



Alannah Oleson

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RESEARCH INTERESTS

My research lies in the intersection of human-computer interaction, computing education, and design. I investigate how we can enable computing students—tomorrow's software practitioners—to create *inclusive*, *ethical*, and *usable* software interfaces.

Topics human-computer interaction, computing education, inclusive 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 – 2023

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) Welcome Address

Oregon State University, Corvallis, OR, USA

PUBLICATIONS

Peer-Reviewed Papers

- c7 Alannah Oleson, Meron Solomon, and Amy J. Ko. **Computing Students' Learning Difficulties in HCI Education.** 2020 ACM CHI Conference on Human Factors in Computing Systems. *To appear.*
- 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.** 2020 ACM CHI Conference on Human Factors in Computing Systems. *To appear.*

- 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). *Under review.*
- 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.** 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 Culty, 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

- 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.

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. Filed February 2018. *Pending.*

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:
 - Understanding struggles computing students face when learning & applying software interface design concepts in HCI classes [c7]
 - Defining two domain-specific types of design (problem-space and program-space) present in K-12 computing curricula and activities [j2]
 - Exploring opportunities to integrate code-level inclusive design practices into software developers' programming workflows
 - Understanding what behaviors constitute "useful" empathy and perspective-taking in user experience (UX) design practices

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 ran user studies to inform interface design
- Developed proof-of-concept prototype iOS app: XCode IDE, Swift, Objective-C

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 interfaces
- Project Lead: GenderMag-Teach [c4, w2]
- Other projects: GenderMag [c2-3, c5, b1, w1], The Idea Garden [c1, j1, b1]

TEACHING

[upcoming] Spring 2020

Design Methods (UW INFO 360)

Instructor of Record

- In charge of preparing, designing, and delivering instructional material to teach design thinking to roughly 50 students, as well as other classroom management activities

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

2019 **Invited Reviewer**

ACM CHI 2020

2019 – 2020 **Student Volunteer**

ACM CHI 2019, 2020

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

ACM SIGCSE Technical Symposium, 2019

2018 – 2020 **UW iSchool Doctoral Student Association**

Communications & Outreach Coordinator, 2019–2020

- Adminstrating student communications: mailing lists, social media accounts, internal 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 more 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