New Study:
WHO, HOW, & WHERE?
EILEEN CARDILLO, D.PHI.L. &
ALEX KRANJEC, PH.D.

Drs. Cardillo and Kranjec are studying how brain injury affects motion perception. In particular, they hope to determine brain areas important for tracking how individuals move (e.g., dancing, skipping, hopping) and where they move (the path that they take). They think difficulty with these aspects of perception may be related to difficulty with motion-related language. Their tasks involve watching cartoons of these five creatures moving across a computer screen. They hope you’re interested in giving it a try – they would appreciate your participation!

Center for Cognitive Neuroscience Patient Database

This summer, the CCN Patient Database celebrated its 10-year anniversary. We also reached a record 2000 research testing sessions! The immense effort of our database participants has helped us in our scientific studies investigating the relationship between cognitive behavior and the brain areas responsible for such behavior. We send a warm thank-you to all of our patients and non-brain-injured subjects for this success.

Photos of some of our CCN researchers.

Art & the Brain
ANJAN CHATTERJEE, M.D.

The Chatterjee lab is examining the relationship of art and the brain. They developed a new instrument to quantify judgments of features of artwork. This instrument is being used to assess how artwork can change with brain damage and what brain areas are involved in the perception of art. Dr. Chatterjee presented a paper called The Assessment of Art Attributes at the biannual meeting of the International Association of Empirical Aesthetics in Chicago this past August. The paper was co-authored by Page Widick, Rebecca Sternschein and Billy Smith and has been chosen to be published in a special issue of the journal, Empirical Studies of the Arts.
Creativity and the Frontal Lobes  
Evangelia G. Chrysikou, Ph.D. & Sharon L. Thompson-Schill, Ph.D.

A large body of research in neuroscience over the past 30 years has revealed the critical implication of the human frontal lobes in complex cognitive tasks, such as paying attention while one is engaged in everyday activities (e.g., writing a letter, cooking, playing cards), organizing and planning future actions (e.g., a vacation), or avoiding distraction from unwanted information. On the other hand, recent studies have shown that certain types of lesions in the frontal lobes or a type of dementia that affects specifically this brain region (fronto-temporal dementia) are sometimes associated with increased performance in creativity tasks. For example, some patients with injuries in these regions outperform their healthy counterparts in tasks requiring creative problem solving, or spontaneously develop new artistic and musical skills that they did not have before the onset of injury. Our research explores the role of the frontal lobes in creativity and examines the hypothesis that limited control from the frontal lobes may, under some circumstances, benefit performance on certain creative problem solving tasks.

Staying Focused  
Robert Langner, Ph.D. Candidate

Robert Langner is a Ph.D. candidate from the RWTH Aachen University in Germany, who joined Dr. Anjan Chatterjee’s research group this spring for three months. In his Ph.D. project he is trying to shed some light on how people are able to maintain their concentration and "stay on the job" - even if it's a very monotonous and boring one. Many people who suffer brain damage have serious problems with this, and in his experiment he wanted to find out which specific brain areas are related to such problems. Several regions in the right hemisphere of the brain are suspected to contribute to problems with concentration, and he is currently analyzing the data to find out more about it. Robert would like to say "Thank you!" to all patients who took part in his rather boring experiment. (Unfortunately, it had to be like that...)

Body Representation  
Jared Medina, Ph.D.

Dr. Medina would like to thank everyone who has participated in his studies understanding how the brain represents the body, especially with regards to motor control. Past researchers have found that people are more accurate at localizing their body after an active movement (e.g., reaching to a target) compared to after passive movement (e.g., someone moving your hand to a target). It is hypothesized that this increased accuracy is because when actively reaching, you have access to a motor plan that helps provide helpful location information. Using this as a guide, Dr. Medina studied the localization performance of subjects with stroke on active and passive reaching tasks. He found that deficits in localization after active reaching are correlated with damage to the left premotor cortex, an area dedicated to movement guidance. However, deficits in localization after passive reaching are correlated with damage to right angular gyrus, an area dedicated to (among other things) representation of the body. Interestingly, a previous study found that stimulation of this area resulted in spontaneous out-of-body sensations (Blanke et al., 2002), further supporting this region as strongly associated with representing the body. Thanks to the help of everyone in the database for undergoing more research to more fully understanding how the brain represents our body.

**Welcome Back a Familiar Face!**

**Joe Kable, Ph.D.**
An old face has recently returned to Penn in a new capacity... Joe Kable, who was a graduate student with Dr. Anjan Chatterjee and received his Ph.D. from Penn in 2004, has recently returned to Penn as an Assistant Professor in the Psychology Department. His lab researches how different brain areas are involved in decision-making, and they plan to begin studies on that topic with the CCN patient database this year. So keep an eye out for descriptions of these studies or invitations to participate in upcoming newsletters!

**Welcome New Researchers!**

**Lars Ross, Ph.D.**
Lars Ross recently received his Ph.D. from the Cognitive Neuroscience Program at the City University of New York. In his thesis research, he investigated how the brain integrates information from different senses and how this can alter and enhance our perception.

More recently Dr. Ross joined the lab of Dr. Ingrid Olson as a post-doctoral fellow. In collaboration with Dr. Olson he is investigating how people think about and perceive aspects of their social environments. The human brain appears to contain networks that are specialized for dealing with information about the thoughts, intentions and emotions of other human beings in their realms. In this new and exciting field of research Drs. Ross and Olson intend to investigate and learn more about the specific workings of these specialized parts of the brain and what happens when they are affected by conditions like dementia, autism and schizophrenia.

Having recently moved to Philadelphia, in fact only two weeks ago, Dr. Ross is already impressed by this city and regards it as one of the most charming and livable cities he has encountered. He is excited to be here and to be part of this excellent research team.

**Bianca Bromberger, B.A.**
Bianca joined Dr. Anjan Chatterjee’s lab in the summer of 2008 after having received her B.A. from Haverford College, where she double majored in Psychology and Art History. Bianca is especially interested in the neural basis for emotional responses to abstract art, and wrote her Art History thesis on the processes of perception, cognition, and emotion in the paintings of Mark Rothko. Bianca is excited to continue to research the intersection between neurology and aesthetics while working as a research assistant in the Chatterjee lab, and simultaneously fulfilling the course requirements to attend medical school. Bianca is looking forward to meeting you!

**Dasha Kliot, B.A.**
Dasha graduated from Columbia University with a Bachelor of Arts in Psychology in 2006. This summer she joined Dr. H. Branch Coslett’s laboratory in the Department of Neurology at HUP where she is working as a research assistant. Dasha is administering a number of the tests conducted by the Coslett lab, so you may have the opportunity to meet her during one of their research studies.

**Update on Former Researchers: A. Cris Hamilton, Ph.D.**
Dr. Hamilton is a former post-doctoral fellow with Dr. H. Branch Coslett, and he is currently a Lecturer in the Psychology Department at Rice University, Houston, Texas. Dr. Hamilton’s current research interests continue to be in the areas of language and memory.
**Patients Needed**

If you are interested in the following study, please contact:

Dr. Marianna Stark (215-615-3649).

Dr. Lila Chrysikou and Dr. Sharon Thompson-Schill are currently recruiting patients with frontal lobe injuries for participation in a study on the use of everyday objects. The study involves looking at images of everyday tools and answering short questions about them. Your help is greatly appreciated!

**We Need Volunteers**

Non-brain-injured subjects are needed for our research studies. These individuals are often the spouses and caregivers of our patients. 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 jluciano@mail.med.upenn.edu.

**Internet Resources**

Dr. Evangelia Chrysikou (Penn, CCN) has kindly shared a variety of resources available to patients and their families through the internet.

**PhillyHealthInfo.org**
www.phillyhealthinfo.org
Informational site on a variety of conditions, including stroke.

**CaringBridge**
www.caringbridge.org
Web-based service to keep family and friends in-touch during illness and recovery.

**Family Caregiver Alliance**
www.caregiver.org
Resource of information and services available for caregivers.