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James S. McDonnell Foundation Announces Grants for The 2012 21st Century Science Initiative Awards

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$18.5 Million in Grants Continue the Commitment to Founder's Vision

(St. Louis, MO) The Officers and Directors of the James S. McDonnell Foundation today announced more than $18.5 million in grants in their ongoing program, the **21st Century Science Initiative**. The McDonnell Foundation, founded in 1950 by the late aerospace pioneer and chief executive of the McDonnell Douglas Corporation, James S. McDonnell, builds on his belief that science and technology gives mankind the power to shape knowledge for the future while improving our lives. Since the inception of the 21st Century Science Initiative in 2000, more than $211 million in funding has been awarded.

The Initiative provides awards in three topical program areas. Scholar Awards in the program area *Understanding Human Cognition* were provided to researchers identified by their peers as likely to continue to make important contributions to the ongoing effort to better understand the neural underpinnings and behavioral ramifications of human cognition. *Brain Cancer Research* supports research that will generate new knowledge eventually leading to increased rates of survival and improved functional recovery for individuals with brain cancer. *Studying Complex Systems* supports scholarship and research directed toward the development of theoretical and mathematical tools that can be applied to the study of complex, adaptive, nonlinear systems. The Postdoctoral Fellowship Awards in *Studying Complex Systems* provides doctoral students an opportunity to broaden their research experience and acquire additional skills in this multi-disciplinary field.

"Support of research and applications of research findings to important problems remains a pivotal role for private philanthropy and for the McDonnell Foundation. The foundation is committed to the ideal that of 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 2012 21st Century Science Initiative Awards are:

Scholar Awards: Understanding Human Cognition

Brown University, Providence, Rhode Island
Principal Investigator: David Badre, $600,000 over six years.
Foundations of goal-directed behavior: Neural and cognitive processes supporting cognitive control,

Ecole Normale Supérieure, Paris, France
Principal Investigator: Sophie Deneve, $600,000 over six years.
Causal inference with spiking neurons

Fundación Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires, Argentina
Principal Investigator: Mariano Sigman, $600,000 over six years.
From single decisions to mental programs

Massachusetts Institute of Technology, Boston, Massachusetts
Principal Investigator: Josh McDermott, $600,000 over six years.
The computational basis of human audition: Representation, recognition, and segregation

Radboud University Nijmegen, Nijmegen, Netherlands
Principal Investigator: Roshan Cools, $600,000 over six years.
Understanding motivation and cognition: Combining psychology and neuropharmacology

University of California - San Diego, San Diego, California
Principal Investigator: John Serences, $600,000 over six years.
Linking attentional modulations in human visual cortex with perception and behavior

University of Cambridge, Cambridge, United Kingdom
Principal Investigator: Jon S. Simons, $600,000 over six years.
Getting a grip on the subjective experience of remembering

University of Oxford, Oxford, United Kingdom
Principal Investigator: Gaia Scerif, $600,000 over six years.
Effects of attention disorders on developing cognition: Mechanisms and plasticity

Collaborative Activity Awards: Understanding Human Cognition

Brazilian Society for Neuroscience and Behavior (SBNeC)
Principal Investigator: Sidarta Ribeiro, up to $420,000 for one year.
Support for the Third Latin American School on Education and the Cognitive and Neural Sciences

Atlanta Research & Education Foundation, Decatur, Georgia
Principal Investigator: Paul Garcia, $1,500,000 over three years.
Probing the overlap between sleep and anesthesia to enhance human
Cognition

University of Michigan, Ann Arbor, Ann Arbor, Michigan
Principal Investigator: George A. Mashour, $530,195 over two years.
Reconstructing consciousness and cognition

The Salk Institute for Biological Studies, La Jolla, California

Principal Investigator: Fred H. Gage, $1,500,000 over three years.
Adult neurogenesis: bridging the gap between model organisms and human cognition

Washington University in St. Louis, St. Louis, Missouri
Principal Investigator: David Gutmann, $1,532,685 over three years.
Brain Tumor Ecology Collaborative (BTEC)

Scholar Awards: Studying Complex Systems

Emory University, Atlanta, Georgia
Principal Investigator: Ilya Nemenman, $450,000 over six years.
In search of simplicity: Coarse-graining cellular information processing networks

Harvard Medical School, Boston, Massachusetts
Principal Investigator: Matthew H. Bonds, $450,000 over six years.
Poverty traps and the ecology of economic development

Johns Hopkins University, Baltimore, Maryland
Principal Investigator: Noah J. Cowan, $450,000 over six years.
Decoding complex animal behavior via sparsity

Universitat Rovira i Virgili, Tarragona, Spain
Principal Investigator: Alexandre Arenas, $450,000 over six years.
Multilevel analysis of complex networked systems

University of California - Los Angeles, Los Angeles, California
Principal Investigator: Priyanga Amarasekare, $450,000 over six years.
Uncovering mechanisms of diversity maintenance: The interplay between abiotic environmental variation and non-linear biotic interactions

University of Cape Town, Percy FitzPatrick Institute, Cape Town, South Africa
Principal Investigator: Graeme S. Cumming, $450,000 over six years.
Complexity, networks, and spatial resilience in social-ecological systems

University of Guelph, Guelph, Ontario, Canada
Principal Investigator: Madhur Anand, $450,000 over six years.
Coupled human-environment system dynamics and alternative stable states in complex mosaic ecosystems

University of North Carolina at Chapel Hill, Chapel Hill, North Carolina
Principal Investigator: Peter J. Mucha, $450,000 over six years.
Community detection in networks across time

Research Awards: Researching Brain Cancer

Baylor College of Medicine, Houston, Texas
Principal Investigator: Stephen Gottschalk, $450,000 over three years.
Improving EphA2-targeted T-cell therapy for glioma

Columbia University, New York, New York
Principal Investigator: Andrew B. Lassman, $449,148 over three years.

Phase II clinical trial of Perifosine + Temsirolimus for recurrent glioblastoma with tissue and imaging correlates of response

German Cancer Research Center, Heidelberg, Germany
Principal Investigator: Stefan Pfister, $441,462 over three years.
Use of cerebrospinal fluid genetics for the diagnosis, subgrouping, and minimal residual disease monitoring in medulloblastoma

University of California - San Diego, Ludwig Institute for Cancer Research, La Jolla, California
Principal Investigator: Frank Furnari, $446,844 over four years.
EGFR inhibitor resistance in glioblastoma: Deciphering the role of FGFR-mediated PTEN phosphorylation,

University of California - San Francisco, San Francisco, California
Principal Investigator: Joanna J. Phillips, $450,000 over three years.
Proteoglycans as novel biomarkers and therapeutic targets in glioblastoma

University of Texas M.D. Anderson Cancer Center, Houston, Texas
Principal Investigator: Zhimin Lu, $450,000 over three years.
Regulation of PKM2 in glioblastoma development

Postdoctoral Fellowship Awards: Studying Complex Systems

Lu Feng, *Doctoral Institution: University of Oxford*

Elad Ganmor, *Doctoral Institution: Weizmann Institute of Science*

Nick Gravish, *Doctoral Institution: Georgia Institute of Technology*

Andrew Hein, *Doctoral Institution: University of Florida*

Jonathan Karr, *Doctoral Institution: Stanford University*

Elena Koslover, *Doctoral Institution: Stanford University*

Shamim Nemati, *Doctoral Institution: Massachusetts Institute of Technology*

Adam Palmer, *Doctoral Institution: Harvard Medical School*

Michal Rabani, *Doctoral Institution: Massachusetts Institute of Technology*

Michelle Wynn, *Doctoral Institution: University of Michigan – Ann Arbor*

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