Medical Portfolio Overview

COL John Teyhen
Director, Medical Portfolio
Office of the Deputy Assistant Secretary
of the Army for Research and Technology

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Army Enduring Challenges

- Greater **force protection (Soldier, vehicle, base)** to ensure survivability across all operations
- Ease **overburdened** Soldiers in Small Units
  - Timely **mission command & tactical intelligence** to provide situation awareness and communications in all environments
- Reduce logistic burden of **storing, transporting, distributing** and **retrograde** of materials
  - Create **operational overmatch** (enhanced lethality and accuracy)
  - Achieve operational **maneuverability** in all environments and at high operational tempo
- Enable ability to **operate in CBRNE environment**
- Enable **early detection and improved outcomes for Traumatic Brain Injury (TBI) and Post Traumatic Stress Disorder (PTSD)**
  - Improve **operational energy**
  - Improve **individual & team training**
- **Reduce lifecycle cost** of future Army capabilities
Army S&T Investments by Portfolio

**Soldier/Squad**
- Soldier survivability equipment;
- human dimension/systems; power & energy; Soldier Weapons, training

**Air**
- Advanced air vehicles;
- unmanned aerial systems;
- manned/unmanned teaming

**Medical**
- Combat Casualty Care,
- Infectious Disease mitigation,
- clinical/rehabilitative medicine

**Innovation Enablers**
- High Performance Computing;
- Environmental Protection;
- Base Protection; Studies

**Lethality**
- Offensive/Defensive kinetic (guns, missiles) > 50 cal;
- Directed Energy (HEL) weapons

**Ground Maneuver**
- Combat/tactical ground platforms/survivability;
- unmanned ground systems;
- austere entry; power & energy

**Basic Research**
- Neuroscience; network science, materials science;
- autonomy

**C3I**
- Secure Comms-on-the-move; cyber/EW; sensors

Note: Figures may not add due to rounding
Medical Vision Statement

Vision

Lead the advancement of Army medical science and technology

Responding to Threats to Service Member Health and Performance
Medical Portfolio
6.2 and 6.3 Funding

FY15

$143M

MRMC 100%

Systems Biology
$5M

Military Operational Medicine
$57M

Infectious Diseases
$36M

Combat Casualty Care
$27M

Clinical and Rehabilitative Medicine
$18M

Investment Areas
- Computational Medical Modeling
- Systems Biology Enterprise

Investment Areas
- Physiological Health
- Injury Prevention and Reduction
- Psychological Health & Resilience
- Environmental Health & Protection

Investment Areas
- Bacterial Diseases
- Viral Diseases
- Parasitic Diseases
- Human Diagnostics
- Vector Control & Diagnostics

Investment Areas
- Hemorrhage Control, Resuscitation & Blood Products
- Diagnosis/Treatment of Brain Injury
- Forward Surgical/Intensive Care and En Route Care
- Treatments for Tissue Injury

Investment Areas
- Regenerative Medicine / Maxillofacial Restoration
- Vision
Medical Major Efforts

**Psychological Health & Resilience and Traumatic Brain Injury (TBI)**

**Goal:** Develop interventions to prevent and reduce combat-related behavioral health problems and cognitive deficits associated with PTSD and TBI, including depression, anger problems, post-concussive symptoms, and other health risk behaviors; develop faster treatments to alleviate symptoms.

**Assessment, Diagnosis, and Intervention**

**Infectious Diseases (Drugs & Vaccines)**

**Goal:** Develop methods to prevent, treat, and/or diagnose naturally occurring viral and bacterial diseases and infections that can impact military mobilization, deployment, or force effectiveness.

**Vaccines**

**Drugs**

**Diagnostics**

**Vector Control**

**Combat Casualty Care/Clinical Rehabilitative Medicine**

**Goal:** Program is designed to meet the needs of first responders in order to reduce preventable combat deaths and reduce resultant morbidities in survivors. This includes controlling non-compressible bleeding with drugs and devices, drugs to stabilize metabolism and protect tissues after hemorrhage, and clinical practices guidelines, and rehabilitative care innovations required to reset our wounded warriors, both in terms of duty performance and quality of life.

**Control of non-compressible bleeding**

**Fluids to sustain life and reduce morbidity of tissues**

**Tests and treatments for coagulopathy of trauma**

**Tissue transplantation programs**
**Psychological Health & Resilience and Traumatic Brain Injury (TBI)**

**Goal:** Develop interventions to prevent and reduce combat-related behavioral health problems and cognitive deficits associated with PTSD and TBI, including depression, anger problems, post-concussive symptoms, and other health risk behaviors; develop faster treatments to alleviate symptoms.

- Measures for concussion-related cognitive impairment using neuropsychological assessment tools following blast and blunt trauma injuries
- Integrated mental health training systems and interventions for resilience, reduce risk behaviors, for the prevention/treatment of suicide and PTSD
- Optimized individualized PTSD drug and psychotherapy treatments
- Screening of novel drugs and alternative therapeutic strategies, including novel stem cell strategies and selective brain cooling, to manage traumatic brain injury
- Clinical evaluation of analytical test to diagnose presence and severity of TBI at or near point of injury
Infectious Diseases (Drugs & Vaccines)

**Goal:** Develop methods to prevent, treat, and/or diagnose naturally occurring viral and bacterial diseases and infections that can impact military mobilization, deployment, or force effectiveness.

- Suitable formulations of next generation malaria prophylaxis drugs for use in future testing in humans.
- Candidate vaccines against *Shigella*, Enterotoxigenic *Echerichia coli* (ETEC) and *Campylobacter* (the three most common bacterial causes of diarrheal diseases in deployed US forces)
- Polyclonal neutralizing antibodies against lethal viruses that could be used to provide "instant immunity" or post-exposure treatment in unvaccinated personnel deployed to high risk areas
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- Preclinical studies on contributions of the immune system and blood products to the body’s ability to properly clot blood following trauma
- Advanced patient monitoring technologies that rapidly and accurately detect early-onset of blood loss, continuously estimate blood loss volume, and predict patient’s risk for cardiovascular collapse
- New methods to control life-threatening bleeding from areas of the body where tourniquets may not be effectively used, such as within the chest and abdomen, and from injuries to the armpit or groin
- Improved blood platelet (important factor required for blood clotting) storage technologies suitable for far forward use
Defense Innovation Marketplace

CONNECTING INDUSTRY & DoD

The Defense Innovation Marketplace is a centralized resource for market research:

For Industry, to learn about Department of Defense (DoD) S&T/R&D investment priorities, capability needs and technology transfers.

For Government, to access search tools to assess and then leverage industry R&D projects for current and future programs.

“We also have the Defense Marketplace, which is a website that allow industry to identify R&D opportunities... that we can then leverage.”

Mary Miller, Deputy Assistant Secretary of the Army for Research & Technology

NEW IN THE MARKETPLACE

Strategic Documents
- Systems Engineering 2013 Annual Report **NEW**
- DoD's FY13 S&T Testimony
- Chairman's 2nd Term Strategic Direction
- Expeditionary Forces Capstone Concept
- Reliance 21 Operating Principles
- More...

Doing Business with DoD
- DARPA Hand & Touch Interfaces (HAPTIX) Proposer's Day **NEW**
- DARPA Upward Falling Payloads **NEW**
- Navy Optical Teascope Assembly BAA **NEW**
- DARPA Tactical Boost Glide BAA

News & Events
- Aerospace Enterprise Dialogue with Industry
- Wright Dialogue with Industry
- DAU March Newsletter
- Top Downloads February
- Army Technology Magazine
- Defense AT&L Magazine

Updated 3/31/14

INNOVATION OPPORTUNITIES

Resources for Industry
- DoD Info for Business & Program Planning
- Submit IR&D Data
- Share projects with DoD Customers

Resources for DoD
- DoD employee access of IR&D Search tool

FEEDBACK

Search Trends

What did you Miss?
- Top Marketplace pages and downloads

TECHNOLOGY INTERCHANGES

Aeronautical
- Dialogue with Industry and IR&D Interchange

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