United
States
Army
Medical
Research and
Materiel
Command

DEPARTMENT OF DEFENSE

BROAD AGENCY ANNOUNCEMENT

BAA 99-1

DECEMBER 1998

FORT DETRICK
MARYLAND

U.S. Army Medical Research and Materiel Command
BAA 99-1

PREFACE

The U.S. Army Medical Research and Materiel Command's (USAMRMC) mission is to provide solutions to medical problems of importance to the American warfighter at home and abroad. The scope of this effort and the priorities attached to specific projects are influenced by changes in military and civilian medical science and technology, operational requirements, military threat assessments, and national defense strategies. The extramural research and development program plays a vital role in the fulfillment of the objectives established by the Command. General information on USAMRMC can be obtained from the USAMRMC website (http://mrmc-www.army.mil).

This Broad Agency Announcement (BAA) is intended to solicit research ideas, and is issued under the provisions of the Competition in Contracting Act of 1984 (Public Law 98-369), as implemented in the Federal Acquisition Regulations. This Announcement provides a general description of the Command's research programs in Section A, including specific areas of interest; defines the evaluation and selection criteria in Section B; and provides proposal preparation instructions and formats in the Appendices. Research proposals are sought from educational institutions, nonprofit organizations and private industry. This is a continuously open announcement. The U.S. Army Medical Research Acquisition Activity (USAMRAA) is in the process of preparing this BAA for electronic commerce. The processes stated within this BAA are the first attempt in making this electronic. The BAA will be revised as other electronic processes are developed. (Amendments of this brochure will be advertised on the USAMRAA website (http://www-usamraa.army.mil) and in the Commerce Business Daily.

Questions concerning the preparation of preproposals or proposals can be emailed (Q&A.BAA@DET.AMEDD.ARMY.MIL) or faxed (301/619-2937) to USAMRAA.

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BAA Preproposal Form (http://extranet.tatrc.org/usamraa/99BAAPre.html)
BAA Conference Form (http://extranet.tatrc.org/usamraa/99CONF.html)

U.S. Army Medical Research and Materiel Command
BAA 99-1

TABLE OF CONTENTS

RESEARCH AREAS OF INTEREST

A. MILITARY INFECTIOUS DISEASE RESEARCH PROGRAM
B. HUMAN IMMUNODEFICIENCY VIRUS(HIV) RESEARCH PROGRAM
C. MEDICAL BIOLOGICAL DEFENSE RESEARCH PROGRAM
D. MEDICAL CHEMICAL DEFENSE RESEARCH PROGRAM
E. COMBAT CASUALTY CARE RESEARCH PROGRAM
F. TELEMEDICINE AND ADVANCED TECHNOLOGY PROGRAM
G. MILITARY OPERATIONAL MEDICINE RESEARCH PROGRAM
H. SPECIAL PROGRAMS

GENERAL INFORMATION

A. USAMRMC AWARDS
B. CONFLICT OF INTEREST
C. DISCLOSURE OF INFORMATION OUTSIDE THE GOVERNMENT
D. GOVERNMENT OBLIGATION
E. INFORMATION SERVICE

PREPROPOSALS

CONFERENCE OR SYMPOSIUM SUPPORT

FULL PROPOSALS

EVALUATION AND SELECTION

CONTRACT ADMINISTRATION

PROPOSAL PREPARATION

APPENDICES (INSTRUCTIONS AND FORMS)

RESEARCH AREAS OF INTEREST

A. MILITARY INFECTIOUS DISEASE RESEARCH PROGRAM.

Research on naturally occurring infectious diseases emphasizes the prevention, diagnosis and treatment of endemic and emerging infectious diseases with demonstrated or potential capability to seriously diminish military operational readiness. Diseases of principal interest in this program are: malaria, infectious bacterial diarrhea, and dengue. Other areas of interest include vector control, vaccine production and delivery, leishmaniasis, hemorrhagic fever viruses, hantaviruses, meningococcal group B infection, hepatitis E, and rickettsial diseases.

1. Research and Development of Preventive Measures for Infectious Diseases includes:

a. Vaccines. Basic studies to characterize infectious agents, define human protective immune responses and select candidate immunogens and methods for delivery for vaccine development. Animal models may be used for studies of pathogenesis and preclinical vaccine testing. Candidate field sites for evaluating vaccine efficacy in humans are solicited.

b. Antiparasitic Drugs. Studies applicable to the discovery, design, and development of prophylactic drugs for parasitic diseases to include drug design, synthesis, screening, mode of action, and mechanisms of drug resistance. Basic investigations of parasite metabolism and structural biology to identify potential molecular targets for therapy also are solicited. Proposed studies must support drug development programs for malaria, leishmaniasis, and other diseases cited above and identified as military threats.

c. Structure Based Drug Design for Novel Antimalarial Drugs. A major international effort is underway to obtain the complete sequence of the malaria genome. Proposals that complement this effort are encouraged. Differences between parasite biochemistry and that of the human host may be exploited and allow the design of selectively toxic antimalarial agents. Efforts which address the following areas are suitable; i) utilizing genetic engineering techniques, identify, isolate, clone, and express a gene coding for crucial enzymes from the human malaria parasite, plasmodium falciparum; ii) express the gene in a suitable vector; iii) isolate, purify, and characterize the expressed enzyme; iv) crystallize the enzyme and determine its three-dimensional structure; v) determine the three-dimensional structure of the enzyme bound to substrate or an inhibitor; vi) provide atomic coordinates of the structures for use in the design of more potent inhibitors and; vii) based on the determined structure, design and evaluate specific inhibitors of this enzyme as potential antimalarial drugs.

d. Epidemiology. Studies include collection and analysis of epidemiological data that would aid in control of relevant infectious diseases. Emphasis is on distribution, incidence, vectors, and reservoirs. Investigation of the epidemiology of naturally occurring pathogens, to include the study of arthropod vectors, and the development of rational prevention and control strategies, is desired.

e. Diagnosis. Studies include the development of field-deployable, common diagnostic systems, including immunologically-based and molecular-based platforms for detection, surveillance and diagnosis of naturally occurring infectious agents of military importance. Studies also include improvement of specimen processing and handling protocols for a variety of clinical specimens.

f. Vector Control. Studies on arthropod vectors and vector-borne diseases, with primary emphasis on malaria, dengue, leishmaniasis, and typhus. Studies include basic research on vector-pathogen-human interaction, improvement of means for risk assessment (identification and classification of vectors, improved surveillance techniques, rapid assays for pathogens in vectors), and improvement of vector control and personal protection techniques applicable to military forces in the field. Information on the international threat from vector-borne disease is considered an appropriate product of the program.

2. Research and Development of Therapeutic Measures for Infectious Diseases includes studies to synthesize, screen, and develop therapeutic drugs for malaria, leishmaniasis and other military relevant infectious agents. Therapeutic drug development is secondary to the prophylactic development program [see 1b, above] which receives program emphasis. However, proposals dealing with novel drug delivery systems, i.e., sustained release and methods of targeting drugs to reduce toxicity or delivery of drugs of clinical importance to the active sites, are of prime interest.

B. HUMAN IMMUNODEFICIENCY VIRUS (HIV) RESEARCH PROGRAM.

The HIV research program emphasizes prevention of disease transmission and measures to prevent disease progression. This includes vaccines for prevention, prevention education of service members, disease assessment, and intervention strategies. Research will be conducted to maximize the use of unique characteristics of military populations such as the broad cross-sectional nature of the community, their potential to be deployed to almost any area of the world, and the total susceptibility of the group to the disease. Areas of research with military relevance include:

1. Research and development of preventive vaccine candidates.
2. Preclinical and clinical evaluation of preventive vaccine candidates.
3. Identification and evaluation of field-test sites for prevention interventions.
4. Identification, isolation and characterization of HIV strains from diverse geographic locations.
5. Development of experimental animal models of HIV transmission and disease.
6. Risk assessments and methods of evaluating behavior modification to reduce risk of infection.
7. Clinical evaluation of interventions in volunteers with asymptomatic HIV infections to prevent or delay the onset of AIDS.
8. Development of improved methodologies for:
    a. early diagnosis,
    b. assessment of disease progression and
    c. evaluation of intervention strategies.
9. Development of improved assays for rapid diagnosis of HIV infections under field conditions.
10. Development of assays to rapidly assess HIV genetic diversity for genetic typing, drug-resistance or viral phenotyping.

C. MEDICAL BIOLOGICAL DEFENSE RESEARCH PROGRAM

The Medical Biological Defense Research Program provides medical countermeasures for biological warfare agents. These countermeasures include specialized medical materiel or procedures designed to enhance protection. The priorities of the program are a) prophylaxis or pretreatment to prevent any casualty; b) identification and diagnosis of biological agents and, c) treatment or supportive care regimens.

Proposals dealing with Technology Assessment are also of interest. Examples of some of the live infectious agents of interest are those causing anthrax, plague, glanders, and the agents Ebola virus; Marburg virus; Venezuelan western and eastern equine encephalitis viruses, and poxvirus models of variola virus. Examples of non-living agents (toxins) include those from plants (ricin); bacteria (Staphylococcal enterotoxins, botulinum) and membrane damaging toxins and venoms from snakes, snails and insects.

In support of Technology Assessment, the following research and development is required:

1. Viral, Toxin and Bacterial Studies.

a. Identification and characterization of organisms and toxins. Molecular antigenic analysis; development of diagnostic assays; studies on structure and function that are related to mechanism of action, binding, internalization and interaction with the immune system and neutralizing antibodies; investigation of pathogenesis and immunology that will allow decision regarding the optimal approach to disease prevention and control. Specific long-term goals include development of vaccines, physiological support, diagnostic tests, rational prevention and control strategies, and improvement of existing products.

b. Vaccine development, with emphasis on protection from agents in aerosol exposure, molecular approaches for development of vaccines, measurement of relevant cellular and humoral protective immune responses, and expression or production of protective antigens using recombinant technology. Development of vaccines for specific toxins and disease agents involving the generation, selection and characterization of attenuated strains or inactivated purified antigen preparations, to include polyvalent vaccines that are more broadly effective. Safer means of passive immunization such as production of human monoclonal or modified antibodies that are despeciated are also of interest. Identification of surrogate markers of protection for the agents identified above and development of assays to assess such protection are needed.

c. Development of improved methods for delivery of vaccines, including adjuvants, nucleic acid vaccines, methods for oral or nasal immunization with inactivated, live and subunit antigens; sustained release formulations; and methods for delivery of antigens for specific induction of mucosal immunity and development of methods to enhance appropriate immune responses to include co-delivery of cytokines.

d. Preparation of research quantities of highly purified and characterized toxins as well as studies on basic chemistry, mechanisms of action, metabolism and excretion.

2. Drug Development. Development, synthesis and testing of compounds that possess antiviral, antibacterial, immunomodulatory or antitoxin activities, with emphasis on compounds that provide broad, nonspecific protection against viruses, bacteria and toxins described above. Studies of their pharmacokinetics and other measurements relevant to more effective drug use are also of interest. Development of lead compound(s) that are potent, active-site inhibitors that may include combinatorial-derived organic molecules and/or rationally designed transition-state substrate analogs. Testing for potency is required. Approaches that will be considered include but are not limited to computational chemistry, combinatorial organic synthesis, high throughput in vitro screening and X-ray analysis of ligand-toxin co-crystals.

a. Discovery of novel or unique biochemical elements or compounds with antiviral, antibacterial, or antitoxin activity against the listed organisms.

b. Development of testing models for evaluation of compounds effective against toxins of several classes, including pre- and post-synaptic toxins, membrane-damaging toxins, toxins which inhibit protein synthesis and others.

c. Mechanism of action studies of immunomodulators, including characterization of effector cells (lymphocytes, macrophages) effector mechanisms, ancillary effects on other cells of the immune system and production and characterization of cytokines released as a consequence of immunomodulation.

3. Identification and Diagnosis. The investigation and evaluation of sensitive and specific methods of identifying and diagnosing for both antigens and antibodies of viruses, bacteria and rickettsia in biological materials. Development of sensitive and specific immunologic, chemical or biological assays for the rapid (within minutes) and reliable diagnoses of (a) acute diseases due to agents of potential biological threat, (b) the identification of toxins or their metabolites in biological samples. Assay may include antigen, antibody or metabolite detection or the use of nucleic acid probes or synthetic antigens. In addition, there is interest in the development of rapid identification and diagnostic methods for the assay of toxins, metabolites and analogs in clinical specimens.

4. Computer Science and Artificial Intelligence. Utilization of computer science and artificial intelligence techniques to enhance fundamental medical systems for biological defense (drugs, vaccines, diagnostic capabilities, and management of casualties exposed to biological agents).

5. Physiologically Active Compounds. Investigation of potential pathophysiological effects of endogenous bioregulators. Determination of biochemical mechanism of action and in vivo effects of neuropeptides, neurohormones, neurotransmitters, cytokines and other endogenous compounds capable of causing severe physiological effects at low doses.

D. MEDICAL CHEMICAL DEFENSE RESEARCH PROGRAM:

The Medical Chemical Defense Research Program seeks to preserve combat effectiveness by timely provision of medical countermeasurers in response to Joint Service chemical warfare defense requirements. The fundamental orientation of the program is to protect U.S. forces from the effects of chemical agents by developing protective, pretreatment, and prophylactic products, providing products usable by the individual soldier for immediate treatment of chemical agent exposures, developing antidotes to chemical agents, defining care procedures for chemical agent casualties, and advancing therapy and management of these casualties. The medical

countermeasures are intended to preserve and sustain the soldiers' combat effectiveness in the face of combined threats from chemical and conventional munitions on the integrated battlefield.

The broad goals of this program are:

1. Maintain the Technologic Capability to meet present requirements and counter future chemical agent threats. The program will maintain the scientific base and technological capability to develop timely medical countermeasures for both current and future chemical agent threats. Research funded by this program will be used to identify concepts and candidate medical countermeasures for use by the individual soldier or by medical personnel. Basic and applied research are both supported, and may address topics as diverse as determining sites, mechanisms of action, and effects of exposure to chemical warfare agents with emphasis on exploitation of neuroscience technology, respiratory, ocular, and dermal pathophysiology; identifying sites and biochemical mechanisms of action of medical countermeasures; exploiting molecular biological and biotechnological approaches to develop new approaches for medical countermeasures to chemical agents; and exploiting molecular modeling and quantitative structure-activity relationships in support of drug discovery and design.
2. Provide Medical Countermeasures for the individual soldier to maintain combat effectiveness and prevent or reduce injury from chemical agents. This goal encompasses research supporting development of new concepts for prophylaxes, pretreatments, antidotes, and therapeutic countermeasures; development of skin protectants and decontaminants, identification of factors which influence safety and efficacy of candidate medical countermeasures; and development and maintenance of preformulation, formulation, and radiolabeling capabilities.
3. Provide Medical Management of Chemical Casualties to enhance survival and expedite the return-to-duty of chemical casualties through definitive therapies and life support technologies. This goal includes developing concepts and recommended therapeutic regimens and procedures for the management of chemical agent casualties, developing diagnostic and prognostic indicators for chemical agent casualties, and developing life-support equipment for definitive care of chemical agent casualties.

Recent changes in the security situation facing the United States have not materially reduced the threat that chemical weapons present to American forces in the field. Many third world countries and terrorist groups have the capability of producing and delivering chemical agents thus posing a substantial and serious threat to the armed forces of the United States.

Classical chemical agent threat categories include vesicant or blister agents (e.g., sulfur mustard, lewisite), blood agents (e.g., cyanide), respiratory agents (e.g., phosgene), and nerve agents (e.g. GA or Tabun, GB or Sarin, GD or Soman, and VX). A high priority will be assigned to research on medical countermeasures to vesicant agents, such as sulfur mustard, and on medical countermeasures to nerve agents, such as GA, GB, GD, and VX. Research on blood agents and on respiratory agents is not a priority at this time. Emphasis is currently placed on reducing incapacitation as a design criterion for medical countermeasures. Limited research quantities of dilute chemical agents are available for use under funded contracts where appropriate. We anticipate that limited research quantities of neat chemical agents will also be available in the near future for use under funded contracts where appropriate.

Examples of pertinent research topics and areas are:

a. Characterizing the mechanisms of vesicant agent pathophysiology to identify medical countermeasures against vesicant agents.

b. Developing innovative models of the pathophysiology of vesicant agent injury.

c. Characterizing and validating mechanistic approaches to vesicant agent injury countermeasures.

d. Identifying, synthesizing, and/or evaluating innovative candidate medical countermeasures against vesicant agents.

e. Developing and validating markers of vesicant agent exposure.

f. Developing monoclonal antibodies and specific probes to vesicating agents (sulphur mustard and lewisite) and to metabolites of sulphur mustard.

g. Identifying, exploring, and developing innovative clinical diagnostic, prognostic, and management approaches to vesicant agent casualties.

h. Characterizing the hematopoietic injury cased by vesicant agents.

i. Characterizing the ocular lesions associated with vesicant agent exposures; developing treatments to ameliorate these injuries.

j. Characterizing the mechanisms of nerve agent-induced convulsions and resulting pathophysiology to identify medical countermeasures against nerve agent-induced convulsions. (Limited funds available.)

k. Identifying, synthesizing, and/or evaluating innovative candidate medical countermeasures against nerve agent-induced convulsions.

l. Developing innovative models of the pathophysiology of nerve agent induced convulsions.

m. Developing catalytic and/or stoichiometric chemical agent scavengers from biological molecules (e.g., antibodies, and enzymes) which provide protection against nerve agent incapacitation and lethality for extended periods following their administration.

n. Developing innovative models for evaluation of chemical agent scavengers.

o. Identifying, expressing, synthesizing, and/or evaluating biotechnologically-derived or pharmaceutically-based scavengers as candidate medical countermeasures against chemical agents.

p. Developing and evaluating custom-synthesized pharmaceuticals based on a detailed understanding of the pathophysiology and mechanisms of action of the chemical agent structure and function of the intended target molecule.

q. Developing catalytic and/or stoichiometric additives for use in skin protectants or decontaminants to protect against chemical warfare agents, especially vesicant and nerve agents.

r. Developing innovative models for evaluation of catalytic and/or stoichiometric additives in skin protectants or decontaminants.

s. Developing candidate formulations for skin protectants or decontaminants containing catalytic and/or stoichiometric additives and evaluating these formulations against chemical warfare agents.

t. Characterizing the pathophysiology and natural progression of chemical warfare agent-induced damage to human tissues.

u. Developing and validating innovative techniques for rapid and accurate analysis of human tissues and body fluids for detection of chemical warfare agent exposures.

v. Characterizing the effects of long-term or chronic exposures to chemical warfare agent exposures and/or medical countermeasures to these agents.

w. Identifying, exploring, and developing innovative clinical diagnostic, prognostic and management approaches to nerve agent casualties.

x. Developing and validating field usable procedures for diagnosis, prognosis, and treatment of chemical warfare agent casualties under both field and laboratory conditions.

E. COMBAT CASUALTY CARE RESEARCH PROGRAM

The Combat Casualty Care Research Program provides integrated capabilities for far-forward medical care thereby reducing mortality and morbidity associated with major battlefield wounds and injuries. The goals of the Research and Development effort are to: extend the "Golden Hour" for treatment, in order to improve survival and minimize morbidity after life-threatening injuries; and to provide military medical capabilities for far-forward medical or surgical care of battle and non-battle injuries.

A primary emphasis of the Research Program is on the identification and development of medical techniques and materiel (medical devices, drugs, and biologics) for early intervention in life-threatening battle injuries. Battlefield conditions impose severe constraints on available manpower, equipment and medical supplies for casualty care. A premium is placed on medical interventions that can be used within the battle area or as close to it as possible, before or during medical evacuation, preferably by medical corpsmen. Medical materiel must be easily transportable (i.e., small, lightweight, and durable; devices must be easy to use, low maintenance, with self-contained power sources as necessary; drugs and biologics, ideally, should not require refrigeration or other special handling). Materiel and techniques must be simple and rapid to employ. Identification of techniques and treatments that significantly enhance operational efficiency are also of interest.

Research efforts are needed in principles, and technology available to render self-aid and buddy-aid; enhancements in techniques, methods, or materials for basic and advanced life support for severely injured persons; management, sustainment and monitoring of severely injured casualties during episodes of delayed or protracted evacuation, management of patients when treatment is delayed as a result of temporary overloading of battlefield facilities; and enhanced management of triage of large numbers of patients and comprehensive and staged treatment at field hospitals. In addition, there is a special interest in existing equipment, for which patient care efficacy and concept have already been demonstrated but, for which intermediate improvement is needed to meet military conditions for proposed use.

The following Combat Casualty Care Science and Technology objectives are of interest:

1. Minimizing Blood Loss and Optimizing Fluid Resuscitation. The principal cause of death among soldiers who are killed outright by an injury is hypovolemia secondary to hemorrhage. Enhanced means are sought to limit actual and functional volume losses and to limit the immediate, short- and long-term consequences of such hemorrhages. This research effort provides information and transition to development products to enhance capabilities for

control of hemorrhage, stabilization and resuscitation from hemorrhage, and development of noninvasive sensors to determine tissue viability and perfusion. Examples of specific products or efforts might be addressed to include: chemically powered fluid infusion or warming devices, plasma substitutes, blood and platelet preservative, local hemostatic agents, and treatments to enhance oxygen delivery and perfusion of tissue, blood products (and artificial substitutes), resuscitation fluids, and equipment and procedures for fluid resuscitation of hemorrhaging individuals. Also of interest are investigations into improved preservation, storage transportability, and processing of red blood cells, platelets, and plasma; fieldable rapid test kits for blood-borne pathogens and blood typing; fundamental investigations of vascular and tissue responses to fluid resuscitation; and the development of simple fluid warming and administration devices.

2. Treatments to Prevent Secondary Damage After Hemorrhage or Major Injuries; secondary injury mechanisms that occur subsequent to hemorrhage and other major trauma contribute to organ failure, sepsis, and death. This research effort is responsible for completing evaluations of commercially available and investigational/experimental drugs and/or biologics, development of non-invasive sensors to determine tissue viability and perfusion identifying suitable, commercially available compounds, and/or transitioning to development, as required, the first in series of far-forward interventions for prevention of secondary damage from shock or other injuries. Areas to be addressed are: general organ failure, ischemia/reperfusion injury, secondary brain/spinal cord damage, trauma-induced immunosuppression and related sepsis, metabolic protection, systemic antibiotic antimicrobial prophylaxis, and trauma induced enhancement of bacterial translocation.

Examples of specific products or efforts might include drugs, substances or treatments which; a) prevent cell death or organ failure; b) reduce or eliminate ischemia and reperfusion injury; c) prevent secondary brain or spinal cord injury; d) prevent immunosuppression and sepsis; e) reduce the demand for metabolic substrates including oxygen and; f) prevent bacterial translocation.

3. Treatments for Battle and Non-Battle Injuries. This research area includes identification and transition to development drugs, or implantable devices, for enhanced healing of soft tissue and bone defects caused by military ballistic injury, development of non-invasive sensors to determine tissue viability and perfusion, identifying and testing techniques, drugs and treatments to enhance vascular repair, identifying improved plasma substitutes for resuscitation of burn victims, identifying improved techniques and assessing commercial materiel developments applicable to surgical management of primary ballistics and thermal burn injuries, and identifying improved techniques for management of primary blast, crush and chemical burn injuries. Examples of specific products or efforts which might addressed include materiel for the pharmacological or surgical management of high-velocity ballistics and fragment wounds, and blast injuries. Materiel of interest include agents that promote neuronal regeneration, bone repair/regeneration, vascular healing and regeneration, development of plasma substitutes for burn and shock, treatment of chemical burns, equipment and procedures for emergency airway management and mechanical ventilation of severely injured casualties.

F. TELEMEDICINE AND ADVANCED TECHNOLOGY PROGRAM

The scope of the joint telemedicine program includes identification, exploration, and demonstration of key technologies and enabling biomedical principles required to overcome technological barriers that are both medically and militarily unique. The goals of this effort are to: 1) provide technologies needed to incorporate health awareness into the battlespace awareness; 2) provide force protection; 3) reduce time to critical intervention for injured personnel; 4) improve the skills and efficiency of care providers; and 5) improve the quality of emergency care throughout the battlespace.

Achieving the goals of telemedicine will require new technologies and the application of existing technologies to uniquely military health-related problems, as well as integration with other DoD modernization initiatives in the areas of information systems, telecommunications, and focused logistics systems. Current telemedicine-related Science and Technology programs include Computer Assisted Diagnosis and Treatment and Warfighter Readiness and Sustainability Assessment. Proposed new initiatives include Predictive Diagnostics Methodology and Noninvasive Monitoring Systems. Research is required to enhance the following operational capability elements:

1. Joint Telemedicine-Joint Readiness: Joint Readiness is operational capability to use distributed medical databases, computer supported collaborative planning, dynamic modeling, surgical simulations, haptic feedback supported virtual reality and telesurgical robotics to enhance the combat trauma training of physicians, medical corpsmen, other healthcare providers, medical teams and units, and to improve the medical readiness of all personnel assigned to the joint warfighting force prior to deployment. This operational capability is supported by three operational capability elements: Individual Medical Skills and Proficiency, Unit Medical Skills Proficiency, and Information Superiority for Medical Applications.

a. Individual Medical Skills and Proficiency is ability to use advanced medical simulations to improve the training of Joint Service battlefield healthcare providers and ensure the currency of their individual and unit related combat medical skills. Physicians, physician assistants, combat medics and Joint Service medical commanders will have the opportunity in home station to iteratively rehearse realistic trauma care procedures using 3D surgical simulations, haptic feedback supported virtual reality training system and robotics. At unit level, realistic simulations using stochastic modeling systems will be used for contingency operation medical mission planning, rehearsal and dynamic mission retasking. These systems will have embedded, fault tolerant, object oriented, dynamic scenario generation capabilities, and will be deployable, scaleable, and evolvable as mission requirements change.

b. Unit Medical Skills Proficiency is defined as the ability to provide home station training for distributed forces (active and reserve) using advanced live, linked and constructive collaborative simulations that represent joint medical task forces in realistic scenarios. Medical training systems will require sophisticated distributed, synchronized resident databases capable of self update and automatic reconstruction, multilevel security with high rate, high bandwidth telecommunications support, and advanced collaboration planning capability.

c. Information Superiority for Medical Applications is defined as the ability to provide near real time information on individual and unit medical readiness of the Joint Task Force personnel prior to deployment. These systems will use intelligent agents to retrieve, filter

and deconflict medical information contained in computerized medical records in large distributed medical databases, and apply artificial intelligence based analytical capabilities to proactively project health parameters and appropriate medical interventions for Joint Forces prior to deployment. These systems will also include interactive, dynamic environmental effects and human systems performance modeling capabilities to forecast the near, mid and long term medical impacts of operational and resource decisions on the health status of the Joint Force.

2. Joint Telemedicine-Battlespace Medical Awareness: Battlespace medical awareness is the operational capability to acquire real time information about the position, physiological status and movement of supported military personnel. Battlespace awareness provides commanders with physiological status monitors, medical situational awareness and display systems to rapidly acquire medically relevant information to precisely process and direct multimedia medical data to the appropriate user, and maintain the integrity of the processed information to provide a common view of the medical battlespace at different echelons and operational levels. Battlespace awareness will remain functional in the face of degraded environmental conditions and hostile countermeasures. Battlespace awareness is supported by functional capabilities for Medical Information Acquisition, Medical Data Fusion and Distribution, and Medical Situational Interfaces.

a. Medical Information Acquisition is defined as the ability for sensors to rapidly acquire a full spectrum of multimedia clinical, physiological and operational information. This information will enable commanders to comprehensively monitor the physiological status of friendly forces, to rapidly detect, locate, diagnose and treat casualties, to track and predict the physiological status of soldiers and casualties during evacuation and to collect other assessment and reporting information on individual and unit casualties, activities, status, capabilities, plans, and intentions. This capability element will ensure that Joint commanders have dominant battlespace knowledge of their human resources.

b. Medical Data Fusion and Distribution is defined as the capability to dynamically access large scale, distributed medical databases, and then integrate, process and direct multimedia medical information to appropriate users to support enhanced diagnosis, treatment and medical management of personnel within the joint battlespace. Information assurance and security is a high priority. Consistent with Joint Vision 2010, and its emphasis on increasing the tempo of operations, Medical Data Fusion will include multi-echelon, real time monitoring capabilities to detect operations within the integrated combat healthcare delivery network, display deviations from plans, and rapidly recommend alternative courses of action .

c. Medical Situational Interfaces is defined as the ability to adjust the level and display of clinical, geospatial, operational and tactical situations, and tailor the presentation of information to accelerate and simplify the cognitive understanding of integrated information. Specifically, consistent battlespace understanding will integrate complex medical and tactical information with geospatial coordinates and advanced "smart" display presentations to provide commanders with a real time understanding of the medical implications of the joint operational battlespace. This information will be displayed in a manner that is congruent with the individual needs of operational commanders and the supporting medical personnel. Medical displays also encompass the use of individual displays that assist healthcare providers in the treatment of casualties.

3. Joint Telemedicine-Effective Employment of Medical Forces: Effective Employment of Medical Forces is the operational capability to more effectively and efficiently employs medical forces within the Battlespace. It is dependent upon three functional capabilities,

Prognostics and Planning, Telemedical Management of Medical Forces and Execution of Time-Critical Medical Missions. These capabilities allow the commander to better monitor and project the health of the force, locate, diagnose and treat individual casualties, tailor joint medical forces to the needs of specific missions and regulate the flow of casualties throughout the battlespace. It allows commanders to dynamically integrate tactical and supporting medical assets throughout the theater and the CONUS supporting base to better coordinate health care delivery using teleradiology, teleconsultation, computer assisted diagnosis, pre-surgical planning and simulation, minimally invasive therapies, mission planning, rehearsal and ongoing assessment of the battlespace to optimize the application of multi-echelon medical forces and assets. Effective employment of medical forces is supported by functional capabilities for medical force management and improved evacuation and treatment.

a. Medical Force Management is defined as the ability to reduce the medical footprint by using superior medical situational awareness, advanced diagnostics, communications and information technology to more effectively manage the care of friendly forces through the dynamic synchronization of medical resources in both the Theater of Operations and the CONUS sustaining base. Consistent with Joint Vision 2010 and its emphasis on increasing the tempo of operations, this capability includes multi-echelon, real-time monitoring capabilities to detect operations within the integrated combat health care delivery network, display deviations from plans, and rapidly recommend alternative courses of action that optimize deployment of medical treatment and evacuation assets, reduce support and maintenance requirements, and focus medical logistics support within the joint battlespace.

b. Improved Evacuation and Treatment is defined as the ability to use integrated networks of physiological sensors, Global Positioning Systems, specialty-specific telementoring and teleconsultation, telerobotics, and advanced life support and transport systems to rapidly locate, diagnose, treat and evacuate casualties when time is the critical variable that will determine mortality and morbidity. This includes the development of techniques, and clinically focused technology systems and linkages that enable rapid identification of high priority casualty treatment requirements, real time coordination of medical treatment (intervention) and evacuation, synchronization of handoffs between Joint Service echelons of care, and execution of time critical invasive medical therapies. A premium is placed on interventions that can be used within the battle area or as close to it as possible, before or during evacuation. This capability element also includes the transmission of multimedia medical data for physician and/or computer aided analysis, teleconsultation in real time or store and forward mode, medical image analysis, 3D image processing, pre-surgical planning, and distance specialty support systems such as teleradiology, telepathology, telepsychiatry, telecardiology, teleophthamology, teledentistry, teledermatology, and other specialties.

G. MILITARY OPERATIONAL MEDICINE RESEARCH PROGRAM.

Operational medicine research centers on the protection of health and sustainment of military performance in the face of stressors that confront soldiers in a deployment. Research is directed to protect and enhance soldiers in a deployment. Research is directed to an improved understanding of the physiology of the deployed soldier, the development of improved damage risk criteria to protect against materiel and environmental hazards, and development of specifications, algorithms, and models for strategies and interventions to protect health and performance. This research program is closely coordinated with programs funded by the Office

of Naval Research in the area of Military Operational Medicine research. The Army Research Office also supports extramural basic research for this program in a coordinated effort on Enhancing Soldier Performance.

Current areas of emphasis include: (1) Environmental physiology and metabolic interventions such as thermal physiology and injury prevention, nonfreezing cold injury protection, sustainment in mountainous terrain, metabolic regulators to optimize performance in adverse environments, nutritional optimization of soldier mental status, optimization of physical performance and musculoskeletal injury prevention; (2) Biodynamics and injury sciences research such as blunt trauma models, soldier performance and injury-based criteria and crash injury protection; laser eye injury protection and treatment ; (3) Neurobehavior and toxicology research such as deployment exposure assessment systems for environmental contaminants, rapid assessment methods for drinking water safety, combined toxic gas models, stress

diagnostic methods deployment stress factors, sleep/wake performance optimization and performance consequences, and military health behaviors promotion and interventions.

Funding opportunities are limited to extramural performers conducting research, which directly augments the current research program objectives and usually involves close coordination with and/or direct support of the intramural performing laboratories.

H. SPECIAL PROGRAMS

The USAMRMC is frequently directed to conduct relatively short-term, high technology, innovative research and development with specific goals and end-points. These special programs are announced by the Government Commerce Business Daily, as well as, other media and posted on our website (http://www-usamraa.army.mil), as funding becomes available. *Announcements for special programs usually specify a submittal closing date, required number of copies of the proposal, and a special mailing address. Special programs may not require submittal of preproposals.*

GENERAL INFORMATION

A. USAMRMC AWARDS

The US Army Medical Research and Materiel Command (USAMRMC) executes its extramural research program through the award of contracts, grants, and cooperative agreements. ***The type of instrument used to reflect the business relationship between the recipient and the Government will be a matter of discussion/negotiation at the time of award.*** Proposals selected for funding are processed by the USAMRMC supporting contracting office, the US Army Medical Research Acquisition Activity (USAMRAA).

Contracts, grants and cooperative agreements are awarded to organizations, not individuals. A principal investigator (PI) must submit a proposal through, and be employed by, a university, college, nonprofit research institute or commercial firm in order to receive support. Any

organization awarded a contract made against this announcement must be registered in the Central Contractor Registration database. Registration may be accomplished by calling 1-800/841-4421, 616/961-5757, DSN 932-5757 or online registration at http://www.ccr.gov.

Support funds are normally provided incrementally during the life of the agreement. Under cost-reimbursement type contracts, payments are made in response to monthly invoices submitted by the contractor. Under grants and cooperative agreements, payments are made periodically in accordance with the payment schedule contained in the award document.

A recipient should meet certain minimum standards pertaining to institutional support, financial resources, prior record of performance, integrity, organization, experience, operational controls, facilities, and conformance with safety and environmental statutes and regulations (OMB Circulars http://www.1800net.com/nprc/omb-a110.html).

B. CONFLICT OF INTEREST

(Investigators are cautioned that awards are made to institutions. Should the PI of a funded project leave the recipient institution contact USAMRAA awarding office as soon as possible to discuss any options available for continued support of the research project.) Every effort should be made to notify USAMRAA prior to leaving the institution.

There are certain post-employment restrictions on former federal officers and employees as defined in Section 207 of Title 14 United States Code and Federal Acquisition Regulation (FAR), part 3.104-4(c). If a submitter believes a post-employment restriction or conflict of interest exists the situation should be discussed with the USAMRMC legal staff (telephone 301/619-2065) prior to expending time and effort in preparation of a proposal.

C. DISCLOSURE OF INFORMATION OUTSIDE THE GOVERNMENT

Proposals submitted will only be disclosed outside of the Government for the sole purpose of technical evaluation. The USAMRMC will obtain a written agreement from the evaluators that information in the proposal will only be used for evaluation purposes and will not be further disclosed. Proposals for funded projects will be subject to public release under the Freedom of Information Act to the extent that they are incorporated into an award document; proposals that are not selected for funding will not be subject to public release.

D. GOVERNMENT OBLIGATION

Only a warranted Contracting/Grants Officer may obligate the government to the expenditure of funds. The Government does not fund preparation of proposals or support research that is inferred from discussions with technical project officers.

E. INFORMATION SERVICE

Submitters may use the technical reference facilities of the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 telephone: 703/605-6000 (http://www.ntis.gov) to acquire information of existing research to avoid duplication of scientific and engineering effort.

PREPROPOSALS

The Principal Investigator (PI) is strongly encouraged to explore USAMRMC interest by submitting a preliminary research proposal (preproposal). Preproposals may be submitted at any time on any research topic describing a specific idea or project to USAMRMC. All preproposals will be assigned an identification number after receipt. Brochures or other descriptions of general organizational or individual capabilities will not be accepted as a preproposal. Email or postcard will acknowledge receipt of a preproposal. Usually, the PI should receive a decision letter or electronic mail on the preproposal within 30-60 days of submission. Instructions for submitting a preproposal can be found in Appendix 1.

CONFERENCE OR SYMPOSIUM SUPPORT

The USAMRMC does provide financial support (if funding is available) for conferences or symposia that benefit our research program. Email or postcard will acknowledge receipt of Conference or Symposium Support Request. The submitter should receive a decision letter within 30 days of submission. Instructions for submitting a Conference or Symposium Support request can be found in Appendix 2.

FULL PROPOSALS

Email or postcard will acknowledge receipt of proposal. Proposals will be prepared according to the instructions under Section H Proposal Preparation. Proposal forms are included (Appendices C-K) and should be part of the submission package. The length of time requested for support should be consistent with the nature and complexity of the proposed research. The identification log number for the proposal will be the same number used for the preproposal.

EVALUATION AND SELECTION

A. EVALUATION FACTORS

Preproposals are evaluated by USAMRMC scientists for relevance to military medical research programs and general scientific merit. Full proposals are reviewed by USAMRMC scientists and/or independent review panels for scientific/technical merit and military relevance using the factors listed below (in descending order of importance).

1. Military and Program Relevance

Does the proposal clearly address a relevant and significant military-related problem that can be solved by research and development studies? Does the proposed research meet current USAMRMC program needs and goals?

2. Research Objective

Is the stated objective clear, valid, and logical? Is the research innovative?

3. Scientific Excellence

Are the plans, methods, techniques and procedures feasible, clear, valid, adequately referenced, and state-of-the-art?

4. Qualifications

Are the qualifications, capabilities, and experience of the proposed PI and other key personnel sufficient to achieve the proposed objectives?

5. Facilities

Are the proposed facilities and equipment, or unique combinations of these, adequate for the proposed objectives?

6. Budget

Does the budget reflect the actual needs of the proposed work? Have the requests for personnel, equipment, supplies and travel been fully justified?

B. SELECTION

The final stage of the evaluation is the establishment of an order of merit based on military relevance and scientific merit evaluations focusing on scientific exchange with programmatic objectives. Subsequent awards depend upon the availability of funds, and fulfillment of the requirements and priorities determined to exist at the time of award. Funding priorities change as certain scientific tasks are addressed and new mission assignments arise. Award is also dependent upon adequate demonstration by the applicant that they have addressed the following:

1. Research involving Human Subjects/Anatomical Substances
2. Research involving Animals
3. Facility Safety Plan (FSP) and
4. Certificate of Environmental Compliance.

AWARD ADMINISTRATION

1. INFORMATION RELEASE

Contractors, grantees, and recipients are required to agree to the release of information pertaining to the research and development supported by the USAMRMC instrument. Statement (1) shall be included in all such releases; Statements (2)-(6) shall be included if relevant to the research being conducted:

a. "This work was supported by the US Army Medical Research and Materiel Command under Contract/Grant/Cooperative Agreement No. DAMD17-_____.
Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the US Army."

b. "In conducting research using animals, the investigator(s) adheres to the laws of the United States and regulations of the Department of Agriculture." Include required assurances, approvals, forms and descriptions as outlined in Appendix 10.

c. "In conducting research using humans and/or human anatomical substances, the investigator is required to include approvals, forms and descriptions as outlined in Appendix 9 of this announcement."

d. "In the conduct of research utilizing recombinant DNA, the investigator adhered to NIH Guidelines for research involving recombinant DNA molecules." (http://www4.od.nih.gov/oba)

e. "In the conduct of research involving hazardous organisms, the investigator adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories." (http://www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4toc.htm)

f. "Information" includes and is not limited to new releases, articles, manuscripts, brochures, advertisements, still and motion pictures, speeches, trade association meetings, and symposia.

2. FREEDOM OF INFORMATION ACT REQUESTS

The Freedom of Information Act (FOIA) (5 USC 552) provides a statutory basis for public access to official Government records. "Records" are defined to include documentation received by the government in connection with the transaction of public business. Records must be made available to any person requesting them unless the records fall under one of nine exceptions to the Act. (http://www.aclu.org/library/foia.html)

When a FOIA request asks for information contained in a successful proposal that has been incorporated into an award document, the submitter will be contacted and given an opportunity to object to the release of all or part of the information that was incorporated. A valid legal basis must accompany each objection to release. Each objection will be evaluated by USAMRMC in making its final determination concerning which information is or is not releasable. If

information requested is releasable, the submitter will be given notice of USAMRMC's intent to release and will be provided a reasonable opportunity to assert available action.

3. SITE VISITS

During the period of support, the PI is encouraged to visit USAMRMC laboratories and institutes to discuss related work with USAMRMC scientists. All such visits must have prior funding and should be coordinated through the USAMRAA Contracting/Grants Officer. Funding for visits may be made available through the award instrument. The USAMRMC laboratory personnel, as well as other Department of Defense personnel, are also encouraged to visit the PI during their contract efforts. The visits must all be coordinated with the Contracting/Grants Officer and are intended for technical discussion and monitoring of progress of the funded project.

4. REPORTS

The contract, grant, or cooperative agreement will normally require the timely delivery of several reports during the research effort. The Contractor and the PI must realize reports are necessary for continuation of the research efforts and funding. Each award instrument will state the necessary reports that are due to the government. The usual reports consist of the following:

a. Quarterly Standard Form Report, SF272, Federal Cash Transaction Report, is used for grants and cooperative agreements. (This form is usually attached to the grant or cooperative agreement)

b. Annual reports consist of detailed summaries of scientific issues, accomplishments and animal research usage during the project.

c. Final report details the findings and issues of the completed project.

PROPOSAL PREPARATION

Proposals will be submitted on an IBM formatted disk in a format readable by Microsoft Office or Adobe Acrobat. A signed original proposal package and the disk should be mailed to:

US Army Medical Research Acquisition Activity (USAMRAA)
ATTN: BAA 99-1
820 Chandler Street
Fort Detrick MD 21702-5014

(If you are unable to submit the disk with the package, you must mail an original and 10 copies of the proposal package to the address above.)

A. COVER PAGE AND ABSTRACT.

Each proposal must include a completed Research Proposal Cover Page (See Appendix 3) and Abstract (See Appendix 4). These forms will be attached to the proposal so that Cover Page and Abstract are foremost.

B. PROPOSAL TABLE OF CONTENTS.

A table of contents (See Appendix 5) should be included to show location of:

1. Research Proposal Cover Page
2. Abstract
3. Table of Contents
4. Statement of Work
5. Body of Proposal
6. Cost Estimate
7. Addenda

C. STATEMENT OF WORK

The Statement of Work (SOW) is the section of a research contract that outlines and establishes the PI and contractor performance expectations for which USAMRMC will provide support. Unlike the general objectives which are agreed to in a grant or cooperative agreement, the contract SOW sets rather specific goals and conditions for each year of the contracted project. The PI and contractor are expected to meet the provisions and milestones of the SOW. (The SOW will be incorporated and, as such, is subject to release under FOIA.)

A series of relatively short statements should be included which comprise the approach to each of the major goals or objectives of the proposed research. The statements should outline the specific tasks, systems and materials that are reasonable estimates for testing the proposed hypotheses of the study. An outline should be included which shows the work statements to be accomplished in each year of the contract. As a guide, the SOW for a three-year research effort should require approximately one page of single-spaced typing.

D. BODY OF PROPOSAL

A detailed description of the research to be undertaken should be submitted. This will include background, hypothesis, objectives, approach, methods, and their relationship to the state of knowledge in the field and to comparable work in progress elsewhere. As a guide, this information should be about 20 pages. Evaluation of the proposed research will be influenced by the adequacy of this information. Literature references and curriculum vitae will be shown in separate addenda entries. The following general outline should be followed:

1. Background. Provide a brief statement of ideas and reasoning behind the proposed study. Describe previous experience most pertinent to this proposal. Cite relevant literature references;
2. Hypothesis. State the hypothesis to be tested and the expected results;
3. Technical Objective. State concisely the question to be answered by each research objective;
4. Military Significance. State precisely the estimates as to the immediate and/or long-range usefulness of this study to the Armed Forces, as distinguished from general advancement of knowledge in medicine.

5. Methods. Give details about the experimental design and methodology. If the methodology is new or unusual, describe in sufficient detail for evaluation. For synthetic chemistry proposals include a clear statement of the rationale for the proposed syntheses. Outline and document the routes to the syntheses; and,

6. Investigator's Qualifications. The offeror certifies that the investigator's credentials have been examined and verifies that the investigator is qualified to conduct the proposed study and to use humans or animals as research subjects (if appropriate).

E. DETAILED COST ESTIMATE.

An estimate of the total research project cost, with a breakdown of direct and indirect costs by category and year, must accompany each formal proposal (use Appendix 6). Multiple year proposals are encouraged to cover the total estimated duration of the project. Incremental funds will be provided by USAMRMC for effort performed during each Federal fiscal year. Costs proposed must conform to the following regulations and principles:

Commercial Firms: Federal Acquisition Regulations (FAR) Part 31 and Defense FAR Supplement Part 231, Contract Cost Principles and Procedures.
Educational Institutions: OMB Circular A-21, Cost Principles for Educational Institutions.
Nonprofit Organizations: OMB Circular A-122, Cost Principles for Nonprofit Organizations. OMB Circular A-133, Audits of Institutions of Higher Education and Other Nonprofit Organizations.

The cost of preparing proposals in response to this BAA is not considered an allowable direct charge to any resultant contract, grant or cooperative agreement. It is, however, an allowable expense to the bid and proposal indirect cost specified in FAR 31.205-18, and OMB Circulars A-21 and A-122. The budget(s) must include the following:

1. Direct Labor Costs: Show current and projected salary amounts in terms of man-hours, man-months or annual salary to be charged by the principal investigator(s), research associates and assistants, and the total amount per year to be paid to each from the project. State the number of man-hours used to calculate a man-month or man-year. Proposals from universities should include time and amounts identified by academic year and summer effort. The proposal must identify the following:

a. The basis for the direct labor hours or percentage of effort, e.g., historical hours or estimates.

b. The basis for the direct labor rates or salaries. Labor costs should be predicated upon actual labor rates or salaries. Budget estimates may be adjusted upward to forecast salary or wage cost-of-living increases that will occur during the contract period. The proposal should separately identify and explain the ratio applied to base salary/wage for cost-of-living adjustments and merit increases.

2. Fringe Benefits and Indirect Cost Rates (overhead, general and administrative and other): The most recent rates, dates of negotiation, the base(s) and periods to which the rates apply must be disclosed and a statement included to identify whether the proposed rates are provisional or fixed. A copy of the negotiated rate agreement should be provided with the proposal. If negotiated forecast rates do not exist, provide sufficient detail regarding a

determination that the costs included in the forecast rate are allocable according to applicable FAR/DFARS or OMB Circular provisions (see above). Disclosure should be sufficient to permit a full understanding of the content of the rate(s) and how it was established.

As a minimum, submission should identify:

a. All individual cost elements included in the forecast rate(s);
b. The basis used to prorate indirect expenses to cost pools, if any;
c. How the rate(s) was calculated; and
d. The distribution basis of the developed rate(s).

3. Major Equipment:

a. It is the policy of the Department of Defense that all commercial and nonprofit contractors provide the equipment needed to support proposed research. In those rare cases where specific additional equipment is approved for commercial and nonprofit organizations, such approved cost elements shall be "non-fee-bearing."

b. An itemized list of permanent equipment is required, showing the cost for each item. Permanent equipment is any article of nonexpendable tangible property having a useful life of more than two years and an acquisition cost of $5000 or more per unit. The basis for the cost of each item of permanent equipment included in the budget must be disclosed.

1. Vendor Quote: Show name of vendor and number of quotes received and justification if intended award is to other than the lowest bidder.

2. Historical Cost: Identify vendor, date of purchase and whether or not cost represented lowest bid. Include release(s) for not soliciting current quotes.

3. Estimate: Include rationale for estimate and reasons for not soliciting current quotes.

4. Special test equipment to be fabricated by the contractor for specific research purposes and its cost.

5. Standard equipment to be acquired and modified to meet specific requirements, including acquisition and modification costs, listing separately.

6. Existing equipment to be modified to meet specific research requirements, including modification costs. Do not include as special test equipment those items of equipment which, if purchased by the contractor with contractor funds, would be capitalized for Federal income tax purposes.

7. Title of equipment or other tangible property purchased with government funds may be vested in institutions of higher education or with nonprofit organizations whose primary purpose is the conduct of scientific research. Normally the title will vest in the recipient if vesting will facilitate scientific research performed by the institution or organization for the Government.

8. Commercial organizations are expected to possess the necessary plant and equipment to conduct the proposed research. Equipment purchases for commercial organizations will be supported only in exceptional circumstances.

4. Material, Supplies and Consumables: A general description and total estimated cost of expendable equipment and supplies is required. The basis for developing the cost estimate (vendor quotes, invoice prices, etc.) must be included. If possible, provide a material list.

5. Subcontracts or subgrants: A description of services or materials that is to be awarded by subcontract or subgrant must be provided. Awards totaling $10,000 or more should provide the following specific information:

a. The identification of the type of award to be used (cost reimbursement, fixed price, etc.).

b. If known, the identification of the proposed subgrantee or subcontractor and an explanation of why and how the subgrantee or subcontractor was selected or will be selected.

c. Whether or not the award will be competitive and, if noncompetitive, rationale to justify the absence of competition.

d. The proposed acquisition price.

e. The offeror's cost or price analysis for the subgrant or subcontract proposed price (applicable only if the award exceeds $500,000).

6. Travel Costs: List the number of trips, number of people per trip, the destinations and the purpose for all proposed travel annually. Estimate round trip fare and per diem costs for each trip. Travel to scientific meetings requires identification of the specific meeting and purpose. Usually, no more than one trip to a scientific meeting for one person, usually the principal investigator, is funded.

7. Publication and Report Costs: Estimate the costs of publishing and reporting research results, including the direct charges for clerical preparation, page or illustration charges, reprints and distribution. Annual reports during the term for the award and a final report will usually be required; the reports will conform to instructions provided upon award. It is also important that a copy of the manuscript and subsequent reprints of research be submitted to the USAMRMC.

8. Consultant Costs: State the daily consultant fee, travel expenses, nature of the consulting effort, and why consultants are required to complete the effort.

9. Other Direct Costs: Itemize other anticipated direct costs such as rental for computers and other equipment (giving hours and rates), communication costs, etc. Unusual or expensive items should be fully explained and justified.

10. Fixed Fee: The fixed fee, if any, applied to the research project should be listed. A claimed Facilities Capital Cost of Money supported by **DD Form 1861** (http://web1.whs.osd.mil/icdhome/DDEFORMS.HTM) is also needed.

F. ADDENDA

Include items appropriate to the proposal. Incomplete proposals will significantly delay both the review and any subsequent contracting actions.

1. Acronym and Symbol Definition. Provide a glossary of acronyms and symbols, which might not be familiar to reviewers who are not current in the proposal, and research area.

2. Bibliography. List the references in the order they appear in the proposal narrative. Use a reference format, which gives the title of the citation. Do not send or attach copies of articles in print.

3. Biographical Sketch. (Appendix G) Provide a biographical sketch for key personnel involved with the project and limited to **three** pages.

a. Principal Investigator and senior investigators. The qualifications of the PI and other senior professional key personnel are important factors affecting the selection of research proposals. Contracts, grants and cooperative agreements may be terminated when the PI severs connections with the organization or is unable to continue active participation in the research.

b. Other Personnel. List the names, titles, and participation of other scientific and technical personnel who will be directly associated with the project.

4. Existing/Pending Support. List the title, time commitments, supporting agency, and level of funding for all existing and pending research projects involving the PI and key personnel. Provide justification for USAMRMC support and interest where the projects overlap or parallel. In order to enable a proper determination of the offeror's past performance, either for use in a technical evaluation or for determination of the necessary level of preaward survey, it is requested that synopsis of contracts be prepared on similar or related effort for the past three years, including:

a. Specifics on each award, including types and dates of performance,

b. The name and address of the Procuring Contracting/Grants Officer; and,

c. The negotiated price(s), and the final cost to the Government, with reasons for the variance.

5. Collaboration and Joint Sponsorship. Provide letter(s) supporting stated collaborative efforts, which are provided at no cost, and are necessary for the project's success. Describe present or prospective joint sponsorship of any portion of the program outlined in the proposal. In the absence of agreements among sponsors for joint support, the proposal should be structured so that the research can be carried out without the resources of any other sponsor. If, however, it is desirable to request partial support from another agency, the proposed plan should be stated and the reasons documented. If the plan cannot be formulated at the time the proposal is submitted, information should be sent later as an addendum to the proposal. Prior approval from both agencies must be secured for research to be undertaken under joint sponsorship.

6 Facilities/Equipment Description. Describe the facilities available for performance of the proposed request and any additional facilities or equipment proposed for acquisition at no cost to USAMRMC. Indicate if Government-owned facility or equipment is proposed for use. Reference should be made to the original or present contract under which the facilities or equipment items are now accountable.

7. Research Involving Human Subjects and/or Anatomical Substances. Address all pertinent issues relating to the use of human subjects in the proposed research. Include the required approvals, forms, and descriptions as outlined in Appendix 9. Research Involved Human Subjects.

8. Certificate of Environmental Compliance. Information regarding environmental compliance must be provided with the proposal (Appendix 8).

9. Research Involving Animals. Address all pertinent issues relating to the use of animals in the proposed research. Include the required assurances, approvals, forms and description in the proposal addenda entitled "Research Involving Animals," as outlined in Appendix 10. (Research conducted under USAMRMC sponsorship that generates preclinical safety data intended to support a research or marketing permit for products regulated by the Food and Drug Administration will be in conformance with the Good Laboratory Practices.)

10. Facility Safety Plan. The facility safety plan is outlined in Appendix 11 and shall be required prior to award. Failure to submit the plan after notification of intent to award will delay the award process.

G. REGULATIONS AND FORMS

1. Copies of the Federal Acquisition Regulation (FAR) and Defense FAR Supplement referenced in this BAA may be purchased from the Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325 or online at http://acqnet.saalt.army.mil/library/

2. Office of Management and Budget Circulars referenced in this BAA may be obtained from:

EOP Publication Office
New Executive Office Building
725 17th Street, NW, Room 2200
Washington DC 20503
Telephone: 202/395-7332

or online at http://www.whitehouse.gov/omb/grants/#circulars

3. The formats and forms listed in Appendices 3-11 of this BAA may be reproduced as needed. Other forms and references made within this BAA can be located on the web. If you need assistance, contact:

US Army Medical Research and Acquisition Activity
ATTN: BAA 99-1
820 Chandler Street
Fort Detrick MD 21702-5014
FAX: 301/619-6660

4. The Contracting/Grants Officer will contact offerors whose proposals are accepted for funding for specific certifications and statements required by Federal statutes and regulations.

5. Code of Federal Regulations can be found at http://www.access.gpo.gov/nara/cfr/crf-table-search.html.