

Rachel Ward

Program in Applied and Computational Mathematics
Princeton University
Princeton, N.J. 08540, U.S.A.

email: rward@princeton.edu

URL: <http://www.princeton.edu/~rward>

Born: June 27, 1983—College Station, Texas

Nationality: American

Research Interests

Applied functional analysis, probability theory, and harmonic analysis, with applications to compressive sensing, quantization theory in analog to digital conversion, and image segmentation.

Education

2009 PHD IN APPLIED MATHEMATICS, *Princeton University*

THESIS: *Extracting information from systems with a redundant representation: three problems in signal and image processing*

ADVISER: Ingrid Daubechies

2005 BS IN MATHEMATICS, *University of Texas at Austin*

Teaching and Service

2008 INSTRUCTOR, *Integrated Math, Engineering, and Physics*, Princeton University.

2008 TEACHING ASSISTANT, *Math Alive*, Princeton University.

2006 CO-ORGANIZER, *Sparse Approximation Workshop*, Princeton University.

2006 TEACHING ASSISTANT, *Math Alive*, Princeton University.

Work Experience

2008 INTERN, INTECH Enhanced Investment Technologies.

2004 TUTOR in Mathematics, Physics, and Chemistry. UT Austin Learning Center.

Selected Talks

- 2008 The Norbert Wiener Center Seminar, University of Maryland.
- 2008 Colloquium, Johann Radon Institute, Vienna, Austria.
- 2006 Sparse Approximation Workshop, Princeton University.

Publications

Iterative Thresholding meets Free Discontinuity Problems. (with Massimo Fornasier).
In preparation.

Cross Validation in Compressed Sensing. Submitted.

On Robustness Properties of Golden Ratio Encoders and Beta Encoders.
IEEE Transactions on Information Theory, Volume 54, Issue 9 (2008). 4324-4334.

Shape Deformation in Continuous Map Generalization. (with J. Danciger, J. Mugno,
D. Sheehy, and Satyan Devadoss). Geoinformatica, May 2008.

Subfunctionalization: How often does it occur? How long does it take?.
(with Richard Durrett). Theoretical Population Biology 66, Issue 2 (2004), 93-100.

Honors and Fellowships

- 2005 National Science Foundation Graduate Research Fellowship
- 2004 Barry M. Goldwater scholarship recipient
- 2001 National Merit Finalist