

**EDUCATION**

**Ph.D., Physics**, University of Illinois at Urbana-Champaign, 2003  
Thesis title: *Lighting up life: Fluorescence studies of the Shaker K<sup>+</sup> channel and myosin V in action*  
Advisor: Paul R. Selvin

**B.S., Physics**, University of Texas at Austin, 1995  
**B.A., Plan II** (liberal arts honors), University of Texas at Austin, 1995

**PROFESSIONAL EXPERIENCE**

**University of Chicago**, Chicago, Illinois  
*Postdoc for Professor Bruce Lahn* **June, 2004 – present**  
Developing a method of gene expression profiling in single cells in order to address questions of cellular heterogeneity in ageing and cancer.

**University of Illinois**, Urbana, Illinois  
*Postdoc for Professor Paul R. Selvin* **September, 2003 – June, 2004**  
Studied the conformation of myosin V in the waiting state using polarized TIRFM.

*Research Assistant for Professor Paul R. Selvin* **June, 1997 – August, 2003**  
Used fluorescence techniques to discover and investigate the rotation of the voltage sensor of the Shaker potassium channel and to refine the hand-over-hand model of myosin V procession. As Professor Selvin's first student, I helped set up the lab, develop instrumentation, and train subsequent graduate students.

*Research Assistant for Professor Michael B. Weissman* **June, 1996 – May, 1997**  
Studied dynamics of hydrogen in amorphous silicon using the 1/f noise of electrical resistance fluctuations.

**Albert Einstein College of Medicine**, Bronx, New York  
*Graduate student* **September, 1995 – May, 1996**  
Completed lab rotations and coursework.

**Applied Research Laboratories**, Austin, Texas  
*Student research assistant* **June, 1993 – August, 1995**  
Aided in data analysis for work on underwater acoustics.

**SKILLS**

**Fluorescence**  
Ensemble techniques including: measurement of steady-state anisotropy, measurement of fluorescence lifetime in the time and frequency domains, Fluorescence Recovery After Photobleaching (FRAP), Fluorescence Resonance Energy Transfer (FRET). Single-molecule techniques including: Fluctuation Correlation Spectroscopy (FCS), Total Internal Reflection Microscopy (TIRFM), Fluorescence Imaging with One Nanometer Accuracy (FIONA).

**Electrophysiology**  
Cut-open oocyte and two-electrode voltage clamps. Harvest and maintenance of *Xenopus* oocytes.

**Molecular biology**  
Handling DNA and RNA, PCR, solid-phase PCR, DNA sequencing.

**Computers**  
Comfortable with MS Windows, MacOS X, Linux, MS Office, L<sup>A</sup>T<sub>E</sub>X, Matlab, IDL, Python, SigmaPlot.

REFEREED  
PUBLICATIONS

**G. E. Snyder**, B. Bugarija, and B. Lahn. “A computer script for automated design of species-specific quantitative PCR primers.” in preparation.

H. L. Cortés and **G. E. Snyder**. “An efficient algorithm for multiple polony detection.” accepted by *Proceedings of the 5th International Symposium on Biomedical Imaging*. (2008).

J. H. Lee, B. Bugarija, E. J. Millan, N. M. Walton, J. Gaetz, C. J. Fernandes, N. Mekel-Bobrov, W. Yu, T. W. Vallender, **G. E. Snyder**, Eliot C. Bush, Andy Peng Xiang, and Bruce T. Lahn. “Systematic identification of cis-silenced genes by trans-complementation.” submitted to *Cell*.

S. Syed\*, **G. E. Snyder**\*, C. Franzini-Armstrong, P. R. Selvin, and Y. E. Goldman. “Adaptability of myosin V studied by simultaneous detection of position and orientation.” *EMBO Journal*. **25**: 1795–1803 (2006).

**G. E. Snyder**, T. Sakamoto, J. A. Hammer III, J. R. Sellers, and P. R. Selvin. “Nanometer localization of single Green Fluorescent Proteins: Evidence that myosin V walks hand-over-hand via telemark configuration.” *Biophysical Journal*. **87**: 1776–1783 (2004).

J. Reifenberger, **G. E. Snyder**, G. A. Baym, and P. R. Selvin. “Emission polarization properties of luminescent lanthanide chelates.” *Journal of Physical Chemistry B*. **107**: 12862–12873 (2003).

A. Cha, **G. E. Snyder**, P. R. Selvin, and F. Bezanilla. “Atomic scale movement of the voltage-sensing region in a potassium channel measured via spectroscopy.” *Nature*. **402**: 809–813 (1999).

M. Xiao, H. Li, **G. E. Snyder**, R. Cooke, R. G. Yount, and P. R. Selvin. “Conformational changes between the active site and regulatory light chain of myosin as determined by luminescence resonance energy transfer: The effect of nucleotides and actin.” *Proceedings of the National Academy of Sciences*. **95**: 15309–15314 (1998).

**G. E. Snyder**, M. B. Weissman, H. T. Hardner, and C. Parman. “Nonequilibrium 1/f noise in amorphous silicon.” *Physical Review B*. **56**: 9205–9207 (1997).

INVITED TALKS

2006

UIUC Complex Systems Symposium

2004

Los Alamos National Laboratory

National Institute of Standards and Technology

Stanford University

University of Chicago

HONORS AND  
AWARDS

Ruth L. Kirchstein NRSA (NIH postdoctoral fellowship)

An Institutional NRSA in Molecular Biophysics (NIH graduate fellowship)

Phi Beta Kappa

Sigma Pi Sigma (physics honor society)

Honors Scholar, Applied Research Laboratories

University of Texas Dean’s List seven semesters