

First Annual DHS University Network Summit on Research and Education



Homeland
Security

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Under Secretary
Science and Technology Directorate



FROM SCIENCE...SECURITY



S&T Goals

Consistent with the Homeland Security Act of 2002

- Accelerate delivery of enhanced technological capabilities to meet requirements and fill capability gaps to support DHS Agencies in accomplishing their mission
- Establish a lean and agile GS-manned, world-class S&T management team to deliver the technological advantage necessary to ensure DHS Agency mission success and prevent technology surprise
- Provide leadership, research and educational opportunities and resources to develop the necessary intellectual basis to enable a national S&T workforce to secure the homeland



DHS S&T Investment Portfolio

Balance of Risk, Cost, Impact, and Time to Delivery

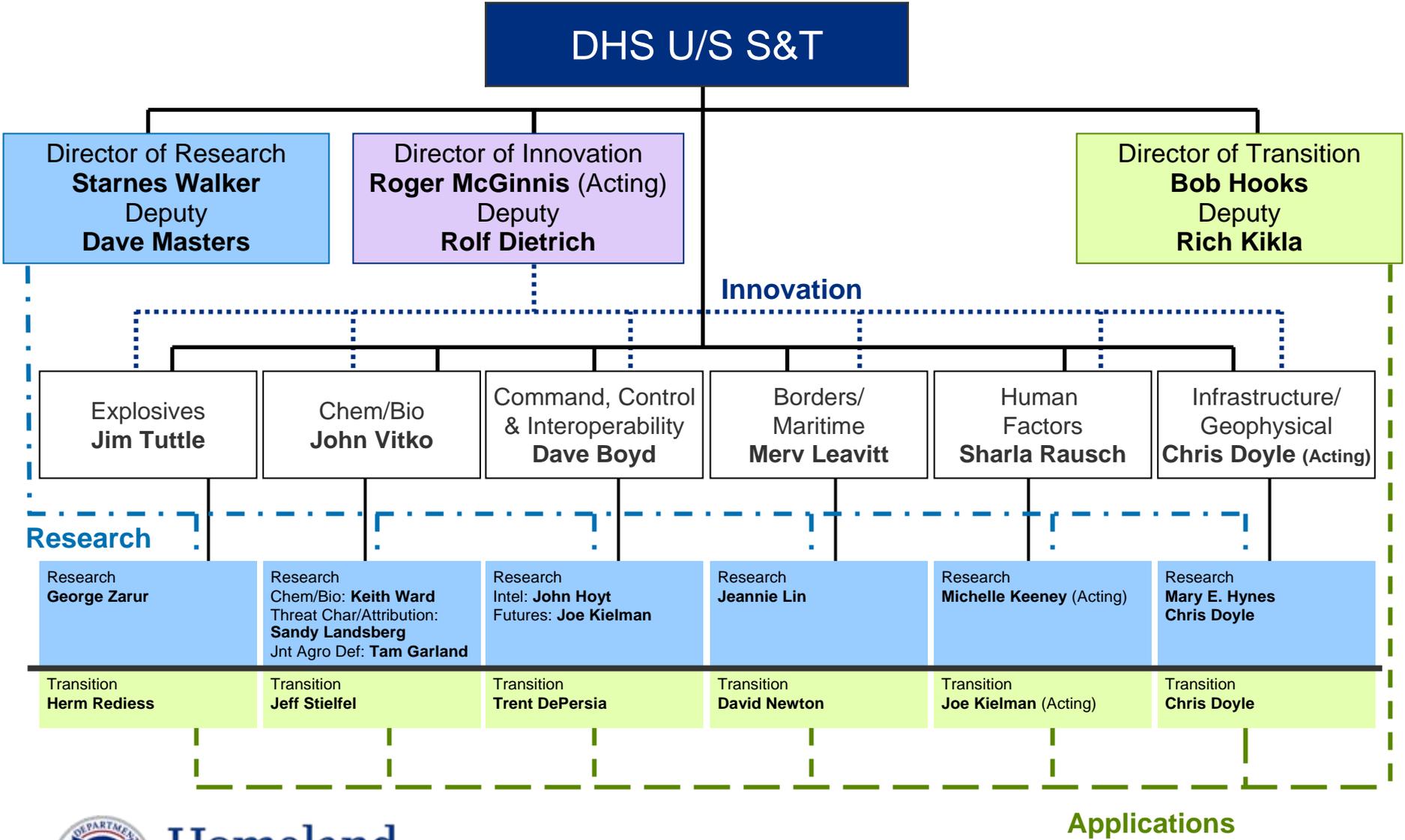
Product Transition (0-3 yrs) <ul style="list-style-type: none">▪ Focused on delivering near-term products/enhancements to acquisition▪ Customer IPT controlled▪ Cost, schedule, capability metrics	Innovative Capabilities (1-5 yrs) <ul style="list-style-type: none">▪ High-risk/High payoff▪ “Game changer/Leap ahead”▪ Prototype, Test and Deploy▪ HSARPA
Basic Research (>8 yrs) <ul style="list-style-type: none">▪ Enables future paradigm changes▪ University fundamental research▪ Gov’t lab discovery and invention	Other (0-8+ yrs) <ul style="list-style-type: none">▪ Test & Evaluation and Standards▪ Laboratory Operations & Construction▪ Required by Administration (HSPDs)▪ Congressional direction/law

Customer Focused, Output Oriented



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S&T Organization



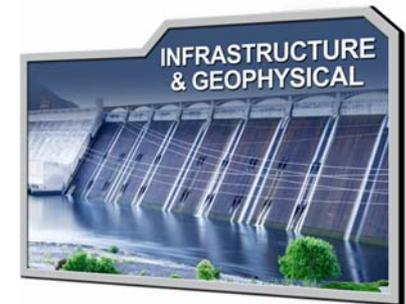
Transition Portfolio

Enabling Capabilities, Supporting Mission Critical Needs of DHS



Integrated Product Teams (IPTs)

- 11 Capstone IPTs form the centerpiece of S&T's customer-driven approach to product transition
- Engage DHS customers, acquisition partners, S&T technical division heads, and end users in product research, development, transition and acquisition activities
- Identify our customers' needs and enable and transition near-term capabilities to address them



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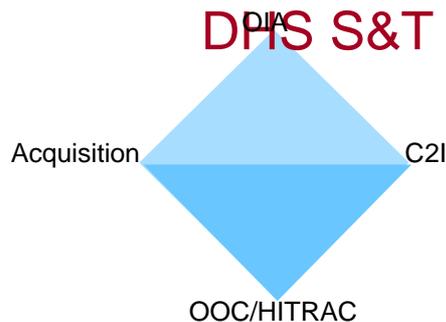


DHS Requirements/Capability Capstone

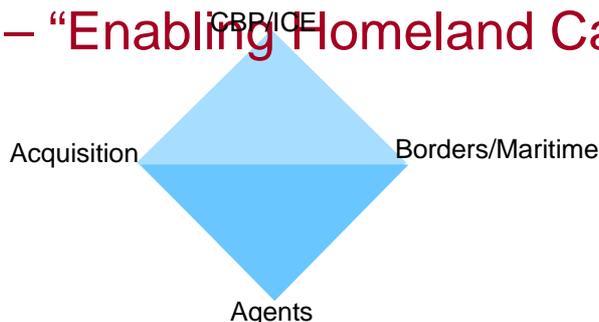
IPTs

DHS S&T Product – “Enabling Homeland Capabilities” (EHCs)

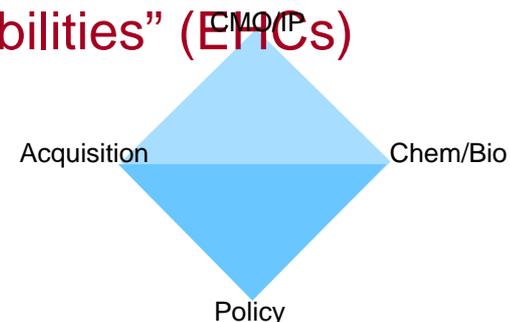
Information Sharing/Mgmt



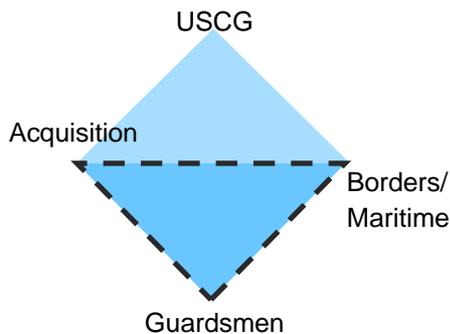
Border Security



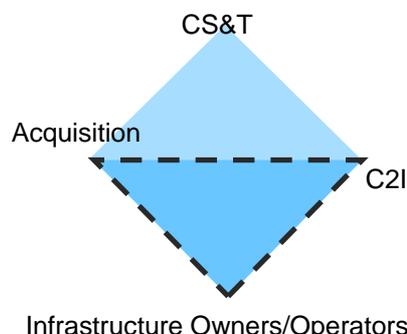
Chem/Bio Defense



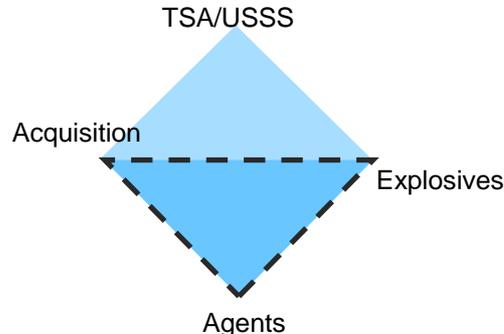
Maritime Security



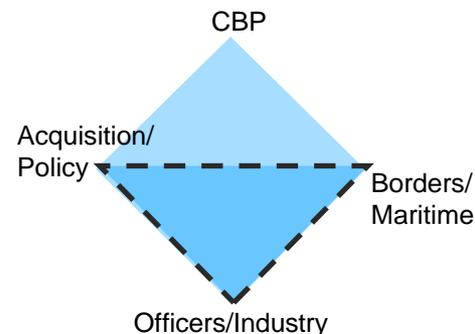
Cyber Security



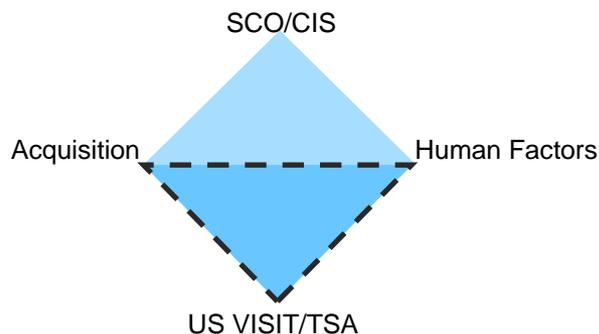
Explosive Prevention



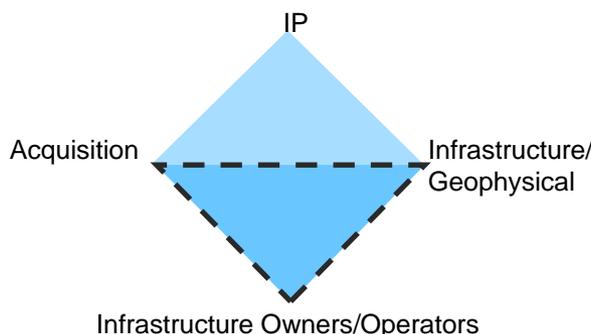
Cargo Security



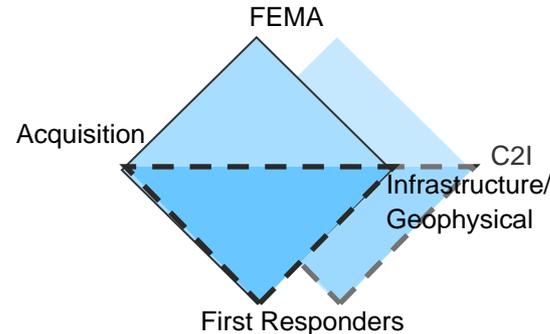
People Screening



Infrastructure Protection

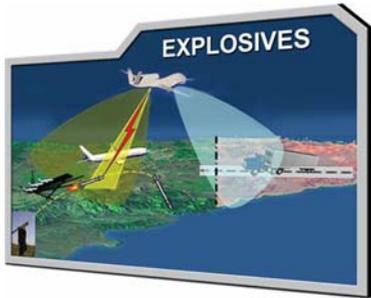


Incident Management



Innovation Portfolio

High Risk, High Gain, Game Changers for Leap-Ahead Results



- Promotes revolutionary changes in technology

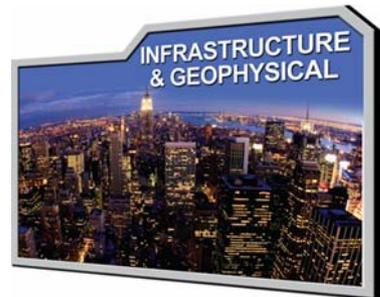
- Focus on prototyping and deploying critical technologies

- Includes: HSARPA – Homeland Security Advanced Research Projects Agency

- “Homeworks” – 1% of budget highest risk, highest pay-off

- Small Business Innovation Research program

- Visit www.FedBizOpps.gov, www.hsarpabaa.com and www.dhssbir.com



Homeland Security

HIPS and HITS

Homeland Innovative Prototypical Solutions (HIPS) are designed to deliver *prototype-level demonstrations* of game-changing technologies in two to five years. Projects are moderate to high risk, with high payoff.

High Impact Technology Solutions (HITS) are designed to provide *proof-of-concept* answers within one to three years that could result in high-payoff technology breakthroughs. While these projects are at considerable risk for failure, they offer the potential for significant gains in capability.



Homeland Innovative Prototypical Solutions (HIPS)

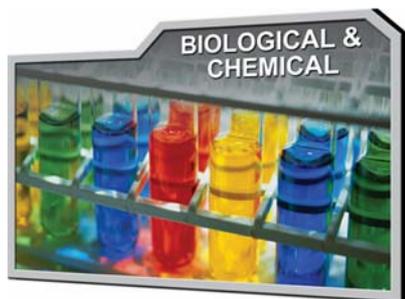
Explosives	Chem/Bio	Command, Control & Interoperability	Borders/ Maritime	Human Factors	Infrastructure/ Geophysical
<p>Project Chloe- High altitude aerial platform existing above civil aviation Counter-MANPADS</p> <p>SENSIT – System to identify numerous liquids in baggage</p> <p>IED Defeat / APE VBIED Defeat – Detection/prevention and mitigation technologies to counter IEDs</p>		<p>SCOPE (Scalable Common Operational Picture Experiment) – Leverages Global Observer JCTD</p>	<p>Patrol Craft Experimental (PCX-150) – Lightweight, composite material with high speed hull</p> <p>SAFECON – 90 second container screening device</p>	<p>FAST M2 (Future Attribute Screening Technology Mobile Module) – Relocatable Lab capable of testing for behavioral/ physiological cues of “hostile intent”</p> <p>Double or triple wide trailer tested at various sites around the country</p>	<p>Resilient Electric Grid – System that will prevent cascading effects of power surge on electrical grids</p> <p>Levee Strengthening and Rapid Repair - rapidly stop a breach in a levee</p> <p>Storm Surge and Hurricane Mitigation</p>

High Impact Technology Solutions (HITS)

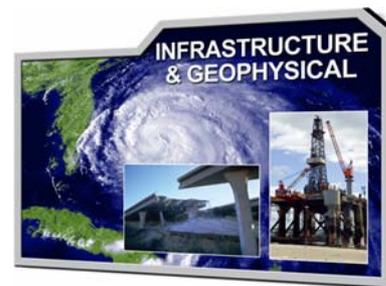
	<p>Real Time Bio Detection and Identify</p> <p>Cell-All - Ubiquitous Chem/Bio/agent detector</p>	<p>First Net - First Responder Reliable Relay Link</p> <p>Phone Home – Inter-operative and inexpensive hand-held radios</p>	<p>Tunnel Detect – Ability to detect, identify, and confirm illegal and clandestine underground border structures and activities</p>	<p>Document Validator –High proficiency scanner that can identify fraudulent docs</p> <p>Leverage USSS system</p> <p>Biometric Detector – High proficiency small biometric scanner</p>	<p>Wide Area Surveillance/ Change Detection for Critical Infrastructure</p> <p>Resilient Tunnel– Tunnel Protection/Blast Mitigation</p>
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Basic Research Portfolio

Discovery and Invention to Enable Future Capabilities

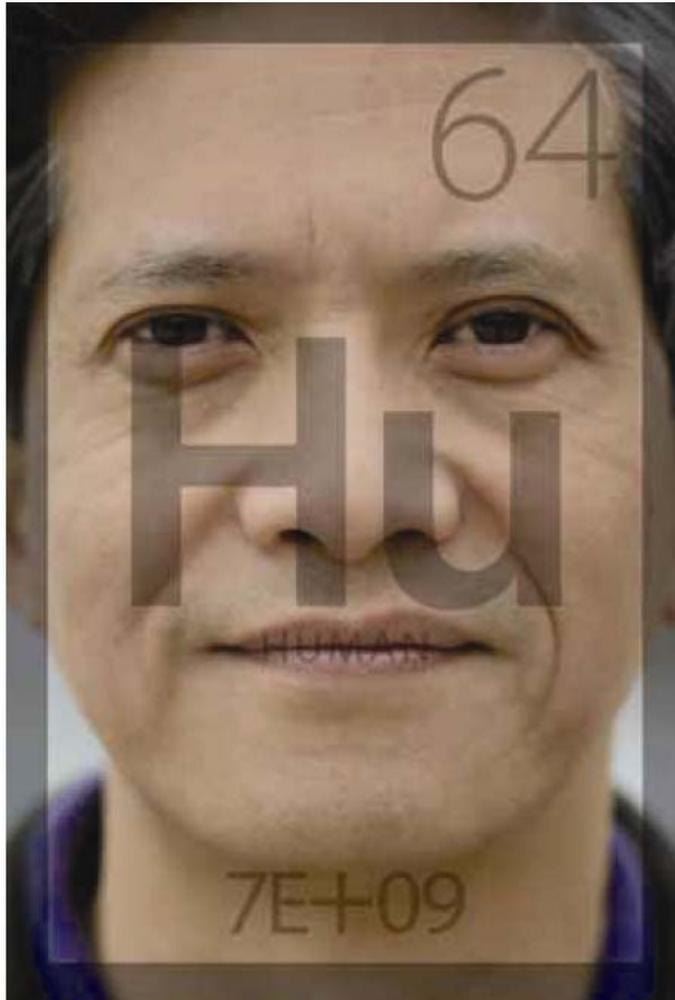


- Brings the capabilities, talent and resources of the Homeland Security Centers of Excellence, DOE National Laboratories and DHS Labs to bear to address the long-term R&D needs for the DHS in sciences of enduring relevance
- This type of focused, protracted research investment has potential to lead to paradigm shifts in the nation's homeland security capabilities



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It's ALL about the *'Human Element'!*



**Dow's
"Human Element" Ad**



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Congressional Mandates

- Homeland Security Act of 2002

- (as amended)

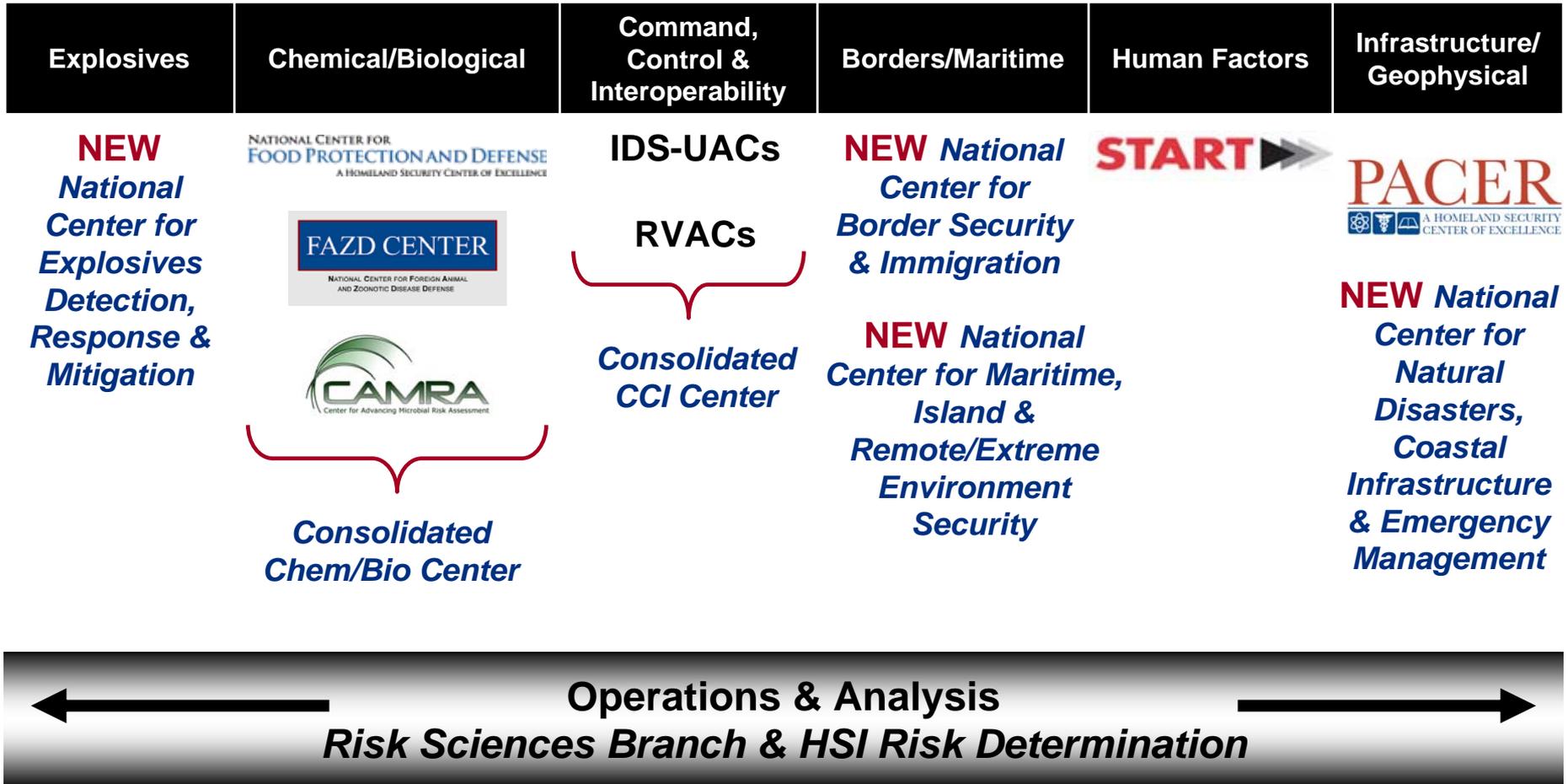
- “The Secretary, acting through the Under Secretary for Science and Technology, shall designate a university-based center or several university-based centers for homeland security. The purpose of the center or these centers shall be to establish a coordinated, university-based system to enhance the Nation's homeland security.”

DHS Appropriations Act of 2007

“The conferees direct the Under Secretary of Science and Technology to brief the Committees on Appropriations, no later than 60 days after the date of the enactment of this Act, on the University-Based Centers of Excellence Program goals for fiscal year 2007 and outcomes projected for each center for the next three years.”

Future COE Alignment

S&T DIVISIONS



DHS Scholars and Fellows Program

Mission

To stimulate, coordinate, leverage and utilize the unique intellectual capital within the academic community to address current and future homeland security challenges.

Goals

- Enhance development of students who wish to study in homeland security-related STEM fields
- Promote DHS-related curriculum and programs to a wider community of academic institutions and research facilities
- Develop a diverse and well-trained scientific and technical workforce for the homeland security community



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MSI Participation in Homeland Security

Homeland Security S&T needs to reflect the face of America. Four thrust areas:

- Taking advantage of existing capacity at MSIs
- Developing capacity at interested MSIs
- Providing Scholarships and Fellowships to MSIs for homeland security students
- Providing career paths for MSI students



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Building an Enduring Homeland Security Capability



2007 HOMELAND SECURITY
S&T Stakeholders
CONFERENCE



A World in Change

May 21-24, 2007

Ronald Reagan Building
Washington, D.C.

Presented by:



2007 S&T Stakeholders Conference Washington, DC

For more information visit:
<http://www.ndia.org/meetings/7680>

Coming Up...
DHS S&T Conference
London - Dec. 4, 2007
Details to follow



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Explosives



Chemical/Biological



**Command, Control, &
Interoperability**



Borders/Maritime



Human Factors



Infrastructure/Geophysical



FROM TECHNOLOGY...TRUST