ARTICLE C.1. STATEMENT OF WORK

Independently, and not as an agent of the Government, the Contractor shall furnish all the necessary services, qualified personnel, materials, equipment, and facilities, not otherwise provided by the Government under the terms of this contract, as needed to perform the work set forth below:

BACKGROUND INFORMATION

The NIDDK conducts and supports much of the clinical research on the diseases of internal medicine and related subspecialty fields. Many of the large clinical studies funded by the NIDDK collect biospecimens from subjects for analysis and store the samples for future study in a study-specific repository. The collection of these patient and control samples from many different studies in a single repository has the potential to become a resource with which researchers can rapidly validate clinical hypotheses and algorithms for clinical decision. The collection will also advance the development of prognostics, markers, and therapeutics. Thus, a repository of biosamples and accompanying clinical data will clearly aid the research community studying diseases related to the mission of the NIDDK. This project, which will be referred to herein as "the Biosample Repository", is conceptually related to repositories in existence at other institutes at the NIH. For example, the National Cancer Institute (NCI) and National Heart, Lung & Blood Institute (NHLBI) have similar repositories. To date, no such collection has been available to the investigators interested in studying the many diseases that are the focus of NIDDK research.

The repository will allow storage, maintenance, and quality control, and equitable, ethical distribution of biosamples other resources important to the study of diseases under the mandate of the NIDDK. This will allow sharing of resources, thus encouraging work by junior investigators, investigators with novel approaches, and others not included in current collaborations, without excluding those who are established in their fields. It will ensure that research participants will be making a maximal contribution, and will decrease duplicative sampling efforts.

Towards the above ends, the objective of this contract will be to establish the NIDDK Biosample Repository, in order to accomplish the following in a highly efficient, rapid, and cost-effective manner:

- Receive and store biosamples collected in many different studies, and
- Widely distribute biosamples to qualified investigators

The specimen archiving tasks outlined in this statement of work are highly technical, and require extensive experience, expertise, and long-term commitment. The samples were collected over several years from carefully chosen subjects and are present in a finite quantity. Each sample is unique and cannot be replaced if lost, damaged, or contaminated. Therefore, it is essential that the samples be stored under optimal conditions, which vary from sample type to sample type. The Contractor's project director must have extensive experience in successful management of an archival storage facility that stores various types of biosamples, including blood, stool, urine, DNA, and tissue, and distributes aliquots to many different investigators. The Contractor's staff must be highly trained to carry out technical tasks accurately and reproducibly. As all the work is with samples from human subjects, all staff must be familiar with human subjects protections and be sensitive to the bioethical and safety issues involved in handling human biosamples. Finally, the Contractor must have a demonstrable long-term interest in providing these services, to ensure that there is continuity throughout the period of the contract, and to prevent repeated shipment of samples from storage site to storage site, as shipment can sometimes damage these unique materials.

There are no grants, cooperative agreements, or contracts currently funded by NIDDK, or by other government agencies, which can perform all of the required work, create all of the required deliverables, and widely distribute biological materials to the scientific community.

NUMBER OF STUDIES

This project will potentially serve fifteen or more large multi-site NIDDK funded studies.

The range for existing samples is 200,000 to 400,000 individual vials. In addition, to 20,000 to 60,000 new samples, in multiple aliquots (5 – 20 vials), will be received annually.

A. Statement of Work

Task 1. Establish biospecimen preparation, shipping, receipt, and tracking systems for numerous individual multi-center clinical studies.

a. The Contractor shall work with representatives of studies designated in writing by the Project Officer, with the NIDDK Genetics and Data Repositories to develop appropriate aliquoting, packaging and labeling systems for samples (such as blood, stool, urine, DNA and tissue).

b. The Contractor shall develop systems to ensure the timely receipt and to document the handling and archiving of biosamples, such as blood, stool, urine, DNA, and tissue samples, from participating studies designated in writing by the Project Officer. The Contractor shall develop biosample packaging, marking and shipping systems that are in accordance with Standard Industry Practice, FDA Requirements, approved Standard Operating Procedures, city, state, and/or Federal regulations, and any special instructions given. The Contractor shall develop notification systems to anticipate shipments and be responsible for recording and monitoring the location of all specimens that are being shipped to minimize delay or loss. The Contractor shall establish procedures for monitoring and maintaining information on the status of specimens upon receipt, including accidental thaws and other adverse conditions, and actions to be taken when such problems occur.

c. Detailed descriptions of all the systems described in paragraph (b) above shall be provided to the Project Officer within 8 weeks of contract award. Revisions specified by the Project Officer will be completed within 2 weeks, and the final version will then be submitted for approval by the Project Officer.

d. The Contractor shall work with the Project Officer and with investigators from studies designated in writing by the Project Officer to modify and adapt these systems to suit the specific needs of individual projects.

Task 2. Maintain the confidentiality of subjects by removing all traditional personal identifiers from samples

a. Traditional personal identifiers that may be utilized to establish the identity of individual subjects (e.g., surname, address, social security number, etc.) shall not be provided nor accepted by the Contractor. Instead, the Contractor shall work with the NIDDK Data Repository and with researchers submitting samples to develop an identifier code for each subject that will link the sample to the clinical and descriptive data associated with the sample. Thus, all data and biological materials received by the Contractor shall be untraceable to their original sources.

b. Neither the investigators receiving samples from the Contractor, nor the Contractor him/herself will use information collected under this contract to establish the identity of a given subject or query the databases and retrieve information for an individual subject whose identity is known from some other source.

c. The Contractor shall assure that all investigators have adequate approval from an Institutional Review Board (IRB), for the collection and use of samples submitted to the analysis facility. The Contractor shall apply to the Office for Human Research Protections (OHRP) at the Department of Health and Human Services for a project assurance number, if such a number has not been assigned to the Contractor. Obtaining a project assurance number represents a binding commitment to minimum standards for the protection of human subjects, which safeguards the rights and welfare of all human research subjects. The Contractor shall submit the relevant documentation showing that a project assurance number has been issued and that submitting investigators have IRB approval to the Project Officer for review and approval before samples are accepted.

d. The Contractor shall obtain blank copies of all the informed consent forms used in the collection of the samples received by the Contractor.

Task 3. Establish one or more subcontracts for timely and cost-effective shipping of biosamples between multiple sites and the repository.

The Contractor shall establish subcontracts with commercial carriers for overnight shipping of biosamples between multiple sites, domestic and international, and the repository in accordance with Standard Industry Practice, FDA Requirements, approved Standard Operating Procedures, city, state, and/or Federal regulations, and any special instructions given. All shipments of samples from these projects shall be paid for by the Contractor and charged to the contract.

Task 4. Store biosamples under optimal conditions to minimize loss, damage or contamination

a. The Contractor shall determine optimal storage conditions for each type of sample received or prepared and store samples under those conditions.

b. The Contractor shall aliquot and store the samples during the time of the contract. In addition, the Contractor shall arrange transfer of samples for storage, or appropriate elimination of samples, when the contract is no longer renewable, as directed in writing by the Project Officer.

c. Detailed protocols for storage of the following materials: whole blood, plasma, serum, stool, urine, formalin-preserved tissue, frozen tissue, and DNA shall be provided to the Project Officer within 8 weeks of contract award. Revisions specified by the Project Officer will be completed within 2 weeks, and the final version will then be submitted for approval by the Project Officer.

Task 5. Distribute biosamples to qualified investigators granted access by the Project Officer, including packaging, handling, and coordinating sample shipments to domestic and international sites.

a. The Contractor shall have, or shall establish, an Internal Review Board that will approve the overall operation of the repository, including storage and distribution of human biosamples. Having received that approval, the Contractor shall then provide samples only to the specific researchers who have been granted access by NIDDK.

b. The Contractor shall charge an access fee and shipping charges per sample. When available, additional details about access will be provided by NIDDK. The Contractor shall establish an appropriate system for the accounting and reporting of fees in accordance with the fee schedule established jointly with NIDDK. The Project Officer retains the right to waive the access charge for a recipient. In these cases, the Contractor shall pay any and all shipping charges. The Contractor shall establish a process, with approval of the Contracting Officer, to ensure that all such fees are promptly collected and accounted for accurately, and offset against contract costs in a proper and timely manner. The Contractor shall not distribute materials before payment in full is received, unless the Project Officer has waived the fees. Payment shall be in the most expeditious format (e.g., check, purchase order) possible. Income received from fees charged for access to samples shall be utilized to offset contract costs. Such income shall be reflected on the Contractor's invoice for the month it is received.

c. The Contractor shall not use the biosamples for any purpose other than that specified in this contract, without prior written approval of the PO.

d. Packaging, marking and shipping shall be accomplished in accordance with Standard Industry Practice, FDA Requirements, approved Standard Operating Procedures, city, state, and/or Federal regulations, and any special instructions given. The Contractor shall guarantee that all required materials be delivered in immediate usable and acceptable condition.

e. The Contractor shall be responsible for recording and monitoring the location of all specimens that are being shipped through use of an electronic tracking system of all requests and specimens, to minimize delay or loss. The Contractor shall have a procedure for the notification of recipients of anticipated delivery time, and the Contractor shall follow-up with the recipient to ensure that specimens are received at the anticipated delivery time. If a specimen shipment is not received within four hours of expected delivery time, the Contractor shall inform the investigator by telephone or electronic mail. The Contractor shall then initiate immediate tracking to locate the delinquent specimen shipment. Upon finding the delinquent specimen shipment, the Contractor shall notify the investigator with the location and new expected delivery time.

f. When investigators granted access by the Project Officer request samples, the Contractor shall ship samples within 1 week of the request, unless the Project Officer grants an exception.

Task 6. Withdraw and destroy samples from the repository as directed in writing by the Project Officer

During the course of a study, or after a study is concluded, a subject may choose to withdraw from the research project. When notified by an investigator who submitted the sample that the subject (identified by the identifier code) has withdrawn from the study, the Contractor shall request confirmation from the Project Officer. Upon receiving confirmation, the Contractor shall withdraw and destroy all biosamples and other materials associated with that subject's identifier code, and record the materials as "withdrawn" in the database.

Task 7. Establish and maintain Quality Control (QC) and Quality Assurance (QA) programs.

a. The Contractor shall develop and implement QA/QC programs covering activities critical for the successful operation of the facility. The QA/QC programs shall include, but not be limited to:

i. Each protocol used for storage of biosamples
ii. Mechanical functioning of freezers and other storage equipment, including alarm and back- up systems
iii. Monitoring the flow of biosamples into and out of the laboratory
iv. Preservation of biological properties of biospecimens during storage
v. Packaging and shipping of materials to domestic and international sites.
vi. Accuracy of data entry and database maintenance in the inventory database, including regular comparisons of shipping and receipt records with the study's data coordinating center

b. The Contractor shall submit, within 8 calendar weeks of award, a detailed protocol for QA/QC. Revisions specified by the Project Officer will be completed within 2 weeks, and the final version will then be submitted for approval by the Project Officer.

c. The Contractor shall conduct a physical inventory of not less than one-tenth of one (0.1) percent of the stored samples annually. The NIDDK Project Officer will assist the Contractor in selection of a representative sample to be inventoried. The inventory shall include both samples handled in the previous 12 months and freezer positions that may or may not include samples. As part of the inventory, the Contractor shall assess the integrity and selected biological properties, including protein and DNA stability, of randomly selected samples.

Task 8. Provide security and back-up systems and a plan for disaster recovery.

a. The repository shall have an adequate number of empty, functional storage units, constantly running, to serve as back-up units in the event of freezer failures. The back-up units shall be appropriate to the sample inventories at respective temperatures, including mechanical and liquid nitrogen freezers.

b. The repository shall store aliquots of each sample in a back-up facility located at a second site, so that there is independent back-up storage of each and every sample in case of catastrophic loss.

c. The Contractor shall ensure that the repository is equipped with fire, smoke, and mechanical failure alarms, and appropriate fire control equipment. The Contractor shall ensure that key repository personnel can be contacted at any time in case of fire, mechanical failure of one or more freezers, or other emergency.
d. The Contractor shall ensure that the repositories have emergency back-up generators with the capabilities of handling the complete power supply, notably all freezers and facility HVAC, in the case of electrical power failure, except as noted below. The Contractor shall ensure that at a minimum, 72 hours of fuel is available for the generator(s). The Contractor shall conduct biweekly tests of the generators to ensure proper operation.

e. The Contractor shall establish systems to ensure data security and to prevent loss of inventory data in case of physical damage or equipment failure.

f. The Contractor shall establish systems that prevent access to samples and data by unauthorized individuals.

g. The Contractor shall develop a plan for recovery of stored materials and data following a natural or man-made disaster.

h. The Contractor shall provide, within 12 calendar weeks of award, detailed plans describing the security, back-up and disaster recovery measures described in parts a - g. Revisions specified by the Project Officer will be completed within 2 weeks, and the final version will then be submitted for approval by the Project Officer. The plans shall be updated annually.

Task 9. Maintain high quality, secure information systems to allow detailed tracking of sample receipt, processing, storage and distribution, rapid retrieval of samples, storage of QA/QC information associated with the sample, and listing of investigators using the repository.

a. The Contractor shall maintain accurate databases that are regularly updated and verified. The databases shall allow real-time tracking of samples as they are received, stored and distributed. In addition, the databases should include location information to allow rapid, efficient retrieval of samples.

b. The Contractor shall maintain a database of information about qualified investigators who are submitting and/or receive samples. The database shall minimally include for each investigator the following information:

a. Name of the principal investigator
b. Title of research project
c. NIH grant, contract, or cooperative agreement # of project
d. Administrative official mailing address, telephone number, fax number, e-mail address, and recipient institution.
e. Samples submitted
    i. Date of submission
    ii. Sample Id
f. Samples withdrawn
    i. Dates of withdrawal
    ii. Ids of samples withdrawn
    iii. Charges and date of fee payment

c. This database shall also include creation and maintenance of an e-mail list of all investigators receiving and submitting samples, to enable rapid and efficient electronic communication among the investigators, the Contractor, and the Project Officer.

d. The databases shall be constructed in cooperation with researchers conducting the study so that data about sample shipment and receipt can be shared with the data coordinating center and so that selected data can be shared with the NIDDK Data and Genetics Repositories. The Contractor shall assure that ASCII files and other formats (e.g., SAS system files) can be rapidly and efficiently generated from all databases.

e. The Contractor shall maintain a daily backup of all electronic databases to protect against the accidental data loss. In addition, the Contractor shall ensure that the information systems include standard security measures, and that new security measures are implemented as they become available.

f. The Contractor shall submit, within 8 calendar weeks of award, a detailed description of the proposed information systems, including a description of security and back-up provisions. Revisions specified by the Project Officer will be completed within 2 weeks, and the final version will then be submitted for approval by the Project Officer.

Task 10. Work in a cooperative fashion with the Project Officer, the External Advisory Committee and the Steering Committee.

a. The Contractor shall cooperate with the Project Officer, the External Advisory Committee, and with Contractors and their representatives from the NIDDK Data and Genetics Repositories, through participation in the Steering Committee and through other activities. This includes, but is not limited to, cooperation in developing a sample labeling system, methods for cross-referencing and database integration. In addition, the Contractor shall facilitate site visits by the Project Officer, the Steering Committee, and other groups, as directed in writing by the Project Officer.

b. The Contractor shall also assist the NIDDK Data Repository in developing a public website that includes data regarding the Biosample Repository's inventory, policy, forms, procedure, and other information. The Contractor shall maintain a list of publications of researchers who received samples from the Biosample Repository, in which the publications has resulted from the use of those samples, and provide these to the NIDDK Data Repository for inclusion on the website. The Contractor shall also search relevant scientific literature databases, including those maintained by the National Library of Medicine, to identify publications that used samples supplied by the NIDDK Biosample Repository. Electronic literature searches shall be carried out at least every 3 months