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For Immediate Release  
Tuesday, April 1, 2008

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## Newly Awarded Autism Centers of Excellence to Further Autism Research

The National Institutes of Health (NIH) announced on April 1, 2008, the latest recipients of the Autism Centers of Excellence (ACE) program. These grants will support studies covering a broad range of autism research areas, including early brain development and functioning, social interactions in infants, rare genetic variants and mutations, associations between autism-related genes and physical traits, possible environmental risk factors and biomarkers, and a potential new medication treatment.

The ACE program encompasses research centers and research networks. The research centers foster collaborations between teams of specialists who share the same facility so that they can address a particular research problem in depth. ACE networks consist of researchers at many facilities in locations throughout the country, all of whom work together on a single research question.

Autism (<http://www.nimh.nih.gov/health/topics/autism-spectrum-disorders-pervasive-developmental-disorders/index.shtml>) is a complex brain disorder involving communication and social difficulties as well as repetitive behavior or narrow interests. Autism is often grouped with similar disorders, all of which may be referred to collectively as autism spectrum disorders (ASD). The underlying causes of ASD are unclear. Currently, there is no cure for the disorders and treatments are limited.

"The ACE program provides the framework for considerable gains in understanding the fundamental underpinnings of autism," said Elias Zerhouni, M.D., Director of NIH. "By building on earlier discoveries, the ACE centers and networks will shed light on important risk factors and possibly even novel treatments."

The 2008 ACE program Center award recipient is:

- **Ami Klin** (Yale University): Researchers at Yale propose to study early social interactions and development and disruptions in these processes in children ages 12–24 months with ASD. The researchers also aim to identify rare genetic variants that may be involved in ASD in this same group of young children. Klin and colleagues will also use brain imaging tools to study the structure and functioning of connections in the brains of an additional group of 10-year old children with ASD who have been followed since age 24 months in previous research studies. Together, these projects will

build upon existing research on the behavioral, brain and molecular aspects of ASD, and may lead to new discoveries on the causes and best treatments for ASD.

The 2008 ACE program Network award recipients are:

- **Diane Chugani** (Wayne State University): Researchers at this Network of sites will study the effects of using buspirone (Buspar) in promoting more normal growth and development of the brains of children with autism. Autistic children tend to have abnormal levels of the neurotransmitter serotonin during important periods of development. Buspirone helps stimulate serotonin production and was shown in a pilot study by the Wayne State researchers to improve social interaction, and reduce repetitive behavior and sensory dysfunction and anxiety in children with autism. Findings from these studies could provide an evidence base for a new medication treatment for autism.
- **Daniel Geschwind** (University of California Los Angeles): Researchers at this Network of sites propose to add to their earlier collaborative efforts, which produced the Autism Genetic Resource Exchange (AGRE). Specifically, they aim to recruit 400 more families that have one child affected by autism to expand the existing data on the relationship between autism-related genes and physical traits (phenotype). Two hundred of the additional families will be of African American descent to determine whether African Americans share the same genetic risk factors as identified in the primarily white European AGRE sample. The researchers also intend to identify rare genetic variants, mutations and abnormalities that affect a person's risk for autism. Studying a large population lends greater reliability to the genetic findings from this research and may be more applicable to a wider range of children who have ASD.
- **Craig Newschaffer** (Drexel University): Researchers at this Network of sites (including Children's Hospital of Philadelphia, Johns Hopkins University, University of California Davis and Kaiser Permanente Division of Research) will study possible risk factors and biological indicators for ASD during the prenatal, neonatal and early postnatal periods. The researchers aim to follow 1,200 mothers of children with autism at the start of a new pregnancy and document the development of their newborn siblings through age three. This study, to be known as the Early Autism Risk Longitudinal Investigation (EARLI), will provide a unique opportunity for studying possible autism environmental risk factors and biomarkers during different developmental windows as well as an opportunity to investigate the interplay of genetic susceptibility and environmental exposure. A number of environmental exposures, ranging from suspected neurotoxicants like persistent organic pollutants to medications taken during pregnancy, could potentially be investigated with data and samples collected in EARLI. The study will also add considerably to current knowledge of the natural history and progression of ASD.

These grant awards add to the five centers and two networks awarded in 2007

(<http://www.nimh.nih.gov/science-news/2007/nih-funds-new-program-to-investigate-causes-and-treatment-of-autism.shtml>), which include the ACE Network grant awarded to Sally Rogers (University of California, Davis) late last year. To address the need for controlled studies of treatments for autism in very young children, Rogers and colleagues will compare an intensive behavioral intervention to standard community-based treatment in 18-24-month-old children with autism. Building on Rogers' previous research, this new research will examine factors that can inform efforts to provide the best treatment outcomes for very young children with autism.

The NIH Institutes providing funding and expertise for this effort are the National Institute of Mental Health, National Institute of Environmental Health Sciences, National Institute of Neurological Disorders and Stroke, Eunice Kennedy Shriver National Institute of Child Health and Human Development and National Institute on Deafness and Other Communication Disorders.

The National Institute of Mental Health (NIMH) mission is to reduce the burden of mental and behavioral

disorders through research on mind, brain, and behavior. More information is available at the NIMH website (<http://www.nimh.nih.gov/>).

The National Institutes of Health (NIH) — *The Nation's Medical Research Agency* — includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. It is the primary federal agency for conducting and supporting basic, clinical and translational medical research, and it investigates the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit [www.nih.gov](http://www.nih.gov).

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