

MEREDITH SLOTA: PERSONAL STATEMENT

I am thrilled by “aha moments” – both my own, and those I’ve helped inspire. My efforts in the field of information science have dovetailed with my experimental research or served an immediate problem-solving purpose, yet it’s the problem-solving part of my work that I love. Day-to-day, and week-to-week, it’s these little moments that help me sleep better at night – putting out fires, providing people with valuable tools to make their lives and work easier, or making information more accessible, digestible, and relevant.

At the Institute for Systems Biology, I became adept at managing mountains of data. There, I had my first exposure to high-throughput science, where even one gene array expression experiment could generate more than 30,000 data points. The sheer volume of data created even by small experiments seemed insurmountable. How could I possibly manage years’ worth of research, let alone conclude something useful from it?

Consistency was key. By simplifying and codifying specimen and data file labeling, I enabled researchers to focus on questions deeper than the location of tube X or data file Y. A simple code could allow anyone looking at the file or the RNA tube hidden in the back of the freezer to determine which particular mouse the sample came from, as well as the experimental time point and processing details. I wrote Perl scripts that were used to rename and partially analyze the raw data files generated from the microarray reader. I beta tested in-house data management systems (SBEAMS — <http://www.sbeams.org/>), and suggested ideas for improvement based on the user experience and the downstream data applications. We then analyzed the data using cluster-analysis to group genes based on up- or down-regulation, my introduction to the idea of hierarchical clustering and the power and pitfalls of unsupervised analysis.

This pile of seemingly insurmountable data was thus partially tamed by creative information solutions, which spurred my growing interest in collaborative information systems development. I discovered that by harnessing the information available, and by making data management easier, we were able to focus on the real questions at hand and let researchers get back to their work.

When the University of Washington offered me a job working with clinical trials, I jumped at the chance to work at a lab that was making an immediate difference in the lives of patients. I have found that the service-based nature of clinical trials is important to me; it is highly motivating to see results in a real live patient. The translational nature of our research also means that lab discoveries go from the bench to bedside in mere months, rather than decades.

I have continued my emphasis on experimental laboratory analysis, but working with human subjects added several challenging dimensions to building information architecture with privacy concerns. Patient information must be carefully tracked, yet vigilantly protected. Simultaneously, to avoid bias specimen information must be blinded before experimental analysis while still remaining connected to relevant patient information via an anonymous numbering system. My background in high-throughput data analysis proved useful as I led database development in-house, reorganized existing flat files into relational database that were first designed to serve only my own needs, but that later expanded to serve the whole group.

The lab eventually hired a full-time database programmer to help, and as someone who has become accustomed to communicating between worlds, I collaborate closely with the programmer and the clinical staff. My ability to parse complicated concepts and explain them in an accessible way for various types of audiences makes me a great fit as a communication bridge between disparate groups of professionals; for example, clinical and laboratory staff in our translational laboratory. Now, recently developed tools for database include a semi-automated data analysis process that ensures consistency amongst technicians and easily accessible, centrally-located data archival warehouse that is regularly audited, giving us powerful and immediate access to years of clinical research. We've made our tools open-source and freely available to others in the field in the hopes that better access to experimental information could increase potential research collaboration.

My interest in the helpfulness of information science goes further than clinical research. After work, I play roller derby with the Rat City Rollergirls, an all-female league in Seattle. I also serve as the webmaster and *ad hoc* information specialist for the business's nearly 200 rollergirls and support staff, who have wildly different educational backgrounds and technology skills. I have learned under pressure the importance of organizational communication, and how tools can make or break a system.

One such issue was our old website host, which provided a difficult-to-use, web-based e-mail system. As a result, many people skipped having an official "@ratcityrollergirls.com" e-mail address in favor of an easier-to-use account, such as Gmail. This led to fractured communication and a lack of professional appearance. I solved this problem by having our business switch web hosts to a company with an easier e-mail system, and usage of official e-mail accounts has already increased. I learned that it's not enough to provide tools if no one wants to use them; in order for information solutions to truly be effective, they need to take into consideration both the information and the users in question.

Access to information is powerful in so many ways, and poor information architecture and tools mean wasted time and potential. I began the MLIS program at the UW to further my skills in order to help people improve their lives – in work and in play – through better use of the world of information. Being a problem-solver at heart, and one who enjoys helping people be a part of their own solutions, I believe the University of Washington MLIS program was a great fit for me, and a place for me to continue to learn, refine my skills, and reach my goals.

I LIKE DATA, AND I LIKE PEOPLE. I PLAY NICE WITH BOTH.