Request for approval of a planned FOA: Additional Preclinical Animal Study Sites (PASS) for the Molecular Transducers of Physical Activity (MoTrPAC) Consortium

Information about the proposed FOA:
The purpose of this FOA is to invite applications for additional Preclinical Animal Study Sites (PASS) to join the Molecular Transducers of Physical Activity Consortium (MoTrPAC; http://commonfund.nih.gov/MolecularTransducers). Awards made through this FOA will support investigations into the molecular mechanisms of action of compounds mobilized in response to exercise identified in initial MoTrPAC investigations by the existing PASS and Chemical Analysis Sites. The new PASS members will conduct detailed mechanistic studies to explore the functions, sources, and target tissues of molecules that transduce the effects of physical activity identified from analysis of Fisher 344 rats in the previous MoTrPAC-approved pre-clinical animal protocol.

Overall, data from the PASS studies are anticipated to substantially increase our understanding of how different tissues and organs adapt to the exercise-induced changes. The PASS will serve to confirm human data and extend the analyses of candidate transducers of physical activity from the clinical study across multiple organs and tissues that are not accessible from human participants.

Awardees from this FOA will represent an integral component of the MoTrPAC and must work collaboratively to plan and execute this study to characterize the molecular transducers (the 'molecular map') that underlie the beneficial effects of physical activity in humans. The product will be a publicly available data resource that will enhance and accelerate subsequent research on diseases and conditions affected by physical activity.

Common Fund will provide up to $6 million for this FOA and anticipates up to four additional PASS awards.

Background information:
The Molecular Transducer of Physical Activity (MoTrPAC) program was considered and approved as a concept in 2014.

Six companion FOAs established the elements of MoTrPAC, and were awarded in December, 2016. Clinical Centers will collect blood, muscle, and fat from well-characterized participants engaging in physical activity. Biospecimens are to be analyzed by Genomics, Epigenomics, and Transcriptomics Chemical Analysis Sites and Metabolomics and Proteomics Chemical Analysis Sites. The PASS are providing additional tissues from the Fisher 344 rat that cannot be obtained from human subjects and will allow for further characterization and validation of molecular transducers identified from the chemical analysis of human samples. Analysis of additional tissues from animals substantially broadens the impact of MoTrPAC since it will indicate how these tissues are responding and adapting to exercise. A Bioinformatics Center is overseeing data standardization, integration, and storage and will implement data sharing and computational tools for the integrated analysis of clinical and molecular data. Overall coordination is being provided by a Consortium Coordination Center (CCC).