Positions available in the Center for Advanced Medical Imaging (CAMI):

Brigham & Women's Hospital, Boston, MA

Project Key Idea:

We are looking for people to lead and/or execute CAMI research projects that can translate an understanding of visual perception and attention into improved performance in Radiology.

What is the main motivation for this project?

Radiologists perform difficult perceptual tasks in order to interpret medical images, detect disease and render an expert opinion to guide medical management. In spite of extensive training, performance on these tasks is not good as would be hoped. Our belief is that there is room for improvement in the stimuli that are presented to radiologists and ways in which those stimuli are used. Moreover, we believe that by bringing radiology tasks into the lab, we can address interesting and important questions in basic vision science.

What might be an example?

Radiologists sometimes assert that they can */sense/* the presence of a problem (e.g. breast cancer) in an image in their first glance at that image – even if they cannot immediately localize that lesion. We have found that this is a reliable phenomenon. Radiologists can indeed classify breast images as normal or abnormal at above chance levels after 250 msec exposure even when the subtle signs of disease are not salient in the image. Apparently, there is some global/statistical signal in the images. We would like to identify that signal. If we could identify a candidate signal, we would want to conduct psychophysical experiments to test that hypothesis. We would like to design displays that drew a radiologist's attention to the presence of this signal and we would want to determine of that intervention improved performance.

What would success look like?

Success for a CAMI project could take any of several forms. A successful project could produce publishable results in the basic, applied, or clinical literature. It could give rise to changes in the practice of radiology that improved performance. It could lead to a program of further research that attracts extramural funding.

Who might contribute?

We are looking for people who believe that they could make a contribution at this interface between medicine and behavioral research. At the present time, we would consider hiring college graduates with appropriate skills, current graduate students, or post-doctoral fellows. This could include Radiologists seeking a non-clinical fellowship for a year or two.

(more..)

Appropriate individuals would have <u>some</u> of the following:

- Strong programming skills (e.g. Matlab, Javascript,Java,C,C++)
- Background in image processing (e.g. jpegs, Photoshop, digital images)
- Familiarity with medical imaging (e.g. CT,MRI, DICOM, PACS)
- Experience in human behavioral research
- Experience in some aspect of radiology (e.g. MD, previous employment in the field)
- Background in some aspect of vision science (e.g. psychophysics, computer vision)

Interested?

Send a resume and a letter describing your interest to Karla Evans: kevans@search.bwh.harvard.edu