

# Patrick Crutchley

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- EDUCATION** ◇ **University of Pennsylvania**, Philadelphia, PA.  
B.S.E in Bioengineering, May 2007.  
*Senior design project:* Implementing an automated method for electrode placement in Parkinson's deep brain stimulation surgery (see below).
- ◇ **Auburn High School**, Auburn, AL.  
International Baccalaureate Diploma, May 2003
- RESEARCH INTERESTS** Conditional and statistical analysis of human memory behavior; human brain electrophysiology, especially during memory encoding; computational modeling of memory and decision-making cognitive processes.
- RESEARCH PROJECTS** ◇ Individual differences in free recall: Behavioral analysis from a 20-session episodic memory long-term experiment. With Michael Kahana, Ph.D. and Karl Healey, Ph.D. *Ongoing*.
- ◇ Computerizing and administering standardized tests of memory, mood, and personality in support of "Individual differences in free recall" project above. *Ongoing*.
- ◇ Using TMS-evoked potentials to probe neural response mechanisms in schizophrenia. With Bruce Turetsky, MD and Mahendra Bhati, MD. Presented at *ICOSR 2009* by BT.
- ◇ Structural MRI investigation of 3-d morphological differences among schizophrenia patients, Alzheimer's patients, and controls. With Bruce Turetsky, MD. Published in *Schizophr Res.* (Turetsky et al., 2009.)
- ◇ Real-time MATLAB implementation of functional localization and visualization of the STN from microelectrode recordings acquired during DBS surgery with unsupervised machine learning. *Senior design project*. With Charles Li and John Paulett; advised by Stephen Wong, MD, Shabbar Danish, MD, and Leif Finkel, MD, Ph.D. Published in *J. Neural Eng.* (Wong et al., 2009.)
- PUBLICATION** Turetsky B. I., Crutchley P., Walker J., Gur R. E., Moberg P. J. (2009). Depth of the olfactory sulcus: a marker of early embryonic disruption in schizophrenia? *Schizophrenia Research*, 2009 Nov;115(1):8-11.
- SKILLS** ◇ *Software:* MATLAB, BrainVisa, EGI NetStation, L<sup>A</sup>T<sub>E</sub>X, Adobe Photoshop and Illustrator, MS Office, iWork, Python/PyEPL
- ◇ *Operating systems:* Mac OS X, Mac OS X Server, Unix/Linux, MS Windows
- ◇ *Other:* application of Electrical Geodesics, BioSemi, Neuroscan EEG systems; MagStim transcranial magnetic stimulator "butterfly coil" operation
- WORK EXPERIENCE** ◇ **Research Coordinator/Lab Manager** (July 2011 – present), **Research Specialist** (July 2009 – June 2011), Computational Memory Lab, Dept of Psychology, University of Pennsylvania. *PI: Michael J. Kahana, Ph.D.*
- ◇ **Programmer/Analyst**, Brain Behavior Laboratory, Dept of Psychiatry, University of Pennsylvania (August 2007 – July 2009). *PI: Bruce I. Turetsky, MD.*
- REFERENCES** Available on request.