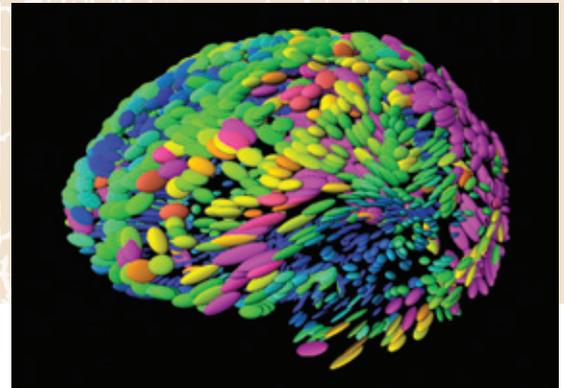
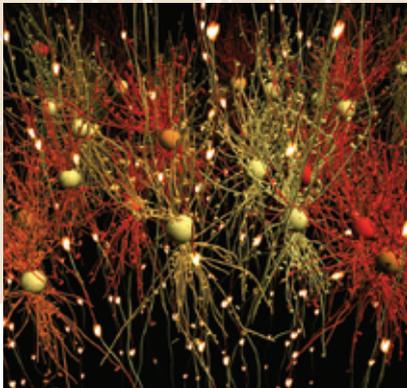


Forum on Neuroscience and Nervous System Disorders

2011 Annual Report



INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

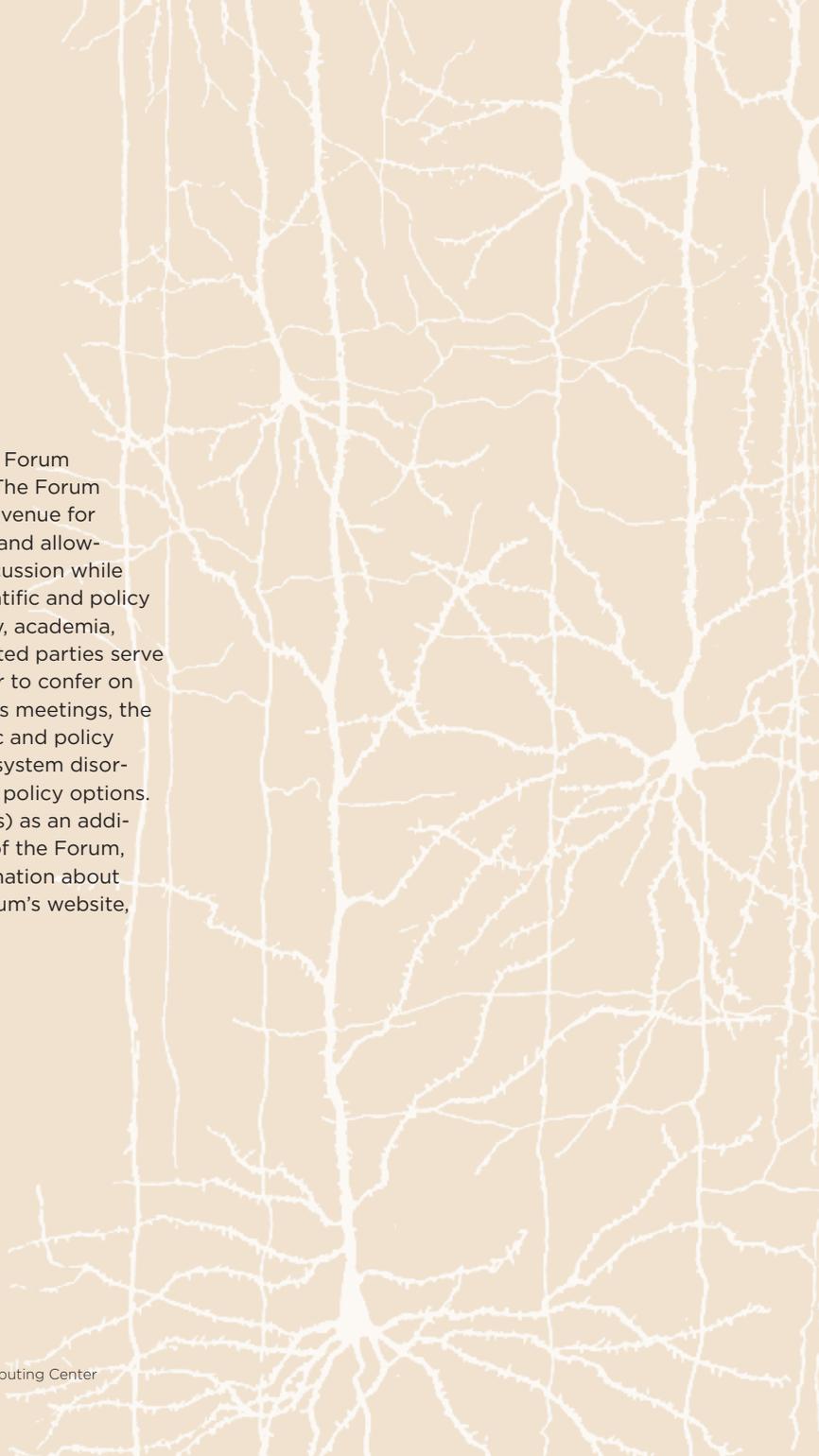
Advising the nation • Improving health

About the Neuroscience Forum

The Institute of Medicine in 2006 established the Forum on Neuroscience and Nervous System Disorders. The Forum is designed to provide its members with a neutral venue for exchanging information, sharing individual views, and allowing a structured opportunity for dialogue and discussion while scrutinizing critical and possibly contentious scientific and policy issues. Representatives from government, industry, academia, patient advocacy organizations, and other interested parties serve as Forum members. It convenes three times a year to confer on subject areas of mutual interest and concern. At its meetings, the Forum identifies and discusses emerging scientific and policy issues related to basic neuroscience and nervous system disorders, as well as effective clinical interventions and policy options. The Forum also sponsors workshops (symposiums) as an additional mechanism for informing the membership of the Forum, other relevant stakeholders, and the public. Information about past or upcoming meetings is available at the Forum's website, www.iom.edu/neuroforum.

Cover Image Credits

Left: Greg Hood, John Burkardt, and Greg Foss, Pittsburgh Supercomputing Center
Right: Paul Thompson and Arthur Toga, UCLA





Message from the Chair

The Institute of Medicine (IOM) established the Forum on Neuroscience and Nervous System Disorders to provide a venue through which neuroscience leaders from private-sector sponsors and users of biomedical and clinical research, federal agencies sponsoring and regulating research, private foundations, the academic community, and other consumers could consider critical issues and how they might be better approached.

Discussions in 2011 focused on a diverse array of topics, including the implications of recent cutbacks by major pharmaceutical companies in drug development for central nervous system disorders, and how to better coordinate and facilitate research across the various stakeholders that make up the neuroscience community.

With an agenda set by the members, the Forum undertook a variety of initiatives to address these challenges and opportunities. Looking ahead to 2012, the Forum plans to host an array of activities, including meetings on topics such as:

- Enhancing Public-Private Partnerships in CNS Research and Development
- Neurodegeneration: Opportunities for Collaboration Across Disease-Specific Research and Development Communities
- Opportunities to Expand the Workforce and Improve Access to Medications Necessary to Care for Individuals with Mental, Neurological, or Substance Use Disorders in Sub-Saharan Africa
- Animal Models of Nervous System Disorders

We look forward to another productive and interesting year for the Forum.

Alan Leshner
Chair

Reflecting Back

Forum Activities in 2011

U.S. and European Animal-Research Regulations: Impact on Neuroscience Research

Numerous regulations, laws, directives, and policies are in place to ensure the ethical use of animals in medical and life-sciences research. These regulations are intended to ensure that animals in research receive humane care and use and that practical steps are taken to use the smallest number of animals to give significant results while ensuring that each individual animal experiences minimum pain or distress. The goal of the workshop was to bring together researchers, legal scholars, administrators, and other key stakeholders to discuss current trends and cross-national differences in animal regulations. Particular attention was to be paid to identifying potential implications of new regulations on neuroscience research. The workshop also provided an opportunity for international dialogue around engaging the public regarding animal use in research and the development of core principles and outcomes for animal care and use.

Validation of Alzheimer’s Disease Diagnostic Guidelines

At the request of the Alzheimer’s Association, the Forum hosted a public workshop at the 2011 Alzheimer’s Association International Conference. The session was designed to bring together key stakeholders and audience members to identify a set of core principles that could be used to validate the newly proposed diagnostic guidelines for Alzheimer’s disease. While validation has been acknowledged as a critical next step, the mechanisms for validation remain unclear. A panel discussion with leading experts engaged the audience in examining the types of studies needed, their design and execution, and how the guidelines will be used in broader populations outside the clinical research environment. In particular, validation and standardization of biomarker use in predicting and diagnosing the symptomatic prodementia and dementia phases of Alzheimer’s disease was included.

Facilitating Translational Research for Clinical Neuroscience Applications

Throughout 2011, individuals from pharmaceutical and diagnostic industry, academia, the National Institutes of Health (NIH), and the Food and Drug Administration have joined members of the Forum in meetings on facilitating translational research for clinical neuroscience applications. The meetings stimulated discussion aimed at improving the understanding of differences between what pharmaceutical and diagnostic developers are looking for and how academic researchers can contribute to the partnership in the most meaningful way. Discussions focused on ways to bridge the interface between basic and drug/diagnostic development researchers in the neurosciences.

Sackler U.S.A.-U.K. Scientific Forum on *Neuroscience and the Law*

The National Academy of Sciences, in collaboration with the U.K. Royal Society, hosted the Second Raymond and Beverly Sackler U.S.A.-U.K. Scientific Forum on *Neuroscience and the Law*. This forum series was launched in 2008 as a venue where scientific conferences and meetings could be held to “help the scientific leadership of the United Kingdom and the United States forge an enduring and productive partnership on pressing topics of worldwide scientific concern with benefit to all people.” The meeting drew on the convening power of the sponsoring organizations to bring together experts for presentations and moderated discussions in the following topic areas: neuroscience in court; mind reading (to include a discussion of lie detection, pain, and false memory); criminal responsibility and sentencing; moral reasoning and psychopathy; and the developing brain.



Looking Forward

Forum Activities in 2012

Neurodegeneration: Opportunities for Collaboration Across Disease-Specific Research and Development Communities

Neurodegenerative diseases are becoming increasingly prevalent in the United States. In 2000, approximately 4 million people had Alzheimer's disease and another million had Parkinson's disease. The workshop will explore commonalities across neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, and frontotemporal dementia, and identify potential opportunities for collaboration across the respective research and development communities. Participants will be invited from academia; pharmaceutical and biotechnology industries; government agencies such as the NIH, National Science Foundation, and Veterans Administration; and patient advocacy groups.

Animal Models for Nervous System Diseases and Disorders

Animal models have significantly increased our understanding of nervous system disorders. Yet a large gap remains for many diseases in treatment options that are high in efficacy, but low in side effects. Given the tremendous burden associated with nervous system diseases and disorders, the Forum will host a workshop that will



Greg Hood, John Burkardt, and Greg Foss, Pittsburgh Supercomputing Center

2008

Jan 30
5th meeting

Jun 25
Molecules to Mind:
Grand Challenges Workshop

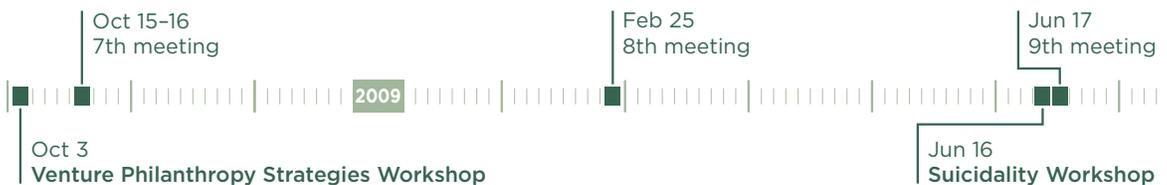
Jun 24
6th meeting

bring together key stakeholders to discuss potential opportunities for maximizing the translation of effective therapies from animal models to clinical practice. Specifically, participants will discuss key issues that contribute to poor translation and examine case studies that highlight successes and failures. In addition, participants will identify next steps that will be critical for improvement of the development and testing of animal models and key infrastructure components required for implementation.

Building Partnerships for Scaling Up Care for Mental, Neurological, and Substance Use Disorders in Sub-Saharan Africa

Sub-Saharan Africa has one of the largest treatment gaps for mental, neurological, and substance use (MNS) disorders in the world. These three groups of disorders incur a substantial burden on the continent's population, and in the absence of both the necessary number of specialists and access to essential medicines for each of these, any remedy of the gap should target the MNS disorders together. Critical to this effort includes increasing the number of health care workers with expertise in MNS disorders, strengthening medical neuroscience education systems, and building clinical and research neuroscience capacity in African medical schools and clinical training programs for nurses, medical officers, and primary care workers. The Forum, in collaboration with the World Health Organization (WHO), will organize a workshop that focuses on strategies to increase availability and expertise of the MNS disorders workforce, a critical barrier to strengthening services for these disorders.

Issues such as local production, bulk purchasing, pricing, supply chain, drug banks, and drug donations will be targeted in order to achieve sustainable models for providing access to essential medicines. The Forum, in collaboration with WHO, will organize a workshop that will include key stakeholders to discuss opportunities to establish partnerships for improving access to essential medicines for MNS disorders in sub-Saharan Africa.



Working Groups

The Forum has created a series of working groups to provide an opportunity for subsets of the broader group to work together on selected topics. Workshop topics often result from these groups and are organized by an independently appointed workshop planning committee.

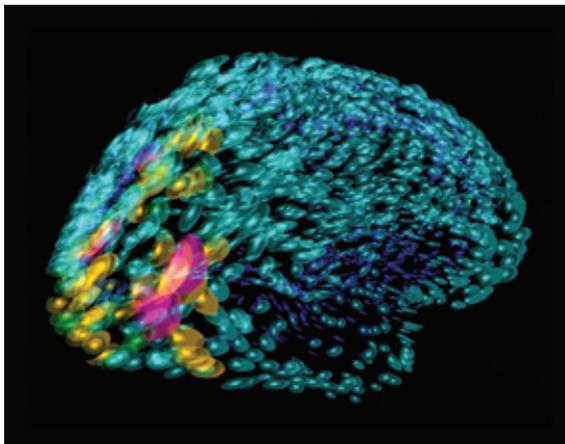
Translational Neuroscience

The translational neuroscience working group was established to identify areas of synergy where public- and private-sector stakeholders can work together to improve the efficiency and effectiveness of drug discovery and development for neurological and mental disorders. The group is currently addressing barriers to repurposing and reusing existing compounds. In addition, it is discussing strategies to improve the understanding between what pharmaceutical and diagnostic developers are looking for and how academic researchers can best contribute to the partnership in a meaningful way in order to improve the neuroscience translational research pipeline.

Training Translational Neuroscientists

The pace of new therapeutic discovery for central nervous system disorders has noticeably slowed during the past decade. Advancing translational neuroscience, the application of fundamental research to therapeutic development, will be critical in efforts to reverse this trend. There is an increasing need for investigators who are able to bridge the gap between basic and clinical neuroscience. A working group will be established to examine current practices of training scientists and identify opportunities for increasing and strengthening translational neuroscience programs.

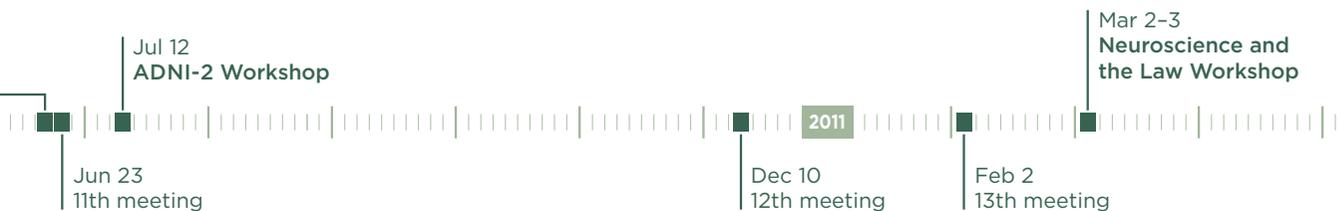




Paul Thompson, Arthur Toga, and Colin Holmes, UCLA

Mental Health, Neurological, and Substance Use Disorders in Sub-Saharan Africa

In collaboration with WHO mental health Gap Action Programme (mhGAP), the Forum is continuing to explore potential opportunities to build on the 2009 “Mental Health and Neurological Disorders in sub-Saharan Africa” workshop. The working group is focused on identifying innovative solutions to enhance care for mental, neurological, and substance use disorders in sub-Saharan Africa. Special attention is being paid to finding solutions to increasing human and financial resources to support current and future efforts.



Forum Members

(as of December 2011)

Alan Leshner (Chair)

American Association for the Advancement of Science

Huda Akil

University of Michigan

Marc Barlow

GE Healthcare

Mark Bear

Massachusetts Institute of Technology

Daniel Burch

CeNeRx Biopharma

Timothy Coetzee

FastForward of the National Multiple Sclerosis Society

David Cohen

Columbia University, Society for Neuroscience representative

John Dunlop

Pfizer, Inc.

Emmeline Edwards

National Center for Complementary and Alternative Medicine

Richard Frank

GE Healthcare, Inc.

Myron Gutmann

National Science Foundation

Richard Hodes

National Institute on Aging

Steven Hyman

Harvard University

Thomas Insel

National Institute of Mental Health

Daniel Javitt

New York University School of Medicine

Story Landis

National Institute of Neurological Disorders and Stroke

Husseini Manji

Johnson & Johnson Pharmaceuticals

David Michelson

Merck & Co., Inc.

Jonathan Moreno

University of Pennsylvania School of Medicine

Kathie Olsen

Association of Public and Land-Grant Universities

Alexander Ommaya

Department of Veterans Affairs

Atul Pande

GlaxoSmithKline

Menelas Pangalos

AstraZeneca Pharmaceuticals

Steven Paul

Weill Cornell Medical College

William Potter

Foundation for the National Institutes of Health

Todd Sherer

The Michael J. Fox Foundation for Parkinson's Research

Paul Sieving

National Eye Institute

Judy Siuciak

Foundation for the National Institutes of Health

Marc Tessier-Lavigne

The Rockefeller University

William Thies

Alzheimer's Association

Nora Volkow

National Institute on Drug Abuse

Kenneth Warren

National Institute on Alcohol Abuse and Alcoholism

Doug Williamson

Lilly Research Laboratories

John Wingfield

National Science Foundation

Frank Yocca

AstraZeneca Pharmaceuticals

Stevin Zorn

Lundbeck USA

Charles Zorumski

Washington University, St. Louis

IOM Staff

Bruce Altevogt, Ph.D.

Project Director

Diana Pankevich, Ph.D.

Associate Program Officer

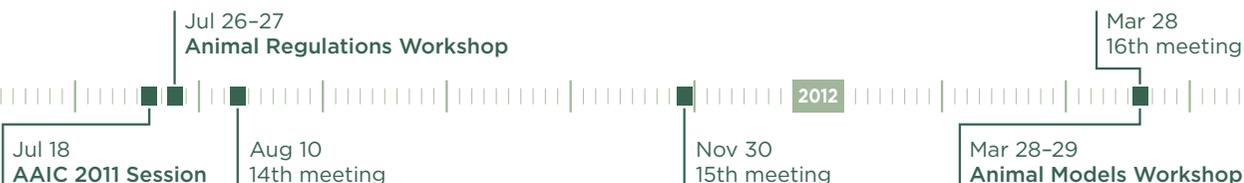
Lora Taylor,

Senior Project Assistant

IOM Board on Health Sciences Policy

Andrew M. Pope, Ph.D.

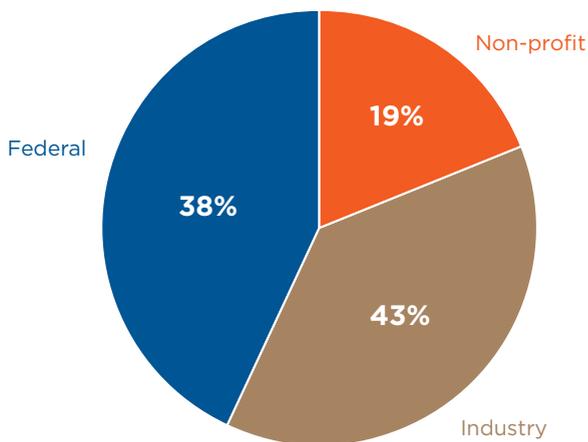
Director



Forum Sponsorship

Financial support for the Forum is derived from federal agencies, patient advocacy organizations, industry, and a non-profit membership society.

- Alzheimer’s Association**
- AstraZeneca Pharmaceuticals**
- CeNeRx Biopharma**
- Department of Veterans Affairs**
- Eli Lilly and Company**
- Foundation for the National Institutes of Health**
- GE Healthcare**
- GlaxoSmithKline**
- Johnson & Johnson Pharmaceuticals**
- Lundbeck USA**
- Merck Research Laboratories**
- The Michael J. Fox Foundation for Parkinson’s Research**
- National Eye Institute**
- National Institute of Mental Health**
- National Institute of Neurological Disorders and Stroke**
- National Institute on Aging**
- National Institute on Alcohol Abuse and Alcoholism**
- National Institute on Drug Abuse**
- National Institutes of Health Blueprint for Neuroscience Research**
- National Multiple Sclerosis Society**
- National Science Foundation**
- Pfizer**
- Society for Neuroscience**





INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

Advising the nation • Improving health

The Institute of Medicine serves as adviser to the nation to improve health.

Established in 1970 under the charter of the National Academy of Sciences, the Institute of Medicine provides independent, objective, evidence-based advice to policymakers, health professionals, the private sector, and the public. The mission of the Institute of Medicine embraces the health of people everywhere.