

**2008/2009 NARSAD
Grant Deadlines:**2008 Young Investigator
Earliest Start Date: July 1,
20082009 Young Investigator
Award Application Deadline:
July 25, 20082008 Independent
Investigator Award Earliest
Start Date: September 15,
20082008 Staglin Awards Earliest
Start Date: September 15,
20082009 Independent
Investigator Award
Application Deadline: March
5, 20092009 Distinguished
Investigator Earliest Start
Date: May 1, 20092009 Young Investigator
Earliest Start Date: July 1,
2009

NARSAD Award Winners

 Mei Huang,
Ph.D.,
Vanderbilt
University
Medical Center,
2005 & 2007
Young Investigator

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NARSAD Investigator
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of Deep Brain Stimulation**Project Summary****Jul. 28, 2008** EMAIL THIS PAGE  PRINT THIS PAGE

Ann M. Graybiel, Ph.D. (Distinguished Investigator 2007) of **Massachusetts Institute of Technology**, will use a new molecular technique developed in her laboratory to study a part of a system in the forebrain called the cortico-basal ganglia loops and its involvement in Obsessive Compulsive Disorder (OCD) and addiction. Specifically, she will investigate the function of the striosome- and matrix-based circuits based on cloning and initial characterization she accomplished with two related signaling genes (CalDAG-GEFII and CalDAG-GEFI). Using a mouse model, she found that strong stressors (repeated exposure to amphetamines) resulting in stereotypic behaviors were sensitized by CalDAG-GEFI, and that this gene was essential in long-term potentiation (LTP) but not long-term depression (LTD) of the striatum. She also found that this same gene in platelets sensed calcium levels on a millisecond time scale by integrating intracellular signaling from multiple receptors. She now hypothesizes that a similar function is occurring in the striatum, and that strong stressors (such as LTP and high-dose amphetamine) depend on CalDAG-GEFI to activate striatal cells normally. She also believes that the other gene, CalDAG-GEFII, plays an equally important role in striatal plasticity. The results of Dr. Graybiel's study may elucidate the striking differences in striosome-matrix expression that has been noted for most neurotransmitter-related substances present in the striatum. Understanding the molecular differences of these two genes may result in increased understanding of important aspects of the cortico-basal ganglia loop function related to response probability, including the repetitive movements and thoughts seen in OCD and addiction.

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Project Summaries**Prizes**

- Lieber Prize
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For Grantees

- Young Investigator Fact Sheet
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