



# STTR DEEP DIVE

**S**mall **B**usiness **I**nnovation **R**esearch  
**S**mall Business **T**echnology **T**ransfer

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# SBIR/STTR Program Vision and Mission



## **VISION**

Empower small businesses to deliver technological innovation that contributes to NASA's missions, provides societal benefit, and grows the US economy.

## **MISSION**

Create opportunities through SBIR/STTR awards to leverage small business knowledge and technology development for maximum impact and contribution.

# The STTR Program



## Small Business Technology Transfer (STTR)

- STTR facilitates cooperative R&D between small business concerns and U.S. research institutions – with potential for commercialization
- For FY17, 0.45% of the extramural research budget for all agencies with a budget greater than \$1B per year (5 federal agencies presently participate)
- The STTR program has a statutory requirement to stimulate a partnership of ideas and technologies between innovative small business concerns (SBCs) and Research Institutions through Federally-funded research or research and development (R/R&D).
- STTR also adheres to SBA directives to increase participation by Women-Owned, Veteran-Owned and Small Disadvantaged Businesses and outreach to HBCUs and Minority Serving Institutions. Outreach is also made to under represented areas/regions of the country.

# Why Should You Participate in STTR?



## **For the Small Business Concerns**

- Opportunity to Leverage expertise and innovative ideas from Professors/Research Staff/Students
- Opportunity to leverage specialized facilities and experimental equipment at the Research Institutions (RIs) when often SBCs may not be able to afford such facilities on their own
- Opportunity to Create Pipeline of Usable Talent for Company from the RIs
- Develop working relationship & credibility with government R&D
- Fosters partnerships with large corporations and academia
- Provides recognition and visibility for your business
- Participation attracts venture capital and other funding sources

## **For the Research Institutions**

- Opportunity to Create/Inspire Entrepreneurship as a vital part of the Educational Experience
- Another opportunity to access federal funding for research
- An opportunity sometimes to get RI Intellectual Property (IP) involved in the project and licensed
- Another means for visibility in the research community, generate peer-reviewed pubs., etc.

# NASA Program Background



- NASA's SBIR and STTR programs have awarded more than **\$3.3B** to research-intensive American small businesses to date; STTR makes up close to **\$300M** of that figure
- Engineers and scientists from more than 12,000 Firms in all 50 States, DC, and Puerto Rico have participated across the two programs
- Each year about 1,700 NASA scientists and engineers support the program performing technical reviews
- NASA invests significant funds and technical expertise into the program and is rewarded with significant R&D results which we infuse into our programs.....along with access to new businesses and RIs who may participate in other NASA programs!



# Participating Federal Agencies



## STTR Programs



Department of  
Defense (DoD)



National Aeronautics  
and Space  
Administration (NASA)



National Science  
Foundation (NSF)



Department of  
Health and Human  
Services (HHS)



Department of Energy  
(DoE)

# Agency SBIR/STTR Differences



## CONTRACTING AGENCIES

- Agency establishes plans,
- protocols, requirements
- Highly focused topics
- **Procurement** mechanism
- for DOD and NASA
- More fiscal requirements



NASA, DoD, HHS/NIH, ED,  
EPA, DOT, DOC

## GRANTING AGENCIES

- Investigator initiates
- Approach
- Less-specified topics
- **Assistance** mechanism
- More flexibility



HHS/NIH, NSF, ED,  
USDA, DOE

# STTR Eligibility Requirements



- Must be located in the United States and at least 51% owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States
- Formal Cooperative R&D effort with a U.S. Research Institution
- Minimum 40% by small business, 30% by U.S. Research Institution (still have 30% that can be shared between the two parties or used for subcontracting, etc.)
- Small business is Prime, Principal Investigator can be from Small Business Concern or Research Institution
- The U.S. research institution (RI) must be an accredited college/university, a federal research and development center, or other non-profit research organization
- Other SBIR requirements generally also apply



# Structure of STTR Programs



## Phase I: Concept

- Award Guideline: \$125K
- Duration: 12 months (STTR)



## Phase II: Full Research, R&D to Prototype

- Award Guideline: \$750K
- Duration: 24 months
  - Post-Phase II
    - Phase II-E → 1:1 Matching up to \$375K (2016 Solicitation onwards); can add another 6-12 months to award period
    - CCRPP (pilot) → 1:1 matching from \$125K up to \$2M; add another 2 years



## Phase III: Commercialization/ Infusion

- Non-STTR funds
  - Contract from NASA program
  - Other agency
  - Prime contractor

# Intellectual Property

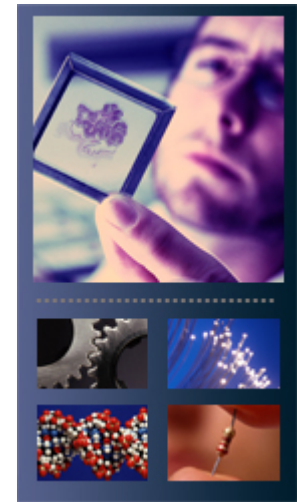


## Patent Rights

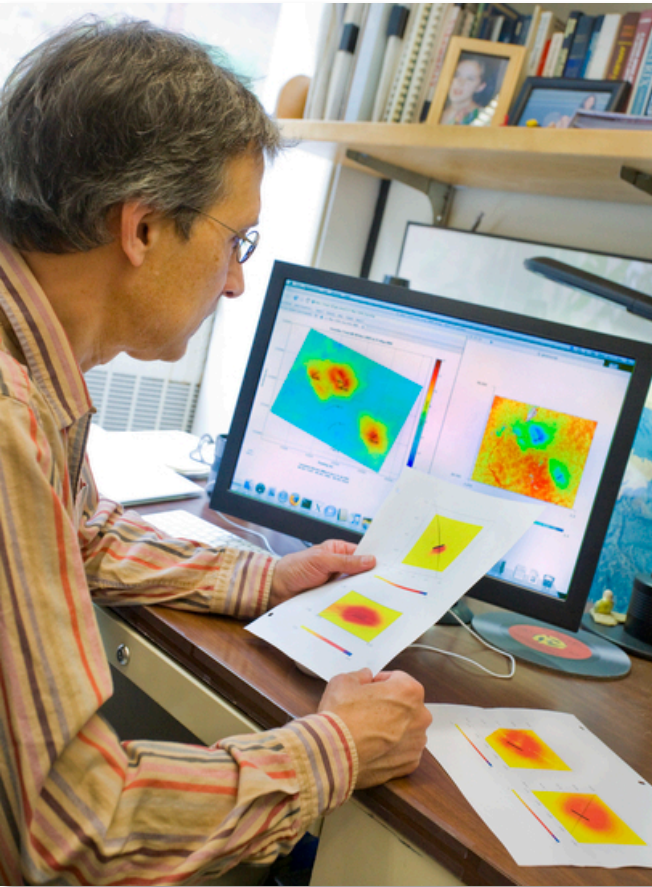
- Small business concerns normally retain the principal worldwide patent rights to any invention developed with Government support

## Government Use

- The Federal Government receives a royalty-free license for Federal Government use



U.S. Patent and Trade Office  
<http://www.uspto.gov/>



## Protection Period

- Data generated from your R/R&D is protected from public disclosure for a minimum of 4 years (civilian agencies) or 5 years (DOD) after the conclusion of your award (Phase I, Phase II, or federally funded Phase III)

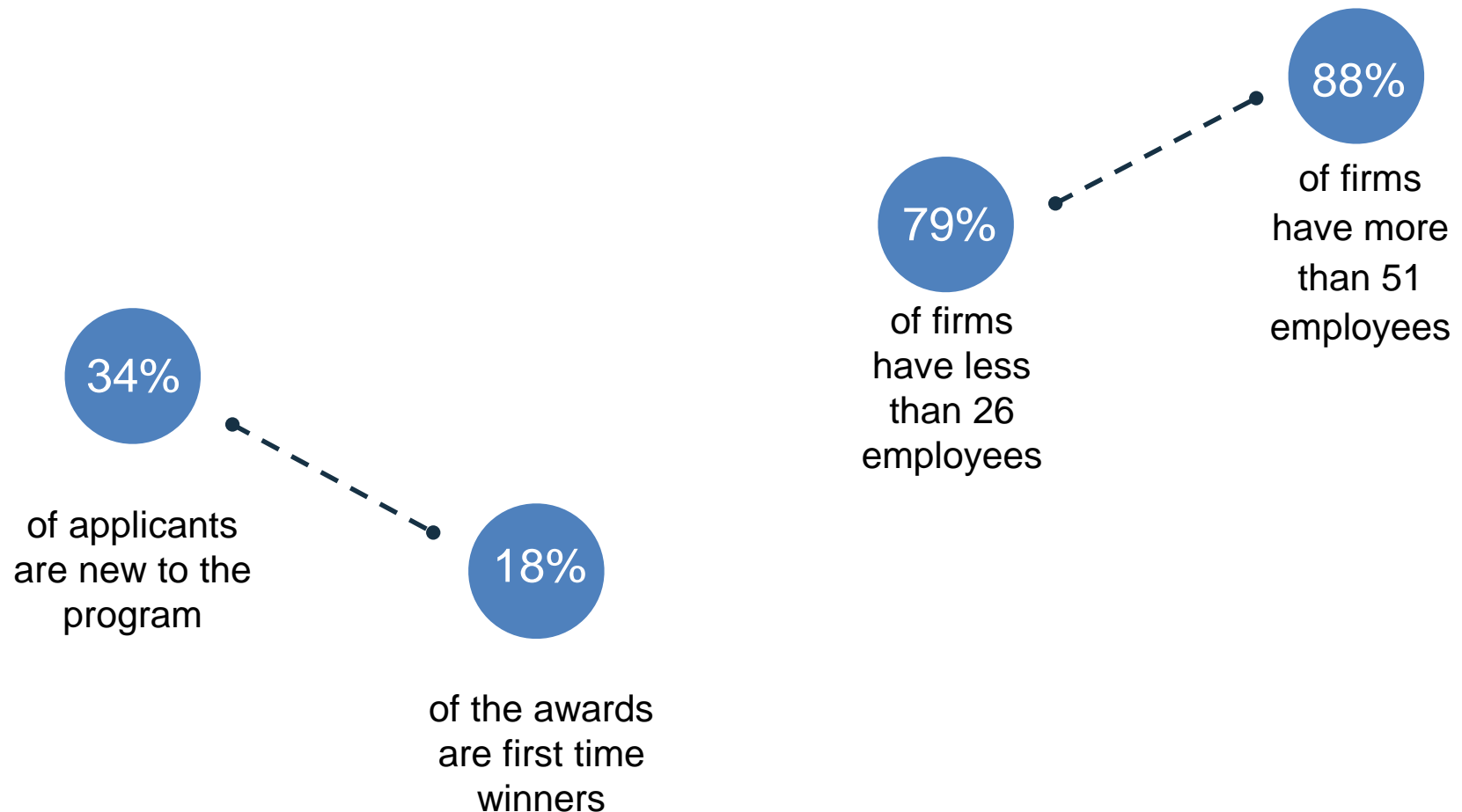
## Government Use

- The Government retains a royalty-free license for Government use of any technical data delivered under an SBIR award, whether patented or not

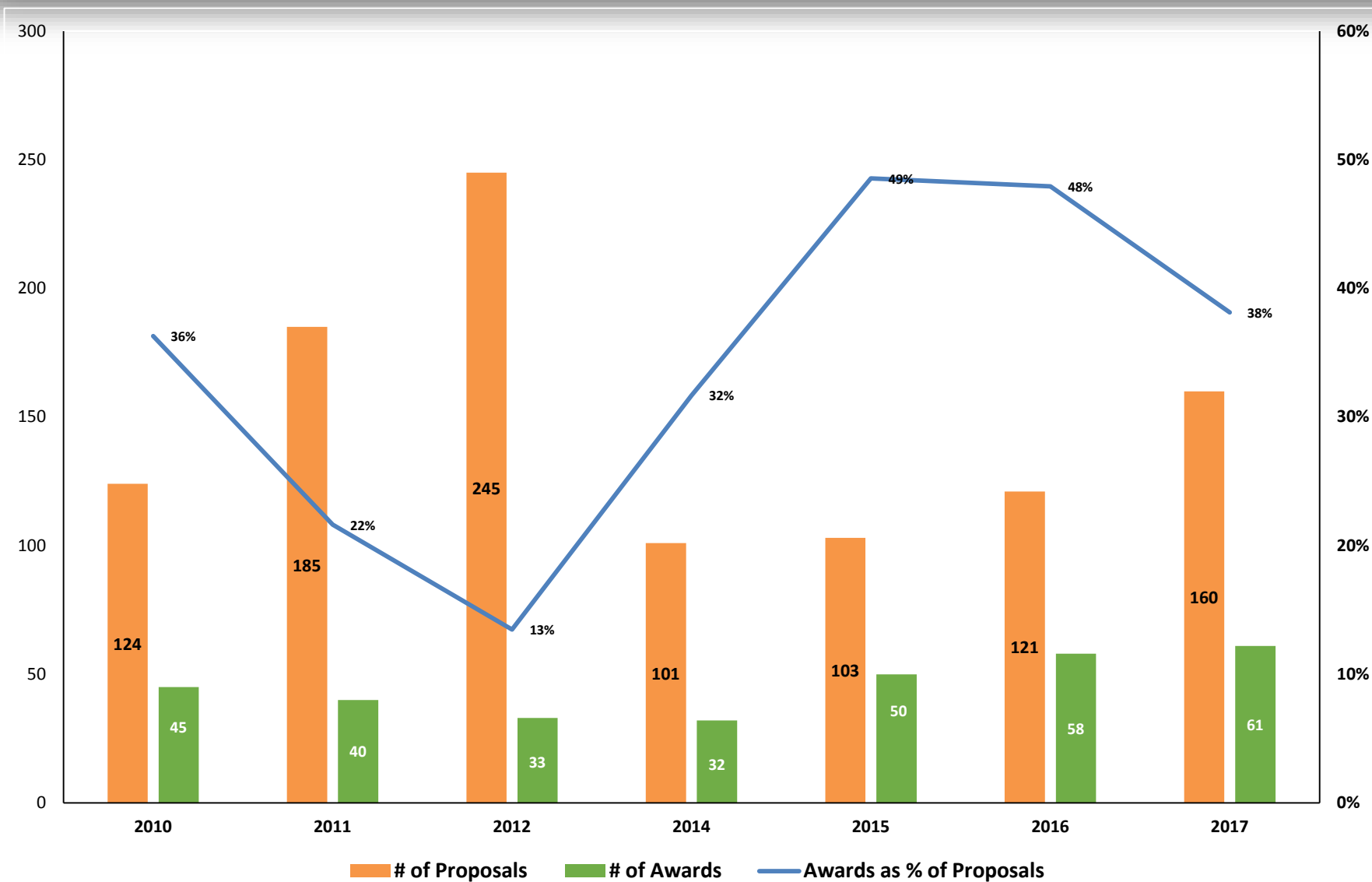
# Working with Small Businesses



## FY17 Phase I SBIR/STTR Awards Data Points

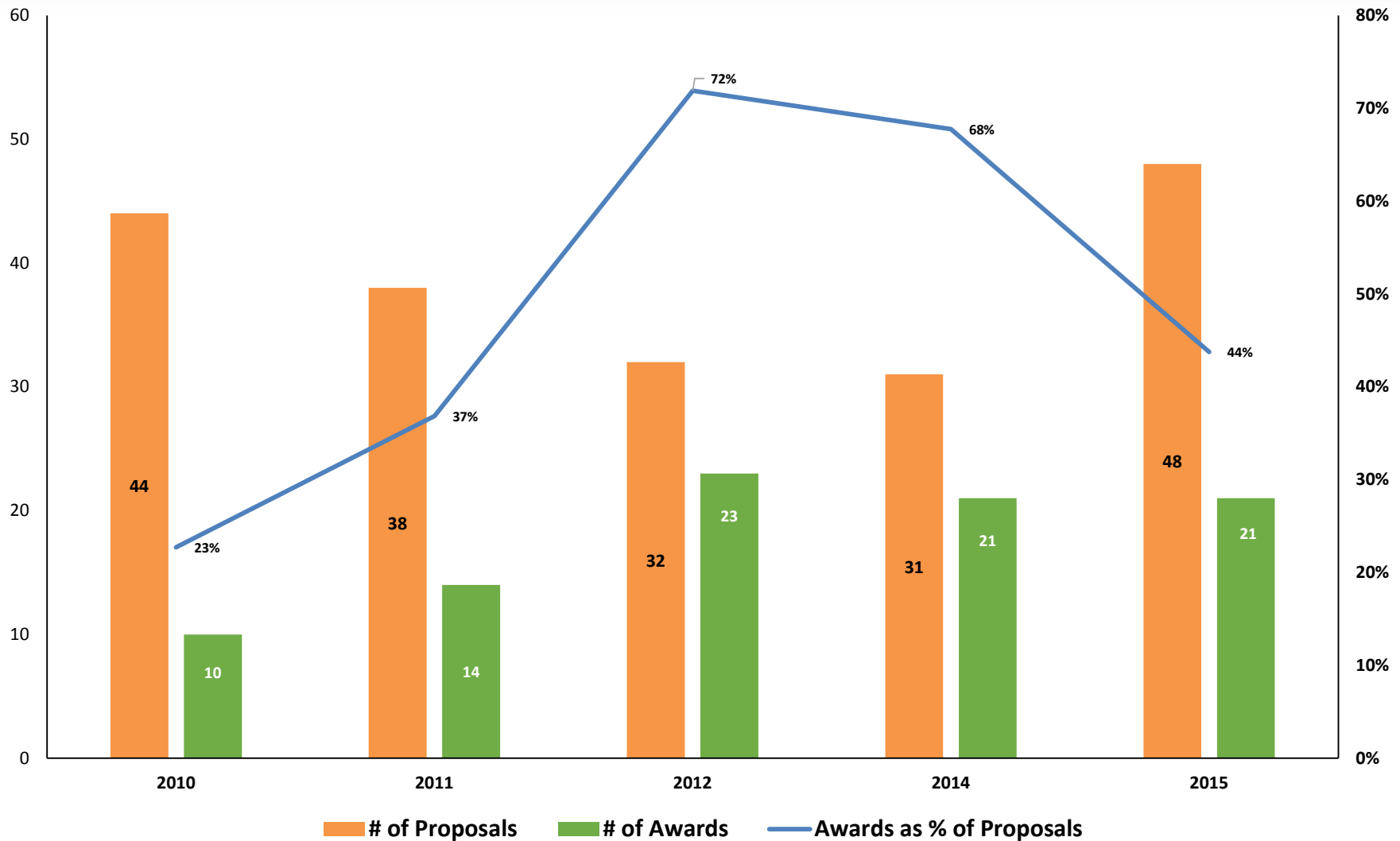


# STTR Phase I Proposals vs. Awards





# STTR Phase II Proposals vs. Awards





# 2017 Solicitation - Noteworthy Changes

## **I-Corps**

In partnership with the National Science Foundation (NSF), NASA is offering the I-Corps program to educate selected teams on how to translate technologies from the laboratory into the marketplace.

<http://sbir.nasa.gov/content/I-Corps>

## **CCRPP**

Under NASA's new Civilian Commercialization Readiness Pilot Program (CCRPP), NASA will match the investments with SBIR/STTR program funds between \$125K-\$2M for each CCRPP award. The technology proposed for advancement toward commercialization should have a strong relevance to NASA's missions, as well as a strong potential use by NASA and/or markets outside of NASA beyond the CCRPP investment.

<http://sbir.gsfc.nasa.gov/content/post-phase-ii-initiatives>

# Mentor-Protégé Program



The NASA Mentor-Protégé Program encourages NASA prime contractors to assist eligible protégés to:

- Enhance their capabilities to perform on NASA contracts and subcontracts,
- Foster the establishment of long-term business relationships between these entities and NASA prime contractors, and
- Increase the overall number of these entities that receive NASA contract and subcontract awards.

For more information on the Mentor-Protégé Program visit: <http://www.osbp.nasa.gov/mpp/index.html>

# 2017 Solicitation - Noteworthy Changes

## Focus Areas

- The research subtopics are now organized by “Focus Areas” that group NASA interests and related technologies
- This change is intended to make it easier for proposers to understand related needs across the agency and thus identify subtopics where their R&D capabilities may be a good match
- <http://sbir.gsfc.nasa.gov/solicit-detail/58007>

2017 Focus Areas	
1. In-Space Propulsion Technologies	12. Entry, Descent and Landing Systems
2. Power and Energy Storage	13. Information Technologies for Science Data
3. Autonomous Systems for Space Exploration	14. In-Space and Advanced Manufacturing
4. Robotic Systems for Space Exploration	15. Lightweight Materials, Structures, Assembly, and Construction
5. Communications and Navigation	16. Ground and Launch Processing
6. Life Support and Habitation Systems	17. Thermal Management Systems
7. Human Research and Health Maintenance	18. Air Vehicle Technology
8. In-Situ Resource Utilization	19. Integrated Flight Systems
9. Sensors, Detectors and Instruments	20. Airspace Operations and Safety
10. Advanced Telescope Technologies	21. Small Spacecraft Technologies
11. Spacecraft and Platform Systems	22. ISS Utilization and Microgravity Research



# NASA's Technology Roadmaps



**TA 1**



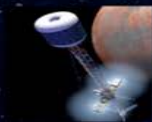
**LAUNCH PROPULSION SYSTEMS**

**TA 2**



**IN-SPACE PROPULSION TECHNOLOGIES**

**TA 3**



**SPACE POWER AND ENERGY STORAGE**

**TA 4**



**ROBOTICS AND AUTONOMOUS SYSTEMS**

**TA 5**



**COMMUNICATIONS, NAVIGATION, AND ORBITAL DEBRIS TRACKING AND CHARACTERIZATION SYSTEMS**

**TA 6**



**HUMAN HEALTH, LIFE SUPPORT, AND HABITATION SYSTEMS**

**TA 7**



**HUMAN EXPLORATION DESTINATION SYSTEMS**

**TA 8**



**SCIENCE INSTRUMENTS, OBSERVATORIES, AND SENSOR SYSTEMS**

**TA 9**



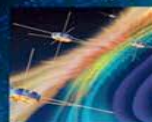
**ENTRY, DESCENT, AND LANDING SYSTEMS**

**TA 10**



**NANOTECHNOLOGY**

**TA 11**



**MODELING, SIMULATION, INFORMATION TECHNOLOGY, AND PROCESSING**

**TA 12**



**MATERIALS, STRUCTURES, MECHANICAL SYSTEMS, AND MANUFACTURING**

**TA 13**



**GROUND AND LAUNCH SYSTEMS**

**TA 14**



**THERMAL MANAGEMENT SYSTEMS**

**TA 15**



**AERONAUTICS**



- **STTR Research Agreement** is a single-page document electronically submitted and endorsed by the SBC and Research Institution (RI). This agreement counts as one page toward the 23-page limit. Refer to section 3.2.5 of the Solicitation.
- The form consists of a model agreement. Additional clauses/conditions can be added if the Firm chooses by inputting them into the text box provided.
- Firms can create their own custom agreement by clicking on the “custom research agreement form” link and entering the text into the text box.
- This form gets electronically endorsed by the RI Official and SBC Official via the endorsement section of the Activity Worksheet.
- **STTR Allocation of Rights Agreement** States the allocation of intellectual property rights between the Small Business Concern and Research Institution with respect to the proposed STTR activity and planned follow-on research, development, and/or commercialization.

# Checklist before Submitting Application



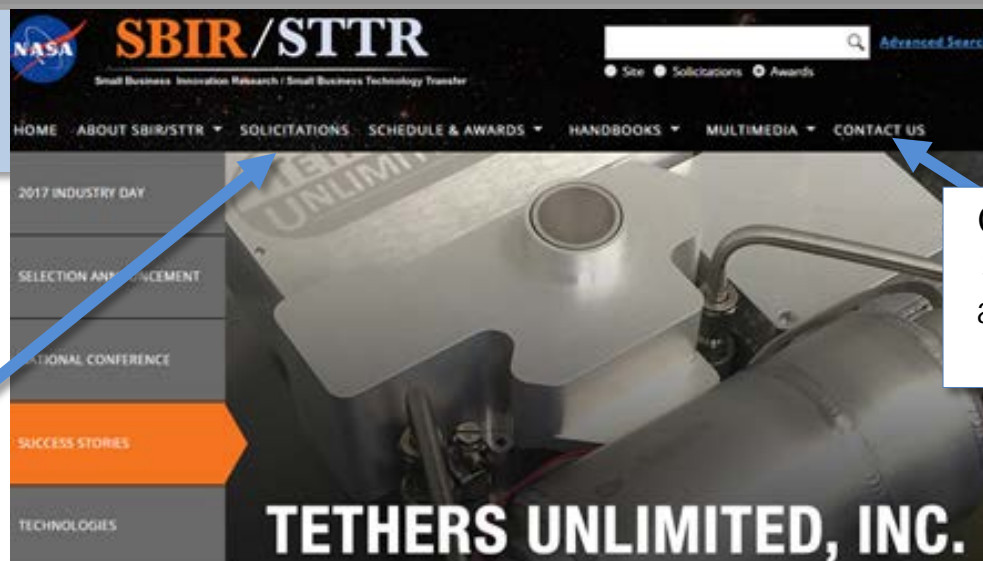
- Submit proposal prior to the deadline
- Perform the “Endorse Proposal” step, which is the final step in the submissions process
- Make sure you meet the format requirements (margin and font size, page limitation)
- Have the RI register correctly (STTR Requirement)
  - For STTR proposals the RI needs to endorse the Research Agreement prior to your proposal being complete and submitted
    - RI will need to create an account in the Proposal Submission EHB
    - register under your firm using your EIN, State, and PIN so they are attached to your proposal correctly
    - choose the RI option at the bottom of the page when entering their name, email, phone etc



# NASA SBIR/STTR Website



The NASA SBIR/STTR website is located at [www.sbir.nasa.gov](http://www.sbir.nasa.gov)



Contact the Program SBIR/STTR Helpdesk and Program Points of Contact

Research NASA's Needs Annual Solicitations including past years

## Looking to Join the Program?

- Program Basics
- Forms Library
- Model Contract
- In-depth Training Resources and FAQs



# Contact Us



**Website:** [www.sbir.nasa.gov](http://www.sbir.nasa.gov)

**NASA Help Desk:** 301.937.0888