Alzheimer's Drug Discovery Foundation

Request for Proposals

Creative Computational Approaches to Accelerate Drug Discovery for the Treatment and Prevention of Dementia

Current methods of drug discovery have had limited success at predicting clinical efficacy of investigational therapies in patients with Alzheimer's disease and other age-related dementias. Computational modeling, systems biology and pharmacology, and translational bioinformatics represent a tremendous yet relatively under developed opportunity to accelerate and improve this process particularly for dementias.

The Alzheimer's Drug Discovery Foundation (ADDF) program on Aging & Alzheimer's Disease Prevention is requesting proposals for innovative computational approaches to map disease and predict the efficacy of drugs to treat and prevent dementia. A variety of approaches and outcomes will be considered. Priority will be given to interdisciplinary teams composed of computational and biology/disease experts, and to proposals that use and perhaps develop open-access databases of biological and clinical data. The winning submission(s) will present the most scientifically compelling, novel, and viable program to accelerate drug discovery.

Funding Opportunity #1. Novel computational approaches to modeling drug efficacy on a key therapeutic target for Alzheimer's disease. Quantitative systems pharmacology and other network modeling approaches are of interest, as well as translational bioinformatics approaches to rational drug repurposing and rational combinatorial therapies. Priority will be given to targets other than beta-amyloid and acetylcholinesterase, including but not limited to neuroinflammation, mitochondrial function, insulin sensitivity, cholesterol and ApoE, and the neurovascular unit. Some applications may benefit from the use of the databases including but not limited to:

- The Gene Expression Omnibus (GEO) open-access database of genomics data and ProfileChaser, a related web server
- Life Sciences databases, many of which are listed here by Oxford Journals Nucleic Acids Research.

Funding Opportunity #2. Novel computational approaches to model disease risk and progression based on risk factors. Research increasingly indicates that Alzheimer's is a multi-factorial disease that can develop along different trajectories with multiple risk factors such as genotype, comorbidities, dietary and environmental factors. Some applications may benefit from the use of open-access databases of epidemiological data including but not limited to:

- The National Alzheimer's Coordinating Center (NACC) (http://www.alz.washington.edu),
- The Alzheimer's Disease Neuroimaging Initiative (ADNI) (http://adni.loni.ucla.edu/data-samples/access-data/),

- The C-Path online Data Repository (CODR) for Alzheimer's Disease (http://www.c-path.org/CAMDcodr.cfm).

Mechanism(s) of support: Up to $150,000 in funding is available for each grant for one-year duration, with the possibility of follow-on funding for computational or experimental research.

Review Process: The deadline date for applications is September 5, 2013. Submission of a Letter of Intent (LOI) is required prior to August 22, 2013. Applications will be confidentially reviewed by the ADDF and an external Scientific Review Committee. The award winner(s) will be publicly announced in Spring 2014.

Application Procedure: All letters of intent and applications must be submitted electronically at www.alzdiscovery.org. Detailed application instructions are available on the website.

To discuss scientific or financial aspects of proposals, please contact:
Penny Dacks, *Assistant Director for Aging & Alzheimer's Disease Prevention*
Phone: 212-390-1392 Email: pdacks@alzdiscovery.org

For more information regarding the application process, please contact:
Reena Vanjani, *Grants Manager*
Phone: 212-901-8019 Email rvanjani@alzdiscovery.org