Scientific reading and writing and learning mechanisms of simple invertebrates.

Session 2

Cookie assignment

Questions we ask ourselves when reading a paper

- What was the question?
- How did the authors try to answer it?
- Did they succeed in answering it?
- What are the implications of this work?

Today’s papers

Neuronal excitability

In	Out	E=58/z*log [Xo]/[Xi]
K – 400	20	-75
Na – 50	440	+55
Cl – 52	560	-60
Charged proteins - 385		

$$Vm=\frac{(ENa \times gNa) + (Ek \times gK) + (ECl \times gCl)}{gNa + gK + gCl}$$

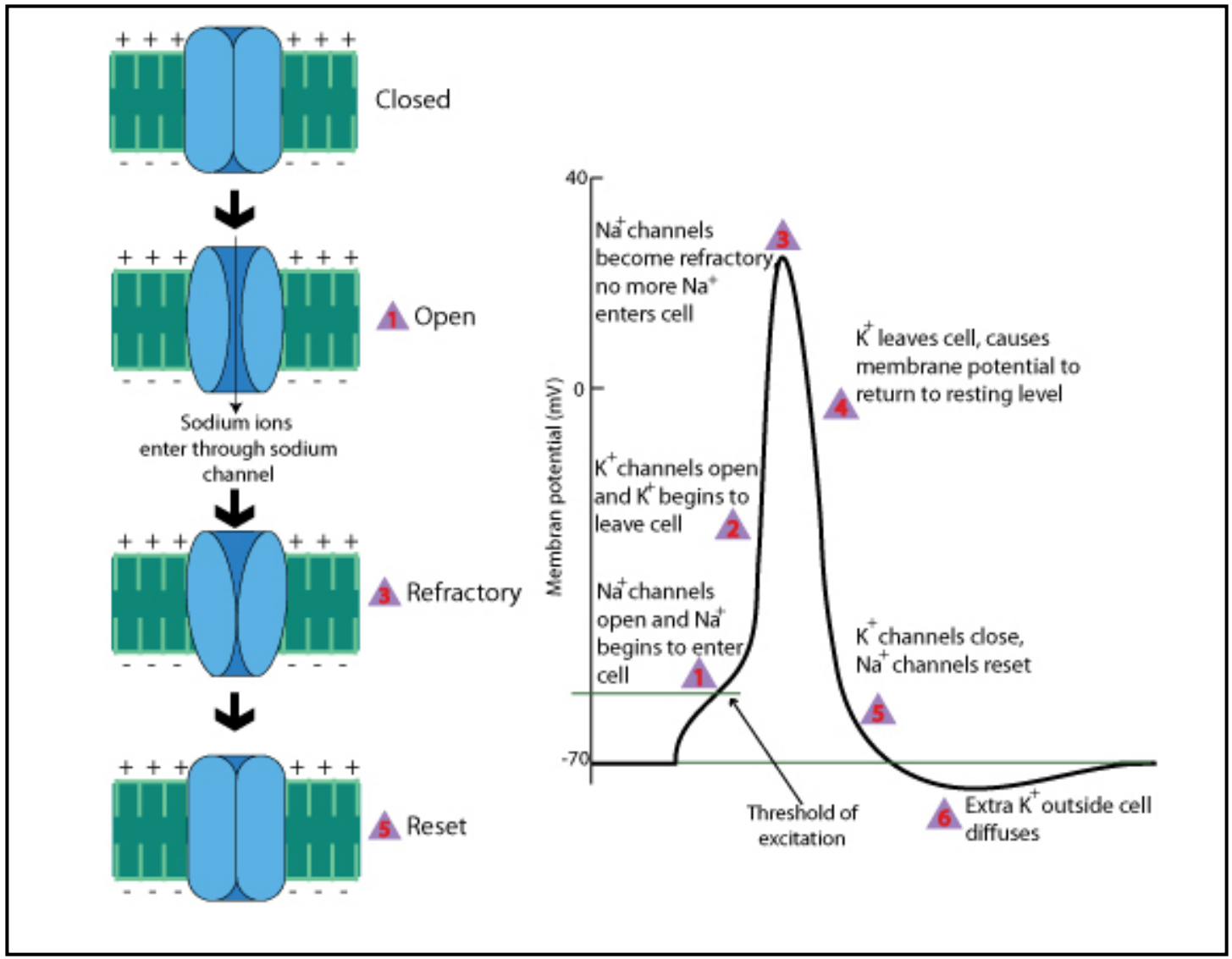


Figure by MIT OpenCourseWare

Neuronal transmission

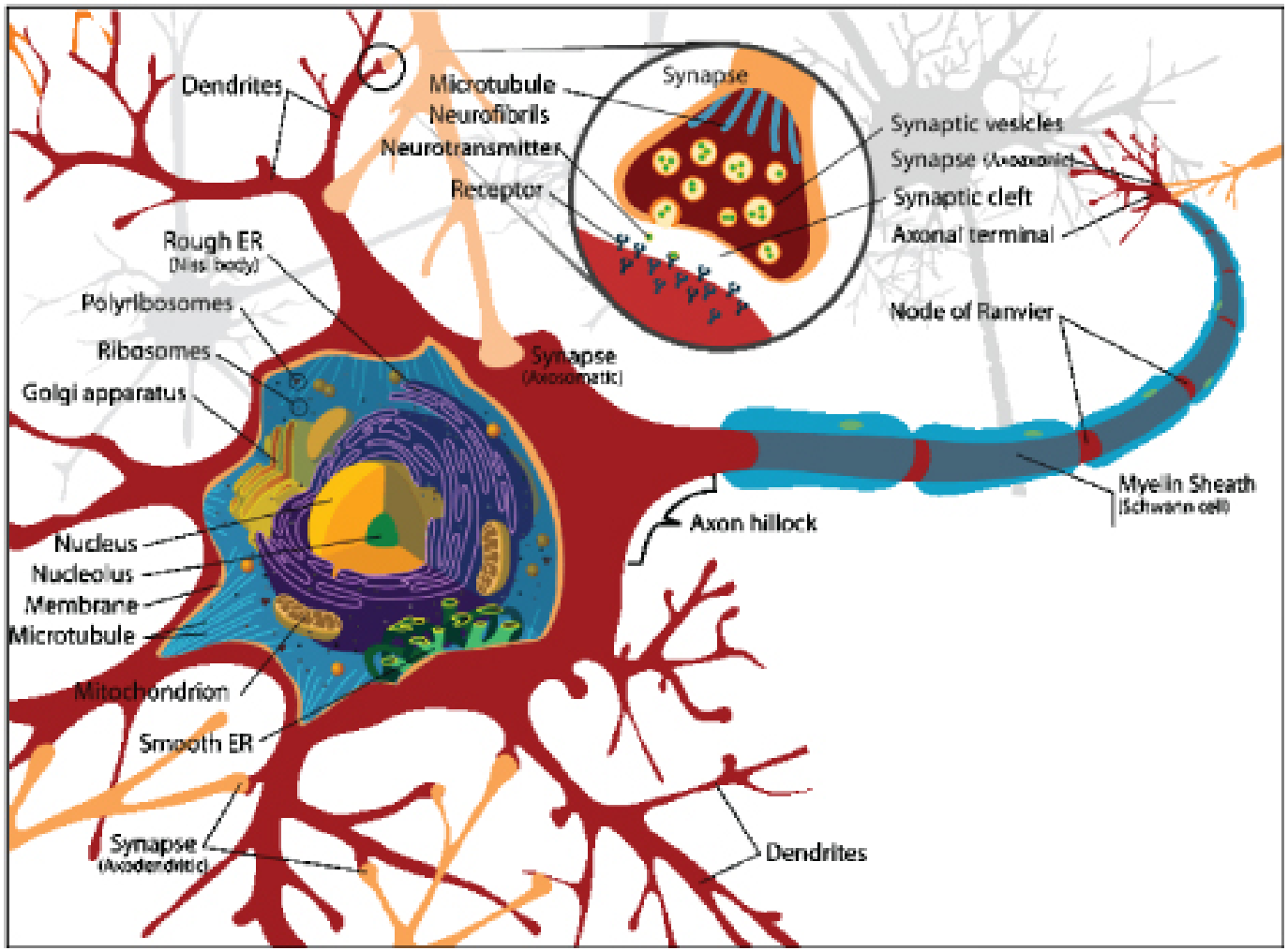
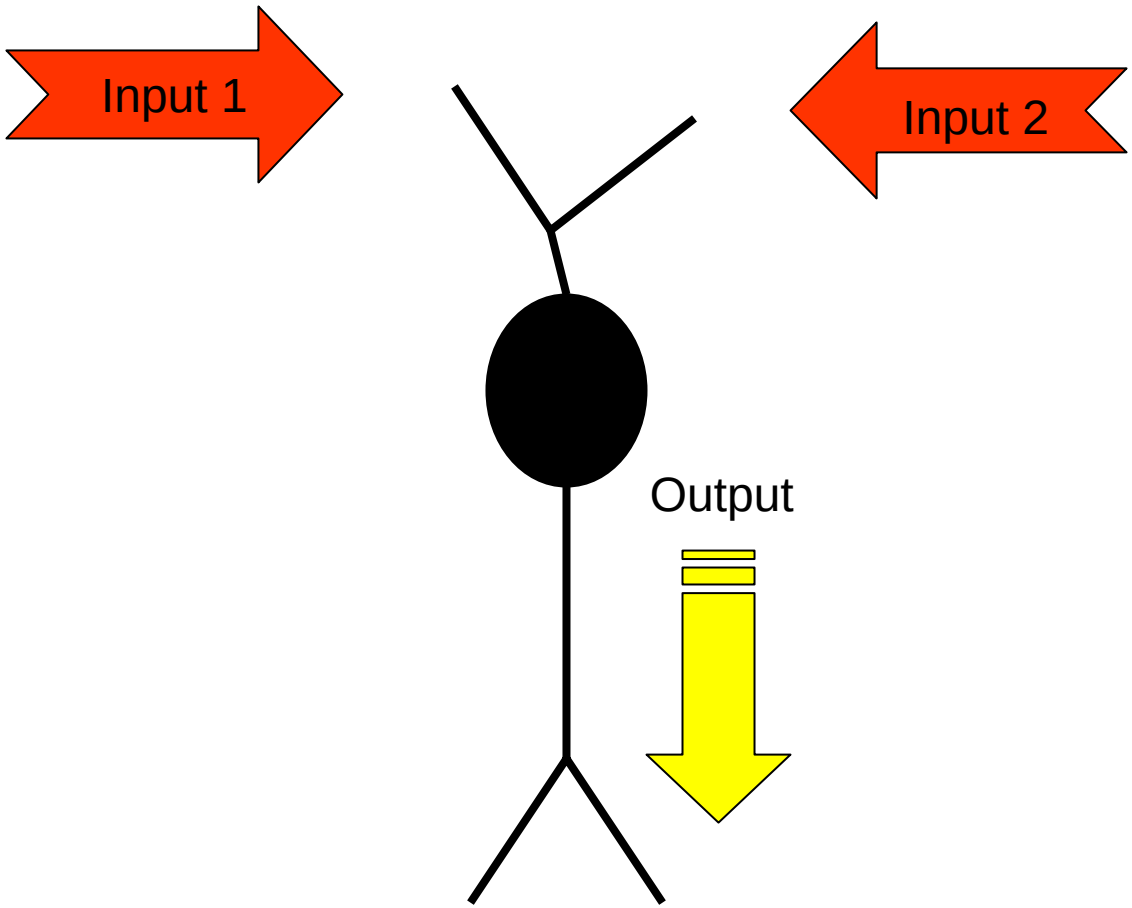


Image courtesy of Mariana Ruiz Villarreal

Neuronal plasticity



Bliss and Lomo – the discovery of LTP

Images removed due to copyright considerations.
See Figures 1 and 4 in Bliss, T. and T. Lomo. "Long-Lasting Potentiation of Synaptic Transmission in the Dentate Area of the Anaesthetized Rabbit Following Stimulation of the Perforant Path." *J. Physiol.* 232 (1973): 331-356.

Protein synthesis

Image removed for copyright considerations.
See Figure A.6. in Appendix A: Early Development . In *Stem Cell Information*. Bethesda, MD: National Institutes of Health, U.S. Department of Health and Human Services, 2006.

Questions for next week

- Schwartzkroin and Wester – How is the specificity of the input demonstrated?

- Stanton and Sarvey – What is the difference between Emetine and Cycloheximide as demonstrated by this paper?