Daniel A. Epstein Teaching Statement

I am driven to teach because it allows me to inspire and learn from people with diverse backgrounds, skillsets, and interests. I decided to pursue a Ph.D. because I admired how my undergraduate Computer Science professors instilled a can-do attitude toward computing, inspiring hundreds of students to become developers, program managers, and entrepreneurs. I strive to give students the skills necessary to answer the challenging questions they encounter, whether those questions involve needfinding through surveys, interviews, or observation, implementation through programming or low-fidelity prototyping, or evaluation through experimental design and statistics. I believe teaching methods to students is best done by executing them and critiquing the outputs.

Teaching Experience

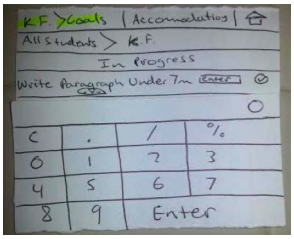
I am especially excited about breaking down complex problems, conveying how they can be approached while avoiding the temptation to provide answers. I practiced this process as an undergraduate in Computer Science at the University of Virginia, where I was a teaching assistant for six semesters. I taught across the curriculum, from the first-year Introduction to Computer Science (CS 1110), to the second-year Data Structures (CS 2150), to advanced core curriculum courses in Algorithms (CS 4102) and Operating Systems (CS 4414), and the upper-level elective of Game Design (CS 4501). My ability to explain difficult concepts in the Algorithms course was honored with the department award for excellence in teaching.

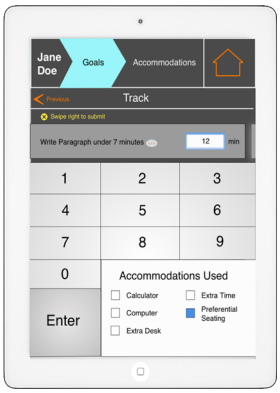
"Daniel Epstein was a boss. Seriously the best TA I have ever had. He was patient, knowledgeable, and could explain even the hardest topics in a way that I could understand them. I wish he could be a TA for every class I have."

"Dan was excellent. Sometimes he could explain things in a different way that helped to reinforce the lecture material and help students understand comments."

As an undergraduate teaching assistant at UVA, I was praised for my ability to present complex concepts in the Algorithms course.

As a Ph.D. Student at the University of Washington, I have had the opportunity to rework the course content of the undergraduate Introduction to Human-Computer Interaction (CSE 440) and Human-Computer Interaction Capstone (CSE 441) courses. These courses had proven difficult to scale to meet increasing demand. With my advisor James Fogarty and then-student Matthew Kay, I redesigned the CSE 440 curriculum with an emphasis toward design idea generation and rapid iteration on group projects. We developed the course to provide opportunities for each group to quickly check in with the course staff every class, with more structured critique from both peers and instructors once a week.





Students designed personal informatics tools in the UW HCI course, such as this app for administering individualized education plans (IEPs) for special education students.

The scalability of peer critique matched the course needs of increased interest and enrollment from Computer Science & Engineering as well as other University programs including Human-Centered Design & Engineering, Information Science, and the Masters in HCI and Design. For many students, this was their first time working in a multi-discipline team of people who think about user's information needs, the usability of design, visual aesthetics, and the practicality of implementation. I worked with James Fogarty on re-designing and teaching the capstone class, CSE 441, with similar multi-discipline teams and critique structure.

I worked with James Fogarty on extending the graduate HCI course (CSE 510) to teach how research knowledge is built in the field. The course balances reading and discussing research papers with a research or design project. The course typically invites guest lecturers to present on their research topic (e.g., accessibility, human-centered machine learning, social computing) and assign a few relevant papers as required reading.

I suggested the discussion move toward surfacing the main research challenges in the topic and beyond critique of the methods and findings in the individual papers. We encouraged the guest lecturers to assign a "framing" reading, usually a classic paper which outlines a key challenge or research direction, and two more recent "instance" readings of that direction for students to choose from. I also gave a guest lecture on using statistics for evaluation and revamped the required statistics assignment to use R.

I have had teaching opportunities outside the standard classroom. I served as a tutor for undergraduate courses for eleven quarters, teaching core concepts in data structures, software engineering, and databases. Additionally, I served as the coach of the University's International Collegiate Programming Contest (ICPC) team for four years, where I gave lectures on algorithmic concepts and ran the University's internal competition to determine who qualified for the Pacific Northwest regional contest.

Research Mentorship

I believe hands-on experiences provide the best way to learn essential research skills. I had the opportunity to teach methods in the classroom through leading a for-credit research group (HCDE 496/596) for five quarters with my advisor, Sean Munson, mentoring 19 master's and undergraduate students in total. Rather than lecture or require textbook reading, I taught survey design and semi-structured interviewing through reviewing and critiquing examples of my own study materials from prior publications. I taught skills fundamental to conducting formative research on understanding how people use personal tracking technology today. With my input and feedback, the students then designed survey instruments and interview scripts, piloting them with friends, and iterating on them. Students participated in the implementation and analyses as well, conducting many of the interviews for two projects, and coding survey responses for another. Work from these research groups resulted in three publications at top-tier venues (C3, C5, and C6). Four students (Bradley Jacobson, An Ping, Monica Caraway, and Chuck Johnston) contributed to the intellectual framing or findings and were recognized as coauthors on the publications, and the remainder were thanked in the acknowledgments.

- Jan 7: Introduction, organizational meeting, interview explanation and prep.
- Jan 14: Interview protocol development, explanation of qualitative coding.
- Jan 21: Mock interviews.
- Jan 28: Block reserved for scheduling interviews and debriefing.
- Feb 4: Qualitative coding day.
- Feb 11: Identification of themes.
- Feb 18: Writing workshop.
- Feb 25: Writing workshop.
- Mar 2: UbiComp deadline
- Mar 4: Reserving for postmortem, free food!
- Mar 11: End of quarter, no meeting

I taught survey and interview instrument design in for-credit research groups through reviewing and critiquing examples from my own study materials. The full course syllabus is available at https://homes.cs.washington.edu/~depstein/hcde596/.

One of the research group students, Monica Caraway, continued to work with Sean and I after the group. She led a project on how people perceive the social feed in the mobile payment app Venmo by designing, deploying, and analyzing data from two surveys and a round of follow-up interviews. I helped Monica find and interpret related work on the topic, provided her feedback on the survey and interview protocols, helped her organize the findings in writing, and edited the submission. The paper (J2), which Monica first-authored, was recently accepted to Proceedings of the ACM: Human-Computer Interaction (Computer Supported Cooperative Work and Social Computing), and she is now applying to Ph.D. programs in Information Science.

Outside of research groups, I have mentored 5 students as summer interns from local high schools and other universities, for undergraduate honors theses, and for individual course credit. One student, Jennifer Kang, contributed to the findings on two publications (C9, C11). Through these mentorship experiences, I have learned that when possible, students should be given the freedom to shape research problems toward topics or methods they are passionate about and have expertise in. I have also led

skillshares on both qualitative and quantitative methods to other Ph.D. students at UW, and regularly give feedback on methods, analyses, and writing from more junior students.

I have aimed to set appropriate and balanced expectations in all of my research mentorship. I want students to have well-rounded lives outside of research. Rather than setting deadlines for the undergraduate and master's students I currently mentor, I typically work with them to plan the next deadline and when to next meet, allowing them to prioritize their competing priorities. I plan to work more closely with my Ph.D. students on setting intermediate milestones and identifying deadline goals. In doing so, I aim to remain mindful of their other commitments and activities within and outside the University as well as my own bandwidth to provide each student with the mentoring they need in light of my research deadlines, teaching schedule, and service responsibilities. The pressures of academia can be tough on mental health, and I strive to be a source of support for my students rather than a source of stress.

Future Teaching

My background prepares me to teach undergraduate and graduate courses in specific research topics as well as courses toward skill development. At the undergraduate level, I would be interested in teaching Introduction to HCI and Human-Centered Design Methods. I would also look forward to applying my experience as a teaching assistant and programming contest coach to teach core classes in Data Structures and Algorithms and Programming. At the graduate level, I would be interested in teaching a course on current research topics in HCI. I would additionally be excited to introduce a graduate methods course focused on teaching user studies concepts which are applicable across a range of disciplines (e.g., HCI, Software Engineering, Graphics, Privacy and Security, Information).

Finally, I would be interested in developing project-based upper-level undergraduate or graduate courses in personal tracking, focusing on the study, design, and implementation of technology for helping people better understand themselves and their habits. The project component would be supplemented with readings emphasizing areas of focus within personal tracking including theoretical foundations, novel sensing, interaction techniques, and privacy. With additional preparation, I would also look forward to extending this course to consider other topics related to ubiquitous computing such as urban computing, public displays, and wearable technology.