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McDonnell Foundation Announces 2008 Grants for The 21st Century Science Initiative Awards

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\$26.7 Million in Grants Continue the Commitment to Founder's Vision

(St. Louis, MO) The Officers of the James S. McDonnell Foundation today announced more than \$26 million in grants in their ongoing program, the **21st Century Science Initiative**.

Founded in 1950 by the late aerospace pioneer and founder of what would become the McDonnell Douglas Corporation, James S. McDonnell believed that science and technology gives mankind the power to shape knowledge for the future while improving our lives. "Mr. Mac's vision continues to be realized through the research these grants are supporting. Since the inception of the program in 2000, more than \$126 million in funding has been awarded.

In January, the Foundation announced the James S. McDonnell Foundation Scholar Awards would fund a new program area *Understanding Human Cognition*, supporting research studying how neural systems are linked to and support cognitive functions and how cognitive systems are related to observable human behavior. The 21st Century Science Initiative also funds research in two other program areas: *Brain Cancer Research* supporting novel research that will generate new knowledge leading to increased rates of survival and improve functional recovery for individuals with brain cancer; and *Studying Complex Systems* supporting scholarship and research directed toward the development of theoretical and mathematical tools that can be applied to the study of complex, adaptive, nonlinear systems.

"Support of research and applications of research findings to important problems remains a critical role for private philanthropy and for the McDonnell Foundation. Having a diversity of private and public funders helps ensure that the most creative work will obtain needed support", said McDonnell Foundation Vice President, Dr. Susan Fitzpatrick.

The McDonnell Foundation's 2008 21st Century Science Initiative Awards are:

MCDONNELL SCHOLAR AWARDS: In the Area of Understanding Human Cognition

Carnegie Mellon University, Pittsburgh, Pennsylvania

Principal Investigator: John R. Anderson, \$600,000 over six years.

Theoretical methodology for using fMRI to understand complex cognition

Carnegie Mellon University, Pittsburgh, Pennsylvania

Principal Investigator: David J. Danks, \$600,000 over six years.

Integrating causal cognition, concepts and decision-making

Duke University, Durham, North Carolina

Principal Investigator: Elizabeth M. Brannon, \$600,000 over six years.

Developmental and evolutionary foundations of mathematical cognition

Weizmann Institute of Science, Rehovot, Israel

Principal Investigator: Noam Sobel, \$600,000 over six years.

From percept to molecule: Human olfactory cognition as a key to the neurobiology of olfaction

Yale University School of Medicine, New Haven, Connecticut

Principal Investigator: Nenad Sestan, \$600,000 over six years.

Evolutionary specializations and development of the human frontal cortex

Collaborative Awards: Understanding Human Cognition

Brain Trauma Foundation, New York, New York, in support of a collaboration, Attention Dynamics

Consortium in Traumatic Brain Injury (ADC-TBI), Principal Investigator: Jamshid Ghajar, \$3,106,677 over three years.

Rotman Research Institute of Baycrest Centre Hospital, Ontario, Canada, in support of a collaboration,

Network mechanisms underlying cognition and recovery of function in the human brain, Principal

Investigator: A. Randall McIntosh, \$3,716,162 over two years.

Washington University, St. Louis, Missouri, in support of a collaboration, Applying cognitive psychology

to enhance educational practice: II, Principal Investigator: Henry L. (Roddy) Roediger, \$6,492,617 over five years.

Weill Medical College of Cornell University, New York, New York, in support of a collaboration,

Recovery of Consciousness After Severe Brain Injury, Principal Investigator: Nicholas D. Schiff,

\$3,889,330 over four years.

Research Awards: Studying Complex Systems

Duke University, Durham, North Carolina

Principal Investigator: Katia Koelle, \$448,937 over four years.

Derivation and application of a dimensionless quantity for understanding viral evolution

Georgia Institute of Technology, Atlanta, Georgia

Principal Investigator: Joshua S. Weitz, \$448,260 over five years.

Mechanisms and evolution of complex life history traits in bacterial viruses

Harvard Medical School, Boston, Massachusetts

Principal Investigator: Roy Kishony, \$450,000 over three years.

The world in a grain of soil: From species interactions to community structure

Ohio State University, Columbus, Ohio

Principal Investigator: Elena G. Irwin, \$406,834 over four years.

Multiscale dynamics and emergent patterns in urban spatial systems

Santa Fe Institute, Santa Fe, New Mexico

Principal Investigator: Christopher Moore, \$417,576 over three years.

Statistical inference and machine learning for complex networks

University of Georgia, Athens, Georgia

Principal Investigator: John M. Drake, \$449,527 over four years.

Evolutionary epidemiology of multi-transmission pathogens in multi-host networks

University of Houston, Houston, Texas

Principal Investigator: Tim F. Cooper, \$421,511 over three years.

Predicting evolutionary trajectories of computational and biological populations

University of Michigan, Ann Arbor, Michigan

Principal Investigator: Robert D. Deegan, \$446,545 over five years.

Interactions in pattern forming systems: Bridging the gap between laboratory and large scale open systems

University of Oxford, Oxford, England, United Kingdom

Principal Investigator: Mason A. Porter, \$418,038 over four years.

Coevolution, interconnections and communities of social and political networks in the United States Congress

Research Awards: Researching Brain Cancer

City of Hope National Medical Center and Beckman Research Institute, Duarte, California

Principal Investigator: Behnam Badie, \$450,000 over three years.

Role of Receptor for Advanced Glycation End product (RAGE) pathway in brain tumor macrophage function

Monash Institute of Medical Research, Clayton, Victoria, Australia

Principal Investigator: Terrance G. Johns, \$386,500 over three years.

Establishing efficacious combinations of targeted therapies for the treatment of glioma

Northwestern University, Chicago, Illinois

Principal Investigator: Jane Y. Wu, \$450,000 over five years.

Designing new therapy by blocking brain tumor invasion and metastasis

Tel Aviv [University] Sourasky Medical Center, Tel Aviv, Israel

Principal Investigator: Dafna Ben Bashat, 418,400 over three years.

Advanced dynamic vascular imaging for brain tumors

University of California-San Francisco, San Francisco, California

Principal Investigator: Manish K. Aghi, \$449,690 over five years.

Identifying and overcoming glioblastoma resistance to treatments targeting vascular endothelial growth factor

University of Texas M. D. Anderson Cancer Center, Houston, Texas

Principal Investigator: Wei Zhang, \$450,000 over three years.

Control of glioma cell migration by Iip45 and HDAC6

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