AGENDA

Monday, June 16, 2008

6:30 - 7:30 a.m.	**Poster Set Up**
7:30 - 8:00 a.m.	**Registration - Poster Display Area Open** **Continental Breakfast**
8:00 - 8:05 a.m.	Introduction and Goals Hunter Peckham, PhD, Case Western Reserve University, Cleveland FES Center*/VA*/MHMC* Joseph Pancrazio, PhD, NINDS/NIH*
8:05 - 8:10 a.m.	Welcome Barbara Snyder, President, Case Western Reserve University
8:10 - 8:15 a.m.	Plenary Session 1A: New Concepts for DBS - Neuroplasticity and Neuroprotection Jerrold Vitek, MD, PhD, Cleveland Clinic and Lerner Research Institute Beth-Anne Sieber, PhD, NINDS
8:15 - 8:40 a.m.	Neuroprotection Conferred by High Frequency Deep Brain Stimulation of the Subthalamic Nucleus in Parkinsonian Monkeys P. David Charles, MD, Vanderbilt University
8:40 - 9:05 a.m.	Neuroprotective Potential of STN DBS: Insight from Rodent Models Caryl Sortwell, PhD, University of Cincinnati
9:05 - 9:30 a.m.	STN Ablation Does Not Protect SNc Cell Survival Andreas Kupsch, MD, University of Medicine, Berlin, Germany
9:30 - 9:45 a.m.	Panel Discussion Jerrold Vitek, MD, PhD, Cleveland Clinic and Lerner Research Institute Panelists: P. David Charles, MD, Vanderbilt University Andreas Kupsch, MD, University of Medicine, Berlin, Germany Caryl Sortwell, PhD, University of Cincinnati
9:45 - 10:00 a.m.	*Break*
10:00 - 10:10 a.m.	User Perspective
10:10 - 10:15 a.m.	Plenary Session 1B: DBS Clinical Trials for Movement Disorders Jerrold Vitek, MD, PhD, Cleveland Clinic and Lerner Research Institute Beth-Anne Sieber, PhD, NINDS
10:15 - 10:40 a.m.	VA/NIH Sponsored Clinical Trial Ken Follett, MD, PhD, F.A.C.S., Nebraska Medical Center

Monday, June 16, 2008 (Continued)

10:40 - 11:05 a.m.	Randomized Trial of Unilateral DBS in STN vs GPi for Advanced Parkinson's Disease Jerrold Vitek, MD, PhD, Cleveland Clinic and Lerner Research Institute
11:05 - 11:25 a.m.	Special Presentation: DBS for Tourettes Syndrome Domenico Servello, MD, Istituto Galeazzi IRCCS, Milan, Italy
11:25 - 11:45 a.m.	Panel Discussion Jerrold Vitek, MD, PhD, Cleveland Clinic and Lerner Research Institute (Chair) Panelists: Ken Follett, MD, PhD, F.A.C.S., Nebraska Medical Center Domenico Servello, MD, Istituto Galeazzi IRCCS, Milan, Italy
11:45 - 12:00 p.m.	Platform Presentations (3) Joseph Pancrazio, PhD, NINDS/NIH* (Moderator) Karl Sillay, University of Wisconsin-Madison Merrill Birdno, Duke University Elias Greenbaum, Oak Ridge National Laboratory
12:00 - 1:00 p.m.	*Lunch*
12:00 - 1:00 p.m.	Break Out Session - DBS Consortium Jaimie Henderson, MD, Stanford University Medical Center (Chair) Dominique Durand, Case Western Reserve University James Mellor, Intelect Medical Joseph Pancrazio, NINDS/NIH* Jeffery Wertheimer, The Parkinson Alliance
12:00 - 1:00 p.m.	Break Out Session - Hermetic Packaging James Weiland, PhD, University of Southern California (Chair) Paul Meadows, ImThera Medical, Inc. (Co-Chair) PM Raj, Georgia Tech Packaging Research Center Phil Troyk, Illinois Institute of Technology
1:00 - 2:00 p.m.	Poster Session
2:00 - 2:05 p.m.	Plenary Session 2: Modulation of Neuronal Excitability with Applied Electric Fields Warren M. Grill, PhD, Duke University Joseph Pancrazio PhD, NINDS/NIH*
2:05 - 2:30 p.m.	Rational Design of Sub-Threshold Stimulation Protocols Marom Bikson, PhD, City College of New York
2:30 - 2:55 p.m.	Modulation of Excitability with Weak Electrical Fields: A Prototype for Continuous Feedback Control Bruce J Gluckman, PhD, Pennsylvania State University
2:55 - 3:20 p.m.	Enhancing Cognitive Function with DC Brain Polarization Eric Wassermann, MD, NINDS/NIH*

Monday, June 16, 2008 (Continued)

3:20 - 3:40 p.m.	Panel Discussion Warren M. Grill, PhD, Duke University Panelists: Marom Bikson, PhD, City College of New York Bruce J Gluckman, PhD, Pennsylvania State University Eric Wassermann, MD, NINDS/NIH*
3:40 - 4:00 p.m.	*Break*
4:00 - 4:05 p.m.	Plenary Session 3: Detection and Control of Seizures with Electrical Stimulation Dominique Durand, PhD, Case Western Reserve University Randall Stewart, PhD, NINDS/NIH
4:05 - 4:30 p.m.	Localizing and Tracking Seizure Generation in Epileptic Networks Brian Litt, MD, University of Pennsylvania
4:30 - 4:55 p.m.	Therapeutic Uses and Mechanisms of Peripheral Nerve Stimulation Scott Krahl, PhD, UCLA, VA Greater Los Angeles Healthcare System
4:55 - 5:20 p.m.	DBS Stimulation for Epilepsy Imad Najm, MD, Cleveland Clinic
5:20 - 5:30 p.m.	Panel Discussion Dominique Durand, PhD, Case Western Reserve University Panelists: Scott Krahl, PhD, UCLA, VA Greater Los Angeles Healthcare System Brian Litt, MD, University of Pennsylvania Imad Najm, MD, Cleveland Clinic
5:30 - 7:30 p.m.	Opening Cocktail Mixer InterContinental Hotel and Conference Center, Third Floor Lobby

AGENDA

Tuesday, June 17, 2008

7:30 - 8:00 a.m.	**Registration - Poster Display Area Open** **Continental Breakfast**
8:00 - 8:05 a.m.	Plenary Session 4A: Neural Prosthesis Program Joseph J. Pancrazio, PhD, NINDS/NIH* Hunter Peckham, PhD, Case Western Reserve University, Cleveland FES Center*/VA*/MHMC*
8:05 - 8:30 a.m.	Restoration of Arm/Hand Function Through Functional Electrical Stimulation Robert Kirsch, PhD, Case Western Reserve University/VA*
8:30 - 8:55 a.m.	Bladder Function Control with Functional Electrical Stimulation Warren Grill, PhD, Duke University
8:55 - 9:20 a.m.	Probabilistic Control of Functional Electrical Stimulation Andrew Fuglevand, PhD, University of Arizona
9:20 - 9:35 a.m.	User Perspective Jennifer French, Neurotech Network Maria Sutter, Graduate Student
9:35 - 9:55 a.m.	Panel Discussion Hunter Peckham, PhD, Case Western Reserve University, Cleveland FES Center*/VA*/MHMC* Panelists: Jennifer French, Neurotech Network Andrew Fuglevand, PhD, University of Arizona Warren Grill, PhD, Duke University Robert Kirsch, PhD, Case Western Reserve University/VA* Gerald Loeb, MD, PhD, University of Southern California Maria Sutter, Graduate Student
9:55 - 10:05 a.m.	*Break*
10:05 - 10:10 a.m.	Plenary Session 4B: Neural Prosthesis Program Joseph J. Pancrazio, PhD, NINDS/NIH* Daofen Chen, PhD, NINDS/NIH*
10:10 - 10:35 a.m.	Wireless Cortical Microelectrode Array Florian Solzbacher, PhD, University of Utah
10:35 - 11:00 a.m.	Advances in Brain Implantable Active Microsystems Arto Nurmikko, PhD, Brown University
11:00 - 11:25 a.m.	Floating Microelectrode Array with Active Integrated Circuits Martin Bak, Microprobe, Inc. Philip Troyk, PhD, Illinois Institute of Technology

Tuesday, June 17, 2008 (Continued)

11:25 - 11:40 a.m.

Panel Discussion
Joseph J. Pancrazio, PhD, NINDS/NIH*
Panelists:
Martin Bak, Microprobe, Inc.
Philip Troyk, PhD, Illinois Institute of Technology
Arto Nurmikko, PhD, Brown University
Rahul Sarpeshkar, PhD, Massachusetts Institute of Technology, Cambridge
Florian Solzbacher, PhD, University of Utah

11:40 - 12:00 p.m.

Poster Platform Presentations (4)
Grace Peng, PhD, (Moderator), NIBIB/NIH*
Joseph O-Doherty, Duke University
Ethan Heming, University of Calgary
Paul Marasco, Neural Engineering Center for Artificial Limbs, RIC
Jonathan Cayce, Vanderbilt University

12:00 - 1:00 p.m.

Lunch

12:00 - 1:00 p.m.

Break Out Session – Training Opportunities
Grace Peng, PhD NIBIB/NIH*

12:00 - 1:00 p.m.

Break Out Session – Commercialization of Neurotechnology
Warren Grill, PhD, Duke University (Chair)
James Weiland, PhD, University of Southern California (Co-Chair)
Pete Lando, St. Jude Medical Company
Ben Pless, Autonomic Technologies, Inc
Geoff Thrope, NDI Medical, LLC

12:00 - 1:00 p.m.

Break Out Session – Neuroprosthetic Implants - Designing to Reduce Complications
Michael Keith, MD FES Center*, MetroHealth Medical Center, Case Western Reserve University (Chair)
Jeffrey Duerk, PhD, Case Center for Imaging Research
Gilles Pinault MD, F.A.C.S., Louis Stokes Cleveland VA

1:00 - 2:00 p.m.

Poster Session

2:00 - 2:05 p.m.

Plenary Session 5A: Concepts Neuroprotection, Regeneration and Repair
James Weiland, PhD, University of Southern California
Michael Selzer, MD, PhD, VA*

2:05 - 2:30 p.m.

Neural Remodeling in Retinal Degeneration
Robert Marc, PhD, University of Utah

2:30 - 2:55 p.m.

Role of Electrical Activity in Retinal Ganglion Cell Survival and Axon Growth
Jeffery Goldberg, MD, PhD, Bascom Palmer Eye Institute

2:55 - 3:20 p.m.

Signaling Pathways Underlying Neural Survival and Apoptosis
Steven Green, PhD, University of Iowa

Tuesday, June 17, 2008 (Continued)

3:20 - 3:35 p.m.	Panel Discussion James Weiland, PhD, University of Southern California (Chair) Panelists: Steven Green, PhD, University of Iowa Jeffery Goldberg, MD, PhD, Bascom Palmer Eye Institute Robert Marc, PhD, University of Utah
3:35 - 3:50 p.m.	*Break*
3:50 - 3:55 p.m.	Plenary Session 5B: Engineering Devices for Neuroprotection, Regeneration and Repair Patricia Leake, PhD, University of California San Francisco Roger Miller, PhD, NIDCD/NIH*
3:55 - 4:15 p.m.	Drug Delivery to the Inner Ear David Martin, PhD, University of Michigan
4:15 - 4:40 p.m.	Hearing/Neural Protection During Cochlear Implantation: Neurotrophic Agents and Glucocorticosteroids Stephen O'Leary, PhD, FRACS University of Melbourne, Australia
4:40 - 5:05 p.m.	Hearing/Neural Protection During Cochlear Implantation: Electrode Design and Minimally Invasive Surgery Thomas Lenarz, MD, PhD, Medizinische Hochschule Hannover, Germany (Dept. of ORL)
5:15 - 5:30 p.m.	Panel Discussion Patricia Leake, PhD, University of California San Francisco (Chair) Panelists: Thomas Lenarz, MD, PhD, Medizinische Hochschule Hannover, Germany (Dept. of ORL) David Martin, PhD, University of Michigan Stephen O'Leary, PhD, FRACS University of Melbourne, Australia
5:30 p.m.	Conference Adjourns for the Day
6:15 p.m.	Buses Board for Conference Reception
7:00 p.m.	Reception Rock and Roll Hall of Fame and Museum
10:00 – 11:15 p.m.	Buses Available for Return to Hotel
11:15 p.m.	Final Shuttle Bus for Return to Hotel

AGENDA

Wednesday, June 18, 2008

7:30 - 8:00 a.m.	**Registration - Poster Display Area Open** **Continental Breakfast**
8:00 - 8:05 a.m.	Plenary Session 6A: Towards Seamless Interfaces - The Biological Seam Ravi Bellamkonda, PhD, Georgia Institute of Technology Naomi Kleitman, PhD, NINDS/NIH*
8:05 - 8:30 a.m.	State-Of-The-Art in Stability and Reliability Issues for Chronic Neural Interfaces Andrew Schwartz, PhD, University of Pittsburgh
8:30 - 8:55 a.m.	Role of Inflammation and Its Modulation in Neurodegenerative Diseases Michelle Block, PhD, Virginia Commonwealth University
8:55 - 9:20 a.m.	Anti-inflammatory Therapies and Neurodegenerative Diseases Robert Miller, PhD, Case Western Reserve University
9:20 - 9:35 a.m.	Panel Discussion Ravi Bellamkonda, PhD, Georgia Institute of Technology (Chair) Panelists: Michelle Block, PhD, Virginia Commonwealth University Robert Miller, PhD, Case Western Reserve University Andrew Schwartz, PhD, University of Pittsburgh
9:35 - 9:50 a.m.	*Break*
9:50 - 9:55 a.m.	Plenary Session 6B: Towards Seamless Interfaces - The Material Seam Ravi Bellamkonda, PhD, Georgia Institute of Technology Michael Selzer, MD, PhD, VA*
9:55 - 10:15 a.m.	Nanoelectrode Arrays and Neural Interfacing Timothy McKnight, Oakridge National Laboratory
10:15 - 10:40 a.m.	Novel Materials Design for Neural Interfacing: Responsive Materials for Neural Interfaces David Martin, PhD, University of Michigan
10:40 - 11:05 a.m.	Anti-inflammatory Biomaterial Strategies for Enhanced Integration Andres Garcia, PhD, Georgia Institute of Technology
11:05 - 11:20 a.m.	Panel Discussion Ravi Bellamkonda, PhD, Georgia Institute of Technology Panelists: Andres Garcia, PhD, Georgia Institute of Technology David Martin, PhD, University of Michigan Timothy McKnight, Oakridge National Laboratory
11:20 - 11:25 a.m.	Hunter Peckham Introduces Joseph Fins, MD

Wednesday, June 17, 2008 (Continued)

11:25 - 12:00 p.m.	Key Note: Ethical Considerations for Neurological Devices Joseph Fins, MD, F.A.C.P., Cornell University
12:00 - 1:00 p.m.	*Lunch*
12:00 - 1:00 p.m.	Break Out Session – Virtual Reality for Design, Assessment and Training in the Use of Neuroprostheses Kenneth Curley, MD, TATRC* (Chair) Stuart Harshbarger, John's Hopkins University Robert Kirsch, Case, Biomedical Engineering Wei Wang, University of Pittsburgh
12:00 - 1:00 p.m.	Break Out Session – Design Guidance for Neural Probes Daryl Kipke, PhD, University of Michigan (Chair) William Shain, PhD, Wadsworth Center Discussants from CNCT Satellite Symposium
1:00 - 1:05 p.m.	Plenary Session 7: Sensory Feedback for Prosthetic Limbs Ranu Jung, PhD, Arizona State University Nancy Shinowara, PhD, NICHD/NIH*
1:05 - 1:30 p.m.	Role and Importance of Sensory Feedback for Limb Control Gregory Clark, PhD, University of Utah
1:30 - 1:55 p.m.	Sensory Feedback: Lessons from Robots Yoky Matsuoka, PhD, University of Washington
1:55 - 3:15 p.m.	Panel Discussion Neurotechnology for Sensory Restoration for Prosthetic Limbs Ranu Jung, PhD, Arizona State University Panelists: Gregory Clark, PhD, University of Utah Kenneth Horch, PhD, Research Professor Arizona State University Yoky Matsuka, PhD, University of Washington Dustin Tyler, PhD, Case Western Reserve University/VA* Doug Weber, PhD, University of Pittsburgh
3:15 p.m.	Closing Comments Hunter Peckham, PhD, Case Western Reserve University, Cleveland FES Center*/VA*/MHMC*
3:30 p.m.	Conference Adjourns and Poster Removal

*** Abbreviation Key**

FES - Functional Electrical Stimulation
MHMC - MetroHealth Medical Center
NIH - National Institute of Health
NIBIB - National Institute of Biomedical Imaging and BioEngineering
NIDCD - National Institute on Deafness and Other Communication Disorders
NICHD - National Institute of Child Health and Human Development
NINDS - National Institute of Neurological Disorders and Stroke
NCMRR - National Center for Medical Rehabilitation Research
ODOD - Ohio Department of Development
TATRC – Telemedicine and Advanced Technology Research Center
VA - Department of Veterans Affairs