Irene Kan, Ph.D.
Assistant Professor
Dr. Irene Kan, an assistant professor at Villanova University, graduated from Penn in 2005 after working with Dr. Sharon Thompson-Schill. Research in her lab at Villanova focuses on understanding how episodic memory (i.e., memory for personally experienced events, such as, “I dropped a hammer on my toe last night”) and semantic memory (i.e., general world knowledge, such as “a hammer is a tool”) are stored and organized in the brain. A second line of research focuses on exploring how these different types of memory interact and support each other. Examining these issues in patients clarifies which memory processes are impaired and which memory processes remain intact subsequent to brain damage. The participation of database patients has greatly contributed to our understanding of human memory and cognition. Thank you for your help!

Cindy Gooch, Ph.D.
Postdoctoral Fellow
Time perception is central to daily function in many ways. Knowing when no cars will be coming and it is okay to cross the street, or when the toaster should have popped, are small examples of the way our sense of time gets us through our days. We are interested in which parts of the brain are responsible for time perception. To this end, we are conducting studies in which participants perform computer tasks such as comparing two short time intervals to determine which is longer, or learning short time intervals and trying to identify them again later.

Wolk Laboratory
David Wolk, M.D., assistant professor of neurology, directs a lab which is studying memory by measuring brain waves. Historically, the parietal lobes have not been thought to play a role in memory, but recent studies in young adults often show brain activity in this region when they try to remember things. To further study this issue, Dr. Wolk’s lab is measuring brain activity in patients with and without parietal lobe injury to determine the effect of this injury on memory function.

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Assistant Professor
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Daniel Kimberg, Ph.D.
Research Assistant Professor of Neurology
Dr. Kimberg studies control processes in cognitive behavior and is developing computer software for managing data from patients with brain injuries.
Exploring the Brain Basis of Understanding Metaphors  
Gwenda Schmidt, Ph.D.

Metaphors are statements that are not literally true. Some examples are *That lake is a mirror* and *The paint danced over the portrait*. For many years, doctors working with stroke patients have noticed that when their stroke is in the right hemisphere, they have trouble understanding metaphors. This is particularly interesting because it is a left hemisphere stroke which usually causes difficulties with language.

When researchers started doing research to better understand this phenomenon, they got mixed results. Some found evidence that patients with right hemisphere strokes did indeed have trouble with metaphors, while others did not. We figured that part of the problem was that there are so many different types of metaphors, and the researchers did not take that into account. So we decided to test patients using a very carefully designed list of metaphors. It included two very specific kinds of metaphors. The first kind was based on nouns, like *The old man’s shirt was a tent*. The second kind was based on verbs, like *The man swept the woman off her feet*. So far we have found that patients with right hemisphere strokes DO have more trouble with metaphors than patients with left hemisphere strokes, but only for verb-based metaphors. Now we are looking at the brain scans of all the patients we tested to learn more about which parts of the right side of the brain are involved. We hope that learning more about this will help develop better ways of helping patients deal with language difficulties.

We are so thankful to the wonderful patients who let us come to test and we thank all of you for participating. With your help, we are able to “shed a little light” (that’s a metaphor!) on the workings of the brain.


Thank You and Update  
Eileen Cardillo, D.Phil. & Alex Kranjec, Ph.D.

Eileen and Alex would like to thank everyone who volunteered this winter for their study. One goal of our project is to better understand how brain injury affects our ability to detect motion. We are specifically interested to see if different brain areas are important for understanding how people and things move (e.g., by running or hopping) versus where they move (e.g., to the right). As many of you now know, we are exploring this question using short videos of cartoon creatures that move in different ways.

The results so far are promising, and we were able to present preliminary findings at a recent meeting of the Cognitive Neuroscience Society in San Francisco. We are still looking for a few more participants, however, so if you are interested in taking part, please do let us know!

As a result of the kind contributions of our research participants, a number of studies have been published in scientific journals. We thank all of our database patients and control subjects.

**Is the posterior parietal lobe involved in working memory retrieval? Evidence from patients with bilateral parietal lobe damage.**

**The medial temporal lobe and visual working memory: Comparisons across tasks, delays, and visual similarity.**

**Impairment in writing, but not reading, morphologically complex words.**

**Refractory access disorders and the organization of concrete & abstract concepts: An attempt to replicate.**

**Letter selection and letter assembly in acquired dysgraphia.**

**Dorsal medial prefrontal cortex plays a necessary role in rapid error prediction in humans.**

**Medial prefrontal cortex plays a critical and selective role in ‘feeling of knowing’ meta-memory judgments.**

**Some surprising findings on the involvement of the parietal lobe in human memory.**

**Visual working memory is impaired when the medial temporal lobe is damaged.**

**Working memory for conjunctions relies on the medial temporal lobe.**

**The enigmatic temporal poles: A review of findings on social and emotional processing.**

**The frontal cortex and stimulus driven attentional orienting.**

**Lesion evidence that two distinct regions within prefrontal cortex are critical for n-back performance in humans.**

**The human ventromedial frontal lobe is critical for learning from negative feedback.**
**We Bid Farewell!**

**GWENDA SCHMIDT, PH.D.**

We send our best wishes to Gwenda Schmidt, Ph.D. as she begins her new position as assistant professor of psychology at Hope College in Holland, Michigan. At Hope, Gwenda will also be associated with the neuroscience program. Her plans include establishing a new EEG laboratory and continuing her research on the neural basis of language.

**ONE DAVE FOR ANOTHER!**

The Olson Laboratory welcomes the addition of a new research assistant, David McCoy (left). David recently graduated from the University of Delaware as a psychology major. Along with postdoctoral fellows Marian Berryhill and Lars Ross, he will be testing database members in the near future. We also bid a sad goodbye to David Drowos (right) who has been a fantastic research assistant for the past two years. We are happy to send him off to George Washington University in DC where he will begin a doctoral program in clinical psychology this fall.

**PAGE WIDICK, B.A.**

After 4 years of service, Page is leaving Dr. Anjan Chatterjee’s laboratory to begin her medical school career at the University of Maryland School of Medicine. Many of you have had the opportunity to work with Page on various research projects, and we know that she will be missed by the patients and controls who have had the wonderful experience of meeting her! We wish her all the best as she continues her studies by entering medical school in the Class of 2013.

**We Want Your Spouse/Friend/Neighbor**

Non-brain-injured subjects are needed for our cognitive research studies. Subjects receive the same tests as the patients, and they help to establish a baseline for how individuals without brain injury perform on the same tasks. Payment is $15 per hour plus mileage and parking.

Call 215-614-1971 for more information.

**Young Stroke Support Group**

Penn’s Young Stroke Support Group provides a chance for stroke patients to meet and talk with others facing similar challenges. Guest-speakers are invited to address issues relevant to younger adults.

Meetings: 3rd Thursday of the month, 6:30 p.m.
Ravdin-6 Conference Room, HUP (34th & Spruce Streets)

For more information and to confirm meeting times, contact Jeanie Luciano, MSN, CRNP (Stroke) at 215-614-0175 or jeanie.luciano@uphs.upenn.edu.