RFA-HL-11-006: Next Generation Genetic Association Studies (U01)

The National Institutes of Health is soliciting applications to utilize cellular reprogramming, molecular profiling, and genomics to investigate functional aspects of genetic variation in humans. NHLBI is soliciting a phased technology development and implementation program whose goal is to add a functional dimension to genomic studies by combining cellular reprogramming strategies with molecular profiling or cellular assays, followed by integration of this information with existing genotypic and clinical phenotypic data to assess how naturally occurring human genetic variation influences the activities of biological networks in cell-based models of disease. Since the design and conduct of such studies will require several areas of expertise, applicants are encouraged to include multiple PIs on the application.

This FOA is threefold and proposals may include all three phases, but must include the second and third phase outlined below.

- Phase I will stimulate the development of efficient and standardized procedures for the generation of iPS cells and their differentiation into cell types relevant to HLBS diseases.
- Phase II will promote the scaling of technologies developed in Phase I for high throughput generation of both iPS and differentiated cells at the population level involving hundreds or thousands of subjects.
- Phase III will include integration of cellular reprogramming, molecular profiling, physiological or biochemical assays and existing genotype and phenotype information to assess the functional significance of human genetic variation.

Applicants may propose Phases I to III or II to III depending on the current state of induced pluripotent stem (iPS) generation and cell type differentiation technology needed to meet their specific aims. First, NHLBI proposes a technology development phase whose goal is to utilize emerging iPS cell generation and differentiation technology to generate cell types relevant to HLBS diseases. The second phase scales up this technology to generate cell lines in large numbers of samples. The availability of such technology on a production scale will enable the third (implementation) phase that
will apply cellular reprogramming and molecular profiling to population-based samples and will integrate this information with existing genotypic and phenotypic data. The resulting data will allow assessment of how human genetic variation influences the activities of biological networks in cell-based models of disease. Addressing this goal will require a multidisciplinary approach, consisting of teams including, but not limited to, epidemiologists, clinicians, population geneticists, stem cell and molecular biologists and bioinformaticians.

For detailed information about this opportunity please see the full solicitation (RFA-HL-11-006). To find more opportunities from this agency, please see here.

It is estimated that $76M will be available over 5 years to support 5 – 8 awards. Cost sharing is not required. Please see the full solicitation for complete award information.

**Deadline for Proposal to OR-Sponsored Programs: 6/8/2010**
(Please see the solicitation for complete application & submission information.)

Please contact Sponsored Programs (4-2402) with questions regarding proposal submission requirements.

**Deadline for Proposal Submission to Agency: 6/15/2010**

If you have any questions regarding this announcement please contact:

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