Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Defense Health Agency	Date: May 2017
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0605502DHA *I Small Business Innovation Research (SBIR) Program*

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	168.337	72.915	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
470A: *Small Business Innovation Research (SBIR) (Army)*	161.415	63.404	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
470B: *Small Business Technology Transfer (STTR) Program*	6.922	9.511	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Small Business Innovation Research (SBIR) program was established in the Defense Health Program (DHP), Research, Development, Test and Evaluation (RDT&E) appropriation during FY 2001, and is funded in the year of execution. The objective of the DHP SBIR Program includes stimulating technological innovation, strengthening the role of small business in meeting Department of Defense (DoD) research and development needs, fostering and encouraging participation by minority and disadvantaged persons in technological innovation, and increasing the commercial application of DoD-supported research and development results. The program funds small business proposals chosen to enhance military medical research and information technology research.

The Small Business Technology Transfer (STTR) program was established in the DHP, RDT&E appropriation during FY 2015, and is funded in the year of execution. The STTR Program, although modeled substantially on the SBIR Program, is a separate program and is separately financed. Central to the program is expansion of the public/private sector partnership to include the joint venture opportunities for small businesses and nonprofit research institutions. The unique feature of the STTR program is the requirement for the small business to formally collaborate with a research institution in Phase I and Phase II. STTR's most important role is to bridge the gap between performance of basic science and commercialization of resulting innovations. The mission of the STTR program is to support scientific excellence and technological innovation through the investment of Federal research funds in critical American priorities to build a strong national economy. The programs' goals are to stimulate technological innovation, foster technology transfer through cooperative research and development between small businesses and research institutions, and increase private sector commercialization of innovations derived from federal research and development.

Both the SBIR and STTR programs address the President's multi-agency science and technology priority of innovation in life sciences, biology, and neuroscience through coordination with the Joint Program Committees, which manage multi-Service DHP-sponsored research.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Defense Health Agency					Date: May 2017
Appropriation/Budget Activity 0130: *Defense Health Program* / BA 2: *RDT&E*		R-1 Program Element (Number/Name) PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*			
B. Program Change Summary ($ in Millions)	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	72.915	0.000	0.000	-	0.000
Total Adjustments	72.915	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	72.915	-			

Change Summary Explanation

FY 2016: Realignment to DHP RDT&E, PE 0605502-Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) Program (+ $72.915 million) from the following DHP PEs:
DHP RDT&E, PE 0601101-In-House Laboratory Independent Research (-$0.269 million);
DHP RDT&E, PE 0601117-Basic Operational Medical Research Sciences (-$0.555 million);
DHP RDT&E, PE 0602115-Applied Biomedical Technology (-$4.114 million);
DHP RDT&E, PE 0602787-Medical Technology (AFRRI) (-$0.091 million);
DHP RDT&E, PE 0603002-Advanced Technology (AFRRI) (-$0.023 million)
DHP RDT&E, PE 0603115-Medical Technology Development (-$16.531 million);
DHP RDT&E, PE 0604110-Medical Products Support and Advanced Concept Development (-$7.469 million);
DHP RDT&E, PE 0605013-Information Technology Development (-$1.451 million);
DHP RDT&E, PE 0605023-Integrated Electronic Record (iEHR) (-$.248 million);
DHP RDT&E, PE 0605025-Theater Medical Information Program - Joint (TMIP-J) (-$0.762 million);
DHP RDT&E, PE 0605026-DoD Healthcare Management System Modernization (DHMSM) (-$33.583 million)
DHP RDT&E, PE 0605039- DoD Medical Information Exchange and Interoperability/Defense Medical Information Exchange (DMIX) (-$0.843 million);
DHP RDT&E, PE 0605145-Medical Products and Support Systems Development (-$1.132 million);
DHP RDT&E, PE 0606105-Medical Program-Wide Activities (-$4.475 million);
DHP RDT&E, PE 0607100-Medical Products and Capabilities Enhancement Activities (-$1.304 million).

FY 2017: No Change.

FY 2018: No Change.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency			Date: May 2017
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	Project (Number/Name) 470A / *Small Business Innovation Research (SBIR) (Army)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
470A: *Small Business Innovation Research (SBIR) (Army)*	161.415	63.404	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Defense Health Agency (DHA) Small Business Innovation Research (SBIR) Program can participate in any of the three (FY.1, FY.2, and FY.3) Department of Defense (DoD) SBIR Broad Agency Announcements (BAA). The process begins with a call for topics to the Joint Program Committees (JPCs), multi-Service committees established to manage research, development, test and evaluation for DHA sponsored research. DHA SBIR topics are submitted directly to the US Army Medical Research and Materiel Command (USAMRMC) and then forwarded to the JPCs for review and internal ranking. Topic Authors brief their topics at a Topic Review Meeting attended by DHA Research& Development Directorate (J9) SBIR Program Director (PD) and personnel from the supporting USAMRMC offices. Approved DHA SBIR topics are published in DoD SBIR BAAs. Small businesses submit proposals against topics which are then evaluated by a Technical Evaluation Team (TET) made up of a Team Chief and Technical Evaluators. TETs recommend proposals for selection. All recommended proposals are reviewed by the JPCs and the DHA SBIR PD. Phase I proposal selections are announced and contract negotiations begin. Phase I contracts are awarded up to $150K for 6 months. Follow-on Phase II projects can be awarded up to $1M for 24 months. This process ensures the SBIR program addresses the multi-agency science and technology priority of innovation in life sciences, biology, and neuroscience.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Small Business Innovation Research (SBIR) Program	63.404	0.000	0.000
Description: The program funds small business proposals chosen to enhance military medical research and information technology research. The following reflects the FY16 research area topics sought for proposals. ***FY 2016 Accomplishments:*** For FY 2016, twelve DHP SBIR topics were developed for the 2016.1 DoD SBIR Solicitation. Funding for each topic was based on the technical merits of the proposals submitted. Topics included: 2016.1 DHP SBIR Topic DHP16-001 - Warrior Health Avatar. This DHP SBIR initiative funded research to develop and demonstrate a simulation framework and physiology based modeling tools of a Warfighter body that could enable definite assessment of his/her health status, physical and physiological performance, and injury trajectory by both the user and medical personnel using mobile computing platforms. This effort solicited a total of ten SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by Technical Evaluation Team (TET) evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470A / *Small Business Innovation Research (SBIR) (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
2016.1 DHP SBIR Topic DHP16-002 - Severe Trauma Female Simulation Training System. This DHP SBIR initiative funded research to develop a realistic simulation-based training system to support the development of psychomotor (movement or muscular activity associated with mental processes) skills to treat severe trauma on female casualties at point of injury. This effort solicited a total of ten SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016. 2016.1 DHP SBIR Topic DHP16-003 - Value Based Monitoring of Cycles of Care. This DHP SBIR initiative funded research to develop software algorithms that reuse existing Military Health System data derived from healthcare operations to assess patient health and performance outcomes for condition-specific cycles of care, and their associated costs, for the purpose of measuring value. This effort solicited a total of sixteen SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made August 2016. 2016.1 DHP SBIR Topic DHP16-004 - Automated Vision Tester Technology Development for Aircrew Clinical Vision Screening. This DHP SBIR initiative funded research to develop, demonstrate, and deliver a computer-based, automated vision tester capable of conducting a full range of clinical vision screening procedures for both near and far focus distances. This effort solicited a total of six SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016. 2016.1 DHP SBIR Topic DHP16-005 - Iron Status Determination Point-of-Care Device. This DHP SBIR initiative funded research to develop a point-of-care device that analyzes the serum iron indicators from a limited amount of blood to determine a diagnosis within minutes. This effort solicited a total of seven SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016. 2016.1 DHP SBIR Topic DHP16-006 - Diagnostic Device for Detecting Biomarkers of Early Multi-organ Injury in Saliva. This DHP SBIR initiative funded research to develop a salivary diagnostic system for existing, clinically qualified biomarkers (biological indicators) of toxic (i.e., chemically-induced) organ injury normally detectable in plasma and/or urine in standard clinical practice.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470A / *Small Business Innovation Research (SBIR) (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
This effort solicited a total of 33 SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016. 2016.1 DHP SBIR Topic DHP16-007 - Creating Sterile Water for Injection (SWFI) at/near Point of Injury (POI). This DHP SBIR initiative funded research to develop a hand-held, portable capability to generate small volumes of SWFI in austere locations to reconstitute dried plasma, dehydrated medications, and other freeze dried medicine at or near the POI. This effort solicited a total of 19 SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of four Phase I proposals were selected under this topic. Awards were made by August 2016. 2016.1 DHP SBIR Topic DHP16-008 - Selective Brain Cooling for Traumatic Brain Injury (TBI). This DHP SBIR initiative funded research to develop a selective brain cooling (SBC) device that provides measurable neuroprotective effects after a moderate or severe TBI by cooling the brain during the acute and sub-acute post-injury phase. This effort solicited a total of sixteen SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016. 2016.1 DHP SBIR Topic DHP16-009 - Selective Aortic Arch Perfusion Technologies for Hemorrhage-induced Cardiac Arrest. This DHP SBIR initiative funded research to develop and refine active selective aortic occlusion and perfusion technology that addresses non-compressible torso hemorrhage, hemorrhage-induced traumatic cardiac arrest that is compatible with currently existing extra-corporeal life support systems. This effort solicited a total of three SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016. 2016.1 DHP SBIR Topic DHP16-010 - Filtration Technologies for Bridge Dialysis in Austere Medicine. This DHP SBIR initiative funded research to develop and refine filtration technologies that bind serum potassium in the context of hyperkalemia (above normal serum potassium levels) induced by traumatic injury and acute kidney injury. This effort solicited a total of five SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470A / *Small Business Innovation Research (SBIR) (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
2016.1 DHP SBIR Topic DHP16-011 - Device to Prevent Retained Hemothorax (collection of blood in the space between the chest wall and the lung). This DHP SBIR initiative funded research to develop a device that can replace or work with existing large bore (>28 French) chest tubes to help evacuate or prevent accumulation of blood in the chest space after chest trauma or chest surgery. This effort solicited a total of three SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016. 2016.1 DHP SBIR Topic DHP16-012 - Genitourinary Tissue Repair, Restoration and Protection: Preserving Fertility and Function in Wounded Warriors. This DHP SBIR initiative funded research to develop methods that enable protection, repair and restoration that preserve continence, sexual function, fertility and hormonal balance in male and female Service members. This effort solicited a total of seven SBIR Phase I proposals. In FY 2016, proposals were accepted through the 2016.1 DoD SBIR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards were made by August 2016. ***FY 2017 Plans:*** FY 2017 Plans: For FY 2017, eleven DHA SBIR topics were developed for the 2017.1 DoD SBIR BAA. Funding for each topic was based on the technical merits of the proposals submitted. Topics included: 2017.1 DHA SBIR Topic DHA17-001 - Electro-Textile Medical Simulation. This DHA SBIR initiative will fund research to develop a medical simulation to model the impacts to e-textiles that coincide with bodily injury. Once established, to use the e-textile impact to infer bodily damage. The model will be based on the e-textile work performed by the Services; in particular the Revolutionary Fibers and Textiles Institute located at US Army's Natick Soldier Research Development and Engineering Center (NSRDEC). This effort solicited a total of one SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of one Phase I proposal was selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-002 - Self-Healing Elastomer for Medical Simulation & Training. This DHA SBIR initiative will fund research to develop lifelike synthetic self-healing material suitable for applications such as 3-D printing or continuous			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470A / *Small Business Innovation Research (SBIR) (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
liquid interface production as examples for medical simulation physical trainer applications. It is desired that such simulated tissue enable self-sealing tissue such as vessels (e.g. veins, arteries, etc.) skin, or other simulated tissues/organs that may be punctured, cut (incision), and possibly even excised, to represent the simulation of wound closure and multiple additional uses. This effort solicited a total of ten SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of four Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-003 - Dynamics for Warfighter Avatars with Complete Articulated Anatomy. This DHA SBIR initiative will fund research to design, develop and demonstrate computer software and data structures for adding articulated joints and natural motions to the US Army Research Institute of Environmental Medicine (USARIEM) avatars and create a graphical user interface for planning and activating avatar physical movement. Complete anatomy avatars have a broad future role in advanced training environments providing, for example, 'medically correct' immersive experiences, performance-related physiological modeling studies, and in simulations for the purpose of designing protective armor. This effort solicited a total of six SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of two Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-004 - A Device to Rapidly Detect Coliform Bacteria and Escherichia Coli in Field Water Samples. This DHA SBIR initiative will fund research to develop a field-portable device to rapidly detect viable coliform bacteria and Escherichia coli (E. coli) in water samples. This effort solicited a total of thirty-one SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of four Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-005 - Compression Garment with Embedded Electronics for Ambulatory Health and Performance Monitoring. This DHA SBIR initiative will fund research to develop and demonstrate a functional compression shirt with embedded electronics capable of physiological monitoring. The prototype e-garment should be both comfortable for the user as well as capable of collecting, storing and wirelessly transmitting acquired data with minimal distortion. This system will provide physiological health and performance state information allowing for improved safety and sustained work capacity. The focus of this topic is primarily on the integration necessary to exploit extant and emerging state of the art ultra-low power electronics and other government furnished technologies to produce a functional physiological monitoring system. This effort solicited a total of seventeen SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470A / *Small Business Innovation Research (SBIR) (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of four Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-006 - Development of Thermal Desorption (TD) Tube Sequential Sampler. This DHA SBIR initiative will fund research to develop a thermal desorption (TD) tube sequential sampler to aid in accomplishing comprehensive air sampling on predetermined or automatically initiated timelines to improve the identification of contaminant concentrations at a certain point of time. This effort solicited a total of eight SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of three Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-007 - Noninvasive Monitor of Vascular Volume Fluid Shifts. This DHA SBIR initiative will fund research to develop a working monitor that quantifies serial/continuous measurements of vascular volume components to detect shifts of 2% in less than 1 hour. This effort solicited a total of ten SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of three Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-008 - Self-Aligning Prosthetic Components. This DHA SBIR initiative will fund research to develop and demonstrate an automatic alignment tool for a prosthetic leg. This tool will generate objective measures to determine optimal alignment of the prosthesis and will provide real time feedback to the care provider and patient. This effort solicited a total of ten SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of four Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-009 - Conformable Osteochondral Repair Platforms for Prevention of Post Traumatic Osteoarthritis. This DHA SBIR initiative will fund research to develop an osteochondral repair platform that is conformable to a wide variety of injury geometries without the need for pre-operative customization, that does not rely on any autologous tissue, and that is amenable to scalable manufacturing methods. This effort solicited a total of eleven SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470A / *Small Business Innovation Research (SBIR) (Army)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
were announced in March 2017. A total of four Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-010 - Point of Injury Device to Maintain and Stabilize Moderate-Severe Traumatic Brain Injury (TBI) Casualties. This DHA SBIR initiative will fund research to develop a novel device for the stabilization of moderate to severe brain injury at point of injury/point of need that can be used by first responders in the deployed environment (medics and corpsmen). This effort solicited a total of fourteen SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of three Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.1 DHA SBIR Topic DHA17-011 - Point of Injury Therapy to Maintain and Stabilize Moderate-Severe Traumatic Brain Injury (TBI) Casualties. This DHA SBIR initiative will fund research to develop a novel treatment for the stabilization of moderate to severe brain injury at point of injury/point of need that can be used by first responders in the deployed environment (medics and corpsmen). This effort solicited a total of eight SBIR Phase I proposals. In FY 2017, proposals were accepted through the 2017.1 DoD SBIR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of four Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. ***FY 2018 Plans:*** No funding programmed. The DHA SBIR program is funded in the year of execution.			
Accomplishments/Planned Programs Subtotals	63.404	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Test and evaluate commercially developed prototypes funded by the SBIR program to ensure military and regulatory requirements are met prior to production and fielding, to include Food and Drug Administration licensure and Environmental Protection Agency registration.

E. Performance Metrics

The number of Phase I awards supporting innovative technology development. The number of Phase II and III awards leading to technology transition.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency			Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470B / *Small Business Technology Transfer (STTR) Program*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
470B: *Small Business Technology Transfer (STTR) Program*	6.922	9.511	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Small Business Technology Transfer (STTR) is a program that expands funding opportunities in the federal innovation research and development arena. Central to the program is expansion of the public/private sector partnership to include the joint venture opportunities for small businesses and nonprofit research institutions. The unique feature of the STTR program is the requirement for the small business to formally collaborate with a research institution in Phase I and Phase II. STTR's most important role is to bridge the gap between performance of basic science and commercialization of resulting innovations. The program funds small business proposals that partner with a research institution, are technically meritorious, and enhance Joint Program Committee (JPC) research and development efforts. The DHA STTR Program can participate in any of the three (FY.A, FY.B, and FY.C) Department of Defense (DoD) STTR BAAs. The process begins with a call for topics to the JPCs. DHA STTR topics are submitted directly to US Army Medical Research and Materiel Command (USAMRMC) and then forwarded to the JPCs for review and internal ranking. Topic Authors brief their topics at a Topic Review Meeting attended by the DHA Research& Development Directorate (J9) STTR Program Director (PD)and personnel from the supporting USAMRMC offices. Approved DHA STTR topics are published in the DoD STTR BAA. Small businesses submit proposals against topics which are then evaluated by a Technical Evaluation Team (TET) made up of a Team Chief and Technical Evaluators. TETs recommend proposals for selection. All recommended proposals are reviewed by the JPCs and the DHA STTR PD. Phase I proposal selections are announced and contract negotiations begin. Phase I contracts are awarded up to $150K for 6 months. Follow-on Phase II projects can be awarded up to $1M for 24 months. This process ensures the STTR program addresses the multi-agency science and technology priority of innovation in life sciences, biology, and neuroscience.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Small Business Technology Transfer (STTR) Program	9.511	0.000	0.000
Description: STTR Program offers funding opportunities in federal research and development to small businesses. The program aims to stimulate technological innovation in DoD research and development, strengthen the role of small business in meeting DoD research and development needs, foster and encourage participation by minority and disadvantaged persons in technological innovation, and increase the commercial application of DoD-supported research or research and development results.			
FY 2016 Accomplishments: For FY 2016 (DHP STTR 16.A), one topic was developed for the 2016.A DoD STTR Solicitation. Funding for the topic was based on the merits of responses to the solicitation. The topic included: 2016.A DHP STTR Topic DHP16A-001 - Bio-Mathematical Models of Aggregated Tissues & Organ Properties. This DHP STTR initiative funded research to develop a preliminary framework for a bio-mathematical model to explain how human tissues interact/			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470B / *Small Business Technology Transfer (STTR) Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
behave at their boundaries; develop a mathematical framework for translating this tissue interaction/behavior into predictive mathematical/biomechanical models able to represent tissue property transitions (e.g., muscle to tendon/ligament), aggregated tissues (connective, epithelial, muscular, and nervous), and systems of tissues/organ properties and behaviors. This effort solicited a total of four STTR Phase I proposals. In FY 2016, proposals were accepted through the 2016.A DoD STTR Solicitation pre-released in December 2015. Proposals were received in February 2016 followed by TET evaluations in March 2016. Phase I proposal selections were announced in April 2016. A total of three Phase I proposals were selected under this topic. Awards will be made by August 2016.			
FY 2017 Plans: For FY 2017, six DHA STTR topics were developed for the 2017.A DoD STTR BAA. Funding for each topic was based on the technical merits of the proposals submitted. Topics included: 2017.A DHA STTR Topic DHA17A-001 - Medical Electro-Textile Sensor Simulation. This DHA STTR initiative will fund research to develop a simulator to provide what-if scenarios to aid in developing smart combat uniform sensors and technology to record electromagnetic field activity of the war-fighter. The model will be developed for Joint use and is based on the e-textile work performed by the Services; in particular the Revolutionary Fibers and Textiles Institute located at the U.S. Army's Natick Soldier Research Development and Engineering Center (NSRDEC). This effort solicited a total of three STTR Phase I proposals. In FY 2017, proposals were accepted through the 2017.A DoD STTR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of three Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.A DHA STTR Topic DHA17A-002 - Smart Morphing Medical Moulage. This DHA STTR initiative will fund research to develop an advanced medical moulage technologies that can simulate an injury or pathology by morphing through a series of clinical states to provide stimulation of different senses to the trainee during a training scenario to confirm progression of the injury / pathology and/or to understand if iatrogenic errors or pathologies occurred due to treatment provided. As an example of a potential use case, a military medical specialist training for point-of-injury care might perform a lifesaving intervention and see the long-term impacts of that intervention. This effort solicited a total of five STTR Phase I proposals. In FY 2017, proposals were accepted through the 2017.A DoD STTR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of three Phase I proposals were selected under this topic. Awards will be made by 30 September 2017.			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470B / *Small Business Technology Transfer (STTR) Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
2017.A DHA STTR Topic DHA17A-003 - Principled Design of an Augmented Reality Trainer for Medics. This DHA STTR initiative will fund research to design, prototype, and validate an augmented reality training system that provides deployed medics with refresher training on common, life-critical procedures of combat medicine. This effort solicited a total of fifteen STTR Phase I proposals. In FY 2017, proposals were accepted through the 2017.A DoD STTR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of four Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.A DHA STTR Topic DHA17A-004 - Non-invasive Telemetric Assessment of Gut Microbiota Activity in Situ. This DHA STTR initiative will fund research to develop and validate an ingestible telemetric device for the non-invasive in vivo measurement of bacterial metabolite production within the human gastrointestinal (GI) tract. This effort solicited a total of two STTR Phase I proposals. In FY 2017, proposals were accepted through the 2017.A DoD STTR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of one Phase I proposal was selected under this topic. Awards will be made by 30 September 2017. 2017.A DHA STTR Topic DHA17A-005 - Wireless Non-Invasive Advanced Control of Microprocessor Prostheses and Orthoses. This DHA STTR initiative will fund research to develop and demonstrate a non-invasive technology to wirelessly control a microprocessor prosthetic foot or hand, or upper or lower limb microprocessor controlled orthosis. The technology must be able to be used within a prosthetic socket and extend beyond the socket for patients who do not use a socket (e.g. osseointegration) and to harness proximal information (e.g. knee, thigh, and hip information for patients with transtibial amputation). This effort solicited a total of two STTR Phase I proposals. In FY 2017, proposals were accepted through the 2017.A DoD STTR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of two Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. 2017.A DHA STTR Topic DHA17A-006 - Medical Device to Assess the Viability of Tissue Prior to Skin Grafting. This DHA STTR initiative will fund research to develop, design, and demonstrate new technology that will allow surgeons to precisely, quickly, and objectively assess the viability of tissue in order to evaluate the effectiveness of the debridement (excision) of necrotic tissue prior to skin grafting. This effort solicited a total of eleven STTR Phase I proposals. In FY 2017, proposals were accepted through the 2017.A DoD STTR BAA pre-released in November 2016. Proposals were received in February 2017 followed by Technical			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Defense Health Agency		Date: May 2017
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0605502DHA / *Small Business Innovation Research (SBIR) Program*	**Project (Number/Name)** 470B / *Small Business Technology Transfer (STTR) Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Evaluation Team (TET) evaluations in March 2017. Phase I proposal selections were announced in March 2017. A total of three Phase I proposals were selected under this topic. Awards will be made by 30 September 2017. ***FY 2018 Plans:*** No funding programmed.			
Accomplishments/Planned Programs Subtotals	9.511	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Test and evaluate commercially developed prototypes funded by the STTR program to ensure military and regulatory requirements are met prior to production and fielding, to include Food and Drug Administration licensure and Environmental Protection Agency registration.

E. Performance Metrics

The number of Phase I awards supporting innovative technology development. The number of Phase II and III awards leading to technology transition.