

# 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  
Embedded Systems  
Computer Organization and Architecture  
Undergraduate C.S. Pedagogy Programming Fundamentals

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

AWARDS AND  
FELLOWSHIPS

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, 2<sup>nd</sup> place 2000  
ACM intercollegiate programming team, world finalists 1998 and 1999  
GAANN Fellowship, Fall 1997 – Summer 2001  
Chancellor’s Fellowship, Fall 2001 – Summer 2004

FUNDING

“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.*

PUBLICATIONS  
AND TALKS

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.

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.

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

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.

Barry Burd, Lecia Barker, Monica Divitini, Felix Armando Fermin Perez, Ingrid Russell, Bill Siever, Liviana Tudor *The Internet of Things in CS Education: Updating Curricula and Exploring Pedagogy*. Working Group Proposal for the 23rd Annual Conference on Innovation and Technology in Computer Science Education. *In review*.

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.

Barry Burd, Lecia Barker, Monica Divitini, Felix Armando Fermin Perez, Ingrid Russell, Bill Siever, Liviana Tudor *Courses, Content, and Tools for Internet of Things in Computer Science Education*. In final review for acceptance. Internet of Things Working Group Final Report from 22nd Annual Conference on Innovation and Technology in Computer Science Education. July 3-5, 2017.

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.

PUBLICATIONS  
AND TALKS  
(CONTINUED)

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.

COMMITTEES  
AND  
MANAGEMENT

*At Washington University:*

**Ad-hoc LMS Review Committee**, Fall 2017 – Present

**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**, 4 Educational Research Papers.

**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**, Program Committee Member. 2 Panels, 2 Special Sessions, 4 Experience Reports/Tools Papers, 3 Lightning Talks. Fall 2018.

**The 2017 ACM Technical Symposium on Computer Science Education**, Birds-of-a-Feather Session Moderator. 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.

SERVICE  
(CONTINUED)

**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.

ADVISING,  
MENTORING,  
AND  
OUTREACH

*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 Multi-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

ADVISING,  
MENTORING,  
AND  
OUTREACH  
(CONTINUED)

*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.

TEACHING  
EXPERIENCE

*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.

TEACHING  
EXPERIENCE  
(CONTINUED)

*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.

TEACHING  
EXPERIENCE  
(CONTINUED)

*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, 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 Anhelu, LLC  
79 Hubble Drive  
Suite 101  
Dardenne Prairie, MO 63368  
(314) 920-2777  
lon.aylsworth@gmail.com