Adam Rule **Teaching Statement**

I owe a great debt to teachers and mentors who, among other things, taught me that research and practice are as much about *people* as ideas. Helping develop the next generation of researchers and practitioners is a driving force in my seeking a faculty position.

TEACHING EXPERIENCE

As a teaching assistant for five different computer science and cognitive science courses at UC San Diego, I covered topics ranging from models of cognition and social critique of computing technology to full-stack web development. While class enrollment typically hovered around 200 students, for each course I led one or more studios of 20-50 students that focused on **experiential learning**. In one course, *Human-Computer Interaction Design,* we guided students through the process of designing, developing, and testing a fully functional web-app in just ten weeks. In studio each week, I helped students complete miniaturized versions of tasks they would need to perform later that week to stay on track with their quarter long-project, helping them practice skills such as Heuristic Evaluation and A/B Testing in a setting where they could receive immediate feedback. In addition to leading a studio for this course, as **head TA** I developed studio plans that eight other TAs and I used to coordinate our teaching efforts and led TA meetings. That quarter, I received my department's **Outstanding Teaching Award** based on my students' feedback.

I have also made **critiquing process** a key component of every course I teach. I routinely plan multi-week assignments and use intermediate weeks to provide feedback on design and implementation decisions rather than the state of the final deliverable. One assignment I helped design for *Cognitive Consequences of Technology* had students collect and clean a dataset about their own digital technology use and I leveraged a mid-project studio session to critique student's data collection and cleaning process. In addition to providing my own critique, I have also found it extremely valuable to have students regularly critique their peer's assignments using a rubric based on course concepts. This practice helps students not only learn to provide constructive critique but also reflect on how they might improve their own work.

Finally, I emphasize **writing and presentation** in the courses I teach. As an engineering undergraduate, I was well aware of the stereotype that engineers could handle math and science but not the social or communication skills needed to make group projects succeed. Over time, I have worked to become a better communicator, earning multiple presentation and paper awards along the way. In my courses, I often have students complete weekly process or reading journals and multiple short presentations (not just one final paper or presentation) to get them more comfortable with writing and speaking about both technical and social topics. While serving as a teaching assistant for our campus' introductory design course *Design of Everyday Things*, I used weekly process journals to solidify students' understanding of course concepts and slowly build a course-long portfolio that several students used to help secure summer internships.

Most recently, I had the pleasure of helping faculty at the Oregon Health & Science University revamp their *Human-Computer Interaction in Biomedicine* course. As a mixed format course with six weeks of **online instruction** and one week of on-campus instruction, I focused on scaffolding online discussion through forum prompts and postings as well as sequencing topics so students arrived on-campus ready to complete a group project redesigning a clinical interface. One of the most rewarding aspects of this course was introducing mid-career healthcare professionals including physicians and nurses to HCI.

MENTORING

In addition to teaching hundreds of students, I have had the pleasure of mentoring ten undergraduate students, three Master's students, and two medical students, many of whom have gone on to roles at companies like Google and Microsoft or PhD programs at schools like the University of Maryland and University of Washington. As with my teaching, I focus research mentoring on involving students in team projects, learning the entire research process from ideation to paper, and developing communication skills. In this vein, I have found Zhang et al.'s notion of agile research studios helpful for structuring research projects, particularly with large teams of undergraduates [1].

For mentoring in the classroom, I have found my diverse experience (spanning research in academia, UX research in industry at Amazon, R&D at one of Intel's university labs, and working with an international health non-profit) helpful in talking to students about skills required in different research and design roles and have given several guest lectures on the topic.

PROPOSED COURSES

Moving forward, I look forward to continuing to teach courses in human-computer interaction, health informatics, and data science such as:

Human Computer Interaction

A project-based course introducing students to the cognitive principles of user interface design and walking students through a user-centered design process of designing, developing, and testing an interface at various levels of fidelity (e.g., paper prototypes, wireframes, web apps).

Health Informatics

A project-based course in which students learn principles of health informatics (e.g., EHRs, data standards and terminologies, bioinformatics, public health informatics, consumer informatics) while completing a term long user-centered design project developing a clinical or consumer facing application.

Social and Cognitive Consequences of Information Technology

Based on a course I helped teach at UC San Diego, this course would introduce students to cognitive principles underlying human-computer interaction (e.g., affordances, representation effect, distributed cognition) as well as the social impacts of information technologies (e.g., algorithmic bias, filter bubbles).

Information Visualization

A project-based introduction to the history and core concepts of information visualization including interactive visualization paradigms. Assignments would involve developing visualizations in a range of mediums including hand-drawn visualizations, visualizations in analysis software such as Excel or Tableau, and custom interactive visualizations with a Javascript library such as D3.

[1] Zhang H, Easterday MW, Gerber EM, Rees Lewis D, Maliakal L. Agile research studios: Orchestrating communities of practice to advance research training. In Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing 2017 Feb 25 (pp. 220-232). ACM.