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# SCARLETT MILLER

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Professional Programs  
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## ACADEMIC AND PROFESSIONAL EMPLOYMENT

*8/11-Present* Assistant Professor, School of Engineering Design, Technology and Professional  
Programs and Industrial and Manufacturing Engineering,  
Pennsylvania State University

## EDUCATION:

*2011* Ph.D., Industrial Engineering, *University of Illinois at Urbana-Champaign*  
*2007* M.S., Industrial Engineering with a minor in Psychology, *University of Nebraska-Lincoln*  
*2006* B.S., Industrial & Management Systems Engineering, *University of Nebraska-Lincoln*

## ACADEMIC HONORS AND AWARDS

*2012* Best Paper Nominee, American Society of Engineering Education Conference  
*2011* James F Will Career Development Professorship, The Pennsylvania State University  
*2010* Human Factors and Ergonomics Society, Member with Honors  
*2009* Honorable Mention, Folsom Outstanding Master's Thesis Award, University of Nebraska  
*2008* College of Engineering Outstanding Master's Thesis Award Winner, University of Nebraska

## TEACHING EXPERIENCE

**SP 2012/13** Interaction Design EDSGN/ IE 597d  
**FA SP 2012/13** Engineering Design, EDSGN 100 and 100H

## RESEARCH EXPERIENCE:

*7/11-Present* Director, BRITE (Bridging Research in Innovation, Technology and  
Engineering) Lab, Pennsylvania State University  
*1/08-7/11* Research Assistant, University of Illinois at Urbana-Champaign  
Dissertation: Supporting Example Based Ideation and Assessment Practices in  
Engineering Design Education  
Advisors: Dr. B.P. Bailey and Dr. A. Kirlik  
*5/07-12/08* Research Assistant, University of Nebraska-Lincoln  
Thesis: Implications of not using user-centered design: A three part investigation  
Advisor: Dr. M.S. Hallbeck

## **OUTREACH-BASED INSTRUCTION**

- 2012* Instructor for US State Department Funded Training Course on Creativity and Innovation in Engineering Education in Marrakesh, Morocco (2/2012) and Monastir, Tunisia (7/2012)
- 2012* Visiting Professor for the Summers by Design Program at Tecnun University in San Sebastian, Spain (5/2012)

## **FUNDING FOR RESEARCH AND TEACHING:**

- 2012* U.S.-Tunisia-Morocco Partnership for Technology Innovation and Entrepreneurship Stimulation. U.S. Department of State, \$198,000 (Role: CO-PI)
- 2012* Using iPads to Teach Sketching and Communication Skills in EDSGN100, The Leonhard Center at Penn State, \$6,500 (Role: PI)
- 2011* Social Media as a Tool to Aid in the Generation Process, Penn State's Center for Research in Design and Innovation, \$6,000 ( Role: PI)

## **PROFESSIONAL SERVICE, ACTIVITIES AND AFFILIATION**

### **TECHNICAL PROGRAM COMMITTEES**

- 2010-Present* ACM Conference on Human Factors in Computing Systems (CHI) Work-In-Progress Committee

### **SCHOLARLY REVIEWING**

- 2012-Present* Advances in Engineering Education
- 2011-Present* ASME International Design Engineering Conference (IDETC)
- 2009-Present* ACM Conference on Human Factors in Computing Systems (CHI)
- 2009-Present* ACM Conference on Computer Supported Collaborative Work (CSCW)
- 2006-Present* Human Factors and Ergonomics Society Annual Conference (HFES)
- 2006-Present* Applied Ergonomics

### **WORKSHOPS AND RETREATS**

- 2012* Participant, Workshop on CDIO, Purdue University, March, 2012
- 2012* Invited Panelist, NAE/ NRC Workshop on Human-Systems Integration in Engineering Education, October 2012

### **DEPARTMENTAL SERVICE**

- 2012-Present* SEDTAPP Curriculum Committee

### **PROFESSIONAL AFFILIATIONS**

American Society of Mechanical Engineers, Human Factors and Ergonomics Society, Association for Computing Machinery: Special Interest Group for Human Factors in Computing Systems, American Society for Engineering Education, Alpha Pi Mu, Tau Beta Pi

## CERTIFICATIONS:

Engineer in Training (EIT), professional engineering license

## STUDENTS ADVISED

### Graduate Students

**Toh, Christine**, “Product Dissection as a tool to increase novelty and decrease fixation in mechanical design”, Industrial Engineering and Mechanical Engineering, MS degrees anticipated by 12/2013, PhD anticipated by 2017

**Adams, Samantha**, “Tools and Techniques for teaching and promoting innovation and entrepreneurship on a global level”, Industrial Engineering, MS degree anticipated by 9/2013

### Undergraduate Students

**Industrial Engineering-** Kiley Coombe (12/12), Brittany Murphy (5/13), Arti Patel (5/16), Boyd Warwick-Clark (5/16)

**Mechanical Engineering-** Kristen Murray (5/13), Connor Disco (5/16)

**Computer Science** – James (Matias) Siebert (8/12)

## PUBLICATIONS

### *Journal Articles*

Toh, C.\*, **Miller, S.R.**, Kremer, G. (In Press). The Role of Personality and Team-based Product Dissection on Fixation Effects. *Advances in Engineering Education*. To Appear.

**Herring, S.R.**, Castillejos, P., Hallbeck, M.S. (2011) Preliminary Evaluation of Handle Shape and Size and Input Controls for a Neutron Detector. *Applied Ergonomics*. 42(6), 919-928

**Herring, S.R.**, Hallbeck, M.S. (2010) Conceptual design of a wearable neutron detector alarm system: A review of the literature. *Theoretical Issues in Ergonomic Sciences* 11(3), 197-219

**Herring, S.R.**, Trejo, A.E., Hallbeck, M.S. (2010) Evaluation of four cursor control devices during a target acquisition task for laparoscopic tool control. *Applied Ergonomics* 41 (1), 47-57.

**Herring, S.R.**, Hallbeck, M.S. (2009) Evaluation of a two cursor control devices for development of a powered laparoscopic surgical tool. *Ergonomics* 52 (8), 891-906.

**Herring, S.R.**, Hallbeck, M.S. (2007). The effects of distance and height on maximal isometric push and pull strength with reference to manual transmission truck drivers, *International Journal of Industrial Ergonomics* 37 (8), 685-696.

**Herring, S.R.**, Bailey, B.P. Searching for Inspiration: An in-depth look at designer’s example finding practices. *Design Studies*. In Preparation.

**Miller, S.R.**, Bailey, B.P., Kirlik, A.K. Towards the Development of Objective Measures of Student Competence in Design. *Journal of Human-Computer Interaction*. In Preparation

### *Conference Articles*

Toh, C.\*, **Miller, S.R.**, Kremer, G. (2012). The impact of dissection activities on the novelty of design outcomes. *ASME International Design Engineering Technical Conference*. Chicago, IL. DETC2012-70421.

*Conference Articles Cont'd*

- Toh, C.\*, **Miller, S.R.**, Kremer, G. (2012). Mitigating Design Fixation Effects in Engineering Design through Product Dissection Activities. Design Computing and Cognition Conference. College Station, TX. **Paper Presenter.**
- Miller, S.R.**, B.P. Bailey, A. Kirlik (2012). Towards the development of an objective assessment technique for use in engineering design education. American Society of Engineering Education Technical Conference. San Antonio, TX. **Paper Presenter. Best Paper Nominee**
- Herring, S.R.**, Poon, C., Balasi, G., Baily, B.P. (2011). TweetSpiration: Leveraging social media for design inspiration. ACM Conference on Human Factors in Computing Systems. **Paper Presenter**
- Herring, S.R.**, Chen, C.C., Krantzler, J. Bailey, B.P. (2009). Getting Inspired! Understanding how and why examples are used in creative design practice. ACM Conference on Human Factors in Computing Systems. (Acceptance Rate: ~24.5%). **Paper Presenter**
- Herring, S.R.**, Jones, B.R, Bailey, B.P (2009). Idea generation techniques among creative professionals. Hawaii International Conference on Systems Sciences (HICSS). **Paper Presenter**
- Herring, S.R.**, Castillejos, P. Hallbeck, M.S. (2008). Objective Analysis of Neutron Detector Control Devices. *Proceedings of the Human Factors and Ergonomics Society 52<sup>nd</sup> Annual Meeting*, New York, New York. **Paper Presenter**
- Crowe, J, Castillejos, P. **Herring, S.R.**, Hallbeck, M.S. (2008). Evaluation of input control type and screen view orientation for a hand-held neutron detector. *Proceedings of the Human Factors and Ergonomics Society 52<sup>nd</sup> Annual Meeting*, New York, New York.
- Herring, S.R.**, Trejo, A.E., Hallbeck, M.S. (2007). Comparison of four cursor control devices for development of a powered laparoscopic surgery tool – users’ opinions. *Proceedings of the Human Factors and Ergonomic Society 51<sup>st</sup> Annual Meeting*. Baltimore, Maryland. **Paper Presenter**
- Gnaneswaran, V., **Herring, S**, Ge, Wei Hua, Castillejos, P., and Bishu, R.R. (2007). Ergonomic Evaluation of Writing Instruments: A Revisit. *Proceedings of the Human Factors and Ergonomic Society 51<sup>st</sup> Annual Meeting*. Baltimore, Maryland.

*Magazine Articles*

- Abbas, A., **Herring, S.**, Robbins, M., Simms, K., Spetzler, C. (2011). Peer-To-Peer Decision Training: Teaching Decision Skills to Troubled Teens. *OR/MS Today*. Aug 2011.
- Abbas, A., **Herring, S.**, Robbins, M., Simms, K., Spetzler, C. (2010). Peer-To-Peer Decision Training. *Decision Analysis Today*. Dec. 2010.

**\*First author advised by Dr. Miller**

**\*\*Articles published before 2012 are in maiden name (Herring)**

**TECHINICAL PROFICIENCIES:**

<b>Languages:</b>	ACT-R cognitive architecture
<i>Also knowledgeable in:</i>	Java, C#, HTML, Flash
<b>Application Software:</b>	
<i>Statistical Analysis:</i>	SAS, SPSS, MiniTab
<i>3D Modeling:</i>	SolidWorks, ProE