

Graduate Research Assistant
University of Minnesota, Twin Cities
Department of Computer Science and Engineering
Keller Hall, 200 Union St. SE, Minneapolis, MN 55455

Phone: (612) 226-7789
Email: smit3694@umn.edu
Twitter: @memyselfandHCI
Website: colleenestellesmith.com

Research Statement

Advised by Professors Loren Terveen (Dept. Computer Science) and Susan O’Conner-Von (Earl Bakken Center for Spirituality and Healing, Nursing School), I am a fourth year Computer Science Ph.D. student in GroupLens Research, a social computing lab at the University of Minnesota. Given trends towards increasing societal polarization, fragmentation, and exclusion, my mission in life is to bring advancements in technology into greater alignment with human flourishing—at both the individual and societal level. Building on three years of empirical quantitative and qualitative research on CaringBridge.org (a large online health community for journaling about health crises), my dissertation explores the relationship between online technologies and users’ needs for spiritual support and healing—even as they are facing the specter of their own mortality.

Education

UNIVERSITY OF MINNESOTA, Twin Cities, MN
Matriculated in Computer Science Ph.D. program, September 2016
Bachelor of Science, Neuroscience, *With Distinction*, 2015
Bachelor of Arts, English (Creative Writing), German Minor, *Summa Cum Laude*, 2010

IES ABROAD, Vienna, Austria
Full Year Study Abroad, 2008-09

Awards

GAANN Fellowship (2017)
Graduate Teaching and Research Assistantships (2016, 2018, 2019)
Lifson/Johnson Memorial Teaching Award (2015)
Phi Beta Kappa Honor Society (2014)
Presidential Scholarship (2005)

Research Experience

UNIVERSITY OF MINNESOTA, GROUPLENS RESEARCH LAB, Minneapolis, MN
Ph.D. Researcher September 2016 to Present
I employ qualitative and quantitative methods to study Human-Computer Interaction in the domains of online health communities (e.g. CaringBridge.org), value-sensitive algorithm design (e.g. on Wikipedia.org), and science communications. Analytical skills include machine learning [7], interviews [3,4,5], surveys [2], and content analysis [2].

CARINGBRIDGE.ORG, Eagan, MN
Contract Research Scientist May 2019-October 2019
I planned and conducted participatory design focus groups with four CaringBridge stakeholder groups to understand their perceptions of “spiritual support” and conceive of technical implementations that can help users to feel spiritually supported as they navigating challenging health crises [1].

UNIVERSITY OF MINNESOTA, MESCE NEUROSCIENCE LAB, Saint Paul, MN
Junior Scientist May 2014 to June 2015
I investigated sensory integration of nociceptive stimuli in the medicinal leech, *Hirudo medicinalis*, completing a Directed Research Project in Fall 2014 (Thesis: “Stimulation of Nociceptive Inputs Does Not Advance Recovery of Locomotor Behavior”) and an Undergraduate Research Opportunity (UROP), Spring 2015 (Poster presentation: “The Crawl Towards Nerve Cord Recovery”).

**Selected
Service
Experience**

**UNIVERSITY OF MINNESOTA COLLEGE OF SCIENCE AND ENGINEERING,
DEPARTMENT OF COMPUTER SCIENCE**
President, Computer Science Graduate Student Association Sept. 2017-Present
In my capacity as president, I have reinvigorated a stagnant student organization to improve student life on campus, renovate our graduate student facilities, increase social activities, and provide more resources for exchanging feedback and creating positive change in the department.

**Selected
Teaching
Experiences**

UNIVERSITY OF MINNESOTA COLLEGE OF SCIENCE AND ENGINEERING
Graduate Teaching Assistant, CSCI 5127W Fall 2016 and Fall 2018
"Embodied Computing: Design & Prototyping"
Students prototype embodied hardware solutions for the Student Design Competition (SDC) at the 2017 and 2019 CHI Conferences. I taught writing skills through in-class presentations, weekly office hours, intellectual guidance of data analyses and projects, and iterative feedback on extended abstract submissions. Three of my student teams have had abstracts successfully accepted to the SDC (acceptance rate, 13%).

Undergraduate Research Mentor, REU and UROP programs Fall 2016 to present
I routinely mentor and train younger students to complete research. To date, I have trained 16 undergrad and 3 high school students of diverse backgrounds.

Undergraduate Teaching Assistant, CSCI 1133 Spring 2016
"Introduction to Computing and Programming Concepts"
I instructed labs in Python programming, held office hours, and assisted with grading.

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL
Undergraduate Teaching Assistant, PHSL 3051 Fall 2014, Spring & Fall 2015
"Human Physiology"
I received the Lifson/Johnson Memorial Award for excellence in teaching for this class. I was specially chosen to lead weekly Q&A sessions; voluntary attendance ranged from 20-100 students. I was hired to revise and edit critical thinking exercises published in:
Anderson, L.C. & Keirstead, S.A. *Cells to Systems: Critical Thinking Exercises in Physiology, 3rd ed.* Dubuque: Kendall Hunt Publishing Company, 2015. Print.

BILLROTHSTRAÙE GYMNASIUM, Vienna, Austria
Teaching Assistant September to December 2008
Provided classroom assistance and taught English language lessons at an Austrian elementary and high school. Prepared and presented course materials in 3 classrooms.

MINNEAPOLIS PUBLIC LIBRARY, Minneapolis, MN
English as a Second Language Teacher January to May 2008
Taught weekly class entitled "People & Stories" for adult ESL participants. Wrote lesson plans centered around short pieces of English literature. Guided discussion to enhance understanding of language, share ideas, and contrast cultural backgrounds.

**Selected
Industry
Experiences**

UMN COLLEGE OF BIOLOGICAL SCIENCES (CBS), Saint Paul, MN
UMN BIOTECHNOLOGY INSTITUTE (BTI), Saint Paul, MN
Freelance Science Writer, Writing Instructor May 2014 to Present
I have written over three dozen pieces of scientific content (online and print), web copy for 4 graduate programs, and dozens of photographs (headshots, research processes). I taught 4 writing workshops for BTI's Science Communications interns.

BAY AREA START-UPS

Full-Time and Freelance Content Management Positions May 2011 - May 2014

I developed exceptional writing and project management skills in rapidly evolving, deadline-driven, early- and late-stage startups, including Airbnb, Peek, Deem, and Plum District. I wrote and edited marketing/website/email copy, and designed visuals or photo essays for geographically targeted content in up to 8 markets simultaneously.

References

- Dr. Loren Terveen, PhD Co-Advisor, terveen@umn.edu
 - Dr. Susan O’Conner-Von, PhD Co-Advisor, ocon0025@umn.edu
 - Brigid Bonner, Chief Customer Experience Officer (CXO), CaringBridge.org, bbonner@caringbridge.org
 - Patricia McMorow, Content Strategist, Direct Supervisor at CaringBridge.org, pmcmorrow@caringbridge.org
 - Dr. Aaron Halfaker, Principal Research Scientist, Wikimedia Foundation, ahalfaker@wikimedia.org
 - Stephanie Xenos, Director of Marketing and Communications, CBS, sxenos@umn.edu
 - Michael Winikoff, Communications Director, BTI, michaelw@umn.edu
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Publications

[1] **C. Estelle Smith** and Susan O’Conner-Von. What is “Spiritual Support” and Why Does that Matter for HCI? **Current Work in Progress**

[2] **C. Estelle Smith**, Zachary Levonian, Robert Giaquinto, Haiwei Ma, Gemma Lein-McDonough, Zixuan Li, Susan O’Conner-Von, and Svetlana Yarosh. "I Cannot Do All of this Alone": Exploring Instrumental and Prayer Support in Online Health Communities. **In submission to ACM Transactions on Computer-Human Interaction (TOCHI)**

[3] **C. Estelle Smith**, Bowen Yu, Anjali Srivastava, Aaron Halfaker, Loren Terveen, and Haiyi Zhu. Keeping Community in the Loop: Understanding Wikipedia Stakeholder Values for Machine Learning-Based Systems. **In Submission to CHI 2020**

[4] **C. Estelle Smith**, Eduardo Nevarez, and Haiyi Zhu. Disseminating Research News in Human-Computer Interaction: Perceived Hazards, How-To's, and Opportunities for Innovation. **In Submission to CHI 2020**

[5] **C. Estelle Smith**, Xinyi Wang, Raghav Karumur, and Haiyi Zhu. 2018. [Un]breaking News: Design Opportunities for Enhancing Collaboration in Scientific Media Production. *Proc. CHI 2018*. (Acceptance Rate: 25.7%) **Best Paper Honorable Mention Award (Top 5% of submissions)**

[6] Niels van Berkel, Julio Vega, Ankit Kariryaa, **C. Estelle Smith**, and Ye Yuan. CHI 2018 Conference Report. *IEEE Pervasive Computing*, vol. 17, no. 03, pp. 58-63, Jul., 2018.

[7] Haiwei Ma, **C. Estelle Smith**, Lu He, Saumik Narayanan, Robert A. Giaquinto, Roni Evans, Linda Hanson, and Svetlana Yarosh. 2017. Write for Life: Persisting in Online Health Communities with Expressive Writing and Social Support. *Proc. ACM Human-Computer Interaction* 1, 2, Article 73 (November 2017). (Acceptance Rate: 27.3%)