

RUTH LYNN AUERBACH

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EDUCATION

Advanced to Candidacy for Ph.D. in Mathematics,
University of Maryland, College Park, May 2000.
Advisor: William W. Adams.

M.A. in Mathematics,
University of California, Los Angeles, June 1998.

B.S. in Mathematics, with Honors in Mathematics,
Haverford College, Haverford, PA, May 1996.

RESEARCH WORKSHOPS AND INTERNSHIPS

Mathematical Modeling in Industry - A Workshop for Grad. Stud.

Institute for Mathematics and Its Applications, University of Minnesota, July 1998.

Analyzed security of a computer system with an intransitive non-interference communication policy.

IAS/PCMI Summer Sess. & Mentoring Prog. for Women in Math.

Institute for Advanced Study, Princeton, NJ, June-July 1996.

Topic: Probability.

Research Experience for Undergraduates

Mount Holyoke College, South Hadley, MA, June-August 1995.

Topic: Knot Theory.

GWU/DoD Science and Engineering Apprenticeship Program

Naval Surface Warfare Center, Carderock, MD, June-August 1992.

Wrote a computer program to model ocean waves and analyzed the energy spectra.

TALKS

- “Applications of Gröbner Bases to the Theory of Regular Functions”, Algebra/Number Theory Seminar, University of Maryland, College Park, May 3, 2000 and May 10, 2000.
- “Analyzing Computer Security”, Women In Mathematics Seminar, University of Maryland, College Park, September 23, 1998.
- “Analysis of an Intransitive Non-Interference Security Policy”, Mathematical Modeling in Industry - A Workshop for Graduate Students, Institute for Mathematics and Its Applications, University of Minnesota, July 31, 1998.

PAPERS

- *Problems in Computer Security*, (with Nataliya Kerbel, Molly Megraw, Robert Osburn, and Sachindev Shetty), Proceedings for the Mathematical Modeling in Industry Workshop for Graduate Students, Institute for Mathematics and Its Applications, July 22-31, 1998.
- *Loose-Ended Knots*, Research Experience for Undergraduates at Mount Holyoke College, August 1995,
<http://www.mtholyoke.edu/~adurfee/reu/95/reu95.htm>.

FELLOWSHIPS

- Piotr Mikulski Fellowship, Department of Mathematics, University of Maryland, College Park, September 1998 - May 1999 and September 2000 - May 2001.
- Dean’s Summer Supplementary Fellowship, Department of Mathematics, University of Maryland, College Park, 1999 - 2002.

TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Maryland, College Park, August 1999 - present.

Led recitation sections, wrote and graded quizzes, and graded exams for Calculus III. Assisted students in homework assignments using program Mathematica. Graded the graduate course Abstract Algebra I.

Instructor, University of Maryland, College Park, July-August 2000.

Prepared lectures, wrote and graded exams, quizzes, and homework, handled administrative duties for Elementary Calculus I.

Graduate Teaching Assistant, University of California, Los Angeles, September 1996 - June 1998.

Led recitations and graded exams, quizzes, and homework for Precalculus, Calculus for Life Science Students, Calculus & Analytic Geometry, Calculus of Several Variables, undergraduate Probability Theory, and Calculus Computer Lab using MAPLE.

Graduate Teaching Assistant, Summer Mathematics Program, California State University at Northridge, June-July 1997

Led recitations in Knot Theory and Graph Theory at summer program for female undergraduate mathematics majors.

Undergraduate Teaching Assistant, Haverford College, Haverford, PA, September-December 1995.

Assisted in recitations and lectured for Calculus III.

Computer Teacher, CIT Computer Camp, Washington, DC, June-August 1993 & 1994.

Taught children ages 7 - 15 programming in LOGO, BASIC, and Pascal.

COMPUTER EXPERIENCE

Programming experience in CoCoA, Mathematica, MAPLE, C++, Pascal, FORTRAN, and BASIC using UNIX, Windows, and Macintosh operating systems. Experience with HTML and LaTeX.

PROFESSIONAL MEMBERSHIPS

American Mathematical Society, Association for Women in Mathematics, Mathematical Association of America.

SERVICE

- Chair of Women in Mathematics (WIM) graduate student talk series, University of Maryland, College Park, January 1999 - present. Ran talk series, applied for and received over \$800 in funding from university, organized panel discussion series on topics of interest to graduate students, and founded and organized annual department-wide picnic.
- Graduate Office Accommodations Committee, University of Maryland, College Park, Fall 2000. Surveyed graduate student offices for needed

repairs and furniture replacement. Repairs were ordered and furniture was recommended.

- Mentor for incoming graduate students to Mathematics Department, University of Maryland, College Park, Fall 2000.
- Recruit new graduate students to the Mathematics Department, University of California, Los Angeles, March 1997 & 1998.
- Explained opportunities in mathematics to incoming undergraduates and their parents for the Mathematics Department, Haverford College, Haverford, PA, April 1996.