

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology					
<i>COST (In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	223999	73252	16512	13491	16000	19380	21036	Continuing	Continuing
D800 Telemedicine Testbed	0	0	1855	1657	1984	2922	3402	Continuing	Continuing
D804 Prostate Cancer Research	48155	2943	0	0	0	0	0	0	51098
D806 Breast Cancer Research	130019	0	0	0	0	0	0	0	130019
D810 Industrial Base/Infectious Disease Vaccines and Drugs	8148	7887	8069	8636	9071	9584	10050	Continuing	Continuing
D815 National Medical Testbed	7704	0	0	0	0	0	0	0	7704
D818 Advanced Cancer Detection	0	3433	0	0	0	0	0	0	3433
D819 Field Medical Protection and Human Performance Enhancement Non-Systems - Advanced Development	0	198	192	553	571	1477	1649	Continuing	Continuing
D840 Combat Injury Management	2335	5823	2421	2645	4374	5397	5935	Continuing	Continuing
D923 Prostate Diagnostic Imaging	7223	7356	0	0	0	0	0	0	14579
D929 Artificial Lung Technology	821	981	0	0	0	0	0	0	1802
D934 Volume Angiocat	3853	5885	0	0	0	0	0	0	9738
D940 Epidermolysis Bullosa	0	981	0	0	0	0	0	0	981
D941 Diabetes Research	4333	13733	0	0	0	0	0	0	18066
D945 Breast Cancer Stamps	1778	0	0	0	0	0	0	0	1778
D954 Digital X-Ray	3852	0	0	0	0	0	0	0	3852

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 2000
---	------------------------------

BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603002A Medical Advanced Technology
--	---

COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D955 Assistive Technology	5778	0	0	0	0	0	0	0	5778
D969 Alcoholism Research	0	6866	0	0	0	0	0	0	6866
D970 Enzymatic Wound Disinfectant	0	1962	0	0	0	0	0	0	1962
D971 HIV Research	0	9809	0	0	0	0	0	0	9809
D972 Laser Vision Correction	0	1962	0	0	0	0	0	0	1962
D973 Recombinant Vaccine Research	0	1962	0	0	0	0	0	0	1962
D974 Smart Aortic Research	0	1471	0	0	0	0	0	0	1471
D975 Emerging Infectious Diseases	0	0	3975	0	0	0	0	0	3975

A. Mission Description and Budget Item Justification: The primary goal of this program is to provide, with minimum adverse effects, maximum soldier survivability and sustainability on the integrated battlefield as well as in military operations other than war. The work in this program element is consistent with the Army Science and Technology Master Plan, the Army Modernization Plan, and Project Reliance. This program element is managed primarily by the U.S. Army Medical Research and Materiel Command. This program element also serves to track funds for Congressionally directed medical research in projects 804, 806, 815, 818, 923, 929, 934, 940, 941, 945, 954, 955, 969, 970, 971, 972, 973, and 974. This program element funds advanced technology development for the DOD core Vaccine and Drug Program, field medical protective devices, and combat injury management. These last two projects focus on diagnostic imaging devices, clinical studies of combat casualty care treatment modalities, and nutrition and soldier performance enhancement. The DOD core Vaccine and Drug Program provides, in accordance with Food and Drug Administration (FDA) regulations, drugs and vaccines for development that are effective protectants, treatments, and antidotes against military disease threats. Pilot and standard lots of candidate pharmaceutical-grade drugs, antidotes and vaccines are produced.

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 2000
---	------------------------------

BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603002A Medical Advanced Technology
---	--

B. Program Change Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (<u>FY 2000/2001</u> PB)	229325	10539	12591
Appropriated Value	230862	74539	
Adjustments to Appropriated Value			
a. Congressional General Reductions	-1537		
b. SBIR / STTR	-6021		
c. Omnibus or Other Above Threshold Adjustments	1778	-295	
d. Below Threshold Reprogramming	-167		
e. Rescissions	-916	-992	
Adjustments to Budget Years Since <u>FY 2000/2001</u> PB			+3921
Current Budget Submit (<u>FY 2001</u> PB)	223999	73252	16512

Change Summary Explanation: Funding - Adjustment in FY 2001 is a one time adjustment in support of D975- Emerging Infectious Diseases.

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603002A Medical Advanced Technology	PROJECT D800
---	--	------------------------

COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D800 Telemedicine Testbed	0	0	1855	1657	1984	2922	3402	Continuing	Continuing

Mission Description and Justification: Primary goals are to demonstrate capabilities for real-time monitoring and assessment of soldiers, remote identification of injured personnel, simulations for training of medical personnel, and decision support and remote intervention for medical personnel. This program element funds development, evaluation, and demonstration of prototypes of advanced technologies that will incorporate health awareness into battlespace awareness, provide force protection, reduce time to critical intervention for injured personnel, improve the skills and proficiency of medical personnel, and improve the quality of emergency and surgical care throughout the battlespace.

- FY 1999 Accomplishments:** Project not funded in FY 1999.
- FY 2000 Planned Program:** Project not funded in FY 2000.
- FY 2001 Planned Program:**
- 1855 - Develop and test a seamless telemedicine network that connects health care providers in the front lines with tertiary medical treatment centers under the Joint Medical Operations - Telemedicine Advanced Concept Technology Demonstration Project. This program element is a new start.
- Total 1855

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D804	
COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D804 Prostate Cancer Research	48155	2943	0	0	0	0	0	0	51098
<p>Mission Description and Justification: By Congressional direction, the purpose of this appropriation is to continue the peer-reviewed Prostate Cancer Research Program in FY 1999 and to provide 1-year of funding for research at the Gallo Cancer Center in FY 2000.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 48155 - Received 2-year funds in November 1998. Published a program announcement in December 1998. <ul style="list-style-type: none"> - Conducted scientific peer review and programmatic review for training grants and made initial awards by May 1999. - Conducted scientific peer review and programmatic review for idea and new investigator grants by August 1999 and began award negotiations in September 1999. - Conducted peer review for prostate cancer center grants in September 1999 and programmatic review in October 1999. Recommended a total of 107 awards for funding in all categories. <p>Total 48155</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 2864 - Solicit a proposal for the FY 2000 Gallo Cancer Center project when funding arrives. Scientifically peer review and award the grant by September 2000. Make initial awards in January 2000 for the FY 1999 cancer center grants. <ul style="list-style-type: none"> - Complete the program for the 107 FY 1999 awards recommended for funding in all categories and make final awards by September 2000. Received funds in January 2000 and released a program announcement for the FY 2000 Prostate Cancer Research Program. Receive training proposals in March 2000 and all other proposals in April 2000. - Complete peer and programmatic review by September 2000. Peer-reviewed prostate cancer research funded within the Defense Health Program in FY 2000. • 79 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 2943</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>									

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D806		
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D806 Breast Cancer Research	130019	0	0	0	0	0	0	0	130019	
<p><u>Mission Description and Justification:</u> By Congressional direction, the purpose of this appropriation is to continue the peer-reviewed Breast Cancer Research Program.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 130019 - Received 2-year funds in January 1999 for the FY 1999 program. Held vision setting meeting in January 1999. Published a program announcement in March 1999. - Received 1,281 proposals by June 1999. - Conducted scientific peer review in September 1999 and programmatic review in November 1999. Complete the awards for the 397 FY 1999 proposals recommended for funding by September 2000. <p>Total 130019</p> <p>FY 2000 Planned Program: Program funded with Defense Health Program dollars in FY 2000.</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D806			Page 6 of 29 Pages			Exhibit R-2A (PE 0603002A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
---	------------------------------

BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603002A Medical Advanced Technology	PROJECT D810
---	--	------------------------

COST (<i>In Thousands</i>)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D810 Industrial Base/Infectious Disease Vaccines and Drugs	8148	7887	8069	8636	9071	9584	10050	Continuing	Continuing

Mission Description and Justification: The primary goal of this program is the development of medical countermeasures for naturally occurring diseases that are militarily significant due to their potential impact on military operations. Development of medical countermeasures will protect the force from infection and sustain operations by preventing hospitalization and evacuations from the theater of operations. Major contractors are the University of California, San Francisco, CA; SRI, Inc., Menlo Park, CA; Starks Associates, Inc., Buffalo, NY; ASH Stevens, Inc., Detroit, MI; and Research Triangle Associates, Research Triangle Park, NC.

FY 1999 Accomplishments:

- 1631 - Conducted the first human evaluation of a vaccine for the prevention of hepatitis E disease and showed safety and immunogenicity.
 - Conducted field testing and evaluation of a scrub typhus rapid diagnostic device, necessary for its future licensure.
 - Completed a Phase 1 safety and immunogenicity study comparing three candidate vaccine formulations for prevention of bacterial meningitis due to Group B *Neisseria meningitidis*.
 - Completed multisite field testing of malaria diagnostic test, necessary for advancing this device to advanced development.
 - Conducted multisite field testing of device to detect *Plasmodium falciparum* and *Plasmodium vivax* malaria in mosquitoes and determined that this device shows promise but requires further development to be a valuable tool for preventive medicine personnel; conducted limited field trials of a *Shigella* diagnostic test for cases of diarrhea.
- 786 - Completed preclinical testing demonstrating that a candidate DNA vaccine protected hamsters against infection by hantaviruses.
 - Completed comparative evaluation of rapid dengue antibody tests and determined the best test for clinical use in future vaccine field trials, necessary to support studies of vaccine effectiveness.
 - Completed immunogenicity trials of modified dengue DNA-vaccine candidates against all four dengue serotypes in mice, demonstrating an increased immune response resulting from the modifications; demonstrated that the dengue serotype 1 DNA vaccine candidate protected monkeys from experimental challenge.
- 1337 - Conducted concept exploration on vaccines for common causes of bacterial diarrhea.
 - Conducted a Phase 1 trial of a candidate *Shigella sonnei* vaccine, demonstrating that this vaccine is safe and immunogenic in humans.
 - Assessed safety, immunogenicity, and protection against diarrhea of candidate *Campylobacter* vaccines in animal models, necessary preclinical studies before these vaccines can progress to human clinical studies.
 - Completed preclinical testing, including characterization and safety testing in mice of four candidate vaccines against enterotoxigenic *Escherichia coli* (ETEC); manufacturing conditions were determined so that sufficient quantities of these vaccines can be produced with quality acceptable for use in human testing.
- 4394 - Conducted concept exploration on vaccines and drugs to prevent or treat malaria.

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)		DATE February 2000
BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603002A Medical Advanced Technology	PROJECT D810
<p>FY 1999 Accomplishments: (continued)</p> <ul style="list-style-type: none"> - Completed good manufacturing practices (GMP) manufacturing of a five-gene DNA vaccine. Completed the preclinical safety and performed immunogenicity tests for submission of an Investigational New Drug (IND) application to the Food and Drug Administration (FDA), necessary to proceed to human clinical evaluation. - Analyzed surveillance data and drafted a report for Commanders in Chief on the threat of drug-resistant malaria to military operations worldwide, including recommendations for prophylaxis against malaria, treatment of soldiers with malaria, and monitoring treated soldiers to assure they have been cured, important for effecting efficacious use of available anti-malarial drugs. - Completed preclinical studies necessary for application to the FDA for IND status for a new drug (artelinic acid) to treat severe and complicated malaria. <p>Total 8148</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 4494 - Conduct concept exploration on vaccines and drugs to prevent or treat malaria. <ul style="list-style-type: none"> - Analyze clinical samples from malaria vaccine trials for specific immune responses to component antigens, necessary for defining measures of vaccine effectiveness; develop a method for inpatient <i>P. vivax</i> sporozoite challenge for clinical vaccine studies. - Produce <i>P. falciparum</i> sporozoites and other reagents, necessary for preclinical evaluation of potential vaccine candidates and conduct preclinical studies of candidate vaccines to support an IND application; perform preclinical toxicology, pharmacokinetic, absorption, disposition, biotransformation, and excretion studies of new drugs, necessary clinical studies before proceeding to clinical studies of safety and efficacy. - Prepare gram and kilogram quantities of drug candidates and prepare drug delivery systems under Good Laboratory Practices (GLP)/GMP, necessary for clinical study of candidate antimalarial drugs. - Conduct a surveillance program for drug-sensitivity patterns of malaria from diverse geographic regions, necessary for defining focus and direction of new drug discovery and development and for advising U.S. forces regarding best effective strategies for drug prevention and treatment of malaria. • 1364 - Conduct concept exploration on vaccines for common causes of bacterial diarrhea. <ul style="list-style-type: none"> - Evaluate immune responses generated by candidate <i>Shigella</i> vaccines, necessary for defining standards and measures of vaccine efficacy in clinical efficacy trials; develop, manufacture, and evaluate candidate <i>Shigella</i> vaccines and diagnostic techniques. - Characterize parameters of ETEC protection in humans, necessary for evaluating vaccine efficacy and test candidate ETEC vaccines in a human challenge model to select vaccine candidate for advanced development. - Study the relative roles of cellular, humoral, and mucosal immunity in recovery from acute <i>Campylobacter jejuni</i> disease and in long-term protective immunity, necessary for design and evaluation of vaccine candidates. • 1063 - Conduct concept exploration on vaccines to prevent hepatitis E, scrub typhus, and Group B meningococcus; on new diagnostic tests for diseases of military interest for incorporation into the common diagnostic platform for biological and infectious threats; and on insect vector control systems. <ul style="list-style-type: none"> - Seek and test new repellent candidates that will outperform the current repellent (DEET) in durability, effectiveness, and user-acceptability. - Perform advanced technology development of a dengue Vector Control System, an integrated system of tools and information that can be physically packaged for a Preventive Medicine Detachment (or service equivalent). 		
Project D810	Page 8 of 29 Pages	Exhibit R-2A (PE 0603002A)

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)		DATE
BUDGET ACTIVITY 3 - Advanced Technology Development		February 2000
PE NUMBER AND TITLE 0603002A Medical Advanced Technology		PROJECT D810
FY 2000 Planned Program: (continued)		
•	807 - Conduct concept exploration on vaccines for viral diseases that may interrupt military operations: dengue, hemorrhagic fevers, hantavirus infections. - Develop test beds for efficacy evaluations of candidate hemorrhage fever vaccines and protective strategies in human, at-risk populations. Improve capability to rapidly identify, assess risk, and formulate control strategies for hantaviruses, including conduct of serosurveys of rodents or humans to detect hantaviruses.	
•	159 - Small Business Innovative Research/Small Business Technology Transfer Research Programs.	
Total	7887	
FY 2001 Planned Program:		
•	5235 - Conduct concept exploration on vaccines and drugs to prevent or treat malaria. - Conduct preclinical studies of a <i>P. vivax</i> malaria vaccine, necessary for advancing to human clinical study. - Validate the <i>P. vivax</i> experimental challenge model, necessary for Phase 1/2 clinical efficacy studies of candidate malaria vaccines to prevent <i>P. vivax</i> infection. - Transition to advanced development at least one new drug for oral treatment of multidrug-resistant malaria. - Complete evaluation of prototype kits and other methodologies for determining with greater than 90 percent accuracy the degree of malaria parasites' resistance to therapeutic agents, necessary to assure the veracity of resistance surveillance data and decision making with regard to the use of available drugs. - Submit IND to FDA for a drug that will effect radical cure of malaria.	
•	1377 - Conduct concept exploration on vaccines for common causes of bacterial diarrhea. - Transition to advanced development a <i>Shigella dysenteriae</i> candidate vaccine with potential to protect 80 percent of immunized personnel. - Transition to advanced development an oral microencapsulated ETEC vaccine with potential to protect 80 percent of immunized personnel from traveler's diarrhea. - Conduct animal studies to determine safety and immunogenicity of combined enteric (<i>Campylobacter</i> , <i>Shigella</i> , and ETEC) vaccine formulations, necessary preclinical studies for advancing candidate vaccines to human clinical studies.	
•	836 - Conduct concept exploration on vaccines to prevent hepatitis E, scrub typhus, and Group B meningococcus; on new diagnostic tests for diseases of military interest for incorporation into the common diagnostic platform for biological and infectious threats; and on insect vector control systems. - Evaluate the nucleic acid analysis system platform performance characteristics before transitioning to advanced development and clinical evaluation. - Conduct Milestone I's for a monovalent Group B meningococcal vaccine and an insect repellent to replace DEET - Conduct Phase 1 studies of multivalent vaccine candidates for prevention of bacterial meningitis due to Group B <i>N. meningitidis</i> , necessary for advancing candidate vaccine to Milestone I and advanced development.	
•	621 - Conduct concept exploration on vaccines for viral diseases capable of interrupting military operations. - Conduct advanced technology development on a DNA vaccine to prevent dengue.	
Total	8069	

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D815		
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D815 National Medical Testbed	7704	0	0	0	0	0	0	0	7704	
<p><u>Mission Description and Justification:</u> By Congressional direction, the purpose of this project is to develop initial research models for a national medical testbed that display measurable improvements in cost and effectiveness in many areas of health care delivery.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 7704 - Completed proposal review panel in September 1999 for supported studies by the Loma Linda Medical Center. Fields of interest included management of trauma and shock; modalities that may improve the rate of tissue and bone healing as well as the regulation of growth, healing, and bone restructuring; and development and testing of new medical instrumentation. <p>Total 7704</p> <p>FY 2000 Planned Program: Project not funded in FY 2000.</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D815			<i>Page 10 of 29 Pages</i>				Exhibit R-2A (PE 0603002A)			

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D818		
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D818 Advanced Cancer Detection	0	3433	0	0	0	0	0	0	3433	
<p><u>Mission Description and Justification:</u> By Congressional direction, the purpose of this appropriation is only for Advanced Cancer Detection.</p> <p>FY 1999 Accomplishments: Project funded under program element 0602787, project 949 in FY 1999.</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 3341 - Develop with the University of South Florida a scientifically meritorious proposal for the appropriation for the FY 1999 and FY 2000 programs. • 92 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 3433</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D818			<i>Page 11 of 29 Pages</i>			Exhibit R-2A (PE 0603002A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D819		
COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D819	Field Medical Protection and Human Performance Enhancement Non-Systems - Advanced Development	0	198	192	553	571	1477	1649	Continuing	Continuing
<p>Mission Description and Justification: This project supports laboratory validation studies and field demonstrations focused on soldier protection, sustainment, and enhancement associated with soldiers operating, wearing, and consuming materiel systems in all climatic and operational conditions. Specific support includes medical development of laser eye protection technologies and laser bioeffects treatment, environmental health monitoring methods to link soldier physiological status with climatic and environmental conditions, methods to enhance sleep and alertness during continuous/sustained operational scenarios, nutritional strategies to enhance soldier mental and physiological performance, and medical protection from vibration and repeated shock hazards arising from the operation of combat vehicle and aircraft systems and rapid test kits for toxic industrial and agricultural chemicals.</p> <p>FY 1999 Accomplishments: Project not funded in FY 1999.</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 193 - Conduct selection of the best technology to detect unhealthy concentrations of coliform bacteria and toxic agricultural pesticides as defined by Department of Defense standard samples within 4 hours. • 5 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 198</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 192 - Continue downselection of best rapid water microbiological test kit technologies. <p>Total 192</p>										
Project D819		Page 12 of 29 Pages				Exhibit R-2A (PE 0603002A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)	DATE February 2000
--	------------------------------

BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603002A Medical Advanced Technology	PROJECT D840
---	--	------------------------

COST (<i>In Thousands</i>)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D840 Combat Injury Management	2335	5823	2421	2645	4374	5397	5935	Continuing	Continuing

Mission Description and Justification: This project funds prototypes of nonsystem-specific medical materiel items for far-forward medical management of shock and trauma and for casualty resuscitation including preclinical testing of large standard lots of candidate compounds and equipment to obtain data necessary for Food and Drug Administration (FDA) approval for human use. A major contractor is the University of North Carolina, Chapel Hill, NC.

FY 1999 Accomplishments:

- 757 - Completed a study of blood loss and hemodynamic changes after treatment of severe liver injury with fibrin foam to assess hemostatic capability of foam formulation.
- Continued a study to assess arterial pressure at which rebleeding occurs to develop guidelines for optimal resuscitation pressure endpoint. Developed novel methods to evaluate platelet membrane fluidity during storage.
 - 711 - Completed a study of freeze-dried vascular allografts in an animal model to determine efficacy of these allografts as vascular grafts. Investigated dermal replacement materials in skin graft models and determined that they appear to be incorporated in host tissue and to enhance wound healing.
- Completed study of biomechanical characteristics of self-drilling/tapping external fixator half pins for bone fracture repair. Completed an analysis of in vivo strength and healing characteristics of metallic and bioabsorbable suture anchors in an animal model.
 - 217 - Developed an experimental model that combines traumatic brain injury with hypoxia that will be used as a sensitive test for potential therapeutics.
 - 650 - Funded development of LSTAT (Life Support for Trauma and Transport).
- Developed a prototype field dental unit with significantly reduced weight and cube, and undertook limited field testing.
- Developed a warzone expedient electric dental handpiece for clinical use.
- Total 2335

FY 2000 Planned Program:

- 3408 - Continue development of LSTAT.
- Develop and evaluate a tourniquet that can be applied one-handed.
- Document the adequacy of inhaled anesthetic output from a draw-over anesthesia machine when used in combination with a transport ventilator.
- 1293 - Continue clinical testing of 10-week red blood cell storage solution to assess safety and efficacy.
- Continue preclinical testing of fibrin foam formulations in animal models of hemorrhage to assess hemostatic efficacy.
- Start Phase 1 clinical testing of polynitroxylated albumin to assess safety.
- 971 - Establish a cytofluorometric method to evaluate combined therapies to inhibit cellular inflammation after hemorrhage and reperfusion. Begin testing of methods for the early diagnosis of limb ischemia in patients with burns to the extremities.
- Continue testing neuroprotective drugs in animal models to assess efficacy; continue to evaluate wound repair biologics.

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)		DATE February 2000
BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603002A Medical Advanced Technology	PROJECT D840
<p>FY 2000 Planned Program: (continued)</p> <ul style="list-style-type: none"> - Evaluate modes of failure of bioabsorbable versus metallic soft tissue anchors in knee joints. Investigate microencapsulated anti-inflammatory dental pulp-capping agents to enhance return to duty in far-forward locations. • 151 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 5823</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 2421 - Test commercial off-the-shelf oxygen carrier solutions in austere environments to assess suitability for military use. - Conduct Milestone I to transition 10-week red blood cell storage solution to advanced development. - Develop advanced field dressing incorporating ease of use, air tight seal, and advanced materials. - Transition fibrin foam hemostatic agent to Phase 1 clinical trials. - Transition anticaries and antiplaque peptides to Phase 1 clinical trials. - Perform preclinical trials of antisense DNA as a therapy against excess mucus secretion after smoke inhalation. - Conduct preclinical trials of lead neuroprotective and cardiovascular protective antioxidant compounds. <p>Total 2421</p>		
Project D840	<i>Page 14 of 29 Pages</i>	Exhibit R-2A (PE 0603002A)

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D923	
COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D923 Prostate Diagnostic Imaging	7223	7356	0	0	0	0	0	0	14579
<p>Mission Description and Justification: By Congressional direction, continue funding the Center for Prostate Disease Research at the Walter Reed Army Medical Center.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 7223 - Continued clinical research efforts at Walter Reed Army Medical Center for Prostate Disease Research comparing efficacy of treatment options for patients. Identified screening guidelines for high-risk populations. <ul style="list-style-type: none"> - Evaluated molecular biomarkers to monitor patient progress. - Developed a comprehensive clinical research database. - Developed an extensive library of prostate cancer specimens for genetic studies. Discovered a novel gene involved in prostate cancer. <p>Total 7223</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 7158 - Receive funds in January 2000. Ensure scientific peer review of research conducted at Walter Reed Army Medical Center for Prostate Disease Research and transfer funding to continue efforts. <ul style="list-style-type: none"> - Study epidemiology of prostate cancer patients to determine possible racial and socioeconomic impacts on prostate cancer's presentation, progression, and response to therapy. - Study hormonal therapy and chemotherapy of prostate cancer inpatients who do not respond well to usual treatments of surgery and radiation. • 198 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 7356</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>									
Project D923	Page 15 of 29 Pages				Exhibit R-2A (PE 0603002A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D929	
<i>COST (In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D929 Artificial Lung Technology	821	981	0	0	0	0	0	0	1802
<p><u>Mission Description and Justification:</u> By Congressional direction, the purpose of this annual program is to develop an intravenous membrane-based oxygenator to enable oxygen delivery to patients with pulmonary insufficiency.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 821 - Completed initial acute and long-term (21 days) testing of intravenous membrane oxygenator patency and function in an animal model of pulmonary insufficiency. <p>Total 821</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 955 - Awaiting proposal submission for evaluation to be followed by contract award. • 26 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 981</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>									
Project D929			<i>Page 16 of 29 Pages</i>			Exhibit R-2A (PE 0603002A)			

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D934	
COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D934 Volume Angiocat	3853	5885	0	0	0	0	0	0	9738
<p>Mission Description and Justification: By Congressional direction, this project will fund development of a multimodality platform integrated into a single device that will perform many aspects of diagnostic studies.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 3853 - Developed sequential rapid slice or high speed computer tomography (HSCT) scanning to provide true real-time and true volume 4D imaging. - Developed state-of-the-art CT spatial resolution, superior tissue contrast resolution, and improved signal-to-noise ratio with a photon flux rate 10X that of electron beam computer tomography (EBCT) or HSCT. - Provided markedly superior temporal resolution with routine exposure times of 50-100 ms compared to about 1 sec in current state-of-the-art HSCT. - Created a single rapid diagnostic examination that will replace 2-4 examinations that are currently being performed. - Integrated stereo fluorography and high resolution digital radiography into the 3D/4D volume imaging for combined digital angiography, mammography, or 3D fluoroscopic guidance of instrumentation. <p>Total 3853</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 5727 - Awaiting proposal submission for evaluation to be followed by contract award. • 158 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 5885</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>									
<p>Project D934</p> <p align="center">Page 17 of 29 Pages</p> <p align="right">Exhibit R-2A (PE 0603002A)</p>									

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D940	
<i>COST (In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D940 Epidermolysis Bullosa	0	981	0	0	0	0	0	0	981
<p><u>Mission Description and Justification:</u> By Congressional direction, the purpose of this Congressional Special Interest Research Program (CSIRP) is to develop a research effort utilizing the inheritable disease Epidermolysis Bullosa (EB) as a model for vesicant-induced skin injury.</p> <p>FY 1999 Accomplishments: Received one million dollars in both FY 1998 and FY 1999 to initiate the EB research effort. Received proposals in response to a request for proposals, reviewed proposals for scientific merit by an extramural peer review panel, and ranked proposals by scientific and program relevance. Awarded FY 1998 funds to Dr. John F. Klement, Thomas Johnson University (Cooperative Agreement) and awarded FY 1999 Defense Health Program funds to Dr. Angela Christiano, Columbia University (Grant).</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 955 - Award the FY 2000 appropriation based on the outcome of evaluation of proposals received in response to a new RFP. The principal objectives of this research program are to identify common molecular blistering mechanisms between EB and HD-induced blistering and to develop potential therapeutic targets to accelerate wound healing. • 26 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 981</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>									
Project D940			<i>Page 18 of 29 Pages</i>			Exhibit R-2A (PE 0603002A)			

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D941		
COST (In Thousands)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D941	Diabetes Research	4333	13733	0	0	0	0	0	0	18066
<p>Mission Description and Justification: By Congressional direction, the purpose of this project is to conduct diabetes research.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 555 - Awarded funds to the Children's Hospital in Pittsburgh for exploring the potential link between the Coxsackievirus B (or CVB) causing the body to react and potentially trigger the onset of juvenile diabetes. • 3778 - Implemented Phase 2 program at Joslin Diabetes Center: <ul style="list-style-type: none"> - Developed retinal imaging technology that accurately diagnoses the clinical level of retinal damage due to diabetes, which correlates with systemic diabetes. This will allow physicians to monitor a patient remotely by sending the image of the patient's retina to the physician, thereby eliminating patient travel and logistics expenses. - Introduced Diabetes Outpatient Intensive Treatment Program to educate the diabetic population on lifestyle adjustments to prevent debilitating secondary complications. <p>Total 4333</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 13363 - Awaiting proposal submission for evaluation to be followed by contract award. Complete research funded in FY 1999. • 370 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 13733</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D941		Page 19 of 29 Pages				Exhibit R-2A (PE 0603002A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D945	
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D945 Breast Cancer Stamps	1778	0	0	0	0	0	0	0	1778
<p>Mission Description and Justification: By Congressional direction from the Stamp Out Breast Cancer Act, funds are provided for the Department of Defense (DOD) Breast Cancer Research Program.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 1778 - Published a program announcement in March 1999. Conducted scientific peer review. <p>Total 1778</p> <p>FY 2000 Planned Program: Complete all FY 1999 awards by September 2000. Based on sales of the breast cancer stamp and the legislation that authorized the stamp, DOD expects two payments of an unknown amount from the U.S. Postal Service in FY 2000.</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>									
Project D945			Page 20 of 29 Pages			Exhibit R-2A (PE 0603002A)			

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D954		
COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D954 Digital X-Ray	3852	0	0	0	0	0	0	0	3852	
<p>Mission Description and Justification: By Congressional direction, this program funds development of a prototype portable digital x-ray for field and fixed facility applications.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> 3852 - Awarded contract in January 2000 to adapt Apollo clinical x-ray technology for immediate military use, including providing a feasibility prototype for military evaluation. This advanced technology will provide ability to generate x-ray images closer to the site of injury, the ability to transmit data for remote interpretation, the elimination of chemicals or auxiliary equipment for image generation, superior image quality, and the possibility of storing image in a digital dog tag. <p>Total 3852</p> <p>FY 2000 Planned Program: Project not funded in FY 2000.</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D954			Page 21 of 29 Pages				Exhibit R-2A (PE 0603002A)			

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D955	
COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D955 Assistive Technology	5778	0	0	0	0	0	0	0	5778
<p>Mission Description and Justification: By Congressional direction, this program funds the research, development, and evaluation of technologies (initially developed for military and space purposes) that can be used to improve the lives of Americans with disabilities.</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> 5778 - Committed funds to National Rehabilitation Hospital Assistive Technology Center. - Peer-reviewed projects are in the final stages of being awarded. This contract will help expand efforts to transfer technology from both military and space programs to civilian healthcare, targeting disabled Americans so that treatment and care of these individuals can be maintained and improved. <p>Total 5778</p> <p>FY 2000 Planned Program: Project not funded in FY 2000.</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>									
Project D955			Page 22 of 29 Pages				Exhibit R-2 (PE 0603002A)		

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D969		
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D969 Alcoholism Research	0	6866	0	0	0	0	0	0	6866	
<p><u>Mission Description and Justification:</u> By Congressional direction, the purpose of this project is to research alcohol abuse and alcohol-related behaviors in military personnel.</p> <p>FY 1999 Accomplishments: Project not funded in FY 1999.</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 6682 - Determine the environmental contexts, psychological dispositions, and organic factors that lead to alcohol abuse. <li style="padding-left: 20px;">- Develop intervention programs to promote behaviors that reduce alcohol abuse. • 184 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 6866</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D969			Page 23 of 29 Pages				Exhibit R-2A (PE 0603002A)			

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D970		
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D970 Enzymatic Wound Disinfectant	0	1962	0	0	0	0	0	0	1962	
<p><u>Mission Description and Justification:</u> By Congressional direction, the purpose of this program is to establish a process to select medical research projects of clear scientific merit and direct relevance to military health including enzymatic wound disinfectants.</p> <p>FY 1999 Accomplishments: Project not funded in FY 1999.</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 1909 - Awaiting proposal submission for evaluation to be followed by contract award. • 53 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 1962</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D970			<i>Page 24 of 29 Pages</i>			Exhibit R-2A (PE 0603002A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D971	
COST (In Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D971 HIV Research	0	9809	0	0	0	0	0	0	9809
<p>Mission Description and Justification: By Congressional direction, the purpose of this program is to perform human immunodeficiency virus (HIV) Research.</p> <p>FY 1999 Accomplishments: Project not funded in FY 1999.</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 9545 - Conduct Phase 1/2 clinical trials of candidate vaccines, including a DNA vaccine (carried by the canary pox virus) combined with a booster immunization with a new candidate protein vaccine, a DNA vaccine (carried by canary pox virus) in combination with booster immunizations with three different candidate protein vaccines to test the best immune response, the Therapore HIV vaccine, and a Venezuelan Equine Encephalitis (VEE) –HIV virus replicon particle. Conduct studies of the natural history of HIV infection among U.S. military personnel, including newly infected personnel. • - Conduct cohort development studies for future overseas vaccine studies. Develop field sites for vaccine testing in the United States, Thailand and Uganda; and produce candidate vaccines under good manufacturing practices for vaccine trials. • - Conduct pre-clinical studies of new complex proteins, new recombinant protein vaccines, new vaccines carried by other viruses, and new vaccine delivery systems. • - Conduct national and international surveillance of HIV subtypes; conduct surveillance of HIV subtypes among newly serconverting service members to determine the relevant subtypes and immune responses for vaccine design. • - Conduct studies of HIV drug resistance among infected U.S. military personnel, especially those with non-subtype B infection. • 264 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 9809</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>									
Project D971	Page 25 of 29 Pages				Exhibit R-2A (PE 0603002A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D972		
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D972 Laser Vision Correction	0	1962	0	0	0	0	0	0	1962	
<p>Mission Description and Justification: By Congressional direction, the purpose of this project is to research Photorefractive Keretectomy (PRK) as a surgical procedure for the correction of myopia and astigmatism for military personnel.</p> <p>FY 1999 Accomplishments: Project not funded in FY 1999.</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 1909 - Leverage the current joint Air Force and Navy human PRK study and examine the effect of PRK on mesopic and scotopic visual function and military performance. • - Explore corneal wound healing to improve visual outcome by reducing haze, glare, and refractive regression effects subsequent to PRK surgery. • 53 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 1962</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D972			Page 26 of 29 Pages				Exhibit R-2A (PE 0603002A)			

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D973		
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D973 Recombinant Vaccine Research	0	1962	0	0	0	0	0	0	1962	
<p>Mission Description and Justification: By Congressional direction, the purpose of this project is to exploit the unique capabilities of the University of Nebraska, Lincoln, for the production of vaccine candidate materiel.</p> <p>FY 1999 Accomplishments: Project not funded in FY 1999.</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 1909 - Support the full utilization and retention of a highly skilled Principal Investigator and his team of researchers who produce large quantities of vaccine candidate materiel by the fermentation, recovery and purification of the HC fragment of the Botulinum Neurotoxin from Pichia Pastoris. • 53 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 1962</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D973			Page 27 of 29 Pages				Exhibit R-2A (PE 0603002A)			

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000			
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D974		
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost	
D974 Smart Aortic Research	0	1471	0	0	0	0	0	0	1471	
<p><u>Mission Description and Justification:</u> By Congressional direction, the purpose of this program is to perform research into a smart aortic arch catheter.</p> <p>FY 1999 Accomplishments: Project not funded in FY 1999.</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 1432 - Awaiting proposal submission for evaluation, to be followed by contract award. • 39 - Small Business Innovative Research/Small Business Technology Transfer Research Programs. <p>Total 1471</p> <p>FY 2001 Planned Program: Project not funded in FY 2001.</p>										
Project D974			<i>Page 28 of 29 Pages</i>			Exhibit R-2A (PE 0603002A)				

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)							DATE February 2000		
BUDGET ACTIVITY 3 - Advanced Technology Development				PE NUMBER AND TITLE 0603002A Medical Advanced Technology				PROJECT D975	
COST <i>(In Thousands)</i>	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D975 Emerging Infectious Diseases	0	0	3975	0	0	0	0	0	3975
<p><u>Mission Description and Justification:</u> The scientific and technical objectives for this project focus on accelerating development of infectious disease threat countermeasures necessary to support operations in nonindustrialized countries and those in which infrastructure has been damaged or destroyed. It will also fund the necessary research to counter the military operational impact of emerging infectious diseases.</p> <p>FY 1999 Accomplishments: Project not funded in FY 1999.</p> <p>FY 2000 Planned Program: Project not funded in FY 2000.</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 3975 - Conduct concept exploration of candidate products that could provide protection of warfighters against emerging infectious diseases. <p>Total 3975</p>									
Project D975			<i>Page 29 of 29 Pages</i>			Exhibit R-2A (PE 0603002A)			