

# William M. Siever

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Dept. of Computer Science & Engineering  
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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

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*. Accepted for presentation 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 Illetszkova, 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.

PUBLICATIONS  
AND TALKS  
(CONTINUED)

- 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

COMMITTEES AND MANAGEMENT (CONTINUED) **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 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.

**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 — 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.

ADVISING,  
MENTORING,  
AND  
OUTREACH  
(CONTINUED)

*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.

ADVISING,  
MENTORING,  
AND  
OUTREACH  
(CONTINUED)

*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:*

**Internet of Things, Instructor**, Fall 2016 – Present

Sophomore/junior level intro. to Internet of Things concepts.

**Computer Science II, Co-Instructor**, Fall 2016 – Present

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.

TEACHING  
EXPERIENCE  
(CONTINUED)

*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  
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**Dr. Fikret Ercal**

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Missouri University of Science and Technology  
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**Marshall Strouse**

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**Alonzo Aylsworth**

President/CTO Anhelu, LLC  
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Dardenne Prairie, MO 63368  
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