Adam D Schuyler, PhD

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Education

Postdoc	University of Connecticut Health Center, Farmington, CT Structural Biology – Dr. Jeffrey C Hoch	2013
Postdoc	University of Michigan, Ann Arbor, MI Neurology – Dr. Eva L Feldman Biophysics – Dr. Heather A Carlson	2009
Ph.D.	Johns Hopkins University, Baltimore, MD Mechanical Engineering – Dr. Gregory S Chirikjian	2006
B.A.	Williams College, Williamstown, MA Mathematics with Honors – Dr. Thomas A Garrity	2000

Professional Experience

- Assistant Professor — 2013-*present*
  University of Connecticut Health Center
  Department of Molecular Biology and Biophysics
- Co-Mentor Graduate Student — 2008-2009
  University of Michigan, Bioinformatics Program
- Graduate Teaching Assistant — 2004
  Johns Hopkins University, Department of Mechanical Engineering
  Biomolecular Mechanics
- Graduate Teaching Assistant — 2004
  Johns Hopkins University, Department of Mechanical Engineering
  Orientational Phenomena
- NIH Cancer Research Training Award Fellowship — 2003
  Structural Glycobiology Section, LECB, NCI, NIH – Dr. Pradman K Qasba
- NIH Cancer Research Training Award Fellowship — 2001
  Molecular Structure Section, LECB, NCI, NIH – Dr. Robert L Jernigan

Honors and Affiliations

- Molecular, Microbial and Structural Biology Department Retreat – Best Poster — 2011
- Sinai Medical Staff Foundation Fellowship — 2006-2009
- Biophysical Society – member — 2004-present
- Reviewer: PROTEINS, PLoS Comp Bio, PLoS ONE, Digital Signal Processing — 2003-present
- Abel Wolman Fellowship, Johns Hopkins University — 2000-2001
  Outstanding first-year doctoral candidate in Whiting School of Engineering.
- Sigma Xi, The Scientific Research Society – member — 2000-present
- Earned BA degree with Honors — 2000

Journal Publications

∗ denotes corresponding author status for ADS

- *In Preparation*
  AD Schuyler∗, MW Maciejewski, AS Stern and JC Hoch. Nonuniform sampling of hypercomplex multidimensional NMR experiments: Role of dimensionality and randomization. *Journal of Magnetic Resonance*.

- JC Hoch, MW Maciejewski, M Mobli, **AD Schuyler**, AS Stern. Nonuniform Sampling and Maximum Entropy Reconstruction in Multidimensional NMR. *Accounts of Chemical Research*, 47(2):708-717, 2014.

- **AD Schuyler**∗, MW Maciejewski, AS Stern and JC Hoch. Formalism for hypercomplex multidimensional NMR employing partial-component subsampling. *Journal of Magnetic Resonance*, 227:20-24, 2013.

- M Mobli, MW Maciejewski, **AD Schuyler**, AS Stern and JC Hoch. Sparse Sampling Methods In Multidimensional NMR. *Physical Chemistry Chemical Physics*, 14:10835-10843, 2012.

- MW Maciejewski, M Mobli, **AD Schuyler**, AS Stern, and JC Hoch. Data Sampling in Multidimensional NMR: Fundamentals and Strategies. *Topics in Current Chemistry*, 316:49-78, 2012.

- MW Maciejewski, M Fenwick, **AD Schuyler**, AS Stern, V Gorbatyuk and JC Hoch. Random phase detection in multidimensional NMR. *Proceedings of the National Academy of Sciences*, 108(40):16640-16644, 2011.

- **AD Schuyler**, MW Maciejewski and JC Hoch. Knowledge-based nonuniform sampling in multidimensional NMR. *Journal of Biomolecular NMR*, 50(3):247-262, 2011.

- **AD Schuyler**∗, HA Carlson and EL Feldman. Computational methods for identifying a layered allosteric regulatory mechanism for ALS-causing mutations of Cu-Zn superoxide dismutase 1. *Proteins: Structure, Function, and Bioinformatics*, 79(2):417-427, 2011.

- J Hur, KA Sullivan, **AD Schuyler**, C Backus, JM Hayes, Y Hong, HV Jagadish, DJ States and EL Feldman. Literature-based discovery of diabetes- and ROS-related targets. *BMC Medical Genomics*, 3(1):49, 2010.

- **AD Schuyler**∗, HA Carlson and EL Feldman. Computational Methods for Predicting Sites of Functionally Important Dynamics. *Journal of Physical Chemistry B*, 113(19):6613-6622, 2009.

- J Hur, **AD Schuyler**, DJ States and EL Feldman. SciMiner: Web-based literature mining tool for target identification and functional enrichment analysis. *Bioinformatics*, 25(6):838-840, 2009.

- **AD Schuyler**, RL Jernigan, PK Qasba, B Ramakrishnan and GS Chirikjian. Iterative cluster-NMA (icNMA): A tool for generating conformational transitions in proteins. *Proteins: Structure, Function, and Bioinformatics*, 74(3):760-776, 2009.

- SA Sakowski, **AD Schuyler** and EL Feldman. Insulin-like growth factor-I for the treatment of amyotrophic lateral sclerosis. *Amyotrophic Lateral Sclerosis*, 10(2):63-73, 2009.

- AM Vincent, SA Sakowski and **A Schuyler**, EL Feldman. Strategic approaches to developing drug treatments for ALS. *Drug Discovery Today*, 13(1-2):67-72, 2008.

- **AD Schuyler** and GS Chirikjian. Efficient determination of low-frequency normal modes of large protein structures by cluster-NMA. *Journal of Molecular Graphics and Modelling*, 24(1):46-58, 2005.

- **AD Schuyler**, GS Chirikjian, JQ Lu and HT Johnson. Random-walk statistics in moments-based $\mathcal{O}(N)$ tight-binding and applications in carbon nanotubes. *Physical Review E*, 71(4):046701, 2005.

- S Assaf, L Chen, T Cheslack-Postava, B Cooper, A Diesl, T Garrity, M Lepinski and **A Schuyler**. A Dual Approach to Triangle Sequences: A Multidimensional Continued Fraction Algorithm. *INTEGERS: The Electronic Journal of Combinatorial Number Theory*, 5(1):A8, 2005.

- **AD Schuyler** and GS Chirikjian. Normal mode analysis of proteins: a comparison of rigid cluster modes with C_α coarse graining. *Journal of Molecular Graphics and Modelling*, 22(3):183-193, 2004.

Book Chapter

- JC Hoch, MW Maciejewski, M Mobli, **AD Schuyler** and AS Stern. Nonuniform Sampling in Multidimensional NMR in "Encyclopedia of Magnetic Resonance", 2012.

Invited Talks

- Experimental Nuclear Magnetic Resonance Conference ⋄ Boston, MA   2014
  "Hypercomplex Multidimensional NMR Employing Partial-Component Nonuniform Sampling"

- University of Connecticut Health Center ⋄ Molecular, Microbial and Structural Biology   2013
  "Molecular Modeling Reveals Molecular Function"

- University of Connecticut Health Center ⋄ Molecular, Microbial and Structural Biology   2009
  "Computational Models of Allostery: Potential Mechanisms for Disease Control"

- Biophysical Society Annual Meeting ⋄ Boston, MA   2009
  "Computational Methods for Predicting Sites of Functionally Important Dynamics"

- Boston University ⋄ Physiology and Biophysics   2009
  "Computational Models of Allostery: Potential Mechanisms for Disease Control"

- Johns Hopkins University ⋄ Mechanical Engineering – Bio Seminar Series   2004
  "Biological function determined by cluster-NMA on very large structures"

- Joint Meetings of the MAA and AMS ⋄ Providence, RI   1999
  "A Dual Approach to Triangle Sequences: A Multidimensional Continued Fraction Algorithm", T Cheslack-Postava, A Diesl, T Garrity, M Lepinski and A Schuyler

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Conference Posters

- Upstate NY NMR Symposium ⋄ Troy, NY   2013
  AD Schuyler, MW Maciejewski, AS Stern and JC Hoch. "Characterizing Sensitivity for Hypercomplex Multidimensional NMR Employing Partial-Component Subsampling".

- GRC: Computational Aspects of Biomolecular NMR ⋄ Mount Snow, VT   2013
  AD Schuyler, MW Maciejewski, AS Stern and JC Hoch. "Characterizing Sensitivity for Hypercomplex Multidimensional NMR Employing Partial-Component Subsampling".

- Experimental Nuclear Magnetic Resonance Conference ⋄ Pacific Grove, CA   2011
  AD Schuyler, MW Maciejewski and JC Hoch. "Improved Metrics for Predicting Performance of Nonuniformly Sampled Schedules".

- Biophysical Society Annual Meeting ⋄ Baltimore, MD   2011
  AD Schuyler. "Binding Profiles Based on Normal Mode Analysis as a Foundation for a Unified Approach to Allosteric Activation of Prolactin Receptor".
  Biophysical Journal, 2011, 100(3) Supplement 1, 550a.

- Experimental Nuclear Magnetic Resonance Conference ⋄ Daytona Beach, FL   2010

M Mobli, AS Stern, W Bermel, GF King, MW Maciejewski, **AD Schuyler** and JC Hoch. "Nonuniform sampling for improving resolution in multidimensional NMR".

- Biophysical Society Annual Meeting ◇ San Francisco, CA   2010
  AD Schuyler and JC Hoch. "Characterization and Optimization of Nonuniform Sampling for Multidimensional NMR Experiments".
  Biophysical Journal, 2010, 98(3) Supplement 1, 175a.

- American Neurological Association Annual Meeting ◇ Salt Lake City, UT   2008
  AD Schuyler, HA Carlson and EL Feldman. "Computational Analysis of Familial Amyotrophic Lateral Sclerosis Causing Mutations of Cu-Zn Superoxide Dismutase".
  Annals of Neurology, 2008, 64(S12), S44-S45.

- Biophysical Society Annual Meeting ◇ Long Beach, CA   2008
  AD Schuyler, HA Carlson and EL Feldman. "Normal Mode Directed Exploration of Conformation Space as a Tool for Studying Macromolecular Interactions".
  Biophysical Journal, 2008, 94, Supplement, 235-Pos.

- Biophysical Society Annual Meeting ◇ Baltimore, MD   2007
  AD Schuyler and EL Feldman. "Iterative Cluster Normal Mode Analysis (icNMA): A Tool for Traversing the Conformation Energy Landscape with an Application to ALS".
  Biophysical Journal, 2007, Supplement, LB3-Pos.

- Biophysical Society Annual Meeting ◇ Baltimore, MD   2004
  AD Schuyler and GS Chirikjian. "Efficient determination of low-frequency modes on large protein structures by cluster-NMA".
  Biophysical Journal, 2004, 86, Supplement, 2597-Pos.

- Institute for Biophysical Research Annual Meeting ◇ Linthicum Heights, MD   2003
  AD Schuyler and GS Chirikjian. "Cluster-NMA: A Computationally Efficient, Rigid-Body-Based, Normal Mode Analysis Tool".

- The 7th Johns Hopkins Folding Meeting ◇ Berkeley Springs, WV   2003
  MK Kim, **AD Schuyler** and GS Chirikjian. "Protein Dynamics Modeling".