

Paul Raff

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Education:

Rutgers: The State University of New Jersey *New Brunswick, NJ*

Currently in the second year of the Ph.D. program in Mathematics with good progress.

Carnegie Mellon University *Pittsburgh, PA*

Master's of Science in Mathematics: *Cardinal Arithmetic: Early Results of Shelah Towards PCF Theory*, May 2005

Bachelor's of Science in Mathematics *with Honors*: May 2004

Bachelor's of Science in Computer Science *with Honors*: May 2004

Honors and Awards:

DIMACS Graduate Student Award: Winter 2005

DIMACS Graduate Student Award: Summer 2005

DIMACS Graduate Student Award: Winter 2004

Andrew Carnegie Scholar: 2004

Richard C. Moore Scholar: 2004

Teaching Experience:

Teaching Assistant, Precalculus II: Current

Teaching Assistant, Calculus I: Fall 2005

Grader, Introduction to Mathematical Reasoning: Fall 2004, Spring 2005

Teaching Assistant, Pennsylvania Governor's School for the Sciences: Summer 2004

Grader, Graph Theory: Spring 2004

Teaching Assistant, Fundamentals of Computer Programming: Fall 2002

Teaching Assistant, Pennsylvania Governor's School for the Sciences: Summer 2002

Invited Talks:

PRIMES is in P, Rutgers Graduate Student Seminar, November 2004

An Introduction to Isabelle (Part 2), Rutgers Graduate Student Seminar, March 2005

An Introduction to the Firefighter Problem, Rutgers Graduate Combinatorics Seminar, October 2005

Work/Research Experience:

Bechtel Bettis Atomic Power Laboratory (Summer 2005): I worked on a project to develop an advanced method for calculating radiation heat deposition in nuclear reactor shielding configurations. The new method significantly reduced the amount of engineering and computational time required to complete this type of analysis.

Verification of the Prime Number Theorem (August 2003 - August 2004): I worked on a project under the supervision of Jeremy Avigad involving a computer verification of the landmark Prime Number Theorem.

Pennsylvania Governor's School for the Sciences (Summers 2002 and 2004): I worked as a Math TA and a Counselor in this intensive 6-week program for the brightest rising high-school seniors in Pennsylvania.

National Security Agency - Director's Summer Program (Summer 2003): I participated in the NSAs premier outreach effort to the very best undergraduate mathematics majors in the country.

Papers:

A Formally Verified Proof of the Prime Number Theorem. Jeremy Avigad, Kevin Donnelly, David Gray, and Paul Raff. To appear in the ACM Transactions on Computational Logic.

Fractional Firefighting in the Two-Dimensional Grid. Kah Loon Ng, Paul Raff. To be submitted.

Computer Languages: C, C++, Java, ML, L^AT_EX

Computer Programs: Maple, Microsoft Word, Microsoft Excel

Citizenship: United States