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# Joint Program Executive Office for Chemical and Biological Defense

## JPEO-CBD Update 2016 NDIA CBRN Defense Division Roundtable Breakfast

Douglas W. Bryce  
Joint Program Executive Officer  
for Chemical and Biological Defense

April 22, 2016





# Overview

- Mission/Vision/Structure
- Areas of Responsibility
- Changing Nature of the CBRN Threat
- Current Major Initiatives
- Whole-of-Government Approach to CBRN Defense
- Partnering and Advocacy Across CBRN Community







# Joint Program Executive Office for Chemical and Biological Defense

## Mission:

*Provide Research, Development, Acquisition Fielding and Life Cycle Support of Chemical, Biological, Radiological and Nuclear Defense Equipment, Medical Countermeasures Capabilities for Army, Marine Corps, Air Force, Navy and Combatant Commands Supporting the National Strategies*

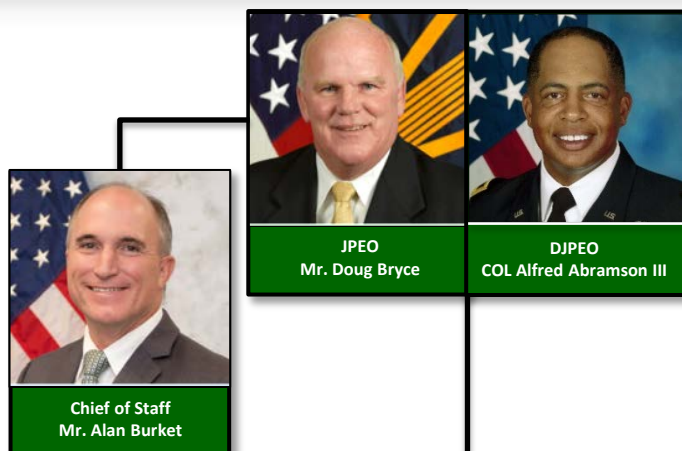
## Vision:

*An Agile, Results-Oriented, and Transformational Acquisition Enterprise Delivering Net-Centric, Modular, Tailorable and Multi-Purpose Capabilities to the Nation*





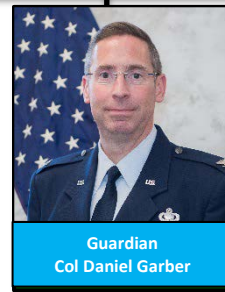
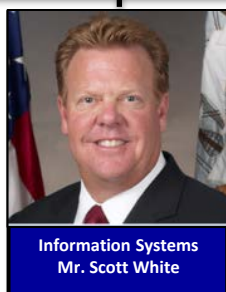
# Joint Program Executive Office for Chemical Biological Defense - Organization



-  **Army**
-  **Marine Corps**
-  **Navy**
-  **Air Force**

*Reported Personnel  
Strength is as of  
1 April 2016*

## Our Joint Project Managers



**963 personnel | Workforce Composition: Civilians (512)\* / Military (44)\***

<b>Army:</b>	<b>458</b>	<b>Air Force:</b>	<b>11</b>	<b>Foreign</b>	<b>Contract Support (All Services): 412</b>
<b>Navy:</b>	<b>57</b>	<b>Marines:</b>	<b>24</b>	<b>Officer: 1</b>	

*\* Numbers include Core, Matrixed, and Attached Personnel*

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# Areas of Responsibility



## Total Life Cycle Management







# Current Major Initiatives



- Biosurveillance
  - Joint US Forces Korea Portal and Integrated Threat Recognition
  - Biosurveillance Portal



- Global Crisis Response
  - Diagnostics/Critical Reagents Program
  - Therapeutics/Vaccines



- Emerging Threats
  - NTA capabilities to WMD Civil Support Teams/active components



- OCONUS Weapons of Mass Destruction Elimination - Expeditionary



- Radiological/Nuclear
  - Joint Personal Dosimeter Program
  - Radiological Detection System



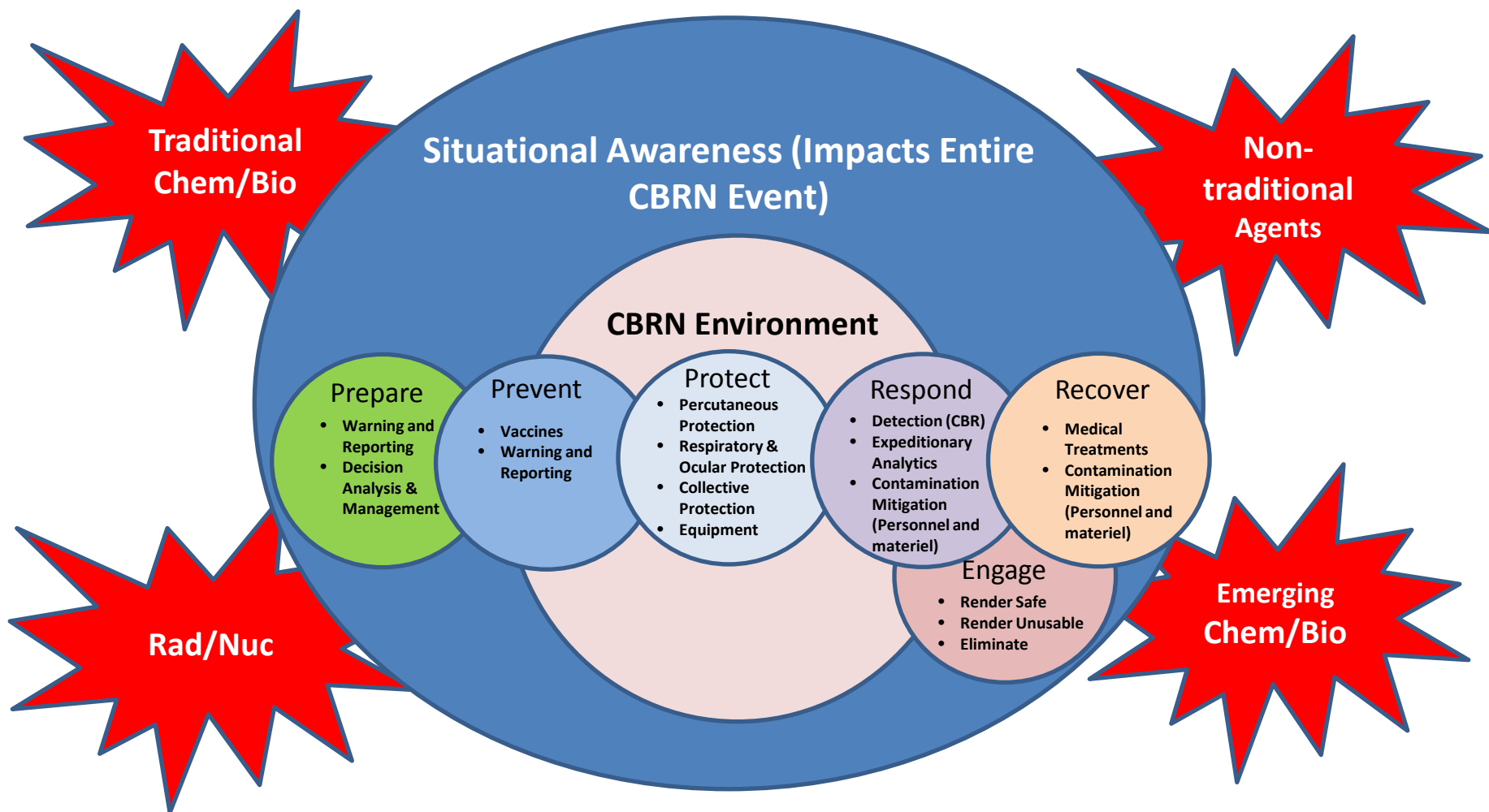
- Long term planning and analysis (30yr Plan) – Update coming



- Advanced Technology Demonstrations (ATDs)
  - Joint CBRNE Advanced Capability Sets (JCACS)



# Whole-of-Government Approach to CBRN Defense, Response & Readiness



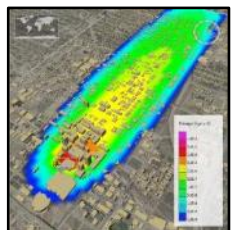


# PREPARE

Implement hazard awareness and understanding activities, protection of critical assets, and contamination mitigation measures with ongoing preparation activities assists in the prevention of negative effects.

## Current

## Future



### • Warning and Reporting:

- No Networked Detectors
- Limited C2 Integration
- Limited Situational Awareness
- Manual Warning and Reporting

JWARN 2



### • Decision Analysis and Management:

- Standalone Capability
- Not Networked
- Limited Decision Support
- Limited C2 Integration

JEM 2

### • Warning and Reporting

- Integrated Sensor Networks
- Automated CBRN Warning Reports
- Integrated Common Operating Environment
- Sensor Fusion and False Alarm Reduction
- Enhanced CBRN Situational Awareness
- Cloud Based Dissemination of CBRN Information
- Reduced Dependency on C2 Systems

### • Decision Analysis & Management

- Improved Hazard Prediction
- Infectious Disease Models
- Urban Models
- High Altitude Missile Intercept
- Cloud Based Hazard Prediction and Analysis Capability
- Integrated into Army Common Operating Environment

Provide Systems that Fuse CBRN and Other ISR Sources into a Situational Awareness and Understanding  
(Enabled with Decision Support Tools)

# PREVENT

**Deter and prevent adversaries from taking actions that impose imminent threat to the Homeland or affect combat power**

## Current

- Vaccines: Limited Agents
  - One Vaccine One Bug
  - Multiple Shots, Long Time Until Protected
  - Lengthy, Costly, Risky Development



- Situational Awareness
  - Global Biosurveillance Portal

Multiple Vaccines  
Chemical  
Prophylaxis



CBRN IS

## Future

- Vaccines
  - One Vaccine, Many Bugs
  - Rapidly Tailored Vaccine
  - One Shot, Short Time to Protection
  - Chemical Prophylaxis
- Advanced Development and Manufacturing of Medical Countermeasures
- Other Transaction Authority for Medical Community
- Alternate Auto injector Manufacturers for DoD and Nation
- Situational Awareness
  - Integrated Sensor Networks
  - Automated CBRN Warning Reports
  - Integrated Common Operating Environment
  - Sensor Fusion and False Alarm Reduction
  - Cloud Based Dissemination of CBRN Information
  - Reduced Dependency on C2 Systems

**Deter Adversaries by Providing Warning Prior to Attack and Medical Countermeasures to Lessen Impact of Attack**



# PROTECT

Protect and mitigate the effects of CBRN hazards to protect military personnel, equipment, and infrastructure and secure the Homeland

## Current

### • Suits/Boots/Gloves/Masks: Good Protection

#### • Operational Burden

- Thermal
- Respiratory Burden
- Bulk
- Not Integrated (With Basic Soldier Kit)
- Not Multi-Mission Capable (Infectious Disease, Sensitive Site Exploitation)
- Communication Challenge



### • Collective Protection: Limited Availability

- Some Chem/Bio Protective Shelters (TOCs)
- Some Medical Shelters
- Abrams/NBCRV
- Filters
  - Limited Agent Protection
  - Limited Life



UIPE 2  
Next Generation  
Protective Mask  
Butyl Boots and Gloves

M8E1 Chem/Bio  
Protective Shelter  
Joint Expeditionary  
Collective Protection

## Future

### • Suits/Boots/Gloves/Masks

#### • Integrated with Basic Soldier Kit

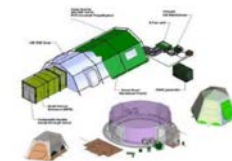
- Minimal Burden
- Multi-Mission Protection
- Rubber off of Face (Communication, Field of View)

#### • All Hazards Suit (Level A Protection)



### • Collective Protection

- Extended Filter Life
- Extended Range of Agent Protection
- Scalable/Modular with Existing Tent Configurations



Provide Personnel and Collective Protection systems that  
Minimize Burden and Maximize Protection

# RESPOND

**Adopt an effective concept of operations that reduces the risk of casualties and cross-contamination, protects property and the environment and ensures the rapid resumption of operations after an incident, by understanding the CBRN contamination**

## Current

### • CBRN Detection

- Limited Ability
- High Operating Costs For Biological Detection
- Time to Identify Biological Threat Agents
- Logistical Burden



### • Reconnaissance

- Very Limited Availability
- Detection Capabilities
- Limited Maneuverability
- Time Consuming



### • Laboratories

- One Sample, One Threat Identification
- Limited Capacity
- Requires Specialist
- State Based



Chemical NGCD 4  
NGCD 1 Biological  
NGCD 2 JBTDS  
NGCD 3 Rad/Nuc  
RDS  
MRDS

NBCRV Sensor Upgrades  
DR SKO Upgrades

CALS  
NGDS

## Future

### • Chemical Detection

- Increased Capability
- Lower Logistics Burden
- Lower Operating Costs
- Improved Portability
- Lower Operating Costs

### • Reconnaissance:

- NBCRV Sensor Upgrades
- Increased DR SKO Capabilities
- Air Reconnaissance /Mapping of Rad/Nuc Field

### • Laboratories

- One Sample, All Chem/Bio Threats ID
- Simplified Operation
- Deployable

**Provide In-Depth Detection Capability, Contamination Mitigation and Situational Awareness**



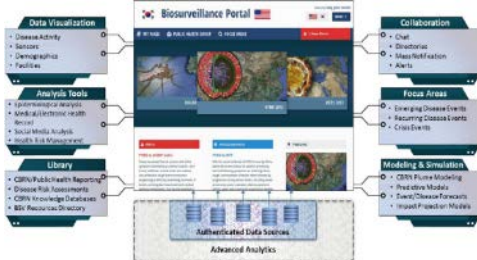
# RESPOND (cont'd)

Adopt an effective concept of operations that reduces the risk of casualties and cross-contamination, protects property and the environment and ensures the rapid resumption of operations after an incident, by understanding the CBRN contamination

## Current

- Situational Awareness

- Global Biosurveillance Portal



- Contamination Mitigation

- Limited Decon Capability
  - Limited Ability to Decon Human Remains
  - Limited Personnel Decon
  - Materials Compatibility
  - Resource Intensive

CBRN IS

- Joint Decon Family of Systems
- Contaminated Human Remains System

## Future

- Situational Awareness

- Integrated Sensor Networks
  - Automated CBRN Warning Reports
  - Integrated Common Operating Environment
  - Sensor Fusion and False Alarm Reduction
  - Cloud Based Dissemination of CBRN Information
  - Reduced Dependency on C2 Systems

- Contamination Mitigation

- Improved Decon capability
  - Contaminated Human Remains System
  - Improved Decon Capabilities
  - Personnel
  - Equipment
  - Sensitive Equipment
  - Concentrated Decontaminant
  - Manpower & Resource Reduction
  - Coatings (Sealants, Strippable)

Provide In-Depth Detection Capability, Contamination Mitigation and Situational Awareness

# RECOVER

The planning and initiation of actions that will enable the force and the homeland to continue operations despite threats and hazards from CBRN material through the conduct of contamination control and medical countermeasures and to recover effectively from the CBRN material exposure

## Current

### • Medical Treatment

- Nerve Agent Treatments Available for Traditional Threats
- Limited Ability to Treat NTAs
- One Bug, One Drug



### • Contamination Mitigation

- Limited Decon Capability
- Limited Ability to Decon Human Remains
- Limited Personnel Decon
- Materials Compatibility
- Resource Intensive



- Antibiotics
- Improved Nerve Agent Treatment System
- Advanced Anti-Convulsant System

- Joint Decon Family of Systems
- Contaminated Human Remains System

## Future

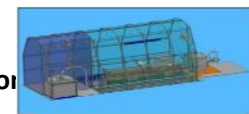
### • Medical Treatment

- Nerve Agent Treatment For All Threats
- One Drug, Many Bugs



### • Contamination Mitigation

- Improved Decon capability
- Contaminated Human Remains System
- Improved Decon Capabilities
- Personnel
- Equipment
- Sensitive Equipment
- Concentrated Decontaminant
- Manpower & Resource Reduction
- Coatings (Sealants, Strippable)



Allow Continuation of Operations by Providing Capabilities which Treat the Affected and Mitigate the Effects of CBRN Materials





# JPEO-CBD Priorities

## Procurement

1. Dismounted Reconnaissance – Sets, Kits & Outfits
2. Joint Mask Family (Ground)
3. Joint Expeditionary Collective Protection
4. Chemical Biological Protective Shelters
5. Joint Decontamination Family of Systems (Joint Service Equipment Wipe)
6. Joint Warning and Reporting Network increment 1 (JWARN)
7. Joint Effects Model Increment 1 (JEM)

## R&D

1. CBRN Information System (\*Integrated Early Warning, \*Biosurveillance Portal and Decision Support Tools)
2. Non Traditional Agent Protection (NTA Defense)
3. Common Analytical Laboratory System
4. Joint Biological Tactical Detection System
5. Next Generation Chemical Detector Increments 1, 2, & 3
6. Next Generation Diagnostic System
7. Dismounted Reconnaissance Sets, Kits & Outfits Upgrade
  1. Sensors for Unmanned Aerial/Ground Vehicles
  2. Sensors for Robotics
8. NBC Reconnaissance Vehicle Sensor Suite Upgrade
  1. Sensors for Unmanned Aerial/Ground Vehicles
  2. Sensors for Robotics
9. Joint Personnel Dosimeter
10. Uniform Integrated Protective Ensemble Increment 2
11. Joint Mask Family (Air Crew)
12. Multivalent Vaccines
13. Advanced Anticonvulsant System
14. Scalable Elimination Sets, Kits & Outfits
15. Joint Decontamination Family of Systems
16. Therapeutics (Chemical and Biological)
17. Field Deployable Destruction Systems
18. Joint Warning and Reporting Increment 2 (JWARN)
19. Joint Effects Model Increment 2 (JEM)
20. Contaminated Human Remains System

## S&T

1. Integrated Early Warning Advanced Technology Demonstration
2. Operational Effects Modeling
3. Risk-Based Planning and Analysis/Operation Effects
4. Expand Device-to-Cloud capability to Other Sensor Platforms
5. S&T in hazard prediction and warning and reporting (Supporting JEM)
6. Biosurveillance
7. Early Warning Sensing
8. Exploration of wearable utility for Biosurveillance
9. Toxicological studies and modeling
10. Next Generation Chemical Detector
  - Enhanced Colorimetric Sensors
  - Tactical Air Monitor
11. Next Generation Diagnostics System
12. Improved Detection and Identification Sensitivity
13. Improved Aerosol Detection
14. Toxic Industrial Material Detection and Identification
15. Improved Sample Collection Capability
16. Non Traditional Agent Protection
17. All-Hazards Integrated Protection
18. Multifunctional Materials
19. Improved Filtration Media
20. Advanced Respiratory Protection
21. Alternatives to Traditional Vaccines
22. Residual Life Indication
23. Less invasive delivery methods for Vaccines
24. Continue to Explore Improved Prophylaxis/Pretreatment Material Solutions and Technologies Against Traditional CWAs and NTAs
25. Scalable Elimination Sets, Kits & Outfits
26. Personnel Decon
27. Joint Decontamination Family of Systems
28. Wide Area Decontamination of Anthrax Spores
29. Sensitive Equipment Decon
30. Coatings
31. Improved CWA, NTA and Emerging Threat Therapeutic Technologies
32. Investigate Currently Approved FDA Licensed Drugs for Therapeutic Application Against Emerging Threats (continue RDT&E)
33. Animal Models
34. Therapeutics (Chemical and Biological)
35. Explore Novel Sulfur Mustard and Cyanide Therapeutics
36. Field Deployable Destruction Systems
37. Improved JEM Models
38. JWARN Technology Refresh and Maturation
39. Contaminated Human Remains



# Mission Partners and Advocates



Strategic Partnerships and Advocates Critical to Developing Innovative Solutions

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# Doing Business w/the JPEO-CBD

- **Updated contract opportunities:**

[www.jpeocbd.osd.mil](http://www.jpeocbd.osd.mil)

- **See us at these events:**

CBRN Conference and Exhibition  
3-4 May (Fort Leonard Wood, MO)

Annual CBRN Defense Conference and Expo  
2-4 Aug (Aberdeen Proving Ground, MD)

Acquisition Planning Briefing to Industry  
Nov/Dec (Aberdeen Proving Ground, MD)

## **Contact:**

### **Mr. Gary Wright**

Director, Contracting Management  
Joint Program Executive Office  
for Chemical and Biological Defense  
[gary.wright4.civ@mail.mil](mailto:gary.wright4.civ@mail.mil)  
410-436-6489

### **Ms. Cicely Levingston**

Chief, Strategic Communications Division  
Joint Program Executive Office  
for Chemical and Biological Defense  
[cicely.r.levingston.civ@mail.mil](mailto:cicely.r.levingston.civ@mail.mil)  
410-436-9799

***The BEST Technology and Equipment  
At the RIGHT PLACE  
At the RIGHT TIME  
At the RIGHT COST***



**Douglas W. Bryce**

**Joint Program Executive Officer  
for Chemical and Biological Defense**

**410-436-4141**

**[douglas.w.bryce.civ@mail.mil](mailto:douglas.w.bryce.civ@mail.mil)**

**[www.jpeocbd.osd.mil](http://www.jpeocbd.osd.mil)**