

Kendra Walther

Curriculum Vitae

854 Downey Way
Rapp Research Building RRB 204
University of Southern California
Los Angeles, CA 90089

240-460-0833
kwalther@usc.edu

Education

- Doctor of Education, Educational Leadership** **May 2024**
University of Southern California, Los Angeles, CA
Education Psychology Concentration.
Dissertation: Digital Fluency and Critically Conscious Computing: A Curriculum for Undergraduates
- Master of Science, Computer Science** **2004**
University of Maryland, College Park, MD
- Bachelor of Science, Computer Science** **2000**
Harvey Mudd College, Claremont, CA
Graduated with distinction

Faculty Positions

- Associate Professor of Technology Practice** **2022 - Present**
Technology and Applied Computing Program, Viterbi School of Engineering
University of Southern California, Los Angeles, CA
- Senior Lecturer of Information Technology** **2018 - 2022**
Information Technology Program, Viterbi School of Engineering
University of Southern California, Los Angeles, CA
- Lecturer of Information Technology** **2015 - 2018**
Information Technology Program, Viterbi School of Engineering
University of Southern California, Los Angeles, CA
- Part-Time Lecturer** **2014 - 2015**
Information Technology Program, Viterbi School of Engineering
University of Southern California, Los Angeles, CA
- Adjunct Assistant Professor** **2011 - 2012**
Software Engineering Department
Milwaukee School of Engineering, Milwaukee, WI

Computer Science Teacher 2004 - 2007
St. Albans School
Washington, DC

Instructor 2001
Computer Science Department
California State University, Los Angeles, CA

Administrative & Appointed Positions

Associate Director for Faculty and Academic Affairs 2023 - Present
Technology and Applied Computing Program, Viterbi School of Engineering
University of Southern California, Los Angeles, CA

Associate Director for Academic Affairs 2021 – 2023
Information Technology Program, Viterbi School of Engineering
University of Southern California, Los Angeles, CA

Co-Director for the Afghan Pathways Program 2023 - Present
Virtual coursework and professional development for women in Afghanistan

Center for Excellence in Teaching (CET) Faculty Fellow 2019 - 2022
Selected by Viterbi dean’s office to participate in the three-year CET Faculty Fellows Leadership Institute, a prestigious honor for advancing teaching excellence across USC

Awards and Honors

Center for Excellence in Teaching “What a Great Teaching Idea” Feature 2024
Information Technology Program Director’s Award for Faculty 2023
Information Technology Program Director’s Award for Faculty 2021
Wiley STEM Hall of Femme 2021
Dean’s Award for Innovation in Teaching and Education 2020
Center for Excellence in Teaching Faculty Fellowship Institute 2020
National Science Foundation Graduate Research Fellowship Recipient 2002
Los Angeles Philanthropic Scholar 2000
Computing Research Association Scholar 1999

Invited Keynotes and Media

Viterbi Magazine article, *Finding Hope Through the Browser Window* Fall 2024
For a group of brave female students, USC Viterbi’s Afghan Pathways Program offers an educational lifeline they would otherwise be denied.

<https://magazine.viterbi.usc.edu/fall-2024/student-life/finding-hope-through-the-browser-window/>

Incorporating Process Oriented Guided Inquiry Learning (POGIL) into your teaching **January 2024**

<https://cet.usc.edu/incorporating-process-oriented-guided-inquiry-learning-pogil-into-your-teaching/>

Workshop on Education, Training and Awareness in Cybersecurity (ETACS) Keynote Speaker. *Cybersecurity Education for All*. **August 2023**
ETACS Workshop at 18th International Conference on Availability, Reliability and Security, Benevento, Italy

An Interview with Kendra Walther, #Tapia2021 Accessibility Deputy Chair **May 2021**

<https://cmd-it.org/news-recent/an-interview-with-kendra-walther-tapia2021-accessibility-deputy-chair/>

Viterbi Magazine article, *The Classroom Innovators* **Spring 2020**

These full-time teaching faculty are using everything from improv theatre to classroom polling to connect with USC Viterbi students.

<https://magazine.viterbi.usc.edu/spring-2020/engineering-plus/the-classroom-innovators/>

Panel Chair / Organizer Positions

Associate Program Chair, ACM Special Interest Group on Computer Science Education **2024 - Present**

Associate Program Chair (APC) for the SIGCSE TS 2025 Paper - Experience Reports and Tools Track.

Ungrading Conference 2024, Dornsife **January 2024**

Chair for conference panel on Reflection

Co-Lead Teach Access Virtual Study Away Program **2020 - 2021**

Co-lead of the first ever Teach Access Virtual Study Away program (80+ students from 9 universities in conjunction with accessibility leaders from major tech companies). Lead of the *Accessathon*, the capstone student project competition.

Deputy Accessibility Chair for 2021 Tapia conference **2020 - 2021**

Provided support to the ACM Richard Tapia Celebration of Diversity in Computing Conference infrastructure team to ensure that conference platform and presentations would be accessible to all.

Curricular Development

Course Substantially Revised: ITP 265: Object Oriented Programming 2024-present
Updating curriculum to adapt to emerging trends in computer programming and education due to wide-spread LLM and AI adoption.

Course Development: Dissertation: Digital Fluency and Critically Conscious Computing: A Curriculum for Undergraduates 2023 - 2024
Developed formal research-backed curriculum for a semester course focusing on a new approach to digital fluency for broad education of undergraduates.

Course Development: Center for Engineering Diversity Viterbi Summer Institute: Digital Fluency 2023
Developed and taught 3-week short course (Summer 2023) to help first generation engineering students to build the knowledge, attitudes, and skills to be successful in college and become lifelong learners who embrace technology and computing.

Minor Development: Education and Computing 2021-2022
Developed a new minor in collaboration with the Rossier School of Education to help students study and gain expertise in the specific needs for education of computing skills.

Syllabus Development: ITP 330: Computational Thinking Through Programming 2021-2022
Developed, proposed, and designed syllabus for Education and Computing minor.

Syllabus Development: ITP 430: Computing Education Capstone 2021-2022
Developed, proposed, and designed syllabus for Education and Computing minor.

Course Development: ITP 499: Technology, Accessibility, and Design 2020-2021
Developed, proposed, and designed syllabus. Ran the course as an ITP 470 in Spring 2021 in conjunction with Teach Access Study Away program.

Course Development: ITP 265: Object Oriented Programming 2018 - 2021
Developed, proposed, and designed curriculum, syllabus, and all course materials for this second semester programming course as part of the new Programming Minor in 2018. Adapted custom online interactive textbook, authored all course lectures and active learning material, developed all homework assignments and assessments, experimented in the course with new learning strategies and mechanisms for class participation based on pedagogical practices and discussions as CET Faculty Fellow. Updates to adapt to COVID and post-COVID realities. Additional updates to course each academic year to integrate new content, technology, and new innovative pedagogy.

Minor Substantially Revised: Computer Programming 2017 - 2018
Worked in concert with ITP programming faculty team to completely reformulate and modernize the computer programming minor, adjust curriculum across courses, adjust units and syllabi.

Course Substantially Revised: ITP 368: Programming Graphical User Interfaces 2017 - 2019
(Cross-listed in Computer Science Department) Designed and developed course curriculum. Authored all lectures and active learning activities, developed all new homework assignments and learning assessments (quizzes and exams). Crafted the curriculum to balance needs of the diverse range of learners in the course (third semester programming minors and senior computer science majors), which required careful consideration of how to present, discuss, and assess course material.

Course Substantially Revised: ITP 109: Introduction to Java Programming 2015 - 2017
Redesigned course to an objects-first approach. Migrated to an online, interactive textbook with custom instructor notes and ordering to correspond text with objects-first approach. Revised all lectures and integrated POGIL active learning into the course. Introduced a new development environment and developed all new homework assignments.

**Course Development: Introduction to Programming, AP Computer Science A, 2002-2004
AP Computer Science AB, Data Structures, Digital Photography, Digital Publishing**
Developed six courses at St. Albans School over three years on computer science and technology-based topics for high school students

Courses Taught

University of Southern California

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| ITP 109 | Introduction to Java Programming (Lead Faculty 2015 – 2019) |
| ITP 115 | Programming in Python |
| ITP 265 | Object Oriented Programming (Lead Faculty 2018 – Present) |
| ITP 368 | Programming Graphical User Interfaces (Lead Faculty 2016 – 2019) |
| ITP 470 | Information Technology Practicum |
| ITP 480 | Information Technology Internship |

Milwaukee School of Engineering

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| SE 1011 | Software Development I |
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St. Albans School

AP Computer Science A
AP Computer Science AB
Data Structures
Introduction to Programming
Digital Photography
Digital Publishing

California State University

CS 212 Programming with Data Structures

University and School Service

Women In Engineering & Center for Engineering Diversity Faculty Advisory Board 2024 - Present

Member of the Faculty Advisory Board, exploring the specific needs of women, non-binary, and historically underrepresented minoritized (URM) students at Viterbi.

Co-Director for the Afghan Pathways Program 2023 - Present

Strategic planning, faculty and staff development, cultural training, creating community based educational experiences, collaboration with non-profit organization (HerFuture Afghanistan), providing virtual coursework and professional development for women in Afghanistan.

Member, Academic Senate Faculty Environment and Employment Committee 2023 - Present

Exploration and guidance for evaluation of teaching at USC.

Member, Viterbi EFC Instruction Committee 2022 - Present

Provide Viterbi faculty with knowledge and tools to improve instruction.

Faculty Learning Community, Alternative Assessments and Grading Practices 2022 – 2023

Center for Excellence in Teaching Faculty Learning Community on alternative assessments and grading practices exploring ungrading and grading for equity practices.

Member, Viterbi Teaching Awards Committee 2021- 2023

Reviewed and recommended nominations for dean's award for innovation in teaching and education and the Northrop Grumman Excellence in Teaching.

Facilitator, Transforming STEM Faculty Teaching and Learning Program 2020 - 2023

Cohort-based professional development program designed to build a supportive community of scholars across USC's STEM faculty in Dornsife and Viterbi. **Facilitator** for 2021-2022 academic year. Member of the inaugural cohort, 2020-2021.

USC Faculty Teaching Communita 2020 - 2023

Founded a supportive virtual community to discuss teaching topics. Led weekly one-hour drop-in sessions.

Viterbi Diversity Outreach 2017 - 2020

Worked with Vice Dean Brandi Jones on increasing engineering pathways for students. Initiated efforts to form an Engineering Accessibility Task Force as part of the Diversity and Inclusion efforts at the school.

Academic Program Service

- DSCI Curriculum Activities and Updates** **2024 - Present**
 Leading efforts to revise and update the curriculum for all undergraduate DSCI major courses as part of the migration of the major to TAC.
- TAC Launch** **2024 – Present**
 Helped define and launch new program name: Technology and Applied Computing.
- TAC/ITP Program Business Process Updates** **2022- Present**
 Creating and documenting business processes, supporting program director and new initiatives.
- TAC/ITP Course Load Management and Scheduling** **2022 - Present**
 Managing faculty course load and course scheduling for fall, spring and summer sessions.
- TAC/ITP Curriculum Activities and Updates** **2021 - Present**
 Overseeing curriculum activities and updates for all minor programs.
- TAC/ITP Operations for Faculty Affairs** **2021 - Present**
 Oversee faculty affairs, faculty search/hiring committees, faculty promotion and reappointment committees, merit review, facilitating mentoring of full-time and part-time faculty, and provide staff oversight.
- TAC/ITP Knowledge Base Strategy and Development Lead** **2021 - Present**
 Creating and maintaining knowledge base repository and organizational structure for general, staff, and management workspaces on Notion.
- Mentor, APP (Afghan Pathways Program) and ITP** **2018 - Present**
 Provide mentoring and professional development support to Nayeon Kim, during her time as a full-time Senior Lecturer in ITP and subsequently in her role as faculty in APP.
- Teaching and Learning Activist in ITP/TAC** **2016 - Present**
 Leading discussions for faculty about relevant research trends in teaching and learning.
- TECH Working Group** **2023 – 2024**
 Defining and planning for relaunch of ITP to TECH (Technology Education and Computing for Humanity) in the era of USC’s new school for Advanced Computing. Planning curriculum for digital fluency for all undergraduates.
- Part-Time Faculty Mentor, ITP** **2022 – 2024**
 Provide mentoring and course support to part-time faculty members across several courses: Mikaila Weaver (2022-present), Estevan Benson (2023-2024), Chris Swain (2023-2024), and Brian Dolan (2023-2024).

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| Member/Chair, Grading Dispute Committees Support at various levels for handling student grade disputes. | 2022 - 2024 |
| Faculty Mentor, ITP Provide mentoring and course support to Senior Lecturer Barry Koster. | 2018 - 2023 |
| Chair, Learning Assistant Committee Led a team of ITP faculty to create a training program for student workers who are “learning assistants” in ITP classes. Developed several instructional modules and delivered a live virtual event to over 80 students in January 2022. | 2021- 2022 |
| Faculty Mentor, ITP Provide mentoring and curriculum support to Senior Lecturer Gregg Ibbotson. | 2021 - 2022 |
| Member/Chair, ITP Faculty Promotion and Reappointment Committees Member and/or chair of various annual committees. | 2019 - 2022 |
| Member, ITP Merit Review Committee Reviewed Annual Faculty Record for all part-time and full-time faculty using new review process. Process was very in-depth. | 2019 |
| Faculty Mentor, ITP Provide mentoring and curriculum support to Senior Lecturer Richard Vawter. | 2019 - 2020 |
| Member/Chair ITP Search and Hiring Committee Served as member and/or chair for full-time search committees. | 2016 - 2020 |
| Annual Faculty Record and Merit Review Steering Committee Actively revamping the evaluation process for ITP, focusing the process away from a stacked rating system and towards a collaborative, goal focused system. | 2016 - 2019 |
| Evaluation Committee Member for ITP Director | 2017 |
| Part-Time Faculty Mentor, ITP Provide mentoring and extensive course support to part-time faculty Kim Peters. | 2015 - 2017 |
| Member, Computer Programming Committee Contribute to the overall design and planning of the Computer Programming minor in ITP. | 2014 - 2016 |

Professional Service and Outreach

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| Member University Network for Afghan Women | 2024 - Present |
| Representing USC Viterbi School of Engineering Afghan Pathways Program (APP) in US- Afghan Women’s Council at Georgetown Univeristy | |
| Program Committee, International Conference on Availability, Reliability and Security (ARES) | 2024 - Present |
| Committee member for Workshop on Education, Training and Awareness in Cybersecurity (ETACS) | |
| Member AccessComputing | 2018 - Present |
| Broadening Participation for people with disabilities in the computing field | |
| CS for CA Coalition | 2020 - 2023 |
| General Member and member of Higher Education Subcommittee | |
| Reviewer, ACM Special Interest group on Computer Science Education | 2023 |
| Lightning Talks | |
| Reviewer, ACM Special Interest group on Computer Science Education | 2022 |
| Experience Reports and Tools and Birds of a Feather (BOFs) | |
| Editorial Advisory Board Member | 2021 |
| Reviewer for book: <i>“Cases on Academic Program Redesign for Greater Racial and Social Justice”</i> | |
| Reviewer, ACM Special Interest group on Computer Science Education | 2018 - 2021 |
| Experience Reports | |
| Co-Chair Teach Access Student Task Force | 2019 - 2021 |
| Mentor, ACM Special Interest group on Computer Science Education | 2020 |
| Mentored two junior faculty members attending conference for the first time. Served as a “table mentor” for the CRA-E teaching track pre-symposium event. | |
| Reviewer, ACM Special Interest group on Computer Science Education | 2020 |
| Experience Paper and Demonstrations | |
| Member, Accessibility Committee | 2020 |
| ACM Richard Tapia Celebration of Diversity in Computing Conference | |
| Reviewer, ACM Special Interest group on Computer Science Education | 2017 - 2019 |
| Experience Reports (2018, 2019) and Lightning Talks (2017, 2019) | |
| Reviewer for Scholarships | 2019 |
| ACM Richard Tapia Celebration of Diversity in Computing Conference | |
| Member Teach Access Student Task Force | 2016 - 2019 |

Academic Presentations and Talks

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| Presentation at University Network for Afghan Women Presentation about Viterbi's Afghan Pathways Program | January 2025 |
| Accessibility in Computer Science Workshop at Tapia Panelist for Advocating for Accessibility | September 2024 |
| CET Faculty Fellows Community of Practice Presentation on Weekly "ART" activities – Assessment and Reflection Time for students | November 2023 |
| Addressing Ungrading Doubts, 2023 Mastery Grading Conference Roundtable discussion with Lori Mesrobian and Mellissa Withers https://thegradingconference.com/session-descriptions/#addressing-doubts | June 2023 |
| CET Faculty Fellows Community of Practice Ungrading presentation with Lori Mesrobian and Mellissa Withers | May 2023 |
| CET FLC Showcase/Roundtable Panel Faculty Learning Community Panel on Ungrading and Grading for Equity with Lori Mesrobian and Mellissa Withers | April 2023 |
| Engineering Faculty Council (EFC) Instruction Committee Coffee Talk Using Gradescope: Grading and beyond with Trina Gregory | Feb 2023 |
| National Conference to Advance POGIL Practice (NCAPP) Fishbowl Teaching Demonstration: Boolean Logic Activity Poster Session: Facilitating Collaborative Active Learning During Virtual Learning Birds of a Feather: Virtual POGIL Facilitation | June 2021 |
| John Slatin AccessU 2021 Conference by Knowbility Panel Moderator, Teach Access Study Away | May 2021 |
| CET Faculty Showcase on Social Justice and Ethics Teaching and Learning about Accessibility & Technology. | April 2021 |
| USC Diversity, Equity, and Inclusion Awareness Week Teaching Accessibility | March 2021 |
| Guest Speaker Access Computing Partner Meeting | July 2020 |
| POGIL Teaching Innovation Talk. Viterbi Engineering Education Retreat | August 2019 |
| Guest Lecture on Designing for Accessibility ENGR 102 Engineering Freshman Academy | Fall 2019 |
| "What to Teach about Accessibility" SIGCSE Pre-Symposium Workshop, Invited Talk | March 2019 |
| "Embracing Diversity in Experiences" BOF at Tapia (Organizer failed to show, so I led the session) | October 2018 |

Publications (also under name: Knudtzon)

Kendra Walther. 2024. Digital fluency and critically conscious computing: a curriculum for undergraduates. [Doctoral Dissertation, University of Southern California]. University of Southern California Digital Library. <https://doi.org/10.25549/usctheses-oUC113992579>

Olga Glebova, Helen Hu, and **Kendra Walther**. 2024. POGIL in Computer Science for Beginners and Experts. In Proceedings of the 55th ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2024). Association for Computing Machinery, New York, NY, USA. <https://doi.org/10.1145/3626253.3635371>

Kendra Walther, Adam Blank, Michael Ball, and Suraj Rampure. 2023. A New Class of Teaching-Track Faculty: No Ph.D. Required. In Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2023). Association for Computing Machinery, New York, NY, USA, 1188–1189. <https://doi.org/10.1145/3545947.3569608>

Olga Glebova, **Kendra Walther**, and Clifton Kussmaul. 2023. Guiding Students to Discover CS Concepts and Develop Process Skills Using POGIL. In Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2023). Association for Computing Machinery, New York, NY, USA, 1180. <https://doi.org/10.1145/3545947.3569612>

Jeffrey Miller, Charles Wallace, **Kendra Walther**, and Shalini Kesar. 2022. *As a CS educator, how do you think we can address inequity issues that exist in the field?* SIGCSE Bull. 54, 3 (July 2022), 5. <https://doi.org/10.1145/3551627.3551632>

Kendra Walther, Adam Blank, Michael Ball, and Suraj Rampure. 2022. *A New Class of Teaching-Track Faculty: No Ph.D. Required*. In Proceedings of the 53rd ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2022). Association for Computing Machinery, New York, NY, USA, 1029–1030. <https://doi.org/10.1145/3478432.3499227>

Justin Hsia, Joshua Hug, and **Kendra Walther**. 2022. *Designing a CS Master's Program for Post-Secondary Teaching*. In Proceedings of the 53rd ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2022). Association for Computing Machinery, New York, NY, USA, 1193. <https://doi.org/10.1145/3478432.3499179>

Olga Glebova, **Kendra Walther**, and Clif Kussmaul. 2022. *Guiding Students to Discover CS Concepts and Develop Process Skills Using POGIL*. In Proceedings of the 53rd ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2022). Association for Computing Machinery, New York, NY, USA, 1198. <https://doi.org/10.1145/3478432.3499151>

Jennifer Akullian, Adam Blank, Brianna Blaser, Elba Garza, Christian Murphy, and Kendra Walther. 2022. Diversity Includes Disability Includes Mental Illness: Expanding the Scope of DEI Efforts in Computer Science. In Proceedings of the 53rd ACM Technical Symposium on

Computer Science Education V. 2 (SIGCSE 2022). Association for Computing Machinery, New York, NY, USA, 1190. <https://doi.org/10.1145/3478432.3499183>

Kendra Walther and Richard E. Ladner. 2021 *Broadening Participation by Teaching Accessibility*. Communications of the ACM 64, 10 (October 2021), 19-21. <https://doi.org/10.1145/3481356>

Kendra Walther. *Teaching and Learning Accessibility*. Birds of a Feather Session for 2021 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2021.

Kendra Walther, Adam Blank, and Michael Ball. *A New Class of Teaching Faculty: No PhD Required*. Birds of a Feather Session for 2021 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2021.

Kendra Walther, Samantha Soloway, and Chris Yoon. *Teach Access Virtual Study Away*. Academic Presentation. 2021 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2021.

Jennifer Akullian, Adam Blank, Christian Murphy, Solomon Russell, and **Kendra Walther**. *Conversations with Faculty about Student Mental Health*. Academic Panel. 2021 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2021.

Kendra Walther, Lawrence Angrave, Erin Carrier, Hongye Liu, Zhilin Zhang, and Harsh Deep. *Understanding of the needs of students with disabilities based on Universal Design of Learning principle*. Academic Panel. 2021 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2021.

Christian Murphy, Adam Blank, Elba Garza, and **Kendra Walther**. *Diversity Includes Disability Includes Mental Illness: Expanding the Scope of DEI Efforts in Computer Science*. Birds of a Feather Session for 2021 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2021.

Winfield Zhao and **Kendra Walther**. *Improving color vision accessibility in scientific research literature*. Poster Presentation. 2021 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2021.

Kendra Walther and Tzu-Yi Chen. *Creating, Building, and Sustaining Community in CS Departments*. Birds of a Feather Session for the 52nd ACM Technical Symposium on Computer Science Education (SIGCSE '21). Association for Computing Machinery, New York, NY, USA. <https://doi.org/10.1145/3408877.3439516>

Briana Blaser, Adam Blank, **Kendra Walther**, Nicholas Lytle, Kayla Brown. *Mental Health in Computer Students and Professionals*. Birds of a Feather Session for 2020 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2020.

Kendra Walther and Adam Blank. *A New Class of Teaching Faculty: No PhD Required*. Birds of a Feather Session for 2020 ACM Richard Tapia Celebration of Diversity in Computing Conference. September 2020.

Kendra Walther. *Exploring Student Understanding of Programming in the classroom*. Oral Presentation for the American Society of Engineering Education Pacific Southwest Conference, scheduled for April 2020, postponed due to Covid.

Kendra Walther and Brandi Jones. *An Exploration of Micro-Aggressions, Diversity of Experience, Imposter Syndrome and Finding Success in Academia*. Workshop for the American Society of Engineering Education Pacific Southwest Conference, scheduled for April 2020, postponed due to Covid.

Kendra Walther and Kate Sonka. 2020. *A Study Away Summer Program Addressing Accessibility*. In Proceedings of the 51st ACM Technical Symposium on Computer Science Education (SIGCSE '20). Association for Computing Machinery, New York, NY, USA.
<https://doi.org/10.1145/3328778.3372569>

Kendra Walther. 2017. *Class-Sourcing Exams: Student-Generated Exam Questions*. In Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education (SIGCSE '17). Association for Computing Machinery, New York, NY, USA.
<https://doi.org/10.1145/3017680.3022389>

Walther, K., Gregory, Trina. *The Best of All Worlds? Teaching a Learner-Centric, Object First Java Programming Class*. Poster session presented at American Society of Engineering Education Pacific Southwest Conference, April 2016.

Kendra Knudtson, Allison Druin, Nancy Kaplan, Kathryn Summers, Yoram Chisik, Rahul Kulkarni, Stuart Moulthrop, Holly Weeks, and Ben Bederson. 2003. *Starting an intergenerational technology design team: a case study*. In Proceedings of the 2003 conference on Interaction design and children (IDC '03). Association for Computing Machinery, New York, NY, USA.
<https://doi.org/10.1145/953536.953545>

Nancy Kaplan, Yoram Chisik, **Kendra Knudtson**, Rahul Kulkarni, Stuart Moulthrop, Kathryn Summers, and Holly Weeks. 2004. *Supporting sociable literacy in the international children's digital library*. In Proceedings of the 2004 conference on Interaction design and children: building a community (IDC '04). Association for Computing Machinery, New York, NY, USA.
<https://doi.org/10.1145/1017833.1017845>

Summers, K., Weeks, H., **Knudtson, K.**, *Libraries in Computers, Computers in Libraries* Conference, March 2003.

Quan, A., **Knudtson**, K., Abbott, R., Crawford, R., Shao, H., Schuler, A., Scott, D., Hayati, S., Higginbotham Jr. R. *Automated Threat Response Using Intelligent Agents (ATRIA)*, IEEE Aerospace Conference, March 2001.

Chen, A., **Knudtson**, K., Stumpf, J., Hodgins, J. *Artistic Rendering of Dynamic Motion*, Siggraph Sketch, August 2000.

Knudtson, K. *A Summer Program for Middle School Girls in Computer Science*. Presented as part of NSF Workshop on Improving and Assessing the Impact of Programs to Encourage High School Girls to Pursue Science, Engineering, and Mathematics, August 1999.

Funded Education Grants and Projects

OER and STEM Grant 2021 - 2022

Recipient of the USC Libraries' OER & STEM Grant.

IntroCS-POGIL (Process Oriented Guided Inquiry Learning) Project 2018 - 2021

Stipend for participating in NSF project + funding to attend the 3 day introductory POGIL workshop, attendance at 2018 CS-POGIL workshop at SIGCSE, and attendance at NCAPP 2021.

Student Scholarship Program for Grace Hopper and Tapia Conferences 2018

\$9,000, Viterbi School of Engineering, USC

Study Away Silicon Valley (Study Abroad Program) 2018

Teach Access funded participation

Events Organized

Teach Access Virtual Study Away Program March - May 2021

Co-organizer for a 5-week student accessibility program online program with presenters from Apple, Google Facebook, EY, Yahoo, LinkedIn, Walmart, Oracle, Verizon Media, Microsoft, Spotify, and various advocacy groups. Lead the follow-on month-long student project competition with awards ceremony during GAAD (Global Accessibility Awareness Day) week.

Viterbi Teaching Workshop May 2021

Teaching workshop focused on Ed stem, oh-yay, hybrid teaching models, and networking

POGIL Teaching Workshop March 2019

Organized and hosted a ½ day POGIL workshop at USC

STEM K-12 Education Outreach 2016 - 2018

Co-organizer for an annual PTA STEM night at an El Segundo elementary school in coordination with Los Angeles Air Force Base volunteers

Research Areas and Projects

Teaching and Learning Computer Science, USC **2016 - Present**
Exploration of effective teaching and learning techniques for STEM education, especially for introductory programming courses. Participant in NSF-funded program to introduce POGIL into CS education. Exploration of alternate pathways to careers in post-secondary education of computer science.

KidsTeam (HCI Lab Participatory Design Project) **2002 - 2004**
University of Baltimore and University of Maryland, College Park
KidsTeam started as a research team under Dr. Allison Druin at the Human-Computer Interaction Laboratory at the University of Maryland, designing technology with kids for kids. Started a new inter-disciplinary research team at the University of Baltimore with an older cohort of children, trying to replicate the successes the UMD KidsTeam. Research work on this project included creating a digital annotation support system for middle school teachers and students.

CRA Intern at the Georgia Tech Animation Lab, Georgia Tech **1999**
Worked with Dr. Jessica Hodgins on non-photorealistic rendering of motion. Researched artistic methods of representing motion. Defined rendering styles to be added to software. Wrote C++ plug-ins for Alias Wavefront to perform renderings. Cleaned up code allowing to user to combine all techniques developed during project. Documented summer research efforts.

Summer Camp Project, Harvey Mudd College **1998 - 2000**
Conceived, researched, and developed plans for a summer computer science camp for middle school girls at HMC under supervision of Dr. Margo Malakoff. Wrote and submitted grant proposal requesting funding. Designed and developed syllabus and evaluation forms. Arranged all preliminary logistical organization. Gathered support of faculty and staff at Harvey Mudd.

Student-Focused Service

Faculty Mentor for BioKind Analytics, Student Organization **2023 - Present**
Mentor for student organization using data analysis for healthcare non-profit organizations.

Judge, HackSC **2023 – 2024**
Faculty judge for USC student hackathon

Academic, Graduate School, and Internship Support **2016- Present**
Writing letters of recommendations and providing advice and support to learning assistants and current and past students regarding graduate school, internships, and career.

Faculty Mentor, Virtual Study Away Program **2021**
Supervised 5 ITP-470 students, 8 additional USC student throughout the program, and provided office hour and support to approximately 30 students throughout the month-long Accessathon.

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| Faculty Mentor, Study Away Silicon Valley (Study Abroad Program) | 2019 |
| Co-lead and organized the week-long capstone project for all teams, mentored one team on their project throughout the week. | |
| Co-Creator and Co-Organizer | 2018 - 2019 |
| ITP Student Scholarship Program for Grace Hopper and Tapia | |
| M³, Mudders mentoring Mudders | 2017 - 2019 |
| 1:1 mentoring of a Harvey Mudd Student as part of the alumni-student mentoring program | |
| Mentor for Student Organization: The Start-Up Club | 2017 – 2018 |
| Faculty mentor for USC student organization. | |
| Mentor for Student Organization: LATCH | 2016 - 2018 |
| Faculty mentor for USC student organization. | |

Supervision of Independent Study Students

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| Tingyu (Arwen) Zhang (ITP 480) | Fall 2023 |
| Adam Yu (ITP 470) | Spring 2022 |
| Winfield Zhao (ITP 470) | Spring 2021 |
| <i>** Student submitted poster presentation of work at 2021 Tapia conference and won 1st place in the ACM Undergraduate Research Competition.</i> | |
| Kamryn McKenzie (ITP 470) | Spring 2021 |
| Mandy Hartman (ITP 470) | Spring 2021 |
| Jeffrey Goettman (ITP 470) | Spring 2021 |
| <i>** Student was selected as a finalist for 2021 Discovery Scholar Distinction for accessibility project</i> | |
| Albert Kim | Spring 2021 |
| Darren Wang (ITP 480) | Fall 2020 |
| Luke Sauer (ITP 470) | Summer 2020 |
| Hannah Chong (ITP 470) | Spring 2019 |
| Varshi Bachu (ITP 470) | Spring 2019 |
| Emily Mathur (ITP 470) | Spring 2019 |
| Langa Tran (ITP 470) | Spring 2017 |
| Meghan Mehta (ENGR 395) | Spring 2017 |
| Winston Lee (ITP 470) | Fall 2016 |
| Alexander Finkelstein (ITP 470) | Spring 2016 |

Conference and Workshop Participation

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| ACM Tapia Conference. San Diego, CA | September 2024 |
| John Brooks Slaughter Leadership in Engineering DEI Summit, ASEE | January 2024 |

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| ETACS/ARES Conference Benevento, Italy | August 2023 |
| The Grading Conference, Virtual | June 2023 |
| Illinois CS Summer Teaching Workshop, Virtual | April 2023 |
| ACM SIGCSE Conference, Toronto, Canada | March 2023 |
| ACM SIGCSE Conference, Providence, RI | February 2022 |
| ACM Tapia Conference. Virtual | September 2021 |
| Computer Science Teachers Association Conference, Virtual | July 2021 |
| National Conference to Advance POGIL Practice, Virtual | June 2021 |
| Computing Research Association Education (CRA-E) | March 2021 |
| <i>Mentor for Teaching Track Faculty Pre-Symposium Event</i> | |
| ACM SIGCSE Conference, Virtual | March 2021 |
| Equity NOW! | October 2020 |
| <i>4-part series for building towards racial equity in higher education</i> | |
| ACM Tapia Conference. Virtual | September 2020 |
| National Effective Teaching Institute Workshop - Online (NETI-3C) | July 2020 |
| CS POGIL Workshop and Birds of a Feather. Zoom Workshop | July 2020 |
| AnitaB.org Presents: A Candid Conversation: Building an Antiracist Society. | June 2020 |
| Accelerated Online Teaching Institute, Center for Excellence in Teaching, USC. | May 2020 |
| Computing Research Association Education (CRA-E) | March 2020 |
| <i>Attendee, Teaching Track Faculty Pre-Symposium Event</i> | |
| ACM SIGCSE Conference, Portland, OR and Virtual | March 2020 |
| POGIL Facilitator Workshop and Training. South Carolina | January 2020 |
| ACM Tapia Conference. San Diego, CA | September 2019 |
| ACM SIGCSE Conference, Minneapolis, MN | March 2019 |
| POGIL Workshop, Los Angeles, CA | March 2019 |
| ACM Tapia Conference. Orlando, FL | October 2018 |
| Implicit Bias Awareness Seminar at USC | Fall 2018 |
| POGIL Workshop. Manhattan, NY | Summer 2018 |
| Teaching with Technology Conference. University of Southern California | May 2018 |
| ACM SIGCSE Conference, Baltimore, MD | February 2018 |
| JavaOne Conference. San Francisco, CA | September 2017 |
| Accessibility in Programming Classes (Teach Access) workshop at USC | May 2017 |
| ACM SIGCSE Conference, Seattle, WA | March 2017 |
| Grace Hopper Celebration of Women in Computing Conference. Houston, TX | 2016 |
| Google For Education Online Conference | 2016 |
| Teaching with and without Technology Conference. USC | 2016 |
| EdNextGen Online Conference | 2016 |

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| ASEE PSW Conference. Pomona, CA | 2016 |
| ACM SIGCSE Conference. Nashville, TN | 2016 |
| ACM Siggraph Conference. Los Angeles, CA | 2015 |
| Teaching with Technology Conference. University of Southern California | 2015 |
| Teach Scheme Workshop. Worcester, MA | 2005 |
| Interaction Design and Children Conference. Preston, England UK | 2003 |
| Human-Computer Interaction Lab Symposium. University of Maryland | 2003 |
| Human-Computer Interaction Lab Symposium. University of Maryland | 2002 |
| Grace Hopper Celebration of Women in Computing. Vancouver, Canada | 2002 |
| International Symposium on Wearable Computers. San Francisco, CA | 1999 |
| ACM Siggraph Conference. Los Angeles, California | 1999 |

Industry and Professional Positions

Associate MTS, The Aerospace Corporation, El Segundo, CA 2000 – 2002
Information Technology Department, Computer Systems Division

Wrote and designed software and databases to support Air Force development programs and internal research efforts. Aided with design and development of an autonomous agent system in Java for a tactical/battlefield scenario. Designed software for an agent-controlled communication network. Participated in a research and development project involving distributed computing, peer-to-peer networks, and software agents. Helped program a Vibro-acoustic software project, using Java programming and database design.

Independent Website Design/Consulting 2007- 2012

Designed, built, and maintained websites for various non-profit community organizations. Setup a user-friendly database system for member registration for a non-profit organization. Provided technical advice and website consultation for a Latino event-listing web service (mivoz.com). Published a monthly quilting newsletter once a month (2009-2010) using Adobe InDesign.

HRL Laboratories, Claremont, CA 1999 - 2000

Harvey Mudd College Computer Science Clinic Project

Team leader, HCI project, working on modality transformation middleware. Coordinated team efforts and all clinic activities. Interfaced between clinic advisor and team. Planned division of work and monitored schedules. Supervised integration of project software. Designed and wrote final project poster, submitted to ACM Multimedia 2000.

Motorola Cellular Subscriber Sector Libertyville, IL 1997

Assisted MIS network support and technical services groups with a variety of projects: Designed and developed a system to automate the collection and presentation of system configuration data. Audited the network connection database. Assisted customers with service requests. Performed numerous system maintenance tasks.

Volunteer Experience

Community Leader: Scoutmaster, Den leader, and Website Administrator 2012 - Present
Boy Scouts of America: Served as a den leader and parent committee member for 5 years for the Cub Scout Pack. Completed Wood Badge course, an advanced national leadership training course. Founded a new BSA troop for girls and been serving as Scoutmaster or Assistance Scoutmaster of that troop since 2019.

Non-profit Leadership: President, VP, and Website Administrator 2012 - 2018

Parent-Teacher-Association, Center Street Elementary School: Set up and designed a website and email system for the PTA. Served one-year full time as PTA president, running the non-profit organization of 400 volunteers with a budget of approximately \$100,000 a year. Continued to serve PTA as website administrator, vice president, and member at large,

interfacing regularly with school administration, school board and district administration, as well as the El Segundo education foundation to support K-12 education.

Professional Memberships

Access Computing

Anita Borg Institute

American Society for Engineering Education

Association for Computing Machinery (ACM)

ACM Special Interest Group on Computer Science Education (SIGCSE)

ACM Special Interest Group on Accessible Computing (SIGACCESS)

ACM Special Interest Group on Computers & Society (SIGCAS)

Computer Science Teacher Association

NCWIT (National Center for Women & IT)

Teach Access

University Network of Afghan Women