

# Matthew Shtrahman

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University of California, Los Angeles  
Department of Neurology  
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## Education & Training

- 2008 - **Neurology Residency**  
UCLA David Geffen School of Medicine
- 2007 - 2008 **Transitional Year Residency**  
The Western Pennsylvania Hospital
- 1997 - 2007 **M.D.**  
University of Pittsburgh School of Medicine, M.D.-Ph.D. Program
- 1999 - 2005 **Ph.D. in Physics**  
University of Pittsburgh, Department of Physics and Astronomy
- 1993 - 1997 **B.S. in Biochemistry**, with Highest Distinction  
University of Michigan, Department of Chemistry

## Research Experience

- 8/2006 - 5/2007 "Elucidating the Electrophysiological Basis of Perception Using Magnetoencephalography (MEG) and Electroencephalography (EEG)"
  - Principle Investigator
  - University of Pittsburgh School of Medicine
  - Research Advisor: Anto Bagic, M.D.
- 5/2005 - 6/2005 The Role of Glial Cells in Synchronous Neuronal Activity
  - Visiting Scholar
  - Academia Sinica, Taipei, Taiwan
  - Research Advisor: C. K. Chan, Ph.D.
- 2000 - 2005 Ph.D. Thesis: "Probing Vesicle Dynamics in Single Hippocampal Synapses"
  - University of Pittsburgh, Department of Physics and Astronomy
  - Research Advisor: Xiao-lun Wu, Ph.D.
- 1995 - 1997 Undergraduate Honors Thesis: "The Physical Basis for Thermostable Proteins"
  - University of Michigan, Department of Chemistry
  - Research Advisor: Richard Goldstein, Ph.D.

## Publications and Patents

- 2007 Yeung, C., **Shtrahman M.**, Wu, X.L. 2007. A Comparison of Two Models of Synaptic Vesicle Dynamics. *Biophys. J.* 92(7): 2271-80
- 2005 **Shtrahman, M.**, Yeung, C., Bi, G.Q., Nauen, D., Wu X.L. 2005. Probing Vesicle Dynamics in Single Hippocampal Synapses *Biophys. J.* 89(5): 3615-27
- 2002 **Shtrahman, M.**, Shtrahman G., Shtrahman A. *Apparatus and method of preparation for automated high output biopolymer crystallization via vapor diffusion sitting drop and micro-batch techniques.* U.S. Patent 6,402,837 July 11, 2002

## Presentations

- 6/2005 "Probing Vesicle Dynamics in Single Synapses"  
▪ Suranaree University of Technology, Nakorn Ratchasima, Thailand
- 5/2005  
▪ Academia Sinica, Taipei, Taiwan
- 3/2004  
▪ Biophysical Society Annual Meeting, Baltimore, Maryland
- 3/2003  
▪ Biophysical Society Annual Meeting, San Antonio, Texas
- 6/2005 "What Can Neurobiology Learn From Soft Condensed Matter Physics"  
▪ The Chinese University of Hong Kong, Hong Kong
- 6/2005  
▪ Hong Kong Baptist University, Hong Kong
- 5/2005  
▪ National Central University, Jhongli City, Taiwan
- 5/2005  
▪ Academia Sinica, Taipei, Taiwan

## Honors and Awards

- 2007 Harold L. Mitchell Prize for Excellence in Neurology
- 2005 Chinese Nationality Room Committee Scholarship Finalist
- 2002 Andrew Mellon Predoctoral Fellowship  
NEC Lectures on Biophysics Student Participant
- 1997 Highest Honors in Biochemistry, James B. Angell Scholar, Class Honors, American Institute of Chemists' Biochemistry Outstanding Student Award
- 1996 Phi Beta Kappa, James B. Angell Scholar, Class Honors, Smeaton Summer Research Fellowship, Lubrizol Chemistry Scholarship

## Professional Affiliations

- 2007 - present Initiative for Collective Neuronal Dynamics and Epilepsy (ICNDE)  
▪ Founder and President
- 2004 - present American Physical Society
- 2003 - present Biophysical Society  
3/2003 & 3/2004  
▪ Cochair Exocytosis & Endocytosis Platform Session

**Academic Service**

2003 - 2004  
1999 - 2001

M.D.-Ph.D. Program, University of Pittsburgh School of Medicine

- Peer Mentor
- Admissions Committee

**Teaching Experience**

Spring 2003  
Fall 2004

Teaching Assistant, University of Pittsburgh, Dept. of Physics and Astronomy

- Physics I for Scientists and Engineers

**Research and Career Goals**

I am interested in studying spatiotemporal patterns of neuronal activity in the human brain. These types of collective excitations are ubiquitous in nature, occurring in noisy systems from superconductors to ant colonies. In the brain, this coherent activity not only underlies thought and perception, but is also essential to our understanding of diseases of cognition and epilepsy. I plan to utilize a variety of experimental models and techniques to understand how these patterns code for information in both the physiological and diseased states. These methods include magnetoencephalography (MEG) and electroencephalography (EEG) recordings from human subjects, as well as optical techniques and multi electrode array studies in animal models. I hope to become a faculty member in both neurology and basic science departments, combining fundamental ideas from condensed matter physics and neuroscience with lessons learned from my clinical practice to study the human brain.

**Hobbies**

traveling, tennis, soccer, biking, guitar and bass, gardening, cooking, reading

**References**

Available upon request