

ALLIANCE NORTHWEST



BREAKOUT SESSION

How to Bring Innovation into the Department of Defense



How to Bring Innovation into the Department of Defense

Alliance NW 2025



About the Presenter

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Program Director, ARC WA, SBA Funded FAST Grant program

- Support Washington State APEX Advisors
- Provide connections to resources and education

<https://washingtonapex.org/sbir/>



About APEX Accelerators

APEX Accelerators are part of a nationwide program dedicated to providing technical assistance to small businesses who wish to sell to federal, state or local governments.

- Marketing to government buyers
- Certifications & registrations
- Finding opportunities to bid
- Interpreting solicitations and regulations
- Locating R & D funding and [much more](#)

*APEX Accelerators are funded in part through
a cooperative agreement with the Department of Defense*



Today's Presentation

- Understanding How R&D Federal Funding Works
- Where to Find Federal Opportunities
- Links



Federal R&D Funding Overview

Average spend: \$190 BILLION per year

Purpose: To solve technical challenges the US faces as a nation

Limited by: Their inability to commercialize

Federal R&D Disbursement

\$26 Billion: National Labs

\$90 Billion to defense contractors

**~ \$74 Billion to private entities to
commercialize**

Creating a Plan

Who are you selling to?

Federal Agency

What are you selling?

New innovation,
new product

How do they buy it?

R&D procurement
options

Federal Agencies with Research and Development Budgets

**Department of
Agriculture
(USDA)**

**Department of
Commerce
(DoC)
NIST, NOAA**

**Department of
Defense
(DoD)**

**Department of
Education
(ED)**

**Department of
Energy
(DOE)**

**Department of
Health and Human
Services
(HHS)**

**Department of
Homeland Security
(DHS)**

**Department of
Transportation
(DOT)**

**Environmental
Protection Agency
(EPA)**

**National
Aeronautics and
Space
Administration
(NASA)**

**National Science
Foundation
(NSF)**

Border Control
TSA
US Secret Service



FEMA
Coast Guard

Key Technology Challenges

- Communications and Networking
- Cybersecurity
- Data Integration
- Digital Identity

Key Technology Challenges

- Manufacturing
- Standards
- Quantum Science
- Cybersecurity



Key Technology Challenges

- Digital Learning
- Connectivity
- Access to learning
- How to utilize Machine learning/AI

**FAA
Railroads
Highways**



**Smart Cities
Infrastructure**

Key Technology Challenges

- Unmanned aircraft
- Geospatial and data visualization
- Machine learning/AI
- Security



TECHNOLOGY PARTNERSHIPS OFFICE

National Oceanic and Atmospheric Administration

Key Technology Challenges

- Uncrewed Systems
- Citizen Science
- Space Innovation
- Biological Sciences



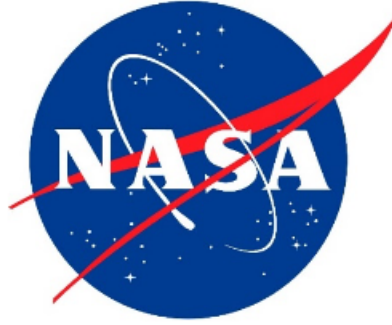
Key Technology Challenges

- Methane Reduction
- Air, Climate and Energy
- Safe and Sustainable Water Resources
- Chemical Safety and Sustainability



Key Technology Challenges

- Digital Transformation Tools
- Biotechnology and Biomanufacturing
- Aquaculture
- Biofuels & Biobased Products



Key Technology Challenges

- Propulsion Systems
- Sensors and Instruments
- Autonomous Systems
- Flight Vehicle Systems



U.S. DEPARTMENT OF
ENERGY

Office of Science

Key Technology Challenges

- Transportation fuels
- Building Energy Efficiency
- Renewable energy
- Carbon Capture



Key Technology Challenges

- Advanced Manufacturing
- Mobility
- Agricultural Technologies
- Environmental Technologies

**Institute on Aging
Cancer Institute
Readiness and Response**



**Occupational Safety
Injury Prevention
Deafness**

Key Technology Challenges

- AI in Health Industry
- Drug safety
- Health Inequities
- Pain Management

**Navy/Air Force/Army
Space Force
Defense Health Agency**



**Troop Support
Defense Microelectronics**

Key Technology Challenges

- Robotics
- Space Platforms
- Advanced Materials
- Networked Sensors

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✓ DOD

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Tool #1: TRL

Technical Readiness Level

TRL 1 -3: Conceptual Stage

Technology Readiness Level

Description

1. **Basic principles observed and reported**

Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include paper studies of a technology's basic properties.

SBIR 1

2. **Technology concept and/or application formulated.**

Invention begins. Once basic principles are observed, practical applications can be invented. Applications are speculative and there may be no proof or detailed analysis to support the assumptions. Examples are limited to analytic studies.

Very little R&D avail

3. **Analytical and experimental critical function and/or characteristic proof of concept.**

Active research and development is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative.

TRL 4 - 6: Prototype Stage

- | | | |
|--|--|---|
| 4. Component and/or breadboard validation in laboratory environment | Basic technological components are integrated to establish that they will work together. This is relatively "low fidelity" compared to the eventual system. Examples include integration of "ad hoc" hardware in the laboratory. | SBIR 2 |
| 5. Component and/or breadboard validation in relevant environment. | Fidelity of breadboard technology increases significantly. The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in a simulated environment. Examples include "high fidelity" laboratory integration of components. | Some other R&D Funding Avail |
| 6. System/subsystem model or prototype demonstration in a relevant environment. | Representative model or prototype system, which is well beyond that of TRL 5, is tested in a relevant environment. Represents a major step up in a technology's demonstrated readiness. Examples include testing a prototype in a high- fidelity laboratory environment or in simulated operational environment. | |

SBIR/STTR

Small Business Innovation Research &
Small Business Technology Transfer



America's Seed Fund



U.S. Small Business
Administration

SBIR.gov

Small Business Innovation Research (SBIR)

→ 3.2% of the extramural research budget for agencies with a budget greater than \$100 M per year

~\$3.2 billion minimum spend each year

3% !!

Small Business Technology Transfer (STTR)

→ 0.45% of the extramural research budget for agencies with a budget greater than \$1B per year

~\$450 million minimum spend each year

Over 5,000 new awards every year

TRL 7-9: Transition Stage

7. System prototype demonstration in an operational environment.	Prototype near, or at, planned operational system. Represents a major step up from TRL 6, requiring demonstration of an actual system prototype in an operational environment such as an aircraft, vehicle, or space. Examples include testing the prototype in a test bed aircraft.	Transition
8. Actual system completed and qualified through test and demonstration.	Technology has been proven to work in its final form and under expected conditions. In almost all cases, this TRL represents the end of true system development. Examples include developmental test and evaluation of the system in its intended weapon system to determine if it meets design specifications.	Other R&D Funding Maybe procurement
9. Actual system proven through successful mission operations.	Actual application of the technology in its final form and under mission conditions , such as those encountered in operational test and evaluation. Examples include using the system under operational mission conditions.	Procurement

Tool #2: NAICS Codes

Industry Code

Small Business Size Designation

TRL 1 - 7 (8-9): Still in R&D?

Reference R&D NAICS Codes

- **541713 Research and Development in Nanotechnology**
- **541714 Research and Development in Biotechnology (except Nanobiotechnology)**
- **541715 Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)**

Small Business Size Standard: 500 employees or less

Have a finished product? Use Procurement NAICS Codes

221117	Biomass Electric Power Generation		550
221118	Other Electric Power Generation		650
221121	Electric Bulk Power Transmission and Control		950
221122	Electric Power Distribution		1,100
221210	Natural Gas Distribution		1,150
221310	Water Supply and Irrigation Systems	\$41.0	
221320	Sewage Treatment Facilities	\$35.0	
221330	Steam and Air-Conditioning Supply	\$30.0	

Tool #3: Quad Chart

Describing the Status of Your
Innovation



This is an example only.

Company:

Contact Name:

Email:

Website:

TECHNOLOGY DEVELOPMENT

Technology/Research Overview: *The team has developed a method to reduce triglycerides; improve glucose tolerance; and reduce weight using an adult stem cell technology platform*

Intellectual Property Protection: *Two issued patents and one patent pending*

Stage of Development: *Basic research; TRL 2*

Value Proposition: *Can reduce the risk of cardiovascular disease for those that cannot treat this syndrome with exercise.*

COMPANY INTRODUCTION

Mission: *To improve patient outcomes by transforming great science into actionable solutions for the treatment of metabolic diseases.*

Founded: *2005*

Number of Employees: *20*

Facility Description: *We are currently developing this method in a laboratory located at the Mayo Clinic in Rochester, MN.*

Product Sales: *None to date*

RESEARCH NEED

Seeking funding to test this platform on diabetes, high blood pressure, and abnormal cholesterol levels.

OPPORTUNITY

Need/Problem: *Metabolic syndrome is becoming increasingly common due to a rise in obesity rates among adults. In the future metabolic syndrome may overtake smoking as the leading risk factor for heart disease.*

Target Customer: *About 32% of people in USA are considered to suffer from metabolic syndrome, with the risk increasing with age (e.g., 40% of people aged between 40 and 60 are considered to suffer from this syndrome).*

Market Opportunity:

Creating a Plan

Who are you selling to?

✓ DOD

What are you selling?

✓ Specific
Innovation

How do they buy it?

R&D procurement
options

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**Department of
Transportation
(DOT)**

**Environmental
Protection Agency
(EPA)**

**National
Aeronautics and
Space
Administration
(NASA)**

**National Science
Foundation
(NSF)**

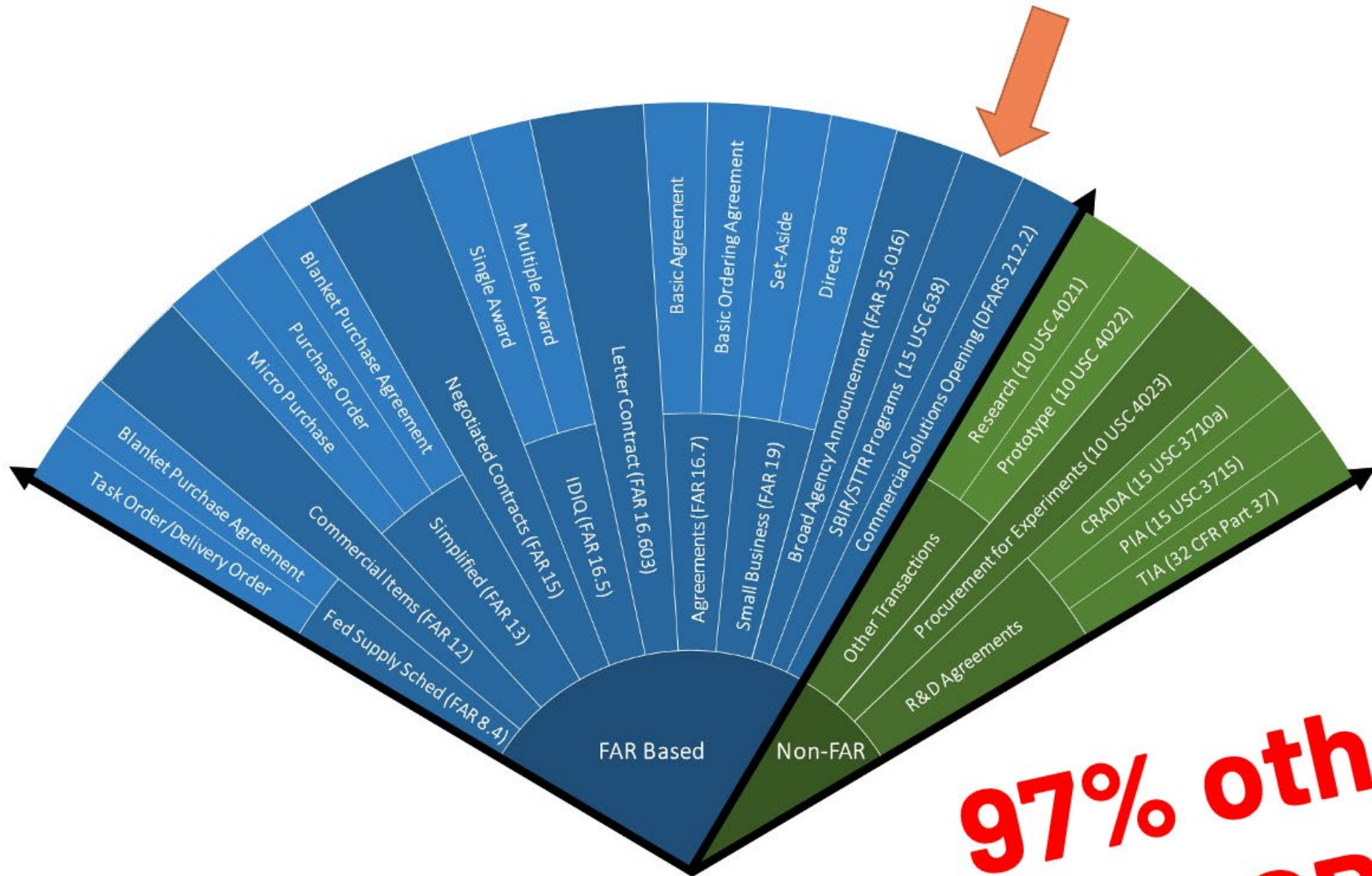
What is the **FAR?**

Federal Acquisition Regulations

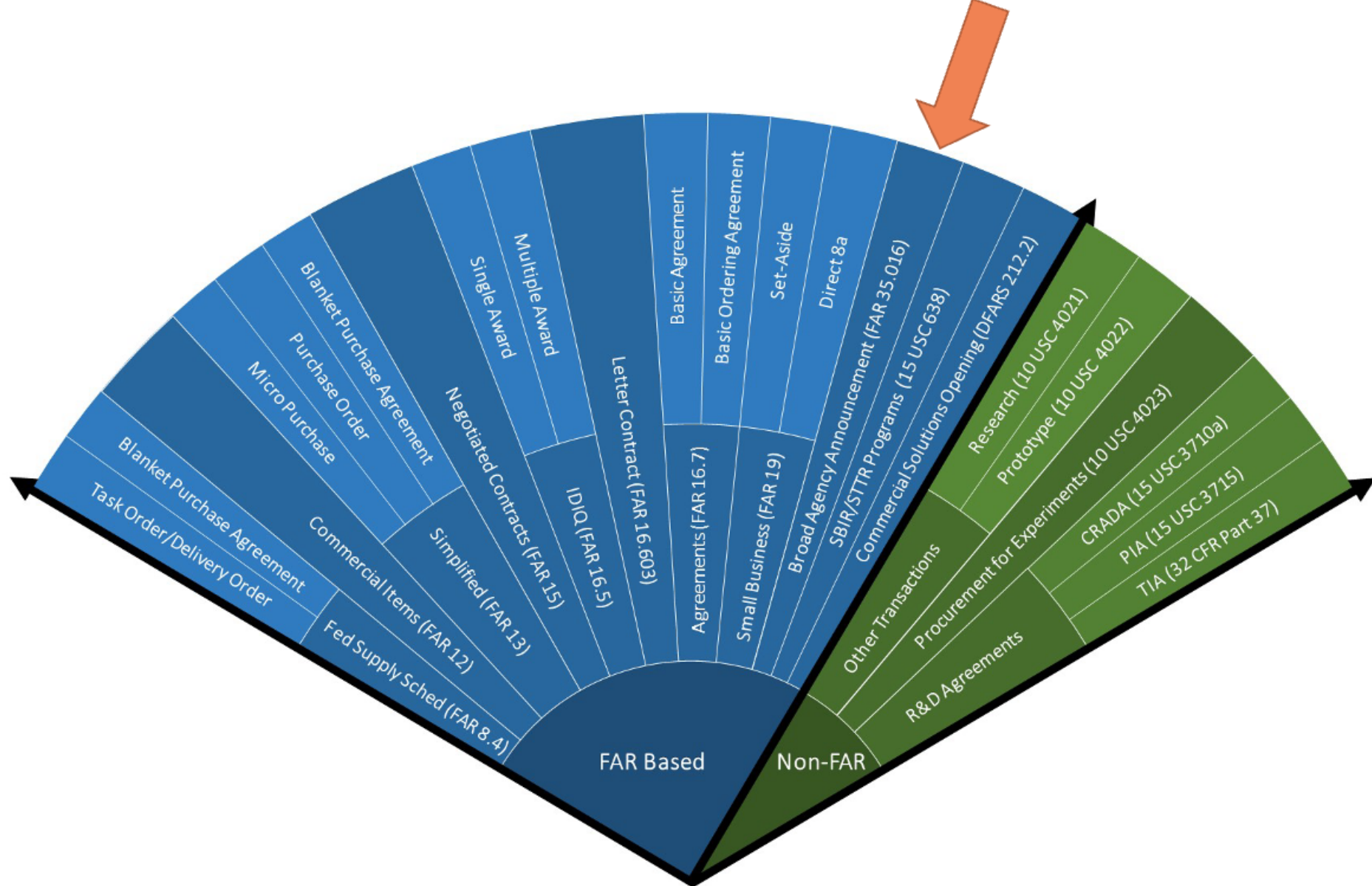
Primary source for use by federal
agencies in the acquisition of supplies
and services

The Purpose of the FAR

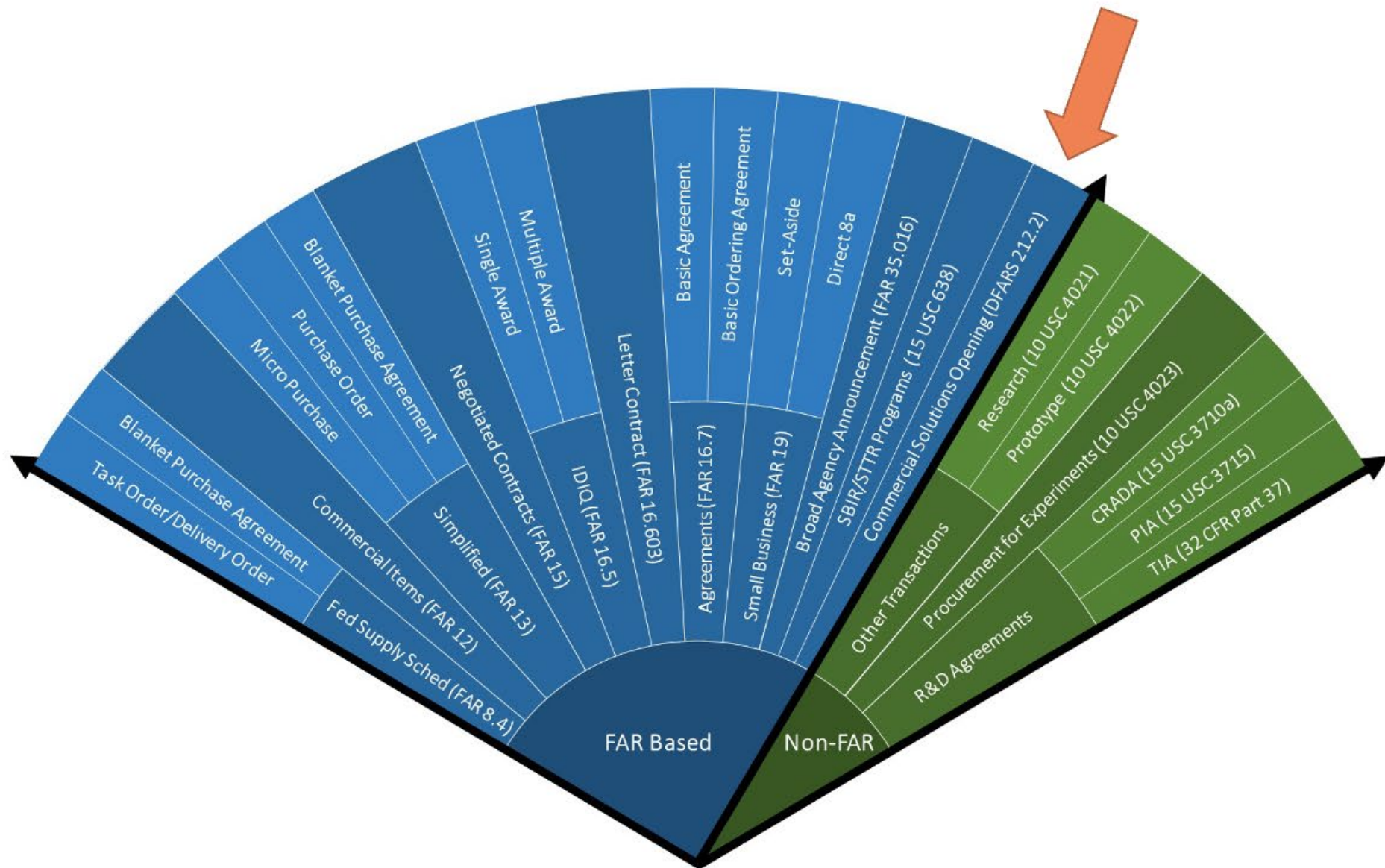
- How and where opportunities should be posted
- Competition requirements
- Required sources
- Contractor Qualifications
- Purchasing thresholds
- Bidding procedures
- IP and data rights
- Protests



**97% other
than SBIR!**

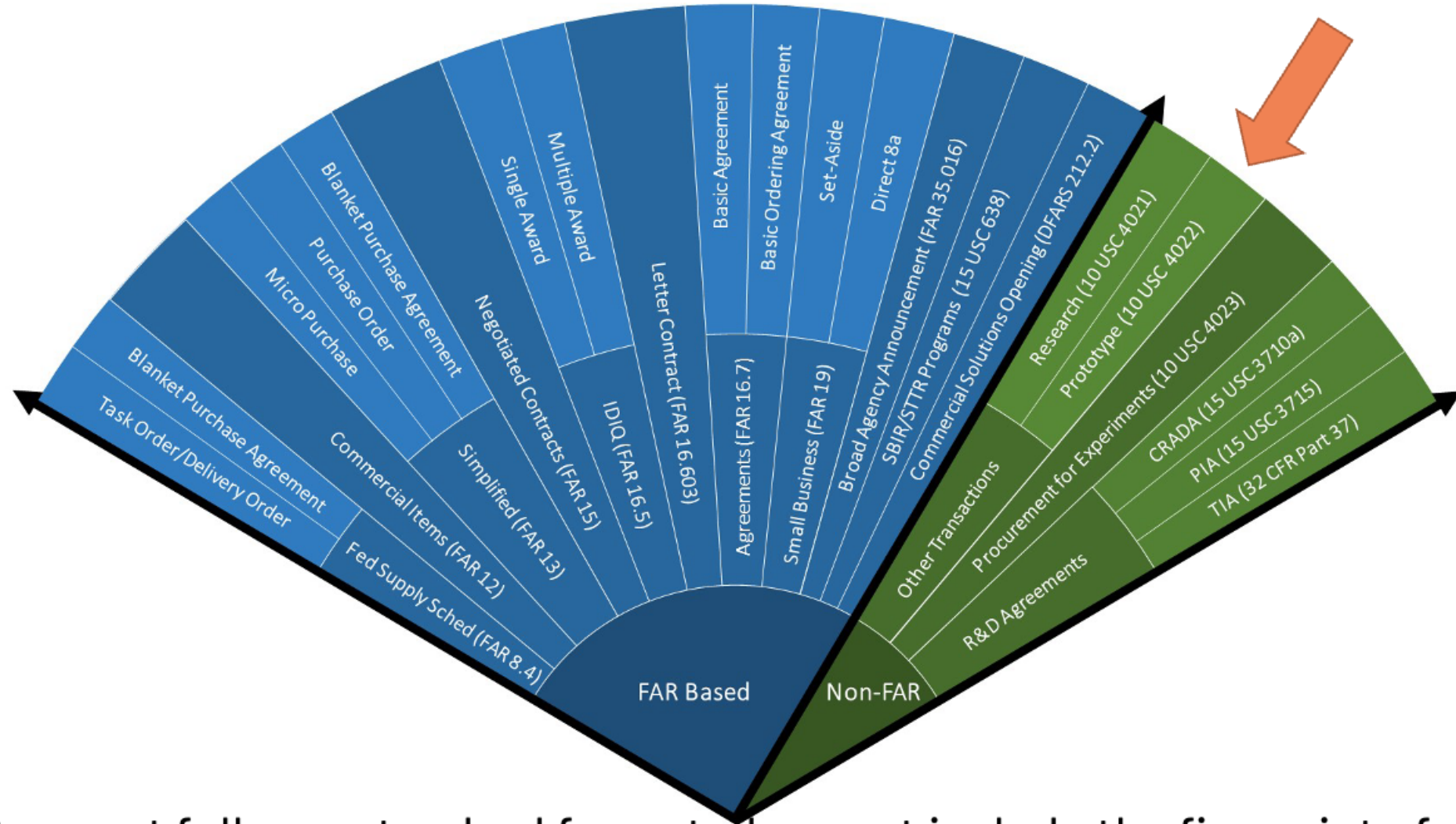


A **Broad Agency Announcement (BAA)** is a procurement method used by U.S. federal agencies to solicit proposals for **basic and applied research** and **development** in areas of interest to the government.



Commercial Solutions Opening (CSO) is a procurement method used by U.S. federal agencies to acquire innovative commercial products, technologies, and services.

Other Transaction Authority: OTAs



Does not follow a standard format; does not include the fine print of a FAR contract; more flexible and appealing to non-traditional suppliers; quicker and easier to use; does away with regulatory overhead

Creating a Plan

Who are you selling to?

✓ DOD

What are you selling?

✓ Specific
Innovation

How do they buy it?

✓ BAA, CSO, OTA

Today's Presentation

- Understanding How R&D Federal Funding Works

- Where to Find Federal R&D Funding Opportunities

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SAM.gov

Searches

Other

Grants.gov

Prime Contractors – Lockheed Martin, Northrup Grumman

SBIR.gov

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Links

SBIR.gov - <https://www.sbir.gov/>

DoD SBIR Topics – DSIP <https://www.dodsbirsttr.mil/submissions/login>

Federal Regulations on R&D Funding - <https://www.acquisition.gov/far/part-35>

Non FAR Based Other Transactions -

[https://uscode.house.gov/view.xhtml?req=\(title:10%20section:4021%20edition:prelim\)%20OR%20\(granuleid:USC-prelim-title10-section4021\)&f=treesort&edition=prelim&num=0&jumpTo=true](https://uscode.house.gov/view.xhtml?req=(title:10%20section:4021%20edition:prelim)%20OR%20(granuleid:USC-prelim-title10-section4021)&f=treesort&edition=prelim&num=0&jumpTo=true)



More Links

NAICS codes - <https://www.census.gov/naics/>

ATI Consortiums - <https://www.ati.org/>

Federal Labs - <https://federallabs.org/>

SAM.gov - <https://sam.gov/content/home>

Grants.gov - <https://www.grants.gov/search-grants>

SBIR 101 NEXT!!

Meet with NAVSEA SBIR!

Visit the APEX booth!

*Outside of Washington State?
Find your regional APEX Accelerator [here](#)*



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