

**MCDB 4650 Questions on Hernandez-Lagunas et al. (2005) paper 2/19/09**

Instructions: Work on the following questions with the people at your table. Please put everyone's name at the top. Depending on time, we may assign certain questions to certain tables, and then ask you to discuss your answers with the class as a whole.

1. Summarize the experiments that proved *prdm1* was required for neural crest and RB determination.
2. In the *nrd* mutant, the authors see a down-regulation in *prdm1* mRNA expression. Is this what you would expect? Why or why not? Think carefully about this one. Remember, the *nrd* mutation is a stop codon in the *prdm1* gene.
3. How do the data in Figure 6 from the paper prove that *prdm1* acts downstream (after) BMP signaling to determine neural crest identity?
4. When *prdm1* is absent, what do the cells that are supposed to make neural crest or RB cells differentiate into instead? Do they die, or do they change their fate?
5. What genes are activated by the *prdm1* protein product (a transcription factor)? Why is it important to determine this, and what does it tell you about the role of *prdm1*?