

## JESSICA HULLMAN – TEACHING STATEMENT

### TEACHING PHILOSOPHY AND EXPERIENCE

Having the opportunity to convey knowledge to others has been a fulfilling part of my master's and doctoral education, and a reason I am pursuing a career in academia. My teaching philosophy is shaped by teaching and mentoring experiences throughout my graduate study. These include studying pedagogical theory, acting as teaching assistant for six courses, developing and teaching workshops on writing and data analysis, and my observations around teaching in courses I've taken.

I feel lucky that my teaching experiences began at Naropa University, a progressive school that frames effective learning as a result of self-challenge combined with reflection upon one's own progress and process. While at Naropa, I participated in a year-long pedagogy seminar, co-instructed several critical writing courses, mentored students writing their master's theses, and developed and ran multiple writing workshops for graduate students. Through these experiences I observed firsthand how a teaching strategy of **emphasizing process and individual learning over outcomes** could, somewhat paradoxically, result in better work by students. While the best students are often self-motivated and take responsibility for learning, this orientation can be encouraged in all students via activities that encourage self-reflection on one's developing understanding. In teaching critical writing at Naropa and as a teaching assistant for English and Russian Literature courses at the University of Michigan, I observed how students benefit when lectures are interjected with short (~10 min.) activities where students are given questions about course material used to note or discuss where their current understanding is challenged. I have found focusing on process to be similarly beneficial in quantitative and computing courses. As a guest lecturer and teaching assistant for HCI and information analysis courses at the University of Michigan iSchool (UMSI), I relied on short activities interspersed in lectures that prompted students to individual or collaboratively reflect on questions about new material, encouraging them to share points of confusion or ambiguity around new methods or analyses. I believe that a similar emphasis on process can be beneficial for project-focused courses as interface or application design. As a teaching assistant for graduate Information Visualization and Network Theory & Applications courses with Professor Eytan Adar, we structured large projects as a series of "milestones" where students turned in artifacts of the methodologies used along the way. In my own coursework in analysis methods like advanced statistical models, I have benefitted most from teachers who stressed the order and rationale for modeling steps as well as how to interpret the outcome. I plan to adopt this framing in teaching analytical methods.

Opportunities to practice applying skills have figured prominently in the successful courses I've taken or assisted in teaching. Particularly in computing-centered fields, I believe that lectures on principles, methodologies, or analyses should be accompanied by **in-class "lab sessions" or "design jams" to give students hands-on practice with new analysis or design methods, new software, or new programming languages**. My first opportunities using software and analysis labs occurred when I taught a day-long course on analyzing user behavior on websites that I designed while working as an analyst for a web analysis start-up. I found that despite the differing experience levels of my students (who included marketing executives and data analysts), they valued these structured tutorials. I believe that including frequent in-class lab sessions in visualization and analysis courses, in which students use a variety of existing software packages, effectively connects principles to applications through active, experiential learning. Additionally, many methods used in HCI and interface design are collaborative. I believe students greatly benefit from **small group activities** that provide practice applying new methods or skills within a group context. In a graduate level Information Visualization course with Professor Eytan Adar, we incorporated hour-long design jams into classes. These activities, which I intend to use in my own design-related courses, presented small groups with data and a design challenge, familiarizing them with design principles and a rapid design process.

I believe fostering **strong communication and presentation skills** is an essential goal in any course that prepares students for information science careers or research. Individuals may vary in the talents or experience they bring to writing and presentation, but I strongly believe that requiring students to present and explain new concepts to others often is beneficial to all students' future pursuits. Three techniques that support communication skills in my students are 1) frequent opportunities to lead class discussions and present their work, 2) evaluations that put a high level of value on being able to explain the logic behind a methodology or principle (even for highly "outcome-oriented" practices, like interface programming), and 3) opportunities for students to describe how they could apply concepts or methods in a future job.

While studying and practicing teaching at Naropa, I learned intellectually and through practice in the classroom and as a writing mentor that **providing highly targeted and consistent feedback to students over the course of a semester** is particularly important when students are learning a skill like writing, programming, or statistical analysis. My approach to evaluating student work was also informed by experiences during my Master's work at the University of Michigan, during which I was a Graduate Student instructor (G.S.I.) responsible for teaching critical writing to students in three large (~50 to 80 student) Russian literature courses. Being responsible for grading all student work in these classes helped me hone my strategy for providing useful evaluations to students despite large class enrollment. I continued to use these strategies in the technical and quantitative coursework for which I was responsible in assisting in the teaching of Professor Adar's graduate Information Visualization and Network Theory & Applications courses at UM's School of Information.

### **MENTORING EXPERIENCE**

I have been fortunate to advise multiple students during my graduate study, and to include them in my research. I have acted as a mentor to a first-year HCI Master's student in her first research experience. By meeting with her frequently and overseeing her work as she collaborated with my colleagues and I to implement a visualization interface, I was able to convey to her nuances of system implementation, experimental evaluation, paper writing, and other research facets. This experience led to a full paper to be published at ACM CHI 2014, and inspired the student to apply to doctoral programs. More generally, my research focus on visualization has provided me opportunities to assist multiple other Master's students interested in visualization through advising and helping as they apply to doctoral programs. As one of the first to graduate from UMSI with a Master's specialization in Information Analysis & Retrieval, I have also enjoyed acting as a "student ambassador" to this degree option through advising prospective and current students on courses, internships, and jobs.

### **PROPOSED COURSES AND FUTURE TEACHING**

I feel confident in my ability to teach graduate or undergraduate level courses in core HCI principles and theory, Information Visualization, Exploratory Data Analysis, Perceptual Models in HCI, User-Centered Design, Experimental Methods, and Social Computing. I would be comfortable teaching introductory programming courses. I would enjoy developing and running graduate seminars in a number of developing areas, for example crowdsourcing theory and applications, collaborative visual analytics, computational journalism, fundamentals in individual decision-making, or theories of social influence.

In sum, I believe my many experiences provide me with a solid teaching and mentoring foundation, and I anticipate an academic career that provides me further opportunities to be an influential educator.