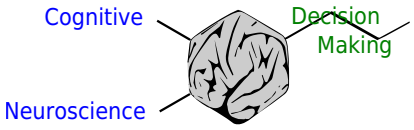
Teaching philosophy and methods

My primary teaching goal is to encourage students to think and create like expert researchers.

Online publishing of seminar research

Cognitive Neuroscience of Decision Making



This course encourages students to read advanced scientific literature the same way that experienced researchers do: by making connections with knowledge they already have, and by doing literature reviews to understand unfamiliar concepts.

The readings stretch beyond typical undergraduate material. Students learn to respond to the advanced readings by writing down what they don't understand in order to make those things explicit, and therefore less daunting. Students submit questions to a group document that range from background questions (“What is the ventral striatum?”), to questions challenging studies' conclusions, to questions about studies' practical implications (“How does learning rate impact decision making? If you have a faster learning rate will you be a better decision maker?”).

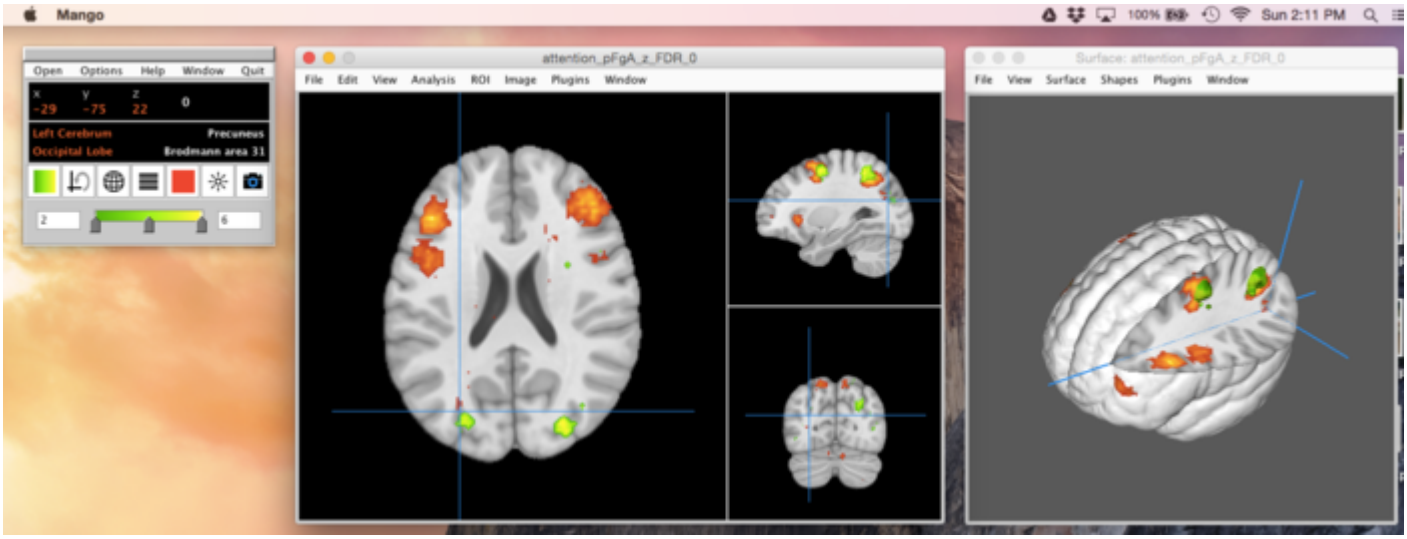
Students spend one day a week researching the submitted questions and documenting their answers. The answers, including bibliographic references, are compiled and documented online. Other students can then use these web pages as online resources for guiding their own learning and research.

Using neuroimaging methods to understand the relationships between cognitive skills

Neuroimaging meta-analysis assignment instructions

Doing a neuroimaging analysis doesn't have to be rocket science. Done correctly, it can be a great way to understand commonalities and differences between cognitive skills, and to learn about the limitations of neuroimaging results.

The above page gives the (very!) detailed instructions for conducting a neuroimaging meta-analysis comparing two different cognitive skills. This is an assignment for my Cognitive Psychology course.



The 3D surface model cut away to reveal the location marked by the crosshairs in the viewing window.

Creating and analyzing data

Individual differences in color naming

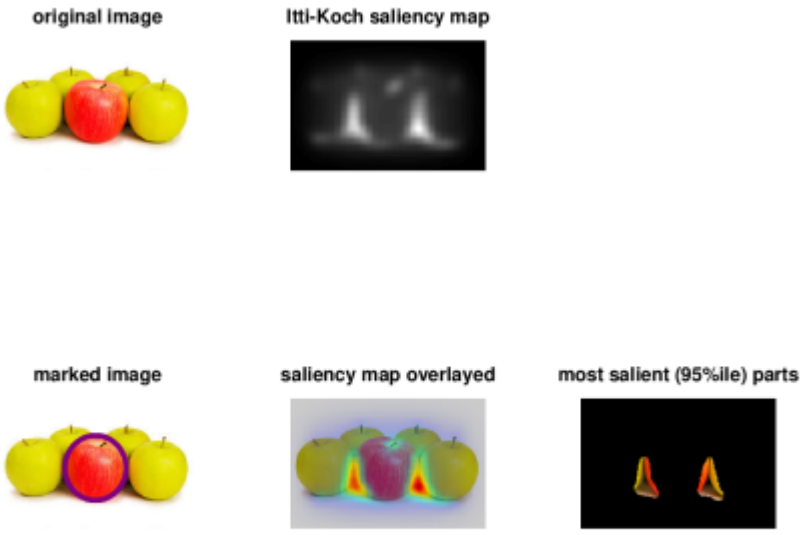
Individual differences in color naming

Students often ask whether everyone perceives colors the same way. This assignment illustrates how variable individuals' choices are when they pick colors to go along with common color words. The results are used to teach concepts of color theory.

Image saliency maps

Attentional saliency in images

This assignment illustrates the difference between the low-level visual features and processes that guide attention to different parts of an image, and students' judgments about what *should* grab attention in an image.



Autobiographical memory

Quantifying autobiographical memory

Video voting

Video voting in class

I created a technique that measures students' judgments about perceptual features of a video that they watch together as a class, and then draws a bar graph on top of the video to summarize the class' decisions or “votes.” The technique only requires a cell phone to record a video of the class holding up cards of two colors. The video of the class is immediately blurred to obscure students' identities.



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