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S&T Thrust Area - BUGS

Moderator: Elizabeth George, Ph.D., S&T Chem-Bio Division Director

June 4, 2008

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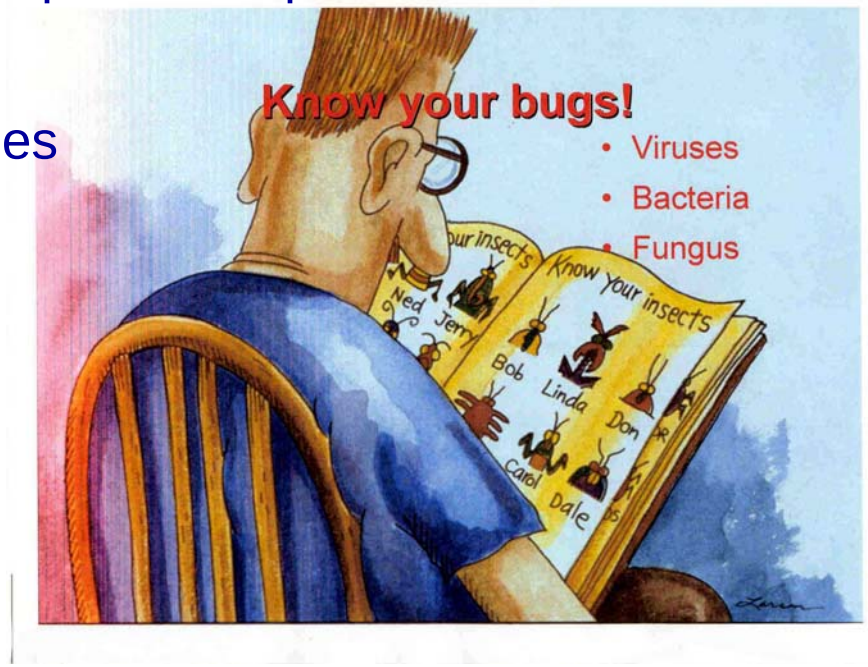
Chem/Bio Division
S&T Thrust Area - BUGS

Biological, chemical, food, agriculture and veterinary defense

Understand needs and define capability gaps

Generate project plans with rapid development schedules

Systems, technologies, studies and methodologies



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S&T Stakeholders Conference

Chem-Bio Division Capability Gap Development

Doug Drabkowski
Director of Transition
Chem-Bio Division
Science and Technology Directorate

June 4, 2008

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Chemical and Biological Division, S&T

Mission:

To increase the Nation's preparedness against chemical and biological threats through improved threat awareness, advanced surveillance and detection, and protective countermeasures.

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Chem-Bio R&D Activities

Engage the world's science and technology communities to satisfy DHS Component needs. This includes performers in the Private Sector, National Labs and Federal Labs.

Satisfy current operational requirements for customers

Conduct prototyping and promote commercial adaptation

Develop revolutionary technologies to address current and future requirements

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Chemical and Biological Division Overview

Key 5 Year Deliverables:

- National lead for operational biological and chemical forensics
- Integrated Chemical/Biological risk assessments and facility protection
- Fully autonomous BioWatch detection systems
- Decision tools for veterinary countermeasures for foreign animal diseases
- Chemical Infrastructure Risk Assessments
- Detection systems for air and food with supporting assays

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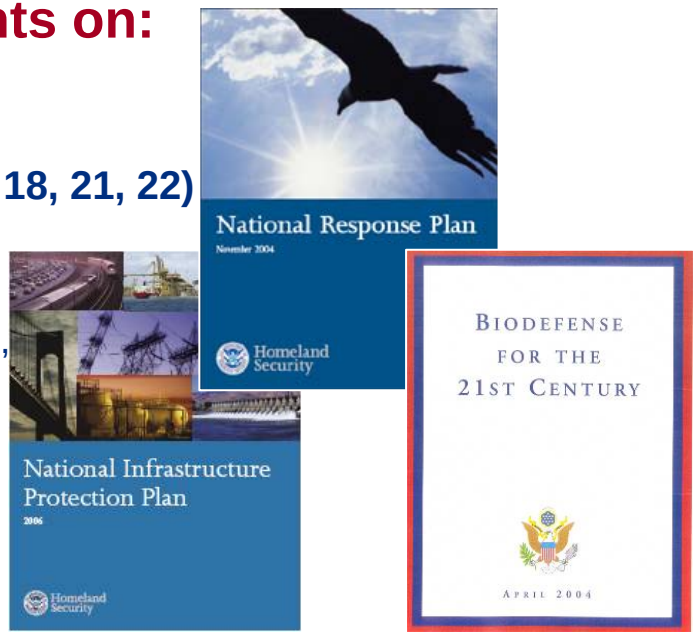
Where do CBD Capability Gaps come from?

Directly from a Capstone Integrated Product Team (IPT)

- **Co-chaired by DHS Office of Health Affairs (OHA) and DHS Office of Infrastructure Protection (OIP)**
- **Membership includes other DHS operational components**
- **Identified ~50 Capability Gaps – FY08**

And they in- turn, base their requirements on:

- ✓ **State and local government, and industry inputs**
- ✓ **Homeland Security Presidential Directives (7, 9, 10, 18, 21, 22)**
- ✓ **Congressional legislation & guidance**
- ✓ **National planning & implementation guidance (**NIPP, NRP, NIMS, and the National Planning Scenarios)
- ✓ **Risk, vulnerability and mitigation studies**



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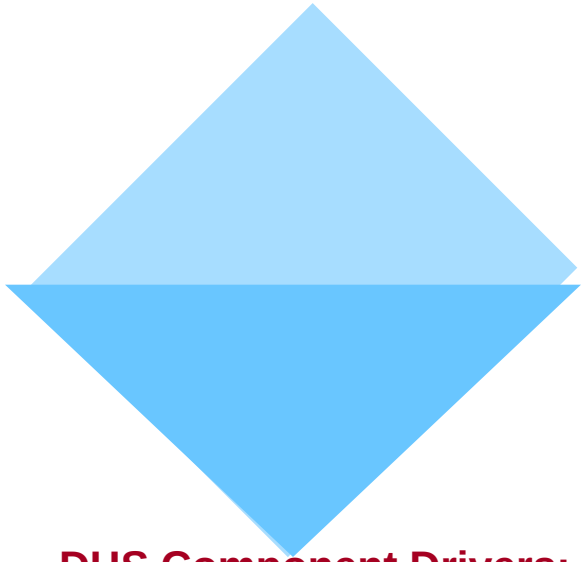
Chemical & Biological Capstone IPT Structure

Capstone IPT Co-Chairs
Assistant Secretary of Health Affairs
Assistant Secretary for Infrastructure Protection

Acquisition



Chem-Bio Division
Chemical and Biological Division Head

DHS Component Drivers:
OHA, IP, I&A, CBP, FEMA, TSA, USSS, PLCY, USCG

External End-Users:
HSC, HHS, FBI, USDA, EPA,
State and Local public health, infrastructure sectors

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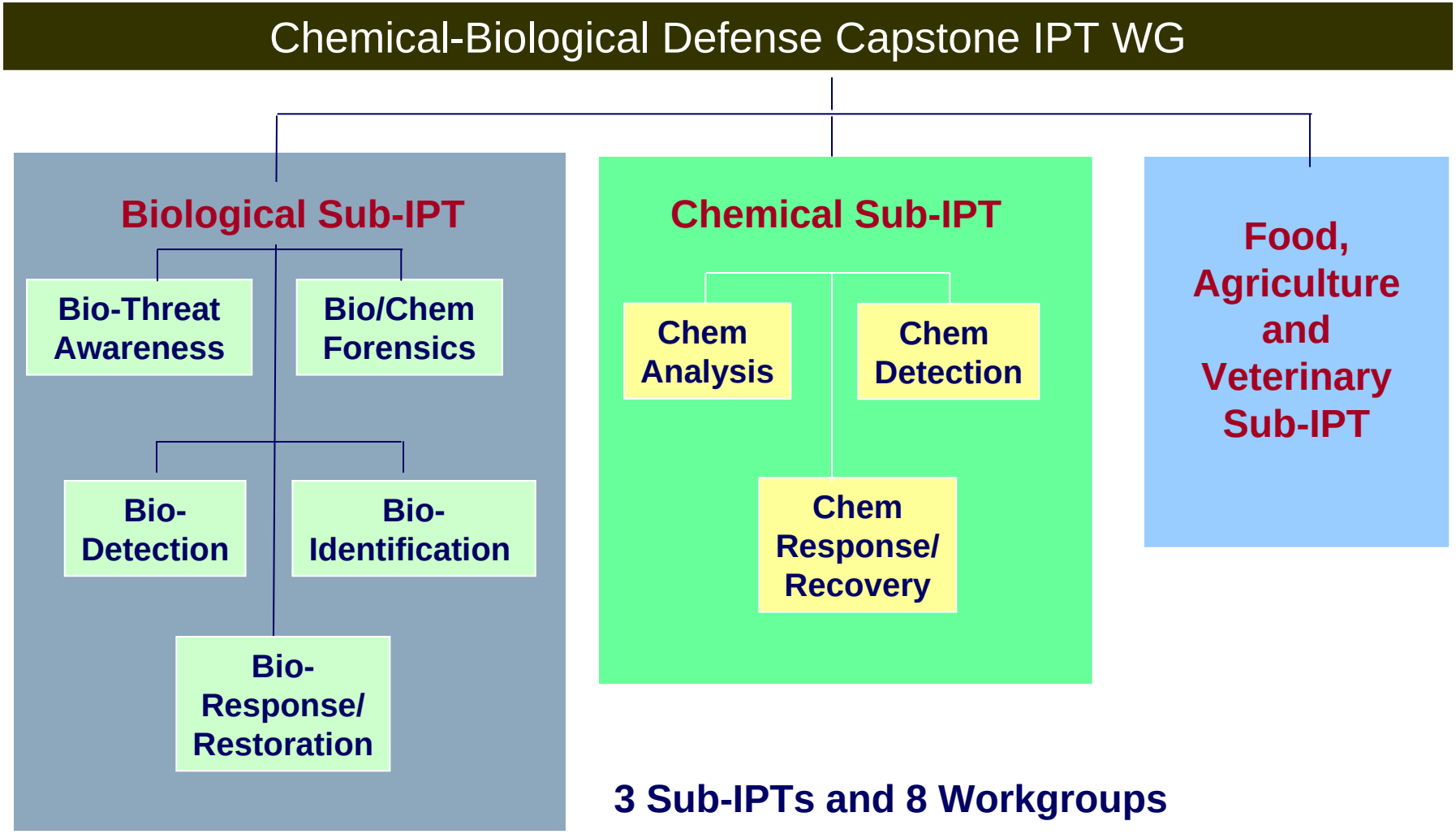
The CB Defense IPT Working Group (WG) Structure



3 Sub-IPTs and 8 Workgroups

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FY10-FY14 CBD Capability Gap Generation

- CB Division issued a call for Capability Gaps (CGs) at October 2007 CBD Capstone IPT meeting.
- 22 CGs submitted for Bio/Ag domain
- 12 CGs submitted for Chem domain
- 15 CGs provided of “broad spectrum” nature (Chem, Ag, Vet, Food)
- Capability Gaps deemed within CB Division mission and not covered by planned programs were prioritized.
- OIP, OHA, and S&T met and identified priority requirements for funding FY10-FY14
- Process re-initiated in June 2008 to collect and evaluate new CGs

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Biological Defense Program Capability Gaps (FY08)

- Testing, validation and guidance for Hand-held Assays for first responders
- Low-cost platform to capture biological threat agents from the environment in a manner that maintains their viability.
- Handheld device to distinguish between biologicals and non-biological agents to detect pathogens while continuing normal streams of commerce.
- Food/Ag/Vet Criticality Assessment tool
- Zoonotic Disease Risk Analysis
- Tool for determining high risk groups requiring vaccination
- 24-hour reach-back capability for food, agriculture and veterinary incidences
- Biotherapeutics against Foreign Animal Diseases
- Cost-effective bio-agent detectors for use in Central Processing Facilities within the food distribution system.

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Biological Defense Program Capability Gaps (FY08)

- More robust methods for rapid-assessment of antimicrobial susceptibility to inform treatment options.
- Rapidly determine the historic incidence of human, animal, and plant diseases and conditions in countries around the world.
- Rapidly determine the normal host species range, and geographic range of the host, of infectious diseases affecting humans, animals, and plants.
- Rapidly determine the normal vector species range, and geographic range of the vector, of infectious diseases affecting humans, animals, and plants.
- Documentation and risk analysis of confiscated food and agriculture products
- Ability to sample large surfaces for trace biological threat materials

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Chemical Defense Program Capability Gaps (FY08)

- Accurate computer modeling of large scale toxic chemical releases.
- Safing and reversible safing of hazardous chemicals
- Continued analysis of CFATS (Chemical Facility Anti-Terrorism Standards) Appendix A Chemicals to maintain robustness
- Handheld, portable device to distinguish between threat and non-threat chemicals
- Investigate new methods for chemical containment and clean-up

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Bio/Chem Defense Program Capability Gaps (FY08)

- Provide hand-held, real-time data acquisition for chem-bio surveillance monitoring.
- Screen letter mail and parcels for chem-bio hazards
- Mass decontamination system for personnel, victims and equipment
- Facility restoration demonstration projects:
  - Methods to contain, treat, decontaminate and dispose of contaminated water and equipment
  - Chem-bio decontamination
  - Wikipedia-like response plans
  - Detect and identify agents in pre- and post-release conditions to mitigate injuries and increase business continuity.
- Evaluate and/or develop chemical and biological PPE for DHS components' use in specific operational environments.

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Your input is important!

Participate in CBD Break-out sessions this afternoon

. . and/or e-mail your recommendations regarding requirements and future activities in Chem-Bio-Food-Vet-Agriculture Defense areas by 6 pm today to:

Doug Drabkowski
Douglas.Drabkowski@dhs.gov

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