

Presenter: Eve Schneider  
Date: Thursday, June 11, 2009 at 9:00 AM  
Location: Guyot 1

## WANG LAB TOPICAL REVIEWS – SUMMER 2009

### SESSION 2: SELF-PERCEPTION IN INFANTS; GENETIC MODELS OF AUTISM

Following on last week's discussion of a perceptual deficit in two-year-old autistic children, this week we will cover the development of self-perception in normal infants (Rochat 1998).

The background readings tell a story that continues from last week's readings demonstrating that the cerebellum is a major site of neuropathology in autism. In this week's readings: The cerebellum may be important for detecting perceptions of non-self, as demonstrated in the phenomenon of tickling (Blakemore et al. 1998). Autism susceptibility genes have started to be found (Abrahams and Geschwind 2008) and include *Reelin* and *Engrailed2*, which are involved in cerebellar development (Sillitoe and Joyner 2007). *Engrailed2* knockout mice have been characterized with a focus to date on movement, social, and learning disorders (Cheh et al. 2006), but not perceptual deficits.

Why not make Cheh *et al.* the main reading? That paper focuses on behavior in adult animals, as opposed to events that may occur during the early development of autism. A principal goal of the lab meeting is to discuss designs for new perceptual experiments.

### PRIMARY READING

Rochat P (1998) Self-perception and action in infancy. *Experimental Brain Research* 123:102-109. <http://www.ncbi.nlm.nih.gov/pubmed/9835398>

### ADDITIONAL READINGS

**The cerebellum and perception.** Blakemore SJ, Wolpert DM, Frith CD (1998) Central cancellation of self-produced tickle sensation. *Nature Neuroscience* 1:635-640.  
<http://www.ncbi.nlm.nih.gov/pubmed/10196573>

**The human genetics of autism.** Abrahams BS, Geschwind DH (2008) Advances in autism genetics: on the threshold of a new neurobiology. *Nature Reviews Genetics* 9:341-355.  
<http://www.ncbi.nlm.nih.gov/pubmed/18414403>

**Engrailed2 mouse behavioral phenotypes.** Cheh MA, Millonig JH, Roselli LM, Ming X, Jacobsen E, Kamdar S, Wagner GC (2006) En2 knockout mice display neurobehavioral and neurochemical alterations relevant to autism spectrum disorder. *Brain Research* 1116:166-176. <http://www.ncbi.nlm.nih.gov/pubmed/16935268>

**Cerebellar development.** Sillitoe RV, Joyner AL (2007) Morphology, molecular codes, and circuitry produce the three-dimensional complexity of the cerebellum. *Annual Review of Cell and Developmental Biology* 23:549-577.  
<http://www.ncbi.nlm.nih.gov/pubmed/17506688>