John Barr *Curriculum Vitae*

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Research Interests

Computer Science pedagogy and didactics, Computers and Software in didactics, Computation in Humanities, Computing for the Social Good

Education

The Pennsylvania State University, Ph D. in Computer Science, January, 1992.

Boston University Metropolitan College, M.S. in Computer Information Systems, September, 1984.

Massachusetts Institute of Technology, S.B. in Political Science, Feb, 1980.

Work Experience

Professor, Aug 2017 – present, Ithaca College, Ithaca, N.Y.

Associate Professor, June 2007 – Aug 2017, chair June 2007-Jan 2012, Department of Computer Science, Ithaca College, Ithaca, N.Y.

Visiting Associate Teaching Professor, August 2006 – June 2007, Carnegie Mellon University, Qatar Campus, Doha, Qatar.

Associate Professor, August 1998 – August 2006, Department of Mathematics and Computer Science, Ithaca College, Ithaca, N.Y.

Assistant Professor, August 1991 - August 1998, Department of Mathematics and Computer Science, Ithaca College, Ithaca, N.Y.

Research Assistant/Lecturer/Teaching Assistant, August 1985 -- August 1991. Department of Computer Science, The Pennsylvania State University, University Park, PA.

Computer Consultant, September 1983 -- June 1985.

Army Officer (RA), September 1979 -- September 1983.

Professional

Consultant and Developer, Zhuang Language Development Project, Jian Hua Foundation, Nanning, Guangxi Province, China, 2013-2014.

External Evaluator for the computer science program at Tompkins-Cortland Community College (TC3), May, 2008 and May 2014.

External Evaluator for the computer science program at Utica College, Utica, NY, May, 2000.

Consultant, Telecine, Inc., Cairo, Egypt, 1999-2001. Provided advice on multimedia and internet design, development, and programming.

Courses Taught

Principles of Computer Science 1	Programming Languages
Principles of Computer Science 2	Intro Robotics with Legos
Computer Organization	Computer Architecture
Software Engineering	Multimedia Programming
Introduction to Web Programming	Advanced Web Programming
Operating Systems	Object-Oriented Programming in Java
	Objective-C for iOS
Computer Networks	Compiler Design
Data Structures	Algorithms
Mobile Development (iOS)	Computer Science Capstone
Mobile Development (React Native)	Geographic Information Systems
Discrete Math	Honors Seminar: Computational Humanities
Complex Systems	

Courses designed, developed, or substantially changed

Computer Science Capstone

Complex Systems. A 400 level course that examines seminal papers that discuss algorithms used in computer systems such as operating systems and networks. The goal of the course is to help students see the connection between algorithms and systems level programming. Designed and implemented.

Mobile Development (course focused on the concepts of mobile computing in React Native). Designed and implemented.

Mobile Computing (course focused on the concepts of mobile computing as implemented in iOS and Android). Designed and implemented.

GIS course for nonmajors; co-developed with Ali Erkan.

Computer Architecture. Designed and implemented.

Introduction to Web Programming. Co-developed with several faculty members.

Advanced Web Programming. Course covers both client and server side technologies. Designed and implemented.

Multimedia Programming. A course for non-majors originally using Macromedia Director and Flash. Designed and implemented.

Computer Organization & Assembly Language. Redesigned the course to focus on organization and introductory operating system concepts.

Programming Languages. Redesigned the course around the MUltiple Language Environment, MuLE, system.

Operating Systems. Redesigned the course to focus on hands-on labs in Linux.

Robotics. Experimental course covering robotics using the MIT Handy board.

Object-oriented programming. This was the first course in the department that included object-oriented concepts. Designed and implemented. Discontinued when we started teaching OOP in our courses.

Senior Projects Sponsored (last 5 years)

2022 Spring

Iyayi Alyevbomwan	Predicting NBA outcomes with machine learning
Daniella Berman	A React Native app for Theater
Nusi Olumegbon	IthaColor: a backend for a marketplace app

2021 Fall

Nicholas Isaacs	Services: A 3-tier Angular app
Joshua Kruger	Services: A 3-tier Angular app
Brendan McMahan	Services: A 3-tier Angular app

2021 Spring

Cameron Arnold	
Amber Elliott	DEFI: electron simulator
Isha Sharma	Energy Efficiency Calculator
Danny Xu	Game Review app

2020 Fall

Mark Volvo (proj course)	Database driven API for physics game

2020 Spring

Everton Steele	Fitness Center Personal Trainer app
Ben Cordova & Milo Rue	Mapping Ithaca College: a mobile app

2019 Fall

Samuel Afolabi	DEFI: electron simulator
Timothy Clerico	Building a computer cluster

2019 Spring

Lee Jackson	Key logger
Javaughn Miller	Student Athlete health tracker

2018 Fall

Michael Gardiner & Yehonatan Geer	IC Connect: student task tracking app
Isaak Hill	Writing a UNIX shell
Bradley Keith	BacTracker: app for tracking bacteria
Brien Pacholec	Campus Graph: app for finding pedestrian routes

2018 Spring

Austin Barrett	IC Sports Club App
Denise Fullerton	Color my world: a coloring app

2017 Fall

Austin Barrett & Adelaide Giesey	iOS app for club sports
Denise Fullerton	Android drawing app
Erika Rumbold	Android app with web-based database and web-crawler for college info
Jonathan Burger and Joe Menduni	Meg's Radio: local music location web and mobile app

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Grants

NSF Scholarships in Science, Technology, Engineering, and Matehmatics (S-STEM), Kelley Sullivan, John Barr, Dave Brown, Matt Thomas. Awarded 1 Oct 2019, $648,000.

IC Change, Laura Campbell Carapella, John Barr, Jacque Washihgton, Madeleine Giroux. Ithaca College ICU Seed Grant Proposal. Awarded 2019, $10,000.

Portable Paris Pilot: Testing an Innovative Digital Humanities Approach, Lauren O'Connell, John Barr, Jennifer Germann. Ithaca College Academic Challenge Funding grant. Awarded October 2014.

Increasing Conceptual Understanding through Annotation Visualization, Ananda Gunawardena, Ph.D, Carnegie Mellon University, John Barr, Ph.D. , Ithaca College, David Kaufer, Ph.D. , Carnegie Mellon University, Joanna Wolfe, Ph.D., University of Louisville, DUE - 0942823
National Science Foundation, Course and Curriculum Improvement Grant, March 2010.

Educating the Educator, John Barr and Ali Erkan. Ithaca College IC^2 grant, Awareded June 2010, $29,000.

An Environment for Interpreter-based Projects for the Programming Languages Course, Laurie A. King and John Barr, January 2000, NSF grant DUE-9952398.

Grants rated highly but not funded

Collaborative Research: Expanding the use of a Large Repository of Quality Computer Science Content for STEM education - A Case study with Data Structures and Algorithms, Ananda Gunawardena, Ph.D, Princeton University, Robert Sedgewick, Ph.D, Princeton University, Kevin Wayne, Ph.D, Princeton University John Barr, Ph.D. , Ithaca College, Krishna Palem, Rice University,

National Science Foundation, DUE- IUSE Engaged Student Le: Design & Development I&II Grant, submitted January 2015.

Portable Paris: Building a Blended Art History Study Abroad Experience, Lauren O'Connell, John Barr, Jennifer Germann, A Level II Start-Up Project Proposal submitted to National Endowment for the Humanities, 2012.

Papers and Conference Proceedings

The Roles of Textual Features, Background Knowledge, and Disciplinary Expertise in Reading a Calculus Textbook, Emilie Wiesner, Aaron Weinberg, Ellie Fitts Fulmer, John Barr, Journal for Research in Mathematics Education, March 2020.

How Best to Teach Global Software Engineering? Educators are Divided, Sarah Beecham, John Noll, Tony Clear, John Barr, Daniela Damian and Walt Scacchi, 14th IEEE International Conference on Global Software Engineering (ICGSE), 2-5 May, 2019.

Didactical Disciplinary Literacy, Aaron Weinberg, Ellie Fitts Fulmer, Emilie Wiesner, John Barr. Proceedings of the 21st SIGMAA Annual Conference on Research in Undergraduate Mathematics Education, San Diego, California February 22-24, 2018.

The roles of textual features, background knowledge, and disciplinary expertise in reading a calculus textbook: A case study comparison, Emilie Wiesner, Aaron Weinberg, John Barr, Ellie Fitts Fulmer. Accepted for publication in the Journal for Research in Mathematics Education.

Developing a Holistic Understanding of Systems and Algorithms Through Research Papers, Ali Erkan, John Barr, Tony Clear, Cruz Izu, Cristian Jose Lopez del Alamo, Hanan Mohammed, Mahadev Nadimpalli, 22nd Annual Conference on Innovation and Technology in Computer Science Education Bologna, Italy, 3-5 July 2017.

Expert vs. Novice Reading of a Calculus Textbook: A Case Study Comparison In Weinberg, A., Rasmussen, C., Rabin, J., Wawro, M., & Brown, S. (Eds). *Proceedings of the 20th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 1018-1025). San Diego, CA.

Preparing Tomorrow's Software Engineers for Work in a Global Environment, Sarah Beecham, Tony Clear, John Barr, Mats Daniels, Michael Oudshoorn, John Noll. IEEE Software, 2017, Volume: 34, Issue: 1, Pages: 9 - 12, DOI: 10.1109/MS.2017.16

How Best to Teach Global Software Engineering? Educators are divided. Sarah Beecham, Tony Clear, Daniela Damian, John Barr, John Noll and Walt Scacchi.

IEEE Software, 2017, Volume: 34, Issue: 1, Pages: 16 - 19, DOI: 10.1109/MS.2017.12

Sense-Making Practices of Expert and Novice Readers, Aaron Weinberg, Emilie Wiesner, and John Barr, Proceedings of the 38th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA 2016), Tucson, Arizona, 3 – 6 November, 2016, pages 97-104.

Algorithms + Systems = Algorithms, Ali Erkan and John Barr, ITiCSE '16, Proceedings of the 2016 ACM Conference on Innovation and Technology in Computer Science Education, Pages 65-70, Arequipa, Peru, July 11 - 13, 2016.

Challenges and Recommendations for the Design and Conduct of Global Software Engineering Courses: A Systematic Review, Tony Clear, Sarah

Beecham, John Barr, Mats Daniels, Roger McDermott, Michael Oudshoorn, Airina Savickaite, John Noll. Working Group Report from the 20th Annual Conference on Innovation and Technology
in Computer Science Education, ITiCSE-WGR '1, Vilnius, Lithuania, 6–8 July, 2015.

A framework for enhancing the social good in computing education: a values approach, Michael Goldweber, John Barr, Tony Clear, Renzo Davoli, Samuel Mann, Elizabeth Patitsas, and Scott Portnoff, ACM Inroads Vol 4, No. 1 (March 2013), 58-79. Reprint of working group report from ITiCSE 2012.

Art, Architecture, and iPads: 'Unbinding' Student Learning in situ. Lauren O'Connell and Jennifer German, Art History and John Barr, Computer Science, Colleen Muldowney, C.S./Art History, Visual Learning: Transforming the Liberal Arts conference, Carleton College, September 28-30, 2012.

First Year Programming Projects for Computing for the Social Good, Michael Goldweber, John Barr, Tony Clear, Renzo Davoli, Samuel Mann, Elizabeth Patitsas, and Scott Portnoff. Working Group Report from the 17th Annual Conference on Innovation and Technology in Computer Science Education, ITiCSE-WGR '12, Haifa, Israel, 30 June – 5 July, 2012. Received "best paper by a working group" award.

Classroom Salon: A Tool for Social Collaboration, Ananda Gunawardena and John Barr, proceedings of the 43rd ACM Technical Symposium, on Computer Science Education (SIGCSE), Feb 29-March 3, 2012, Raleigh, North Carolina.

Educating the Educator Through Computation: What GIS Can Do For Computer Science, John Barr and Ali Erkan, proceedings of the 43rd ACM Technical Symposium, on Computer Science Education (SIGCSE), Feb 29-March 3, 2012, Raleigh, North Carolina.

Results from Using an Environment for Interpreter-based Projects for the Programming Languages Courses, Barbara M. Moskal, L. A. Smith King, and John Barr, 33rd ASEE/IEEE Frontiers in Education Conference November 5-8, 2003, Boulder, CO.

What Could Be More SLic? Projects for the Programming Languages Course, L.A. Smith King, John Barr, and Ben Coleman. Paper presented at the 32nd Annual ACM SIGCSE Technical Symposium, February 21-25, 2001, Charlotte, NC.

Virtual Reality in Archeology, Michael Malpass, John Barr, and Tony Bo, workshop presented at the 62nd meeting of the Society of American Archeologists, 4 April 1997.

Computer Science for the Artist, Laurie A. Smith King and John Barr, Proceedings of the 27th Annual ACM SIGCSE Technical Symposium, February 27-March 1, 1997, San Jose, CA.

Multiple Paradigms in CS 1, Laurie A. Smith King, Chuck Leska, and John Barr. 27th Annual SIGCSE Technical Symposium, 15-18 February 1996, Philadelphia, Pennsylvania.

Teaching Programming Languages by Counter Example, Laurie A. Smith King and John Barr. Proceedings of the 11th annual Eastern Small College Computing Conference, October 20-21 1995, Iona College, New York, New York.

An Environment for Interpreter-based Programming Language Projects, John Barr and Laurie A. Smith King, 26th Annual SIGCSE Technical Symposium, 2-4 March 1995, Nashville, Tennessee.

Interpreter-Based Projects for a Traditional Programming Languages Course, John Barr, Laurie A. Smith King, proceedings of the 10th annual Eastern Small College Computing Conference, October 21-22, 1994, St. John Fisher College, Rochester, New York.

Improved algorithms for searching restriction maps. Miller, Webb, John Barr, and Kenneth E. Rudd, Bioinformatics 7.4 (1991): 447-456.

Technical Reports

Beecham, S., T. Clear, J. Barr and J. Noll (2015). Protocol for a Systematic Literature Review on "Approaches to the Design and Conduct of Global Software Engineering Courses."(ITiCSE Working Group One: Technical Report No. Lero_TR_2015_01). Protocol. Limerick, Ireland, University of Limerick. 09 September, 2015.

MuLE User's Manual, L.A Smith King and John Barr, Ithaca College Technical Report 95-001.

Invited Talks

Portable Paris: Visual Learning and Mobile Devices in a Study Abroad Context, Lauren O'Connell and Jennifer German, Art History; John Barr, Computer Science. "A Conversation on Visual Literacy", Information Services Instructional Support Seminar (ISIS), 19 Oct 2012.

Panels, Posters and Workshops

Bringing Reflection into Computer Science Education, Paul Dickson, John Barr, Birds-of-a-Feather, ACM SIGCSE Technical Symposium, Minneapolis, MN, USA, February 2019 (SIGCSE '19).

Messy Learning: When Problem-based Learning Just Isn't Enough, Paul Dickson, John Barr, *poster*, ACM SIGCSE Technical Symposium, Minneapolis, MN, USA, February 2019 (SIGCSE '19).

Holistic Approaches to Computer Science, Ali Erkan (Moderator), John Barr, Valerie Barr, Michael Goldweber, and Deepak Kumar. 2018. ACM SIGCSE Technical Symposium, Baltimore, MD, USA, February 2018 (SIGCSE '18).

Geographic Information Systems (GIS): Opportunities of Spatial Data Processing for Computer Science Education, Ali Erkan and John Barr. Workshop accepted for the ACM SIGCSE Technical Symposium, Baltimore,

MD, USA, February 2018 (SIGCSE '18).

Developments in Global Software Engineering Education, Tony Clear, Sarah Beecham, John Barr, Mats Daniels, Michael Oudshoom, Roger McDermott, and John Noll, panel at the 2016 IEEE Frontiers in Education Conference (FIE), 12-15 October, 2016.

Perspectives on Global Software Engineering Education, Sarah Beecham, John Barr, Tony Clear, Daniela , John Noll, Walt Scacchi, panel at the GSE-ed workshop 2016, 11th IEEE International Conference on Global Software Engineering (ICGSE), 2-5 August, 2016.

Computing for the Social Good, Michael Goldweber, John Barr and Elizabeth Patitsas, Panel, 44rd ACM Technical Symposium, on Computer Science Education (SIGCSE), Mar 6-9, 2013, Denver, Colorado.

Friending your textbook: Using social networks to get students to read and analyze text and video, John Barr, workshop at Tompkins County Community College, 19 Oct 2012.

Friending your textbook: Using social networks to get students to read and analyze text and video, John Barr, workshop at Ithaca College, 10 Oct 2012.

Using Social Networking to Improve Student Learning Through Classroom Salon, John Barr and Ananda Gunawardena, Workshop, 43rd ACM Technical Symposium, on Computer Science Education (SIGCSE), Feb 29-March 3, 2012, Raleigh, North Carolina.

What Everyone Needs to Know About Computation, John Barr, Steve Cooper, Mike Goldweber, and Henry Walker, Panel, 41st ACM Technical Symposium on Computer Science Education, March 10-13, 2010.

A Method for Analyzing Reading Comprehension In Computer Science Courses, Ananda Gunawardena, John Barr, Andrew Owens, poster presented at the 13th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE) 2008.

Interpreter Based Assignments for a Standard Programming Languages Course, John Barr, L.A. Smith King and Ben Coleman. Workshop presented at the 32nd Annual ACM SIGCSE Technical Symposium, February 21-25, 2001, Charlotte, NC.

A Comparison of Operating System Courseware, John Barr, Tracy Camp, Michael Goldweber, John Grahm, and Steve Hartley, Panel presented at the 29th Annual ACM SIGCSE Technical Symposium, March 25-27, 1999, New Orleans, LA.

Object Oriented Programming: How to "Scale Up" CS1, Stuart Hirshfield, Owen Astrachan, John Barr, Karen Donnelly, David Levine, Mark McGinn. Panel at

the 25th Annual SIGCSE Technical Symposium,
6-12 March 1994, Phoenix, Arizona.

Other publications and presentations

'Twas the Night Before Classes, John Barr, Susan Barr, ACM Inroads Magazine, Volume 7 Issue 4, December 2016, Pages 108-108

Goodby Gutenburg! Lightening Talk at the 2016 Ithaca College Educational Technology Day Conference.

IC Library Books, iOS app in the iTunes store developed with Mariah Flaim, Ithaca College Student.

Classroom Salon: Using Social Networking to Improve Student Learning, John Barr, 2012 Ithaca College's Educational TechnologyDay Teaching and Learning with Technology Symposium, Ithaca, NY.

Reading in Computer Science, Ananda Gunawardena and John Barr, Presented at English Literacy for the Global University, The Communication Symposium at Carnegie Mellon University, June 11-13, 2007, Pittsburgh, PA.

Service

Editor, the Back Page, Inroads Magazine, 2015-2021

Program Committee, Global Software Engineering Education workshop (GSE-Ed), 11TH IEEE International Conference on Global Software Engineering (ICGSE) 2016, Orange County, CA, U.S.A.

Co-chair, Working Groups, 21th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE) 2016, Arequipa, Peru.

Reviewer, Special Interest Group, Computer Science (SIGCSE) annual conference, 1999-2019. Meta-Reviewer, 2011 and 2012.

Reviewer, Inroads Magazine, 2010-2016, ITiCSE Annual Conference, 2010-2016, Frontiers in Education Conference 2016, 24th European Conference on Information Systems, 2016, ACM Transaction on Computing Education , 2017.

Moderator, NCUR 2011

Administrative Duties

School of Humanities & Sciences faculty senate member 2009-2013 and 2017-present. Chaired committee to select and implement electronic voting. Implemented and conducted electronic voting for the School of Humanities & Sciences.

Member Faculty Flexible Workload committee, Humanities and Sciences, 2017-present

Chair, Personnel Committee, Department of Computer Science, 2000-present (including 6 tenure cases)

Member, Tenure committee, Kelley Sullivan, Physics, 2018-2019

Chair, Protestant Community at Ithaca College board 2018-present

Co-Chair, Mission & Goals Committee, Middle States Review, November 2015-February 2018. Committee's section received two accomodations from the Middles States Reviewers

Member, steering committee, Howard Hughes Medical Institute (HHMI) proposal for underprepared students, 2016-2018

Search committee, Dean of Humanities and Sciences, Fall 2015

Search committee, Associate Vice President, Information Technology Services, Spring 2014

Search committee, outside member, Physics Department, 2010

Search committee, Director of Infrastructure and Communication Services (ICS), Fall 2009

Chair of the "flexible workload" committee that created a document to guide the flexible workload process in the School of Humanities & Sciences at Ithaca College, 2012-2013

School of Humanities & Sciences curriculum committee member 1996-2002 and 2008-2013.

Co-chaired (with Nancy Cornwell, chair TVR) the committee which developed an interdisciplinary major in Emerging Media, 2011-2012.

Member of the IC 20/20 Task Force/Liberal Learning Working Group, AY 2010-2011.

Member of the IC 20/20 Integrative Learning Working Group subcommittee of Liberal Learning Working Group, AY 2010-2011.

Chair, Department of Computer Science, 2008-2012

Member of the Information Technology Planning Committee, Technology Enabled Teaching/Learning/Research, 2005-2007.

Chair, program review, Department of Computer Science, 2014-2015.

Chair, Curriculum Committee, Department of Computer Science, 1999-present

Search Chair, Department of Computer Science, 2001-2012 (7 faculty searches)

IT Liasion, Department of Computer Science, 1996-present

Labs Coordinator, Department of Computer Science, 1996-present