William M. Siever

Washington University
Dept. of Computer Science & Engineering
221 Jolley Hall
1 Brookings Drive
Saint Louis, MO 63130

http://siever.info
bsiever@gmail.com
(573) 364-8890

RESEARCH
INTERESTS

Bluetooth Low Energy / IoT
Computer Architecture, Organization, and Embedded Systems
Undergraduate C.S. Pedagogy

ACADEMIC
EXPERIENCE

Principal Lecturer, September 2016–Present
Washington University in St. Louis

Assistant Professor, August 2012–August 2016
Western Illinois University

Assistant Professor, August 2011–August 2012
Northwest Missouri State University

Instructor, August 2010–August 2011
Northwest Missouri State University

Visiting Assistant Professor, Aug. 2007–May 2010
Michigan Technological University

Instructor, Jan. 2007–May 2007
Missouri University of Science and Technology

Graduate Assistant, Aug. 1997–Dec. 2006
Missouri University of Science and Technology

INDUSTRY
EXPERIENCE

Independent Contractor, Oct. 2006–Oct. 2016
Engineered Audio, LLC
Firmware, Bluetooth Low Energy, and iOS Apps.

Independent Contractor, June 2009–2014
Anhelo
Firmware development for medical equipment.

Software Engineer, May 1995–Dec. 1995, May 1996–Aug. 1996
Axis, Inc.
Data conversion tools and database GUI for Caterpillar, Inc.

EDUCATION

Ph.D., Computer Engineering, May 2007
Missouri University of Science and Technology
Dissertation: *Power Grid Flow Control Studies and High Speed Simulation*
Advisors: Dr. Ann Miller and Dr. Daniel Tauritz

M.S., Computer Science, July 2000
Missouri University of Science and Technology
Thesis: *A Robot Soccer System for Research and Education*
Advisor: Dr. Ralph Wilkerson

B.S., Computer Science, Aug. 1997
Missouri University of Science and Technology

WIU Departmental Undergraduate Teaching Award, 2014

S&T Computer Science Award for Service to the Department, 2007

S&T Computer Science Teaching Assistant of the Year, 2005

S&T Computer Science Department Ambassador, 2002

S&T Intelligent Systems Center Presentation of the Year, 2000 and 2001

Mentor Graphics Worldwide HDL Contest team, 2nd place 2000

ACM intercollegiate programming team, world finalists 1998 and 1999

GAANN Fellowship, Fall 1997–Summer 2001

Chancellor's Fellowship, Fall 2001–Summer 2004

"Using Socially Relevant Computing to Attract and Retain Computer Science Majors", Co-PI (16%) with Merry McDonald et al., Aug. 2011.
NSF. Award: $517,075.

Development of MultiTouch War Gaming Application for the Microsoft Surface, Project Lead (100%), Oct. 2011
U.S. Army (CERDEC). Award: $84,069.

Bill Siever. *Nifty Assignments: An IoT Assignment Sequence.* Accepted for presentation at the 2019 Central Plains conference of the Consortium for Computing Sciences in Colleges.

Bill Siever, Roger Chamberlain, Elliott Forbes, and Ingrid Russell. *Panel: Including Embedded Systems in CS: Why? When? and How?.* Proposed and will moderate panel. Accepted for presentation at the 2019 SIGCSE Technical Symposium on Computer Science Education. Feb. 27th-Mar 2nd, 2019.

Bill Siever, Michael P. Rogers. *Workshop: Micro:bit Magic: Engaging K-12, CS1/2, and non-majors with IoT & Embedded.* Accepted for presentation at the 2019 SIGCSE Technical Symposium on Computer Science Education. Feb. 27th-Mar 2nd, 2019.

Roger D. Chamberlain, Ron K. Cytron, Doug Shook, and Bill Siever. *Computers Interacting with the Physical World: A First-Year Course.* in Proc. of Workshop on Embedded and Cyber-Physical Systems Education (WESE), October 2018.

Bill Siever, Michael P. Rogers. *Invited Workshop: An IoTa of IoT.* Invited to give the pre-conference workshop at 2018 Consortium for Computing Sciences in Colleges (CCSC) Central Plains Conference. April 6th, 2018.

Bill Siever. *Workshop: Introduction to Real-Time Systems.* Two offerings of a 1-day workshop on Real-Time Systems given to Boeing Employees. 2017-2018.

Barry Burd, Lecia Barker, Flix Armando Fermn Prez, Ingrid Russell, Bill Siever, Liviana Tudor, Michael McCarthy, and Ian Pollock. *The internet of things in undergraduate computer and information science education: exploring curricula and pedagogy.* In Proceedings Companion of the 23rd Annual ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE 2018 Companion). ACM, New York, NY, USA, 200-216. 2018.

Barry Burd, Lecia Barker, Monica Divitini, Felix Armando Fermin Perez, Ingrid Russell, Bill Siever, and Liviana Tudor. *Courses, Content, and Tools for Internet of Things in Computer Science Education.* In Proceedings of ITiCSE 2017 Working Group Reports (ITICSE-WGR17). ACM, New York, NY, USA, 15 pages. 2017.

Bill Siever, Michael P. Rogers. *Workshop: Micro:bit Magic: Engaging K-12, CS1/2, and non-majors with IoT & Embedded.* Presented at the 2018 SIGCSE Technical Symposium on Computer Science Education. Feb. 24th, 2018.

Marketa Illetskova, Alex R. Bertels, Joshua M. Tuggle, Adam Harter, Samuel Richter, Daniel R. Tauritz, Samuel Mulder, Denis Bueno, Michelle Leger and William M. Siever. *Improving Performance of CDCL SAT Solvers by Automated Design of Variable Selection Heuristics.* Accepted for publication in the proceedings of the 2017 IEEE Symposium Series on Computational Intelligence (SSCI 2017), Honolulu, Hawaii, U.S.A., November 27 - December 1, 2017.

Adam Harter, Daniel R. Tauritz and William M. Siever. *Asynchronous Parallel Cartesian Genetic Programming.* In Proceedings of the 19th Annual Conference Companion on Genetic and Evolutionary Computation (GECCO '17), pages 1820-1824, Berlin, Germany, July 15-19, 2017.

Bill Siever, Michael P. Rogers. *Workshop: An IoTa of IoT.* 2017 SIGCSE Technical Symposium on Computer Science Education. March 10th, 2017.

Michael P. Rogers, William Siever. *Achieving the EMBaaSable: Easy Cloud Storage, Push Notifications and Social Media Integration in an Introductory Mobile Computing Class.* Consortium for Computing Sciences in Colleges Central Plains Conference. April 1st, 2016.

William Siever, Michael P. Rogers. *Workshop: A Hands-On Introduction to the Internet of Things.* 2016 SIGCSE Technical Symposium on Computer Science Education. March 4th, 2016.

William Siever. *An Introduction to Bluetooth Low Energy and its Security Implications*, Invited Talk; Sandia National Laboratories, Albuquerque, NM; June 24th, 2015.

William Siever. *An Introduction to Bluetooth Low Energy and its Security Implications* Invited Talk; Los Alamos National Laboratories; Los Alamos, NM; June 22nd, 2015.

Michael P. Rogers, William Siever. *Switching to Swift: Instructional Issues and Student Sentiment.* Consortium for Computing Sciences in Colleges Central Plains Conference. April 10th, 2015.

Michael P. Rogers, William Siever. *Workshop: A Swift Introduction to Swift App Development.* 2015 SIGCSE Technical Symposium on Computer Science Education. March 6, 2015.

William Siever. *Automated Assessment in Data Structures: A Summary of Experience.* The 23rd Annual Conference of the Rocky Mountain Conference of the Consortium for Computing Sciences in Colleges. Oct. 10-11, 2014.

William Siever. *Leveraging MOOCs.* The 23rd Annual Conference of the Rocky Mountain Conference of the Consortium for Computing Sciences in Colleges. Oct. 10-11, 2014.

Christopher Brown, Robert Pastel, Bill Siever, and John Earnest. *JUG: a JUnit generation, time complexity analysis and reporting tool to streamline grading.* Proceedings of the 17th ACM annual conference on Innovation and technology in computer science education. *July 2012.*

William Siever, Linda Heeler, Phil Heeler. *Multi-Step Problem Solving Using Scratch: A Preliminary Report.* Consortium for Computing Sciences in Colleges, Central Plains Conference. *April 2011.*

W.M. Siever, D. R. Tauritz, A. Miller, M. L. Crow, B. M. McMillin, S. Atcitty. *Symbolic Reduction for High-Speed Power System Simulation.* Simulation: Transactions of the Society for Modeling and Simulation International, 84(6):297-309, June 2008.

William M. Siever, Ann Miller and Daniel R. Tauritz. *Improving Grid Fault Tolerance by Optimal Control of FACTS Devices.* International Journal of Innovations in Energy Systems and Power, 2(1):44–49, June 2007.

W.M. Siever, A. Miller, D. R. Tauritz. *Blueprint for Iteratively Hardening Power Grids Employing Unified Power Flow Controllers.* Systems of Systems Engineering Conference, Feb. 2007.

T. Service, D.R. Tauritz, W.M. Siever. *Infrastructure Hardening: A Competitive Coevolutionary Methodology Inspired by Neo-Darwinian Arms Races.* 31st Annual International Computer Software and Applications Conference, July 23–27, 2007.

W.M. Siever, D. R. Tauritz, A. Miller. *Improving grid fault tolerance by optimal control of FACTS devices.* Proceedings of First International ICSC Symposium on Artificial Intelligence in Energy Systems and Power, AIESP 2006, Madeira, Portugal, February 7-10, 2006.

W.M. Siever, R. P. Kalyani, M. L. Crow, D. R. Tauritz. *UPFC Control Employing Gradient Descent Search.* Proceedings of the 37th Annual North American Power Symposium. Oct. 23-25, 2005.

	At Washington University: **Ad-hoc LMS Review Committee**, Fall 2017 **Computer Engineering Curriculum Committee**, Fall 2017–Present **Ad Hoc Non-Tenure Track White Paper Committee**, Spring 2017 **At Western Illinois University:** **Faculty Senate**, Fall 2015–August 2016 **Intellectual Property Committee**, Fall 2013–August 2016 **Department Curriculum Committee**, Fall 2012–Spring 2014, Fall 2015–August 2016 **Department Facilities Committee**, Fall 2013–August 2016 **Department Personnel Committee**, Fall 2015–August 2016 **Council on General Education**, Spring 2014 **At Northwest Missouri State University:** **Department Curriculum Committee**, Fall 2010–Spring 2012 **Director of Graduate Directed Projects**, Spring 2012 Management of the capstone component of the graduate program. **Manager of Battle Command Project**, Fall 2011–Spring 2012 Management of a Department of Defense sponsored project for the Microsoft Surface. **Distinguished Lecturer Series Committee**, Fall 2011–Spring 2012 **Graduate Council**, Fall 2011–Spring 2012

At Washington University:

Ad-hoc LMS Review Committee, Fall 2017

Computer Engineering Curriculum Committee, Fall 2017–Present

Ad Hoc Non-Tenure Track White Paper Committee, Spring 2017

At Western Illinois University:

Faculty Senate, Fall 2015–August 2016

Intellectual Property Committee, Fall 2013–August 2016

Department Curriculum Committee, Fall 2012–Spring 2014, Fall 2015–August 2016

Department Facilities Committee, Fall 2013–August 2016

Department Personnel Committee, Fall 2015–August 2016

Council on General Education, Spring 2014

At Northwest Missouri State University:

Department Curriculum Committee, Fall 2010–Spring 2012

Director of Graduate Directed Projects, Spring 2012
Management of the capstone component of the graduate program.

Manager of Battle Command Project, Fall 2011–Spring 2012
Management of a Department of Defense sponsored project for the Microsoft Surface.

Distinguished Lecturer Series Committee, Fall 2011–Spring 2012

Graduate Council, Fall 2011–Spring 2012

RESEARCH
EXPERIENCE

At the Missouri University of Science and Technology:

Research Assistant, Fall 2006
Critical Infrastructure Protection via FACTS Technology.

Research Assistant, Summer 2005–Spring 2006
High-speed simulation for hardware-in-the-loop testbed.

Research Assistant, Spring 2005–Fall 2005
FACTS technology for power system fault tolerance.

Research Assistant, Spring 2003–Summer 2004
Applications of reinforcement learning and wireless sensor networks.

SERVICE

The 2019 ACM Technical Symposium on Computer Science Education, Birds-of-a-Feather Session Co-Moderator with Michael Rogers. Topic: What to Make of Makerspaces?, Accepted.

The 2019 ACM Technical Symposium on Computer Science Education, 4 Educational Research Papers and 4 posters. Fall 2018.

Workshop: Micro:bit Magic , Washington University's Institute for School Partnership. Two offerings of a one day workshop introducing educators for grades 5-12 to the micro:bit.

The 2018 ACM Technical Symposium on Computer Science Education, Birds-of-a-Feather Session Co-Moderator with Michael Rogers. Topic: What to do about Comp Org?, Feb. 2018.

The 2018 ACM Technical Symposium on Computer Science Education, Program Committee Member. 2 Panels, 2 Special Sessions, 4 Experience Reports/Tools Papers, 3 Lightning Talks. Fall 2017.

The 2017 ACM Technical Symposium on Computer Science Education, Birds-of-a-Feather Session Co-Moderator with Michael Rogers. Topic: An IoT BOF, Spring 2017.

The 2017 ACM Technical Symposium on Computer Science Education, Program Committee Member. Reviewed 3 papers, 2 Panels, 5 Birds-of-a-Feather, 1 Student Research Poster. Spring 2017.

Future Farmers of America: Tech on the Farm, 2016-2017. Helped develop computing activities for high school students to use technology to assist with agriculture.

1, 2, & 3D Robotics, Printing and Design Camp, Assistant, 2016. Assisted activities at a summer camp for Grades 7-12.

NSF Review Panel Participant, 2016.

ACM Computing Surveys, Paper Review, Spring 2016.

Computers, Paper Review, Spring 2016.

The 46th ACM Technical Symposium on Computer Science Education, Birds-of-a-Feather Session Moderator. Topic: The Great Objective-C Swift Migration of 2015, Spring 2015.

The 23rd Annual Rocky Mountain Conference of the Consortium for Computing Sciences in Colleges, Paper Reviews, Summer 2015.

For TechShop, Inc.:

STEAM Programs, Summer 2017
Helped refine and deliver two 30-hour Basic Electronics summer camps for kids from 7-16 years old. Assisted with Design and Build workshops.

At Washington University:

Independent Study — Blockchain, Fall 2018

Masters Project — Android Course Development, Fall 2018

Masters Project — Micro:bit IoT, Spring 2018

Independent Study — Android App Development, Spring 2018

Independent Study — Augmented Reality, Fall 2017

Independent Study — Android Apps for TextBook Exchange, Fall 2016
Supervised three students who wanted to create a mobile app for college students to exchange text books.

At Western Illinois University:

Graduate Independent Study — Mobile Apps, T. Boyapalle, Spring 2016
Supervising independent study of Mult-platform Mobile App Development.

First Lego League, Co-Coach of the McDonough County, 4-H Team, 2015–2016.

Graduate Independent Study — A.I. for Robotics, J. Leighton, Fall 2015
Supervising independent study of A.I. in mobile robotics.

Graduate Project Committee, N. Althobaiti, Fall 2015

Independent Study Supervisor, K. Randolph, Spring 2015
Oversaw study of iOS App development.

Illinois Science Olympiad Mentor, Fall 2014
Aided a middle school robotics competition team.

Food For Thought: Weekly STEM Program, Fall 2014–Spring 2015
Weekly K-12 after school program introducing computing concepts.

Graduate Project Committee, A. Snowden, Fall 2014
Server-side development.

Graduate Project Supervisor, A. Snowden, Spring 2014
Supervising development of monitoring/control system for aquaponics.

Graduate Independent Study — Android, Wirsing and Soto, Spring 2014
Supervising independent study of mobile application development for Android devices.

Graduate Project Supervisor, J. Hawkins, Fall 2013
Supervising graduate project developing control software for a refinery.

CSA, Invited Speaker, Spring 2012
Introduction to the Arduino.

Graduate Project Committee, E. Neblock, Spring 2013

Graduate Project Committee, M. McGarrigle, Fall 2012

At Northwest Missouri State University:

ACM Programming Team Co-Coach, Fall 2010–August 2012
Coaching a team for participation in ACM's Intercollegiate Programming Competition.

Graduate Directed Project Committee Member, Fall 2010 – August 2012
Served as a committee member on five graduate directed projects.

ACM Chapter, Invited Speaker, Spring 2011
Introduction to the Arduino.

Horace Mann: Middle School Scratch and Robotics, Fall 2010–Spring 2012
Assisting with computer science after school activities for fifth and sixth grade students.

Undergraduate Research: C. Bredlow, Robot Path Traversal, Spring 2011
Supervising undergraduate investigation of path traversal algorithms.

At Michigan Technological University:

Independent Study: B. DePew, GP-GPU, Fall 2009
Supervising graduate study of GPUs, manycore architectures, and CUDA.

University Honors Project: T. Waltz, Search Engine, Fall 2008
Development of a simple web-based search engine.

Independent Study: S. Pendyala, Reinforcement Learning, Spring 2008
Supervising graduate study of reinforcement learning.

Independent Study: C. Swisher, Satellite Simulation, Spring 2008
Supervising undergraduate development of a simulation of a satellite orbit.

Independent Study: J. Fahey, Alice for C.S. Education, Spring 2008
Supervising undergraduate development of an a course based on Alice.

At the Missouri University of Science and Technology:

Undergraduate Research — Robot Soccer, Summer 2006
Advised undergraduate implementation of a simple robot soccer system.

S&T Chapter of ACM-W, Invited Speaker, Spring 2006
Hardware workshop and basic introduction to computer organization.

High School Artificial Intelligence Outreach, Spring 2005
Advised high school students developing chess playing programs.

Introduction to Engineering Camp — Computer Science, Summers 1998 – 2005
Designed and taught an introduction to computer science for a summer camp.

At Washington University:

Computer Science I, Co-Instructor, Spring 2018 and Fall 2018
Freshmen/sophomore large enrollment introduction to computer science.

Internet of Things, Instructor, Fall 2016–Present
Sophomore/junior level intro. to Internet of Things concepts.

Computer Science II, Co-Instructor, Fall 2016 – Fall 2017
Freshmen/sophomore computer science and computer engineering topics.

At Western Illinois University:

Data Structures II, Instructor, Fall 2012–Fall 2015
Sophomore/junior level concepts in data structures, memory management, and C++.

Computer Organization II, Instructor, Fall 2012 – Fall 2015
Sophomore/junior level study of Intel assembly language and architecture.

Intensive Programming Review, Instructor, Fall 2015
Graduate-level review of programming.

Intro. to Computer Science, Instructor, Spring 2015
Introduction to Computer Science for non-majors.

Topics in Architecture: ARM, FPGAs, and CUDA; Instructor, Fall 2012
Graduate level study of contemporary architecture topics.

Advanced Computer Architecture, Instructor, Spring 2013–Spring 2014
Graduate level study of advanced topics in architecture.

Topics in Architecture: CUDA, Instructor, Fall 2012
Graduate level study of architecture and algorithms for manycore architectures.

At Northwest Missouri State University:

Software Engineering II, Instructor, Spring 2012
Junior/senior level application of concepts in software engineering.

Operating Systems, Instructor, Fall 2011
Junior/senior/graduate level introduction to operating systems, Unix, and threading.

Software Engineering I, Instructor, Fall 2011
Junior/senior level introduction to concepts of software engineering.

Introduction to Scientific Computing, Instructor, Summer 2011
Introduction to programming and computational modeling techniques.

Computer Organization, Instructor, Spring 2011, Spring 2012
Sophomore/junior level study of fundamentals of computer organization.

Computer Science I, Instructor, Fall 2010, Summer 2012
Freshmen introduction to programming (Java in 2010 and Python 2012).

Data Structures, Instructor, Fall 2010–Spring 2011
Sophomore study of algorithms, data structures, and complexity.

Graduate Directed Projects, Mentor, Fall 2010–August 2012
Graduate level multi-semester projects. Mentored/managed 14 projects.

At Michigan Technological University:

Computer Science I, Instructor, Fall 2008
Freshmen accelerated introduction to programming and data structures.

Data Structures, Instructor, Fall 2008–Spring 2010
Sophomore study of algorithms, data structures, and complexity.

Programming Languages, Instructor, Fall 2007–Spring 2008, Spring 2009
Senior/junior introduction to programming language concepts.

Discrete Structures, Instructor, Spring 2008, Spring 2010
Freshman/sophomore introduction to discrete mathematics.

Computer Organization, Instructor, Fall 2007
Junior/sophomore introduction to computer organization.

At the Missouri University of Science and Technology:

Real-Time Operating Systems (Distance Education), Instructor, Spring 2007
Graduate/senior introduction to real-time operating systems.

Programming Languages and Translators, Interim Instructor, Fall 2006
Junior/sophomore introduction to programming languages and translators.

Introduction to Artificial Intelligence, Graduate Assistant, Fall 2004–Spring 2005
Graduate/senior introduction to fundamental concepts of artificial intelligence.

Introduction to Computer Organization, Instructor, Spring 2000–Fall 2002
Junior/sophomore introduction to computer organization.

Advanced Computer Organization, Instructor, Fall 1999
Senior/junior advanced concepts in computer organization.

Matlab Short-Tutorial, Instructor, Fall 1998
Junior/sophomore introduction to Matlab for numerical methods.

Scientific Programming Laboratory, Instructor, Fall 1997–Fall 1998
Sophomore/freshman introduction to programming.

Numerical Methods, Graduate Assistant, Fall 1997
Junior/sophomore introduction to basic concepts in numerical methods.

REFERENCES

Dr. Daniel Tauritz (Ph.D. Co-Advisor)
Associate Professor, Department of Computer Science
Missouri University of Science and Technology
325 Computer Science Bldg.
500 W. 15th St. Rolla, MO 65409-0350
(573) 341-7218
tauritzd@mst.edu

Dr. Linda Ott
Associate Dean, College of Sciences and Arts
Professor, Department of Computer Science
Michigan Technological University
1400 Townsend Drive
Houghton, MI 49931
(906) 487-2315
linda@mtu.edu

Dr. Phillip Heeler
Former Chair (retired), Department of Mathematics, Computer Science and Info. Systems
Northwest Missouri State University
2260 Colden Hall
Maryville, MO 64468
(816) 646-3033
pheeler@gmail.com

Dr. David Poplawski
Associate Professor (retired), Department of Computer Science
Michigan Technological University
7733 Copper Corner Drive SE
Caledonia, MI 49316
(616) 275-1099
pop@mtu.edu

Dr. Fikret Ercal
Professor (retired), Department of Computer Science
Missouri University of Science and Technology
325 Computer Science Bldg.
500 W. 15th St.
Rolla, MO 65409-0350
(573) 341-4857
ercal@mst.edu

Marshall Strouse
Owner, Engineered Audio, LLC
426 Strecker Rd.
Wildwood MO 63011
(314) 323-1104
research@engineeredaudio.com

Alonzo Aylsworth
President/CTO Anhelo, LLC
79 Hubble Drive
Suite 101
Dardenne Prairie, MO 63368
(314) 920-2777
lon.aylsworth@gmail.com