Curriculum Vitae

Bradley E. Richards

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Degrees

Ph.D. in Computer Science, August 1996 and M.S. in Computer Science, May 1992
University of Wisconsin, Madison, WI
Advisor: James R. Larus
Thesis: "Memory Systems for Parallel Programming"

M.Sc. in Computer Science, April 1990
University of Victoria, Victoria B.C., Canada
Advisor: Maarten van Emden
Thesis: "Contributions to Functional Programming in Logic"

B.A. Degrees, *magna cum laude*, in Computer Science and Physics, May 1988
Gustavus Adolphus College, St. Peter, MN
Advisor: Karl Knight

Positions Held

University of Puget Sound, Tacoma, Washington
Professor (7/2010–present)
Associate Professor (7/2005–6/2010)

Vassar College, Poughkeepsie, New York
Associate Professor, tenured (6/2004–8/2005)
Assistant Professor (9/1997–6/2004)
Visiting Assistant Professor (9/1996–8/1997)

University of Wisconsin, Madison, Wisconsin
Graduate Research Assistant (6/1993–8/1996)
Graduate Teaching Assistant (9/1990–5/1993)

University of Victoria, Victoria, B.C., Canada
Graduate Research Assistant (9/1988–4/1990)
Graduate Teaching Assistant (9/1988–4/1990)

Grants and Awards

Co-PI, NSF Computing Research Infrastructure (CRI) grant #0734761, titled "Workshop for investigating the issues involved in implementing a data repository for empirical CS education data." Total grant amount $19,070, awarded 7/2007. With PI Kathryn Sanders, Associate Professor of Mathematics and Computer Science, Rhode Island College.

NSF-funded travel grant to attend ICER 2005.

Co-PI, NSF Major Research Instrumentation (MRI) grant #0320764, titled "RUI: Acquisition of Robotic Systems for Research in Cognitive Science, Biomechanics, and Computer Science." Total grant amount $471,340, awarded 11/2003. With PI John Long and co-PIs Kenneth R. Livingston, Luke Hunsberger, and Thomas Ellman.

PI, NSF Course, Curriculum, and Laboratory Improvement (CCLI) grant #0087723, titled "Laboratory Materials for Hands-On Exploration of Wireless Networking Concepts." Total grant amount $74,879, awarded 1/2001 (26% funding rate).

PI, NSF Major Research Instrumentation (MRI) grant #0079466, titled "Acquisition of an Eight-Processor Sun Enterprise 3500 Parallel Computer." Total grant amount $143,600, awarded 9/2000. With co-PIs Maria Gomez and James Lombardi..

Conference and Journal Publications

*Student authors are denoted by *.*

Briana Morrison, Mike Clancy, Robert McCartney, *et al.*, "Applying data structures in exams" To appear in *the 41st SIGCSE technical symposium on Computer Science Education.*

Beth Simon, Mike Clancy, Robert McCartney, *et al.*, "Making sense of data structures exams." In *ICER 10: Proceedings of the Sixth International Workshop on Computing Education Research*, pages 97-106, New York, NY, USA, 2010. ACM Press.

Brad Richards. "Representation of women in CS: how do we measure a program's success?" In *Proceedings of the 40th SIGCSE technical symposium on Computer Science Education*, pages 96–100, New York, NY, USA, 2009. ACM Press.

Kate Sanders, Brad Richards, and Jan Erik Moström, *et al.*, "DCER: Sharing Empirical Computer-Science Education Data." In *Proceedings of the fourth international Workshop on Computing Education Research (ICER 2008)*, pages 137–148, New York, NY, USA, 2008. ACM Press.

Laurie Murphy, Renée McCauley, Suzanne Westbrook, *et al.*, "Women catch up: Gender differences in learning programming concepts." In *Proceedings of the thirty-seventh SIGCSE technical symposium on Computer Science Education*, New York, NY, USA, 2006. ACM Press.

Laurie Murphy, Renée McCauley, and Suzanne Westbrook *et al.*, "A multi-institutional investigation of computer science seniors' knowledge of programming concepts." In *Proceedings of the thirty-sixth SIGCSE technical symposium on Computer Science Education*, pages 510–514, New York, NY, USA, 2005. ACM Press.

Kate Sanders, Dennis Bouvier, and Sally Fincher *et al.*, "What are they thinking?: A multi-institutional, multinational study of programming concepts using card sort data." *Expert Systems*, 22(3):121–128, 2005.

Brad Richards and Benjamin Stull*. "Teaching Wireless Networks with Minimal Resources." Appears in *Proceedings of the Thirty-Fifth SIGCSE Technical Symposium on Computer Science Education*, pages 306–310, March 2004.

Roumen Kaiabachev* and Brad Richards. "Java-Based DSM with Object-Level Coherence Protocol Selection." In *Proc. of the Fifteenth IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS)*, pages 648–653, November 2003.

Brad Richards. "Experiences Incorporating Java into the Introductory Sequence." In *Proc. of the Sixth Annual CCSC Eastern Conference on The Journal of Computing Sciences in Colleges*, pp. 247–253, October 2003. (Also appears in *Journal of Computing Sciences in Colleges*, 19(2):247–253, December 2003.)

John P. Dougherty, Tony Clear, Stephen Cooper, Tom Dececchi, Brad Richards, and Tadeusz Wilusz. "Information Technology Fluency in Practice." *ACM SIGCSE Bulletin*, 35(2), 2003.

Brad Richards and Nate Waisbrot*. "Illustrating Networking Concepts with Wireless Handheld Devices." In *Proc. of the Seventh Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, pages 28–33, June 2002. (Also appears in *ACM SIGCSE Bulletin*, 34(3):29–33, 2002.)

Susan Hert and Brad Richards. "Multiple-Robot Motion Planning = Parallel Processing + Geometry." In Henrik Christensen and Greg Hager, editors, *Sensor Based Intelligent Robots*, Springer Verlag *Lecture Notes in Computer Science*, 2238:183–205, November 2001.

Brad Richards. "RTP: A Transport Layer Implementation Project." In *Proc. of the Sixth annual CCSC Northeastern Conference on The Journal of Computing in Small Colleges*, pp. 134-141, April 2001. (Also appears in *Journal of Computing in Small Colleges*, 16(4):134–141, May 2001.)

Brad Richards. "Bugs as Features: Teaching Network Protocols Through Debugging." In *Proc. of the Thirty-First SIGCSE Technical Symposium on Computer Science Education*, March 2000. (Also appears in *ACM SIGCSE Bulletin*, 32(1):256–259, 2000.)

Satish Chandra, Brad Richards, and James R. Larus. "Teapot: A Domain-Specific Language for Writing Cache Coherence Protocols." In *IEEE Transactions on Software Engineering (TSE)*, 25(3):317–333, May 1999.

Brad Richards and James R. Larus. "Protocol-Based Data-Race Detection." In *Proc. of the Second SIGMETRICS Symposium on Parallel and Distributed Tools (SPDT)*, pp. 40–47, August 1998.

Satish Chandra, Michael Dahlin, Brad Richards, Randolph Y. Wang, Thomas E. Anderson, and James R. Larus. "Experience with a Language for Writing Coherence Protocols." In *Proc. of the USENIX Conference on Domain-Specific Languages (DSL '97)*, October 1997.

Satish Chandra, Brad Richards, and James R. Larus. "Teapot: Language Support for Writing Memory Coherence Protocols." In *Proc. of the SIGPLAN conference on Programming Language Design and Implementation (PLDI)*, pp. 237–248, May 1996. (Also appears in *ACM SIGPLAN Notices*, 31(5):237–248, 1996.)

James R. Larus, Brad Richards, and Guhan Viswanathan. "LCM: Memory System Support for Parallel Language Implementation." In *Proc. of the Sixth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, pp. 208–218, October 1994. (Also appears in *ACM SIGPLAN Notices*, 29(11):208–218, 1994.)

M.H.M Cheng, M.H. van Emden, and B.E. Richards, "On Warren's Method for Functional Programming in Logic." In *Proc. of the Seventh International Conference on Logic Programming (ICLP)*, pp. 547–560, June 1990.

Book Chapters

James R. Larus, Brad Richards, and Guhan Viswanathan. C**. In Gregory V. Wilson and Paul Lu, editors, *Parallel Programming in C++*, chapter 8, pages 297–342. MIT Press, 1996.

Technical Reports and Unrefereed Publications

Marian Petre, Sally Fincher, and Josh Tenenberg et. al. "My Criterion is: Is it a Boolean?": A card-sort elicitation of students' knowledge of programming constructs. Technical Report 6-03, Computing Laboratory, University of Kent, Canterbury, Kent, UK, June 2003.

Bradley E. Richards. *Memory Systems for Parallel Programming.* Ph.D. thesis, Computer Sciences Department, University of Wisconsin — Madison, August 1996.

James R. Larus, Brad Richards, and Guhan Viswanathan. "C**: A Large-Grain, Object-Oriented, Data-Parallel Programming Language." University of Wisconsin Computer Sciences Technical Report #1126, November 1992.

Bradley E. Richards. Contributions to Functional Programming in Logic. Master's thesis, University of Victoria, April 1990.

Workshop Publications

Satish Chandra, Brad Richards, and James R. Larus. "Teapot: Language Support for Writing Memory Coherence Protocols." In *Proc. Workshop on Interaction Between Compilers and Computer Architectures*, (In conjunction with the Symposium on High-Performance Computer Architecture (HPCA)), February 1996.

Satish Chandra, Brad Richards, and James R. Larus. "Teapot: Language Support for Writing Memory Coherence Protocols." In *Proc. Workshop on Compiler Support for Systems Software (WCSSS)*, February 1996.

Refereed Poster Presentations

Brad Richards. "An 802.11 Wireless Networking Implementation Project." Appeared as part of *the Thirty-Fourth SIGCSE Technical Symposium on Computer Science Education*, February 2003.

Brad Richards. "Illustrating Networking Concepts with Wireless Handheld Devices." Abstract appears In *Proc. of the Seventh Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, pages 240–240, June 2002. (Also appears in *ACM SIGCSE Bulletin*, 34(3):240–240, 2002.)

Student Publications and Presentations

Joe Granville*. Embedding Binary Trees in Grids Using Genetic Algorithms. *CCSC-NW student poster competition, October 2010.*

Stephanie Hatfield*. Finding Efficient Tree Embeddings Computationally Using Genetic Algorithms. *Third prize winner, CCSC-NW student poster competition, October 2009.*

Steven Canfield*. TardyBoat: Analyzing Delays in the Washington State Ferry System. *First prize winner, CCSC-NW student poster competition, October 2007.*

Joshua Stevenson*. Robots in the Classroom: Developing materials to teach introductory Computer Science via Palm Pilot-Controlled robots. *Mid-Hudson Technology Council's SCiNTILLA Forum, May 2005.*

Joy Kamunyori*. Parallelizing an Algorithm for Simulating Brownian Dynamics. *First prize presentation, Mid-Hudson Technology Council's SCiNTILLA Forum, May 2004.*

Benjamin Stull*. A virtual wireless network layer. *Journal of Computing Sciences in Colleges.*

Joy Kamunyori*. Exploring WEB dynamics. *Journal of Computing Sciences in Colleges.*

Joy Kamunyori*. Implementation of a Parallel Algorithm for Simulating Molecular Association. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 2003.*

Benjamin Stull*. Implementing the IEEE 802.11 wireless standard on Cybiko toys. *Journal of Computing Sciences in Colleges*, 18(5):289–289, May 2003.

Richard Wing*. Using UHBD to establish a protocol for investigating enzyme-substrate interactions via a parallelized WEB Dynamics algorithm. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 2003.*

Benjamin Stull*. Wireless Networking Applications. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 2003.*

Sharon Paisner*. Wireless Networking Applications. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 2002.*

Roumen Kaiabachev*. Communication Support for Parallel Java Programs. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 2002.*

Nathaniel Waisbrot*. Building a virtual topology atop wireless devices. *Journal of Computing in Small Colleges*, 17(6):297–297, May 2002.

Nathanial Waisbrot*. Wireless Networking Applications. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 2001.*

Roumen Kaiabachev*. Communication Support for Parallel Java Programs. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 2001.*

Kevin Davis*. Communication Support for Parallel Java Programs. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 2000.*

Gabe Anderson*. Characterizing the Performance of a Cluster of Workstations. *Vassar College Undergraduate Research Summer Institute (URSI) Symposium, September 1999.*

Panels and Invited Talks

Presenter, "It seemed like a good idea at the time" session, 2011 SIGCSE Technical Symposium on Computer Science Education.

Panelist, "Different approaches to the programming languages course." Northwestern Conference of the Consortium for Computing Sciences in Colleges, October 2006. (In *Journal of Computing Sciences in Colleges*, 22(2):30–31, 2006.)

Co-Presenter, Pacific Northwest Higher Education Teaching & Learning Conference, Vancouver, WA, May 2006.

Panelist, "Models for Computer Science K-12 Outreach Activities", Northwestern Conference of the Consortium for Computing Sciences in Colleges, October 2005. (In *Journal of Computing Sciences in Colleges*, 21(1):274–276, 2005.)

Panelist, "Emerging Areas in Undergraduate Computer Science Education", Northeastern Conference of the Consortium for Computing Sciences in Colleges, April 2004

"A Java-Based DSM with Multiple Coherence Protocols", University of Puget Sound, February 2004

"A Java-Based DSM with Multiple Coherence Protocols", Swarthmore College, November 2003

"Networking Technologies for Parallel Computing", Swarthmore College, November 2003

"An Exploration of Wireless Ethernet", Northwestern Missouri State University, February 2003

"Using the Cybiko in Computer Science Education", Northwestern Missouri State University, February 2003

"Laboratory Materials for Hands-On Exploration of Wireless Networking Concepts", demonstration for the National Science Foundation at ACM SIGCSE, February, 2002

"Implementing Distributed Shared Memory", Haverford College, November 2001

"LCM: Memory System Support for Parallel Language Implementation", Bates College, March 1997

"LCM: Memory System Support for Parallel Language Implementation", Hamilton College, March 1997

"LCM: Memory System Support for Parallel Language Implementation", Grinnell College, March 1997

"LCM: Memory System Support for Parallel Language Implementation", Colgate University, May 1996

"LCM: Memory System Support for Parallel Language Implementation", Vassar College, May 1996

"LCM: Memory System Support for Parallel Language Implementation", Union College, May 1996

"LCM: Memory System Support for Parallel Language Implementation", University of Portland, February 1996

"Teapot: Language Support for Writing Memory Coherence Protocols", Silicon Graphics, February 1996

"Tuning Parallel Computer Systems to Applications' Needs", Beloit College, September 1995

Professional Activities

Affiliations: ACM, IEEE, Consortium for Computing Sciences in Colleges

Reviewer for SIGCSE, ITiCSE, JERIC, TOCE, ICER, CCSC-E, CCSC-NE, CCSC-NW, ACM Crossroads

Member, Liberal Arts Computer Science Consortium (LACS), March 2006 – Present.

Information Director for the ACM Journal on Educational Resources in Computing (JERIC), 2006–2009

Organizer, Workshop on Sharing Computing-Education Research Data in Practice, August 2009.

Associate Program Chair, SIGCSE Technical Symposium on Computer Science Education, March 2009.

Presenter, SIGCSE Technical Symposium on Computer Science Education, March 2009.

Organizer, Workshop on the Feasibility of a Data Repository for Computing-Education Research, March 2008.

Scholarship Reviewer for Grace Hopper Celebration of Women in Computing Conference, 2008

Session Chair, SIGCSE Technical Symposium on Computer Science Education, March 2007.

Participant, Disciplinary Commons Project, South Puget Sound region, 2005-2006.

Participating Faculty, Cognitive Science Program, Vassar College, fall 2002 – summer 2005.

Chair, Vassar College Computer Science Department, summer 2004 – summer 2005.

Papers Co-Chair, Northeastern Conference of the Consortium for Computing Sciences in Colleges, April 2005

Presenter, SIGCSE Technical Symposium on Computer Science Education, March 2004.

Student Posters Chair, Northeastern Conference of the Consortium for Computing Sciences in Colleges, April 2004

Invited participant, NSF-funded "Bootstrapping Research in Computer Science Education" project and workshop, June 2003.

Exhibitor, SIGCSE Technical Symposium on Computer Science Education, February 2003.

Acting Chair, Vassar College Computer Science Department, fall 2002.

Member, Working Group on Fluency in Information Technology, Seventh Annual Conference on Innovation and Technology in Computer Science Education, 2002.

Exhibitor, Seventh Annual Conference on Innovation and Technology in Computer Science Education, June 2002.

Invited Exhibitor, SIGCSE Technical Symposium on Computer Science Education, February 2002.

Member, Pedagogy Focus Group #5 (Advanced Study), ACM/IEEE Curriculum 2001.

Asst. Director, Undergraduate Summer Research Institute, Vassar College, summer 2000.

Grader, free-response portion of Advanced Placement Computer Science Exam, June 2000.

Acting Chair, Vassar College Computer Science Department, fall 1999.

Asst. Director, Undergraduate Summer Research Institute, Vassar College, summer 1999.

Organized and coached students participating in the ACM programming competition, 1998–2005.

Participant, Undergraduate Parallel Computing Workshop, Colgate University, July 1998.

Grader, free-response portion of Advanced Placement Computer Science Exam, June 1998.