

**PROFESSIONAL EXPERIENCE**

2019 to present    **Robson Forensic, Inc.**  
*Associate*

Provide technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving medical devices and equipment design, patient safety operations and management, health information technology, clinical environment layout and design, usability, and user-centered design.

2018 to present    **John Hopkins University Applied Physics Lab**  
*Senior Professional Staff, Human Systems Engineering Lead*

- Established structured methodology to advance the technical rigor of the evaluation, development and implementation of enabling capabilities for enterprise-wide initiatives.
- Led the development of a novel systems engineering and risk management tool to accelerate the commercialization of point-of-care diagnostic technologies.
- Led improvement initiatives to standardize and implement operational best practices in care delivery environments and health data contexts.

2015 to 2018        **National Center for Human Factors in Healthcare, MedStar Institute for Innovation, MedStar Health**  
*Director, Human Factors System Integration*

- Established human factors safety program and managed safety consult services to mitigate the risks for patient harm and hazardous conditions in clinical and non-clinical environments.
- Formalized human factors applications for the enterprise-wide adoption of systems-focused event reviews in safety operations and risk management.
- Led event review investigations and human factors safety analyses in response to adverse events.
- Developed decision-making tools for adoption in patient-care environments and clinical workflows.

*Program Manager, Usability Services*

2015

- Managed usability testing services for medical device and health information technology (HIT) companies seeking FDA (Food and Drug Administration) regulatory approval for 501(k) submission or Pre-market Approval (PMA).
- Engaged with the Corporate Executive Team (CET) to integrate usability testing services in the procurement decision-making process for the enterprise.

GRACE M. TRAN, MS, CHFP  
Healthcare Human Factors Expert

- 2007 to  
2015
- Johns Hopkins University Applied Physics Lab**  
*Senior Professional Staff, Human Factors/Human Systems Integration Engineer*
- Identified and characterized user needs as technical lead and assistant project manager in concept development activities for *Project Emerge*, funded by Gordon and Betty Moore Foundation. Defined operational concept and requirements to support clinical decision-making and patient-family engagement to reduce preventable harm in the intensive care unit.
  - Demonstrated impact of safer medical device design enabling direct transfer of information through concept development and usability evaluation of medication infusion pump (*MIP*).
  - Informed system-level design requirements to support the safe use of an advanced neural prosthetic limb (*Revolutionizing Prosthetics*) under normal and emergency use operations.

- 2005 to  
2007
- Mayo Clinic**  
*Ergonomist, Section of Safety and Security*
- Established employee safety program in laboratory and clinical environments to reduce the risks for injury through injury/illness data analysis, work place assessments, survey tools, ergonomics audits, education and training.
  - Developed work place design solutions to support safe workflow processes and minimize the risks for high-risk injuries and repetitive stress disorders.
  - Designed targeted intervention to support system-wide implementation of barcoding solution to reduce wrong specimen labeling errors.
  - Managed installation of motion analysis and force plate systems to stand up a new Applied Ergonomics Training and Development Lab.

- 2001 to  
2004
- Virginia Polytechnic Institute and State University**  
*Graduate Research Assistant, Industrial and Systems Engineering*
- Demonstrated efficacy of self-transfer aid device for abdominal surgery patients through electromyography during bed rising tasks, observations and interviews with patients in clinical setting, and post-operative recovery measures via patient self-report tools.
  - Conducted comparative evaluation of micro-climate cooling vests to study physiological strain on users in extreme environments, and contributed to the reliability and validity of electrogoniometry measurement of upper extremity movement.

**PROFESSIONAL CREDENTIAL**

Certified Human Factors Professional (CHFP), Board of Certification in Professional Ergonomics

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## EDUCATION

M.S. Industrial and Systems Engineering (Human Factors), Virginia Polytechnic Institute and State University, Blacksburg, VA, 2004  
B.S. Materials Science and Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, 2001

## PROFESSIONAL MEMBERSHIPS

Member, American Society for Healthcare Risk Management  
Member, Human Factors and Ergonomics Society  
Member, Omicron Delta Kappa (ODK) Honor Society

## MAJOR PUBLICATIONS

Pham JC, Carson KA, Benson J, Doyle PD, Ijagbemi M, Ravitz A, Wyskiel R, Tran G (2016). Comparison of Automated versus Manual Programming of Infusion Pumps. *Biomedical Instrumentation & Technology*, July/August 2016, pp. 241-250.

Rosen M, Tran G, Carolan H, Romig M, Dwyer C, Dietz A, Kim G, Sapirstein A, Pronovost P (2016). Data Driven Patient Safety and Clinical Information Technology. In: Weaver C, Ball M, Kim G, Kiel J (eds) Healthcare Information Management Systems, Health Informatics. Springer, Cham, pp 301-316.

Tran G, Babski-Reeves K, and Nussbaum M (2008). Electromyographic Evaluation of a Bed Assistive Device for Abdominal Surgery Patients in Postoperative Care, *Human Factors*, Vol 50, No. 2, pp. 237-55.

Babski-Reeves K, Tran G (2006). Efficacy of an assistive intervention for abdominal surgery patients in postoperative care. *Disability and Rehabilitation: Assistive Technology*, Vol. 1, No.3, pp. 191-97.

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## PRESENTATIONS

Patel V and Tran G (Poster). Optimization of EHR Clinical Data Visualization to Improve Clinical Accuracy and Patient Safety. Presented at: Human Factors and Ergonomics in Healthcare and Ergonomics, Boston, MA. March 2018.

Moturu A, Tran G, and Howe J (Poster). Qualitative Review of Wrong-Site Surgeries: What Side Will My Surgery Take Place? Presented at: Human Factors and Ergonomics in Healthcare and Ergonomics, Boston, MA. March 2018.

Khunletrkit N, Rivera J, Tran G, Won J, Yin S (Discussion Panel). Human Factors in the Wild: Delivering Safety in the Pediatric World. Presented at: International Annual Meeting Human Factors and Ergonomics Society, Austin, Texas, October 12, 2017.

Hoffman D, Tran G, Morales C (Lecture). Changing the Way We Think About Error at MedStar Health. Presented at: IISE Annual Conference and Expo 2017, Pittsburgh, PA. May 21, 2017.

Tran G, Savage E, Suggs A (Poster). Designing for Two: Applying Human Factors Design to Support Clinician and Parent Users in a Pediatric Home-Use Dosing Chart. Presented at: International Symposium on Human Factors and Ergonomics in Health Care, San Diego, CA, April 2016.

Pham JC, Doyle P, Tran G, Benson J, Ravitz A (Lecture). Human Factors Studies. Presented at: National Coalition for Infusion Therapy Safety Meeting, Annapolis, MD: March 13, 2015.

Tran G, Doyle P, Pham JC, Benson J, Ravitz A (Lecture). Development of an Infusion Pump Prototype and Evaluation Environment to Improve the Safety of Medication Infusion Pumps Through Simulation. Presented at: International Symposium on Human Factors and Ergonomics in Healthcare: Improving the Outcomes, Baltimore, MD, April 2015.

Ravitz A, Sapirstein A, MD, Pham JC, Doyle P, Tran G (Poster). Improving Interoperability in Healthcare through Systems Engineering Principles and Best Practices. Presented at: Johns Hopkins Medicine Patient Safety Summit, Baltimore, MD, June 2012.

Koshy JG, Tran G (Lecture). The Human in Human Performance. Presented at: Mayo Clinic Human Factors in Health Care: Practical Applications to Improve Patient Safety, St. Paul, MN, October 2007.

Koshy JG, Tran G (Poster). Designed to Fall: Bathrooms in Healthcare Environments. Presented at: Mayo Clinic Human Factors in Healthcare: Practical Applications to Improve Patient Safety, Rochester, MN, October 2006.

Babski-Reeves K, Tran G (Lecture). Assessment of recovery rates during light exercise using micro-climate cooling products. Presented at: *2004 National Athletic Trainers Association Annual Meeting and Clinical Symposium*, Baltimore, MD, June 2004.