

TRAVIS AARON HOPPE

Curriculum Vitæ
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PhD Physics
(775) 287-4033

education

2014-current

Postdoctoral

Theoretical Biophysics with Robert Best at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health (NIH).

2011-2014

Postdoctoral

Physical Biochemistry with Allen Minton at the NIH, NIDDK.

2011

Doctor of Philosophy

Physics, Drexel University with Jian-Min Yuan. *Thesis*, *On the Role of Entropy in the Protein Folding Process*.

2008

Master of Science

Physics, Drexel University

2005

Bachelor of Science

Physics, University of Nevada

2005

Bachelor of Science

Mathematics, University of Nevada

publications

Protein-Protein Interaction

2015

Dependence of Internal Friction on Folding Mechanism, Wenwei Zheng, David De Sancho, Travis Hoppe & Robert B. Best, *Journal of the American Chemical Society*.

2015

An Equilibrium Model for the Combined Effect of Macromolecular Crowding and Surface Adsorption on the Formation of Linear Protein Fibrils, Travis Hoppe, Allen Minton, *Biophysical Journal*.

2013

A Simplified Representation of Anisotropic Charge Distributions in Proteins, Travis Hoppe, *Journal of Chemical Physics*.

2013

Singular Value Decomposition of the Radial Distribution Function for Hard Sphere and Square Well Potentials, Travis Hoppe, *PLoS ONE*.

2010

Protein Folding with Implicit Crowders: A Study of Conformational States Using the Wang-Landau Method, Travis Hoppe, Jian-Min Yuan, *Journal of Physical Chemistry B*.

Protein Topology & Graph theory

2014

Integer Sequence Discovery from Small Graphs, Travis Hoppe, Anna Petrone, *arXiv*.

2009

Entropic Flows, Crowding Effects, and Stability of Asymmetric Proteins, Travis Hoppe, Jian-Min Yuan, *Physical Review E*.

Experimental Modeling

- 2014 **Programmable Nanoscaffolds that Control Ligand Display to a G-Protein Coupled-Receptor in Membranes allow Dissection of Multivalent Effects**, Andrew Dix, Daniel Appella, Travis Hoppe, et al., *Journal of the American Chemical Society*.
- 2014 **Quantification of Plasma HIV RNA Using Chemically Engineered Peptide Nucleic Acids**, Chao Zhao, Daniel Appella, Travis Hoppe, et al., *Nature Communications*.
- 2008 **The Importance of EBIT Data for Z-Pinch Plasma Diagnostics**, A S Safronova, Travis Hoppe, et al., *Canadian Journal of Physics*.
- 2006 **Spectroscopic and Imaging Study of Combined W and Mo-Pinches at 1 MA-Pinch Generators**, Alla Safronova, Travis Hoppe, et al., *IEEE Transactions on Plasma Science*.

research in progress

- Enhancing the Coevolutionary Signal**, Travis Hoppe, Robert Best.
- Stabilizing Membrane Proteins from Thermophilic Evolution**, Travis Hoppe, Robert Best.
- Enchanting the Coevolutionary Signal**, Travis Hoppe, Robert Best.
- Effect of Charge Anisotropy and the Theoretical Prediction of Phase Separation of Ionic Solutions**, Travis Hoppe, Allen Minton.
- Rise of the Coauthor: Editorial on the Systematic Trends of Coauthorship**, Travis Hoppe, Daniel Appella.
- Entropic Microscopes of PNA on Membranes**, Travis Hoppe, Daniel Appella.
- Dual-Graph Representation of RNA Structure**, Travis Hoppe, Tamar Schlick.

conferences

- 2016 **Biophysical Society: Los Angeles**
Poster: Coevolutionary signal enhancement
- 2015 **Biophysical Society: Baltimore**
Seminar: Mean-field lattice-model IDPs, Binding Affinity & Specificity
- 2014 **Advances in Enhanced Sampling Algorithms: Telluride**
Seminar: Topological considerations in the Wang-Landau algorithm
- 2013 **Biophysical Society: Philadelphia**
Seminar: Coarse-grained Electrostatic Models for Protein Solutions
- 2010 **Biophysical Society: San Francisco**
Poster: Wang-Landau Density of States in Crowded Protein Environments
- 2009 **Drexel University Libraries' Communication Symposium: The Hidden Costs of Scholarly Communication**
Invited Panel Member
- 2009 **Biophysical Society: Boston**
Poster: Exhaustive Properties of Simple Lattice Peptides

teaching (drexel)

- 2011 **PHYS 305**, Computational Physics II*
- 2010 **PHYS 304**, Computational Physics I*
PHYS 160, Introduction to Scientific Computing*
PHYS 305, Computational Physics II*
- 2009 **PHYS 304**, Computational Physics I*
PHYS 160, Introduction to Scientific Computing*
DSP 099, Dragon Summer Program: Remedial Mathematics
PHYS 100, Preparation for Engineering Studies
PHYS 305, Computational Physics II*
- 2008 **PHYS 304**, Computational Physics I*
PHYS 102, Fundamentals of Physics II*
PHYS 115, Contemporary Physics III*
PHYS 114, Contemporary Physics II*
- 2007 **PHYS 113**, Contemporary Physics I*
PHYS 102, Fundamentals of Physics II, Lab
PHYS 115, Contemporary Physics III*
PHYS 114, Contemporary Physics II*
- 2006 **PHYS 113**, Contemporary Physics I*
TDEC 101, Fundamentals of Physics I, Lab
TDEC 103, Fundamentals of Physics III*
TDEC 102, Fundamentals of Physics II*
- 2005 **TDEC 101**, Fundamentals of Physics I*

*Developed new curricula and modernized the Computational Physics, Contemporary Physics and Introduction to Scientific Computing courses at Drexel.

awards

- 2014 **Top Presentation Award**
Institution-wide recognition during the NIDDK Annual Conference.
- 2010 **Research Assistant Grant**
Competitive grant from Drexel Physics Department on the basis of outstanding research and teaching.
- 2010 **Student Research Achievement Award (SRAA)**
Top poster at the Biophysical Society 2010 meeting.
- 2009 **Department Research Award (Senior Division)**
Given by the Drexel Physics Department, this award recognized a high proficiency in both original research and synthesis of results into publications.
- 2008 **Department Research Award (Junior Division)**
Restricted to the first two years of study, the junior division award was awarded for early achievements in research.
- 2007 **Teaching Assistant of the Year**