Who We Fund

The mission of the LuMind Foundation (formerly the Down Syndrome Research and Treatment Foundation or DSRTF) is to stimulate research to significantly improve cognition, including memory, learning and speech, for people with Down syndrome.

Through supporting this highly focused field of research, our goal is to develop treatments that help people with Down syndrome:

- lead more active and independent lives,
- participate more successfully in school and employment, and
- avoid additional cognitive decline associated with early-onset Alzheimer's Disease and aging.

Since our founding in 2004, the LuMind Foundation has become the leading private source of funding in the US, generating more than $10.5 million to support results-driven research to improve cognition in Down syndrome.

Who We Fund: 2014–2015

Johns Hopkins Medicine, Baltimore

LuMind Research Center Grant awarded to Dr. Roger Reeves and co-Principal Investigators Drs. David Foster and Paul Worley. The new grant is entitled "A Down Syndrome Center for Fundamental Research-Cognition." Researchers are exploring the mechanism by which a single dose treatment of SAG (an SHH growth factor-like drug) given to a mouse model of Ds early in life completely restores cerebellar development and improves hippocampal function involving learning and memory associated with the developmental intellectual disability in Ds. A second study investigates the role of altered regulation of a gene involved in synaptic plasticity related to cognition and brain network dysfunction in Alzheimer's disease and Ds and the identification of potential new therapeutic targets. A third study concerns the development and application of a new method for real-time analysis of brain signaling that correlate with cognitive function, learning and memory which could accelerate the evaluation of the effectiveness of new drug in mouse models of Ds.

University of California, San Diego

LuMind Research Center Grant awarded to Dr. William Mobley, Principal Investigator and Drs. Belichenko, Kleschevnikov, Wu and Wagner, co-Principal Investigators. The new grant, entitled "Defining the Genes and Mechanisms and Treatments for Neurodevelopmental and Neurodegenerative Causes of Cognitive Dysfunction in Down Syndrome," continues investigations on how excess APP and/or its products potentially in conjunction with additional over-expressed genes, lead, with age, to degeneration of specific brain circuits and Alzheimer's disease-associated pathology in Ds, towards the goal of identifying new drug targets, potential drugs, and therapeutic strategies to decrease APP and/or its products, thus ameliorating the age-related cognitive dysfunction and AD pathology associated with Ds.

University of Arizona

LuMind Innovation Research Grant awarded to Drs. Lynn Nadel and Jamie Edgin co-Principal investigators. The grant, entitled "The Neuropsychology of Down Syndrome," aims to refine and validate the first set of Ds-specific battery of cognition tests that provide a way to more specifically evaluate the efficacy of potential drug treatments and interventions. Additional studies will explore EEG-based methodologies which could provide critical support for fundamental cognition research and clinical trials as well as extending sleep studies which can provide new insights to address sleep disorders to improve cognitive function in children and adults with Ds.

Stanford University

LuMind Innovation Research Grant awarded to Dr. H. Craig Heller, Principal Investigator and Dr. Garner, co-Principal Investigator. The grant, entitled "Mechanisms Underlying the Roles of Sleep and Circadian Rhythms in the Learning Disability of Down Syndrome," will continue to investigate the GABA -A receptor, a protein that plays a major part in inhibition, extending research in mouse models of Ds about how the over-inhibition may impair circadian rhythms and sleep in Ds, how this may contribute to cognitive impairment, and whether drugs that overcome the inhibition ameliorate these impairments. Research is also continuing on a recent discovery of another over-expressed chromosome 21 gene, Usp16, and its potential role in deficient brain development, loss of brain cells, and early aging in Ds.

VA Palo Alto Health Care System

LuMind Innovation Research Pilot Grant awarded to Principal Investigator Dr. Ahmad Salehi. The grant, entitled "Improving Adrenergic Signaling for the Treatment of Cognitive Dysfunction in Down Syndrome" continues research investigating the potential for an additional existing FDA-approved drug, fomoterol, which acts as a norepinephrine mimic to restore contextual learning in the mouse Ds model and also overcome the effects of the Alzheimer's disease neuropathology in Ds on cognition. The results could provide further evidence and a rationale for accelerated clinical evaluation of this drug in individuals with Ds.

Emory University School of Medicine

LuMind Innovation Research Grant awarded to a consortium of nine institutes led by Drs. Stephanie Sherman (Emory University School of Medicine) and Roger Reeves (Johns Hopkins). The grant, entitled "The Down Syndrome Cognition Project," will investigate the genetic contribution to the substantial variation in cognitive ability among individuals with Ds using the Arizona Cognitive Test Battery, identify targets for therapeutic interventions, and establish a network of collaborating clinical sites as an initial scaffold for a clinical trials network.

Learn more and help spread the word!
Visit our website www.lumindfoundation.org or engage with us through social media. Find us at facebook.com/LuMindFDN and Twitter @LuMindFDN.

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