

SUDEEP HEGDE

Department of Industrial and Systems Engineering
Texas A&M University

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SUMMARY

Human Factors and Resilience Engineering expert with experience studying and designing for sociotechnical systems. Applications include novel information displays, self-reporting tools for clinicians to share narratives of work practice, and frameworks to identify and define resilient characteristics of complex systems. Domains of experience include healthcare and military intelligence analysis. Future plans involve extending these methods and frameworks toward performance improvement in diverse domains, including telehealth and clinical information systems.

EDUCATION

Doctor of Philosophy, September 2015, Industrial and Systems Engineering; Concentration: Human Factors Engineering, University at Buffalo (UB), The State University of New York
Dissertation: *Resilience Engineering Approach to Improve Patient Safety*
Doctoral advisor: Ann Bisantz, Ph.D.

Master of Science, May 2010, Industrial and Systems Engineering, Concentration: Human Factors Engineering, UB

Bachelor of Engineering, June 2007, Industrial Engineering and Management, M.S. Ramaiah Institute of Technology, Bangalore, India

PRACTICAL EXPERIENCE

Assistant Research Engineer, September 2019-present, Texas A&M Engineering Experimentation Station (TEES), Texas A&M University

Instructional Assistant Professor, September 2019-present, Department of Industrial and Systems Engineering, Texas A&M University

Postdoctoral Research Associate, August 2018-August 2019, Department of Industrial and Systems Engineering, University at Buffalo (UB), The State University of New York. Postdoctoral advisor: Ann Bisantz, Ph.D.

Harvard Research Fellow, September 2015-July 2018, Department of Anesthesia, Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center (BIDMC), teaching affiliate of Harvard Medical School. Postdoctoral supervisor: Cullen Jackson, Ph.D.

HONORS and AWARDS

- 2nd place, Student Paper Competition, Cognitive Engineering and Decision Making (CEDM) Technical Group, Human Factors and Ergonomics Society, 2015: **Hegde, S.**, Hettinger, A. Z., Fairbanks, R. J., Wreathall, J., Wears, R. L., & Bisantz, A. M. (2015, September). Knowledge Elicitation for Resilience Engineering in Health Care. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 2015, Los Angeles, CA.
- Travel Award – Young Talent Program, Resilience Engineering Association (REA) Symposium June 22nd-25th 2015, Lisbon, Portugal

- Best Poster Abstract in Health Services Research Category, MedStar Health Research Institute Annual Research Symposium, Columbia, MD, March 4th 2013: **Hegde S.**, Rackoff A, Bisantz A, Wreathall J, Wears R, Lewis VL, Fairbanks RJ, Hettinger AZ. *A Framework for Root Cause Analysis Safety Solutions.*
- Best Poster award at the annual Inter-University Workshop for Human Factors students at University at Buffalo, November 5th 2011. McGeorge NM, **Hegde S.**, Guarrera TK, Zhou Y, Bisantz AM, Lin L, Crane PW, Fairbanks RJ, and with the HITEC Investigators. *Studying the Impact of Interoperable Health IT on Workflows in Ambulatory Care.*
- Member, Alpha Pi Mu – Students honors society for Industrial Engineers. Inducted Sept. 16th 2010

RESEARCH EXPERIENCE

Assistant Research Engineer: Dept. of Industrial & Syst. Engineering, Texas A&M University, Sept. 2019 – present.

Remote Monitoring of Physiological Measures Through Sensor-Based Technologies: Applications for Mental Health Support. Funded by Texas A&M University's X-Grant. PI: Farzan Sasangohar.

Contribution:

- Analysis of large data sets to determine statistical relationships between physiological measures (e.g. heart rate) and mental health issues: stress, anxiety, and Post Traumatic Stress Disorder (PTSD)
- Data collection for study to understand the effect of biofeedback on physiological measures

Postdoctoral Research Associate: Dept. of Industrial & Syst. Engineering, UB, August 2018 – Aug. 2019.

Design and Evaluation of a New Electronic Status Board for Emergency Medicine, August 2018 – Aug. 2019. Funded by the Agency for Healthcare Research and Quality (AHRQ). PI: Aaron Z. Hettinger.

Contribution:

- Supporting the analysis of qualitative data related to clinicians' performance and feedback on the new patient-centered display
- Preparation of manuscripts to be submitted to peer-reviewed journals

Critical Decision Making of Emergency Care Nurses, August 2018 – Aug. 2019. Funded by the Agency for Healthcare Research and Quality (AHRQ). PI: Aaron Z. Hettinger. Contribution:

- Qualitative analysis of interviews of emergency care nurses for insights on decision making in critical situations

Postdoctoral Fellow: Dept. of Anesthesia, Crit. Care and Pain Med., BIDMC, Sept 2015 – July 2018.

Design of Virtual Endoscopic Surgery Simulator (VESS) using Cognitive Task Analysis, March 2017 – July 2018. Funded by the National Cancer Institute (NCI). PI: Dr. Suvranu De. Contribution:

- Conducted interviews of novice and expert practitioners of endoscopic submucosal dissection (ESD) towards a cognitive task analysis (CTA)
- Analyzed findings and developed insights to inform the design of an ESD training simulator

Pilot-Implementation of the Resilience Engineering Tool to Improve Patient Safety (RETIPS), April 2016 – present. Internally funded. Contribution:

- Made design improvements to a novel lesson-sharing tool (developed as part of dissertation) based on iterative feedback of clinicians
- Implemented on pilot basis among anesthesia interns
- Developed manuscript for conference proceedings

Characterizing the Work of Operating Room Floor Managers as a Resilient Practice, Feb 2016 – present. Internally funded. Contribution:

- Study conception, based on the Resilience Engineering philosophy, design and preparation
- Data collection and analysis

- Manuscript development and conference presentation

Graduate Research Assistant, Department of ISE, UB, May 2009 – 2015:

Dissertation: *Resilience Engineering approach to improving patient safety*, May 2012 – August 2015.

Healthcare Domain

Design and Testing of a Novel Emergency Department Information Display Using Cognitive Systems Engineering Methods, Sept 2013 – Aug 2015. Funded by Agency for Healthcare Research and Quality (AHRQ); Principal Investigator (PI): Dr. Ann Bisantz, UB. Contribution:

- Video analysis of participant activity and screen usage using Noldus software
- Statistical analysis of study results using SAS
- Co-authored manuscript

Assessing the Effectiveness and Sustainability of Root Cause Analysis in Healthcare, Jan-Dec 2012
Funded by American Society for Healthcare Risk Management (ASHRM); PI: Dr. A. Zachary Hettinger, National Center for Human Factors in Healthcare. Contribution:

- Study design and preparation of data collection materials, e.g. interview guides, surveys
- Data collection – on-site interviews of nurses and technicians in a large hospital group in the Washington D.C. area
- Quantitative and qualitative analysis of interview and survey data
- Study reporting through journal paper submissions and technical report

Assessing the Impact of Interoperable Health IT on Workflow in Ambulatory Care, Jun 2010 – Aug 2011.
Funded by New York State (NYS) Department of Health. PI: Dr. Ann Bisantz, UB. Contribution:

- Data collection through semi-structured interviews of physicians, nurses and staff at ambulatory care practices in Rochester, NY
- Qualitative analysis of interview data using Microsoft Visio and Excel
- Study reporting through journal and conference paper submissions, poster presentations and technical report

Usability testing of patient health information portal, “LIPIX”, Jun – Aug 2011. Funded by the NYS Department of Health through the Health Information Technology Evaluation Collaborative (HITEC). A. Bisantz, UB PI. Contribution:

- Analysis of screen-capture of participants interacting with the portal using Morae usability testing software
- Qualitative analysis of results and reporting through a memo

Military/General Domain – Knowledge Representation

Evaluation and Usability Analysis of Causal Influence Models (a novel method of representing expert knowledge through Bayesian probability networks). Aug 2014 – present. Funded by Charles River Analytics, Inc. Boston, MA. PI: Dr. Ann Bisantz. Contribution:

- IRB protocol preparation
- Study design and set-up

Uncertainty Visualization for Movement and Path Tracking for Military Intelligence Analysis. Jan 2012 – Aug 2013. Funded by Defense Advanced Research Projects Agency (DARPA). UB PI: Dr. Ann Bisantz. Contribution:

- Study design, data collection, statistical analysis
- Study reporting technical report and conference paper submission

Ergonomics

User-preferred Position of Computer Displays, Effects of Display Size. May 2009 – Apr 2010. Funded by Office Ergonomics Research Committee (OERC). PI: Dr. Gwanseob Shin. Contribution:

- Study design and set up, data collection, data processing
- Study reporting through journal paper and conference paper submissions

Video Game Playing: The Effects of Controllers and Duration on Physical and Mental Workload Assessment. Spring 2009. Research Practicum supervised by Dr. Gwanseob Shin. Contribution:

- Study design and set up; data collection, data processing and analysis
- Study reporting through final project report, manuscript (not published) and presentation at student conference

Research Assistant, Department of Management Studies, Indian Institute of Science, Bangalore, India. Jun – Sept 2007. Supervisor: Dr. Mary Mathew

Research area - Intellectual property rights and software licensing

- Conducted extensive and systematic literature reviews, and contributed to various reports prepared by supervisor

Proposal Preparation: Significant Contributions -

- Agency for Healthcare Research and Quality (AHRQ) – R03 mechanism. Defining Trade-offs and Resilience in Operating Room Floor Management. **S. Hegde, PI**, C.D. Jackson, P. Panzica, S.K. Ramachandran. \$100,000 Total Costs. Submitted Feb 2017. Scored. Not funded.
- Agency for Healthcare Research and Quality (AHRQ) – Step-Up Challenge. Advancing precision health decision making regarding functional health decline and falls risk in community dwelling older adults: A mobile platform for collecting, aggregating, and sharing patient reported outcomes among patients, clinicians, and informal caregivers. Sabrina Casucci, **S. Hegde, PI**, Suzanne Sullivan, Kris Schindler. \$10,000 Total Costs (initial step). Submitted Sept 2019. Not funded.
- Agency for Healthcare Research and Quality (AHRQ) – R18 mechanism. *Development of a Resilience Approach to Improving Patient Safety*. Z. Hettinger, PI, **S. Hegde**, Research Assistant. \$599,319 Total Costs. Submitted February 2013. Not Funded

Undergraduate and Graduate Supervision: Mentored and supervised undergraduate and graduate research assistants on the project, “*Evaluation and Usability Analysis of Causal Influence Models*”. January-August 2015.

PUBLICATIONS and PRESENTATIONS

Peer Reviewed Journal Papers:

1. **Hegde, S.**, Hettinger, A.Z., Fairbanks, R.J., Wreathall, J., Krevat, S.A., & Bisantz, A.M. (Accepted for publication). Knowledge Elicitation to Understand Resilience: A Method and Findings from a Health Care Case Study. *Journal of Cognitive Engineering and Decision Making*.
2. **Hegde, S.**, Hettinger, A.Z., Fairbanks, R.J., Wreathall, J., Krevat, S.A., Jackson, C.D. & Bisantz, A.M. (January 2020). Qualitative Findings from a Pilot Stage Implementation of a Novel Organizational Learning Tool Toward Operationalizing the Safety-II Paradigm in Health Care. *Applied Ergonomics*, 82. Advance online publication. <https://doi.org/10.1016/j.apergo.2019.102913>
3. Wang, X., Kim, T.C., **Hegde, S.**, Hoffman, D.J., Benda, N.C., Franklin, E.S., Lavergne, D., Perry, S.J., Fairbanks, R.J., Hettinger, A.Z., Roth, E.M., Bisantz, A.M. (Accepted). Design and Evaluation of an Integrated, Patient-focused Electronic Health Record Display for Emergency Medicine. *Applied Clinical Informatics*.
4. **Hegde, S.**, Gromski, M. A., Halic, T., Turkseven, M., Xia, Z., Cetinsaya, B., Sawhney, M.S., Jones, D.B., De, S., Jackson, C.D. (Online First). Endoscopic Submucosal Dissection: A Cognitive Task Analysis Framework Toward Training Design. *Surgical Endoscopy*. DOI 10.1007/s00464-019-06822-x.

5. Cetinsaya, B., Gromski, M. A., Lee, S., Xia, Z., Demirel, D., Halic, T., Coskun Bayrak, Jackson, C.D., De, S., **Hegde, S.**, Cohen, J., Sawhney, M., Stavropoulos, S.N., Jones, D.B. (2018). A task and performance analysis of endoscopic submucosal dissection (ESD) surgery. *Surgical endoscopy*, 1-15.
6. Clark, L.N., Benda, N.C., **Hegde, S.**, McGeorge, N.M., Guarrera-Schick, T.K., Hettinger, A.Z., LaVergne, D.T., Perry, S.J., Wears, R.L., Fairbanks, R.J., Bisantz, A.M. (2017) Usability evaluation of an emergency department information system prototype designed using cognitive systems engineering techniques. *Applied Ergonomics*, 60, 356-365.
7. McGeorge, N.M., **Hegde, S.**, Berg, R.L., Guarrera-Schick, T.K., LaVergne, D.T., Casucci, S.N., Hettinger, A.Z., Clark, L.N., Lin, L., Fairbanks, R.J., Benda, N.C., Sun, L., Wears, R.L., Perry, S.J., Bisantz, A.M. (2015). Assessment of Innovative Emergency Department Information Displays in a Clinical Simulation Center. *Journal of Cognitive Engineering and Decision Making*, 9(4), 329-346.
8. McGeorge, N. M., **Hegde, S.**, Guarrera, T. K., Zhou, Y., Lin, L., Crane, P. W., Fairbanks, R. J., Kaushal, R. and Bisantz, A.M (2014). Studying the impact of interoperable electronic health records on workflow in ambulatory care. *International Journal of Industrial Ergonomics*.
9. Hettinger, A. Z., Fairbanks, R. J., **Hegde, S.**, Rackoff, A. S., Wreathall, J., Lewis, V. L., Bisantz, A.M. and Wears, R. L. (2013). An evidence-based toolkit for the development of effective and sustainable root cause analysis system safety solutions. *Journal of Healthcare Risk Management*, 33(2), 11-20.
10. Zhou, Y., Ancker, J. S., Upadhye, M., McGeorge, N. M., Guarrera, T. K., **Hegde, S.**, Crane, P. W. and Lin, L. (2013). The impact of interoperability of electronic health records on ambulatory physician practices: a discrete-event simulation study. *Informatics in primary care*, 21(1), 21-29.
11. Guarrera, T. K., McGeorge, N. M., Ancker, J. S., **Hegde, S.**, Zhou, Y., Lin, L., Crane, P. W., Fairbanks, R. J., Kaushal, R. and Bisantz, A. M. (2013). Characterizing the effect of interoperability on healthcare work: a novel framework. *Theoretical Issues in Ergonomics Science*, 15(6), 578-594.
12. Shin, G., & **Hegde, S.** (2010). User-preferred position of computer displays: effects of display size. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 52(5), 574-585.

Book Chapters

Hegde, S., Jackson, C.D. Communication as a Driver of Resilience in Frontline Operating Room Floor Management. In Braithwaite, J., Hollnagel, E. and Hunte, G. (In press) *Resilient Health Care Volume 5: Working Across Boundaries*. Boca Raton, FL: CRC Press, Taylor and Francis..

Manuscripts in Preparation

Hegde, S., Arora, J., Wang, X., Kim, T.C., Hoffman, D.J., Benda, N.C., Franklin, E.S., Lavergne, D., Perry, S.J., Fairbanks, R.J., Hettinger, A.Z., Roth, E.M., Bisantz, A.M.(in prep.). The Role of Experience in the Critical Decision Making of Emergency Department Nurses: Findings from a Qualitative Study.

Hegde, S., Panzica, P., Hess, P., Jackson, C.D. (in prep.). Frontline Operating Room Floor Management as a Trade-Off Space: An Ethnographic Study to Examine Barriers and Adaptive Strategies for Reconciliation.

Invited Authorship/Panel Presentations:

- **Hegde, S.**, Bisantz, A.M., Fairbanks, R.J. Building a safety program using principles of resilience engineering [Perspective]. AHRQ PSNet [serial online]. June 2019. Available at: <https://psnet.ahrq.gov/perspectives/perspective/273>.
- **Hegde, S.**, Aaron Z. Hettinger, Ann M. Bisantz. Information Visualization as a Driver of Safety-II, at the *Safety-II in Practice Workshop*. February 25th-27th 2019, Saint Petersburg, FL, USA
- Panelist – session on “Approaches for use in identifying or quantifying the presence of resilience”, at the *Theory to Practice: Issues and Challenges for Engineering Resilience* conference. November 1st-2nd 2018, Mayo Clinic, Rochester, MN, USA. Invited as a contextual expert in Resilience Engineering.

Conference Papers and Presentations:

1. **Hegde, S.**, Bisantz, A. M., Hettinger, A. Z. (2019). Information Visualization in a Safety-II Context. Presented at the Workshop on Safety_II in Practice, February 25th-27th, 2019, St. Petersburg, FL.
2. **Hegde, S.**, Halic, T., Sawhney, M., Jones, D. B., De, S., & Jackson, C. D. (2018). A Cognitive Task Analysis Approach Toward Identifying Learning Requirements and Informing Training Design for Different Categories of Learners of Endoscopic Submucosal Dissection. *Gastrointestinal Endoscopy*, 87(6), AB536.
3. **Hegde, S.**, Jackson, C.D. (2017, September). RETIPS Revisited: Findings from a Pilot Stage Implementation of the Resilience Engineering Tool to Improve Patient Safety. Presented at *the Human Factors and Ergonomics Society Annual Meeting*, 2017, Austin, TX.
4. **Hegde, S.**, Jackson, C.D. (2016, August). Characterising the Resilience of Operating Room Floor Managers. Presented at Resilient Health Care Network meeting, August 15th-17th, 2016, Middelfart, Denmark.
5. **Hegde, S.**, Hettinger, A. Z., Fairbanks, R. J., Wreathall, J., Wears, R. L., & Bisantz, A. M. (2015, September). Knowledge Elicitation for Resilience Engineering in Health Care. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 2015, Los Angeles, CA. (Vol. 59, No. 1, pp. 175-179).
6. **Hegde, S.**, Hettinger, A. Z., Fairbanks, R. J., Wreathall, J., Wears, R., & Bisantz, A. M. (2015, September). Resilience Engineering for a Learning Organization in Health Care: Insights for Developing a Learning Tool "RETIPS". In *Proceedings of the International Symposium of Human Factors and Ergonomics in Healthcare*, 2015, Baltimore, MD. [Lecture Presentation]
7. *McGeorge NM, **Hegde S**, Guarrera-Schick TK, LaVergne DL, Clark LN, Hernandez A, Benda NC, Wears RL, Perry SJ, Hettinger AZ, Fairbanks RJ, and Bisantz AM. (2015). Supporting the Work of ED Clinicians: Assessment of a Novel Emergency Department Information System in a Clinical Simulation Center. Proceedings of the 2015 International Symposium on Human Factors and Ergonomics in Healthcare: Improving the Outcomes, Human Factors and Ergonomics Society, April, 2015, Baltimore, MD. [Lecture Presentation]
8. **Hegde, S.**, Wreathall, J., Hettinger, A. Z., Fairbanks, R. J., Wears, R. L., & Bisantz, A. M. (2014, September). Towards the Development of a Resilience Engineering Tool to Improve Patient Safety The RETIPS Approach. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 58, No. 1, pp. 803-807).
9. Bisantz, A., D'Arcy, J. F., Kerker, D., **Hegde, S.**, Guan, P., Voshell, M., & Kilgore, R. (2014, September). Maps, Space-time Cubes, and Meta-Information for Understanding Path Information A Comparative Analysis. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 58, No. 1, pp. 370-374).
10. **Hegde, S.**, Hettinger, A. Z., Fairbanks, R. J., Wreathall, J., Lewis, V., Wears, R., & Bisantz, A. M. (2013, September). A Bottom-Up Approach to Understanding the Efficacy of Event-Analysis in Healthcare Paradigm Shift from Safety to Resilience Engineering. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 57, No. 1, pp. 673-677).
11. *Guarrera, T. K., McGeorge, N. M., Ancker, J. S., **Hegde, S.**, Zhou, Y., Lin, L., Crane P.W., Fairbanks RJ, Kaushal R., & Bisantz, A. M. (2013, June). Characterizing Levels of Health IT System Interoperability based on How it Affects the Work of the Users. In *Proceedings of the International Symposium of Human Factors and Ergonomics in Healthcare* (Vol. 2, No. 1, pp. 6-6).
12. *Shin, G., & **Hegde, S.** (2010, September). User-preferred position of computer displays of different sizes and configurations. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 54, No. 15, pp. 1110-1114).

Conference Posters:

1. **Hegde, S.**, Halic, T., Sawhney, M., Jones, D., De, S., Jackson, C. (2018). A Cognitive Task Analysis Approach Toward Identifying Learning Requirements and Informing Training Design for Different Categories of Learners of Endoscopic Submucosal Dissection. *Digestive Disease Week, 2018*.

2. Jackson, C., **Hegde, S.**, Cohen, J., Sawhney, M., Jones, D., Cetinsaya, B., Gromski, M., Leed, S., Zhaohui, X., Demirel, D., Halic, T., Bayrak, C., De, S. (2018). A Cognitive Task Analysis A Approach Toward the Design of A Virtual Reality Simulator for Endoscopic Submucosal Dissection. *16th World Congress of the Society for American Gastrointestinal Endoscopic Surgeons (SAGES), 2018.*
3. *Zhou Y., Ancker J., Upahdye M., McGeorge NM., Guarrera T.K., **Hegde S.**, Crane P.W., Fairbanks RJ, Bisantz AM, Kaushal R., and Lin L. (2013). Evaluating the Impact of EHR Interoperability Using a Simulation Model. *Proceedings of the Industrial and Systems Engineering Research Conference, Institute of Industrial Engineers Annual Meeting, May 18-22, 2013, San Juan, Puerto Rico*
4. *Ancker, J., Miller, M., **Hegde, S.**, Agarwal, K., Kaushal, R., Bisantz, A.M. (2012, November). Usability testing of a novel system for patient-provider messaging in a health information exchange environment. In *AMIA Annual Symposium Proceedings, 2012.*

Unpublished Research Presentations and Posters:

1. *McGeorge N.M., Guarrera T.K., Casucci S., LaVergne D.T., Sun L., **Hegde S.**, Chevalier D., Clark L.N., Benda N., Hernandez A., Hettinger A.Z., Lin L., Fairbanks R.J., and Bisantz A.M. (2014). Assessment of a novel emergency department information system in a medical simulation center. Poster presented at Industrial and Systems Engineering Department Poster Competition, State University of New York at Buffalo, March 28, 2014, Buffalo, NY.
2. ***Hegde S.**, Rackoff A, Bisantz A, Wreathall J, Wears R, Lewis VL, Fairbanks RJ, Hettinger AZ. (2012) A Framework for Root Cause Analysis Safety Solutions. Abstract Poster Presentation at the MedStar Health Research Institute Annual Research Symposium. Columbia, MD 4th March 2013
3. **Hegde, S.**, Hettinger, A.Z., Bisantz, A.M., Rackoff, A., Lewis, V., Wreathall, J., Wears, R., Fairbanks, R. (2013). Assessment of Root Cause Analysis Safety Solutions in Healthcare Using a Bottom-up Approach. Poster presented at UB-ISE's graduate student poster competition on 21st March 2013.
4. **Hegde, S.**, McGeorge, N.M., Guarrera, T.K., Zhou, Y. & Bisantz, A.M. (2012). Impact of Health Information Technology on Work Practice in Ambulatory Care. Lecture presented at the Inter-University Workshop at the University of Toronto on November 10th 2012.

*Presenter other than Hegde, S.

Technical Reports:

1. D'Arcy, J-F, Kerker, D., Guan, P., Li, R., **Hegde, S.** and Bisantz, A.M. (2013). Insight Technical Area 4 Foundational Experiments and Demonstration: Visualizations for spatiotemporal analysis tasks. Submitted to DARPA.
2. Hettinger, A. Z., Fairbanks, R. J., **Hegde, S.**, Rackoff, A. S., Wreathall, J., Lewis, V. L., Bisantz, A.M. and Wears, R. L. (2012) Toolkit for RCA Effectiveness and Sustainability. Submitted to ASHRM.
3. McGeorge, N.M., **Hegde, S.**, Guarrera, T.K., Zhou, Y., Bisantz, A.M., Lin, L., Crane, P.W., Fairbanks, R.J. (2011). Studying the impact of interoperable HIT on workflows in ambulatory care. Buffalo, NY: State University of New York at Buffalo. Submitted to HITEC.

TEACHING EXPERIENCE

Instructor, Department of Industrial and Systems Engineering (ISE), UB, Buffalo, New York

- Human Computer Interaction (IE 435/535), Fall 2018
- Design and Analysis of Experiments (IE 507), Summer 2014 (Graduate level class)

Instructor, Monash University, Australia

- 2019 Human Factors Short Course (developed course material and lecture on Resilient Health Care)

Teaching Assistant, Department of ISE, UB, Buffalo, New York

- Human factors in Safety, Spring 2014
 - Graded homeworks. Assisted the instructor creating assignments and projects
- Lean Enterprises, Spring 2010
 - Graded homeworks and assisted the instructor in creation of assignments and projects.
- Six Sigma Quality, Fall 2009;
 - Graded homeworks and exams and assisted the instructor in supervising student projects.

Invited Talks and Guest Lectures:

- “Resilience Engineering/Safety-II in Practice” Fireside chat with fellows, Healthcare Improvement Unit Fellowship program, **Clinical Excellence Queensland**, Queensland, Australia, May 22nd 2019
- “Resilience Engineering Approaches to Improve Performance and Safety in Health Care” to the UB-HFES Student Chapter, at the **University at Buffalo**, Buffalo, NY on March 29th 2019
- Lectured on “Applications of Cognitive Engineering and Resilience Engineering in Health Care” to a graduate-level class, Introduction to Biomedical Informatics at the Department of Biomedical Informatics, at the **University at Buffalo**, Buffalo, NY on November 8th 2018
- Web-based lecture on Resilience Engineering in Healthcare as part of graduate course on “Human Factors in Healthcare Systems” at the **University of Iowa’s** Department of Mechanical and Industrial Engineering on April 19th 2018
- Delivered talk on previous and current research on Resilience Engineering in Health Care at the STRATUS Center for Medical Simulation, **Brigham and Women’s Hospital (BWH)**, Boston, MA, on June 17th 2016
- Lectured first year Anesthesia residents on “Resilience Engineering” during Quality Improvement week at **Beth Israel Deaconess Medical Center**, Boston, MA, on June 7th 2016
- Lectured first year Anesthesia interns on “Resilience Engineering” during Quality Improvement week at **Beth Israel Deaconess Medical Center**, Boston, MA, on November 30th 2015
- Taught a graduate-undergraduate cross-listed class “Resilience Engineering Basics” as part of the course, Human Factors in Safety at the **University at Buffalo**, on March 24th and 26th 2014

SERVICE ACTIVITIES

Editorial:

Reviewer:

- *Ergonomics*, July 2019-present
- *Safety Science*, (guest reviewer for special issue on Resilient Health Care) 2019
- *Applied Ergonomics*, November 2018 – present
- *Journal of Cognitive Engineering and Decision Making*, June 2014 – present
- *Proceedings of the Human Factors and Ergonomics Society*
 - Cognitive Engineering and Decision Making (CEDM) Technical Group (TG), 2009 – present
 - Health Care TG, 2010 – present

Professional:

- **Chair, Organizing Committee**, Young Talent Workshop, 8th Symposium of the Resilience Engineering Association (REA), 2019
- **Session Chair**, Session: “Cognitive Engineering at Work and in the Field”, CEDM TG, the Human Factors and Ergonomics Society’s annual conference, October 30th 2019.
- **Facilitator**, Team-based RCAAs for Learning Team Concepts, Combined Safety Grand Rounds, Beth Israel Deaconess Medical Center, Boston, September 13th 2017
- **Organizing Committee Member**, Young Talent Workshop, 7th Symposium of the Resilience Engineering Association (REA), Belgium 2017

- **Session Co-chair**, Panel: “*How to Tell a ‘Good’ Cognitive Task Analysis?*”, CEDM TG, the Human Factors and Ergonomics Society’s annual conference, 2014. Session Chair: Dr. Emilie Roth. October 29th 2014.
- **President**, UB Student Chapter of the Human Factors and Ergonomics Society – 2011-12
- **President**, UB Student Chapter of the Human Factors and Ergonomics Society – 2009-10
- **Planning Committee member**, 12th Annual Inter-University Workshop for Human Factors and Ergonomics Society Student Chapters 2011, University at Buffalo

University:

- Documented course materials and evaluations, and helped prepare reports towards renewal of ABET accreditation as TA in IE441, Human Factors in Safety
- Volunteer, International Student Orientation, Fall 2009, 2010 at UB
- Volunteered for department open-houses in Fall 2011 and Fall 2013 – conducted demonstration of Occupational Biomechanics Lab to potential Engineering undergraduate students.
- Taught a workshop on Morae Usability Testing Software to department graduate students in Fall 2012

Outreach:

- Lead the UB-HFES Student Chapter’s outreach program to explain Human Factors to high school students at a public event called “Junior Robotic Surgeon Challenge”, at Roswell Park Cancer Institute, Buffalo, April 26th 2014
- Team member, UB-HFES Student Chapter’s Heuristic Evaluation and Design Recommendations for the website of Darwin Martin House, a historic architectural site in Buffalo, NY, Spring 2009

Public:

Nashik Accident and Medical Emergency (NAME) Foundation, Nashik, India

Full Time Volunteer January to August 2008

- Assisted the CEO in planning, organizing and designing the functional structure of citywide emergency management system
- Designed website for the organization
- Recruited paramedics and ambulance drivers

SOFTWARE TOOLS AND SKILLS:

- Statistical analysis using SAS and Minitab
- Video analysis using Noldus and Morae
- MS Word, Excel, Visio and Power Point
- Qualitative data analysis using Atlas.ti

LANGUAGES

Fluent in English, Kannada and Hindi; Limited working proficiency in German