This semester’s biobehavioral seminar will take an in-depth look at theories of conditioning and associative learning that have followed Rescorla and Wagner (1972). We will begin by looking at the Rescorla-Wagner model, and then examine important findings and alternative models that have steadily improved on it. I will assume that students share my belief that classical conditioning is important as both a \textit{phenomenon} that is deeply involved in many other psychological phenomena (including anxiety disorders, substance abuse, operant conditioning, etc.) and a \textit{method} for studying the basic associative processes that are involved in learning, emotion, and cognition. (It is also increasingly used as a tool for studying how the brain is involved in these processes.) The goal of the course will therefore be to arrive at a deeper understanding of conditioning and associative learning, how good theories and models are developed, how theory and data interrelate, and how scientific knowledge accumulates. I personally believe that the models we will cover this semester constitute one of the main achievements of Learning Theory over the past 40 years. We will nonetheless also consider some modern challenges and questions about the generality of the “associative” view of behavior and learning that the models promote.

**Requirements.** The course readings have been selected with care. Students will play the essential role of presenting most of the readings to the rest of the class. Half of many classes will be devoted to the presentation of a target article (often a citation classic) that describes a theory or model; the second half of the class will involve the presentation of several empirical papers reporting data that shed more light on the model. Each student will present his or her share of both the longer target articles (n = 16) and shorter empirical articles (n = 28). The last class meeting will involve discussion of some relatively light articles (yet to be determined) that will hopefully lead us to reflect on what we have learned over the semester. I will assign a short (5-page) capstone paper that puts the themes of the course together at that time (there will be more information on this assignment later).

All readings will be available as pdf files on Blackboard.

Let me say a little more about the class presentations. Most of the target articles will be given 75 minutes total class time. They should be presented in 60–65 minutes, leaving 10-15 more minutes for questions and discussion. \textbf{Timing will be important}, and this will take thoughtful planning and editing. \textit{I would like to meet with you two weeks before you present a target article}. Empirical articles should be presented in 20 minutes, with an additional 5 minutes for discussion. These will also require careful planning, and I would be pleased to meet with you a week before you present one, although this should be considered optional. Please pay particular attention to your Powerpoint slides and how to best convey and teach the work to the rest of us in the time allotted.

**Background.** This course will be challenging, but I hope it will be stimulating and fun. My section of Proseminar will be adequate background for the course. However, as additional background, I will make available a chapter that reviews several of the models from my book on Learning (Chapter 4 in Bouton, 2007). I will also provide an \textit{Annual Review of Psychology} paper (Pearce & Bouton, 2001) that summarizes some of the course material at a more advanced level.

**CLASS MEETINGS**

Please do the reading before each class. \textbf{T} = target article; \textbf{E} = empirical article.
January 21: The Rescorla-Wagner model


Or:


January 28: Rescorla-Wagner and the Mackintosh attention model


February 4: The Pearce-Hall attention model


February 11: Wagner’s short-term memory model


February 18: SOP and its “affective extension” (AESOP)


Discussion of the following question: How would SOP and/or AESOP explain the “trial spacing effect” in conditioning, where trials that are spaced more widely in time yield better conditioning than trials that are spaced more closely in time? (Discussion led by Mark; please put some time into thinking about the question in preparation for the class!)

February 25: No class
March 4: Spring Break

March 11: Pearce configural learning model


**March 18: Some issues surrounding stimulus representation and attention**


**March 25: Comparator theory**


**April 1: Alternatives to associations**


**April 8: Spatial learning**


**April 15: No class**

**April 22: Occasion setting and associative analyses of instrumental learning**


**April 29: Reinforcement learning**


**May 6: Party and final discussion**

We will get together at my house for a cook-out and final discussion of some final readings, TBA, that will help frame our thinking about what we see as the major achievements and crucial current issues for the field. A 5-page paper will be required.