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DEFENSE THREAT REDUCTION AGENCY

# *Research & Development Overview*

*2023 S&T Strategic Overview Summit*

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*Deter. Prevent. Prevail.*

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# DTRA is both a Defense Agency and Combat Support Agency



**DEFENSE AGENCY** – Strategic role. Reduce global WMD and emerging threats by deterring adversaries' acquisition and use of such materials. Nuclear assurance, treaty support, and building partner capacity.

**COMBAT SUPPORT AGENCY** – Operational role. Identify, develop, and field solutions to counter WMD and emerging threats.

***Deter. Prevent. Prevail.***



1998 -  
Defense Threat  
Reduction Agency



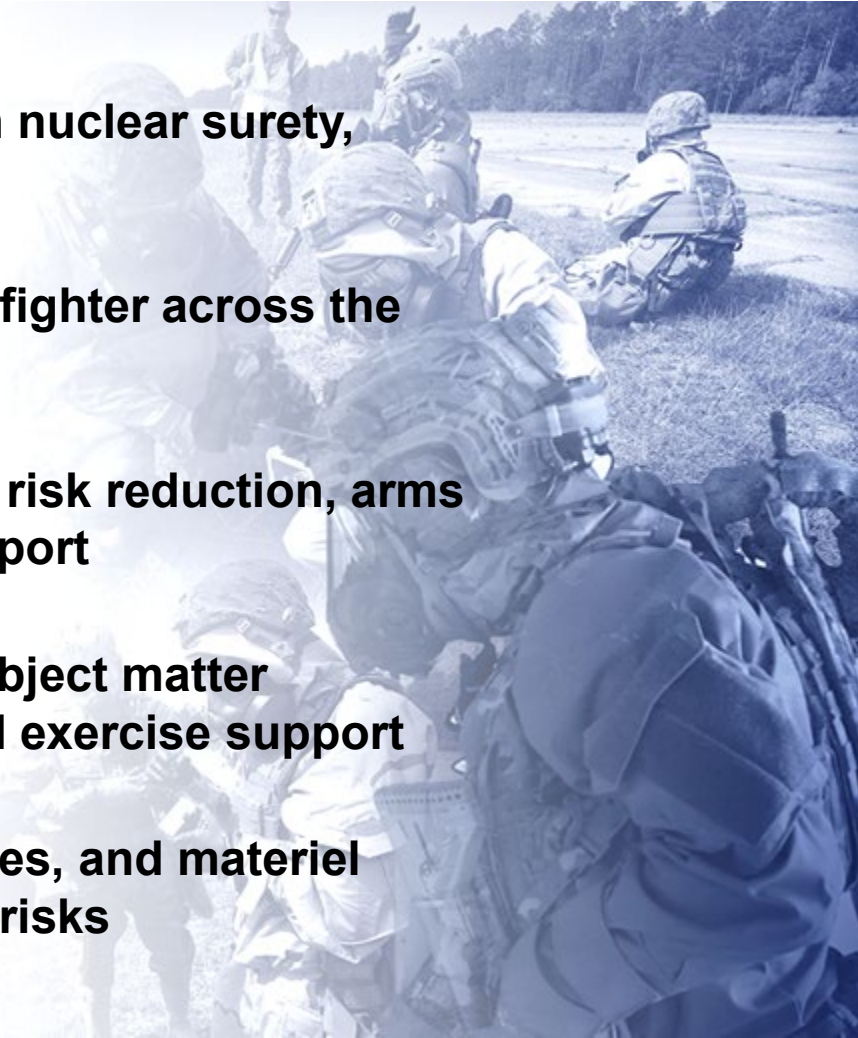
1941-1947  
Manhattan  
Engineering District



# DTRA is DoD's key developer of capabilities to counter WMD threats

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1. Ensure a reliable, resilient strategic deterrent through nuclear surety, mission assurance, and crisis response activities
2. Develop and deliver innovative capabilities to the warfighter across the threat spectrum
3. Prevent, reduce, and eliminate CBRN threats through risk reduction, arms control, partner capacity building, and warfighter support
4. Provide strategic and operational support through subject matter expertise, technical reach-back, tailored analysis, and exercise support
5. Support the Joint Force with plans, concepts, exercises, and materiel solutions to address CBRN operational and strategic risks



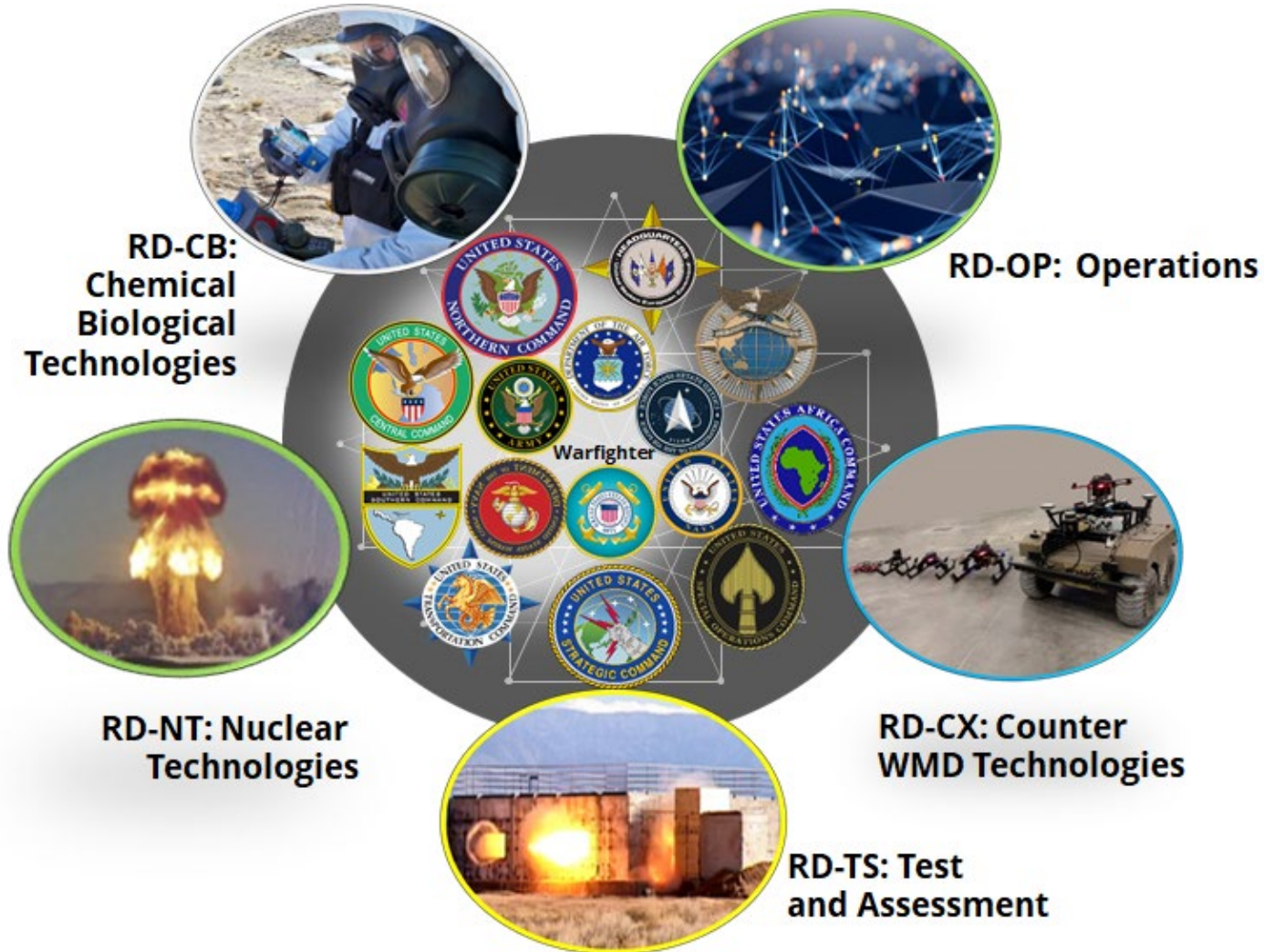
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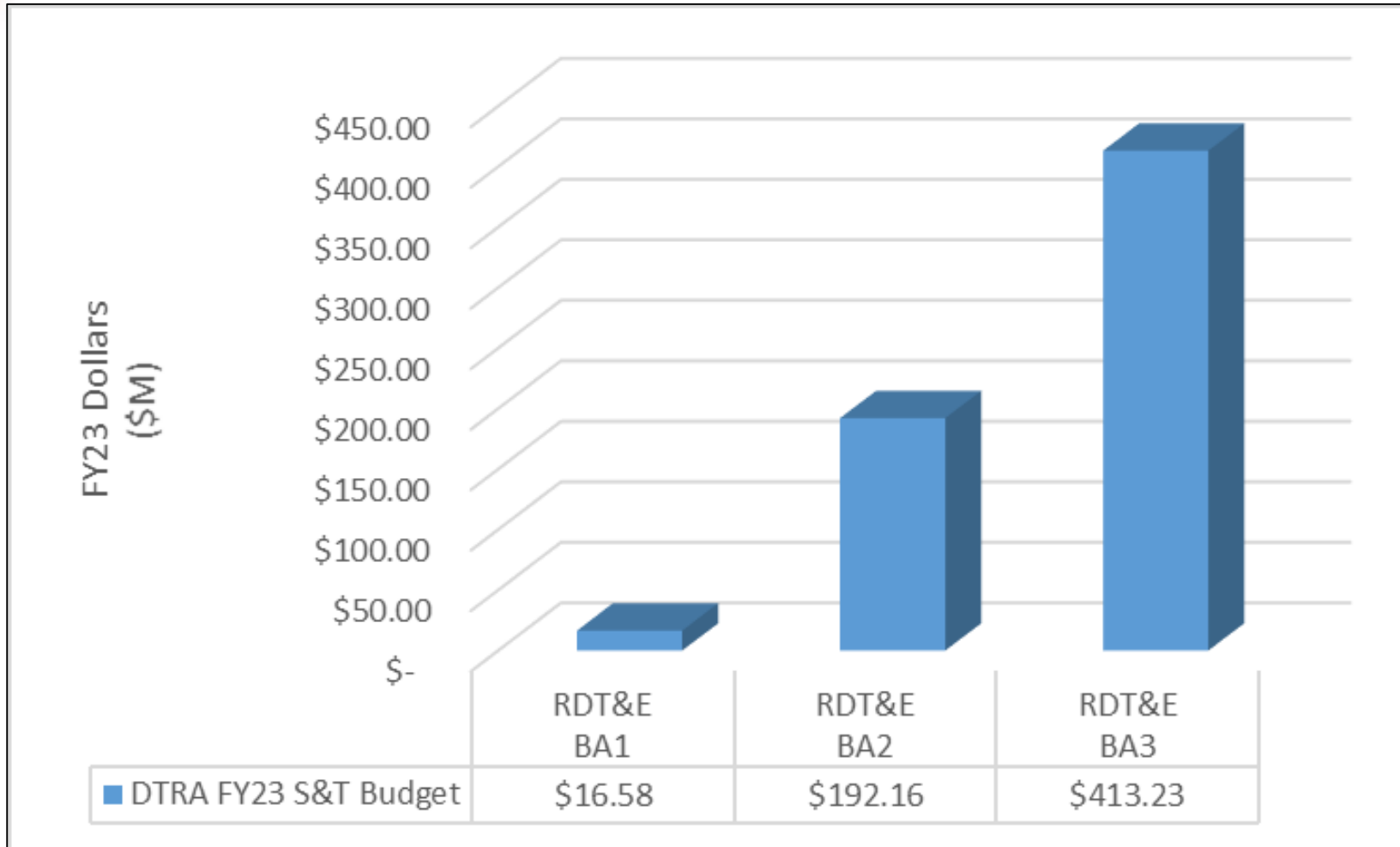
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# R&D Directorate's five departments deliver innovative solutions to WMD threats





# DTRA's FY23 R&D budget is \$622M

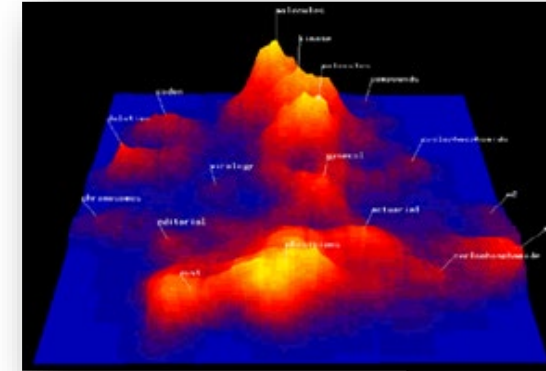




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# Counter WMD Technologies Department develops technologies to actively counter CBRNE threats

- Characterization and of WMD Targets
- Modeling and Simulation to Enable Effective WMD Strike Planning
- Defeat Hard and Deeply Buried Targets
- Find, Fix and Finish Strategic Targets
- Forecast Future WMD Threats



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# Nuclear Technologies Department supports and enables an effective nuclear deterrent

- Nuclear Weapons Effects – Deliver modeling & simulation tools for nuclear targeting, consequence of execution assessment, and nuclear capabilities
- Nuclear Survivability – Develop nuclear environments, protection standards, and handbooks. Operate large pulsed-power machines to test nuclear survivability
- Nuclear Threat Detection – develop sensors and software to locate and identify nuclear threats
- Nuclear Assessments – Develop technologies to monitor and characterize nuclear detonations. Install, operate, and improve 32 of the 337 International Monitoring System stations. Develop tools to integrate nuclear effects into wargames.
- Nuclear Technologies Integration – Provide cloud-ready nuclear modeling platform and applications



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# Test and Assessment Department enables the evaluation, validation, and assessment of capabilities

- CWMD Test and Evaluation – Robust scientific and engineering expertise to design, construct, and instrument threat representative WMD test environments
- Rapid Warfighter Assessments – Worldwide, rapid, and independent vulnerability, operational, and other specialized assessment support for urgent warfighter requirements

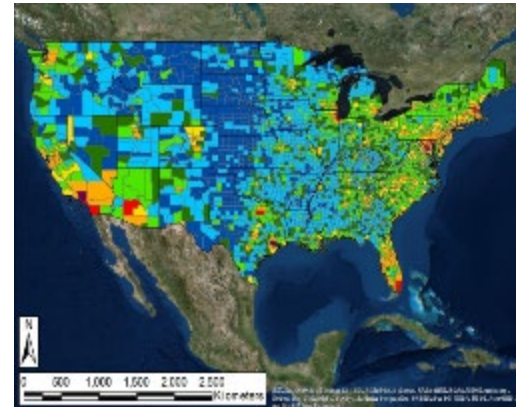
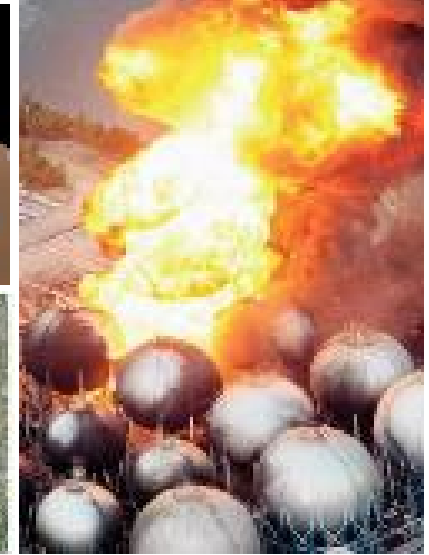
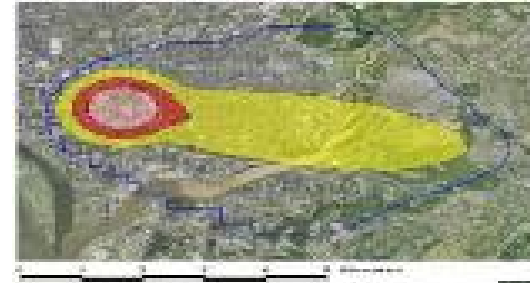
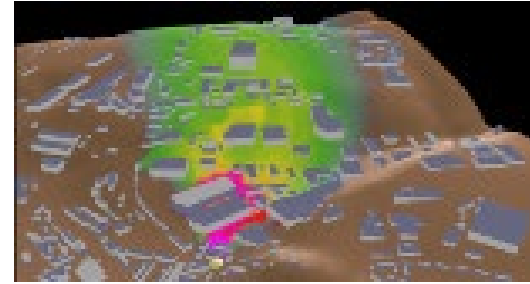






# RD Operations Department integrates RD operations, manages Technical Reachback Division, and executes basic research

- DTRA's basic research (6.1)
- Cross-Directorate strategic integration and tactical integration
- Technical Reachback





# DTRA targeted research needs

- Information Management and Technology
  - Provides R&D to a broad array of engineering and test efforts to meet new requirements introduced at the DTRA Requirements Review Board
- Operations and Integration
  - Conducts R&D to support the development of advanced geospatial techniques (modeling and simulation) with rapid prototyping that enables quick turn, high value support to the global mission community
- Strategic Integration
  - Provides support to National Defense University and to the Strategic Research and Dialogues Office which refines strategic research projects to improve tangible outcomes and achievable recommendations for future activities to counter WMD development and use



# DTRA R&D Summary

- DTRA R&D provides science, technology and capability development investments that counter WMD threats and maintain the U.S. military's technological superiority
- Integrated and coordinated portfolio leverages DoD, Interagency, and international partners to provide support to our warfighters
- Comprehensive R&D investments increase agility to respond to new and changing Combatant Command requirements and national and DoD CWMD priorities





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