

AMBER WAGNER

<http://dramberwagner.com>

SUMMARY OF QUALIFICATIONS

- Extensive experience teaching Computer Science concepts and leading Computer Science workshops from K-12 to undergraduate students in addition to K-12 teachers. Extremely passionate Computer Science Education advocate.
- Growing an undergraduate research program at University of Alabama at Birmingham encompassing Computer Science Education, Accessible Computing, and Human Computer Interaction.
- Corporate experience managing suite of 150 projects with oversight of 75 people impacting 30,000 end-users utilizing statistics to drive strategic initiatives.

EDUCATION

2010 - 2015 **University of Alabama** **Tuscaloosa, AL**

- Ph.D., Computer Science focus on Human Computer Interaction
- Dissertation: *Programming by Voice: A Hands-Free Approach for Motorically Challenged Children*
- Upsilon Pi Epsilon

2007 - 2008 **Kennesaw State University** **Kennesaw, GA**

- M.S., Information Systems

2000 - 2003 **Kennesaw State University** **Kennesaw, GA**

- B.S., Computer Science with Spanish Minor
- Graduated magna cum laude

PROFESSIONAL EXPERIENCE

Aug 2023 – Present **University of Alabama at Birmingham** **Birmingham, AL**

Assistant Professor of Computer Science, Undergraduate Program Director

- Teaching a 3-3 load with a heavy emphasis on undergraduate education.
- Transitioning research program centered on Computer Science Education and Accessible Computing.
- Proposed BS Data Science degree in collaboration with the Department of Mathematics.
- Departmental Service: ABET Accreditation, Assessment, UAB Scholarship Committee, Diversity Committee, High School Programming Contest, Women in Tech.
- 2024-2025 Global Awareness Ambassador: strategizing ways to improve the education of and experience for International students within Computer Science.
- 2025-2026 Institute for Human Rights Faculty Fellow: Human Rights and Technology

Aug 2022 – May 2023 **Birmingham-Southern College** **Birmingham, AL**

Associate Professor (early tenure) and Director of Applied Computer Science

- Responsible for all program duties: annual assessment, adjunct hiring/oversight, equipment procurement, program maintenance, and recruitment and retention efforts
- Taught a 3-1-3 load: taught all courses within the curriculum as needed.
- Average Overall Teaching Effectiveness since Fall 2017: 1.25 (scale 1 to 5 with 1 being the best).
- Developed online Master's of Science in Data Science program to begin Fall 2023.
- Conducted research with undergraduate students in the areas of accessible computing and computer science education.

Mar 2017 – May 2022 **Birmingham-Southern College** **Birmingham, AL**

Assistant Professor and Director of Applied Computer Science

- Designed and maintained the Applied Computer Science Bachelor of Science major/minor and Data Science minor programs while teaching a 3-1-3 load.
- Responsible for all program duties: annual assessment, adjunct hiring/oversight, equipment procurement, program maintenance, and recruitment and retention efforts (enrollment in Applied CS started at 0 (Fall 2017) to approximately 65 majors and minors (Fall 2022) out of just under 1,000 students on campus.

- Built undergraduate research program focusing on accessible computing and computer science education.
- Selected to participate in NSF Designing Empirical Education Research Studies (DEERS) Workshop (Summer 2017).
- Received \$5,000 award from Teach Access to embed accessibility content into existing courses (2018-2019).
- Selected to participate in NCWIT Learning Circle with \$10,000 in seed funds to increase the recruitment and retention of underrepresented groups in Computer Science.
- Served on IT Committee (2018-2020), Curriculum and Standards Committee (2020-2021), Reopening Academic Affairs Task Force (2020-2021), First Year Experience Committee (2021-2022), and Faculty Development Committee (2022-2023).

Aug 2015 – Dec 2016 Kennesaw State University

Kennesaw, GA

Limited Term Assistant Professor

- Taught a 4-4 load while working on research to extend dissertation work
- Founded Women in CS group at KSU, Object-Oriented Owls.
- Received \$9,950 gift from Google igniteCS for Object-Oriented Owls to work with Girls, Inc. from summer 2016 through spring 2017. Program teaches CS concepts to girls in grades 1-12.
- Selected to participate in the Center for Education Teaching and Leadership's Quick Starters Faculty Learning Community. This learning community focused on assisting new faculty with developing both teaching and research programs.
- ACMSE 2017 Conference Co-Chair and Program Chair: led the planning and organization of the 2017 conference.

Aug 2011 – Aug 2015 University of Alabama

Tuscaloosa, AL

Research Assistant

- Researched the semi-automation of a process to map a graphical user interface to a vocal user interface for any application. Specific application is in the area of "Programming by Voice" with adaptation to initial programming environments (e.g., Scratch) that allow children with physical disabilities an opportunity to learn computer programming through a vocal interface. Work was supported by NSF grant IIS-1117940 with previous support from a Google Research Award.
- Responsible for the annual grant renewal documentation in addition to the annual IRB renewal process.
- Planned and led two Computer Science Fun Days for children with disabilities. The activities aimed to share the joy of computing with 10-15 year old students, funded by Computer Science Collaboration Project Mini-Grant (\$1,000).
- Founded and served as President of the League of Women Coders (a Women in CS group), Fall 2014 – Spring 2015.

Teaching Assistant

- Assisted in teaching a pilot course for the AP College Board (CSP) regarding fundamental Computer Science topics utilizing Berkeley's Snap! and Android App Inventor. Duties: grading, creating and delivering lectures, and tutoring students.

Aug 2007 – Jan 2011 Kennesaw State University

Kennesaw, GA

Associate Director, Technology Planning and Strategy

- Led team devoted to initializing strategic initiatives while overseeing management of all IT projects.
- Utilized statistical software to strengthen reporting infrastructure (SAS, SPSS, Excel).
- Utilized strong knowledge of systems infrastructure and administration to cross-develop optimal solutions for the University on Active Directory, Exchange, Windows, Unix, and Mac environments.
- Developed ad-hoc applications to streamline, automate, and standardize system interactions.
- Designed and developed project management foundation for IT, utilizing and distributing innovative reporting, tracking, and project management fundamentals. Responsible for ensuring all projects were on time, on budget and delivered desired results.

JOURNAL PAPERS

- **Amber Wagner** and Jeff Gray, “An empirical evaluation of a vocal user interface for programming by voice,” *International Journal of Information Technologies and Systems Approach (Special Issue on Human-Computer Interaction, Carina Gonzalez, ed.)*, vol. 8, no. 2, May 2015, pp. 47-63.
- Ferosh Jacob, **Amber Wagner**, Prateek Bahri, Susan Vrbsky, and Jeff Gray, “Simplifying the development and deployment of mapreduce algorithms,” *International Journal of Next-Generation Computing (Special Issue on Cloud Computing Yugyung Lee and Praveen Rao, eds.)*, vol. 2, no. 2, 2011, pp. 123-142.

PEER REVIEWED PAPERS AND EXTENDED ABSTRACTS

- **Amber Wagner**, Josh Fryer. Learning to Drive: Evaluation of a Prototype to Prepare Children for a Power Chair. *ACM Southeast Conference (ACMSE)*, Cape Girardeau, MO, April 2025.
- **Amber Wagner**. Strategies for Recruitment and Retention in Computer Science. *The Journal of Computing Sciences in Colleges*, 40(5), November 2024.
- Chloe Dunmire, **Amber Wagner**. Modeling Particle Randomness: A Pseudorandom Number Generator. *ACM Southeast Conference (ACMSE)*. Virtual Event. April 2023.
- **Amber Wagner**. Applied Computer Science at Birmingham-Southern College. Curricular Innovations for Computing Education in the Liberal Arts Panel, SIGCSE Pre-Symposium Event, March 2021.
- **Amber Wagner**. Early childhood resource review: Kindercoding Unplugged: Screen-Free Activities for Beginners. *National Science Teaching Association, Science and Children*, v. 58, issue 5, May/June 2021. <https://www.nsta.org/science-and-children/science-and-children-mayjune-2021/kindercoding-unplugged>.
- Zirui Wang, **Amber Wagner**. Evaluating a tactile approach to programming Scratch. *ACM Southeast Conference (ACMSE)*. Kennesaw, GA, April 2019.
- **Amber Wagner**. Myna: Empowering motorically challenged students to program by voice. *ACM SIGCSE Conference on Computer Science Education, Student Research Competition*. Atlanta, GA, March 2014.
2nd Place Winner in Graduate Category
- **Amber Wagner**. Automation of VUI to GUI mapping. *ACM SIGCHI Conference on Human Factors in Computing Systems, Doctoral Consortium*. Paris, France, April 2013.
- **Amber Wagner**, Jeff Gray, Jonathan Corley, David Wolber. Using App Inventor in a K-12 summer camp. *ACM SIGCSE Conference on Computer Science Education*. Denver, CO, March 2013.
- **Amber Wagner**, Ramaraju Rudraraju, Srinivasa Datla, Avishek Banerjee, Mandar Sudame, and Jeff Gray, Programming by voice: A hands-free approach for motorically challenged children, *ACM SIGCHI Conference on Human Factors in Computing Systems*, Austin, TX, May 2012, pp. 2087-2092.
- **Amber Krug**, Pamila Dembla, Improving data quality via increasing the usability of the interface, *Global Information Technology Management Association (GITMA) World Conference*, Atlanta, GA, June 2008.

PEER REVIEWED POSTERS AND SUBMITTED ABSTRACTS

- **Amber Wagner**, Zirui Wang. Talking and listening to blocks. *Symposium on Disability Rights, UAB Institute for Human Rights*. Birmingham, AL, February 2019.
- Daniela Marghitu, **Amber Wagner**. Building Bridges: How the Southeast is Increasing the Representation of Students with Disabilities in STEM. *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education*. Seattle, WA, March 2017.
- **Amber Wagner**, Jeff Gray, Daniela Marghitu, Andreas Stefik. Raising the awareness of accessibility needs in block languages. *ACM SIGCSE Conference on Computer Science Education*. Memphis, TN, March 2016.
- **Amber Wagner**, Jeff Gray. Accessible design. *Southeast Women In Computing Conference*. Atlanta, GA, November 2015.

- **Amber Wagner**, Jake Trower, Jeff Gray. Improving the accessibility of block-based languages. *Blocks and Beyond*. Atlanta, GA, October 2015.
- **Amber Wagner**, Jeff Gray. Observations of first learners with different capabilities. *ACM SIGCSE Conference on Computer Science Education*. Atlanta, GA, March 2014.
- Jeff Gray, Mary Boehm, Carol Crawford, Kathleen Haynie, Sheryl Packman, Deepa Muralidhar, Jeff Baker, Roy Black, Sandy Falgout, Leella Holt, Albert Lily, Gina McCarley, James Morse, Jennie Rountree, Jill Westerlund, Carol Yarbrough, Mokter Hossain, Jonathan Corley, **Amber Wagner**, Cassidy Lamm. Model for statewide deployment of CS Principles courses. *ACM SIGCSE Conference on Computer Science Education*. Atlanta, GA, March 2014.
- **Amber Wagner**, Jeff Gray. An empirical evaluation of Myna – A vocal user interface. *Southeast Women In Computing Conference*. Guntersville, AL, November 2013.
- **Amber Wagner**. Myna: Empowering motorically challenged students to program by voice. *Southeast Women In Computing Conference*. Guntersville, AL, November 2013.
- **Amber Wagner**. Creating a vocal user interface for initial programming environments. *2013 UA Systems Scholars Institute*. Huntsville, AL, May 2013.
- **Amber Wagner**, Jeff Gray Creating a VUI for initial programming environments. *ACM Mid-Southeast*, Gatlinburg, TN, November 2012. **1st Place Winner - Doctoral Research Award**

INVITED TALKS

- Using AI in the Classroom – Experiences of Three Teaching Faculty (Brandon Blankenship, Amber Wagner, Jonan Donaldson), UAB Center for Teaching and Learning – March 2024
- Association for Teaching and Curriculum Panel (Jessica Pincham King, Alan Litsey, Stephanie Hansard, Amber Wagner): “Coming Down from the Hill and Engaging Beyond the Gates” – September 2019
- University of Mississippi: “Increasing the Accessibility of Block Programming Languages” – February 2018
- University of Nevada, Las Vegas: “Myna: A Hands-Free Approach for Block Programming” – May 2017

STUDENT PEER REVIEWED POSTERS AND SUBMITTED ABSTRACTS

- Josh Fryer. Wheelchair Driving the Mountains. *ACM MidSoutheast 2022*, Gatlinburg, TN, November 2022. **Awarded 3rd Place, Undergraduate**
- Serena Ivery. Clearing the Cobwebs: The Benefits of Identifying Online Human Trafficking using a Web Crawler. *ACM MidSoutheast 2022*, Gatlinburg, TN, November 2022.
- Gia Subedi. Mirroring an Arm: Creating a Locally Programmed Prosthetic Limb. *ACM MidSoutheast 2022*, Gatlinburg, TN, November 2022.
- Nicole Villavicencio-Garduño. Hopper’s Fables, Chapter Two. *ACM MidSoutheast 2022*, Gatlinburg, TN, November 2022.
- Zirui Wang. Using Touch and Sound to Program Scratch. *Proceedings of the 2019 ACM SIGCSE Technical Symposium on Computer Science Education, Student Research Competition*. Minneapolis, MN, February 2019. **Awarded 2nd Place, Undergraduate**
- Zirui Wang, Amber Wagner. CodeBox64, A Tactile Input Approach to Scratch for Students with Visual Impairments. *ACM MidSoutheast 2018*, Gatlinburg, TN, November 2018.
- Deja Jackson, Cindi Simmons, Kate Zelaya, Erica Pantoja, **Amber Wagner**. Hopper’s Fables: A Mathematical Storytelling Adventure. *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education*. Seattle, WA, March 2017.
- Max Paulk, **Amber Wagner**. CodeBox64: A Tactile Input Modality for Block Programming. *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education*. Seattle, WA, March 2017.
- Zane Johnston. One Size Doesn’t Fit All. *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education, Student Research Competition*. Seattle, WA, March 2017.

HONORS AND AWARDS

- Awarded the Bob Whetstone Faculty Development Award for Birmingham-Southern College - 2020
- Awarded Birmingham-Southern College President's Service Award - 2020
- Awarded KSU Career Planning and Development Faculty Award - 2017
- Selected to participate in Designing Empirical Education Research Studies (DEERS) Workshop – 2017-2018
- Travel award for attending conference on education (SIGCSE) from CETL, KSU – 2015-2016 (\$1,000.00)
- Selected to participate in CETL Quick Starters Faculty Learning Community, KSU – 2015-2016 (\$1,000.00)
- Microsoft Student Research Competition, 2nd Place Winner, Graduate Category – March 2014
- Travel award for SIGCSE conference (2014) due to Student Research Competition participation (\$500.00)
- Research and Creative Activity Fellowship, University of Alabama – 2013-2014
- University of Alabama 3 Minute Thesis finalist – Fall 2013
- Travel award for Doctoral Consortium participant at SIGCHI 2013 (\$1,930.00)
- Committee on the Status of Women in Computing Research (CRA-W) Travel Award (\$1,529.91)
- ACM Mid-Southeast, 1st Place Doctoral Research Award winner – November 2012
- Outstanding Service by a Graduate Student, College of Engineering, University of Alabama – Jan. 2012

SERVICE

- Tapia Reviewer 2024, 2025
- Conference for Research on Equitable and Sustained Participation in Engineering, Computing, and Technology (RESPECT) Reviewer: 2024, 2025
- ACMSE Reviewer: 2025
- ACM Innovation and Technology in Computer Science Education (ITCSE) Reviewer: 2024
- Symposium on Educational Advances in Artificial Intelligence (EAAI) Reviewer: 2024
- ACM Special Interest Group for Computer Human Interaction (SIGCHI) Reviewer: 2023, 2024
- ACM Special Interest Group for Computer Science Education (SIGCSE) Reviewer: 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2023, 2024
- NCWIT Academic Alliance Co-Chair 2019-2022, Engagement Committee Co-Chair 2018-2019
- Grace Hopper Celebration Student Scholarship Reviewer – April 2022
- Alabama School of Fine Arts Senior Symposium Judge – April 2018, April 2022
- Reviewer: National Science Foundation Panel 2022
- Grace Hopper Celebration Mentoring Circles Committee Member 2019
- ACM SE 2019 Program Committee Member
- Grace Hopper Celebration Faculty Scholarship Reviewer – 2018
- NCWIT Seed Fund Reviewer – 2018
- Invited panelist for Computing Research Association for Women's (CRA-W) Collaborative Research Experiences for Undergraduates (CREU) program - 2017
- Reviewer: Blocks & Beyond Workshop 2017
- ACM Southeast 2017 Conference Co-Chair – April 2017
- Middle and High School Hour of Code Instructor – December 2014
- STEM Entrepreneurship Academy speaker – Summer 2014
- Graduate Student Association Computer Science Representative – Spring 2014
- Founded the League of Women Coders (LWC) organization at the University of Alabama – Spring 2014
- Upsilon Pi Epsilon officer – Spring 2014
- University of Alabama Robotics Competition – April 2011, April 2014
- SIGCSE 2014 Student Volunteer – March 2014

- High School Robotics Workshop, Northridge High School, Tuscaloosa – Spring 2013, Spring 2014
- 4H Computer Science Talk – July 2013
- United Cerebral Palsy Summer Camp, Birmingham, AL – Summer 2013
- University of Alabama High School CS Summer Camps – June 2011, July 2012, July 2013
- Google CS4HS Teacher Workshop – July 2011, June 2012, June 2013

MEMBERSHIPS

- ACM Computer Science Teachers Association
- ACM; ACM W
- NCWIT