

# Barry G. Lawson

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Associate Professor of Computer Science  
Department of Mathematics and Computer Science  
University of Richmond  
Richmond, VA 23173

voice: (804) 287-6393  
fax: (804) 287-6444  
blawson@richmond.edu

## Research Interests

Computer Security, Performance Evaluation, Scheduling, Discrete-Event Simulation

## Education

Ph.D. in Computer Science, College of William and Mary, 2002  
M.S. in Computer Science, College of William and Mary, 1996  
B.S. in Math & Computer Information Systems, University of Virginia's College at Wise, 1993

## Employment History

Associate Professor of Computer Science, University of Richmond, 2008 – present  
Assistant Professor of Computer Science, University of Richmond, 2002 – 2008  
Adjunct Instructor of Computer Science, College of William and Mary, 2001 – 2002  
Teaching Fellow, College of William and Mary, 1998 – 2001  
Programmer, NASA Langley Research Center, Unisys Corporation, 1997 – 1998  
Research Assistant, College of William and Mary, 1995 – 1996  
Programmer, VA Department of Mines, Minerals, and Energy, 1991 – 1994

## Teaching Activities

CMSC 105: Elementary Programming (CS0), CMSC 150: Introduction to Computing (CS1), CMSC 221: Data Structures (CS2), CMSC 222: Discrete Structures, CMSC 321: Operating Systems, CMSC 326: Simulation, BIOL 351: Bioinformatics (co-instructor)

## Grants

- NSF #0524239, Cyber Trust, Division of Information & Intelligent Systems, \$401,193. "CT-ISG/RUI: Ensuring Computation Integrity in Distributed Volunteer Computing Platforms", co-PI with Doug Szajda and Jason Owen, September 2005 – August 2008.
- University of Richmond Summer Research Fellowship, \$5000. "A Configurable Self-adapting Scheduler for Heterogeneous Parallel Systems", June 2003–August 2003.

## Publications

### Refereed Conference Publications

- B. Lawson and L. Barnett. Using iPodLinux in an Introductory OS Course. In *Proceedings of the 39th ACM SIGCSE Technical Symposium on Computer Science Education*, Portland, OR, March 2008.
- D. Szajda, M. Pohl\*, J. Owen, and B. Lawson. Toward a Practical Data Privacy Scheme for a Distributed Implementation of the Smith-Waterman Genome Sequence Comparison Algorithm. In *Proceedings of the 2006 ISOC Network and Distributed System Security Symposium (NDSS 2006)*, San Diego, CA, February 2006.
- D. Szajda, B. Lawson, and J. Owen. Toward An Optimal Redundancy Strategy for Distributed Computations. In *Proceedings of the 2005 IEEE International Conference on Cluster Computing (Cluster 2005)*, Boston, MA, September 2005.
- B. Lawson and E. Smirni. Power-aware Resource Allocation in High-end Systems via Online Simulation. In *Proceedings of the 19th ACM International Conference on Supercomputing (ICS05)*, pages 229–238, Cambridge, MA, June 2005.

- B. Lawson and E. Smirni. Self-Adaptive Scheduler Parameterization Via Online Simulation. In *Proceedings of the 19th International Parallel and Distributed Processing Symposium (IPDPS 2005)*, Denver, CO, April 2005.
- D. Szajda, B. Lawson, and W. Owen. Hardening Functions for Large-Scale Distributed Computations. In *Proceedings of the 2003 IEEE Symposium on Security and Privacy*, pages 216-224, Berkeley, CA, May 2003.
- B. Lawson, E. Smirni, and D. Puiu. Self-adapting Backfilling Scheduling for Parallel Systems. In *Proceedings of the 2002 International Conference on Parallel Processing (ICPP 2002)*, pages 583-592, Vancouver, B.C., August 2002.

#### Refereed Workshop Publications

- D. Szajda, W. Owen, B. Lawson, A. Charlesworth, and E. Kenney\*. An Alternate Multiplicity-2 Task Assignment Scheme for Distributed Computations. In *Scheduling and Resource Management for Parallel and Distributed Systems (SRMPDS 05)* in conjunction with *The 2005 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA 05)*, pages 59–65, Las Vegas, NV, June 2005.
- B. Lawson and E. Smirni. Multiple-queue Backfilling Scheduling with Priorities and Reservations for Parallel Systems. In *8th Annual Workshop on Job Scheduling Strategies for Parallel Processing*, pages 72-83, Edinburgh, Scotland, July 2002.

#### Refereed Journal Publications

- B. Lawson and S. Park. Asynchronous Time Evolution in an Artificial Society Model. *Journal of Artificial Societies and Social Simulation*, 3(1), January 2000.

#### Extended Abstracts

- B. Lawson, C. Yue, E. Smirni, and D. Nikolopoulos. Power-aware Resource Allocation via Online Simulation with Multiple-queue Backfilling. In *The 7th International Workshop on Performability Modeling of Computer and Communication Systems (PMCCS-7)*, Torino, Italy, September 2005.

#### Non-refereed Conference Publications

- J. Owen, B. Lawson, and D. Szajda. *A Nonparametric Analysis for Smith-Waterman Alignment Scores*, Proceedings of the American Statistical Association 2006 Joint Statistical Meetings, Biometrics Section, pp. 315-320. August 2006.

#### Invited Papers

- B. Lawson and L. Leemis. Monte Carlo and Monte Carlo and Discrete-Event Simulations in C and R. In *Proceedings of the 2008 Winter Simulation Conference*, pp. 11-16. Miami, FL. December 2008.
- B. Lawson and L. Leemis. Simulation 101 Software: Workshop and Beyond. In *Proceedings of the 2007 Winter Simulation Conference*, pp. 233-236. Washington, DC. December 2007.
- B. Lawson and E. Smirni. Multiple-queue Backfilling Scheduling with Priorities and Reservations for Parallel Systems. *SIGMETRICS Performance Evaluation Review*, 29(4):40–47, March 2002.

#### Miscellaneous Publications

- M. Duggan, B. Lawson, L. Leemis, N. Moore, R. Moore, and E. Walsh. Instructor's Solutions Manual for *Discrete-Event Simulation: A First Course* by L. Leemis and S. Park. Upper Saddle River, NJ: Pearson Education, Inc. 2006.

### Presentations

#### Conference Presentations

- “Simulation 101 Workshop”, with L. Leemis. Pre-conference day-long workshop given to 2008 Winter Simulation Conference, Miami, FL, 7 December 2008.
- “Simulation 101 Workshop”, with L. Leemis. Pre-conference day-long workshop given to 2007 Winter Simulation Conference, Washington, D.C., 1 December 2007.

- “Using iPodLinux in an Introductory OS Course.” To *39th ACM SIGCSE Technical Symposium on Computer Science Education*, Portland, OR, March 2008.
- “Simulation 101 Workshop”, with L. Leemis. Pre-conference day-long workshop given to 2006 Winter Simulation Conference, Monterey, CA, 2 December 2006.
- “Power-aware Resource Allocation via Online Simulation with Multiple-queue Backfilling.” To *7th International Workshop on Performability Modeling of Computer and Communication Systems (PMCCS-7)*, Torino, Italy, September 2005.
- “Power-aware Resource Allocation in High-end Systems via Online Simulation.” To *19th ACM International Conference on Supercomputing (ICS05)*, Cambridge, MA, June 2005.
- “Self-adaptive Scheduler Parameterization via Online Simulation.” To *19th International Parallel and Distributed Processing Symposium (IPDPS 2005)*, Denver, CO, April 2005.
- “Self-adaptive Backfilling Scheduling for Parallel Systems.” To *2002 International Conference on Parallel Processing (ICPP 2002)*, Vancouver, B.C., August 2002.
- “Multiple-queue Backfilling Scheduling with Priorities and Reservations for Parallel Systems.” To *8th Annual Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP)*, Edinburgh, Scotland, July 2002.

#### Invited Talks

- “Approaches to Undergraduate Research: What Works”. Panel with K. Anewalt, J. Polack-Wahl, R. Necaie. Consortium for Computing Sciences in Colleges (CCSC) 2006 Eastern Conference, University of Mary Washington, Fredericksburg, VA, 27–28 October 2006.
- “How To Tell A Secret Without Revealing It: Enhanced Data Privacy in a Distributed Implementation of the Smith-Waterman Genome Sequence Comparison Algorithm.”
  - In Faculty and Student Talk (FAST) Series, Denison University Department of Mathematics and Computer Science, Granville, OH, 19 April 2006.
  - To Elon University Department of Computer Science, Elon, NC, 13 April 2006.
  - ACM Spring 2006 Invited Speaker, Bucknell University, Lewisburg, PA, 6 April 2006.
- “The Evolution of Linux and its Relevance to the MyDoom Worm.” To Residence Life Program, University of Richmond, 02 February 2004.

#### Professional Service

- Program Committee Member: *Workshop on Scheduling and Resource Management for Parallel and Distributed Systems (SRMPDS)*
- Reviewer: *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, *Journal of Parallel and Distributed Computing (JPDC)*, *International Parallel and Distributed Processing Symposium (IPDPS)*, *Network and Distributed System Security Symposium (NDSS)*, *ACM SIGMETRICS Performance Evaluation Review (PER)*
- Publications Chair: *NDSS 2008*, *NDSS 2009*
- Proceedings Co-editor: 2006 Winter Simulation Conference
- Member IEEE Computer Society, Association for Computing Machinery (ACM)

#### University Service

- Ad Hoc Curriculum Task Force, General Education Subcommittee (2009 – )
- HHMI Renewal Steering Committee (2007)
- Richmond Science Scholars Committee (2006 – )
- Web Steering Committee (2007 – )
- University Scholars Committee (2003 – 2005)
- Computer Science Unit Conversion Committee (2006 – 2007)
- Computer Science Faculty Search Committee (2003 – 2004)
- Faculty Sponsor, UR ACM Student Chapter (2009 – )