

**Nathaniel Eldredge**  
Department of Mathematics  
593 Malott Hall  
Cornell University  
Ithaca, NY 14853 USA

neldredge@math.cornell.edu  
<http://www.math.cornell.edu/~neldredge/>  
Citizenship: United States

## Education

- **University of California, San Diego** La Jolla, CA  
*Ph.D., Mathematics* 2009  
*M.A., Mathematics* 2005  
– Ph.D. advisor: Bruce Driver
- **Harvey Mudd College** Claremont, CA  
*B.S., Mathematics* 2003  
– Graduated with High Distinction, and Honors in Mathematics and Computer Science.

## Academic Appointments

- **Cornell University** Ithaca, NY  
*Postdoctoral Associate / Visiting Assistant Professor* 2009 – 2013  
– Teaching and research responsibilities. Postdoctoral advisor: Laurent Saloff-Coste.  
– Courses taught: Math 1920 (Multivariable Calculus for Engineers), Math 6710 (Graduate Probability Theory), Math 4740 (Stochastic Processes, undergrad), Math 7770 (Topics in Probability)
- **University of California, San Diego** La Jolla, CA  
*Associate Instructor* 2008, 2009  
– Instructor with full responsibility for course; supervised teaching assistants  
– Courses taught: Math 3C (Precalculus), Math 20A (Calculus for Science and Engineering)
- **University of California, San Diego** La Jolla, CA  
*Qual Review Instructor* 2008  
– Taught intensive review course for graduate students retaking qualifying exam in real analysis  
– Prepared and presented review lectures, wrote problem sets and practice exams, worked individually with students
- **University of California, San Diego** La Jolla, CA  
*Teaching Assistant* 2003 – 2008  
– Taught discussion sections, worked with students in office hours, graded exams, maintained grade data  
– Courses assisted: Math 10C (Calculus), Math 20ABC, (Calculus for Science and Engineering), Math 240ABC (Graduate Real Analysis), Math 280ABC (Graduate Probability Theory)

## Selected Awards and Fellowships

- **Cornell University Department of Mathematics Teaching Award** 2012
- **Project NExT Fellow** 2009 – 2010  
– MAA -sponsored professional development program for early career mathematicians, focusing on new ideas for teaching.
- **NSF Graduate Research Fellowship** 2003 – 2006

(continued)

## Research Interests

- Probability theory and partial differential equations, especially heat kernel analysis.
- Full research statement [available on web page](#).

## Peer-Reviewed Publications

- N. Eldredge and L. Saloff-Coste. Widder's representation theorem for symmetric local Dirichlet spaces. Accepted by *J. Theoret. Probab.* (2012)
- N. Eldredge. Gradient estimates for the subelliptic heat kernel on H-type groups. *J. Funct. Anal.* 258 (2010), pp. 504-533.
- N. Eldredge. Precise estimates for the subelliptic heat kernel on H-type groups. *J. Math. Pures. Appl.* 92 (2009), pp. 52-85.

## Other Papers

- N. Eldredge. *Hypoelliptic heat kernel inequalities on H-type groups*. Ph.D. dissertation, University of California, San Diego, 2009.
- N. Eldredge. *An eigenspace approach to isotypic projections for data on binary trees*. Senior thesis, Harvey Mudd College, 2003.

## Other Activities

- **Cornell Probability Summer School** Ithaca, NY  
*Conference Secretary* 2010, 2011
  - Coordinated two-week summer school in probability theory for 50+ participants.

## Professional Memberships

- American Mathematical Society (AMS)
- Mathematical Association of America (MAA)
- Association for Women in Mathematics (AWM)