

CHANGWON SON

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ACADEMIC POSITIONS

- 2021-Present **Assistant Professor**, Department of Industrial, Manufacturing, & Systems Engineering
Texas Tech University (TTU), Lubbock, TX
- 2021-Present **Director**, Safety, Human factors, And Resilience Engineering (SHARE) Lab, TTU
(<https://www.thesharelab.org>)
- 2016-2021 **Research Assistant**, Wm Michael Barnes '64 Department of Industrial and Systems
Engineering, Texas A&M University (TAMU), College Station, TX
- 2014-2021 **Research Assistant**, Mary Kay O'Connor Process Safety Center, TAMU, College Station,
TX

EDUCATION

- 2016-2021 **Ph.D., Industrial Engineering**
Wm Michael Barnes '66 Department of Industrial and Systems Engineering
Texas A&M University, College Station, TX
Dissertation: 'A multifaceted approach to understanding resilience of incident management
teams'
Faculty Advisors: Farzan Sasangohar and S. Camille Peres
- 2014-2016 **M.Sc., Safety Engineering**
Mary Kay O'Connor Process Safety Center, Department of Chemical Engineering
Texas A&M University, College Station, TX
Thesis: 'A Study of Safety Culture Assessment Framework for Process Industries and Its
Application to a Bayesian Belief Network Analysis'
Faculty Advisor: M. Sam Mannan
- 2000-2008 **B.Sc., Industrial Engineering**
Hanyang University, Seoul, South Korea
- 2005-2006 **Exchange Student, Mechanical Engineering**
Pittsburg State University, Pittsburg, KS

AWARDS, HONORS, & FELLOWSHIPS

- 2022 **Early-Career Research Fellowship**, National Academies of Sciences, Engineering, and
Medicine (NASEM) Gulf Research Program (GRP) Offshore Energy Safety Track
- 2020 **Outstanding PhD Student Award**, Industrial and Systems Engineering Department, TAMU

2020	National Ergonomics Month Best Educational Resource for K-12 , Human Factors and Ergonomics Society (HFES)
2020	Student Member with Honors , HFES
2020	Council of Technical Group Student Presenter Award , the 64 th HFES Annual Meeting
2020	Emerging Leader , HFES
2019	Best Student Paper , the 63 rd HFES Annual Meeting Safety Technical Group
2019	Student Presentation Competition Winner , the 2019 Resilience Week
2018	Graduate Student Research and Presentation Travel Award , TAMU
2018	Outstanding Graduate Student Service Award , Industrial and Systems Engineering Department, TAMU
2018	Texas Safety Foundation Steve Halliburton HSE Scholarship , American Society of Safety Engineers
2017	Young Talent , Resilience Engineering Association
2016	Best Poster Presentation Award , Inaugural Texas A&M Conference on Energy
2014	Award of Excellence Performance , Hoegh LNG Carriers Project
2013	Safety Excellence Award , Brunei Gas LNG Carriers Project
2010	Safety Excellence Award , Eni Norge Goliath FPSO Project
2007	Dean's Scholastic Honors , Pittsburg State University
2006	All A Scholastic Honors , Pittsburg State University
2005	Scholarship of Academic Excellence, Honor , Hanyang University
2005	Scholarship of Academic Excellence, Top , Hanyang University

GRANTS & CONTRACTS

Funded Projects (Total Amount=\$1,084,131)

2024-2026	Source: National Institute of Standards and Technology (NIST) Standards Coordination Office Curricula Development Cooperative Agreement Program Title: Integrating Emergency, Disaster, and Crisis Management Standards into Safety Engineering Courses Amount: \$149,021 Role: Principal Investigator (Co-PIs: Mihwa Park and Wesley Wehde)
2023-2026	Source: National Academies of Science, Engineering, and Medicine (NASEM) Gulf Research Program (GRP) , Safer Offshore Energy Systems Grant Title: Empowering and enhancing offshore workers' SWA, UWA, Reporting unsafe conditions, and Employee participation Amount: \$855,760 Role: Project Director (PIs: Marshall Watson, Kerk F. Kee, and Tyree Mitchell [LSU])
2022-2023	Source: NASEM, Gulf Research Program, Offshore Energy Safety Track, Early-Career Research Fellowship Amount: \$76,000 Role: Research Fellow

- 2018-2019 Source: **Texas Sea Grant**, Grants-In-Aid of Graduate Research Program
 Title: Identifying Sources of Resilience in a Large-scale Disaster Management through Dynamic Team Interaction
 Amount: **\$1,950**
 Role: **Principal Investigator**
- 2017-2018 Source: **Aggies Commit Research Grant**, Office of Graduate and Professional Studies, TAMU
 Title: Resilient Performance of Incident Responders during Hurricane Harvey
 Amount: **\$1,400**
 Role: **Principal Investigator**

Pending Projects

- 2024-2027 Source: **National Science Foundation (NSF) Humans, Disasters, and the Built Environment (HDBE) Program**
 Title: **Investigating and Enhancing Firefighters' Lifecycle of Situation Awareness**
 Amount: **\$395,144**
 Role: **Principal Investigator** (Co-PI: Eric Greenlee)
- 2024-2027 Source: **National Institute of Justice (NIJ) Research and Development on School Safety**
 Title: **A System Safety Engineering and Management Approach to K-12 School Violence Incidents**
 Amount: **\$593,191**
 Role: **Principal Investigator** (Co-PI: Natasha Pusch)
- 2023-2028 Source: **US Department of Transportation (DOT)**
 Title: **Center for Next Generation Convergent Transportation Safety (C-NGCTS)**
 Amount: **\$20,137 / Total Amount: \$8M**
 Role: **Co-PI** (Lead PI: Venky Shankar)

PUBLICATIONS

(**SHARE Lab member in bold**; †=advised by Son; ‡=co-advised by Son; *=corresponding author)

Refereed Journal Articles (accepted or published)

- [J.14] **Dos Santos, V. M.†** & **Son, C.*** (2023). Identifying Firefighters' Situation Awareness Requirements for Fire- and Non-fire emergencies Using a Goal-Directed Task Analysis, *Applied Ergonomics*, 114, 104136. DOI: 10.1016/j.apergo.2023.104136
- [J.13] **Son, C.*** (2023). Disaster Ergonomics: A Human Factors approach to address escalating challenges from disasters, *Cognition, Technology, & Work*. DOI: 10.1007/s10111-023-00736-4
- [J.12] Moon, J., Sasangohar, F.*, Peres, S. C., & **Son, C.** (2023). Naturalistic observations of multiteam interaction networks: Implications for cognition in crisis management teams, *Ergonomics*. DOI: 10.1080/00140139.2023.2221418
- [J.11] **Son, C.**, Hegde, S., Markert, C., Zahed, K., & Sasangohar, F.* (2023). Use of a Mobile Biofeedback Application to Provide Health Coaching for Stress Self-Management: Findings from a Pilot Quasi-Experiment. *JMIR Formative Research*, 7 (e41018). DOI: 10.2196/41018
- [J.10] **Son, C.**, Sasangohar, F.*, Peres, S. C., & Moon, J. (2022). Analyzing work-as-imagined and work-as-done of incident management teams using Interaction Episode Analysis. *Theoretical Issues in Ergonomics Science*, DOI: 10.1080/1463922X.2022.2153495.

- [J.09] Wang, X., Hegde, S., **Son, C.**, Keller, B., Smith, A., & Sasangohar, F.* (2020). Investigating Mental Health of US College Students During the COVID-19 Pandemic: Cross-Sectional Survey Study. *Journal of Medical Internet Research*, 22(9), e22817. DOI: 10.2196/22817
- [J.08] **Son, C.**, Hegde, S., Smith, A., Wang, X., & Sasangohar, F.* (2020). Effects of COVID-19 on College Students Mental Health in the US: An Interview-survey Study. *Journal of Medical Internet Research*, 22(9), e21279. DOI: 10.2196/21279
- [J.07] Moon, J. Sasangohar, F.*, **Son, C.**, & Peres, S. C. (2020). Cognition in Crisis Management Teams: An Integrative Analysis of Definitions. *Ergonomics*, 63(10), 1240-1256. DOI: 10.1080/00140139.2020.1781936
- [J.06] **Son, C.**, Sasangohar, F.*, Peres, S. C., & Moon, J. (2020). Muddling through troubled water: resilient performance of incident management teams during Hurricane Harvey. *Ergonomics*, 63(6), 643-659. DOI: 10.1080/00140139.2020.1752820
- [J.05] **Son, C.**, Larsen, E. P., Sasangohar, F.*, & Peres, S. C. (2020). Opportunities and challenges for resilient hospital incident management: Case study of a hospital's response to Hurricane Harvey. *Journal of Critical Infrastructure Policy*, 1(1), 81-104. DOI: 10.18278/jcip.1.1.7
- [J.04] **Son, C.**, Sasangohar, F.*, Peres, S. C., Neville, T. J., & Moon, J. (2020). Investigating Resilience in Emergency Management: An Integrative Review of Literature. *Applied Ergonomics*, 87, 103114. DOI: 10.1016/j.apergo.2020.103114
- [J.03] **Son, C.**, Sasangohar, F.*, Peres, S. C., Neville, T. J., & Moon, J. (2020). Evaluation of Work-as-Done in Information Management of Multidisciplinary Incident Management Team via Interaction Episode Analysis. *Applied Ergonomics*, 84, 103031. DOI: 10.1016/j.apergo.2019.103031.
- [J.02] **Son, C.**, Sasangohar, F.*, Rao, A., & Larsen, E. P. (2019). Resilient Performance of Emergency Department: Patterns, Models and Strategies. *Safety Science*, 120, 362-373. DOI: 10.1016/j.ssci.2019.07.010.
- [J.01] **Son, C.**, Sasangohar, F.*, Peres, S. C., Neville, T. J., Moon, J., & Mannan, M. S. (2018). Modeling an Incident Management Team as a Joint Cognitive System. *Journal of Loss Prevention in the Process Industries*, 56, 231-241. DOI: 10.1016/j.jlp.2018.07.021.

Manuscripts in progress (in preparation, under review, or in revision)

- [M.02] **Son, C.* & Parker, K.†** (in preparation). Effects of Semantically Irrelevant Virtual Reality Experience on Memory and Emotion of An Adverse Event. *Applied Ergonomics*.
- [M.01] **Son, C.*** (in preparation). 158 Deaths at Halloween Night: A Systemic Analysis of 2022 Itaewon Crowd Crush Using AcciMap and Functional Resonance Analysis Method. *Safety Science*.

Peer-reviewed Papers in Conference Proceedings

- [C.11] **Vaughn, A.†, Son, C.*, Baek, S.†**, Caballero, S., & Decker, S. (2023). Identifying EHR Novice Users' Cognitive Challenges: Mapping Critical Nursing Tasks Using HTA. *Proceedings of the International Symposium on Human Factors and Ergonomics in Health Care*, 12(1), 24–30. DOI: 10.1177/2327857923121007
- [C.10] **Dos Santos, V. M.† & Son, C.*** (2022). Virtual Reality Simulation for Emergency Management teams – A Literature Review. *Proceedings of the 66th Human Factors and Ergonomics Society Annual Meeting*, 66(1), 1937–1941. DOI: <https://doi.org/10.1177/1071181322661324>
- [C.09] Ashraf, A., **Son, C.**, Peres, S. C., & Sasangohar, F. (2021). Navigating operating procedures in everyday work in a petrochemical facility: A comparative analysis of WAI and WAD. *Proceedings of the 65th Human Factors and Ergonomics Society Annual Meeting*, 65(1), 623-627. DOI: 10.1177/1071181321651210

- [C.08] **Son, C.**, Sasangohar, F., Peres, S. C., & Moon, J. (2020). Designing an emergency management simulation testbed to investigate incident management team performance. *Proceedings of the 64th Human Factors and Ergonomics Society Annual Meeting*, 64(1), 1881-1885. DOI: 10.1177/1071181320641453
- [C.07] **Son, C.**, Peres, S. C., & Sasangohar, F. (2020). Developing a novel operator performance measure for procedural tasks based on Safety-II perspective. *Proceedings of the 64th Human Factors and Ergonomics Society Annual Meeting*, 64(1), 1755-1759. DOI: 10.1177/1071181320641425
- [C.06] Mendonza, A. M., Liu, S. C., Dumlao, S. V., Hendricks, J. W., **Son, C.**, Sasangohar, F., & Peres, S. C. (2020). Where Two Ends Meet: Operator and Stakeholder Perceptions of Procedures. *Proceedings of the 64th Human Factors and Ergonomics Society Annual Meeting*, 64(1), 1350-1354. DOI: 10.1177/1071181320641322
- [C.05] **Son, C.**, Peres, S. C., & Ade, N. (2019). Reflecting Abstraction Hierarchy of a Chemical Processing System on Standard Operating Procedures. *Proceedings of the 63rd Human Factors and Ergonomics Society Annual Meeting*, 63(1), 1806-1810. DOI: 10.1177/1071181319631400 (**Best Student Paper, HFES Safety Technical Group**)
- [C.04] **Son, C.**, Sasangohar, F., Peres, S. C., & Moon, J. (2019). Orchestrating through Whirlwind: Identified Challenges and Resilience Factors of Incident Management Teams during Hurricane Harvey. *Proceedings of the 63rd Human Factors and Ergonomics Society Annual Meeting*, 63(1), 899-903. DOI: 10.1177/1071181319631265
- [C.03] **Son, C.**, Peres, S. C., Ade, N., & Sasangohar, F. (2019). A Dilemma on Procedure Compliance: Reflection of Ecological Approach on Standard Operating Procedures. *Proceedings of 2019 Mary Kay O'Connor Process Safety Center International Symposium*.
- [C.02] **Son, C.**, Moon, J., Sasangohar, F., & Peres, S. C. (2018). An Episode as a Trace of Resilient Performance in Multi-Agency Incident Management Systems. *Proceedings of the 15th International Conference on Information Systems for Crisis Response and Management*, 942-948.
- [C.01] **Son, C.**, Halim, S. Z., Koirala, Y., & Mannan, M. S. (2017). Incorporating Human Factors Engineering Methods in the System Life Cycle of Offshore Oil and Gas Industries. *Proceedings of Institution of Chemical Engineers Symposium Series: Hazards* 27, 162.

Peer-reviewed Abstracts in Conference

- [A.08] Markert, C., Hegde, S., **Son, C.**, Zahed, K., & Sasangohar, F. (2022). Evaluating a Biofeedback Mobile Health Application to Improve Self-Management of Stress. *The 66th Human Factors and Ergonomics Society Annual Meeting*.
- [A.07] Moon, J., Sasangohar, F., Peres, S. C., & **Son, C.** (2020). Interactive Team Cognition in Incident Action Planning: A Network Approach to Assess Work-As-Done Within and Between Multidisciplinary Crisis Management Teams. *The 64th Human Factors and Ergonomics Society Annual Meeting*, 64(1), 861-862. DOI: 10.1177/1071181320641199.
- [A.06] Hegde, S., Zahed, K., **Son, C.**, Markert, C., & Sasangohar F. (2020). Facilitating the Practice of Biofeedback Via Mobile Applications and Wearable Devices for Self-Management of Mental Health. *The 64th Human Factors and Ergonomics Society Annual Meeting*, 64(1), 1491-1492. DOI: 10.1177/1071181320641356.
- [A.05] Moon, J., Sasangohar, F., Peres, S. C., Neville, T. J., & **Son, C.** (2019). Investigating Incident Management Teams as Cognitive Systems via Network Analysis of Real Time Interactions. *The 63rd Human Factors and Ergonomics Society Annual Meeting*, 63(1), 1955-1956. DOI: 10.1177/1071181319631263
- [A.04] Neville, T. J., Peres, S. C., Ade, N., **Son, C.**, Bagaria, P., Quddus, N., & Mannan, M. S. (2018). Assessing Procedure Adherence Under Training Conditions in High Risk Industrial

- Operations. *The 62nd Human Factors and Ergonomics Society Annual Meeting*, 62(1), 1604–1604. DOI: 10.1177/1541931218621362
- [A.03] Moon, J., Sasangohar, F., Peres, S. C., Neville, T. J., & **Son, C.** (2018). Modeling Team Cognition in Emergency Response via Naturalistic Observation of Team Interactions. *The 62nd Human Factors and Ergonomics Society Annual Meeting*, 62(1), 1801-1802. DOI: 10.1177/1541931218621408
- [A.02] **Son, C.**, Sasangohar, F., Peres, S. C., & Mannan, M. S. (2018). An Episode as a Trace of Resilient Performance in Large-Scale Incident Management Systems. *The 62nd Human Factors and Ergonomics Society Annual Meeting*, 62(1), 787–787. DOI: 10.1177/1541931218621178
- [A.01] **Son, C.**, Sasangohar, F., & Peres, S. C. (2017). Redefining and Measuring Resilience in Emergency Management Systems. *The Human Factors and Ergonomics Society Annual Meeting*, 61(1), 1651–1652. DOI: 10.1177/1541931213601899

PRESENTATIONS (presenter underlined)

Conference Presentations

- [P.40] Vaughn, A.†, **Son, C.**, & Caballero, S. (2023, October). A Mixed-Methods Approach to Understanding Nursing Students' Cognitive Challenges and Workarounds during EHR-related Tasks. *Oral presentation at the 67th Human Factors and Ergonomics Society Annual Meeting*, Washington, DC.
- [P.39] **Dos Santos, V. M.†** & **Son, C.** (2023, October). Modern Firefighters' Three-level Situation Awareness in Fire and Non-fire Incidents. *Poster presentation at the 67th Human Factors and Ergonomics Society Annual Meeting*, Washington, DC.
- [P.38] Mim, A. R.† & **Son, C.** (2023, October). Help is on the way: Effects of pre-response information and planning on communication and performance of simulated firefighting teams. *Oral presentation at the 67th Human Factors and Ergonomics Society Annual Meeting*, Washington, DC.
- [P.37] Vaughn, A.†, **Son, C.**, & Caballero, S. (2023, April). Nurse's cognitive challenges along the EHR data lifecycle: A hierarchical data analysis of an expert's live demonstration of critical nursing tasks. *Poster presentation at the 17th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, Houston, TX.
- [P.36] **Dos Santos, V. M.†** & **Son, C.** (2023, April). Determining Firefighters SA Requirements: A Goal-Directed Task Analysis (GDTA). *Oral presentation at the 17th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, Houston, TX.
- [P.35] Dedeaux, J.† & **Son, C.** (2023, April). Existing challenges in response to mass shooting events and needs for novel non-lethal countermeasures based on Human Factors principles. *Oral presentation at the 17th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, Houston, TX.
- [P.34] Mim, A. R.† & **Son, C.** (2023, April). Effects of pre-response information and planning on firefighting team communication and performance. *Poster presentation at the 17th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, Houston, TX.
- [P.33] Vaughn, A.†, **Back, S.†**, & **Son, C.** (2023, March). Identifying EHR Novice Users' Cognitive Challenges: Mapping Critical Nursing Tasks Using Hierarchical Task Analysis. *Oral presentation at 2023 International Symposium on Human Factors and Ergonomics in Health Care*, Orlando, FL.
- [P.32] Markert, C., Hegde, S., **Son, C.**, Zahed, K., & Sasangohar, F. (2022, October). Evaluating a Biofeedback Mobile Health Application to Improve Self-Management of Stress. *Poster presentation at the 66th Human Factors and Ergonomics Society Annual Meeting*, Atlanta, GA.

- [P.31] Peres, S. C., Zahabi, M., Sasangohar, F., Murphy, R., **Son, C.**, Hendricks, J., Ashraf, A., Aguilar Reyes, C. I., & Jei, A. (2022, March). Adaptive Procedures: Adjusting and accommodating changing conditions, worker states, and task attributes. *Poster presentation at the 25th Annual 2022 Applied Ergonomics Conference*, Orlando, FL.
- [P.30] **Dos Santos, V. M.**, De Carvalho, P. V. R., Burns, C., Vidal, M. C. R., **Son, C.**, & Jatoba, A. (2022, March). A Framework to Assess Resilience in Health Care Patient Prioritization. *Poster presentation at 2022 International Symposium on Human Factors and Ergonomics in Health Care*, New Orleans, LA.
- [P.29] **Son, C.** (2021, October). Disaster Ergonomics: Growing threats from disasters and increasing needs for a human factors approach. *Oral presentation at 2021 Mary Kay O'Connor Process Safety Symposium*, College Station, TX
- [P.28] Wang, X., **Son, C.**, Sasangohar, F., & Moon, J. (2021, July). Lessons Learned from Teaching Various Industrial Engineering Courses During the COVID-19 Pandemic. *Oral presentation at 2021 American Society for Engineering Education Annual Conference & Exposition* (virtual).
- [P.27] **Son, C.**, Sasangohar, F., & Peres, S. C. (2021, June). Qualitative and quantitative analysis of work-as-imagined and work-as-done of incident management teams using interaction episodes. *Oral presentation at the 21st Triennial Congress of the International Ergonomics Association* (virtual).
- [P.26] Quddus, N., **Son, C.**, Halim, S. Z., & Behie, S. (2021, April). Practical Approaches for Integrating Pandemic Preparedness and Response into Business Continuity and Risk Management Planning of Critical Infrastructure Operations. *Oral presentation at 2021 American Institute of Chemical Engineers Annual Meeting* (virtual).
- [P.25] **Son, C.**, Peres, S. C., & Sasangohar, F. (2020, October). Developing a Novel Operator Performance Measure for Procedural Tasks Based on Safety-II Perspective. *Oral presentation at the 64th Human Factors and Ergonomics Society Annual Meeting* (virtual).
- [P.24] **Son, C.**, Sasangohar, F., & Peres, S. C. (2020, October). Designing an Emergency Management Simulation Testbed to Investigate Incident Management Team Performance. *Oral presentation at the 64th Human Factors and Ergonomics Society Annual Meeting* (virtual).
- [P.23] **Son, C.**, Peres, S. C., & Sasangohar, F. (2020, October). Two Views of Evaluating Procedural Task Performance:
A Transition from Safety-I to Safety-II Approach. *Oral presentation at the 2020 Mary Kay O'Connor Process Safety Symposium*, (virtual).
- [P.22] **Son, C.**, Peres, S. C., & Sasangohar, F. (2020, August). New Wine in New Cups: Measuring Operator Performance for Safety-II Perspective. *Poster presentation at the 16th Global Congress on Process Safety* (virtual).
- [P.21] **Son, C.**, Larsen, E. P., & Sasangohar, F. (2020, May). A Safety-II Perspective towards Hospital Incident Management during Hurricane Harvey. *Poster presentation at the 2020 International Symposium on Human Factors and Ergonomics in Health Care* (virtual).
- [P.20] **Son, C.**, Sasangohar, F., Peres, S. C., & Moon, J. (2020, February). Characteristics of resilient incident management teams during an extreme event: A case study of Hurricane Harvey. *Poster presentation at the 2nd Texas Disaster Management Symposium*, College Station, TX.
- [P.19] **Son, C.**, Sasangohar, F., Peres, S. C., & Moon, J. (2019, November). Resilience Traits of Incident Management Teams During Hurricane Harvey: A Qualitative Analysis from a Joint Cognitive Systems Perspective. *Oral presentation at 2019 Resilience Week*, San Antonio, TX. **(Winner of the Student Competition)**
- [P.18] **Son, C.**, Sasangohar, F., Peres, S. C., & Moon, J. (2019, October). Orchestrating through Whirlwind: Resilience Factors of Incident Management Teams during Hurricane Harvey. *Oral presentation at the 63rd Human Factors and Ergonomics Society Annual Meeting*, Seattle, WA.

- [P.17] **Son, C.**, Peres, S. C., & Ade, N. (2019, October). Reflecting Abstraction Hierarchy of a Chemical Processing System on Standard Operating Procedures. *Oral presentation at the 63rd Human Factors and Ergonomics Society Annual Meeting*, Seattle, WA.
- [P.16] **Moon, J.**, Sasangohar, F., Peres, S. C., Neville, T. J., & **Son, C.** (2019, October). Investigating Incident Management Teams as Cognitive Systems of Systems via Network Analysis of Real Time Interactions. *Oral presentation at the 63rd Human Factors and Ergonomics Society Annual Meeting*, Seattle, WA.
- [P.15] **Son, C.**, Sasangohar, F., Peres, S. C., & Moon, J. (2019, September). Resilience Functions of Incident Management Teams during Hurricane Harvey: A Qualitative Study. *Oral presentation at 2019 Resilience Rising Symposium of Hazard Reduction & Recovery Center*, College Station, TX.
- [P.14] **Son, C.**, Ade, N., Peres, S. C., & Neville, T. J. (2019, April). Analyzing Standard Operating Procedures using Abstraction Hierarchy: Implications for Designing Procedures. *Poster presentation at the 15th Global Congress on Process Safety*, New Orleans, LA.
- [P.13] **Son, C.**, Larsen, E. P., & Sasangohar, F. (2019, April). A Comparison Between Government and Hospital Incident Management Teams during Hurricane Harvey. *Poster presentation at the 15th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, Houston, TX.
- [P.12] **Son, C.**, Sasangohar, F., Peres, S. C., & Moon, J. (2019, April). Resilience Factors of Incident Management Teams during Hurricane Harvey. *Poster presentation at the 15th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, Houston, TX.
- [P.11] **Son, C.**, Sasangohar, F., Peres, S. C., Moon, J., Neville, T. J., & Larsen, E. P. (2019, March). Same Disaster, Different Response: A Comparison Between Government and Hospital Incident Management Teams during Hurricane Harvey. *Poster presentation at the 2019 International Symposium on Human Factors and Ergonomics in Health Care*, Chicago, IL.
- [P.10] **Son, C.**, Sasangohar, F., Peres, S. C., & Neville, T. J. (2018, October). Representing ‘Work-As-Done (WAD)’ of Communication and Information Flow in an Incident Management Team. *Oral presentation at the 2018 MKOPSC International Symposium*, College Station, TX.
- [P.09] **Son, C.**, Sasangohar, F., Peres, S. C., Moon, J., & Neville, T. J. (2018, September). An Interaction-based Episode as ‘Work-As-Done’ in a Multidisciplinary Incident Management Team: A Trace of Resilient Performance. *Oral presentation at the 62nd Human Factors and Ergonomics Society Annual Meeting*, Philadelphia, PA.
- [P.08] **Son, C.**, Sasangohar, F., Peres, S. C., Moon, J., & Neville, T. J. (2018, April). Representing Work-As-Done (WAD) of Communication and Information Flow in an Incident Management Team. *Poster presentation at the 14th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, Houston, TX.
- [P.07] **Moon, J.**, **Son, C.**, Sasangohar, F., Peres, S. C., & Neville, T. J. (2018, April). Modeling team cognition for coordinated decision-making in emergency response via naturalistic observation of interactions. *Poster presentation at the 14th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, Houston, Texas.
- [P.06] **Son, C.**, Moon, J., Sasangohar, F., Peres, S. C., & Mannan, M. S. (2018, March). Extracting Episodes as a Trace of Resilient Performance of Multi-Agency Incident Management Systems. *Poster presentation at the 2018 International Symposium on Human Factors and Ergonomics in Healthcare*, Boston, MA.
- [P.05] **Son, C.**, Peres, S. C., & Sasangohar, F. (2017, October). Conceptualizing Multiagency Emergency Management Systems. *Oral presentation at the 20th MKOPSC International Symposium*, College Station, TX.

- [P.04] **Son, C.**, Peres, S. C., & Sasangohar, F. (2017, October). Defining and Measuring Resilience in Emergency Management Systems. *Oral presentation at the 61st Human Factors and Ergonomics Society Annual Meeting*, Austin, TX.
- [P.03] **Son, C.**, Sasangohar, F., & Peres, S. C. (2017, June). Cognitive basis for defining and measuring resilience of emergency management systems. *Poster presentation at the 13th Southwest Regional (Houston) Human Factors and Ergonomics Society Annual Symposium*, San Antonio, TX.
- [P.02] **Son, C.**, Bernat, M., & Sasangohar, F. (2017, March). Towards More Resilient Performance of Emergency Department. *Poster presentation at the 2017 International Symposium on Human Factors and Ergonomics in Health Care*, New Orleans, LA.
- [P.01] **Son, C.**, Marengo-Ramirez, C., & Mannan, M. S. (2016, September). Safety culture assessment framework and its application to a Bayesian Belief Network analysis. *Poster presentation at the Inaugural Texas A&M Conference on Energy*, College Station, TX. (**Winner of the Best Poster Presentation Award**)

Invited Talks/Colloquia

- [T.06] **Son, C.** (2022, Apr 8). New cups for new wine – designing an adaptive operating procedure based on a new safety paradigm. *Invited research talk at Wichita State University Human Factors Psychology Department* (virtual).
- [T.05] **Son, C.** (2021, May 28). A New Wine Has Aged and We Need New Cups to Measure it: A Novel Framework to Measure Procedural Task Performance Based on Safety-II Perspective. *Invited webinar at the Next Generation Advanced Procedures (NGAP) Consortium Webinar Series*.
- [T.04] **Son, C.** (2020, Oct 31). A novel approach toward analyzing work-as-imagined and work-as-done of an incident management team's information management activity. *2020 Institute of Industrial and Systems Engineers (IISE) Doctoral Colloquium* (virtual).
- [T.03] **Son, C.** (2019, Nov 7). A systems approach towards the procedure performance: the promise of abstraction hierarchy. *Invited webinar at the Next Generation Advanced Procedures (NGAP) Consortium Webinar Series*.
- [T.02] **Son, C.** (2019, Feb 28). Resilience in Emergency Management: A New Perspective on Safety of Complex Systems. *Invited presentation at Texas Chemical Council Process Safety Committee Meeting*, Pasadena, TX.
- [T.01] **Son, C.** (2015, Mar 12). Case Study: 2013 High-density Polyethylene Storage Silo Explosion Yeosu, South Korea. *Invited presentation at Mary Kay O'Connor Process Safety Center Steering Committee Meeting*, Houston, TX.

MEDIA COVERAGE & FEATURES

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- [M.03] Ramsey, A. (2022). Engineering Faculty Member Named an Early-Career Research Fellow. **Texas Tech Today**, January 24, 2022. URL: <https://today.ttu.edu/posts/2022/01/Stories/Engineering-Faculty-Member-Named-an-Early-Career-Research-Fellow>
 - [M.02] KCBD (2022). TTU faculty member recognized by the National Academies' Gulf Research Program. **KCBD**, January 24, 2022. URL: <https://www.kcbd.com/2022/01/24/ttu-faculty-member-recognized-by-national-academies-gulf-research-program/>
 - [M.01] **Lubbock Avalanche-Journal** (2022). Texas Tech engineering faculty member named Early-Career Research Fellow, January 27, 2022. URL: <https://www.lubbockonline.com/story/news/education/2022/01/27/texas-tech-engineering-faculty-member-named-early-career-research-fellow/9202286002/>

TEACHING

Texas Tech University

Instructor (student evaluation and number of students)

Fall, 2023	IE 5305, Cognitive Engineering (30 students) IE 5305 Distance Section, Cognitive Engineering (16 students)
Spring, 2023	IE 4306, Advanced Systems Safety Engineering (4.4/5.0 , 37 students) IE 5306, Advanced Systems Safety Engineering (4.7/5.0 , 49 students) IE 5306 Distance Section, Advanced Systems Safety Engineering (4.6/5.0 , 28 students)
Fall, 2022	IE 5305, Cognitive Engineering (4.9/5.0 , 15 students) IE 5305 Distance Section, Cognitive Engineering (4.9/5.0 , 8 students)
Spring, 2022	IE 4306, Advanced Systems Safety Engineering (4.9/5.0 , 34 students) IE 5306, Advanced Systems Safety Engineering (4.7/5.0 , 27 students) IE 5306 Distance Section, Advanced Systems Safety Engineering (4.9/5.0 , 23 students)

Teaching Skills Development

2023	TeMPO (Teaching Mentoring through Peer Observation) Fellow , Teaching, Learning, & Professional Development Center (TLPDC), TTU
2023	President's STEM Mentoring Academy , TTU
2023	Faculty Mentorship Academy (FMA) , TTU

Texas A&M University

Instructor

Fall, 2020	ISEN 302, Economic Analysis of Engineering Projects (88 students)
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Teaching Skills Development

2020	Center for the Integration of Research, Teaching, & Learning (CIRTL) Certificate
2017-2019	Academy for Future Faculty (AFF) Fellow, Center for Teaching Excellence (CTE)

ADVISING & MENTORING

Texas Tech University

Dissertation/Thesis Advising as Chair

2022-Present	Austin Vaughn (PhD, IE)
2022-Present	Jessica Dedeaux (PhD, SYEM)
2022-Present	Armina Rahman Mim (PhD, IE)
2021-Present	Viviana Maura Dos Santos (PhD, IE)
2021-Present	Corey Shultz (PhD, SYEM)

Dissertation/Thesis Committee Member

2023-Present	Nan Zhang (PhD, IE, Chair: George Z. Tan), Dissertation TBD.
2023-Present	Trent Kelly (PhD, SYEM, Chair: George Z. Tan), Dissertation TBD.
2023-Present	Chrissa Mayhall (PhD, SYEM, Chair: Jennifer Cross), Dissertation TBD.
2023-Present	Seunghun Lee (PhD, ME, Chair: James Yang), Dissertation TBD.
2023-Present	Michael Rubin (PhD, SYEM, Chair: Dongping Du), Dissertation, “Improving the Reliability of Spacecraft Attitude Control Systems through Dynamic Failure Management”.
2022-Present	Richard Burgess (PhD, SYEM, Chair: Mario Beruvides), Dissertation, “Strategic Resilience Planning for Conjunctive Water Resource Systems”.
2022-Present	Brian Jacobi (PhD, SYEM, Chair: Mario Beruvides), Dissertation, “Impact of Smartphone Use in Undergraduate Engineering Programs on Industry 4.0”.
2022	Ramy Hindiye (PhD, SYEM, Chair: Jennifer Cross), Dissertation, “Identifying Critical Team Performance Measurement Output Variables that Characterize Overall Team Performance”. <i>Defended October 2022.</i>

Master’s Student Research Supervision *(IMSE student unless noted otherwise)*

2023	Margarita C. Caceres (<i>Healthcare Engineering</i>), Mohammad Jamshidzadeh, Zhenyu Wang (<i>Interdisciplinary Studies</i>)
2022	Folayemi Ogunfuye, Luis Araiza, Margarita C. Caceres (<i>Healthcare Engineering</i>)
2021	Folayemi Ogunfuye, Luis Araiza

Undergraduate Student Research Supervision *(IMSE student unless noted otherwise)*

2023	Aaron Watson, Maysen Brown, Linh Nguyen, Killan Parker (<i>Psychology</i>), Iris Youngblood, Cameron Williams (<i>Electrical & Computer Engineering</i>), Jacob Hernandez (<i>Biology</i>), Aven Tweed (<i>Psychology</i>)
2022	Mobisola Oyewole, Aaron Watson, Dylan A. Lopez, Maysen Brown, Linh Nguyen
2021	Nazeli Hannon, Shriya Satish (<i>Psychological Science</i>)

High School Student Research Supervision

2023	Evan Phipps, Engineering Research Internship Experience (ERIE), TTU
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Texas A&M University

Undergraduate Research Supervision *(Industrial engineering students unless noted otherwise)*

2021	Alexandra Osborn (NSF REU), Pamela Navarrete, Ignacia Antoinette, Abigail Hyun-gee Jei, Mary Pinedo, Jainita Chauhan, Elyssa Ramos, Allison Chang, Kevin Mai, Joseph Cahill
2020	Jacob Palat, Cittely Fuentes, Jessica Farias Zanette, Minsoo Kim, Jainita Chauhan
2019	Vu Hoang Le, Katherine Renter, Anna Him, Kevin To, Lauren Luu (<i>Public Health</i>), Prisha Patel (<i>Public Health</i>)
2018	Trevor Hennington, Justin Wood, Jiahui Bian, Alec Smith, Nitesh Woona, Rohit Lilhare, Tudor Tutuianu, Sisley Yan (<i>Psychological Science</i>)
2017	Miha Bernat

PROFESSIONAL AFFILIATIONS & SERVICE

Journal and Conference Reviewer

2021-Present	Editorial Board Member , Human Factors in Healthcare
2021-Present	Associate Editor , Emergency Management Science and Technology
2022-Present	Reviewer , IISE Transactions on Health Systems Engineering
2021-Present	Reviewer , Applied Ergonomics
2021-Present	Reviewer , Human Factors and Ergonomics in Manufacturing & Service Industries
2021-Present	Reviewer , International Journal of Disaster Risk Reduction (IJDRR)
2021-Present	Reviewer , Process Safety Progress
2021-Present	Reviewer , Journal of American College Health (JACH)
2021-Present	Reviewer , Journal of Community Psychology (JCOP)
2021-Present	Reviewer , PLOS One
2021-Present	Reviewer , BMJ Open
2020-Present	Reviewer , SAGE Open
2020-Present	Reviewer , Journal of Medical Internet Research (JMIR)
2020-Present	Reviewer , Journal of the American Medical Informatics Association (JAMIA)
2017-Present	Reviewer , Proceedings of Human Factors and Ergonomics Society Annual Meetings

Grant/Proposal Reviewer

2022	Proposal Review Panelist , National Science Foundation (NSF)
2022	Proposal Reviewer , Mission Daybreak, US Department of Veterans Affairs (VA)

Professional Memberships & Affiliations

2019-Present	Institute of Industrial and Systems Engineers (IISE) , Member
2018-Present	Information Systems for Crisis Response and Management (ISCRAM) , Member
2018-Present	Ergonomics Society of Korea (ESK) , Member
2016-Present	Human Factors and Ergonomics Society (HFES) , Member
2016-Present	Resilience Engineering Association (REA) , Member

Service to Profession

2023-2024	Chair , Patient Safety Track, 2024 International Symposium of Human Factors in Health Care
2023	HFES Event Innovation Project Panelist , HFES
2023	Committee Member , Membership Committee, HFES
2023	Faculty Judge , North Central Regional Conference, IISE
2022-2023	Co-chair , Patient Safety Track, 2023 International Symposium of Human Factors in Health Care
2022	Session Chair , the 66 th HFES Annual Meeting, Atlanta, GA

2022-Present **Practitioner Engagement Committee**, 2023 Global Conference of ISCRAM
 2022 **Guest Editor**, REA Newsletter, February, 2022
 2021-Present **Awards and Scholarships Committee Chair**, Healthcare TG, HFES
 2021 **Session Chair**, the 65th HFES Annual Meeting, Baltimore, MD
 2021 **Panelist**, the 65th HFES Annual Meeting Student Career Development Day
 2021 **Guest Speaker**, HFES TAMU Student Chapter Webinars on Academic Job Search
 2020-2022 **Student Outreach Officer**, Augmented Cognition TG, HFES
 2020 **Session Chair, Co-Chair**, the 64th HFES Annual Meeting (virtual)
 2019 **Session Chair**, the 63rd HFES Annual Meeting, Seattle, WA.
 2018 **Session Co-chair**, the 62nd HFES Annual Meeting, Philadelphia, PA.
 2018 **Session Chair**, 2018 HFES Healthcare Symposium, Boston, MA.

Service to Institution

2023 **Guest Talk**, Tips for Networking, TTU HFES Student Chapter
 2023 **Dean's Representative**, Final Doctoral Examination of **Tiffany Lui** (PhD in Human Factors Psychology, TTU Department of Psychological Sciences)
 2023 **Guest speaker**, IMSE Department Job Seeking Seminar, TTU
 2023 **Red Raider Orientation** for incoming students, IMSE Department, TTU
 2023 **Dean's Representative**, Final Doctoral Examination of **Leslie Stockel** (PhD in Technical Communication and Rhetoric, TTU Department of English)
 2023 **Dean's Representation**, Final Doctoral Examination of **Shadman Tahmid** (PhD in Mechanical Engineering, TTU Department of Mechanical Engineering)
 2023 **Dean's Representative**, Final Doctoral Examination of **Ritwik Rakshit** (PhD in Mechanical Engineering, TTU Department of Mechanical Engineering)
 2023 **Reviewer and Judge**, TTU Undergraduate Research Conference (URC)
 2023-Present **Undergraduate Recruitment Committee**, IMSE Department, TTU
 2023-2024 **Vice President**, Korean Faculty Association, TTU
 2022-2023 **Faculty Search Committee (Lecturer Position)**, IMSE Department, TTU
 2022 **Guest speaker**, IMSE Department Job Seeking Seminar, TTU
 2022 **Dean's Representative**, Final Doctoral Examination of **Brittany Neilson** (PhD in Human Factors Psychology, TTU Department of Psychological Sciences)
 2022 **Guest speaker**, TTU Korean Student Association Academic Job Search Webinar
 2022 **Reviewer and Judge**, TTU Undergraduate Research Conference (URC)
 2022 **Public Relations Officer**, Korean Faculty Association, TTU
 2022-Present **Faculty Co-advisor**, Korean Student Association, TTU
 2021-Present **Faculty Co-chair (co-advisor)**, HFES Student Chapter, TTU
 2021-Present **Undergraduate Student Recruiting Committee member**, TTU IMSE Department

PROFESSIONAL DEVELOPMENT

2023	NSF CISE CAREER Proposal Workshop , National Science Foundation (virtual)
2022	New Faculty Colloquium , IISE Annual Conference, Seattle, WA
2022	NSF ENG CAREER Proposal Workshop , National Science Foundation (virtual)
2022	Research Development Workshop , TTU Office of Research & Innovation

INDUSTRY EMPLOYMENT HISTORY

2015	Engineering Co-op, Baker Engineering and Risk Consultants , Houston, TX <ul style="list-style-type: none"> • Conducted quantitative risk analyses (QRA) and facility siting studies (FSS). • Wrote technical proposals and reports for safety engineering consulting projects. • Conducted a research project to improve theoretical models of chemical release analysis software.
2008-2014	Project HSE Manager, Hyundai Heavy Industries , Ulsan, South Korea <ul style="list-style-type: none"> • Held responsible for HSE issues in multiple ship/offshore platform construction projects. • Investigated major fatality and high consequence events using root cause analysis. • Developed computer-aided safety systems: e-Permit-to-work, GPS-based Crane Collision Prevention System.

CERTIFICATIONS

2020	US Certified Safety Professional (CSP) (No. CSP-38445)
2011	UK NEBOSH International General Certificate (No. 00109476/293242)
2010	Korean Industrial Safety Engineer (No. 09203090024W)

LEADERSHIP, OUTREACH & COMMUNITY SERVICE

2023	Volunteer , Engineering Fair, TTU STEM Outreach & Engagement
2022-Present	Parent Committee Member , Lubbock Korean Language School
2017-2018	Operating Officer , Korean-American Scientists and Engineers Association, TAMU
2017-2018	Coordination Officer , Korean Student Association, TAMU
2016, 2017, 2021	Korean mask dance performer , Korean Language School and CSISD Summer School
2016-2017	Departmental Representative , Texas A&M Energy Research Society
2010-2014	President , Hyundai Heavy Industries English Conversation Club
2007	President , Korean Student Association, Pittsburg State University
2004	President , Seoul Pine Tree Club (Intercollegiate English Conversation Club)
2001-2003	Sergeant , Brigade 103, Republic of Korean Army