Alannah Oleson

</> alannaholeson.com

olesona@uw.edu

aoleson

aoleson

@OAlannah

RESEARCH INTERESTS

My research lies in the intersection of human-computer interaction, computing education, and interface design. I explore how we can best prepare computing students and practitioners to create software that enables a wide range of users and their interactions. In particular, my work emphasizes inclusive software design for diverse genders, cultures, backgrounds, and other attributes of inclusion beyond traditional accessibility.

Topics human-computer interaction, computing education, inclusive software design, accessibility, design education

EDUCATION

2018 – present **Ph.D. in Information Science**
University of Washington, Seattle, WA, USA
Advisor: Amy J. Ko

2014 – 2018 **Honors B.S. in Computer Science**
Oregon State University, Corvallis, OR, USA
Advisor: Margaret M. Burnett
Thesis: Pedagogical Content Knowledge for Teaching Inclusive Software Design

AWARDS

2018 – present National Science Foundation (NSF) Graduate Research Fellowship

2018 Computing Research Association (CRA) Outstanding Undergraduate Researcher, Finalist

2017 Adobe Research Women-in-Technology Scholarship

2015, 2016 Drucilla Shepard Smith Academic Award, Oregon State University

INVITED TALKS

May 2018 **Celebrating Undergraduate Excellence (CUE) Research Symposium Welcome Address**
Oregon State University, Corvallis, OR, USA

PUBLICATIONS

Peer-Reviewed Papers

c8 Alannah Oleson, Meron Solomon, Christopher Perdriau, and Amy J. Ko. **Teaching Inclusive HCI Design by Helping Students Identify Design Bias.**
Draft, in progress.

j2 Alannah Oleson, Brett Wortzman, and Amy J. Ko. **On the Role of Design in K-12 Computing Education.** ACM Transactions on Computing Education (TOCE) 2021. 21, 1, Article 2, 34 pages.

c7 Alannah Oleson, Meron Solomon, and Amy J. Ko. **Computing Students' Learning Difficulties in HCI Education.** In Proceedings of the 2020 ACM CHI Conference on Human Factors in Computing Systems (CHI'20). 1-14.

c6 Amanda Swearngin, Chenglong Wang, Alannah Oleson, Amy J. Ko, and James Fogarty. **Scout: Rapid Exploration of Interface Layout Variations through High-Level Design Constraints.** In Proceedings of the 2020 ACM CHI Conference on Human Factors in Computing Systems (CHI'20). 1-13.

c5 Christopher J. Mendez, Zoe Steine-Hanson, Alannah Oleson, Amber Horvath, Charles Hill, Claudia Hilderbrand, Anita Sarma, and Margaret Burnett. **Semi-Automating (or not) a Socio-Technical Method for Socio-Technical Systems.** 2018 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), Lisbon, 2018, pp. 23-32.

c4 Alannah Oleson, Christopher J. Mendez, Zoe Steine-Hanson, Claudia Hilderbrand, Christopher Perdriau, Margaret Burnett, and Amy J. Ko. **Pedagogical Content Knowledge for Teaching Inclusive Design.** In Proceedings of the 2018 ACM Conference on International Computing Education Research (ICER '18). 69-77.

c3 Charles G. Hill, Maren Haag, Alannah Oleson, Christopher J. Mendez, Nicola Marsden, Anita Sarma, and Margaret Burnett. **Gender-Inclusiveness Personas vs. Stereotyping: Can We Have it Both Ways?** In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17). 6658-6671.
★ **Best Paper Honorable Mention**

b1 Margaret Burnett, Todd Kulesza, Alannah Oleson, Shannon Ernst, Laura Beckwith, Jill Cao, William Jernigan, and Valentina Grigoreanu. 2017. **Toward Theory-Based End-User Software Engineering.** Chapter in *New Perspectives in End-User Development*, Fabio Paternò and Volker Wulf (eds.). Springer International Publishing, Cham, 231–268.

j1 William Jernigan, Amber Horvath, Michael Lee, Margaret Burnett, Taylor Cuilty, Sandeep Kuttal, Anicia Peters, Irwin Kwan, Faezeh Bahmani, Amy J. Ko, Christopher J. Mendez, and Alannah Oleson. **General Principles for a Generalized Idea Garden.** 2017. Journal of Visual Languages & Computing, Volume 39, Pages 51-65.

c2 Charles Hill, Shannon Ernst, Alannah Oleson, Amber Horvath, and Margaret Burnett. **GenderMag Experiences in the Field: The Whole, the Parts, and the Workload.** 2016 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC), Cambridge, 2016, pp. 199-207.

c1 Dastyni Loksa, Amy J. Ko, Will Jernigan, Alannah Oleson, Christopher J. Mendez, and Margaret Burnett. **Programming, Problem Solving, and Self-Awareness: Effects of Explicit Guidance.** In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16). 1449-1461.

Workshops & Symposia

w3 Alannah Oleson and Amy J. Ko. **Toward the Development of HCI Pedagogical Content Knowledge.** Virtual Symposium at 2020 ACM CHI Conference on Human Factors in Computing Systems: 2nd Annual EduCHI Symposium on HCI Education.

w2 Margaret Burnett, Zoe Steine-Hanson, and Alannah Oleson. **The GenderMag-Teach Project.** Symposium at 2019 ACM CHI Conference on Human Factors in Computing Systems: EduCHI Global Perspectives on HCI Education.

w1 Margaret Burnett, Anita Sarma, Christopher J. Mendez, Alannah Oleson, Claudia Hilderbrand, Zoe Steine-Hanson, and Amy J. Ko. **Gender Biases in Software for Problem-Solving.** Workshop at 2018 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC): Designing Technologies to Support Human Problem Solving. Lisbon, 2018.

Articles

a1 Amy J. Ko, Alannah Oleson, Neil Ryan, Yim Register, Benjamin Xie, Mina Tari, Matt Davidson, Stefania Druga, Dastyni Loksa, and Greg Nelson. **It's time for more critical CS education.** Communications of the ACM (CACM) Viewpoints. *To appear, November 2020.*

Patents

p1 Alannah Oleson, Radomir Mech, Jose Echevarria, and Cynthia (Jingwan) Lu. **Smart Guide to Capture Digital Images that Align with a Target Image Model.** P7429-US 20030.152, US20190253614A1, US10574881B2.

EXPERIENCE

Sept. 2018 – present

Graduate Research Assistant, Code & Cognition Lab

University of Washington, Seattle, WA, USA

- Researching the role of design in computing education to promote creative, inclusive, & ethical software interface design practices and engage diverse populations in technical fields
- Current projects:
  - Creating and evaluating an activity to help computing students recognize and respond to exclusionary assumptions built into HCI artifacts *[c8]*
  - Exploring opportunities to integrate code-level inclusive design practices into software developers' programming workflows
- Past projects:
  - Defining two types of design (problem-space and program-space) present in K-12 computing curricula and activities *[j2]*
  - Understanding struggles computing students face when learning & applying basic software interface design concepts in HCI classes *[c7]*

June 2017 – Sept. 2017

Procedural Imaging Group Intern, Creative Intelligence Lab

Adobe Research, San Jose, CA, USA

- Mentors: Cynthia (Jingwan) Lu, Jose Echevarria, Radomir Mech
- Designed and implemented interface for AR guided selfies camera app *[p1]*
- Designed and conducted user studies to inform interface design
- Developed proof-of-concept prototype iOS app (XCode IDE, Swift, Objective-C) and showcased demo at internal research exhibition

Dec. 2014 – June 2018 **Undergraduate Research Assistant**

Oregon State University, Corvallis, OR, USA

- Advisor: Margaret Burnett
- Researched and led projects on end-user software engineering and gender-inclusive software interface design
- Project Lead: GenderMag-Teach *[c4, w2]*
- Other projects: GenderMag *[c2-3, c5, b1, w1]*, The Idea Garden *[c1, j1, b1]*

TEACHING

Autumn 2020 **Cooperative Software Development (UW INFO 442)**

Co-Instructor & Teaching Assistant
34 undergraduates

- In a flipped classroom setup, led discussions around key concepts of user-centered software development, using theories and tools from social psychology, computer-supported collaborative work, and software engineering
- Helped adapt course content to equitable remote instruction formats, focusing first on the needs of the most disadvantaged student groups and implementing actionable structures for instructor and peer support

Spring 2020 **Design Methods (UW INFO 360)**

Instructor of Record
40 undergraduates, 1 undergraduate TA

- Created and adapted course materials to asynchronous, accessible online formats to support meaningful remote design learning
- Planned and led optional synchronous discussion sections to foster peer connections and combat remote learning isolation
- Deployed and longitudinally evaluated a theoretically grounded weekly assignment to help students develop inclusive HCI design skills *[c8]*

Winter 2019 **Design Methods (UW INFO 360)**

Co-Instructor & Teaching Assistant
49 undergraduates

- Helped prepare and plan course content and topics to cover during instruction
- Prepared and delivered lesson on interface design evaluation methods
- Created questions to assess gaps in students' understandings of interface design concepts

SERVICE

Invited Reviewer

ACM CHI 2020, ACM CSCW 2020

Student Volunteer

ACM CHI 2019, 2020 (selected but cancelled due to COVID-19)

- 2019: Nominated for internal SV award by session chair "for going above and beyond" typical SV duties

ACM SIGCSE Technical Symposium, 2019

2019 – 2020 **DUB Student Seminar Coordinator**

DUB (Design, Use, Build) is an interdisciplinary community at the UW focused on HCI and Design running weekly invited talks with internal and external speakers.

2018 – 2021 **UW iSchool Doctoral Student Association**

Secretary, 2020–2021

- Organizing and disseminating information internally to doctoral students, including meeting minutes; overseeing internal DSA officer elections

Communications & Outreach Coordinator, 2019–2020

- Administration of internal & external communications: mailing lists, social media accounts, reports on DSA activity, other outreach channels as requested

Retreat Committee Coordinator, 2018–2019

- Co-organized annual PhD student retreat to welcome incoming cohort and strengthen ties between members of senior cohorts

2015 – 2018 **Peer Mentor, STEM Leaders Program**

Oregon State University, Corvallis, OR, USA

- Over three years, helped five freshmen from underrepresented backgrounds in STEM transition to and succeed in a college environment
- Supported students as they started, completed, and presented original research under the supervision of a faculty mentor