

Jeremy D. Schmit
Department of Physics
Kansas State University
330 Cardwell Hall
Manhattan, KS 66506-2601
phone: (785) 532-1621 e-mail: schmit@phys.ksu.edu

EDUCATION

University of California, Santa Barbara, Santa Barbara, CA, 2000 - 2005.

Field of study: *Theoretical Soft Condensed Matter, Theoretical Biophysics.*

Advisors: Philip A. Pincus & Alex J. Levine.

Ph.D. Biomolecular Science and Engineering.

thesis: *“Intermolecular adhesion in conjugated polymers”*.

Northwestern University, Evanston, IL, 1995-1999.

B.A. Integrated Sciences Program and Biological Sciences.

RESEARCH EXPERIENCE

Assistant Professor, Kansas State University, 2011-present.

Postdoctoral Fellow, University of California, San Francisco, 2007-2011.

Advisor: Ken Dill

Lawrence Berkeley National Lab Facility User, Molecular Foundry, 2009-present.

Studied peptoid self-assembly in collaboration with Ron Zuckerman and Steve Whitelam.

Postdoctoral Fellow, Brandeis University, 2005-2007.

advisors: Jané Kondev and Bulbul Chakraborty

Graduate Research Assistant, University of California, Santa Barbara, 2000-2005.

Advisor: Philip Pincus

TEACHING

General Physics recitation instructor, Kansas State University, Spring 2012.

Graduate Statistical Mechanics, Kansas State University, Fall 2011 & Fall 2012.

Substitute Lecturer, Brandeis University, 2005-2007.

Teaching Assistant, University of California, Santa Barbara, 2002.

REVIEWS AND COMMENTARIES

L. Narhi, J. Schmit, K. Bechtold-Peters, and D. Sharma, "Classification of protein aggregates", *J. Pharm. Sci.* **101**(2), 493-498 (2012)

K.A. Dill, K. Ghosh, and J.D. Schmit, "Physical limits of cells and proteomes", *Proc. Nat. Acad. Sci.* **108**, 17876-17882 (2011)

RESEARCH ARTICLES

J. D. Schmit, "Kinetic theory of amyloid fibril templating", *submitted to Biophys. J.*

J. D. Schmit and K. Dill, "Growth rates of protein crystals ", *J. Am. Chem. Soc* **134**, 3934-3937 (2012)

J. D. Schmit, S. Whitelam, and K. Dill, "Electrostatics and aggregation: how charge can turn a crystal into a gel ", *J. Chem. Phys.* **135**, 085103 (2011)

J. D. Schmit, K. Ghosh, and K. Dill, "Why do amyloid molecules assemble into oligomers and fibrils?", *Biophys. J.* **100**, 450 (2011)

J. D. Schmit and K. Dill, "The stabilities of protein crystals", *J. Phys. Chem. B* **114**, 4020 (2010)

J. D. Schmit, E. Kamber, and J. Kondev, "Diffusion limited reactions in confined environments", *Phys. Rev. Lett.* **102**, 218302 (2009)

J. D. Schmit and A. J. Levine, "Statistical Model for Intermolecular Adhesion in π -Conjugated Polymers", *Phys. Rev. Lett.* **100**, 198303 (2008)

A. Rahmanisison, C. Castelnovo, J. D. Schmit, and C. Chamon, "Dynamics of single polymers under extreme confinement", *J. Stat. Mech* **09**, P09022 (2007).

J. D. Schmit and A. J. Levine, "Intermolecular adhesion in conducting polymers", *Phys. Rev. E* **71**, 051802 (2005).

J. Schmit, R. Menes, and P.A. Pincus, "Dielectric-induced counterion partitioning and its effect on membrane rigidity", *Phys. Rev. E* **66**, 061502 (2002).

SEMINARS

University of South Florida, “Playing with velcro: The kinetics of protein self-assembly”, September 2012.

Amgen, Inc., Seattle, WA, “Modeling Protein Crystallization and its application to viscosity”, November 2011.

University of Kansas, “Growth and stability of protein crystals”, September 2011.

Loyola University of Chicago, “What are the driving forces for the aggregation of proteins into crystals or amyloid fibrils?”, February 2011.

Kansas State University, “What are the driving forces for the aggregation of proteins into crystals or amyloid fibrils? ”, February 2011.

Brandeis University, “Intermolecular Bonding in Conducting Polymers”, September 2005.

Clark University, “Covalent-like Bonding Between Conjugated Polymers”, December 2004.

University of Massachusetts, Amherst, “Conjugated Polymers: The world’s smallest wires”, December 2004.

CONFERENCE PRESENTATIONS

Poster, “Binding and unbinding in protein self-assembly” Biopolymers Gordon Research Conference, Newport, RI, June 2012.

Contributed Talk, with Kingshuk Ghosh and Ken Dill, “Thermodynamic model for amyloid fibril and oligomer formation” ACS National Meeting, Anaheim, CA, March 2011.

Poster, with Kingshuk Ghosh and Ken Dill, “Thermodynamic Models for Amyloid and Crystal Protein Phases” Workshop on Aggregation and Immunogenicity, Breckenridge, CO, July 2010.

Poster, with Kingshuk Ghosh and Ken Dill, “A thermodynamic model of amyloid fibrils and oligomers” Biopolymers Gordon Research Conference, Newport, RI, June 2010.

Poster, with Ken Dill, “A theory of protein crystallization” Biophysical Society Meeting, San Francisco, CA, February 2010.

Poster, with Steve Whitelam and Ken Dill, “Electrostatic control of nanoscale geometry” Berkeley Mini Stat Mech Meeting, Berkeley, CA, January 2010.

Poster, with Ken Dill, “A theory of protein crystallization” Proteins Gordon Research Conference, Holderness, NH, June 2009.

Poster, with Kingshuk Ghosh and Ken Dill, “A thermodynamic model for amyloid fibrils and oligomers” Berkeley Mini Stat Mech Meeting, Berkeley, CA, January 2009.

Contributed Talk, with Kingshuk Ghosh and Ken Dill, “Caliber approach for non-equilibrium systems with a small number of states” American Physical Society March Meeting, New Orleans, LA, March 2008.

Contributed Talk, with Ercan Kamber, Joshua Kalb, Bulbul Chakraborty, and Jané Kondev, “Polymer dynamics in a tight squeeze” New England Complex Fluids Workshop, Waltham, MA, December 2006.

Contributed Talk, with Ercan Kamber, Joshua Kalb, Bulbul Chakraborty, and Jané Kondev, “Polymer dynamics in a tight squeeze” Greater Boston Area Statistical Mechanics Meeting, Waltham, MA, October 2006.

Contributed Talk, with Jané Kondev, “Polymer models of bacterial chromosomes” New England Complex Fluids Workshop, Waltham, MA, September 2006.

CONFERENCE PRESENTATIONS (cont.)

Contributed Talk, with A.J. Levine, “Intermolecular bonding in conjugated polymers: The effect on aggregate morphology,” American Physical Society March Meeting, Baltimore, MD, March 2006.

Contributed Talk, with Joshua Martin, Bulbul Chakraborty and Jané Kondev, “Polymer dynamics within a harmonic confinement potential,” American Physical Society March Meeting, Baltimore, MD, March 2006.

Contributed Talk, with A.J. Levine, “Covalent-like bonding between conjugated polymers,” Greater Boston Area Stat. Mech. Meeting, Waltham, MA, October 2005.

Poster, with A.J. Levine, “Intermolecular Bonding in Conducting Polymers”, American Conference on Theoretical Chemistry, University of California, Los Angeles, July 2005.

Contributed Talk, with A.J. Levine, “Intermolecular bonding in conjugated polymers,” American Physical Society March Meeting, Los Angeles, CA, March 2005.

Contributed Talk, with A.J. Levine, “Intermolecular Bonding in Metallic Polymers,” American Physical Society March Meeting, Montreal, QC, Canada, March 2004.

Poster, with A.J. Levine, “Intermolecular Bonding in Conducting Polymers”, National Science Foundation Site Visit Poster Session, University of California, Santa Barbara, February 2004.

Poster, with A.J. Levine, “Intermolecular Bonding in Conducting Polymers”, UC Santa Barbara-Singapore Workshop Poster Session, University of California, Santa Barbara, April 2004.

Contributed Talk, with P.A. Pincus, “Self Energy Effects on Membrane Rigidity,” American Physical Society March Meeting, Indianapolis, IN, March 2003.

Poster, with R. Menes and P.A. Pincus, “Dielectric Induced Counter-Ion Partitioning and its Effect on Membrane Rigidity”, Materials Research Outreach Program Symposium, University of California, Santa Barbara, California, January 2002.