ERNEST E. ROTHMAN

Department of Mathematical Sciences   Phone: +1-401-341-3237
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EDUCATION

Ph.D., Applied Mathematics, Brown University, May 1988.
Sc.M., Applied Mathematics, Brown University, May 1984.
B.S., *summa cum laude* **with Honors in Mathematics**, Brooklyn College, CUNY, June 1981.

PROFESSIONAL EXPERIENCE

Mathematical Sciences Department, Salve Regina University, Newport, RI

Appointments:

Professor (September 2006–present)

Chair of the Mathematical Sciences Department (July 2002–June 2008)

Associate Professor (September 1999–August 2006)

Tenured faculty member (Effective September 2000)

Assistant Professor (September 1993–August 1999)

Administrative Service as Mathematical Sciences Department Chair:

Prepared department teaching schedules, budgets, plans, goals, and strategies, annual reports, and program reviews for Vice President for Academic Affairs (VPAA)

Planned regular cycle of course offerings and revised departmental section of university catalog

Conducted teaching reviews and faculty evaluations of non-tenured department faculty members and made recommendations concerning continuing contracts of department faculty to VPAA

Chaired department meetings

Led restructuring of mathematics major

Fostered collaborative projects between Mathematical Sciences Department and other academic departments

Evaluated mathematics courses taken at other institutions for transfer to Salve Regina University

Served as liaison between members of department and administration

Assisted department faculty members in professional development

Maintained information data base on current department mathematics majors and minors, in accordance with Family Educational Rights and Privacy Act (FERPA) guidelines

Consulted with departmental faculty members to make recommendations for student awards

Wrote Mathematics Major Handbook

Curriculum Development:

Co-developed Master of Science program in Applied Mathematics (with William Stout)

Co-developed Minor in Computational Science (with William Stout and Joseph Toto)

Developed courses in computational science, including courses in scientific programming, scientific computing, and Unix

Committees:

Professional Review Committee

Faculty Development Committee

Mathematics Core Curriculum Development Committee (as chair)

Library Committee

Faculty Advisory Committee on Technological Services (as chair)

Academic Grants Advisory Committee

Faculty Senate

Travel Committee

Search Committees for a faculty positions in the Mathematical Sciences and Education departments

Technology Planning Committee

Committee to nominate students for Barry M. Goldwater Scholarship

Undergraduate Council

Ad hoc Committee on Secondary Education Programs

Faculty Advisory Committee on Salary and Benefits

Rank and Tenure (as chair)

Other University Service:

Reviewed library's mathematics collection and made recommendations for acquisitions

Evaluated textbooks and educational computer software

Participated in development and implementation of criteria for placement of freshmen and transfer students into appropriate mathematics courses

Advised faculty, staff, and students on Internet use

Introduced and ran a Computational Science Colloquium series

Maintained and provided technical support for a cluster of SUN Microsystems workstations used in mathematics and science courses

Advised IT staff on systems administration of various computer systems

Developed, maintained, and provided consulting for *A Menu-Driven User Interface to AIX*

Served as Cornell Theory Center "Smart Node Consultant" on supercomputing

Advised administration on acquisition of computer hardware and software

Participated in faculty meetings, workshops, and seminars

Represented Mathematical Sciences Department at Admissions open houses

Advised students on academic programs

Supervised independent studies

Faculty Advisor to student Mathematics Club

Center for Theory and Simulation in Science and Engineering, Advanced Computing Research Institute, Cornell University, Ithaca, NY

Research Associate (March 1991–August 1993)

Carried out research in numerical analysis and algorithms for high-performance computers: applied the theory of equivalent operators on Hilbert spaces to the numerical solution of elliptic partial differential equations; devised stabilization strategies to reduce round-off errors in pseudospectral computations. Consulted to faculty on numerical and computational aspects of their research; participated in seminars and conferences.

Scientific Software Analyst (December 1988–March 1991)

Developed computer programs that exploited the speed and power of supercomputers; evaluated mathematical software; reviewed scientific research proposals; designed educational materials; consulted to users on efficient use of numerical methods and scientific software.

Division of Applied Mathematics, Brown University, Providence, RI

Computer Consultant (September 1984–May 1985)

Consulted to faculty and students on IBM VM/CMS and FORTRAN issues.

Insurance Services Office, New York, NY

Actuarial Assistant (May 1982–May 1983)

Applied Bayesian statistics to evaluate credibility formulas used in rate-making.

TEACHING EXPERIENCE

Department of Mathematical Sciences, Salve Regina University, Newport, RI

Graduate:

MTH 599, *Statistics* (Independent study)

MTH 521-522, *Numerical Analysis I-II*

MTH 506, *Complex Variables*

MTH 505, *Applied Linear Algebra*

Undergraduate:

MTH 381-382, *Principles and Techniques of Applied Mathematics I-II*

MTH 303-304, *Numerical Analysis I-II*

MTH 300, *Linear Algebra*

MTH 204, *Multivariable Calculus*

MTH 201, *Calculus I*

MTH 191-192, *Applied Calculus I-II*

MTH 115, *Contemporary Mathematics and its Applications*

MTH 111, MTH 117, *Precalculus*

MTH 105, *Mathematics for Early Childhood Educators*

MTH 099, *Algebra*

STA 341-342, *Statistical Theory I-II*

STA 201, *Statistical Methods* (for non-mathematics majors)

CMP 301, *Scientific Computing*

CMP 201-202, *Scientific Programming I-II* (C, MATLAB)

CSC 202, *Intermediate Computer Programming* (C)

CSC 201, *Introductory Computer Programming* (C)

CMP 200, *Introduction to Unix*

GST 110, *New Student Seminar*

Department of Computer Science, Cornell University, Ithaca, NY

CS 222, *Introduction to Scientific Computation*

CS 100, *Introduction to Computer Programming* (Pascal)

Empire State College, State University of New York, Ithaca, NY

Finite Mathematics and Calculus

Division of Applied Mathematics, Brown University, Providence, RI

AM 165, *Probability and Statistics* (Teaching Assistant)

AM 33, *Ordinary Differential Equations* (Teaching Assistant)

HONORS AND AWARDS

Salve Regina University *Certificate of Presidential Recognition for Notable Professional Activity* (2004, 2003, 1999)

Salve Regina University *Certificate of Presidential Recognition for Notable Grant Proposal Activity* (1999)

Salve Regina University *Presidential Award* (1998)

Brown University/NASA Research Fellowship (1985-1988)

Sigma Xi (1981)

Brooklyn College most outstanding student in mathematics *Henrietta Nachtman Silverman Award* (1981)

Brooklyn College achievement in mathematics *Sol Cohen Memorial Award* (1981)

Brooklyn College *Presidential Scholar Award* (1981)

Brooklyn College *Humanities Institute Fellow* (1980-1981)

Pi Mu Epsilon (1980)

Brooklyn College Dean's Honor List (1979-1981)

Brooklyn College *Scholars' Program* (1978-1981)

PROFESSIONAL ACTIVITIES

Consulting: Cornell Theory Center *Smart Node Consultant* at Salve Regina University (1994-1997)

Reviewer: SIAM Journal on Numerical Analysis, Journal of Computational Physics, *Macintosh Terminal Pocket Guide,* O'Reilly Media.

Membership in Professional Organizations:

American Mathematical Society

International Linear Algebra Society

Mathematical Association of America

Society for Industrial and Applied Mathematics

Institute of Mathematical Statistics

Participation in Professional Meetings:

First International Symposium on Fractional PDEs, supported by the Army Research Office, the Air Force Office of Scientific Research, and the Department of Energy, Salve Regina University, Newport, RI, June 3–5, 2013. (Local Organizer.)

Northeastern Section of the Mathematical Association of America Spring Meeting, Salve Regina University, Bristol, RI, June 11–12, 2010. (Local Organizer.)

Mathematical Association of America MathFest 2004, Providence, RI, August 12–14, 2004.

Northeastern Section of the Mathematical Association of America Spring Meeting, Roger Williams University, Bristol, RI, June 4–5, 2004.

Macworld Conference & Expo/Pro Conference, New York, NY, July 16–19, 2002.

Mathematical Association of America Mathfest 99, Providence, RI, July 31– August 2, 1999.

International Symposium on Discontinuous Galerkin Methods, Salve Regina University, Newport, RI, May 24–26, 1999. (Local Organizer.)

National High Performance Computing and Communications (HPCC'99) Conference, Newport, RI, March 23–25, 1999.

Northeastern Section of the Mathematical Association of America Fall Meeting, Salem State College, Salem, MA, November 17–18, 1995.

Burlington MathFest, Annual Joint Summer Meeting of the American Mathematical Society and the Mathematical Association of America, University of Vermont, Burlington, VT, August 6–8, 1995.

Northeastern Section of the Mathematical Association of America Spring Meeting, Salve Regina University, Newport, RI, June 3–4, 1994.

Careers in the Mathematical Sciences, Bentley College, Waltham, MA, October 30, 1993.

ICIAM 91: Second International Conference on Industrial and Applied Mathematics, Washington, DC, July 8–12, 1991.

Copper Mountain Conference on Iterative Methods, Copper Mountain, CO, April 1–5, 1990.

Fourth SIAM Conference on Parallel Processing for Scientific Computing, Chicago, IL, December 11–13, 1989.

Large-Scale Numerical Optimization, Mathematical Sciences Institute, Cornell University, Ithaca, NY, October 19–20, 1989.

SIAM Annual Meeting, San Diego, CA, July 17–21, 1989.

Courses, Workshops, and Seminars:

Regression Analysis with MATLAB: New Statistics Toolbox Capabilities in R2012a, Online Seminar sponsored by The MathWorks, July 2012.

Computer Vision with MATLAB, Online Seminar sponsored by The MathWorks, June 2012.

Making Project-Based Learning Easy and Affordable with MATLAB, Simulink, and Target Hardware, Online Seminar sponsored by The MathWorks, May 2012.

How a Differential Equation Becomes a Robot, Online Seminar sponsored by The MathWorks, May 2012.

MATLAB Tool for Scientists - Introduction to Statistical Analysis, Online Seminar sponsored by The MathWorks, January 2012.

Generating C and C++ Code from MATLAB Using MATLAB Coder, Online Seminar sponsored by The MathWorks, January 2012.

Algorithm Development with MATLAB, Online Seminar sponsored by The MathWorks, April 2011.

MATLAB on the Web for the Classroom, Online Seminar sponsored by The MathWorks, February 2011.

Computational Statistics: Getting Started with Classification Using MATLAB, Online Seminar sponsored by The MathWorks, September 2010.

Speeding Up MATLAB Applications, Online Seminar sponsored by The MathWorks, June 2010.

Global Optimization with MATLAB Products, Online Seminar sponsored by The MathWorks, April 2010.

Harnessing the Art of MATLAB: Analyzing Laboratory Data, Online Seminar sponsored by The MathWorks, March 2010.

What's New for MATLAB with R2010a, Online Seminar sponsored by The MathWorks, March 2010.

What's New for MATLAB with R2009a Webinar, Online Seminar sponsored by The MathWorks, March 2009.

Parallel Computing with MATLAB Webinar, (Recorded) Online Seminar sponsored by The MathWorks, August 2008.

Computational Statistics Using MATLAB Webinar, (Recorded) Online Seminar sponsored by The MathWorks, June 2008.

Using MATLAB to Develop Financial Models Webinar, Online Seminar sponsored by The MathWorks, January 2008.

Data Analysis with MATLAB for EXCEL Users Webinar, (Recorded) Online Seminar sponsored by The MathWorks, June 2007.

Image Processing Using MATLAB Webinar, Online Seminar sponsored by The MathWorks, April 2006.

RITER Grant: Increasing Teacher Candidates' Content Knowledge Workshop, Radisson Airport Hotel, Warwick, RI, June 2005.

Mac OS X and Mac OS X Server for High Performance Computing Webcast, Online Seminar sponsored by Apple Computer, June 2005.

Mac OS X Tiger for Scientific and Technical Computing Webcast, Online Seminar sponsored by Apple Computer, May 2005.

What's New in MATLAB 7 Webinar, Online Seminar sponsored by The MathWorks, January 2005.

Governor's Blue Ribbon Invitational Mathematics/Science Higher Education Forum, Rhode Island Office of Higher Education, Providence, RI, January 2005.

Distributed Computing with MATLAB and Simulink Webinar, Online Seminar sponsored by The MathWorks, December 2004.

New Statistics Tools in MATLAB and the Statistics Toolbox Webinar, Online Seminar sponsored by The MathWorks, November 2004.

Computational Clusters for Bioinformatics Webcast, Online Seminar sponsored by Apple Computer, March 2004.

Using Numerical Computing with MATLAB in the Classroom Webinar, Online Seminar sponsored by The MathWorks, April 2004.

Writing Across the Curriculum, Salve Regina University, Newport, RI, Fall 2004.

Information Literacy and Technology Across the Curriculum, Salve Regina University, Newport, RI, Spring 2003.

Mac OS X In Depth Track Workshop, Macworld Conference & Expo/Pro Conference, New York, NY, July 16–19, 2002.

Solaris 7 System Administration II (SA-287), SUN Microsystems Educational Services, Warwick, RI, June 12–16, 2000.

Solaris 7 System Administration I (SA-237), SUN Microsystems Educational Services, Burlington, MA, March 20–24, 2000.

Parallel Programming with Message-Passing Libraries, Cornell Theory Center Virtual Workshop, World-Wide Web, December 1, 1995–March 1, 1996.

Calculus: An Active Approach with Projects, Ithaca College Calculus Group, Burlington, VT, August 6–8, 1995.

Parallel Computing on the IBM SP2 with PVM, Cornell Theory Center Virtual Workshop, World-Wide Web, May 25–July 6, 1995.

Multilevel Methods, Mathematics Department, Cornell University, Ithaca, NY, Spring 1992.

Connection Machine Training Workshop, Northeast Parallel Architectures Center, Syracuse University, Syracuse, NY, November 28–30, 1990.

Matrix Computations, Computer Science Department, Cornell University, Ithaca, NY, Fall 1990.

Short Course on Linear Algebra Computations and Parallel Computers, SIAM, Chicago, IL, December 10, 1989.

CNSF Unix Workshop: End-User Skills, Center for Theory and Simulation in Science and Engineering, Cornell University, Ithaca, NY, May 15, 1989.

IBM 3090 Numerically Intensive Computation Application Performance Seminar, Engineering/Scientific National Support Center, IBM, Dallas, TX, April 10–14, 1989.

Supercomputer User Training Workshop, Center for Theory and Simulation in Science and Engineering, Cornell University, Ithaca, NY, March 20–24, 1989.

Numerical Optimization and Solution of Nonlinear Algebraic Systems, Computer Science Department, Cornell University, Ithaca, NY, Spring 1989.

PUBLICATIONS

B. JEPSON, E. E. ROTHMAN, AND R. ROSEN, *Mac OS X for Unix Geeks, 4th Edition,* O'Reilly Media, Sebastopol, CA, September 2008. ISBN: 0-596-52062-X.

E. E. ROTHMAN, *The X Window System,* in A. LESTER, C. STONE, C. TOPOREK, AND J. MCINTOSH, *Mac OS X Tiger in a Nutshell,* O'Reilly Media, Sebastopol, CA, July 2006, ch. 12, pp. 448–466. ISBN: 0-596-00943-7.

E. E. ROTHMAN, *Spot Faked Data,* in B. B. FREY, *Statistics Hacks,* O'Reilly Media, Sebastopol, CA, May 2006, ch. 6, Hack # 64, pp. 268–279. ISBN: 0-596-10164-3.

B. JEPSON AND E. E. ROTHMAN, *Mac OS X Tiger for Unix Geeks,* O'Reilly Media, Sebastopol, CA, June 2005. ISBN: 0-596-00912-7.

B. JEPSON, E. E. ROTHMAN, AND W. M. LEE, *Access Remote Desktops,* in R. DORNFEST AND J. D. DAVIDSON, *Mac OS X Panther Hacks,* O'Reilly Media, Sebastopol, CA, June 2004, ch. 6, Hack # 67, pp. 384–401. ISBN: 0-596-00718-3.

E. E. ROTHMAN, *The X Window System,* in C. TOPOREK, C. STONE, AND J. MCINTOSH, *Mac OS X Panther in a Nutshell, 2nd Edition,* O'Reilly Media, Sebastopol, CA, June 2004, ch. 26, pp. 680–697. ISBN: 0-596-00606-3.

E. E. ROTHMAN, *Managing Packages on Panther with DarwinPorts,* O'Reilly Network, O'Reilly Media, Sebastopol, CA, April 2004.
(http://www.macdevcenter.com/pub/a/mac/2004/04/09/darwinports.html.)

B. JEPSON AND E. E. ROTHMAN, *Mac OS X Panther for Unix Geeks,* O'Reilly & Associates, Sebastopol, CA, February 2004. ISBN: 0-596-00607-1.

B. JEPSON AND E. E. ROTHMAN, *Mac OS X for Unix Geeks,* O'Reilly & Associates, Sebastopol, CA, October 2002. ISBN: 0-596-00356-0.

S. V. PARTER AND E. E. ROTHMAN *Preconditioning Legendre Spectral Collocation Approximations to Elliptic Problems,* SIAM J. Numer. Anal., 32 (1995), pp. 333–385.

E. E. ROTHMAN, *Subroutines: COOELL, DCN, ECN, and MATRF2,* in Y. SAAD, *SPARSKIT: A Basic Toolkit for Sparse Matrix Computations (Version 2),* tech rep., University of Minnesota, Minneapolis, MN, June 1994. (http://www.cs.umn.edu/~saad/software/SPARSKIT/sparskit.html.)

E. E. ROTHMAN, *Reducing Round-off Error in Chebyshev Pseudospectral Computations.* in High Performance Computing II: Proc. Second Symposium on High Performance Computing, M. Durand and F. El Dabaghi, eds, Montpellier, France, October 1991, Elsevier, pp. 423–439.

D. FUNARO AND E. E. ROTHMAN, *Preconditioning Matrices for the Pseudospectral Approximation of First-order Operators,* in Finite Element Analysis in Fluids: Proc. Seventh International Conference on Finite Element Methods in Flow Problems, T. J. Chung and G. R. Karr, eds., Huntsville, AL, April 1989, UAH Press, pp. 1458–1463.

INVITED LECTURES AND SEMINARS

Using MATLAB to Enhance Student Learning of Mathematics, Faculty Academic Use of Technology Workshop, Salve Regina University, Newport, RI, May 2009.

A Unix User's Guide to Mac OS X (with Brian Jepson), Providence Section of the IEEE, Seekonk Ramada, Seekonk, MA, April 27, 2006.

Mac OS X For Unix Geeks (with Brian Jepson), Professional Development Seminar, Greater Boston Chapter of the Association for Computing Machinery, Massachusetts Institute of Technology, Cambridge, MA, April 24, 2004.

Unix End-User Skills, Workshop for Mathematics Faculty, Salve Regina University, Newport, RI, August 25 and August 28, 2000.

Visualizing Convergence and Divergence Regions in Functional Iteration, Bridges Colloquium, Salve Regina University, Newport, RI, November 1998.

Pseudorandom Number Generators and their Applications, Bridges Colloquium, Salve Regina University, Newport, RI, November 1997.

Supercomputing and Education, Faculty Academic Symposium, Salve Regina University, Newport, RI, September 1994.

Numerical Solution of Large Linear Systems, Senior Seminar, Department of Mathematical Sciences, Salve Regina University, Newport, R.I., November 1993.

Mathematical and Algorithmic Issues in High-Performance Computing, Colloquium, Department of Mathematics and Computer Science, Skidmore College, Saratoga Springs, NY, April 1992.

Parallel Domain Decomposition Techniques for Spectral Methods, Parallel Computing Colloquium, San Diego Supercomputer Center, San Diego, CA, June 1991.

Stabilizing Pseudospectral Derivative Computations, Brown Bag Luncheon Seminar, Center for Theory and Simulation in Science and Engineering, Cornell University, Ithaca, NY, April 1991.

Recent Trends in Spectral Methods, Staff-to-Staff Seminar, Center for Theory and Simulation in Science and Engineering, Cornell University, Ithaca, NY, December 1990.

Introduction to Spectral Methods, Supercomputing Program for Undergraduate Research, Center for Theory and Simulation in Science and Engineering, Cornell University, Ithaca, NY, June 1990.

Sparse Matrix Algorithms and Software Libraries, Research Experience for Undergraduates, Center for Theory and Simulation in Science and Engineering, Cornell University, Ithaca, NY, June 1989.

Introduction to Scientific Software Libraries, Supercomputer User Training Workshop, Center for Theory and Simulation in Science and Engineering, Cornell University, Ithaca, NY, March 1989.

Preconditioning Matrices for Chebyshev Derivative Operators, Invited Lecture, 6th Annual Graduate Student Workshop, NASA Langley Research Center, Hampton, VA, June 1987.

Estimation of Ionic Radii, Invited Paper, 33rd Annual Eastern Colleges Science Conference, Wilson College, Chambersburg, PA, March 1979.

COMMUNITY ACTIVITIES

Developed, maintained and supported *A Menu-Driven User Interface to AIX using the Korn Shell,* Salve Regina University, Newport, RI, April 1996–April 2000.

Member of the Board of Governors of the Newport Health Care Corporation.

Member of the Aquidneck Island Mac Users Group.