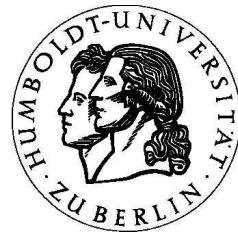




## Oberseminar SS'03

### „Lernen und Gedächtnis“



#### Themen und Literaturliste

Blockseminar „Computational Neuroscience V: Lernen und Gedächtnis“

am Fr./Sa. 27./28. Juni 2003 im ITB-Seminarraum

Prof. Dr. A. V. M. Herz, Dr. L. Wiskott, Dr. R. Kempter

#### Grundlegende Literatur:

- Kandel ER, Schwarz JH & Jessell TM (1995) *Neurowissenschaften*, Spektrum Akademischer Verlag, Heidelberg, pp. 667-684.
- Hammond C. (2001) *Cellular and Molecular Neurobiology*, Academic Press, San Diego, pp. 451-471.

#### Themen:

1. The nature of explicit and implicit memory.  
Kandel ER, Schwarz JH & Jessell TM (1995) *Neurowissenschaften*, Spektrum Akademischer Verlag, Heidelberg, pp. 667-684.  
Milner B, Squire LR & Kandel ER (1998) *Neuron* **20**:445-468.
2. Anatomy and physiology of the hippocampus.  
Amaral DG (1993) *Curr. Opin. Neurobiol.* **3**:225-229.  
Hammond C. (2001) *Cellular and Molecular Neurobiology*, Academic Press, San Diego, pp. 451-471.
3. Molecular bases of learning and memory: long term synaptic plasticity.  
Malenka RC, Nicoll RA (1999) *Science* **285**:1870-1874.  
Bear MF, Connors BW & Paradiso MA (2001) *Neuroscience: Exploring The Brain*. Lippincott Williams & Wilkins, Baltimore, MA, pp. 791-807.
4. Declarative memory, memory (re)consolidation, and the hippocampus.  
Myers KM & Davis (2002) *Neuron* **36**:340-343.  
Debiec J, LeDoux JE & Nader K (2002) *Neuron* **36**:527-538.  
Milekic MH & Albertini CM (2002) *Neuron* **36**:521-525.
5. Hippocampus as an autoassociative memory.  
Treves A & Rolls ET (1994) *Hippocampus* **4**:374-391.
6. Computing with sequences.  
Levy WB (1996) *Hippocampus* **6**:579-590.
7. Place cells: how taxi drivers find their way.  
Wilson MA & McNaughton B (1993) *Science* **261**:1055-1058.  
Maguire AM et al. (2000) *Proc. Natl. Acad. Sci. USA* **97**:4398-4403.
8. Decoding place cells.  
Samsonovich A & McNaughton BL (1997) *J. Neurosci.* **17**:5900-5920.  
Brown EN et al. (1998) *J. Neurosci.* **18**:7411-7425.
9. Hippocampal rhythms.  
O'Keefe J & Recce ML (1993) *Hippocampus* **3**:317-330.  
Jeffreys GRJ, Traub RD & Whittington MA (1996) *Trends Neurosci.* **19**:202-208.  
Chrobak JJ & Buzsáki G (1996) *J. Neurosci.* **16**:3056-3066.
10. Sleep and playback of stored sequences.  
Wilson MA (2002) *Neurobiol. Learn. Mem.* **78**: 565-569.  
Wilson MA & McNaughton B (1994) *Science* **265**:676-679.  
Louie K & Wilson MA (2001) *Neuron* **29**:145-156.

**Weitere Themen:**

11. The neural basis of perceptual learning.  
Gilbert CD, Sigman M & Crist RE (2001) *Neuron* **31**:681-697.
12. Classical conditioning and reinforcement learning.  
Dayan P & Abbott LF (2001) *Theoretical Neuroscience*, MIT Press, Cambridge, MA, pp. 331-358.  
(see also: Sutton RS & Barto AG (1998) *Reinforcement Learning*, MIT Press, Cambridge, MA)
13. Catastrophic interference.  
McClelland JL, McNaughton BL & O'Reilly RC (1995) *Psych. Rev.* **102**:419-457.  
French RM (1997) *Connection Science* **9**:353-379.  
Ans B & Rousset S (1997) *C. R. Acad. Sci. Paris, Sciences de la Vie*, **320**:989-997.
14. Different modes of processing.  
Paulsen O & Moser EI (1998) *Trends Neurosci.* **21**: 273-278.  
Yeckel MF & Berger TW (1998) *J. Neurosci.* **18**:438-450.
15. Early theories of hippocampal function.  
Marr D (1971) *Phil. Trans. Roy. Soc. Lond. B* **262**:23-81.  
Gardner-Medwin AR (1976) *Proc. R. Soc. London B Biol. Sci.*, **194**:375-402.
16. Quantitative analysis of hippocampal autoassociative memory: dilute 'spin-glass' network theory and information-theoretic estimates.  
Treves A & Rolls ET (1991) *Network* **2**:371-397.  
Rolls ET et al. (1998) *J. Neurophysiol.* **79**:1797-1813.
17. Dream-wake theory.  
Hinton GE, Dayan P, Frey BJ, & Neal RM (1995) *Science* **268**:1158-1161.

FachInstitut für Theoretische Biologie (ITB)  
HU Berlin  
Invalidenstr. 43  
10115 Berlin  
Tel: 030-2093-9112 (Sekretariat)  
E-mail: {a.herz, l.wiskott, r.kempter}@biologie.hu-berlin.de  
[http://itb.biologie.hu-berlin.de/~kempter/Teaching/2003\\_SS\\_Seminar/](http://itb.biologie.hu-berlin.de/~kempter/Teaching/2003_SS_Seminar/)