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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army

DATE: February 2011

**APPROPRIATION/BUDGET ACTIVITY**  
 2040: Research, Development, Test & Evaluation, Army  
 BA 3: Advanced Technology Development (ATD)

**R-1 ITEM NOMENCLATURE**  
 PE 0603002A: MEDICAL ADVANCED TECHNOLOGY

COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	336.741	71.510	68.171	-	68.171	65.647	69.795	72.971	72.302	Continuing	Continuing
810: IND BASE ID VACC&DRUG	19.748	18.185	18.646	-	18.646	18.820	20.674	19.910	18.342	Continuing	Continuing
840: COMBAT INJURY MGMT	42.272	44.004	38.659	-	38.659	34.079	35.463	36.729	37.141	Continuing	Continuing
945: BREAST CANCER STAMP PROCEEDS	1.005	-	-	-	-	-	-	-	-	Continuing	Continuing
97B: BLOOD SAFETY	2.388	-	-	-	-	-	-	-	-	Continuing	Continuing
97D: CENTER FOR AGING EYE PROTECTION - ADV TECH DEV	2.387	-	-	-	-	-	-	-	-	Continuing	Continuing
FH4: FORCE HEALTH PROTECTION - ADV TECH DEV	1.885	1.974	1.542	-	1.542	1.672	1.761	1.776	1.806	Continuing	Continuing
MB1: ADV DIAGNOSTICS & THERAPEUTIC DIG TECH	1.593	-	-	-	-	-	-	-	-	Continuing	Continuing
MB3: CENTER FOR INTEGRATION OF MEDICINE & INNOV TECH	8.953	-	-	-	-	-	-	-	-	Continuing	Continuing
MG5: NATIONAL FUNCTIONAL GENOMICS CENTER (CA)	5.968	-	-	-	-	-	-	-	-	Continuing	Continuing
M4: ALLIANCE FOR NANOHEALTH (CA)	3.979	-	-	-	-	-	-	-	-	Continuing	Continuing
MJ2: FIBRINOGEN BANDAGES FOR BATTLEFIELD WOUNDS (CA)	2.388	-	-	-	-	-	-	-	-	Continuing	Continuing
MK8: PLASMA STERILIZER (CA)	2.387	-	-	-	-	-	-	-	-	Continuing	Continuing
ML3: SOLDIER-MOUNTED EYE-TRACKING & CONTROL SYSTEM (CA)	3.482	-	-	-	-	-	-	-	-	Continuing	Continuing
MM2: MEDICAL ADVANCE TECHNOLOGY INITIATIVES (CA)	231.980	-	-	-	-	-	-	-	-	Continuing	Continuing

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2040: Research, Development, Test & Evaluation, Army BA 3: Advanced Technology Development (ATD)	PE 0603002A: MEDICAL ADVANCED TECHNOLOGY										
MMS: WARRIGHTER MEDICAL PROTECTION & PERFORMANCE STDS	6.326	7.347	9.324	-	9.324	11.076	11.897	14.556	15.013	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

This program element (PE) supports maturation and demonstration of advanced medical technologies including drugs, vaccines, medical devices, and diagnostics and developing medical practices and procedures to effectively protect and improve the survivability of US Forces across the entire spectrum of military operations. Tri-Service coordination and cooperative efforts are focused in four principal medical areas: Combat Casualty Care, Military Operational Medicine, Militarily Relevant Infectious Diseases, and Clinical and Rehabilitative Medicine.

Promising medical technologies are refined and validated through extensive testing, which is closely monitored by the US Food and Drug Administration (FDA) and Environmental Protection Agency (EPA), as part of their processes for licensing new medical products. The FDA requires medical products to undergo extensive preclinical testing in animals and/or other models to obtain preliminary efficacy and toxicity information, before they can be tested in humans (clinical trials). Clinical trials are conducted in three phases, starting with Phase 1, to prove the safety of a drug, vaccine, or device for the targeted disease or medical condition in a small number of healthy volunteers. Each successive phase includes larger numbers of human subjects and requires FDA cognizance prior to proceeding. Work conducted in this PE primarily focuses on late stages of technology maturation activities required to conduct Phase 2 human expanded safety and efficacy clinical trials. Some high risk technologies may require additional maturation with FDA guidance prior to initiating these clinical trials. Such things as proof of product stability and purity are necessary to meet FDA standards before entering later stages of testing and prior to transitioning into a formal acquisition program and conducting Phase 3 pivotal trials for licensure. Activities in the PE may include completion of preclinical animal studies and Phase 2 clinical studies involving human volunteers according to the FDA and EPA requirements.

Blast research efforts in this PE are fully coordinated with the United States Army Natick Soldier Research, Development and Engineering Center. This coordination enables improved body armor design and rations for Soldiers. Additionally, the activities funded in this PE are externally peer reviewed and fully coordinated with all Services as well as other agencies through the Joint Technology Coordinating Groups of the Armed Services Biomedical Research Evaluation and Management (ASBREM) Committee. The ASBREM Committee serves to facilitate coordination and prevent unnecessary duplication of effort within DoD's biomedical research and development community, as well as their associated enabling research areas.

Work funded in this project PE is fully coordinated with efforts undertaken in PE 0602787A.

The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan.

Work in this PE is performed by Walter Reed Army Institute of Research, Silver Spring, MD; US Army Medical Research Institute of Infectious Diseases, Fort Detrick, MD; US Army Research Institute of Environmental Medicine, Natick, MA; US Army Institute of Surgical Research, Fort Sam Houston, TX; US Army Aeromedical

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Research Laboratory, Fort Rucker, AL; the Naval Medical Research Center, Silver Spring, MD; US Army Dental Trauma Research Detachment, Fort Sam Houston, TX; US Army Center for Environmental Health Research and the Armed Forces Institute of Regenerative Medicine, Fort Detrick, MD.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
Previous President's Budget	339,752	71,510	63,808	-	63,808
Current President's Budget	336,741	71,510	68,171	-	68,171
Total Adjustments	-3,011	-	4,363	-	4,363
<ul style="list-style-type: none"> <li>• Congressional General Reductions</li> <li>• Congressional Directed Reductions</li> <li>• Congressional Rescissions</li> <li>• Congressional Adds</li> <li>• Congressional Directed Transfers</li> <li>• Reprogrammings</li> <li>• SBIR/STTR Transfer</li> <li>• Adjustments to Budget Years</li> </ul>					
			4,363	-	4,363

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<b>Exhibit R-2A, RDT&amp;E Project Justification: PB 2012 Army</b>		<b>DATE: February 2011</b>			
<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>R-1 ITEM NOMENCLATURE</b>	<b>PROJECT</b>			
2040: Research, Development, Test & Evaluation, Army BA 3: Advanced Technology Development (ATD)	PE 0603002A: MEDICAL ADVANCED TECHNOLOGY	MM2: MEDICAL ADVANCE TECHNOLOGY INITIATIVES (CA)			
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>			<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>
<b>FY 2010 Accomplishments:</b>					
This is a Congressional Interest Item.					
<b>Title:</b> Multi-Dose Closed Loop pH Monitoring System for Platelets.			1.591	-	-
<b>Description:</b> Funding is provided for the following effort					
<b>FY 2010 Accomplishments:</b>					
This is a Congressional Interest Item.					
<b>Title:</b> Multiplexed Human Fungal Infection Diagnostic.			1.592	-	-
<b>Description:</b> Funding is provided for the following effort					
<b>FY 2010 Accomplishments:</b>					
This is a Congressional Interest Item.					
<b>Title:</b> Musculoskeletal Interdisciplinary Research Initiative.			1.592	-	-
<b>Description:</b> Funding is provided for the following effort					
<b>FY 2010 Accomplishments:</b>					
This is a Congressional Interest Item.					
<b>Title:</b> MAU-TGen North Dangerous Pathogens DNA Forensics Center Upgrades.			1.592	-	-
<b>Description:</b> Funding is provided for the following effort					
<b>FY 2010 Accomplishments:</b>					
This is a Congressional Interest Item.					
<b>Title:</b> Near Infrared Spectroscopy Military Personnel Assessment.			0.796	-	-
<b>Description:</b> Funding is provided for the following effort					
<b>FY 2010 Accomplishments:</b>					
This is a Congressional Interest Item.					
<b>Title:</b> Neural Control of External Devices.			1.990	-	-
<b>Description:</b> Funding is provided for the following effort					