

John A. Trono

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Education

- M.S. Computer Science 1980 Purdue University
- B.S. Computer Science 1979 University of Vermont (magna cum laude)
(Received Outstanding Student in Computer Science award)

Professional History

- 2003-present Professor of Computer Science
- 1990-2002 Associate Professor of Computer Science
- 1982-1990 Assistant Professor of Computer Science
- 1980-1982 Member of Technical Staff - Bell Telephone Laboratories

Publications

“Predicting the NCAA Men’s Postseason Basketball Poll More Accurately”, SMC Tech Report (SMC-2015-CS-001), and coauthored with SMC colleague Dr. Phil Yates.

“Transactions: They’re Not Just For Banking Any More”, Journal of Computing Sciences in Colleges, Volume 30, #5, May, 2015.

“How Predictable is the Overall Voting Pattern in the NCAA Men’s Basketball Post Tournament Poll?”, Chance (published by Springer-Verlag, and supervised by the American Statistical Association), Volume 27, Issue 2, 2014 (coauthored with SMC colleague: Dr. Phil Yates).

“Increasing Student Confidence throughout the Computer Science Curriculum”, Psychology of Programming Interest Group (PPIG), Work-in-Progress (WIP) Workshop, July 8-9, 2013.

“Evaluating Regional Balance in the NCAA Men’s Basketball Tournament using the Tournament Selection Ratio”, Proceedings of the 4th International Conference on Mathematics in Sport, June 5-7, 2013: published by the Institute of Mathematics and its Applications.

“A Longitudinal Study of Regional Bracket Equality in the NCAA Men’s Basketball Tournament”, SMC Tech Report (SMC-2013-CS-001), January, 2013.

“Updated MPHFW Weights for Ada 2012”, Ada Letters (published by the Association for Computing Machinery: ACM), Volume 32, #1, April 2012.

“Security Enhancements for the Additive Cryptosystem”, Proceedings of the 27th Annual CCSC (Consortium for Computing Sciences in Colleges) Eastern Conference, Volume 27, Issue 3, January, 2012.

"Rating/Ranking Teams through the (Spanning) Trees", Proceedings of the 3rd International Conference on Mathematics in Sport, June, 2011: published by the Institute of Mathematics and its Applications.

"Rating/Ranking Systems, Post-Season Bowl Games, and 'The Spread' ", Journal of Quantitative Analysis in Sports: Berkeley Electronic Press (BEP), Volume 6, Issue 3, Article 6, 2010.

"On k-minimum and m-minimum edge-magic injections of graphs", Discrete Mathematics (Elsevier), January, 2010, volume 310, issue 1, pages 56-69. (Coauthored with Dr. John P. McSorley, Associate Professor of Mathematics at Southern Illinois University.)

"A Simple Encryption Strategy Based on Addition," Proceedings of the 14th Annual CCSC (Consortium for Computing Sciences in Colleges) Northeastern Conference, Volume 24, #6, June, 2009.

"Discovering More Properties of the Fibonacci Sequence", Proceedings of the 15th Annual CCSC Central Plains regional conference, Volume 24, #5, May, 2009.

"A Discovery-based Capstone Experience", Proceedings of the 14th Annual CCSC Central Plains regional conference, Volume 23, #4, April, 2008.

"An Effective Nonlinear Rewards-Based Ranking System", Journal of Quantitative Analysis in Sports (JQAS): Berkeley Electronic Press (BEP), Volume 3, Issue 2, Article 3, 2007.

"Optimal Table Lookup for Reserved Words in Ada", Ada Letters, Volume 26, #1, April 2006.

"Search for a Shortest K-Element Sidon Set in Parallel", Proceedings of the 2005 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA), June 2005 (with Andrew J. Bays who graduated in December, 2004).

"Can You Beat the Odds(makers)?", Math Horizons (published by the Mathematical Association of America), April 2005.

"Overtake & Feedback Follow-Up", Dr. Dobb's Journal: Software Tools for the Professional Programmers (#360), May, 2004.

"Applying the Overtake & Feedback Algorithm", Dr. Dobb's Journal (#357), February, 2004.

"An Extended Programming Assignment (Using Java)", PDPTA - 2001, June 2001.

"Arithmetical Croquet", Proceedings of the Sixth Annual CCSC Northeastern Conference, Volume 16, #4, April 2001. (This was recognized as the third best paper by the conference's committee.)

"March Mathness: An Analysis of a Nonstandard Basketball Pool", Math Horizons, February, 2001 (with Aaron Archer, Richard Cleary, and Robin Lock).

"Comments on 'Tagged Semaphores'", ACM Operating Systems Review, Volume 34, #4, October 2000.

"Further Comments on 'A Correct and Unrestrictive Implementation of General Semaphores'", ACM Operating Systems Review, Volume 34, #3, July 2000 (with William E. Taylor – undergraduate coauthor).

"A Quantitative Examination of Computer Architecture Evolution", Proceedings of the Fourth Annual CCSC Northeastern Conference, Volume 14, #4, May 1999.

"A Comparison of Three Strategies for Computing Letter Oriented, Minimal Perfect Hashing Functions", ACM Special Interest Group on Programming Languages (SIGPLAN) Notices, Volume 30, #4, April 1995.

"Taxman Revisited", ACM Special Interest Group on Computer Science Education (SIGCSE) Bulletin, Volume 26, #4, December 1994.

"A New Exercise in Concurrency", ACM SIGCSE Bulletin, Volume 26, #3, September 1994.

"An Undergraduate Project to Compute Minimal Perfect Hashing Functions", ACM SIGCSE Bulletin, Volume 24, #3, September 1992.

"Average Case Analysis When Merging Two Ordered Lists of Different Length", ACM SIGCSE Bulletin, Volume 23, #3, September 1991.

"A Deterministic Prediction Model for the American Game of Football", ACM Simuletter, Volume 19, #1, March 1988.

"NSCS H/MI Implementation Considerations", Bell Laboratories Technical Memorandum 82-59473-11, October 1, 1982 (with James P. Jenal).

"A Performance Evaluation of NSCS (1NS1)", Bell Laboratories Memorandum for File, 59473-820805.01MF, August 5, 1982 (with Arthur T. Sullivan).

Conference Presentations

"Increasing Student Confidence throughout the Computer Science Curriculum", PPIG WIP Workshop, July 8-9, 2013.

"Evaluating Regional Balance in the NCAA Men's Basketball Tournament using the Tournament Selection Ratio", 4th International Conference on Mathematics in Sport, June 5-7, 2013.

"Security Enhancements for the Additive Cryptosystem", 27th Annual CCSC (Consortium for Computing Sciences in Colleges) Eastern Conference, October 14-15, 2011.

"Rating/Ranking Teams through the (Spanning) Trees", 3rd International Conference on Mathematics in Sport, June 22-24, 2011.

"A Simple Encryption Strategy Based on Addition," 14th Annual CCSC (Consortium for Computing Sciences in Colleges) Northeastern Conference, April 23-24, 2009.

"Discovering More Properties of the Fibonacci Sequence." Proceedings of the 15th Annual CCSC Central Plains regional conference, April 3-4, 2009.

"A Discovery-based Capstone Experience", 14th Annual CCSC (Consortium for Computing Sciences in Colleges) Central Plains regional conference, April 4-5, 2008.

"Multi-Phase Homework Assignments in CS1 and CS2", 19th Annual CCSC Eastern regional conference, October 17-18, 2003. (One of four panelists.)

"Experiences with IDEs and Java Teaching: What Works and What Doesn't", 8th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE), June 30 – July 2, 2003. (One of six panelists.)

"An Extended Programming Assignment (Using Java)", 2001 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA), June 25-28, 2001.

"Arithmetical Croquet", Sixth Annual CCSC Northeast regional conference, April 20-21, 2001. (Recognized as 3rd best paper presented.)

"A Quantitative Examination of Computer Architecture Evolution", Fourth Annual CCSC Northeast regional conference, April 23-24, 1999.

Talks given while at SMC

"Solving an Optimization Problem by Applying a Modified Simulated Annealing Technique" was presented as part of the Chemistry/Physics Science Seminar on 10/11/02.

"Using Sidon Sets in Cryptography" was given as part of the UVM Applied Combinatorics Seminar on 4/3/01.

"A New Strategy for Encrypting Information" was presented on 9/20/2000 as part of the Math/CS afternoon colloquia, and on 3/30/01 as part of the Chemistry/Physics Science Seminar.

"Thought Processes leading to a 'solution' to Problem 910" was presented to the SMC Math Club in April, 2000.

"Everything you ever wanted to know about Minimal Perfect Hashing Functions (but were afraid to ask!)" was presented as part of the Math/CS afternoon colloquia on 3/17/1993.

"The INTERNET Worm" was presented to the Math/Science lunch group (spring 1991).

Grants Awarded

CSEMS awarded approximately \$200,000 to Saint Michael's College in scholarship grants for prospective students who expressed interest in attending as a computer science major. (Co-principal investigator.)

EPSCoR Grant, from the Vermont Experimental Program to Stimulate Competitive Research – Small College Development (funded by NSF), to attend CRYPTO '01 conference.

SMC Professional Growth development curriculum grant awarded in the fall of 1995 - this paid my expenses to attend the "Intensive C++" course offered at Stanford University during August 1996.

NSF Grant to attend a workshop at Colgate University during the middle two weeks of June, 1991. The workshop focused on Parallel Processing and how to incorporate it into a typical

undergraduate computer science curriculum. (SMC funded my travel costs back and forth. Everything else was covered by the grant.)

Teaching Experience

St. Michael's College:	Introduction to Computing Data Structures Operating Systems Database Systems Compiler Construction File Structures and I/O Cryptography (& Info. Security) Data Communications and Networks	Introduction to Computer Science I & II Advanced Algorithms and Analysis Computer Architecture Machine Organization & VAX Assembler Theoretical Foundations of C.S. Programming Languages Senior Seminar
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University of Vermont: Lab T.A. for CS11-Introduction to Computer Programming (Jr. & Sr. year)

Books and papers I have reviewed/refereed

"The Object of Java" by Riley, Addison Wesley, ISBN#0-201-71585-6, 2002.

"Introduction to Computing Systems: From Bits and Gates to C and Beyond" by Yale N. Patt and Sanjay J. Patel, McGraw-Hill, ISBN #0-07-237683-X, 1999.

"Introduction to Computer Science: A Structured Approach using the C Language" by Behrouz A. Forouzan and Richard F. Gilberg, West Publishing, ISBN#0-314-09573-X, 1997.

"The Art of Programming: Computer Science with C" by Stephen C. Lawlor, West Publishing, ISBN#0-314-06814-7, 1996.

"The Art and Science of Programming in C" by Eric Roberts, Addison Wesley, ISBN#-0-201-54322-2, 1995.

"PASCAL: A guided tour" by Leland L. Beck, Addison Wesley, ISBN#-0-201-57839-5, 1994.

An introductory programming text in C that, to my knowledge, was never printed by D. C. Heath Inc. (In the early '90s.)

For the annual ACM SIGCSE conference (which is the largest one focusing on computer science education in the US) I have refereed papers in the following years:

2 in 1989, 3 in '90, 4 in '91, 2 in '93, 3 in '94, 3 in '95, 3 in '96, 4 in '00, 2 in '01, 3 in '02, 2 for '03.

I reviewed 5 papers for the 7th Annual CCSC-NE conference in 2002, and 2 in 2009. (Consortium for Computing Science in Colleges – Northeast region.) I also reviewed 2 papers for the 2010 ACM ITiCSE (Information Technology in Computer Science Education) conference to be held in Turkey.

I reviewed a paper entitled "Extending Inter-Process Synchronization with Robust Mutex and Variants in Condition Wait" for the IEEE Transactions on Parallel and Distributed Systems journal in December, 2007. (It has not been accepted yet.)

I reviewed a paper entitled "Toward Resolution of the NCAA Football Championship Conundrum: A Performance-Based Model" for JQAS in October, 2006. (It has not been accepted yet.)

I reviewed the article "Quasi-perfect hashing" by Z. Czech (that eventually appeared in Volume 41, #6 of *The Computer Journal* in June 1998), and a paper by J. Martin and P. Welch entitled "A Design Strategy for Deadlock-Free Concurrent Systems" for the publication *Transputer Communications*.

External Service

Registrar and Treasurer for the 1987 ACM SIGCOMM (Special Interest Group on Computer Communications) Workshop entitled "Frontiers in Computer Communication Technology", held in Stowe, VT from August 11th-13th, 1987.

I was a summer consultant for the Education Testing Service (ETS) during the following years: 1995, 1996, 1998, 1999, 2002, 2008, 2009 and 2010. My title was "reader" for the Advanced Placement (AP) Computer Science exam. This task was primarily to evaluate/grade said exams. I also held the position of "Question Leader" for the 2000 exam. This position was to lead 18 other readers correctly grade the A1 question on over 20,000 exams.

SMC Committee Service

Faculty Welfare Committee 2008-2010

NEASC Subcommittee - Standard 5 (The Faculty): 2008-2010

Honors Committee 2005-2007

Admissions/Financial Aid Committee 2003-2004

Library Committee 2002-03 (Chair)

Faculty Welfare Committee 2001-2003, spring 2005

Ed Tech. Committee 2000-2001

Professional Growth Committee: 1993-1997 (Co-chair in 1994, Chair 1995).

Financial Planning Advisory Committee (FPAC) 2000: 1992-1994

Ad Hoc committee for "Writing Across the Curriculum" (spring 1990).

Athletic Advisory Committee: 1991-1992

Professional Growth Committee: 1989-1990.

Admissions Committee: 1987-1989.

Financial Aid Committee: 1985-1987, 1998-2000.

Ad hoc Computer Software Committee: 1985-1990.

Other SMC service

Chair of the Computer Science department: 1997-2006, except for spring 2000 semester when I was on sabbatical, and during the fall of 2009 (when Prof. Battig was on sabbatical). (I wrote the CS and IS department self-studies in the fall of 2009, for the 2010 NEASC visit.)

Five years soliciting funds from the faculty for United Way

Conferences Attended:

July 1-3, 2013 → 18th Annual Information Technology in Computer Science Education (ITiCSE) conference

June 5-7, 2013 → 4th International Conference on Mathematics in Sport

October 14-15, 2011 → Consortium for Computing Sciences in Colleges (CCSC) Eastern regional conference

June 22-24, 2011 → 3rd International Conference on Mathematics in Sport

April 23-24, 2009 → Consortium for Computing Sciences in Colleges (CCSC) Northeast regional conference

April 3-4, 2009 → Consortium for Computing Sciences in Colleges (CCSC) Central Plains regional conference

April 4-5, 2008 → Consortium for Computing Sciences in Colleges (CCSC) Central Plains regional conference

July 24-28, 2006 → Workshop on Advanced Computer Architecture and Compilation for Embedded Systems (ACACES)

June 27-30, 2005 → Parallel and Distributed Processing Applications and Techniques (PDPTA) conference

October 17-18, 2003 → Consortium for Computing Sciences in Colleges (CCSC) Eastern regional conference

June 30-July 2, 2003 → 8th Annual ITiCSE conference

August 19-20, 2002 → ACM SIGCOMM (Special Interest Group on data Communications) 2002 workshop on Computer Networking: Curriculum Designs and Educational Challenges

May 25-29, 2002 → International Symposium on Computer Architecture (ISCA 2002), plus the Complexity Effective Design, and, Computer Architecture Education workshops

August 19-23, 2001 → CRYPTO 2001

June 25-28, 2001 → PDPTA conference

April 20-21, 2001 → Sixth annual CSSC Northeast regional conference, and the workshop concerning Event Driven programming led by three CS professors from Williams. (I also chaired a session on "Security".)

March 8-12, 2000 → ACM Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium

April 23-24, 1999 → Fourth annual CCSC Northeast regional conference

February 25-28, 1998 → ACM Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium plus the workshop on concurrency by Stephen Hartley

April 25-26, 1997 → 2nd annual CCSC Northeast regional conference

October 14-16, 1996 → Symposium on Foundations of Computer Science, held at the Radisson Hotel, Burlington, VT. (Attended two talks and purchased the conference proceedings.)

May 21-24, 1996 → Federated Computing Research Conference (including ISCA '96, PLDI '96, PODC '96 and STOC '96)

March 2-4 1995 → ACM Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium, plus the Case Study workshop by Michael Clancy

July 18-20, 1994 → Summer Computer Simulation Conference (sponsored by Society for Computer Simulation)

June 27-30, 1993 → National Educational Computing Conference (NECC)

August 14-16, 1991 → Workshop on Algorithms and Data Structures (WADS)

May 28-31, 1990 → ISCA, plus two tutorials: one on cache design with Mark Hill, and the other on RISC architecture design with Yale Patt

September 13-18, 1989 → The Marshall Hall 80th Birthday Conference on Coding Theory, Design Theory and Group Theory held @UVM. (Attended Saturday talks, and received proceedings.)

August 16-19, 1988 → ACM SIGCOMM '88 Symposium - Communications, Architectures and Protocols

August 11-13, 1987 → ACM SIGCOMM '87 Workshop - Frontiers in Computer Communications Technology (Also was the Registrar and Treasurer for this workshop.)

August 4-7, 1986 → ACM SIGCOMM '86 Symposium, and the tutorial on Network Interconnection and Gateways

June 4-6, 1986 → National Educational Computing Conference (NECC)

June 25-27, 1984 → ACM SIGOA Conference on Office Information Systems

May 25-27, 1983 → International Symposium on Computer Performance Modeling, Measurement, and Evaluation