# Kevin J. Ross

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## Professional Experience

NSF VIGRE Postdoctoral Fellow.
Department of Statistics, Stanford University.
August 2006 - present.

## Education

University of North Carolina at Chapel Hill.
Ph.D. in Statistics, May 2006.
Thesis title: "Numerical Methods for Some Singular Stochastic Control Problems."
Adviser: Amarjit Budhiraja.

University of North Carolina at Chapel Hill. M.S. in Statistics, 2005.

University of North Carolina at Chapel Hill. B.S. in Mathematical Sciences, 1997.

Society of Actuaries. Associate Designation (ASA), 2000.

## Awards

Thomas S. and Caroline H. Royster, Jr. Fellowship (2001-2006). Five years of guaranteed funding including two non-service years, plus mentoring from senior faculty, interdisciplinary learning, and leadership development opportunities (Graduate School, UNC-CH).

Excellence in Teaching Award (2004). For excellence in teaching undergraduates (Department of Statistics & Operations Research, UNC-CH).

Wassily Hoeffding Fellowship (2002). For best performance in the first year of the Ph.D. program in Statistics (Department of Statistics & Operations Research, UNC-CH).

## Research Interests

Applied Probability, Stochastic Processes and Statistics
Mathematical Finance and Actuarial Science
Numerical Methods for Stochastic Processes
Stochastic Control Theory
Stochastic Modeling in Biology
Stochastic Networks

## Publications

"Existence of optimal controls for singular control problems with state constraints" (with A. Budhiraja). *Annals of Applied Probability*, (2006), Vol. 16, No. 4, 2235-2255.

“Convergent numerical scheme for singular stochastic control with state constraints in a portfolio selection problem” (with A. Budhiraja). *SIAM Journal of Control and Optimization*, (2007), Vol. 45, No. 6, 2169-2206.

“Surface patterning: Tool to trigger stem cell differentiation in an adipose system” (with A. Chaubey, M. R. Leadbetter, and K. J. L. Burg). *Journal of Biomedical Materials Research Part B: Applied Biomaterials*, (2008), Vol. 84B, No. 1, 70-78.

“Optimal stopping and free boundary characterizations for some Brownian control problems” (with A. Budhiraja). *Annals of Applied Probability*, (2008), Vol. 18, No. 6, 2367-2391.

“Characterization of the differentiation and leptin secretion profile of adult stem cells on patterned polylactide films” (with A. Chaubey, M. R. Leadbetter, C. Gomillion, and K. J. L. Burg). *Journal of Biomaterials Science: Polymer Edition*, To appear.

“A new approach to singular stochastic control with applications to investment and stochastic networks” (with T. L. Lai and T. W. Lim). Under preparation.

## Teaching Experience

Theory of Probability (Stat 116). Stanford University. Autumn 2008 (91 students).

Stochastic Processes (Stat 219/Math 136). Stanford University. Autumn 2008 (54), Autumn 2007 (59), Autumn 2006 (51).

Continuous Time Stochastic Control (Stat 220). Stanford University. Spring 2008 (9).

Introduction to Stochastic Processes (Stat 217). Stanford University. Winter 2007 (28).

Introduction to Statistics (STOR 155). UNC-CH. Spring 2005 (98), Summer 2004 (28), Spring 2004 (46), Summer 2003 (43), Spring 2003 (49).

## Undergraduate Student Research Supervision

Leonid Pekelis, Stanford University. Summer 2008. “A study of the free boundary of a two-dimensional singular stochastic control problem.”

## Actuarial Experience

Actuarial Specialist. Towers Perrin, Philadelphia, PA. July 1997 - June 2001.

- Worked on design, valuation, accounting, funding, and compliance of benefit plans.
- Taught employee training programs on actuarial science and the actuarial profession.

## Invited Talks and Conference Presentations

University of California, Berkeley. Probability Seminar. December 2008.

Stanford University. Probability Seminar. November 2008.

Second Western Conference in Mathematical Finance. Austin, TX. November 2008.

University of California at San Diego. Probability Seminar. April 2008.

Rutgers University. Department of Statistics Seminar. October 2007.

Thirty-second Conference on Stochastic Processes and their Applications. Urbana, IL. August 2007.

Tenth Meeting of New Researchers in Statistics and Probability. Salt Lake City, UT. July 2007.

Stanford University. Probability Seminar. April 2007.

Stanford University. Probability Seminar. April 2006.

SAMSI Workshop on Financial Mathematics, Statistics and Econometrics. Research Triangle Park, NC. September 2005.

Joint Statistical Meeting. Minneapolis, MN. August 2005.

SIAM Conference on Control and its Applications. New Orleans, LA. July 2005.

Southeast Workshop on Tissue Engineering and Biomaterials. Clemson, SC. January 2004.

## Service Activities

Organizer. Probability Seminar, Stanford University. September 2006 - December 2008.

Co-organizer. Financial Mathematics Seminar, Stanford University. September 2006 - June 2007.

Admissions committee. Master of Science in Financial Mathematics, Stanford University. 2007-2009.

Referee for:

- Mathematical Finance
- Mathematics of Operations Research