

Defense Threat Reduction Agency Overview and Expectations MSEE Kickoff Meeting

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Cooperative Agreement Manager***

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Agency Mission



The Defense Threat Reduction Agency enables DoD, the U.S. Government, and International Partners to counter and deter Weapons of Mass Destruction and Improvised Threat networks



DTRA Research & Development (RD) Mission and Vision



Mission

Provide science, technology and capability development investments that maintain the U.S. military's technological superiority in countering weapons of mass destruction & asymmetric threats, mitigate the risks of technical surprise and respond to the warfighter's urgent technical requirements.

Vision

Be the recognized leader for technical innovation to counter weapon of mass destruction & asymmetric threats – responding to urgent warfighter needs while investing in R&D to shape the Nation's counter-threat capabilities.



DTRA R&D prioritizes *Deter, Detect, and Defeat*



OBJECTIVE

R&D Thrust Areas* *Capabilities and technologies that...*

Understand the Environment, Threats, and Vulnerabilities

- Detect, locate, identify, and track chemical, biological, nuclear, and improvised threats
- Enhance warfighters' ability to rapidly capture, catalogue, link, and illuminate nefarious activities
- Increase understanding through high-speed information processing, M&S, and advanced analytics
- Detect improvised devices (including IED and UAS) and their components from safe distances
- Improve nuclear/radiological hazard assessment techniques, methodologies, and analytic tools

Control, Defeat, Disable and/or Dispose WMD and Improvised Threats

- Provide direct or indirect physical or functional defeat of WMD threats, especially prior to weapon use
- Prevent adversary networks' ability to deliver and use IEDs, or rapidly neutralize emplaced IEDs
- Interrupt the acquisition of weapon-related materials and expertise, or otherwise defeat threat networks
- Enable suitable, field-deployable capabilities to mitigate warfighter risk through improved stand-off
- Support survivable, hardened conventional forces that can fight and win in a difficult WMD environment

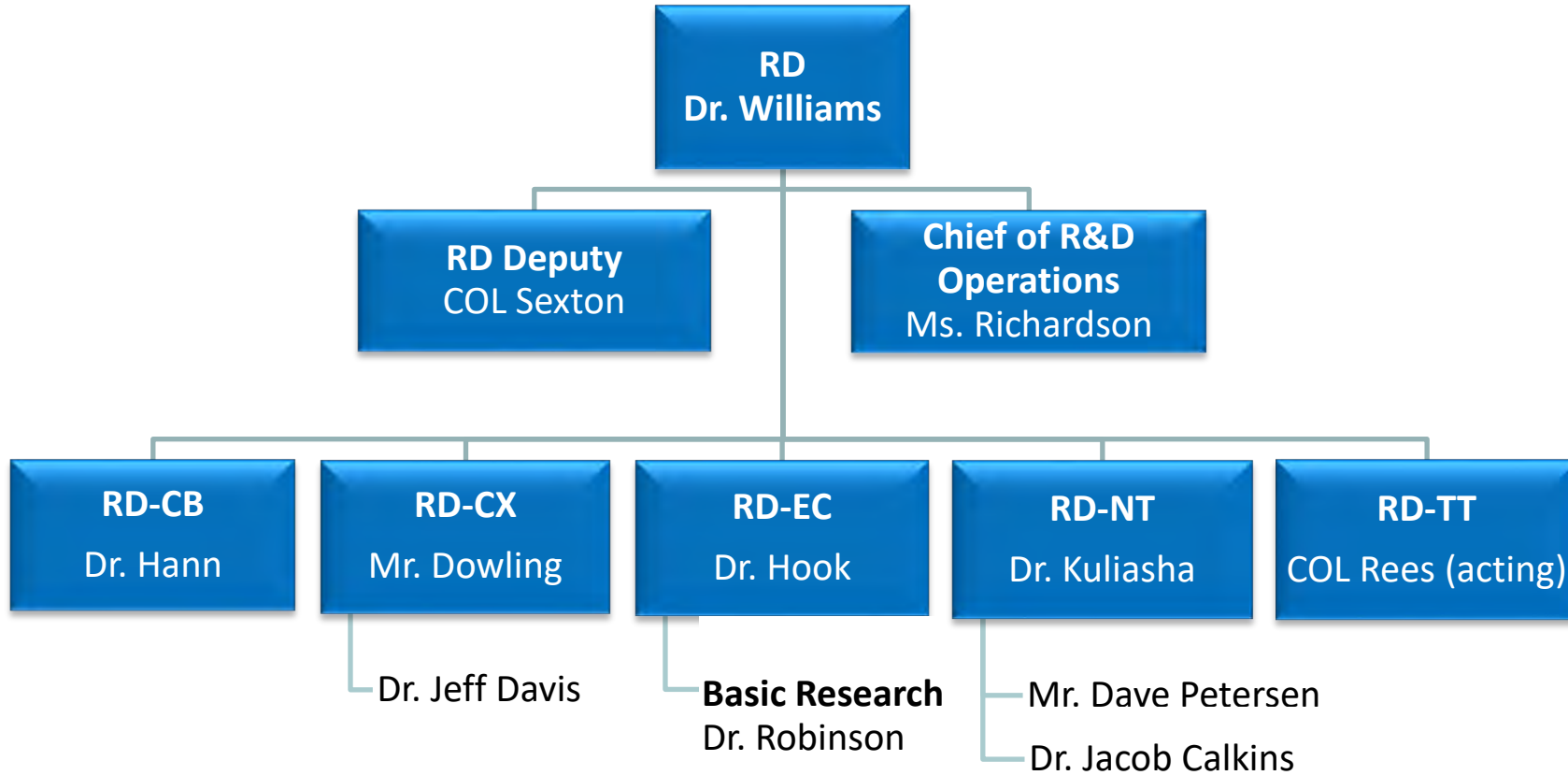
Safeguard the Force and Manage Consequences

- Protect forces, reduce casualties, and degrade adversaries' abilities to disrupt operations
- Enable biological, chemical, and radiological surveillance, exposure detection, and medical diagnostics
- Provide survivability standards, hardening technologies, and experimental test capabilities
- Improve medical countermeasures, pretreatments, prophylaxes, vaccines, and therapeutics
- Reduce size and weight, and increase performance of contamination mitigation tools

* Not all R&D Thrust Areas are listed



Research & Development (RD) Directorate



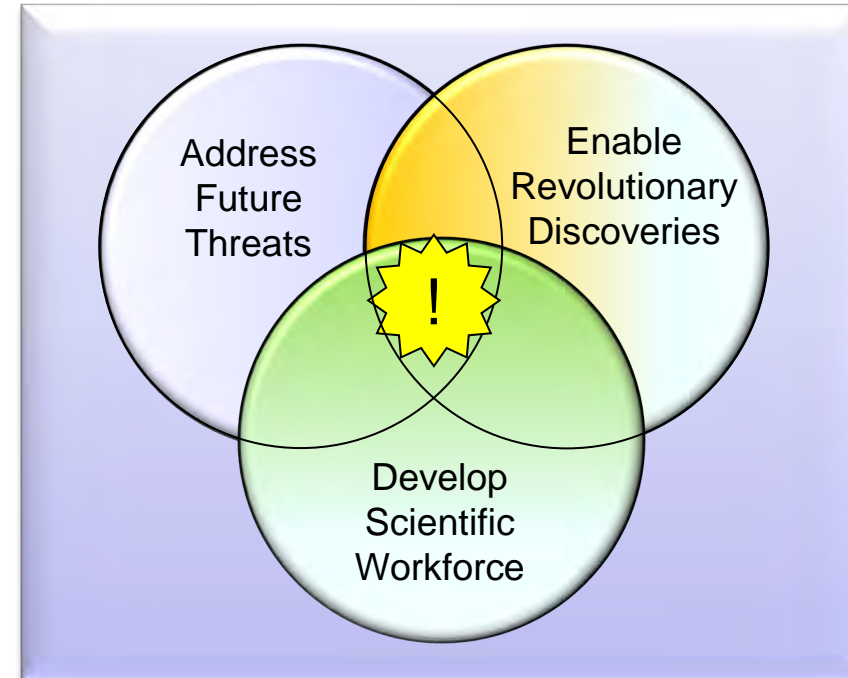


DTRA Basic Research Program



The DTRA RD Basic Research Program:

- Conducts revolutionary CWMD scientific research with broad applicability across multiple mission areas to set conditions for disruptive gains in the effectiveness of technology-enabled concepts of operation not possible through evolutionary excursions from the current state of practice; and
- Builds up U. S. research institution and personnel scientific capability and capacity to counter competitor nations below the threshold of armed conflict.



BUILDING THE FOUNDATION FOR TOMORROW'S CWMD & ITN



DTRA Key Personnel



- Cooperative Agreement Manager (CAM)
 - Mike Robinson
- Technical Points of Contact (TPOCs)
 - Jeff Davis, *Counterforce Systems*
 - Dave Petersen, *Nuclear Assessments*
 - Jacob Calkins, *Nuclear Survivability*
- Grants Officer
 - Mary Kay Chase



Alliance Purpose



- Establish a close collaborative relationship between DTRA and the universities
 - TPOCs will be actively engaged in Alliance research projects
- Promote U.S. Workforce Development
- Address basic research gaps and warfighter's emerging technical needs



MSEE Mission and Goals



MSEE Mission: Understanding, controlling, characterizing, and predicting interactions of materials in extreme pressure, temperature, and optical environments that may lead to future exploitation for Counter WMD.

MSEE Goals:

- Thoughtful, targeted basic research studies will enable next generation applied solutions for:
 - C-WMD technologies
 - Threat forecasting (3D printing, novel materials)
 - Wargaming (fidelity of tools for low yield detonations & CWMD mission planning)
 - Supporting the modernization of the nuclear deterrent
 - Conventional-Nuclear Integration (bring technical SMEs on both sides)
- Inclusion of students and other young investigators in basic research studies will build a pipeline of next generation experts in extreme materials science to feed into the DoD/DOE labs or government agencies
- Large-scale cross-cutting research effort will facilitate ongoing and future collaboration with our partners (DoD, USG, International)



MSEE Mission and Goals



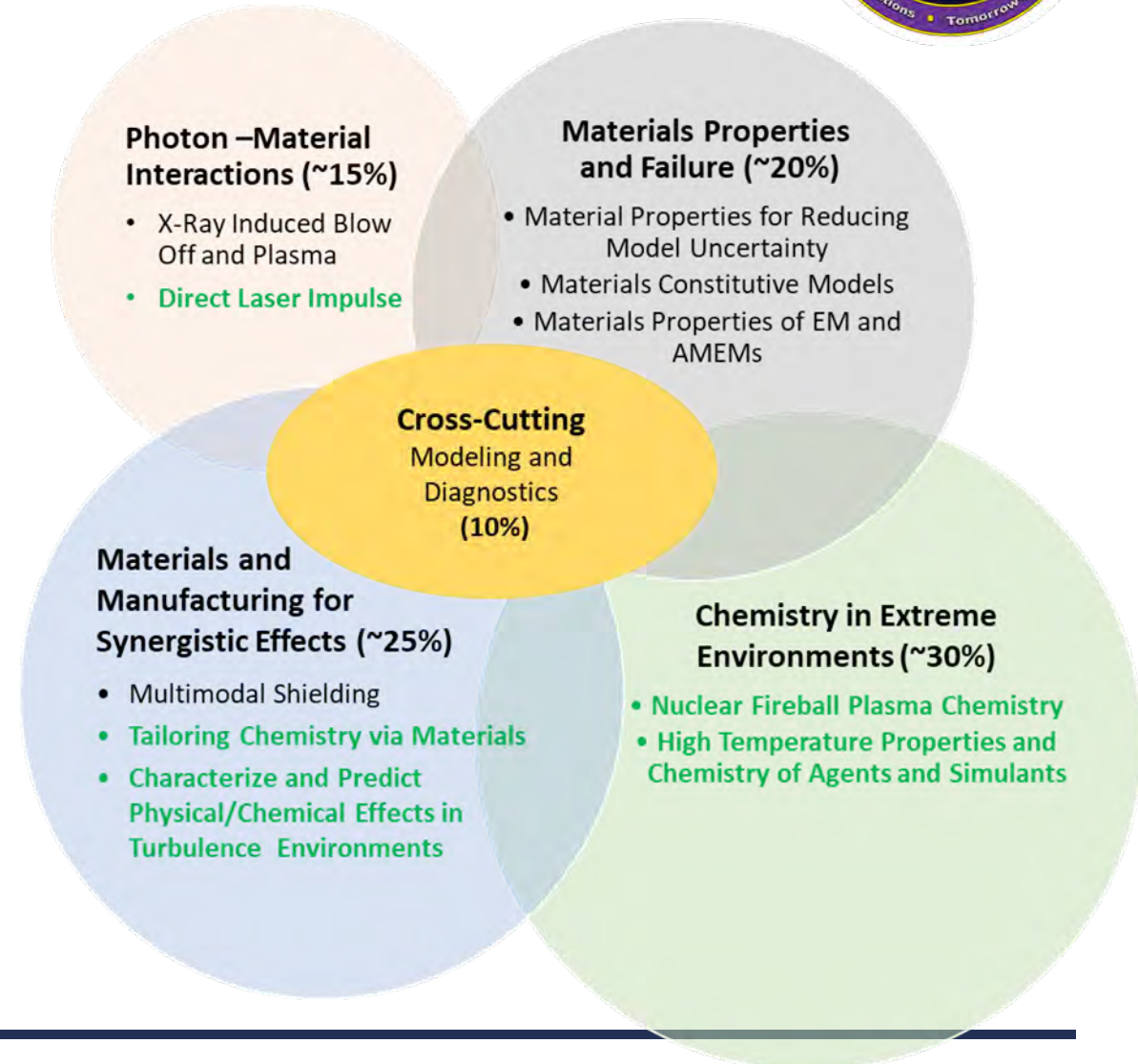
MSEE Mission: Understanding, controlling, characterizing, and predicting interactions of materials in extreme pressure, temperature, and optical environments that may lead to future exploitation for Counter WMD.

Main Research Areas:

- Material Properties and Failure
- Materials Development and Manufacturing for Synergistic Effects
- Chemistry in Extreme Environments
- Photon-Material Interactions

URA Funding Structure:

- 5 core years (Base)
- Two, 2-year options
- \$5-6M/year





Alliance Management



- Cooperative Agreement Manager (CAM) – DTRA Basic Research Manager
- Technical Point of Contact (TPOC) – Government technical lead for each RA
- Technical Management Group (TMG) – Collaboratively leads the Consortium
 - Includes the CAM, TPOCs, Dep Chief EC, PM, Research Area Leads (RALs)
- Research Management Board (RMB) – Provides strategic leadership (sets priority areas of research of interest to DTRA)
 - Government only, i.e., (CAM, TPOCs, Dep Chief EC, other DTRA/Gov't reps assigned by the CAM)



Alliance Expectations



- **Publish. Publish. Publish. And Presentations**
 - Funding Acknowledgment. E.g. "The project or effort depicted was or is sponsored by the Department of the Defense, Defense Threat Reduction Agency under award HDTRA1-20-2-0001. The content of the information does not necessarily reflect the position or the policy of the federal government, and no official endorsement should be inferred."
- **Additional Metrics showing 'return on investment'**
 - Number of students and degrees awarded
 - Collaborations, student and technology transitions, awards, and staff, student, and post-doctoral fellow rotations
- **Transition**
 - DTRA can facilitate transitions to other projects – CA can accept 6.2 funding to aid
 - Your organizational technology transition office can help commercialization when appropriate

Option Years are not guaranteed. Decisions will be made internally by DTRA based on technical progress, DTRA priorities, and funding availability.



Reporting Requirements



- Data Management Plan – Beginning of work
- Submission of publications to DTIC
- Quarterly Reports
- Research Performance Progress Reports (RPPR) – Annually
- Annual Technical Review – Beginning in 2021
- Annual Financial Report – Annually NLT 30 Sept
- Final Technical Report
- Invention Reports



Questions?