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Knocking Down Brick Walls: An HF/E Student's Entry Into the Health Care Domain

BY KIM GAUSEPOHL

Five lessons learned can ease the way for graduate students who aim to conduct HF/E research in unfamiliar organizational environments.

LIKE EVERY OTHER GRADUATE STUDENT, I found it difficult to choose a thesis topic. I've always been interested in usability, but I became overwhelmed when it came time to focus my topic on a particular domain. After several meetings with my adviser, in which I pursued and subsequently abandoned several topics, he turned to me and said, "If you want your work to have practical impact, you should look into health care." We spent the rest of the meeting discussing medical device usability, and I left feeling simultaneously elated and terrified. I was elated because I felt the health care domain was a perfect fit for my research interests in requirements engineering. I was terrified because I knew nothing about health care, medicine, or hospitals, and I was apprehensive of working in such an unfamiliar domain.

In this article, in the hope of encouraging other human factors/ergonomics (HF/E) students and practitioners to pursue future work in health care, I offer several lessons learned from my recent research collaboration with a local hospital.

LESSON 1: Everyone Encounters "Brick Walls"

Apparently I wasn't able to mask my feelings of apprehension from my adviser, because a few days later, I received an e-mail of encouragement containing a link to Randy Pausch's famous *Last Lecture*, from which I learned my first lesson: *Everyone encounters "brick walls."* In his inspiring talk, he likened obstacles to brick walls that one must break through to prove the worth of one's goal. Encouraged by this sentiment, I hastily wrote the phrase "Brick walls!" on a scrap of paper, taped it to my office wall, and started a mental list of obstacles that I would need to overcome as an HF/E student conducting research in the health care domain.

The first obstacle was simply gaining access to a health care organization. Although my university plans to open a medical school in collaboration with a hospital network in fall 2010, at the time of my research I was unable to locate any formal or informal resources for students wishing to conduct research in a health care environment. In addition, my brief literature review forewarned of potential entry issues because of patient privacy regulations and a complicated institutional review board (IRB) process.

The second obstacle was the recruitment of participants. My broad research interest is the reduction of medical practitioner stress through improved usability of medical devices. It is ironic that the characteristics of the medical practitioner's stressful work environment, such as 12-hour workdays in an understaffed ward, were potential obstacles in participant recruitment. Also, unlike other studies I've conducted in which I was able to recruit participants through paper and e-mail advertisements on the university campus, I would be totally reliant on the hospital administration to gain access to potential participants.

I offer the following lessons as practical strategies that HF/E students and practitioners may use while gaining access to and recruiting participants from a health care environment.

LESSON 2: Locate Champions for Research Within the Organization

A research champion is a person within the organization of interest who shares your excitement regarding the research project and who promotes the project within the organization. I first learned of research champions in my cochair's requirements engineering course, where he regaled the class with cautionary tales of his most difficult projects while working for the U.S. Department of Defense. The moral of his stories was "You must actively seek help during entry into an unfamiliar organization."

I've found that as a student, the best way to find a research champion is to talk about your project with anyone willing to listen. You can transform the listener into a research champion by emphasizing potential benefits of the project. For example, while I was talking with the chair of a local hospital's nursing research council, she became interested in my study when I mentioned that I could promote research methods to the staff and help foster future collaborations with other graduate students. She also requested that I conduct the study in the newly renovated nurses' reading room to promote staff use of this new room. After this initial discussion, the council chair became a research champion because I was able to offer reciprocal benefits from her involvement in the study.

FEATURE AT A GLANCE: In this article I offer my perspective as a doctoral industrial engineering student attempting to "break into" the health care domain. I provide practical advice for other students based on my personal experience collaborating with a local hospital to conduct my master's thesis. I offer recommendations for gaining access into a health care organization and strategies for recruiting practitioners as research participants. I hope to encourage students who may be initially intimidated by an unfamiliar domain to pursue health care research.

KEYWORDS: health care research, participant recruitment, institutional review board

The power of the research champion is that he or she often provides access to other potential champions. For example, council members quickly became champions for my research, disseminating advertisements throughout the hospital wards and encouraging ward managers to promote staff participation. Members also introduced me to hospital administrators who had the power to assist me with study logistics, further expanding my network of champions. The lesson here is that you only need to find one research champion to gain access to the entire organization.

LESSON 3: Obtain Local IRB Approval First

Although the council sponsored my study and provided an opportunity to present my research proposal to the hospital's IRB board, I still found the IRB process overwhelming in its unfamiliarity and complexity. After flipping through the hospital's IRB forms, which included foreboding sections entitled "Genetic Concerns," I decided to apply for university IRB approval first simply because it appeared easier in comparison. In this act of procrastination, I accidentally learned my next lesson, which is to obtain local IRB approval first.

I recommend offering monetary compensation to ensure participation by more experienced staff.

Because I was more familiar with the university forms and procedures, I found it easier to develop and present a comprehensive plan for the protection of my participants within this familiar format. After I obtained university approval, I felt encouraged to apply for hospital approval. I found the hospital forms less daunting in this second attempt because I could constantly refer back to my completed university forms for guidance. I also attached the university's approval letter when I submitted the hospital's paperwork to provide further support of my research plan's merit in my application. The lesson here is to utilize local IRB resources and to treat local IRB approval as the first milestone in your study.

LESSON 4: Offer Multiple Forms of Reimbursement

Although hospital administrators granted me entry into the organization after I obtained IRB approval, I still needed to recruit 10 to 15 nurses from a limited participant pool before I could start my study. After a few weeks of limited response to my initial advertisements, I became discouraged and requested assistance from my research champions.

Members of the council suggested offering multiple forms of reimbursement as a means to improve recruitment. Although my original reimbursement plan of \$25 per participant per session was considered adequate compensation, members suggested including clinical ladder credit as an additional enticement. The hospital's clinical ladder program is the advancement system for registered nurses through which they accumulate points that are required for promotions through

involvement in professional activities. I was able to provide participants with clinical ladder credit in the form of a letter of appreciation from my research committee, which allowed me to offer a highly valued benefit to participants at low cost to me. However, because less experienced staff members are more likely to need clinical ladder credit, I recommend offering monetary compensation to ensure participation by more experienced staff.

The lesson I learned from the research council is to provide multiple forms of reimbursement that are valued by potential participants.

LESSON 5: Schedule for Convenience

Another issue I faced was scheduling study sessions at a convenient time that considered nurses' 12-hour day and night shifts. I was unsure whether or not nurses would prefer to participate on a workday, so I returned to the research council for guidance. The council took a quick vote and suggested I accommodate both day and night shifts by scheduling sessions 30 minutes after the end of each shift. The council advised me that this schedule would provide workday participants time to relax before the study session. This schedule would also accommodate off-day nurses because the sessions would coincide with nurses' regular sleep schedules.

Once again my research champions provided me with invaluable insight into nurses' working environment and culture, which allowed me to tailor my study to these particular participants' needs and expectations.

Applying the Lessons

These lessons could apply to any student or practitioner working in any domain that is new to you. You can reduce the barriers to entry into an unfamiliar organization by locating a research champion. You can manage a complex hospital IRB approval process by viewing local IRB approval as the first milestone. You can offer multiple forms of reimbursement and create a convenient schedule, both of which encourage participant recruitment.

I hope that by sharing my experiences, I have encouraged other HF/E students and practitioners to enter health care and/or other unfamiliar domains.



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