

Rebecca Schulman

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- ACADEMIC EMPLOYMENT**
- University of California, Berkeley** September 2008–
Miller Fellow, Department of Physics
Sponsor: Jan Liphardt
- California Institute of Technology** June 2007–September 2008
Postdoctoral Scholar, Department of Computer Science
- EDUCATION**
- California Institute of Technology** May 2007
PhD, Computation and Neural Systems
Dissertation: “The Self-Replication and Evolution of DNA Crystals”
Advisor: Erik Winfree
- Massachusetts Institute of Technology** June 1999
B.S., Mathematics
B.S., Computer Science
GPA 4.8/5.0
- FIRST-AUTHOR, PEER-REVIEWED PUBLICATIONS**
- Rebecca Schulman and Bernard Yurke. A Molecular Algorithm for Path Self-Assembly in 3 Dimensions. In *Proceedings of Robotics: Science and Systems*, 2010.
- Rebecca Schulman and Erik Winfree. Simple Evolution of Complex Crystal Species. In *Proceedings of the 16th Annual Conference on DNA Computing and Molecular Programming*, 2010.
- Rebecca Schulman, Bernard Yurke and Erik Winfree. Enzyme-Free Chemical Sequence Self-Replication Using DNA Tile Crystals. *In preparation*.
- Christina Wright¹, Rebecca Schulman¹ and Erik Winfree. Increasing Redundancy Exponentially Reduces Error Rates During Algorithmic Self-Assembly. *In preparation*.
- Rebecca Schulman and Erik Winfree. Programmable control of nucleation for algorithmic self-assembly. *SIAM Journal on Computing*, 39 (4) 1581–1616, 2009.
- Robert Barish¹, Rebecca Schulman¹, Paul Rothmund and Erik Winfree. An Information-Bearing Seed for Algorithmic Self-Assembly. *Proceedings of the National Academy of Sciences USA*, 106 (15), 6054-6059, 2009.
- Rebecca Schulman and Erik Winfree. How Crystals that Sense and Respond to Their Environments Could Evolve. *Natural Computing*, 7 (2) 219-237, 2008.
- Rebecca Schulman and Erik Winfree. Synthesis of Crystals with a Programmable Barrier to Nucleation, *Proceedings of the National Academy of Sciences USA*. 104 (39), 15236–15241, 2007.
- Ho-Lin Chen¹, Rebecca Schulman¹, Ashish Goel and Erik Winfree. Reducing Facet Nucleation During Algorithmic Self-Assembly. *Nano Letters*, 7 (9), 2913–2919, 2007.

¹These authors contributed equally to this work.

Rebecca Schulman and Erik Winfree. Self-Replication and Evolution of DNA Crystals. In Proceedings of the VIIIth European Conference on Artificial Life, 2005.

Rebecca Schulman and Erik Winfree. Controlling nucleation rates in algorithmic self-assembly. In Proceedings of the 10th Annual Conference on DNA-Based Computation, 2004.

Rebecca Schulman, Shaun Lee, Nick Papadakis and Erik Winfree. One-dimensional boundaries for DNA tile self-assembly. In Proceedings of the 9th Annual Conference on DNA-Based Computation, 2003.

HONORS AND
AWARDS

- Miller Institute Postdoctoral Fellowship, 2008
- Sherwood Chang Award for Student Excellence in the Origin of Life, 2008
- Excellent Student Paper Award, DNA Computing 12, 2006
- Philanthropic Education Organization (PEO) Scholar, 2006
- Best Paper Award, VIIIth European Conference on Artificial Life (out of 94 papers), 2005
- National Science Foundation Graduate Research Fellowship, 1999
- Exceptional Student Researcher Award, National Institutes of Health, 1995

SELECTED INVITED
PRESENTATIONS

California Institute of Technology	Pasadena, CA, March 2010
University of Pennsylvania	Philadelphia, PA, March 2010
Columbia University	New York, NY, March 2010
Johns Hopkins University	Baltimore, MD, February 2010
Molecular Foundry, Lawrence Berkeley Laboratories	Berkeley, CA, January 2010
Chemical Emergence 2.0	Anchorage, AK, June 2009
University of California, San Francisco	San Francisco, September 2008
University of Washington, Seattle	Seattle, February 2008
University of Nottingham	Nottingham, UK, September 2007
Caltech Workshop on Self-Replicating Chemical Systems	Pasadena, CA, August 2007
Workshop on Embodied Evolution	Venice, Italy, May 2007

SELECTED
PRESENTATIONS

Robotics: Science and Systems, 2010	Zaragoza, Spain, June 2010
DNA Computing 16	Hong Kong, China, June 2010
Foundations of Nanoscience	Alta, Utah, April 2009
Meeting of the American Chemical Society	Boston, Massachusetts, August 2007
DNA Computing 12	Seoul, Korea, June 2006
VIIIth European Conference on Artificial Life	Canterbury, UK, September 2005
Weizmann Institute	Rehovot Israel, July 2005

	DNA Computing 10	Milan, Italy, June 2004
	Conference on Modern Materials and Technologies	Acireale, Italy, June 2004
TEACHING EXPERIENCE	Teaching Assistant Neural Computation, California Institute of Technology	October - December 2004
	Recitation Instructor and Head Teaching Assistant Introduction to Computer Science, California Institute of Technology	September - December 2003
	Recitation Instructor and Head Teaching Assistant Introduction to Computer Science, California Institute of Technology	September - December 2002
PROFESSIONAL EXPERIENCE	Kontiki Mountain View, CA Technology consultant	June 2001 - August 2001
	Eazel Mountain View, CA Senior software engineer	April 2000 - May 2001
	AnswerFriend.com Los Angeles, CA Founding employee, technology architect and software engineer	December 1999 - April 2000