



Student Research

Student researchers have been actively involved in all phases of research at HF&T Group, including conceptualization, data collection, prototyping, data analysis, and manuscript preparation. Students are always encouraged to work independently and to further their unique academic interests in conjunction with their education goals. Students from a wide range of academic programs with different background have worked in HF&T Group:

- Nursing informatics
- Human computer interaction
- Information systems
- Computer science
- Electrical engineering
- Organizational behavior
- Psychology

Student researchers leverage their strengths and experiences and contribute greatly to the multi-disciplinary research at HF&T Group. At the same time, experience in research enhance their education and often help them in competing for recognition in academic programs, such as honors and merit scholarships.

Several student researchers have made great scholarly achievement in peer reviewed publication. For example, two papers first-authored by **Jacqueline Moss** and one by **Caterina Lasome**, both PhD students in the Nursing Informatics Program at School of Nursing, were selected as Harriett Worley Award Nominees by American Medical Informatics Association in its annual fall symposiums.

Selected Publications and Presentations

(Graduate Research Assistant authors in **Bold**)

- **Lu**, Yen-Chiao, Jin (Janet) Kyung **Lee**, Yan Xiao, Andrew Sears, Julie A. Jacko, Kathleen Charters (2003). Why Don't Physicians Use Their Personal Digital Assistants? *Proceedings of the American Medical Informatics Association (AMIA)*
- **Plasters**, Cheryl L., F. Jacob Seagull, & Yan Xiao (2003). Coordination Challenges in Operating-Room Management: An In-Depth Field Study. *Proceedings of the American Medical Informatics Association (AMIA)*
- Xiao, Y., **Lasome**, C, **Moss**, J, Mackenzie, CF & Faraj, S. Cognitive Properties of a Whiteboard: A Case Study in a Trauma Centre. In Proceedings of the Seventh European Conference on Computer-Supported Cooperative Work, Bonn, Germany, Kluwer Academic Publishers, 259-278, 2001
- **Moss**, J., Xiao, Y., & Zubaidah, S. The operating room charge nurse: Coordinator and communicator. *JAMIA*, 9(6 suppl):S70-S74, 2002
- **Moss**, J. & Xiao, Y. (2002). A comparison of communications needs in two operating room suites. *Proceedings of the American Medical Informatics Association Annual Symposium*, San Antonio, TX, 543-547
- **Lu**, Y., Xiao, Y., Sears, A., & Jacko, J. (2003). An Observational and Interview Study on Personal Digital Assistant (PDA) Uses by Clinicians in Different Contexts. In *Human Centered Computing*, Vol. 3, 93-97

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Graduate Research
Assistantship
At
Human Factors &
Technology Group



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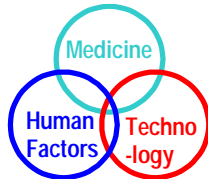
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Shock Trauma
Center

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Human Factors & Technology Group

Human Factors is an applied field that studies the efficiency and reliability of systems through the consideration of human strengths and limitations. The Human Factors & Technology Group (HF&T) strives for excellence in three interrelated research areas: patient safety, coordination, and information/communication technology applications in healthcare. Currently the program receives over \$4 million extramural grants and contracts from six federal and national agencies and two companies.



Research Areas

- ✓ **Coordination:** computer supported cooperative work (CSCW)/coordination technologies; team coordination; leadership
- ✓ **Patient Safety:** video-based education, training, and care systems analysis; human errors; human factors engineering
- ✓ **Information Technology:** mobile computing; telemedicine



Telecontrol room in University of Maryland Shock Trauma Center, the audio-video-data hub of a comprehensive video-based research testbed.

Current Projects

Coordination in High Velocity Environments

Examining coordination processes in fast paced, dynamic settings such as trauma resuscitation

Sponsors: National Science Foundation, Nortel Networks, Department of Defense

- Ethnographic research on practices of *high reliability teams* in trauma care
- Ethnographic research on *distributed cognition in* managing operating rooms
- Development of *collaboration displays* for coordination and decision making
- Experimental and field research of shared and distributed *team leadership* in trauma
- Field and survey studies of *Expertise coordination* in multiple trauma centers

Patient Safety through Research

Sponsors: Agency for Healthcare Research and Quality, University of Maryland Medical Center

- Prospective studies of safety performance and establishment of *best practices* through video analysis in chest-tube placement
- Evaluation studies of *video based training and education* in central line placement
- Human factors engineering and cultural interventions in improving *blood-product administration safety*

Information Technology for Healthcare

Sponsors: National Library of Medicine, National Science Foundation, Department of Defense, TRW

- Evaluation of impact of mobile computing devices (*PDA*s) on clinical care
- Evaluation of wireless technology for *mobile telemedicine* for transport and field care
- Development of mobile coordination interfaces for enhanced situation awareness.
- Development of browsing and authoring tools for video-based training and education.



Part of HF&T Group researchers, students, and collaborators.

Researchers

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