



**National Biodefense Analysis
and Countermeasures Center**

DEPARTMENT OF HOMELAND SECURITY

BROAD AGENCY ANNOUNCEMENT

BAA 05-2

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Frederick, Maryland

National Biodefense Analysis and Countermeasures Center

BAA 05-2

PREFACE

The National Biodefense Analysis and Countermeasures Center (NBACC) is the name of the proposed facility to be located at the National Interagency Biodefense Campus at Fort Detrick, Maryland. The NBACC will execute two of the seven biosecurity program areas of the Science-based Threat Analysis and Response Program Office, Office of Research and Development, Directorate of Science and Technology. The two program areas to be executed at NBACC will be Biological Threat Characterization and Bioforensics Operations and Research. The other five biosecurity program areas are Agricultural Security, Knowledge Management and Dissemination, Sensors and Signatures Research, Surveillance and Response, and Systems Engineering and Analysis.

The mission of NBACC is to provide an integrated and responsive biosecurity enterprise for homeland security, law enforcement, medical, and veterinary communities. Specifically, NBACC's goals are to (a) understand classical, engineered, and emerging biological terrorism threats; (b) develop deployable technologies and systems in partnership with operational end-users that protect the people, agriculture, and economy of the United States against biological terrorism; and (c) provide the scientific basis and operational capability to prevent technology surprise, rapidly detect events, respond effectively, and attribute use. The extramural research and development program plays a vital role in the fulfillment of the objectives established by the NBACC.

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 Regulation. This BAA provides a general description of NBACC's research programs, including specific areas of interest; general information; evaluation and selection criteria; and proposal preparation instructions. The [Appendices](#) to this BAA include forms that are required with the submission of a full proposal. Research proposals are sought from educational institutions, nonprofit organizations, and private industry. **This BAA is a continuously open announcement; preproposals may be submitted and will be evaluated at any time throughout the year, unless time frames are stated in a separate announcement issued pursuant to this BAA.**

Amendments to this BAA will be advertised on the U.S. Army Medical Research Acquisition Activity (USAMRAA) website (www.usamraa.army.mil) and in the Fedbizopps (www.fedbizopps.gov). Many of the programs and areas of interest may not have funding readily available, but the status of funds will be part of the advice elicited from a proposal. From time-to-time separate announcements or calls for proposals may supplement this BAA.

Any agreement resulting from this BAA will be made between USAMRAA and the awardee on behalf of the Department of Homeland Security (DHS). Any organization conflict of interest (OCI) issues will be evaluated on a case by case basis. Offerors who have existing contract(s) to provide Scientific, Technical, Engineering, or Administrative (SETA) support directly to the program offices or other operational activities of the DHS Directorate of Science and Technology will receive particular scrutiny.

Questions concerning the preparation of preproposals or proposals can be e-mailed to (NBACC_BAA@NBACC.NET) or faxed (301-682-3662) to NBACC.

Mail: National Biodefense Analysis and Countermeasures Center
ATTN: BAA 05-02
7435 New Technology Way, Suite A
Frederick, MD 21703-9401

BAA Preproposal & Conference Forms (www.usamraa.army.mil/pages/BAA_Forms/user/login.cfm)

BAA Appendices (www.usamraa.army.mil/pages/NBACC_BAA/BAA_05-2_Appendices.doc)

National Biodefense Analysis and Countermeasures Center

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A request for research funding includes the completion and submission of a full proposal of appropriate Appendices.

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Representations & Certifications: <http://orca.bpn.gov>

I. RESEARCH AREAS OF INTEREST

A. Biological Threat Characterization Program Research Program

The Department of Homeland Security (DHS) Directorate of Science and Technology (S&T) Biological Threat Characterization Program (BTCP) mission is to characterize existing biological threats, anticipate future threats, and conduct comprehensive risk assessments to anticipate, prevent, respond to, and recover from an attack through the establishment of an integrated science-based program and infrastructure. Biological agent characterization studies in support of risk analyses will focus on a limited set of high-consequence biological threat agents (BTAs) (Centers for Disease Control and Prevention [CDC] Category A), as well as new and emerging BTAs. These studies will include, but are not limited to, pathogenesis/toxicity in animal hosts, communicability, pathogen/agent stability and viability, lethality studies (dose-response), and environmental remediation.

The BTCP strategic goals are to (a) deliver science and technology capability to conduct biological threat characterization; (b) create, coordinate, and maintain an enduring biological threat characterization science and technology complex; and (c) strengthen the Directorate of Science and Technology technical leadership to manage, respond, and coordinate U.S. capability to analyze and anticipate new and emerging biological threats.

1. Methodologies for Characterizing Biological Threats and Possible Consequences

The ability to understand and predict human vulnerability and susceptibility to BTAs is a critical component of BTA risk reduction/mitigation efforts. Furthermore, the vulnerability and susceptibility information will iteratively inform and feed back into other BTCP efforts, such as ongoing end-to-end risk assessment projects. Studies conducted to address vulnerability and susceptibility will generate information that is critical to BTA event scenario and health and infrastructure consequence modeling. Study proposals are requested to guide/inform on the development of drugs, vaccines, devices, and tests for the following agents: *Bacillus anthracis*, orthopoxviruses, *Yersinia pestis*, *Francisella tularensis*, *Clostridium botulinum*, and hemorrhagic fever viruses, as well as new and emerging BTAs. Specifically, proposals and preproposals are requested to:

- a. Consider all probable routes of BTA exposure.
- b. Study effects associated with attributes of agent exposure modalities.
- c. Study effects of probable dose levels and exposure frequencies.

BTCP will prioritize research proposals that focus on systematic and scientific assessments of potential biothreats posed by encephalitis and hemorrhagic fever viruses. The successful proposal will be characterized by the following:

- a. The work must identify and characterize the phenotypic and genotypic traits of these pathogens that make the viruses potential BTAs.
- b. The work must establish the public health hazard posed by nasal, respiratory, and gastrointestinal exposures to these viruses.
- c. The work must define vulnerabilities in U.S. countermeasures and defensive posture against the use of these viruses as BTAs.
- d. The work must identify and evaluate the public health consequences associated with the use of these viruses as BTAs.
- e. The collective results of this work must be integrated to provide an estimate of the likelihood and impact of the use of these viruses as BTAs.

Highly preferred capabilities/attributes of organizations proposing to do this work are:

- a. Certification and experience conducting studies involving select agents.
- b. The ability to conduct animal studies, including nonhuman primates.

- c. The ability to conduct studies in Biosafety Level (BSL)-3 and/or BSL-4 environments.
- d. The ability to conduct aerosol biology studies, including those using select agents.
- e. The ability to work on and appropriately control sensitive information.

B. National Bioforensic Analysis Center (NBFAC)

The National Bioforensic Analysis Center (NBFAC) was designated by Homeland Security Presidential Directive 10 (HSPD10) to be the lead federal agency to conduct and coordinate forensic analysis of evidentiary material from biocrime or bioterrorist events. The NBFAC operates the first biocontainment laboratories solely dedicated to coordinating and conducting bioforensic analyses to generate data for attribution analysis of biocrimes, bioterrorism, or state-sponsored biological events. NBFAC will provide law enforcement agencies, the intelligence community, the State Department, and the Department of Defense (DoD) with centrally coordinated, validated sample handling and processing, and bioforensic analysis of evidence and samples to generate data for attribution analysis in support of national and homeland security.

The strategic goals of the NBFAC are: 1) Establishment of dedicated biocontainment laboratories and spoke laboratories to conduct bioforensic analysis, 2) Conduct of bioforensic casework and research, 3) Evaluate, validate and establish assays for high consequence biological threat agents, 4) Establishment of bioforensic reference collections for comparative identification and establishment of an internationally recognized accreditation program for bioforensic casework.

Proposals to support ongoing casework for the operational NBFAC will be considered:

- a. Development, evaluation, and technology transfer of commercially available and novel approaches to concentrate dilute suspensions of BTA nucleic acid signatures to enable detection of trace quantities of nucleic acid signatures in evidentiary samples and novel techniques for the recovery of nucleic acid signatures in inhibitory environmental and other matrices for polymerase chain reaction analysis.
- b. Development, evaluation, and conduct of mass spectroscopy analysis for the identification and characterization of toxins in various matrices including environmental matrices and food. Toxins of interest include ricin, abrin, botulinum toxins, and other biological toxins.

Highly preferred capabilities/attributes of organizations proposing to do this work are:

- a. Certification and experience conducting studies involving select agents.
- b. The ability to conduct studies in Biosafety Level (BSL)-3 and/or BSL-4 environments.
- c. The ability to work on and appropriately control sensitive information.
- d. Demonstrated and documented subject matter expertise and performance.

II. GENERAL INFORMATION

A. NBACC Awards

The NBACC executes its extramural research program through the award of contracts, assistance agreements (grants and cooperative agreements), and other transaction awards. **The type of instrument used to reflect the business relationship between the recipient and the Government will be a matter of negotiation prior to award.** The NBACC supporting contracting office, U.S. Army Medical Research Acquisition Activity (USAMRAA), will process proposals selected for funding.

To protect the public interest, the Federal Government ensures the integrity of Federal programs by only conducting business with responsible recipients. The NBACC uses the Excluded Parties List System (EPLS) to exclude recipients ineligible to receive Federal awards. The EPLS is online at <http://epls.arnet.gov/>. (Reference DODGAR 25.110)

A recipient organization 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 at www.whitehouse.gov/omb).

Investigators are cautioned that awards are made to organizations, not individuals. A Principal Investigator (PI) must submit a proposal through, and be employed by, a university, college, nonprofit research institute, commercial firm, or Government agency to receive support. (Federally Funded Research and Development Centers are not eligible for awards in accordance with FAR 35.017). **Should the PI of a funded project leave the recipient institution, both the PI and institution must contact USAMRAA as soon as possible to discuss options for continued support of the research project. Every effort should be made to notify USAMRAA prior to the PI leaving the institution.**

An organization located outside of the United States may submit in response to this BAA; however, it is the organization's responsibility to ensure that the research staff is able to complete the work without intercession by the DoD for a J-1 Visa Waiver on behalf of a foreign national in the United States. **In addition, the Government will not provide funds to reimburse scientists from communist or terrorist countries.**

An organization must be registered in the Central Contractor Registration database, which requires annual updates, to receive an award under this BAA. You may register online at www.ccr.gov or by calling 1-800-841-4421, 616-961-5757, or DSN 932-5757.

Support funds may be provided incrementally during the life of the award. Under cost-reimbursement type awards, payments are made in response to monthly vouchers or invoices submitted by the awardee. Under grants and cooperative agreements, advance payments are normally made periodically, in accordance with the negotiated payment schedule included in the award document.

B. Conflict of Interest

There are certain post-employment restrictions on former Federal officers and employees as defined in Section 207 of Title 14 United States Code (USC) 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 will be discussed with the appropriate USAMRMC Legal (301-619-2065) advisor prior to expending time and effort in preparation of a proposal.

C. Disclosure of Information Outside the Government

Proposals will only be disclosed outside the Government for the sole purpose of technical evaluation. The NBACC 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. All pre-proposals will be considered as draft, working documents and not subject to public release.

D. Government Obligation

Only a warranted Contracting/Grants Officer may obligate the Government to the expenditure of funds for awards under this BAA. 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 (www.ntis.gov) to acquire information of existing research to avoid duplication of scientific and engineering effort.

F. Conference or Symposium Support

The NBACC may provide financial support (if funds are available) for conferences or symposia that benefit the NBACC's research program. The BAA Conference or Symposium Support electronic form is located at www.usamraa.army.mil/pages/BAA_Forms/user/login.cfm. Email or postcard will acknowledge receipt of Conference or Symposium Support Request. The submitter should receive a decision letter within 30 - 60 days of submission. Instructions for submitting a Conference or Symposium Support Request can be found in [Appendix 1](#).

G. Preproposals

PIs are strongly encouraged to explore NBACC interest by submitting a preliminary research proposal (preproposal). Preproposals may be submitted at any time describing a specific idea or project that pertains to any of the research areas of interest outlined in the BAA. The BAA Instructions for submitting a preproposal can be found in [Appendix 2](#). Preproposal electronic form is located at www.usamraa.army.mil/pages/BAA_Forms/user/login.cfm. Brochures or other descriptions of general organizational or individual capabilities will not be accepted as a preproposal. All preproposals will be assigned an identification number and an e-mail or postcard will acknowledge receipt of a preproposal. Usually, the PI should receive a decision letter or e-mail regarding the preproposal within 30-60 days of submission.

H. Full Proposals

Full Proposals should be submitted within 90 days after requested by the Government. Receipt of full proposals will be acknowledged by e-mail or postcard. The identification log number for the full proposal will be the same number used for the preproposal (if one was submitted). Proposals should be prepared according to the instructions under Proposal Preparation. **Proposal forms ([Appendices 3-11](#)) should be completed and included as part of the submission package.** Electronic and scanned signatures are acceptable. Full proposals may be submitted without protocols for human and animal use ([Appendices 9 & 10](#)). However, protocols with required institutional approvals must be submitted not later than 60 days after award to ensure continuation of payment. The contracting office may grant exceptions in situations where human and/or animal use are not expected to begin until after the first year of the research project. In such cases, a time frame for submission of the appropriate protocols should be established during discussions/negotiations, prior to award. The length of time and the level of funding requested should be consistent with the nature and complexity of the proposed research. Generally, research proposals are awarded for three years, and in no case should the period of performance exceed five years. An award decision should be forwarded by the Government within 180 days after submission.

III. EVALUATION AND SELECTION

A. Evaluation Factors

The NBACC scientists or outside experts will evaluate preproposals for scientific merit and programmatic relevance. PIs whose preproposals meet preliminary qualification may be invited to submit full proposals. Full proposals will be evaluated using a two-tier review process. NBACC scientists and/or outside experts will conduct the first tier, peer review. Peer reviewers evaluate proposals and assign scores based on the following factors (in descending order of importance):

1. **NBACC Program Relevance:** Does the proposal clearly address a relevant and significant problem with the scope of this BAA that can be solved by research and development studies? Does the proposed research meet current NBACC 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. **Impact:** How are the results of this research expected to impact the intended beneficiaries? Is there a dual purpose for this research?
5. **PI and Key Personnel Qualifications:** Are the qualifications, capabilities, and experience of the proposed PI and other key personnel sufficient to achieve the proposed objectives?
6. **Facilities:** Are the proposed facilities and equipment, or unique combinations of these, adequate for the proposed objectives?
7. **Budget:** Does the budget reflect the actual needs of the proposed work? Have the requests for personnel, equipment, supplies, and travel been fully justified and are the costs reasonable?

The second tier of the review, the programmatic review, may be conducted by a team consisting of expert NBACC scientists, other federal agency representatives, outside scientists with diverse expertise, clinicians, consumers, or combinations thereof. The programmatic review is primarily concerned with three criteria: peer review recommendations, programmatic priorities, and portfolio balance. Other programmatic priorities that may be considered include:

1. Congressional guidance
2. Military mission, relevance, health, medicine, and beneficiaries
3. DoD priorities
4. Veterans Affairs priorities
5. Collaborations with federal researchers

B. Selection

After the two-tier evaluation, proposals recommended for funding may be prioritized. A prioritized list of alternates may also be prepared when warranted. Subsequent awards depend on the availability of funds and fulfillment of requirements and priorities determined to exist at the time of award. In some cases, funding priorities may change as certain scientific tasks are addressed and new mission assignments arise. Award is also dependent on demonstration by the applicant that they have adequately addressed the following requirements:

1. Research involving human subjects/human anatomical substances (if proposed),
2. Research involving animals (if proposed),
3. Facility Safety Plan (FSP),
4. Certificate of Environmental Compliance, and
5. Representations for Assistance Agreements or Representations & Certification for a Contract, as appropriate.

IV. AWARD ADMINISTRATION

A. Information Release

Award recipients are required to agree to the release of information pertaining to the research and development supported by the NBACC instrument. Statement 1 shall be included in all such releases; Statements 2–6 shall be included if relevant to the research being conducted:

1. “This work was supported by the National Biodefense Analysis and Countermeasures Center under Contract/Grant/Cooperative Agreement No. _____. Opinions, interpretations, conclusions, and recommendations are those of the author and are not necessarily endorsed by NBACC.”
2. “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.”
3. “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](#).
4. “In the conduct of research utilizing recombinant DNA, the investigator adhered to NIH Guidelines for research involving recombinant DNA molecules.” (www.nih.gov)
5. “In the conduct of research involving hazardous organisms, the investigator adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.” (www.cdc.gov/od/ohs/biosfty/biosfty.htm)
6. “Information” includes, but is not limited to, news releases, articles, manuscripts, brochures, advertisements, still and motion pictures, speeches, trade association meetings, and symposia.

Public Releases: Prior to release to the public, the recipient shall notify the Contracting/Grants Officer and the Contracting/Grants Officer Representative (COR/GOR) of the following: planned news releases, planned publicity, advertising material concerning contract, grant/cooperative agreement work, and planned presentations to scientific meetings. This provision is not intended to restrict dissemination of research information; the purpose is to inform the NBACC of planned public release of information on NBACC-funded research to adequately respond to inquiries and to be alert to the possibility of an inadvertent release of information that could be taken out of context.

B. 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. (www.usdoj.gov/04foia)

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.

All FOIA requests will be processed by USAMRAA and all final decisions regarding release will be in accordance with FOIA guidelines and DHS policy.

C. Site Visits

During the term of the award, the PI is encouraged to visit NBACC laboratories and institutes to discuss related work with NBACC scientists. All such visits must have prior funding and must be coordinated through the USAMRAA Contracting/Grants Officer. Funding for visits may be made available through the award instrument. The NBACC laboratory personnel, as well as other DoD personnel, are also encouraged to visit the PI during their award 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.

D. Reports

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. Reporting requirements may include the following:

1. Monthly or quarterly reports that outline the accomplishments and progress for that period.
2. Quarterly Standard Form Report, SF272, Federal Cash Transaction Report, is used for grants and cooperative agreements that track the expenditure of funds on the project.
3. Annual reports that consist of detailed summaries of scientific issues, accomplishments, and animal research usage during the project.
4. Final report that details the findings and issues of the completed project.
5. Copies of all scientific publications as a result of funding.
6. Abstracts that are suitable for publication in relation to planned meetings.
7. Oral presentations that detail the status of a project to a panel of subject matter experts.
8. Programmatic meetings that include discussions regarding findings, accomplishments, and direction of the program.

E. Title to Inventions and Patents

In accordance with the Bayh-Dole Act (35 USC 200 et seq.), title to inventions and patents resulting from such federally funded research may be held by the grantee or its collaborator, but the U.S. Government shall, at a minimum, retain nonexclusive rights for the use of such inventions. An investigator must follow the instructions in the assistance agreement concerning license agreements and patents.

V. FULL PROPOSAL PREPARATION

A. Formatting

Full Proposals should be submitted within 90 days after requested by the Government and an award decision should be rendered by the Government within 180 days after submission. Forms and information supporting the submission of a full proposal are included in the BAA Appendices, located at www.usamraa.army.mil/pages/NBACC_BAA/BAA_05-2_Appendices.pdf

The full proposal must be submitted on one CD/DVD in PDF or Microsoft Office format. The CD/DVD must be labeled with the following contact information in case the disc is unreadable: organization's & PI's names, the e-mail address and phone number for a point-of-contact. Required forms, signed by the appropriate persons, must be included on the disc. Electronic signatures are acceptable or the signed forms can be scanned and included in the proposal. Submit the complete proposal, including the appendices on one disc. The proposal can be mailed or hand delivered to:

American Institute of Biological Sciences
ATTN: NBACC BAA 05-2 (Include area of interest i.e. Biological Threat Characterization
Program or National Bioforensic Analysis Center)
1900 Campus Commons
Suite 200
Reston, VA 20191

The proposal must be clear and legible and conform to the following guidelines:

1. **Type Font:** 12 point, 10 pitch.
2. **Type Density:** No more than 15 characters per inch (including spaces). (For proportional spacing, the average for any representative section of text must not exceed either 15 characters per inch or 114 characters per line.)
3. **Spacing:** Single-spaced between lines of text, no more than five lines of type within a vertical inch.
4. **Margins:** Minimum of 0.5-inch top, bottom, right, and 1-inch left.
5. **Color, Resolution, and Multimedia Objects:** Proposals may include color, high-resolution, or multimedia objects (e.g., MPEG, WAV, or AVI files) embedded in the PDF files; however, these objects must not exceed 15 seconds and 10 megabytes (MB). Since some reviewers work from black and white printed copies, applicants may wish to include text in the proposal directing the reviewer to the electronic file for parts of the proposal that may be difficult to interpret when printed in black and white. Photographs and illustrations, etc. must be submitted in JPEG format only (no bitmaps or TIFF).
6. **Acronyms:** Spell out all acronyms the first time they are used. One page following the proposal body is allocated to a list of acronyms, abbreviations, and symbols.
7. **Language:** English.
8. **Print Area:** 7.0 x 10.0 inches (approximately 18 cm x 25.5 cm).

B. Cover Page and Abstract

Each proposal must include a completed Research Proposal Cover Page ([Appendix 3](#)) and Abstract ([Appendix 4](#)). These completed forms must be included with the proposal so that the Cover Page and Abstract are foremost, as indicated in the Table of Contents ([Appendix 5](#)).

1. The Research Proposal Cover Page has been designed to request information that is not requested on other forms. A block for identifying the Area of Interest (i.e., Biological Threat

Characterization Program or National Bioforensic Analysis Center) or BAA Supplement (e.g., PRMRP, NETRP, and TMM 04) has been added to facilitate processing proposals.

2. The abstract is vitally important to both the peer and programmatic review process. The programmatic review includes an evaluation of the abstract as part of the peer review summary statement; therefore, it is paramount that the investigator submits an abstract that fully describes the proposed work. The abstract must contain the title of the proposal and the name of the PI. Do not include figures or tables in the abstract. Spell out all Greek or other non-English letters. Abstracts of all funded proposals may be posted; therefore, proprietary or confidential information should not be included in the abstract.

The structured technical abstract should provide a clear and concise overview of the proposed work, including the background, objective, or hypothesis and its supporting rationale, significance of the proposed work to the program's goals, specific aims of the study, and the study design.

An outline is provided below for preparing the structured technical abstract.

- a. **Background:** Provide a brief statement of the ideas and reasoning behind the proposed work.
- b. **Objective/Hypothesis:** State the objective/hypothesis to be tested. Provide evidence or rationale that supports the objective/hypothesis.
- c. **Specific Aims:** State concisely the specific aims of the study.
- d. **Study Design:** Briefly describe the study design.
- e. **Relevance:** Provide a brief statement explaining the potential relevance of the proposed work to the specific topic area being addressed and its impact on health outcomes.

A **sample technical abstract** can be found at www.usamraa.army.mil/pages/nbacc_baa/baa_05_2.cfm.

C. Proposal Table of Contents

A table of contents ([Appendix 5](#)) must be included to show location of the following:

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

D. Statement of Work

The Statement of Work (SOW) is the section of a research proposal that outlines and establishes the PI's and organization's performance expectations. Unlike the general objectives that 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 the contractor are expected to meet the provisions and milestones of the SOW. (The SOW will be incorporated into the award document and, as such, is subject to release under FOIA.)

A series of relatively short statements must be included that outline the approach to each of the major goals or objectives of the proposed research. The statements will include the specific tasks, systems, and materials that are reasonable estimates for testing the proposed hypotheses of the study. An outline must be included that shows the work statements to be accomplished in each year of the award. The SOW for a 3-year research effort should **not exceed one page** of single-spaced type.

E. Body of Proposal

A detailed description of the research to be undertaken must 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. This information should **not exceed 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 must 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. **Project Milestones:** Identify time lines for critical events that must be accomplished for the project to be successful in terms of cost, schedule, and performance.
5. **Mission Significance:** State precisely the estimates as to the immediate and/or long-range usefulness of this study to National Biodefense Analysis and Countermeasures Center, as distinguished from general advancement of knowledge in medicine.
6. **Public Purpose:** If appropriate, provide a concise, detailed description of how this research project will benefit the general public.
7. **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.
8. **PI's Qualifications:** By submitting a proposal and accepting an award, the organization is certifying that the PI's credentials have been examined and verifying that the investigator is qualified to conduct the proposed study and to use humans or animals as research subjects, if proposed.

F. 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 ([Appendix 6](#)). All costs must be entered in U.S. dollars. Recipients performing outside of the United States should include the cost in local currency, the rate used for converting to U.S. dollars, and justification/basis for the conversion rate used. Multiple year proposals are encouraged to cover the total estimated for the duration of the project. Incremental funds may be provided by NBACC for effort performed during each federal fiscal year. Costs proposed must conform to the following regulations and principles:

Commercial Firms: FAR Part 31 and Defense FAR Supplement (DFAS) Part 31, (<http://farsite.hill.af.mil>) 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.

State, Local, and Tribal Governments: OMB Circular A-87, Cost Principles for State, Local, and Indian Tribal Governments.

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 following section provides instructions for preparing the Detailed Cost Estimate form. **Organizations**

must provide sufficient detail and justification so that the government can determine the proposed costs to be allocable and reasonable for the proposed research effort.

1. Personnel:

- a. **Name:** Starting with the PI, list the names of all participants who will be involved in the project during the proposed budget period, regardless of whether salaries are requested. Include all collaborating investigators, research associates, individuals in training, and support staff.
- b. **Role on Project:** Identify the role of each individual listed on the project. Describe his or her specific functions in the “Justification” section of the Detailed Cost Estimate form.
- c. **Type of Appointment (Months):** List the number of months per year reflected in an individual’s contractual appointment with the applicant organization. The DoD staff assumes that appointments at the applicant organization are full time for each individual. If an appointment is less than full time, e.g., 50%, note this with an asterisk (*) and provide a full explanation in the “Justification” section of the Detailed Cost Estimate form. Individuals may have split appointments (e.g., for an academic period and a summer period). For each type of appointment, identify and enter the number of months on separate lines.
- d. **Annual Base Salary:** Enter the annual institutional base salary for each individual listed for the project. The basis for 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 period-of-performance. The proposal should separately identify and explain the ratio applied to base salary/wage for cost-of-living adjustments and merit increases.
- e. **Percentage of Effort on Project:** The qualifications of the PI and the amount of time that they and other professional personnel will devote to the research are important factors in selecting research proposals for funding. For each key staff member identified on the budget form, list the percentage of each appointment to be spent on this project.
- f. **Salaries Requested:** Enter the salaries in whole dollar figures for each position for which funds are requested. The salary requested is calculated by multiplying an individual’s institutional base salary by the percentage of effort on the project.
- g. **Fringe Benefits:** Fringe benefits may be requested in accordance with institutional guidelines for each position provided the costs are treated consistently by the applicant organization for all sponsors. Documentation to support the fringe benefits should be provided.
- h. **Totals:** Calculate the totals for each position and enter these as subtotals in the columns indicated.

- 2. Consultant Costs:** Regardless of whether funds are requested, provide the names and organizational affiliations of all consultants. State the daily consultant fee, travel expenses, nature of the consulting effort, and why consultants are required for the proposed research project.

3. Major Equipment:

- a. It is the policy that all commercial and nonprofit recipients 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 separately negotiated.
- 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 2 years and an acquisition cost of \$5,000 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 reasons(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 that, 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. **Materials, Supplies, and Consumables:** A general description and total estimated cost of expendable equipment and supplies are required. Itemize supplies in separate categories (e.g., glassware, chemicals, and radioisotopes). Categories in amounts less than \$1,000 do not need to be itemized. If animals are to be purchased, state the species, strain (if applicable), and the number to be used. If human cell lines are to be purchased, state the source and the description.
 5. **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, and usually the PI is funded.
 6. **Research-Related Subject Costs:** Itemize costs of subject participation in the research study. These costs are strictly limited to expenses specifically associated with the proposed study. The NBACC will not provide funds for ongoing medical care costs that are not related to a subject's participation in the research study.
 7. **Other Expenses:** Itemize other anticipated direct costs such as publication and report costs, rental for computers and other equipment (provide hours and rates), and communication costs. Unusual or expensive items should be fully explained and justified. Estimate the costs of publishing and reporting research results, including direct charges for clerical preparation, illustrations, reprints, and distribution.
 8. **Subaward Costs:** A description of services or materials that are to be awarded by subcontract or subgrant is required. The following information must be provided on subawards totaling \$10,000 or more:
 - a. Identification of the type of award to be used (e.g., cost reimbursement and fixed price);
 - b. Identification of the proposed subcontractor or subgrantee, if known, and an explanation of why and how the subcontractor or subgrantee was selected or will be selected;
 - c. Whether the award will be competitive and, if noncompetitive, rationale to justify the absence of competition;

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

If the resultant award is a contract that exceeds \$500,000 and the offeror is a large business or an educational institution (other than historically black colleges/universities and minority institutions), the contractor is required to submit a subcontracting plan for small business and small disadvantaged business concerns, in accordance with FAR 19.7. A mutually agreeable plan will be incorporated as part of the resultant contract.

9. **Indirect Costs (overhead, general and administrative, and other):** The most recent rates, dates of negotiation, base(s), and periods to which the rates apply should be disclosed with a statement identifying 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 Section V.F). Commercial firms can also visit <http://www.dcaa.mil> for additional information on indirect rates. 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).
10. **Total Costs for the Entire Proposed Period of Support (second page of the Detailed Cost Estimate form):** Enter the totals under each budget category for all additional years of support requested and itemize these totals in the "Justification" section of the Detailed Cost Estimate form. Note with an asterisk (*) and explain any significant increases or decreases from the initial year budget. All amounts should be in U.S. dollars. Total costs for the entire proposed period of support should equal the amount entered on the Proposal Cover Page.
11. **Fixed Fee:** A profit or fixed fee is not allowable on grants or cooperative agreements. If a profit or fee is negotiated, the award will be a contract. Any fixed fee applied to the research project must be listed and a claimed Facilities Capital Cost of Money supported by **DD Form 1861** www.dtic.mil/whs/directives/infomgt/forms/ddforms1500-1999.htm must be submitted with the full proposal.
12. **Justification (third page of the Detailed Cost Estimate form):** Clearly justify each item in the budget under the "Justification" section of the Detailed Cost Estimate form.

G. Addenda

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

- 1. **Acronyms and Symbol Definition:** Provide a glossary of acronyms and symbols that might not be familiar to reviewers who are not current in the proposal and research areas.
- 2. **Bibliography:** List the references in the order they appear in the proposal narrative. Use a reference format that gives the title of the citation. Do not send or attach copies of articles in print.
- 3. **Biographical Sketch (Appendix 7)** Provide a biographical sketch for key personnel involved with the project and limit to **three** pages.

- a. **PI 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 NBACC support and interest where the projects overlap or parallel. 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 awards be prepared on similar or related effort for the past 3 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 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, 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 NBACC. 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. **Certificate of Environmental Compliance:** Information regarding environmental compliance must be provided with the full proposal ([Appendix 8](#)).
 8. **Research Involving Human Subjects and/or Human Anatomical Substances:** The PI must address all pertinent issues relating to the use of human subjects in the proposed research. Include the required approvals, forms, and information as outlined in [Appendix 9](#), Research Involving Human Subjects and/or Anatomical Substances. Full proposals may be submitted without protocols for human use. **However, protocols and required institution approvals must be submitted no later than 60 days after award to ensure continuation of payments.** The contracting office may grant exceptions in situations where human use is not expected to occur until after the first year of the research project. In such cases, a time frame for submission of the appropriate protocols should be established during discussion/negotiations.
 9. **Research Involving Animals:** The PI must 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 NBACC 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.) Full proposals may be submitted without protocols for animal use. **However, protocols and required institution approvals must be submitted no later than 60 days after award to ensure**

continuation of payments. The contracting office may grant exceptions in situations where animal use is not expected to occur until after the first year of the research project. In such cases, a time frame for submission of the appropriate protocols should be established during discussion/negotiations.

10. **Facility Safety Plan:** The facility safety plan is outlined in [Appendix 11](#) and must be addressed in the full proposal.
11. **Certifications & Assurances for Assistance Agreements or Representations & Certification for Contracts,** as appropriate, must be submitted with the full proposal. The forms are located at www.usamraa.army.mil/pages/Regulatory/MasterList.htm.
12. **Multimedia Objects, Photographs, Illustrations, Graphs, etc.:** Proposals may include color, high-resolution, or multimedia objects (e.g., MPEG, WAV, or AVI files) embedded in the PDF files; however, these objects must not exceed 15 seconds and 10 megabytes (MB). Since some reviewers work from black and white printed copies, applicants may wish to include text in the proposal directing the reviewer to the electronic file for parts of the proposal that may be difficult to interpret when printed in black and white. Photographs and illustrations, etc. must be submitted in Microsoft Office or JPEG format only (no bitmaps or TIFF).
13. **Other:** Include in this section any other documentation not specified elsewhere that supports the research proposed and could influence the evaluation and selection process.

H. Regulations and Forms

1. Copies of the FAR and DFAR referenced in this BAA may be purchased from the Superintendent of Documents, Government Printing Office, Washington DC 20402-9325 or located at <http://farsite.hill.af.mil>.
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
www.whitehouse.gov/omb
3. The formats and forms in [Appendices 3-11](#) of this BAA are interactive and may be completed electronically for inclusion on the CD or DVD. Other forms and references made within this BAA can be located on the web. If you need assistance, contact:
U.S. Army Medical Research Acquisition Activity
ATTN: NBACC BAA 05-2 (Identify the Area of Interest Biological Threat Characterization Program or National Bioforensic Analysis Center
820 Chandler Street
Fort Detrick, MD 21702-5014
FAX: 301-619-6662

The contracting/grants office may contact offerors whose proposals are selected for funding for specific certifications and statements required by federal statutes and regulations. Failure to include all required information and completed forms with submission of the full proposal could delay the award process.
4. *Code of Federal Regulations* can be found at www.gpoaccess.gov/cfr.