

**AGENDA**  
**JAMES S. McDONNELL FOUNDATION WORKSHOP:**  
**“AN INTEGRATED SCIENCE OF MEMORY: ARE WE THERE YET?”**  
**LA JOLLA HILTON, JANUARY 8-10, 2004**

**Thursday January 8, 2004**

**6:30 Dinner at La Jolla Hilton, Room**

**Friday January 9, 2004**

**8:45 Convene**

**9:00 WELCOME FROM THE ORGANIZERS**

**Susan Fitzpatrick, Introduction to the Meeting**

**Carl Craver, Background of the Meeting**

**9:45 Discussion**

**10:00 Break**

**10:20 SESSION 1: WHAT IS MEMORY?**

This session is concerned with characterizing the phenomenon/phenomena that we seek to explain: What are the memory systems of 2003? How and why are they different from the memory systems of, e.g., 1994? Despite the existence of different types of memory, is it still meaningful to speak of memory as a single kind of cognitive faculty? For which varieties of memory have we made progress in integrating results outside of psychology and for which have we not? In seeking to integrate our understanding of memory with findings from, e.g., the cognitive neurosciences, what aspects of these phenomena call out for special explanatory attention? What aspects of memory have been neglected in the search for an integrated science?

**John Sutton**

**Dan Schacter**

**Gyorgy Buzsaki**

**Yadin Dudai**

**11:40 Discussion (First Commentator, Ellen Landers)**

**12:20 Lunch**

**1:30 Convene**

**1:45 SESSION 2: WHY DO WE STUDY MEMORY THE WAY THAT WE DO?**

This session is concerned with experimental organisms, preparations and protocols used to investigate memory. What are the limitations of the Morris water maze or animal models of memory? What are the relative merits of, e.g., spatial memory tasks and, e.g., fear conditioning in the study of memory? How might we design a better assay of memory performance in experimental organisms so as to better integrate neuroscientific and psychological approaches? What role can computational models play in developing our understanding of memory systems and what limitations do extant computational models have? Is LTP a model of memory or a memory mechanism?

**Alcino Silva**

**Robert Clark**

**Lynn Nadel**

**2:45 Discussion ( First Commentator, Jackie Sullivan)**

**3:25 Break**

**3:45 SESSION 3: WHERE IS MEMORY?**

This session is concerned with the localization of function. In particular it is concerned with different locations in the brain that have been associated with different memory systems (or different aspects of the same memory system) and with the functions that have been assigned to those regions. For example: What is the function of the hippocampus? What areas besides the hippocampus are ripe for investigation: e.g., amygdala, cerebellum, frontal regions? Does the notion of localization correspond to or misrepresent the physiological processes involved in memory?

**Mortimer Mishkin**

**John Aggleton**

**Larry Squire**

**Floh Thiels**

**5:05 Discussion (First Commentator, Bill Bechtel)**

**5:45**            **End of Friday Meeting**

**6:30**            **Bus leaves for Dinner at Tapenade**

**Saturday January 10, 2004**

**8:45**            **Convene**

**9:00**            **SESSION 4: HOW ARE LTP AND MOLECULAR MECHANISMS MEANINGFUL FOR MEMORY?**

In 1996, Chuck Stevens declared that most neuroscientists believed that LTP was a memory mechanism. Does this belief persist? To what extent have the skeptical challenges of Shores and Matzel been addressed? Has the research program now met the challenge that LTP has not been demonstrated to occur during learning, and if not, what more would be required to assess that link? How does LTP fit into the way that we think about learning in connectionism? What remains to be addressed in assessing the LTP-learning and memory link? Relatedly, to what extent have the skeptical challenges of Sanes and Lichtman concerning the relevance of molecular components of LTP been met? Is it possible to distinguish which molecules are specifically implicated in learning and memory and those that are merely involved in the day-to-day function of a cell?

**Tracy Shors**

**David Sweatt**

**Tim Bliss**

**10:00**            **Discussion (First Commentator, Michael Stryker)**

**10:40**            **Break**

**11:00**            **SESSION 5: DO WE HAVE AN INTEGRATED SCIENCE OF MEMORY?**

The purpose of this session is to identify the most salient results of the preceding discussion, to address issues that have not come up, and to envision future courses of research in integrating the science of memory. Have we answered or come to a better understanding of the questions Jacqueline Sullivan posted on the Discussion Forum: What is integration? and What are we trying to integrate?

**Patricia Churchland**

**Endel Tulving**

**11:40 Discussion (may continue into the Concluding Working Session)**

**12:20 Break to pick up Box Lunches for Concluding Working Session**

**12:40 CONCLUDING WORKING SESSION/ONGOING DISCUSSION**

**Rusty Gage**

**Marc Raichle**

**1:20 Discussion**

**2:50 Concluding remarks from organizers**

**3:00 Meeting officially ends**