

CONCEPT CLEARANCE
REQUEST FOR PROPOSALS (RFP)

A RECOMPETITION: NHGRI SAMPLE REPOSITORY FOR HUMAN GENETIC RESEARCH

BACKGROUND:

The International HapMap Project was the catalyst for establishment of the NHGRI Sample Repository for Human Genetic Research. At the beginning of the HapMap project, the samples had to be deposited into NIGMS's Human Genetic Cell Repository, which is housed at the Coriell Institute for Medical Research (CIMR) in Camden, New Jersey. But, the use of the NIGMS repository was a temporary measure, which we intended to use only until NHGRI could award a contract that would address NHGRI's research initiatives. A sole source Request for Proposals (RFP) was solicited from CIMR to establish the NHGRI Sample Repository for Human Genetic Research. The reason for the sole source solicitation was because of NHGRI's and Coriell's past experiences with the NIGMS Human Genetic Cell Repository and NHGRI's need to get the NHGRI repository up and running quickly. The RFP was announced on 25 October 2005. The contract was awarded on 1 August 2006 and runs through 31 July 2011.

The NHGRI repository now includes the samples from three of the four populations included in the International HapMap Project (the NIGMS repository at Coriell retains the CEPH samples) and from seven additional populations that were subsequently included in the extended HapMap set; thus, there is a total of ten populations in the HapMap collections. (See <http://ccr.coriell.org/Sections/Collections/NHGRI/?SsId=11>). The repository also now includes samples from five additional populations that are being studied for the 1000 Genomes Project, and samples from an additional fourteen populations for that project are in the process of being acquired. Finally, the repository includes human blood samples from the Human Microbiome Project.

The DNA and cell lines from the HapMap samples have proved to be a valuable resource in many genetic and genomic research projects. Researchers use the samples to examine genetic variation in particular chromosomal regions and as already-characterized quality control samples in many other studies, such as GWAS. Researchers also study molecular phenotypes such as expression patterns, in these extensively genotyped cells lines, which allows them to map the genetic factors affecting phenotypes of interest without having to do their own genotyping. Thus, the HapMap samples have become standard sets for discovery of human genetic variation and for testing of genomic technology platforms, and the 1000 Genomes samples are similarly expected to become standard for these uses. The HMP samples will probably also eventually be sequenced.

Mechanisms are in place to ensure that all research proposed with these samples is consistent with the informed consent provided by the donors. The repository promotes ongoing communication with the HapMap donor communities through Community Advisory Groups and provides quarterly reports of sample use in a

newsletter to those groups. Similar mechanisms will be put into place for continuing interaction with the donor communities for the 1000 Genomes Project.

NHGRI has a continuing need for the repository because there is expected to be considerable demand for these samples by the worldwide research community for many years. In order to ensure a continuation of this contract beyond 31 July 2011, NHGRI needs to publish the RFP by August 2010. Unlike the first competition, which was sole source, this will be a free and open competition.

STATEMENT OF WORK

NHGRI continues to require a cell resource for the community. Maintaining and expanding the resource requires the collection, transformation, long-term storage, and distribution of DNA, cell lines, and clones. The required tasks include:

- Maintenance of current sample collections, including backup storage;
- Establishment, at the request of NHGRI, of new sample collections by transforming blood samples and by accepting cell lines and blood samples from other places;
- Performance of extensive quality assurance to assure that the cell lines and DNA are from the submitted samples, that samples reflect the expected family relationships, that the cell lines grow well, and that the samples are free from contamination;
- Distribution of DNA, cells and clones in standard and customized formats at agreed upon prices;
- Provision of technical and logistical assistance to international investigators collecting samples;
- Communication with donor communities, such as through distribution of quarterly reports;
- Assurance that requesters comply with the proper use of the samples as documented in the consent forms used to collect the samples;
- Updating of the sample catalogue;
- Updating of the website;
- Communication of progress to the NHGRI staff through monthly telephone calls and quarterly and annual reports; and
- Provision of logistical support for the repository's Consultation and Oversight Group

MECHANISM OF SUPPORT

The NHGRI Sample Repository for Human Genetic Research will be supported as a cost-reimbursement contract.

FUNDS AVAILABLE

NHGRI intends to make one five-year award. Since the contractor will distribute cell lines, DNA, and clones at a reasonable cost, the cost of this contract is expected to be partially offset by the sale of the samples to qualified scientists in both public and private organizations. As is done currently, discounts will be given to scientists from developing countries.