1. STUDENT IDENTIFICATION
Name, University background, title, institution

James Dooley
BA in biology and psychology from the University of Chicago
Neuroscience Graduate Group
PhD Candidate
University of California, Davis

2. SCHOOL EXPERIENCE AND CONTRIBUTION

- Research interest

My research interests involve studying developmental plasticity of the mammalian neocortex. The neocortex is highly dynamic, particularly during development. This plasticity is an important feature that allows the individual to optimize the functional organization and connectivity of the neocortex to generate behavior that is highly adaptive for the context in which the animal develops and ultimately lives. While many factors are known to contribute to this plasticity, the limits to which the neocortex can be altered by these factors following early cortical injury or extreme changes to the physical environment in which it develops are still not well known. The goal of my research is to gain a better understanding of the contribution of pervasive environmental enhancement following cortical insult. I intend to determine the effects of bilateral lesions to visual cortex in the short-tailed opossum (Monodelphis domestica) at two major developmental milestones: (1) just before thalamocortical projections reach the cortex and (2) immediately after thalamocortical projections reach the cortex, while cortical connections are still forming. Once the animals reach maturity, I use behavioral testing combined with electrophysiological and neuroanatomical techniques to examine visual acuity, the functional organization and the neural response properties of the re-organized cortex, as well as cortical and thalamic connectivity.

- Reason for participating in BCBT2014

The theme of BCBT this year seemed to be perfectly suited to both my current research interests as well as the line of research I hope to pursue as a post-doctoral scholar. Additionally, while primarily trained as a biologist, I hoped attending BCBT would expose me to numerous other perspectives, particularly with regards to robotics and modeling neuronal behavior. This point is best appreciated with respect to the list of speakers, nearly all of which generate data of direct interest to that which interested my own, but often offering a novel perspective. Finally, I had hoped BCBT would introduce me to students and professors from around the world, exposing me to a more international community of scholars and giving me a greater appreciation for science coming from around the world.

- How did BCBT2014 contributed to your education

After now attending BCBT2014, I can say that all of the above goals which I discussed above were met or exceeded, along with several unexpected contributions. I was afforded numerous opportunities to discuss science with the speakers in both formal and informal settings throughout the two weeks spent in Barcelona. Additionally, while I was hoping to speak with other students about their
science, the social nature of the conference allowed me to better understand not just their research, but the sociology of academia in numerous countries throughout the world, and the ways which it differs from the system I know. While working on my project, I was also able to gain exposure in programming statistics in matlab, robot programming language, as well as exposure to psychological theory which previously I was not familiar.