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## James S. McDonnell Foundation Announces 2014 Grants for The 21<sup>st</sup> Century Science Initiative Awards

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### **\$13.4 Million in Grants Bring Total Commitment For Pathbreaking Research to a Quarter of a Billion Since 2000**

(St. Louis, MO) The Officers and Directors of the James S. McDonnell Foundation today announced more than \$13 million in grants in their ongoing program, the **21<sup>st</sup> 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 \$250 million in funding has been awarded.

In 2014, the 21<sup>st</sup> Century Science Initiative funded research in three programs and Cognitive Rehabilitation. 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 effort to better understand the neural underpinnings and behavioral ramifications of human cognition. ***Mathematical & Complex Systems Approaches to Brain Cancer*** supports collaborative research focused on incorporating mathematical and ecologically-informed research into studies of brain cancer biology and the design of new brain cancer therapies. ***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 JSMF Postdoctoral Fellowship Awards in ***Studying Complex Systems*** provides students completing doctoral training 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 having a diversity of private and public funders helps ensure that the most creative work will obtain needed support,” said recently named McDonnell Foundation President, Dr. Susan Fitzpatrick.

The McDonnell Foundation's 2014 21<sup>st</sup> Century Science Initiative Awards are:

### Scholar Awards: Understanding Human Cognition

#### **Carnegie Mellon University, Pittsburgh, Pennsylvania**

Principal Investigator: Anna V. Fisher, \$600,000 over six years.

Elucidating developmental change in the structure of semantic knowledge and inductive reasoning

#### **Johns Hopkins University, Baltimore, Maryland**

Principal Investigator: Justin Halberda, \$600,000 over six years.

How biology and experience shape mathematical thought

#### **Massachusetts General Hospital, Boston, Massachusetts**

Principal Investigator: Ken Solt, \$600,000 over six years.

Reanimation and cognitive recovery from general anesthesia

#### **New York University, New York, New York**

Principal Investigator: Todd M. Gureckis, \$600,000 over six years.

Self-directed learning: Understanding the interactions between decision making, learning, and memory

#### **Stanford University, Stanford, California**

Principal Investigator: Surya Ganguli, \$600,000 over six years.

The emergence of cognition from the biophysics of neurons and synapses

#### **University of Oxford, Oxford, United Kingdom**

Principal Investigator: Mark Stokes, \$600,000 over six years.

Stability of mind in a dynamic brain: Neural principles of working memory for flexible human cognition

#### **University of Oxford, Oxford, United Kingdom**

Principal Investigator: Roi Cohen Kadosh, \$600,000 over six years.

New frontiers to improve learning, cognition and neuroplasticity

#### **The University of Western Ontario, London, Ontario, Canada**

Principal Investigator: Jessica Grahn, \$600,000 over six years.

Moving to the beat: The relationship between rhythm perception and movement

### Collaborative Activity Awards: Understanding Human Cognition

#### **University of Iowa, Iowa City, Iowa**

Principal Investigator: Daniel Tranel, \$1,502,100 over three years.

Vulnerable hubs in human brain networks: A new approach to neurological disease

### Collaborative Activity Awards: Cognitive Rehabilitation

#### **The Florey Institute of Neuroscience and Mental Health, Victoria, Australia**

Co-Investigators: Leanne Carey, Carolyn Baum, & Naomi Josman, \$528,500 over three years.

Advancing the Science of Rehabilitation: Translating Neuroscience and Rehabilitation into Everyday Life

## Collaborative Activity Awards: Mathematical & Complex Systems Approaches for Brain Cancer

### **Northwestern University, Chicago, Illinois**

Project Manager: Kristin Swanson, \$1,850,584 over three years.

The “ENDURES” Study: Environmental dynamics underlying responsive extreme survivors of glioblastoma

## Scholar Awards: Studying Complex Systems

### **Duke University, Durham, North Carolina**

Principal Investigator: James W. Moody, \$450,000 over six years.

Cohesion and connectivity: Methods for identifying endemic diffusion in dynamic networks

### **Georgia Institute of Technology, Atlanta, Georgia**

Principal Investigator: Christopher J. Rozell, \$450,000 over six years.

Tracking time-varying low-dimensional structure to uncover the building blocks of complex dynamics

### **North Carolina State University, Raleigh, North Carolina**

Principal Investigator: Karen E. Daniels, \$450,000 over six years.

A network approach to multi-scale materials

### **Northwestern University, Chicago, Illinois**

Principal Investigator: Rosemary Braun, \$450,000 over six years.

Modeling biocomplexity: From molecular interactions to population genetics

### **The University of Chicago, Chicago, Illinois**

Principal Investigators: Sarah Cobey & Patrick C. Wilson, \$450,000 over six years.

Measuring the predictability of evolution with adaptive immunity

### **University of New Mexico, Albuquerque, New Mexico**

Principal Investigator: Melanie E. Moses, \$450,000 over six years.

Emergent cooperative search in natural and engineered systems

## Postdoctoral Fellowship Awards: Studying Complex Systems

Yi-Ju Chen, *Doctoral Institution: California Institute of Technology*

Babak Fotouhi, *Doctoral Institution: McGill University*

Albert Kao, *Doctoral Institution: Princeton University*

Rémi Louf, *Doctoral Institution: Institut de Physique Theorique, CEA Saclay*

Lisa O'Bryan, *Doctoral Institution: University of Minnesota*

Shai Pilosof, *Doctoral Institution: Ben-Gurion University*

Andrew Rhines, *Doctoral Institution: Harvard University*

Maria Riolo, *Doctoral Institution: University of Michigan*

Elizabeth Roberto, *Doctoral Institution: Yale University*

Jakob Runge, *Doctoral Institution: Potsdam Institute for Climate Impact Research*

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