

Curriculum Vitae  
**Bradley E. Richards**

January 2004

*Office:*

Department of Computer Science  
Vassar College, Box 284  
124 Raymond Avenue  
Poughkeepsie, NY 12604  
(845) 437-7497  
(845) 437-7498 (fax)  
richards@cs.vassar.edu

*Home:*

65 Trillium Road  
Pleasant Valley, NY 12569  
(845) 635-2952  
(845) 325-0632 (cell)

**Education**

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**

Assistant Professor, Vassar College (9/97-Present)  
Visiting Assistant Professor, Vassar College (9/96-8/97)  
Teaching Assistant to the Computer Sciences Department, Madison (9/90-5/93)  
Teaching Assistant to the Computer Science Department, Victoria (9/88-4/90)

**Conference and Journal Publications**

*Student authors are denoted by \*.*

Marian Petre, Sally Fincher, and Josh Tenenberg et. al. "A Large-Scale Elicitation of Students' Knowledge of Programming Constructs." Submitted to *the Conference on Innovation and Technology in Computer Science Education (ITiCSE) 2004*.

Brad Richards and Benjamin Stull\*. "Teaching Wireless Networks with Minimal Resources." To appear in *Proc. of the Thirty-Fifth SIGCSE Technical Symposium on Computer Science Education*, 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.

### Student Publications and Presentations

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

Joy Kamunyoru\*. Exploring WEB dynamics. To appear in *Journal of Computing Sciences in Colleges*.

Joy Kamunyoru\*. 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.

Nathaniel 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*.

### 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.

## 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 (WCSS)*, 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.)

## Technical Reports and Unrefereed Publications

Marian Petre, Sally Fincher, and Josh Tenenberget. 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\*\*<sup>\*</sup>: 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.

## Professional Activities

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

Reviewer for SIGCSE, ITiCSE, CCSC-E, CCSC-NE, ACM Crossroads

Participating Faculty, Cognitive Science Program, fall 2002 – present.

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

Panelist, “Emerging Areas in Undergraduate Computer Science Education”, 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 participant, NSF-funded “Bootstrapping Research in Computer Science Education” project and workshop, June 2003.

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

Member, Vassar College Appeals Committee, 9/2001 – 9/2002.

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.

Member, Vassar College Quantitative Analysis Committee, 9/1999 – 9/2002.

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–present.

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

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

## **Grants and Awards**

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 (Chemistry) and James Lombardi (Physics and Astronomy).

## Invited Talks

“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