

# ***Chemical and Biological Defense (CBD)***

***Small Business Innovation Research (SBIR)/  
Small Business Technology Transfer (STTR)***

***at The Joint Science and Technology Office  
for Chemical and Biological Defense (JSTO-CBD)***

***Mr. Larry Pollack  
CBD SBIR/STTR Program Manager***



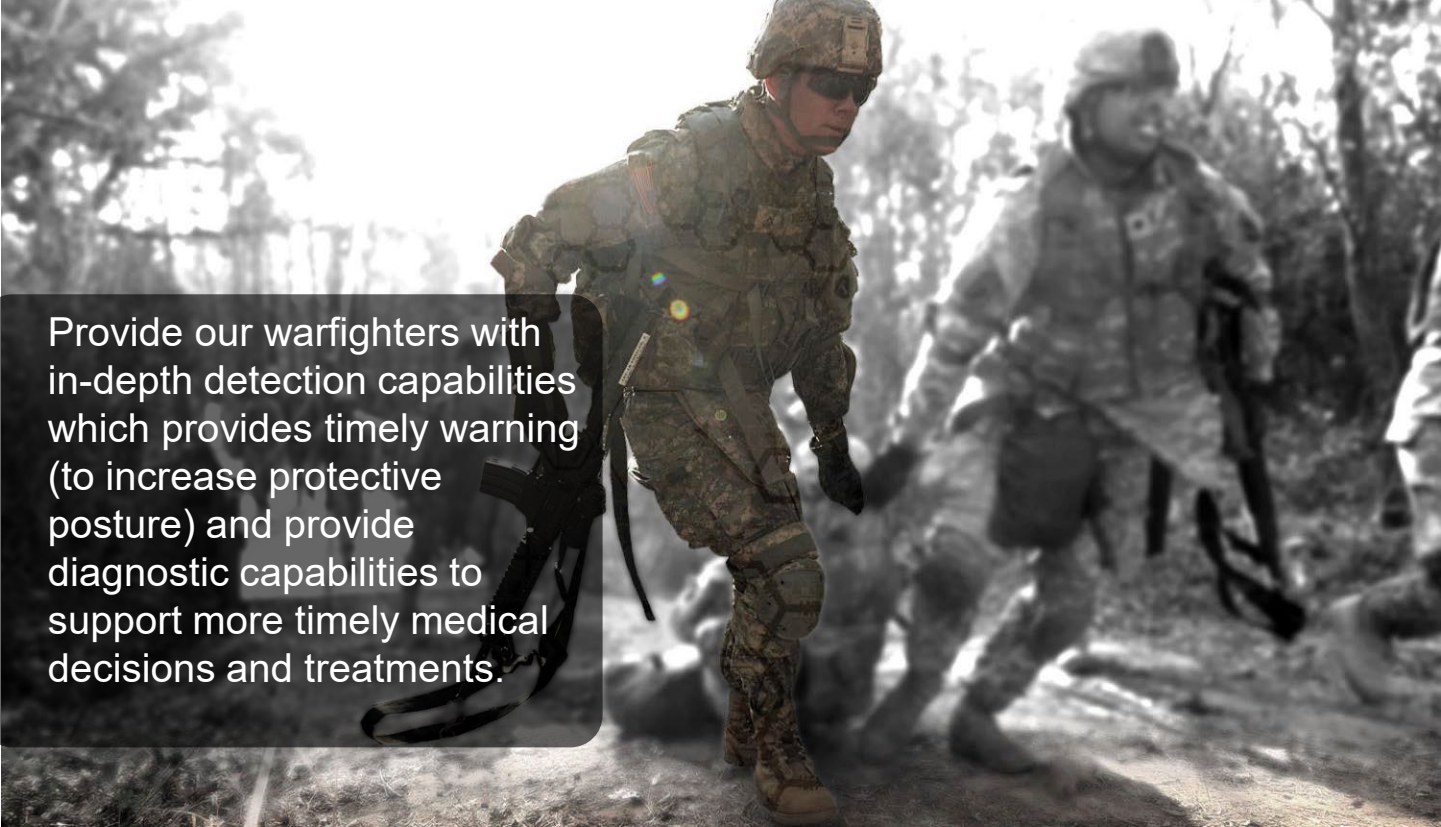


# Chemical/Biological Detection





# Detection/Diagnostics

A photograph of two soldiers in full combat gear, including helmets and body armor, moving through a wooded area. The soldier in the foreground is wearing a helmet with a night vision device and is looking down. The soldier in the background is also in full gear and is moving forward. The scene is brightly lit, possibly by sunlight filtering through the trees.

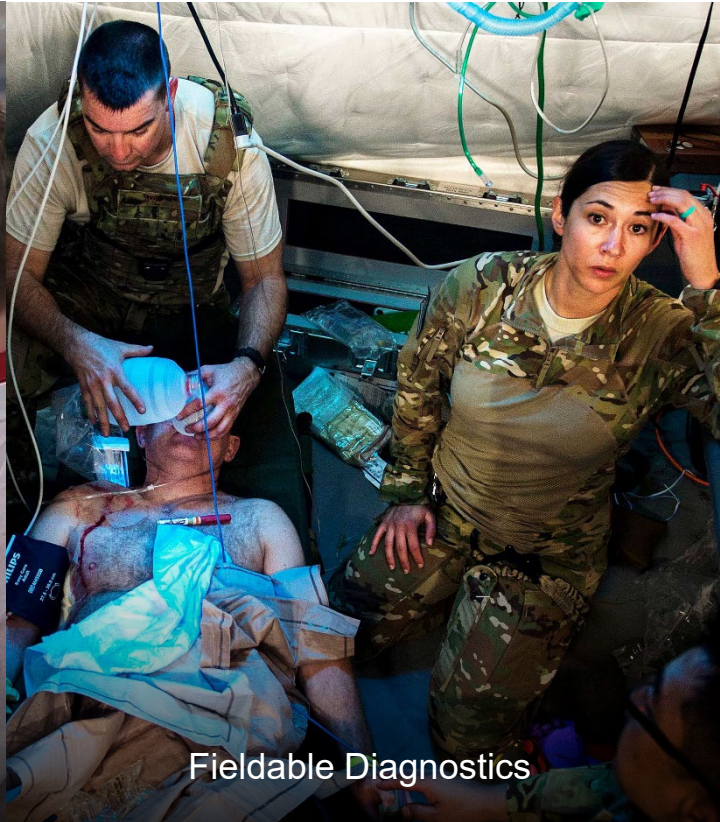
Provide our warfighters with in-depth detection capabilities which provides timely warning (to increase protective posture) and provide diagnostic capabilities to support more timely medical decisions and treatments.



# Medical Diagnostics



Lab-based Analytical Methods



Fieldable Diagnostics



# Vaccines/Therapeutics



Provide our warfighters with vaccines and therapeutics to eliminate or mitigate biological threats thereby maintaining combat effectiveness and safeguarding lives.

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# Medical Countermeasures: Chemical & Biological



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# Individual CB Protection Continuum

## Lightweight



- ✓ General-purpose
- ✓ Open-air battlefield levels of CB agents
- ✓ DoD specific requirements

## Medium Weight



- ✓ Compatible with civil response needs
- ✓ Higher concentrations
- ✓ NFPA 1994 class 2/3; ISO 16604:2004

## Full Encapsulation



- ✓ High hazard response
- ✓ Interior & confined space
- ✓ NFPA 1991/1994 class 1



# Decontamination



Sprayable slurry chemical decontaminant that effectively reduces the residual hazard of chemical agents in tactical settings.





# Information Systems/Surveillance





# Advanced and Emerging Threats



Develop and transition novel concepts and technologies to address current and emerging chemical & biological threats to protect the lives of our warfighters.



# DoD SBIR/STTR Announcements

Dates established by Assistant Secretary of Defense/Research & Engineering (ASD R&E); not all DoD Components participate in each Announcement

Solicitation SBIR / STTR	Pre-Release	Open	Close *
FY19.1 / FY19.A	28 Nov 2018	8 Jan 2019	6 Feb 2019
 <b>CBD SBIR</b> FY19.2 / FY19.B	2 May 2019	30 May 2019	1 Jul 2019
FY19.3 / FY19.C	23 Aug 2019	24 Sep 2019	23 Oct 2019

All proposals due No Later Than 8:00pm Eastern Time for all DoD SBIR and STTR Announcements

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# DoD FY19.2 SBIR Announcement CBD SBIR Has New Topics!

**'ON-THE-STREET' RIGHT NOW!**

**Phase I Proposals due July 1, 2019  
No Later Than 8:00pm EDT**

**SEE:**

**<https://sbir.defensebusiness.org>**

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# CBD SBIR – FY19.2 Announcement Topics

- CBD192-001** Military Working Dog Decontamination Kit
- CBD192-002** On-site Treatment of Contaminated Equipment
- CBD192-004** Phage therapy for bio-threat bacteria
- CBD192-005** Development (or Application) of a Non-Invasive Device to Measure Changes in Intra-Cranial Pressure resulting from Viral or Bacterial Infections of the Central Nervous System
- CBD192-006** Development of Small Molecule Therapeutics for Emerging Viral Agents
- CBD192-007** Optimized Platforms for Proper Glycosylation and Sialylation of Recombinant Human Butyrylcholinesterase (rBChE)
- CBD192-008** Long Duration, Novel Opioid Medical Countermeasure for Intramuscular Injection

<http://sbir.defensebusiness.org>

Proposals due NLT 8pm ET, 1 July 2019



# Some Helpful Resources

DoD SBIR/STTR Program Information for Small Businesses  
and  
DoD SBIR Proposal Submission (Phase I & Phase II):  
<https://sbir.defensebusiness.org>

DoD Office of Small Business Programs – Doing Business with  
the DoD: <http://www.acq.osd.mil/osbp/sb/dod.shtml>

Doing Business with DoD:  
Guide to DoD Contracting Opportunities:  
[http://www.acq.osd.mil/dpap/cpic/cp/doing\\_business\\_with\\_the\\_department\\_of\\_defense\\_dod\\_us.html](http://www.acq.osd.mil/dpap/cpic/cp/doing_business_with_the_department_of_defense_dod_us.html)

Chem-Bio Defense (CBD) SBIR/STTR web-site:  
<http://www.cbdsbir.net>



# CBD SBIR/STTR Program Manager

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# Supplemental Slides

## A Brief Primer in DoD Acquisition Terminology



# 6-Point What?



DOD divides its RDT&E account into seven categories, each with a numerical code

- Basic Research (known as '6.1')
- Applied Research ('6.2')
- Advanced Technology Development ('6.3')
- Advanced Component Development and Prototypes ('6.4')
- System Development and Demonstration ('6.5')
- RDT&E Management Support ('6.6')
- Operational System Development ('6.7')



# RDT&E\* Funding

- The '6.1,' '6.2', and '6.3' categories are often grouped together as "Science and Technology" (S&T): basic research, applied research, and advanced technology development, respectively.
  - S&T is separate from the '6.4' and higher categories (thru '6.7'), which are focused on the final development and testing of specific systems.
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\* Research, Development, Test, and Evaluation  
see: <https://www.dau.mil/glossary/pages/2574.aspx>

“Activities for the development of a new system, or to expand the performance of fielded systems”



# *Basic vice Applied & Advanced R&D*

## Basic Research

- Technology Readiness Level (TRL) 1 (of 9)
- 6.1 funding designation
- JSTO-CBD definition aligned with DoD definition:

*“Basic Research is systematic study directed toward greater knowledge or understanding the fundamental aspects of phenomena and has the potential for broad, rather than specific, application”*



## Basic vice Applied & Advanced R&D (cont'd)

### Applied Research

- Technology Readiness Level (TRL) 2, 3, or 4 (of 9)
- 6.2 funding designation
- JSTO-CBD definition aligned with DoD definition:

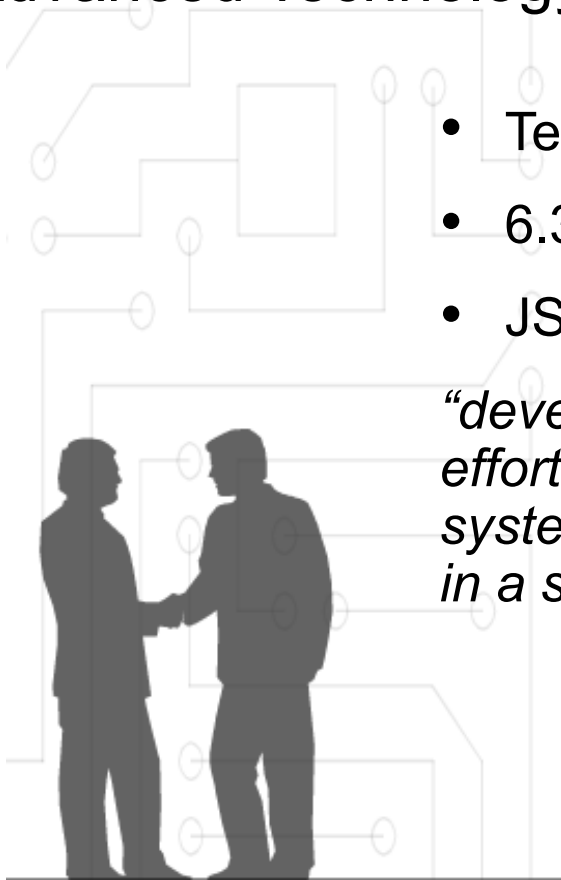
*“translates promising basic research into solutions for broadly defined military needs and includes studies, investigations, and non-system specific technology efforts. It may also include design, development, and improvement of prototypes and new processes to meet general mission area requirements.”*



## *Basic vice Applied & Advanced R&D (cont'd)*

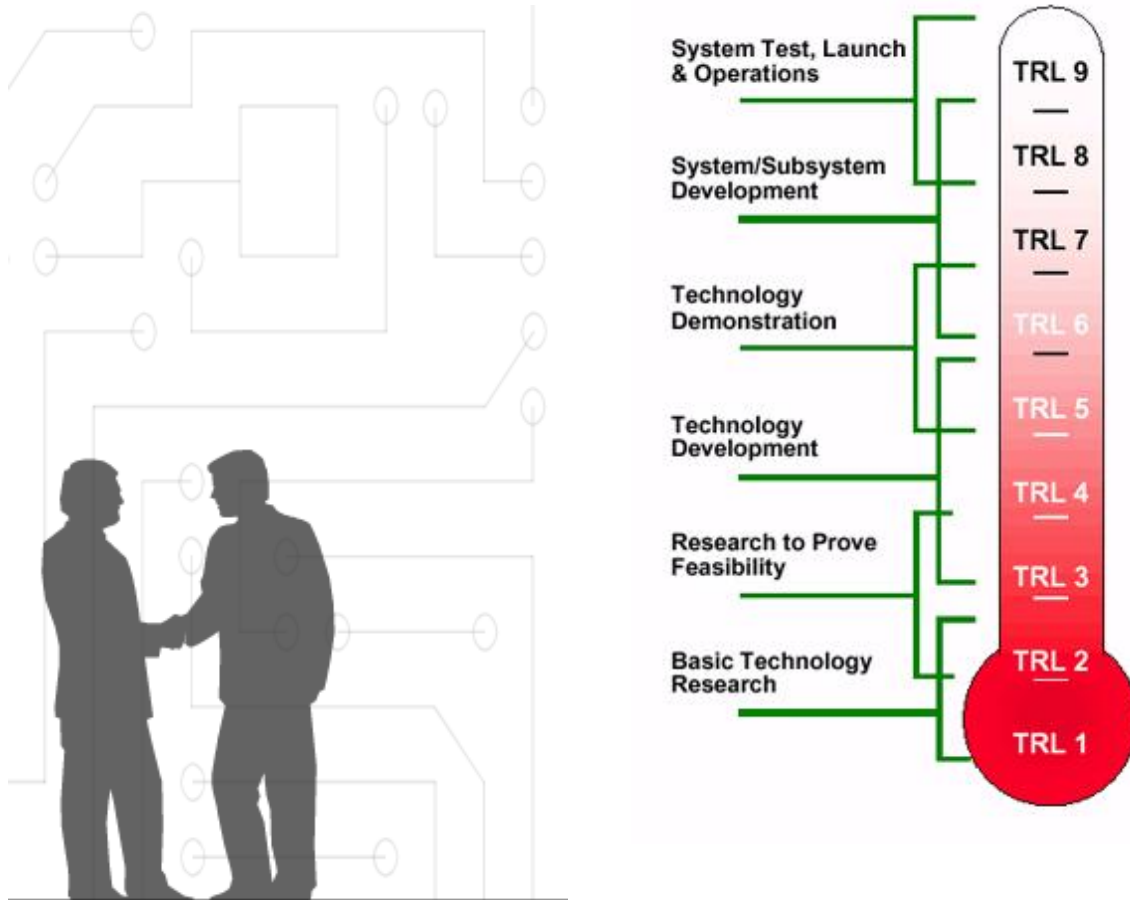
### Advanced Technology and Development

- Technology Readiness Level (TRL) 4, 5, 6(of 9)
- 6.3 funding designation
- JSTO-CBD definition aligned with DoD definition:  
*“development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment”*



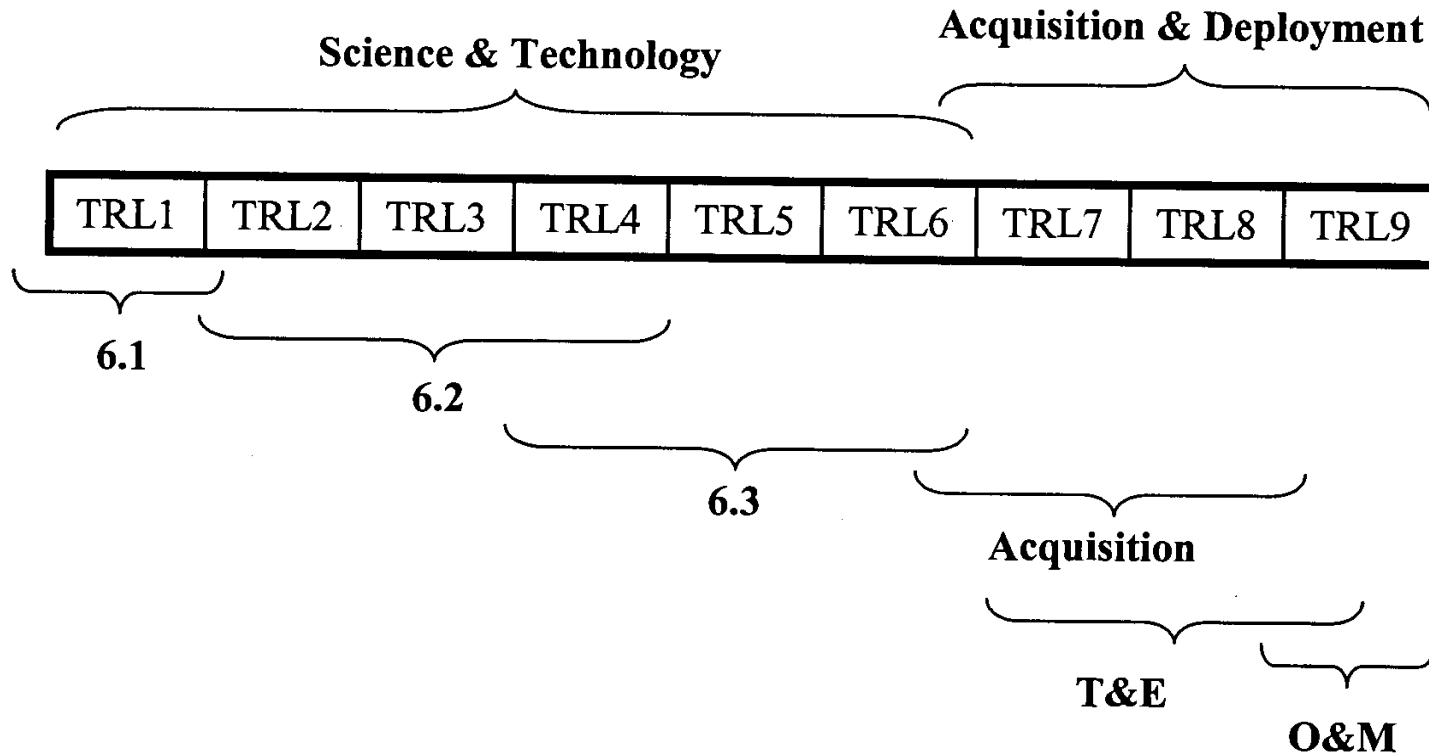


# Technology Readiness Levels





# Technology Readiness Levels (TRLs)





# *DoD TRL Definition*

## TRL LEVEL

1. Basic principles observed and reported.
2. Technology concept and/or application formulated.
3. Analytical and experimental critical function and/or characteristic proof of concept.
4. Component and/or breadboard validation in laboratory environment.
5. Component and/or breadboard validation in relevant environment.
6. System/subsystem model or prototype demonstration in a relevant environment.





# DoD TRL Definition (cont'd)

## TRL LEVEL

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.
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- Different TRL definitions for DoD vice NASA
  - TRL definitions differ for hardware vice software
  - ***'non-Medical' TRL definitions vary from 'medical' TRL definitions***



# Contract vs Grant *(in really, really basic terms)*

## Contract

- Requires specific deliverables to receive payment
- CDLR: Contract Data Requirements List
- Issued in response to a proposal submitted against a specific technology topic
- Governed by the rules of the Federal Acquisition Regulations (FAR) and the Defense Federal Acquisition Regulation Supplement (DFARS)

## Grant

- Often, Principal Investigator (PI) directed research
- Deliverables more loosely defined
- Usually applied towards early stage (basic) research
- Peer Review Process



# Some DoD Acquisition Types

- Broad Agency Announcement (BAA)
- Other Transaction Authority (OTA)
- Request for Proposals (RFP)
- Small Business Set-asides
  - Small Business Innovation Research (SBIR)
  - Small Business Technology Transfer (STTR)
  - Mentor Protégé Program (MPP)
  - Others.....see <http://www.sba.gov>

