Jonathan W. Berry

Department of Computing Sciences
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Education **Ph.D. in Computer Science**, Rensselaer Polytechnic Institute, 1995.
M.S. in Computer Science, Rensselaer Polytechnic Institute, 1989.
B.S. in Computer Science and Economics, The American University, 1987.

Teaching Experience

Assistant Professor of Computing Sciences, Elon University, 1996-present.
Visiting Assistant Professor of Computer Science, DePauw University, spring 1995.
Instructor, Rensselaer Polytechnic Institute, 1993-1994.
Teaching assistant, Rensselaer Polytechnic Institute, 1990 and 1992.

Research and Work Experience

Postdoctoral Fellow DIMACS Center, Rutgers University, 1995-1996.
Graduate Research Assistant, Los Alamos National Lab, summers 1993, 1994.
Research Assistant, Rennselaer Polytechnic Institute, 1989 and 1991.
Software Engineer, General Electric Company, Schenectady, NY, summer 1989.
Computer Scientist National Bureau of Standards, Gaithersburg, MD, 1987-1988.
Summer Student National Bureau of Standards, Gaithersburg, MD, 1985-1987.

Interests **Experimental computer science**: graph partitioning & other combinatorial optimization problems, software systems for experimental algorithmics and computer science education,

Publications

1. J. Berry and M. Goldberg. Path optimization and near-greedy analysis for graph partitioning: An empirical study. In *Proceedings of the Sixth*

Annual ACM-SIAM Symposium on Discrete Algorithms, pages 223–232, 1995.

2. J. Berry, N. Dean, P. Fasel, M. Goldberg, E. Johnson, J. MacCuish, G. Shannon, and S. Skiena. LINK: A combinatorics and graph theory workbench for applications and research. Technical Report 95-15, Center for Discrete Mathematics and Theoretical Computer Science, Piscataway, NJ, 1995.
3. J. Berry. Improving discrete mathematics and algorithms curricula with LINK. In *SIGCSE Bulletin: Integrating Technology into Computer Science Education*, Vol. 29, Number 3, September, 1997.
4. J. Berry. LINK: A software system for experimentation with graphs and hypergraphs. *SIAM Activity Group on Discrete Mathematics Newsletter*, 7(2), 1997.
5. J. Berry and M. Goldberg. Path optimization for graph partitioning problems. *Discrete Applied Mathematics*, 90(1999) 27-50.
6. J. Berry and N. Dean. Market basket analysis with LINK. *Congressus Numerantium*, 124:5–13, 1997.
7. J. Berry, N. Dean, M. Goldberg, G. Shannon, and S. Skiena. Graph drawing and manipulation with LINK. In *Lecture Notes in Computer Science, 1353*, pages 425–437. Springer Verlag, 1997.
8. J. Berry, N. Dean, M. Goldberg, G. Shannon, and S. Skiena. Graph Computation with LINK. In *Software Practice and Experience*, September, 2000.

In preparation

J. Berry and J. Marshall. Better Constructive Graph Partitioning Using Vertex 2-Neighborhoods

Contributed Talks

Graph Drawing and Manipulation with LINK, *The Fifth Symposium on Graph Drawing*, Rome, Italy, September, 1997.

Improving discrete mathematics and algorithms curricula with LINK, *SIGCSE/SIGCUE Conference on Integrating Technology into Computer Science Education*, Uppsala, Sweden, June, 1997.

Path optimization and near-greedy analysis for graph partitioning: an empirical study, *The Sixth Annual ACM-SIAM Symposium on Discrete Algorithms*, San Francisco, January, 1995.

Statistical properties of the MAX-CUT problem, *The 25th Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, Florida Atlantic University, March, 1994.

Invited Talks

The Future of General Purpose Discrete Mathematics Software, *Computer-Generated Conjectures from Graph Theoretic and Chemical Databases I*, DIMACS, November, 2001.

The Halting Problem, *North Carolina Governor's School*, July, 2001.

RNA Reconstruction: You Can Do It!, *North Carolina Governor's School*, July, 2000.

LINK: A Software System for Research and Education, *Rensselaer Polytechnic Institute, Computer Science Department Colloquium*, September, 1999.

Two Games with Graphs, *North Carolina Governor's School*, July, 1999.

LINK, *DIMACS Research & Education Institute, plenary lecture*, August, 1998.

Three Applications of Graph Theory, *North Carolina Governor's School*, July, 1998.

Graphs: Theory, Algorithms, and Puzzles, *North Carolina Governor's School*, July, 1997.

Path optimization for graph partitioning, *REU Seminar, Rutgers University*, June, 1995.

LINK, *AT&T Bell Laboratories*, November, 1995.

Student Research Supervised

Ruth Brown, Summer Undergraduate Research Experience (S U R E), Elon, 2001.

John Marshall, Summer Undergraduate Research Experience (S U R E), Elon, 1999.

Damon DeSonier, Summer Undergraduate Research Experience (S U R E), Elon, 1997.

Christopher Burrows, NSF Research Experience for Undergraduates, Rutgers, 1996.

Adam Capes, Efficiency of Object-Oriented Programming, DePauw University, 1995.

Service

Curriculum Committee Elon University, 2001.
Faculty Research and Development Committee Elon College, 1999, Chair 2000.

Academic Standing Committee Elon College, 1997, Chair 1998.
Science Fellows Selection Committee Elon College, 1997-present.
DIMACS Reconnect Conference – primary lecturer Rutgers University, 1998.
Editor *National Information Center for Undergraduate Research, Math/Computer Science Undergraduate Research Directory*, 1997.
Paper Referee, Midwest Small College Computing Conference (1 paper)
Paper Referee, Journal of Operations Research (1 paper)
Paper Referee, Journal of Algorithms (2 papers)
Voting Representative, Undergraduate Curriculum Committee RPI, Fall 1994
Student Coordinator, Graduate Student Seminar RPI, 1993 & 1994
Voting Student Representative, Graduate Curriculum Committee RPI, 1991-1993

Awards, Honors, and Grants

Publication # 5 above included in *Discrete Applied Mathematics, Editor's Choice, Edition 1999.*
Faculty Research & Development Committee Grant, Elon College, 1997.
SIAM Student Travel Award, Symposium on Discrete Algorithms, 1995.
Teaching Incentive Award, RPI School of Science, 1992.
Scholar Topper Award RPI, 1988
Geico Award for outstanding Sophomore/Junior, TAU, 1986

References

Dr. Fred Roberts, Director of DIMACS,
Rutgers University, `froberts@dimacs.rutgers.edu`, (732) 445-5928
Dr. Nathaniel Dean, Computational and Applied Mathematics,
Rice University, `nated@caam.rice.edu`, (713) 348-6113
Dr. Ann Wooten, (teaching) Department of Education,
Elon University, `wooten@elon.edu`, (336) 278-2468
Dr. Rosalind Reichard, (teaching) Vice President for Academic Affairs,
Meredith College, `reichardr@meredith.edu`, (919) 760-8514
Dr. Brenda Latka, Department of Mathematics
Lafayette College, `latka@lafayette.edu`, (610) 330-5279
Dr. Mark Goldberg, Department of Computer Science
Rensselaer Polytechnic Institute, `goldberg@cs.rpi.edu`, (518) 276-2609
Dr. Cynthia Phillips, Massively Parallel Computing Research Laboratory
Sandia National Laboratories, `caphill@mp.sandia.gov`, (505) 845-7296
Dr. Gunnar Brinkman, Department of Mathematics
Uni-Bielefeld, `gunnar@Mathematik.Uni-Bielefeld.de`, (0 52 21) 6 60 50