Appendix. National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) The Intersection of Metabolic and Neurocognitive Dysfunction Workshop

National Institutes of Health (NIH) Campus, Building 31 Bethesda, MD July 16 – 17, 2015

Agenda

Day One, July 16, 2015

12:30 – 1:00 p.m. Welcome and Logistics Dr. Griffin P. Rodgers, Director, NIDDK
Dr. Luke Stoeckel

1:00 – 1:30 p.m. Insulin and IGF-1 Signaling in the Brain and the Relationship to Diabetes and Neurodegenerative Disease Dr. C. Ronald Kahn

1:30 – 1:40 p.m. Q and A

1:40 – 1:55 p.m. Effect of Decrements in Circulating Glucose and Diabetes on Brain Function and Metabolism Dr. Robert Sherwin

1:55 – 2:00 p.m. Q and A

2:00 – 2:15 p.m. Neural and Metabolic Regulation of Food Intake and Obesity: The Gut–Brain Axis as a Common Link between Metabolic and Cognitive Dysfunction Dr. Hans-Rudi Berthoud

2:15 – 2:20 p.m. Q and A

2:20 – 2:35 p.m. The Relationship between Diabetes, Aging, and Dementia Dr. Rachel Whitmer
Basic Mechanisms of Metabolic and Neurocognitive Dysfunction
Moderator: Dr. Arvanitakis

3:45 – 4:00 p.m.  SORCS1: Genetic Defect in Protein Sorting Underlies Some Risk for Both Diabetes and Alzheimer’s Disease
Dr. Gandy (Workshop Organizer)

4:00 – 4:05 p.m.  Q and A

4:05 – 4:20 p.m.  Insulin/IGF1 Signaling Mechanisms in Metabolism, Aging, and Neurodegenerative Disease
Dr. Morris White

4:20 – 4:25 p.m.  Q and A

4:25 – 4:40 p.m.  Blood-Brain Barrier Breakdown and Cognitive Decline
Dr. Berislav Zlokovic

4:40 – 4:45 p.m.  Q and A

Neurocognitive Mechanisms of Food Intake Behavior, Obesity, and Metabolic Dysfunction: I
Moderator: Dr. Alvaro Pascual-Leone

4:45 – 5:00 p.m.  The Mechanistic Links between “Western” Diet and Cognitive Dysfunction
Dr. Scott Kanoski

5:00 – 5:05 p.m.  Q and A

5:05 – 5:20 p.m.  Neurocognitive Adaptations Due to “Western” Diet and Obesity
Dr. Dana Small (Workshop Organizer)

5:50 – 6:00 p.m.  Day 1 Summary and Take Home Points
Dr. Kahn
Day Two, July 17, 2015

8:30 – 8:40 a.m. Logistics (Conference Room 6)
Dr. Stoeckel

8:40 – 8:55 a.m. The Neural Basis of Self-Control: Rewards, Decisions, and Executive Functions in Obesity
Dr. Lesley Fellows

8:55 – 9:00 a.m. Q and A

9:00 – 9:15 a.m. Enhancing Neuroplasticity to Improve Brain Function in Diabetes
Dr. Pascual-Leone (Workshop Organizer)

9:15 – 9:20 a.m. Q and A

Dr. Steve Arnold

9:35 – 9:40 a.m. Q and A

9:40 – 9:55 a.m. Pharmacological and Nonpharmacological Interventions for Diabetes and Dementia: Effects on Cognition and CNS Biomarkers
Dr. Suzanne Craft

9:55 – 10:00 a.m. Q and A

10:00 – 10:15 a.m. Nonpharmacological Interventions for Obesity and Diabetes: Effects on Neurocognition
Dr. John Gunstad

10:35 – 10:50 a.m. Drosophila as a Model for Human Neurodegenerative Disease: Integrating the Microbiome
Dr. Nancy Bonini

10:50 – 10:55 a.m. Q and A
10:55 – 11:10 a.m.  
**Harnessing the Neuroimaging Arsenal for the Study of Neurocognition in the Context of Metabolic Disease**  
*Dr. Peter Fox*

11:10 – 11:15 a.m.  
**Q and A**

11:15 – 11:30 a.m.  
**Assessment of Metabolic and Cognitive Interaction by Advanced Imaging Techniques over the Whole LifeSpan**  
*Dr. Hubert Preissl*

11:30 – 11:35 a.m.  
**Q and A**

11:35 – 11:50 a.m.  
**Crowdsourcing to Study Cognition: New Insights into Human Cognitive Variation and How to Collect Large Samples for Understanding the Brain and Metabolic Disease**  
*Dr. Laura Germine*

11:50 – 11:55 a.m.  
**Q and A**

11:55 a.m. – 12:00 p.m.  
**General Q and A**

12:00 – 12:30 p.m.  
**Working Lunch**

12:30 – 2:00 p.m.  
**Breakout Sessions**

• Topic 1 (Room 7)

• Topic 2 (Room 8)

• Topic 3 (Room 9)

• Topic 4 (Room 6)

• Topic 5 (Room 6)
2:00 – 2:30 p.m. **General Discussion Following Breakout Sessions** (Room 6)

2:30 – 2:40 p.m. **Day Two Summary and Take Home Points**  
*Dr. Sherwin*

2:40 – 3:40 p.m. **Overall Summary, Including Final Recommendations**  
*Moderators: Breakout Session Leaders (Drs. Gandy, Small, Kahn, Fox, Biessels, Arnold, and Arvanitakis)*

3:40 – 3:50 p.m. **Concluding Remarks**  
*Dr. Sherwin*

**Day Three, July 18, 2015**

8:30 a.m. – 1:00 p.m. **Closed meeting: Debrief and Plans for Future Efforts**  
(Workshop Planning Committee Only)