"> <li>Learn More</li> </ul>	<p><b>SMALL BUSINESS RESOURCES</b></p> <p>Small Business Resources can help your growing enterprise:</p> <ul style="list-style-type: none"> <li>Small Business Resources</li> <li>Small Business Innovation Research (SBIR) program</li> <li>Rapid Innovation Fund</li> </ul>	<p><b>NEWS &amp; EVENTS</b></p> <p>What DoD news, events, or meetings do you need to know about?</p> <ul style="list-style-type: none"> <li>News</li> <li>Events</li> <li>Weekly S&amp;T Bulletin</li> </ul>

**CONNECTING INDUSTRY AND DoD**

## Defense Innovation Marketplace

### Business Opportunities

- Small Business Resources
- Acquisition Resources
- Technology Interchange Meetings
- Army, Navy, Air Force & Other DoD S&T Information

### Rapid Innovation Fund (RIF) Program

- Current BAA / FBO Link
- RIF Awards
- Overview Brief (RIF 101)
- Congressional Statute
- Key RIF Headquarters POCs

# ***Additional Resources (2 of 4)***

<http://defenseinnovationmarketplace.mil/RIF.html>

<b>Focal Point</b>	<b>Office</b>	<b>Phone</b>	<b>Email</b>
Dan Cundiff	OSD (R&E) EC&P	571-372-6807	thomas.d.cundiff.civ@mail.mil
Alice Williams	OSD (OSBP)	571-372-6309	alice.m.williams101.civ@mail.mil
Rob Saunders	Army (ASA/ALT)	703- 617-0279	robert.m.saunders14.civ@mail.mil
Tom Gallagher	Navy (ONR)	703-696-6815	thomas.j.gallagher@navy.mil
LtCol Dan Gallton	AF (SAF)	571-256-0332	daniel.a.gallton.mil@mail.mil
John (JR) Smith	AF (SAF)	571-256-0316	john.r.smith346.ctr@mail.mil



# Additional Resources (3 of 4)

## Small Business Administration (SBA)



## *Doing Business Across the Federal Agencies*

<http://www.sba.gov>

- **Starting & Managing a Business**
- **Loan Programs & Grants Assistance**
- **Contracting with the Federal Government**
  - **Contracting Resources for Small Businesses**
  - **Government Contract Field Activities**
  - **Partnership Agreements**
- **Learning Center**
  - **Understanding Your Customer**
  - **Marketing Research**
  - **Legal for Small Businesses**
  - **Patents, Trademarks, Copyrights**
  - **Finding & Attracting Investors**
- **Local Assistance**
  - **SBA Regional & District Offices**
  - **Small Business Development Centers**
  - **Export Assistance Centers**
  - **Procurement Technical Assistance Centers**



# Additional Resources (4 of 4)

## DoD Small Business Innovative Research



## ***Doing Business with the Department of Defense***

***<http://www.acq.osd.mil/osbp/sb/index.shtml>***

- “How-To” work with Defense
- Guides on Marketing to Defense
- Programs for Small Business
  - SBIR / STTR
  - Mentor Protégé
  - Indian Incentive Program
- Contracting with Defense
- Small Business Training
- Conferences & Workshops
- Frequently Asked Questions
- Links to Army, Navy, Air Force & Other Defense Agency Programs

## ***Talk to an Small Business Program Expert***

***<http://www.acq.osd.mil/osbp/sbir/contacts/sbir-contacts.shtml>***

- 14 Points of Contact Across the Department of Defense