JACKIE S. CHA

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Clemson University
Department of Industrial Engineering

EDUCATION

Purdue University, West Lafayette, IN
Ph.D. Industrial Engineering (2020)

University of Michigan, Ann Arbor, MI
M.S.E. Biomedical Engineering (2016)
B.S.E. Biomedical Engineering (2015)

PROFESSIONAL APPOINTMENTS/ EMPLOYMENT HISTORY

Clemson University, Clemson, SC

Assistant Professor, Department of Industrial Engineering	1/2021 – Present
Core Faculty, Biomedical Data Science and Informatics Program	1/2023 – Present
Faculty Fellow, Clemson University School of Health Research	1/2023 – 8/2023
Faculty Scholar, Clemson University School of Health Research	5/2021 – Present
Affiliated Faculty, AI Research Institute for Science and Engineering (AIRISE)	5/2021 – Present

Food and Drug Administration (FDA), Silver Spring, MD
Biomedical Engineer, CDRH/OPEQ/OHT4/DHT4A/Robotic Assisted Surgery Devices Team

Purdue University, West Lafayette, IN
Graduate Research Assistant, Advisor: Dr. Denny Yu
Graduate Teaching Assistant, IE 386 Work Analysis and Design I

Army Research Laboratory, Orlando, FL
Graduate Research Intern, Advisor: Dr. Jessie Chen

University of Michigan, Ann Arbor, MI
Research Assistant, Center for Ergonomics, Advisor: Dr. Thomas Armstrong
Student Intern, CoE Associate Deans of Research and Graduate Education

AWARDS AND HONORS

Best Work Systems Track Paper	2024	Institute of Industrial and Systems Engineers (IISE) Work Systems Division
Best Student Paper Award	2020	Human Factors and Ergonomics Society (HFES) Product Design Technical Group
College of Engineering Outstanding Graduate Student Research Award	2020	Purdue University
Human Factors and Ergonomics (HFE) WOMAN Rising Star Award	2019	HFES
Student Member with Honors Award	2019	HFES

People's Choice Poster Presentation	2019	2019 Regional Education and Research Center Symposium
1st place HFES Annual Conference UX Day Business Wire® Heuristic Evaluation Competition	2018	HFES
Graduate Student Government Travel Grant	2017, 2019	Purdue University
Graduate Student Government Professional Grant	2018	Purdue University
3rd place, School of Industrial Engineering Poster Competition	2018	Purdue University
3rd place, Health & Disease: Science, Technology, Culture and Policy Research Poster Session	2018	Purdue University
Ross Fellowship	2016-2017	Purdue University
Rackham Domestic Travel Grant	2016	University of Michigan

PUBLICATIONS

* denotes mentored student

Peer-Reviewed Journal Articles

1. Gonzales, A.*, Lin, J. H., & **Cha, J. S.** (2024). A year-long case study of multicomponent interventions to promote physical activity in office workers: A randomized control trial. *Applied Ergonomics*, *120*, 104333. https://doi.org/10.1016/j.apergo.2024.104333
2. Mihandoust, S., Joseph, A., Browning, M. H., **Cha, J. S.**, Gonzales, A.*, & Markowitz, J. (2024). Can pre-visit exposure to virtual tours of healthcare facilities help reduce child and parent anxiety during outpatient surgical procedures?. *Applied Ergonomics*, *119*, 104308. https://doi.org/10.1016/j.apergo.2024.104308
3. **Cha, J. S.**, Athanasiadis, D. I., Asadi, H., Stefanidis, D., Nussbaum, M. A., & Yu, D. (2024). Evaluation of a passive arm-support exoskeleton for surgical team members: Results from live surgeries. *Journal of Safety Research.* https://doi.org/10.1016/j.jsr.2024.02.003
4. Gonzales, A.*, Barbieri, D. F., Carbonell, A. M., Joseph, A., Srinivasan, D., & Cha, J. (2024). The compatibility of exoskeletons in perioperative environments and workflows: an analysis of surgical team members' perspectives and workflow simulation. *Ergonomics*, *67*(5), 674-694. https://doi.org/10.1080/00140139.2023.2240045
5. **Cha, J. S.,** Athanasiadis, D. I., Peng, Y., Wu, D., Anton, N. E., Stefanidis, D., & Yu, D. (2024). Objective nontechnical skills measurement using sensor-based behavior metrics in surgical teams. Human Factors, 66(3), 729-743. https://doi.org/10.1177/00187208221101292
6. Dong, M., Lee, Y. Y., **Cha, J. S.**, & Huang, G. (2024). Drinking and driving: A systematic review of the impacts of alcohol consumption on manual and automated driving performance. *Journal of Safety Research*. https://doi.org/10.1016/j.jsr.2024.01.006
7. Raghuraman, R. N., Upasani, S., Gonzales, A.*, Aviles, J., **Cha, J.**, & Srinivasan, D. (2023). Manufacturing Industry Stakeholder Perspectives on Occupational Exoskeletons: Changes after a Brief Exposure to Exoskeletons. *IISE Transactions on Occupational Ergonomics and Human Factors*, *11*(3-4), 71-80. https://doi.org/10.1080/24725838.2023.2262480
8. Anton, N. E., **Cha, J. S.**, Hernandez, E., Athanasiadis, D. I., Yang, J., Zhou, G., Stefanidis, D., & Yu, D. (2023). Utilizing eye tracking to assess medical student non-technical performance during scenario-based simulation: results of a pilot study. *Global Surgical Education-Journal of the Association for Surgical Education*, *2*(1), 1-6. https://doi.org/10.1007/s44186-023-00127-3
9. **Cha, J. S.**, Ausri, F., Mudge, L., & Yu, D. (2022). Effectiveness of smart wrist wearables for distinguishing physical and cognitive demands. *IISE Transactions on Healthcare Systems Engineering*, 1-11. https://doi.org/10.1080/24725579.2022.2142867

10. Gonzales, A.*, Lin, J. H., & **Cha, J. S.** (2022). Physical activity changes among office workers during the COVID-19 pandemic lockdown and the agreement between objective and subjective physical activity metrics. *Applied Ergonomics*, *105*, 103845. https://doi.org/10.1016/j.apergo.2022.103845
11. **Cha, J. S.**, & Yu, D. (2022). Objective Measures of Surgeon Non-Technical Skills in Surgery: A Scoping Review. *Human Factors*, *64*(1), 42-73. https://doi.org/10.1177/0018720821995319
12. **Cha, J. S.**, Athanasiadis, D., Anton, N. E., Stefanidis, D., & Yu, D. (2021). Measurement of Nontechnical Skills During Robotic-Assisted Surgery Using Sensor-Based Communication and Proximity Metrics. *JAMA Network Open*, *4*(11), e2132209-e2132209. doi:10.1001/jamanetworkopen.2021.32209
13. Anton, N.E., Huffman, E.M., Ahmed, R.A., Cooper, D.D., Athanasiadis, D.I., **Cha, J.**, Stefanidis, D. and Lee, & N.K. (2021). Stress and resident interdisciplinary team performance: Results of a pilot trauma simulation program. Surgery, 170(4), pp.1074-1079. (2021). Stress and resident interdisciplinary team performance: Results of a pilot trauma simulation program. *Surgery*, *170*(4), 1074-1079. https://doi.org/10.1016/j.surg.2021.03.010
14. Anton, N. E., Whiteside, J. A., **Cha, J.**, Perkins, L. A., Martin, M., & Stefanidis, D. (2021). Characterizing robotic surgical expertise: An exploratory study of neural activation during mental imagery of robotic suturing. *The American Journal of Surgery*, *222*(6), 1131-1138. https://doi.org/10.1016/j.amjsurg.2021.02.002
15. Anton, N. E., Athanasiadis, D. I., Karipidis, T., Keen, A. Y., Karim, A., **Cha, J.**, Walke, N., & Stefanidis, D. (2021). Surgeon stress negatively affects their non-technical skills in the operating room. *The American Journal of Surgery*, *222*(6), 1154-1157. https://doi.org/10.1016/j.amjsurg.2021.01.035
16. Wu, C., **Cha, J.**, Sulek, J., Sundaram, C. P., Wachs, J., Proctor, R. W., & Yu, D. (2021). Sensor-based indicators of performance changes between sessions during robotic surgery training. *Applied Ergonomics*, *90*, 103251. https://doi.org/10.1016/j.apergo.2020.103251
17. **Cha, J. S.**, Monfared, S., Stefanidis, D., Nussbaum, M. A., & Yu, D. (2020). Supporting surgical teams: Identifying needs and barriers for exoskeleton implementation in the operating room. *Human Factors*, *62*(3), 377-390. https://doi.org/10.1177/0018720819879271
18. Wu, C., **Cha, J.**, Sulek, J., Zhou, T., Sundaram, C. P., Wachs, J., & Yu, D. (2020). Eye-tracking metrics predict perceived workload in robotic surgical skills training. *Human Factors*, *62*(8), 1365-1386. https://doi.org/10.1177/0018720819874544
19. Zhou, T., **Cha, J. S.**, Gonzalez, G., Wachs, J. P., Sundaram, C. P., & Yu, D. (2020). Multimodal physiological signals for workload prediction in robot-assisted surgery. *ACM Transactions on Human-Robot Interaction (THRI)*, *9*(2), 1-26. https://doi.org/10.1145/3368589
20. Peng, Y., Anton, N. E., **Cha, J.**, Mizota, T., Hennings, J. M., Stambro, R., Rendina, M., Stanton-Maxey, K., Stefanidis, D., & Yu, D. (2019). Objective measures of communication behavior predict clinical performance. *Journal of Surgical Education*, *76*(5), 1337-1347. https://doi.org/10.1016/j.jsurg.2019.03.017
21. **Cha, J. S.**, Anton, N. E., Mizota, T., Hennings, J. M., Rendina, M. A., Stanton-Maxey, K., Ritter, H., Stefanidis, D., & Yu, D. (2019). Use of non-technical skills can predict medical student performance in acute care simulated scenarios. *The American Journal of Surgery*, *217*(2), 323-328. https://doi.org/10.1016/j.amjsurg.2018.09.028
22. Yu, D., **Cha, J. S.**, Kasten, S. J., Green, C., & Armstrong, T. J. (2015). Design of low-cost ergonomic microsurgery equipment: comparison of microscope and 3D video displays on task performance. *Journal of Medical Devices*, *9*(2). https://doi.org/10.1115/1.4030130

Peer-Reviewed Conference Proceedings

1. Duffie, H.*, Barbieri, D., Fuller, P.*, Lin, J., **Cha, J. S.** (2023) Workers Standing Times with Use of Sit-Stand Desks and Social Influences: An Investigation of Two Months of Office Workers'

Sit-Stand Desks Utilization. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, Washington D.C.

2. Ball, M.*, Cha, J. S., Anton, N., Athanasiadis, D. I., Hernandez, E., Stefanidis, D., Yu, D. (2023) Evaluating Nontechnical Skills and Leadership Skills During Simulated Critical Care Scenarios. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, Washington D.C.
3. Stribling, H.*, Gonzales, A.*, **Cha, J. S.** (2022) Systematic Review and Comparison of Physical Activity Variations Among Global Worker Populations. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, Atlanta, GA.
4. Gonzales, A.*, Lin, J., **Cha, J. S.** (2022) Promoting Healthier Office Environments: Evaluation of Mindfulness and Gym Interventions. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, Atlanta, GA.
5. Narasimhan Raghuraman, R., Gupta, G., Upasani, S., Aviles, J., **Cha, J. S.**, Srinivasan, D. (2022) Manufacturing Industry Stakeholder Perspectives on Occupational Exoskeletons: Changes Before and After Exposure to Exoskeletons. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, Atlanta, GA.
6. Dong, M., Lee, Y., **Cha, J. S.**, Huang, G. (2022) Effects of Alcohol Consumption on Driving: A Systematic Review. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, Atlanta, GA.
7. Narasimha, S., Agnisarman, S., **Cha, J.**, Ponathil, A., Rogers, H. (2022). Graduate to Professional: Career Conversations by Early Career Professionals to Support HFE Students. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, Atlanta, GA.
8. **Cha, J. S.**, Yang, J., Wachs, J., Sundaram, C., Yu, D. (2021) Measuring Cognitive Load from EEG during Motor Control Calibration in Robotic-Assisted Surgery. *Proceedings of Human Factors and Ergonomics Society Annual Meeting*, Baltimore, MD.
9. **Cha, J. S.**, Ausri, F., Mudge, L., & Yu, D. (2020, December). Sensitivity of Wrist-Wearables to Changes in Physical and Mental Demands. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 970-970). Sage CA: Los Angeles, CA: SAGE Publications.
10. Zhou, T., **Cha, J. S.**, Gonzalez, G. T., Sundaram, C. P., Wachs, J. P., & Yu, D. (2019, November). JISAP: Joint Inference for Surgeon Attributes Prediction during Robot-Assisted Surgery. In *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (pp. 2246-2251). IEEE.
11. **Cha, J. S.**, Monfared, S., Ecker, K., Lee, D., Stefanidis, D., Nussbaum, M. A., & Yu, D. (2019, November). Identifying barriers and facilitators of exoskeleton implementation in the operating room. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Human Factors and Ergonomics Society. Annual meeting* (Vol. 63, No. 1, pp. 1113-1113).
12. Wu, C., **Cha, J. S.**, Sulek, J., Zhou, T., Sundaram, C. P., & Yu, D. (2019, November). Analysis of Eye Behavior: Mental Workload Assessment in Robotic Surgery Training. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 63, No. 1, pp. 1920-1921). Sage CA: Los Angeles, CA: SAGE Publications.
13. Stowers, K., Hancock, G. M., Neigel, A., **Cha, J.**, Chong, I., Durso, F. T., Peres, C., Stone, N., & Summers, B. (2019, November). HeForShe in HFE: Strategies for Enhancing Equality in Leadership for All Allies. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 63, No. 1, pp. 622-624). Sage CA: Los Angeles, CA: SAGE Publications.
14. Chong, I., **Cha, J.**, Peng, F., & Yu, D. (2019, September). Usability of a Home-Use Blood Pressure Monitor System: An Evaluation of the Device and Instructional Materials. In *Proceedings of the International Symposium on Human Factors and Ergonomics in Health Care* (Vol. 8, No. 1, pp. 147-151). Sage CA: Los Angeles, CA: SAGE Publications.
15. Peng, Y., Anton, N. E., **Cha, J.**, Mizota, T., Hennings, J. M., Stambro, R., Rendina, M., Stanton-Maxey, K., Stefanidis, D., & Yu, D. (2018, September). Do Objective Measures of Communication Predict Clinical Performance?–Application in Acute Care Trauma Simulation.

In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 62, No. 1, pp. 588-592). Sage CA: Los Angeles, CA: SAGE Publications.

16. Zhou, T., **Cha, J. S.**, Gonzalez, G. T., Wachs, J. P., Sundaram, C., & Yu, D. (2018, March). Joint surgeon attributes estimation in robot-assisted surgery. In *Companion of the 2018 ACM/IEEE International Conference on Human-Robot Interaction* (pp. 285-286).
17. Yu, D., **Cha, J. S.**, Kasten, S. J., & Armstrong, T. J. (2014, September). Gaze and viewing patterns in microsurgery: Task analysis in the operating room. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 58, No. 1, pp. 639-643). Sage CA: Los Angeles, CA: SAGE Publications.

Technical Reports and Professional Publications

1. **Cha, J. S.**, Barnes, M., & Chen, J. Y. (2019). *Visualization Techniques for Transparent Human-Agent Interface Designs* (No. ARL-TR-8674). US Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground United States.

OTHER SCHOLARLY ACTIVITY

Invited Lectures, Seminars, and Panels

1. 22nd Triennial Congress of the International Ergonomics Association (IEA). Jeju, Republic of Korea. *Applications of Emerging Technologies in Addressing Musculoskeletal Disorders (MSDs)* Panelist. August 2024.
2. 2024 International Symposium on Human Factors and Ergonomics in Health Care Robotics Summit Panelist, Chicago, IL. *What We Talk About When We Talk About Robots.* March 23, 2024.
3. University of Michigan, Occupational Health and Safety 2024 Seminar Series, Ann Arbor, MI. *Healthcare Ergonomics and Robotics: Insights into Equipment, Exoskeletons, and the Environment*. March 22, 2024.
4. University of Massachusetts - Lowell, Special Topics in Human-Robot Interaction, Lowell, MA. *Applications of Data Analytics in Healthcare Human Factors – Enhancing Human-Robot Interaction for Surgeon Training and Performance*. March 19, 2024.
5. Clemson University, Biomedical Data Science and Informatics Program, Clemson, SC. *Applications of Data Analytics in Healthcare Human Factors – Enhancing Human-Robot Interaction for Surgeon Training and Performance.* March 6, 2024.
6. Society of Surgical Ergonomics 2nd Annual Symposium. *Misadventure 1: Surgical Retractors* Panelist. September 8, 2023.
7. Clemson University 7th Annual Research Symposium. *Human Factors in Healthcare*. May 10, 2023.
8. Kennesaw State University, Department of Industrial and Systems Engineering, Kennesaw, GA. *Human Factors Engineering in Device Design & Analysis– Applications in Surgery*. February 28, 2023.
9. HFES 2022 Annual Meeting, Graduate to Professional: Career Conversations by Early Career Professionals to Support HFE Students Panelist. October 14, 2022.
10. NSF REU Students, Center for Workforce Development, Clemson University, *Human Factors in Device Design and Wearable Technology*. June 20, 2022.
11. Auburn University, Department of Industrial and Systems Engineering, Auburn, AL. *Assessing wearable technology to improve surgical team performance: a focus on nontechnical skills and exoskeletons.* April 6, 2022.
12. Voiland School of Chemical Engineering and Bioengineering, Washington State University, Women in Engineering Panelist. February 24, 2022.
13. Clemson Health Advancement Talks (The CHAT), Clemson University. *Sensor-based measurement of nontechnical skills in surgery*. October 21, 2021.

14. NSF REU Students, Center for Workforce Development, Clemson University, *Measuring Behavior and Performance for Smarter Systems*. June 21, 2021.
15. Voiland School of Chemical Engineering and Bioengineering, Washington State University, Women in Engineering Panelist. February 23, 2021.
16. Student Career and Professional Development Day, HFES 2020 Annual Meeting, Job Seeking and Networking Panelist. September 20, 2020.
17. HFES 2019 Annual Meeting, HeForShe in HFE: Strategies for Enhancing Equality in Female Leadership for All Allies Panelist. November 1, 2019.

In Press

1. Gonzales, A., Lin, J. H., & Cha, J. (2023, February). Efforts to keep workers active in office and home environments. *ISE Magazine*, 55(2), 58–60.

Presentations at Conferences (presenter in bold)

International/ National Conferences

1. **Fuller, P.***, Kennedy, S., Ball, M.*, Duffie, D.*, Gainey, M., Luo, Q., Joseph, A., Carbonell, A., Cha, J. S. (2024, September 9-13) Stakeholders' Perspectives on the Adoption of Robotic-Assisted Surgery: Considerations of Human-Robot Interactions, the Built Environment, and Training. *ASPIRE – 2024 Human Factors and Ergonomics Society Annual Meeting and Exhibition.* Phoenix, AZ.
2. **Duffie, H.***, Singh, C.*, Li, D., Carbonell, A., Cha, J. S. (2024, September 9-13) Assessment of a Cognitive Workload-Adaptive Augmented Reality Training Aid for Laparoscopic Surgery. *ASPIRE – 2024 Human Factors and Ergonomics Society Annual Meeting and Exhibition.* Phoenix, AZ.
3. **Ball, M.***, Khademi, A., Cha, J. S. (2024, September 9-13) An Information Theoretic Approach to Understanding the Information Gain during Laparoscopic Motor Skill Training. *ASPIRE – 2024 Human Factors and Ergonomics Society Annual Meeting and Exhibition.* Phoenix, AZ.
4. **Gonzales, A.***, Raghuraman, R., Barbieri, D., Srinivasan, D., Carbonell, A., Joseph, A., Cha, J. S. (2024, September 9-13) Do exoskeletons support minimally invasive surgical postures? A systematic evaluation across a series of typical surgical postures. *ASPIRE – 2024 Human Factors and Ergonomics Society Annual Meeting and Exhibition.* Phoenix, AZ.
5. **Raghuraman, R.**, Cha, J. S., Srinivasan, D. (2024, September 9-13) Biomechanical effects of powered vs. passive back-support exoskeletons in static tasks. *ASPIRE – 2024 Human Factors and Ergonomics Society Annual Meeting and Exhibition.* Phoenix, AZ.
6. **Gonzales, A.***, Barbieri, D., Srinivasan, D., Carbonell, A., Joseph, A., Cha, J. S. (2024, August 25-29) Shoulder-support exoskeletons as an intervention to support tasks performed by perioperative staff. *22nd Triennial Congress of the International Ergonomics Association (IEA).* Jeju, Republic of Korea.
7. **Fuller, P.***, Kennedy, S., Ball, M.*, Duffie, D.*, Gainey, M., Luo, Q., Joseph, A., Carbonell, A., Cha, J. S. (2024, May 18-21) Understanding the Adoption of Robotic-Assisted Surgery: A Focus on Human-Robot Interactions, Training, and Built Environments. *Institute of Industrial and Systems Engineers Annual and Expo.* Montreal, Canada.
8. **Cha, J. S.**, Franca Barbieri, D., Ranganathan, S., Ulrich, J., Chang, C., Srinivasan, D. (2024, March 24-27) System Engineering Approach to Understand Sepsis Care Workflow during Emergency Department Admissions. *International Symposium on Human Factors and Ergonomics in Health Care.* Chicago, IL.
9. Cha, J. S., **Kennedy, S.**, Joseph, J., Luo, Q. (2023, November 4-7) Physical Environment Considerations for the Future of Robotic Surgery. *2023 Healthcare Design Conference + Expo*. New Orleans, LA.
10. **Duffie, H.***, Barbieri, D., Fuller, P., Lin, J., Cha, J. S. (2023, October 23-27) Workers Standing Times with Use of Sit-Stand Desks and Social Influences: An Investigation of Two Months of

Office Workers' Sit-Stand Desks Utilization. *Human Factors and Ergonomics Society Annual Meeting,* Washington D.C.

11. **Ball, M.***, Cha, J. S., Anton, N., Athanasiadis, D. I., Hernandez, E., Stefanidis, D., Yu, D. (2023, October 23-27) Evaluating Nontechnical Skills and Leadership Skills During Simulated Critical Care Scenarios. *Human Factors and Ergonomics Society Annual Meeting,* Washington D.C.
12. Gonzales, A.*, Barbieri, D., Srinivasan, D., Carbonell, A., Joseph, A., **Cha, J. S.** (2023, September 20-26) Evaluation of Shoulder-Support Exoskeletons to Support Minimally Invasive Surgical Postures. *11th International Scientific Conference on the Prevention of Work-Related Musculoskeletal Disorders*. Bengaluru, India.
13. **Gonzales, A.***, Barbieri, D., Srinivasan, D., Carbonell, A., Joseph, A., Cha, J. (2023, May 19-22) Evaluating Back and Shoulder Support Exoskeletons in Postures Typical in General Surgery. *Institute of Industrial and Systems Engineers Annual and Expo*. New Orleans, LA.
14. **Duffie, H.*,** Barbieri, D., Lin, J., Cha, J. (2023, May 19-22) Evaluation of Break Activities Among Office Workers with Sit-stand Desk Utilization. *Institute of Industrial and Systems Engineers Annual and Expo.* New Orleans, LA.
15. **Gonzales, A.***, Barbieri, D., Carbonell, A., Joseph, A., Srinivasan, D., Cha, J. (2023, March 29-April 1) Acceptance of Exoskeletons in Intraoperative Environments: A Qualitative Analysis of Surgical Teams' Perspectives. *Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) Annual Meeting*. Montreal, Canada.
16. **Gonzales, A.***, Barbieri, D., Carbonell, A., Joseph, A., Srinivasan, D., Cha, J. (2023, March 26-29) Compatibility of Exoskeletons in Surgical Workflows: A Simulated Walkthrough of Surgical Teams' Tasks. *International Symposium on Human Factors and Ergonomics in Health Care.* Orlando, FL.
17. **Duffie, H.*,** Ball, M.*, Kennedy, S., Joseph, A., Luo, Q., Cha, J. (2023, March 26-29) Training and Design Environment Considerations for Future of Robotic Surgery. *International Symposium on Human Factors and Ergonomics in Health Care.* Orlando, FL.
18. **Gonzales, A.***, Barbieri, D., Carbonell, A., Joseph, A., Srinivasan, D., Cha, J. (2023, March 1) Justification of Shoulder and Back Support Exoskeletons for Minimally Invasive Surgeons and Operating Room Nurses to Reduce Musculoskeletal Symptoms. *American College of Surgeons (ACS) 2023 Surgeons and Engineers: A Dialogue on Surgical Simulation*. Chicago, IL.
19. **Joseph, A.,** Markowitz, J., **Goel, S.**, Cha, J. S. (2022, October 8-11) Understanding Perceptions of Care Spaces in an Ambulatory Surgery Center. *2022 Healthcare Design Conference + Expo.* San Antonio, TX.
20. **Stribling, H.*,** Gonzales, A.*, Cha, J. S. (2022, October 10-14) Systematic Review and Comparison of Physical Activity Variations Among Global Worker Populations. *Human Factors and Ergonomics Society Annual Meeting,* Atlanta, GA.
21. **Gonzales, A.*,** Lin, J., Cha, J. S. (2022, October 10-14) Promoting Healthier Office Environments: Evaluation of Mindfulness and Gym Interventions. *Human Factors and Ergonomics Society Annual Meeting,* Atlanta, GA.
22. **Narasimhan Raghuraman, R**., Gupta, G., Upasani, S., Aviles, J., Cha, J. S., Srinivasan, D. (2022, October 10-14) Manufacturing Industry Stakeholder Perspectives on Occupational Exoskeletons: Changes Before and After Exposure to Exoskeletons. *Human Factors and Ergonomics Society Annual Meeting,* Atlanta, GA.
23. **Dong, M.,** Lee, Y., Cha, J. S., Huang, G. (2022, October 10-14) Effects of Alcohol Consumption on Driving: A Systematic Review. *Human Factors and Ergonomics Society Annual Meeting*, Atlanta, GA.
24. **Gonzales, A.***, Barbieri, D., Carbonell, A., Joseph, A., Srinivasan, D., Cha, J. (2022, September 23) Assessing Surgical Team Members for Exoskeleton Implementation: An Observation of Work Demands. *First Annual Research Symposium of the Society of Surgical Ergonomics*. Virtual.

25. **Gonzales, A.***, Lin, J., Cha., J. S. (2022, May 21-24) Evaluation of Interventions on Office Worker Health. *Institute of Industrial and Systems Engineers Annual and Expo*. Seattle, WA.
26. **Gonzales, A.*,** Shah, A., Luo, Q., Cha., J. S. (2022, May 21-24) Retention of Robotic-Assisted Surgery Skills: Leveraging Scheduling and Training Tasks to Improve Performance. *Institute of Industrial and Systems Engineers Annual and Expo.* Seattle, WA.
27. Anton, N., Cha, J. S., Hernandez, E., Athanasiadis, D. I., Yang, J., Zhou, G., Stefanidis, D., **Yu, D.** (2022, May 2-7) Utilizing Eye Tracking to Assess Medical Student Non-Technical Performance During Scenario-Based Simulation: Results of a Pilot Study. *Association for Surgical Education (ASE) Annual Meeting.* San Antonio, TX.
28. **Gonzales, A.***, Lin, J., Cha., J. S. (2022, March 20-24) COVID-19 Effects on Work-From-Home Office Workers: Evaluation of Physical Activity from Objective and Subjective Metrics. *International Symposium on Human Factors and Ergonomics in Health Care.* New Orleans, LA.
29. **Gonzales, A.***, Shah, A., Luo, Q., Cha., J. S. (2022, March 20-24) Identifying Optimal Training Tasks and Scheduling Times to Improve Robotic-Assisted Surgical Training. *International Symposium on Human Factors and Ergonomics in Health Care*. New Orleans, LA.
30. **Cha, J. S.,** Athanasiadis, D., Asadi, H., Monfared, S., Stefanidis, D., Nussbaum, M., Yu, D. (2022, March 2) Evaluation of Exoskeleton Implementation in the Operating Room. *American College of Surgeons (ACS) Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting.* Chicago, IL.
31. **Cha, J. S.**, Yang, J., Wachs, J., Sundaram, C., Yu, D. (2021, October 4-7) Measuring Cognitive Load from EEG during Motor Control Calibration in Robotic-Assisted Surgery. *Human Factors and Ergonomics Society Annual Meeting*, Baltimore, MD.
32. **Cha, J. S.**, Athanasiadis, D., Anton, N. E., Stefanidis, D., Yu, D. (2021, June 13-18) Sensor-Based Behavior Measurement of Non-Technical Skills in Robotic-Assisted Surgery. *21st Triennial Congress of the International Ergonomics Association*, Vancouver, CA.
33. **Cha, J. S.,** Barragan Nogurea, J. A., Sundaram, C., Wachs, J., Yu, D. (2021, April 12-16) Understanding effects of inverted motion control during robotic skills tasks to cognitive workload and performance. *International Symposium on Human Factors and Ergonomics in Health Care. Virtual Conference.*
34. **Cha, J. S.**, Peng, Y., Anton, N., Mizota, T., Stanton- Maxey, K., Stefanidis, D., Yu, D. (2021, March 10) Non-Technical Skills Evaluation of Medical Students Through Objective and Subjective Measures. *American College of Surgeons (ACS) Surgeons and Engineers: A Dialogue on Surgical Simulation Meeting.* Chicago, IL.
35. **Cha, J. S**., Ausri, F., Mudge, L., Yu, D. (2020, October 5-9) Sensitivity of Wrist-wearables to Changes in Physical and Mental Demands. *Human Factors and Ergonomics Society Annual Meeting*. Virtual Meeting.
36. **Anton N.E.,** Whiteside J.A., Cha J. S., Perkins L.A., Martin M, Stefanidis D. (2020, August 20) Characterizing Robotic Surgical Expertise: An Exploratory Study of Neural Activation during Mental Imagery of Robotic Suturing. *Association for Surgical Education Virtual Highlights*.
37. **Anton, N. E.**, Athanasiadis, D. I., Karipidis T., Keen, A. Y., Karim, A. N., **Cha, J. S.**, Walke, N. J., Stefanidis, D. (2020, August 13) Surgeon Stress Negatively Affects Their Nontechnical Skills in the Operating Room. *2020 Association for Surgical Education (ASE) Annual Meeting Virtual Highlights*. Virtual Meeting.
38. Cha, J. S., **Steward, J.**, Sulek, J., Sundaram, C. P., Wachs, J. P., Yu, D. (2020, May 15-18) Objective Metrics of High Cognitive Workload during Robotic Partial Nephrectomy: A Pilot Study. *American Urological Association (AUA) Annual Meeting*. Washington, D.C.
39. **Anton, N. E.**, Whiteside, J. A., Cha, J. S., Andrew, L., Martin, M., Stefanidis, D. (2020, April 28-30) Characterizing Robotic Surgical Expertise: An Exploratory Study of Neural Activation during Mental Imagery of Robotic Suturing. *2020 Association for Surgical Education (ASE) Annual Meeting*. Seattle, WA.

40. **Anton, N. E.**, Huffman, E. M., Ahmed, R. A., Cooper, D., Athanasiadis, D. I., **Cha, J. S.**, Stefanidis, D., Lee, N. K. (2020, March 12-14) Stress and Resident Interdisciplinary Team Performance: Results of a Pilot Trauma Simulation Program. *American College of Surgeons (ACS) Surgical Simulation Summit: An International Multi-Professional Meeting.* Chicago, IL.
41. **Zhou, T.,** Cha, J. S., Gonzalez, G., Sundaram, C. P., Wachs, J. P., Yu, D. (2019, November 4-8) JISAP: Joint Inference for Surgeon Attributes Prediction during Robot-Assisted Surgery. *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019)*. Macao, Macau, China.
42. **Cha, J. S.**, Monfared, S., Ecker, K., Lee, A., Stefanidis, D., Nussbaum, M., Yu, D. (2019, October 28-November 1) Identifying Barriers and Facilitators of Exoskeleton Implementation in the Operating Room. *Human Factors and Ergonomics Society Annual Meeting*. Seattle, WA.
43. **Wu, C.**, Cha, J. S., Sulek, J., Zhou, T., Sundaram, C. P., Wachs, J. P., Yu, D. (2019, October 28-November 1) Analysis of Eye Behavior: Mental Workload Assessment in Robotic Surgery. *Human Factors and Ergonomics Society Annual Meeting*. Seattle, WA.
44. Stowers, K., Hancock, G.M., Neigel, A., **Cha, J.**, Chong, I., Durso, F.T., Peres, S.C., Stone, N.J. and Summers, B. (2019, October 28-November 1). HeForShe in HFE: Strategies for Enhancing Equality in Leadership for All Allies. *Human Factors and Ergonomics Society Annual Meeting, Seattle, WA.*
45. Cha, J. S., Sulek, J., **Sundaram, C. P.**, Cai, X., Wachs, J. P., Yu, D. (2019, April 23-27) Ergonomics driven training: Can wearable sensors guide robotic skills training? *Association for Surgical Education Annual Meeting*. Chicago, IL.
46. Peng, Y., Cha, J. S., Anton, N., Mizota, T., Hennings, J., Stambro, R., Rendina, M., Stanton-Maxey, K., Stefanidis, D., **Yu, D.** (2019, April 23-27) Objective Assessments of Medical Students' Communication and Relationships with Non-Technical Skills. *Association for Surgical Education Annual Meeting*. Chicago, IL.
47. Chong, I., **Cha, J.**, Peng, F., & Yu, D. (2019, March 24-27) Usability of a Home-Use Blood Pressure Monitor System: An Evaluation of the Device and Instructional Materials. *International Symposium on Human Factors and Ergonomics in Health Care, Chicago, IL*.
48. Peng, Y., **Anton, N.**, Cha, J., Mizota, T., Hennings, J., Stambro, R., Rendina, M., Stanton, K., Stefanidis, D., Yu, D. (2018, October 21-25) Automated Communication Assessments Predict Acute Care Team Simulation Performance. *Clinical Congress 2018.* Boston, MA.
49. **Peng, Y.,** Anton, N., Cha, J., Mizota, T., Hennings, J., Stambro, R., Rendina, M., Stanton, K., Stefanidis, D., Yu, D. (2018, October 1-5) Do objective measures of communication predict clinical performance? –Application in Acute Care Trauma Simulation. *Human Factors and Ergonomics Society Annual Meeting. Philadelphia, PA.*
50. **Cha, J. S.,** Anton, N. E., Mizota, T., Hennings, J. M., Rendina, M.A., Stanton- Maxey, K., Ritter, H. E., Stefanidis, D., Yu, D. (2018, May 1-3) Use of non-technical skills can predict medical student performance in acute care simulated scenarios. *Association for Surgical Education*. Austin, TX.
51. Cha, J. S., **Anton, N. E.**, Mizota, T., Hennings, J. M., Rendina, M.A., Stanton- Maxey, K., Ritter, H. E., Stefanidis, D., Yu, D. (2018, April 11-14) Assessment of non-technical skills in acute care team simulation training. *Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) 16th World Congress*. Seattle, WA.
52. **Zhou, T.,** Cha, J. S., Gonzalez, G. T., Wachs, J. P., Sundaram, C., & Yu, D. (2018, March 5-8). Joint Surgeon Attributes Estimation in Robot-Assisted Surgery. *2018 ACM/IEEE International Conference on Human-Robot Interaction. Chicago, IL.*
53. Wachs, J.P., Cha, J. S., Gonzalez, G., Sundaram, C., & **Yu, D.** (2017, July 17-21) Performance and physiological stresses during robotic surgical skills tasks. *8th International Conference on Applied Human Factors and Ergonomics*. Los Angeles, CA.

54. **Cha, J. S.**, Wagner, E., & Ashton-Miller, J.A. (2017, May 28-31) Student and Faculty Evaluations of Michigan Engineering's 'Train-the Trainer' RCRS Program. *5th World Conference on Research Integrity.* Amsterdam, Netherlands.
55. **Cha, J. S.**, Wagner, E., & Ashton-Miller, J.A. (2017, May 28-31) Evaluation of the Effectiveness of Michigan Engineering Ethics Programs Using the Ethical Decision Making Measure. *5th World Conference on Research Integrity.* Amsterdam, Netherlands.
56. **Cha, J. S.**, Wagner, E., Sick, V., & Ashton-Miller, J.A. (2017, May 25-26) Building and Implementing a Program to Foster a Culture of Research Integrity. *Research Integrity and Regulatory Compliance Symposium.* Portland, ME.
57. **Cha, J. S.**, Gonzalez, G. T., Wachs, J. P., & Yu, D. (2017, March 5-8) Workload measurement during robotic surgical skills tasks using wearable sensors. *2017 International Symposium on Human Factors and Ergonomics in Health Care*. New Orleans, LA.
58. **Cha, J. S.**, Yu, D., Kasten, S.J., Green, C., & Armstrong, T. J. (2016, April 13-16) Using Hierarchical Task Analysis for Standardization of Surgical Technique: Investigation of Adventitial Stripping. *2016 International Symposium on Human Factors and Ergonomics in Health Care: Shaping the Future.* San Diego, CA.
59. **Yu, D.**, Cha, J. S., Kasten, S. J., & Armstrong, T. J. (2014, October 27-31). Gaze and viewing patterns in microsurgery Task analysis in the operating room. *Human Factors and Ergonomics Society Annual Meeting.* Chicago, IL.

Regional/ University Conferences (does not include 22 posters prior 2021)

1. **McCurley, C.***, Gonzales, A.*, Narasimhan, R., Barbieri, D., Srinivasan, D., Carbonell, A., Joseph, A., Cha, J. (2024, April). Assessing the Effectiveness of Passive Exoskeletons for Surgeons during Simulated Laparoscopic Surgery. *7th Annual Clemson University Student Research Forum*, Clemson, SC.
2. **Ashley, L.***, Franca Barbieri, D., Chang, C., Ulrich, J., Srinivasan, D., Cha, J. (2024, April). Improving Sepsis Care and Treatment Using a System-Approach to Understand Clinical Decision Support Systems. *7th Annual Clemson University Student Research Forum*, Clemson, SC.
3. **Thompson, Z.***, Duffie, H.*, Singh, C.*, Li, D., Carbonell, A., Cha, J. (2024, April). Assessment of a Cognitive Workload-Adaptive Aid for Surgical Training. *7th Annual Clemson University Student Research Forum*, Clemson, SC.
4. **Knipschild, L.*, Whaley, V.***, Ball, M.*, Luo, Q., Carbonell, A., Cha, J. (2024, April). One Size Does Not Fit All: Developing Personalized Robotic-Assisted Surgery Training Through an Adaptive Scheduling Approach. *7th Annual Clemson University Student Research Forum,* Clemson, SC.
5. **Lanier, S.***, Gonzales, A.*, Barbieri, D., Srinivasan, D., Joseph, A., Carbonell, A., Cha, J. (2024, April). Can Exoskeletons Help Surgical Staff?: Evaluation of Shoulder-Support Exoskeletons During Simulated Surgical Tasks. *Clemson University 19th Annual Focus on Creative Inquiry Forum*, Clemson, SC.
6. **Lanier, S.***, Gonzales, A.*, Haselman, T., Dhar, S., Barbieri, D., Srinivasan, D., Joseph, A., Carbonell, A., Cha, J. (2023, August) Scrubbing into the Future; Evaluating Exoskeletons' Affect on Health Care Workers' Energy Expenditure and Fatigue. *Clemson University 7th Annual Summer CI + UR Showcase Poster Symposium.* Clemson, SC.
7. **Haselman, W. T.***, Dhar, S.*, Gonzales, A.*, Barbieri, D., Carbonell, A., Srinivasan, D., Joseph, A., Cha, J. (2023, July 14) Passive Exoskeletons to Reduce Muscle Activity and Metabolic Demand in Surgical Staff. *University of South Carolina School of Medicine Greenville Research Symposium.* Greenville, SC.
8. **Dhar, S.***, Gonzales, A.*, Barbieri, D., Carbonell, A., Srinivasan, D., Joseph, A., Cha, J. (2023, July 14) Evaluating the Role of Shoulder and Back Exoskeletons in Augmenting Surgeon

Ergonomics During Simulated Surgical Tasks. *University of South Carolina School of Medicine Greenville Research Symposium*. Greenville, SC.

9. **Mohammad, Y.*,** Barbieri, D., Beltran, G., Aviles, J., Srinivasan, S., Cha, J. (2023, July 14) Evaluating the Role of Shoulder and Back Exoskeletons in Augmenting Surgeon Ergonomics During Simulated Surgical Tasks. *University of South Carolina School of Medicine Greenville Research Symposium*. Greenville, SC.
10. **Gainey, M.***, Carbonell, A., Cha, J. (2023, July 14) Integrating Expert Perspective on Current and Future Challenges for Robotic-Assisted Surgery (RAS) Workflow. *University of South Carolina School of Medicine Greenville Research Symposium*. Greenville, SC.
11. **Ludden, D.***, Gonzales, A.*, Barbieri, D., Srinivasan, D., Carbonell, A., Joseph, A., Cha, J. (2023, April). Exo-Lent Posture: Evaluating Potential Benefits of Exoskeleton Support for Postures Common in Minimally Invasive Surgeons. *Clemson University 18th Annual Focus on Creative Inquiry Forum*, Clemson, SC.
12. **Fuller, P.***, Duffie, H.*, Ball, M.*, Kennedy, S., Carbonell, A., Luo, Q., Joseph, A., Cha, J. (2023, April). Future of Robotic Surgery: Identifying the Changing Paradigm of Surgical Human-Robotic Interactions. *Clemson University 18th Annual Focus on Creative Inquiry Forum*, Clemson, SC.
13. **Ludden, D.***, Gonzales, A.*, Barbieri, D., Carbonell, A., Joseph, A., Srinivasan, D., Cha, J. (2022, August 23) Suit Up: Assessing Integration of Exoskeletons to Reduce the Physical Demands of Surgeons. *Clemson University 6th Annual Summer CI + UR Showcase Poster Symposium.* Clemson, SC.
14. **Bozard, R. ***, Duffie, H.*, Liu, H., Carbonell, A., Luo, Q., Cha., J. S. (2022, August 23) How to Train Your Surgeon: Eye Tracking Metrics for Robotic-Assisted Surgery Skills Training. *Clemson University 6th Annual Summer CI + UR Showcase Poster Symposium.* Clemson, SC.
15. **Ludden, D. ***, Gonzales, A.*, Barbieri, D., Carbonell, A., Joseph, A., Srinivasan, D., Cha, J. (2022, July 29) Suit Up: Assessing Integration of Exoskeletons to Reduce the Physical Demands of Surgeons. *9th Annual Summer Undergraduate Research Poster Symposium.* Clemson, SC.
16. **Bozard, R. ***, Duffie, H.*, Liu, H., Carbonell, A., Luo, Q., Cha., J. S. (2022, July 29) How to Train Your Surgeon: Eye Tracking Metrics for Robotic-Assisted Surgery Skills Training. *9th Annual Summer Undergraduate Research Poster Symposium.* Clemson, SC.
17. **Duffie, H.***, Stefanidis, D., Yu, D., Cha., J. S. (2022, April 8) How Loud are Your Doctors? A Systematic Approach to Quantifying Vocal Interactions in Medical Training Simulations. *5th Annual Clemson University Student Research Forum*. Clemson, SC.
18. **Mazur, K.***, Gonzales, A.*, Goel, S., Joseph, A., Cha., J. S. (2022, April 8) Taking Care of You: Evaluating Heart Rate Variability and Skin Conductance of Children and Parents Throughout a Surgical Procedure. *Clemson University 17th Annual Focus on Creative Inquiry Forum*. Clemson, SC.
19. **Stribling, H.***, Gonzales, A.*, Cha., J. S. (2022, April 7) This is How We Move It: Physical Activity Distinctions Between Global Populations. *5th Annual Clemson University Student Research Forum.* Clemson, SC.
20. **Goodwin, C.***, Ball, M.*, Gonzales, A.*, Stefanidis, D., Yu, D., Cha., J. S. (2022, April 7) Does a Good Doctor Ask a lot of Questions? A Quantitative Approach to Assessing Communication in Medical Training Simulations. *5th Annual Clemson University Student Research Forum*. Clemson, SC.
21. **Gonzales, A.***, Lin, J., Cha., J. S. (2021, October 22) Actively Working-From-Home but Without the Active: Perceptions Versus Reality of Work-From-Home Physical Activity. *Prisma Health Research Showcase.* Clemson, SC.
22. **Witt, S.***, Gonzales, A.*, Lin, J., Cha, J., (2021, August 17) Comparison of the Effects of COVID-19 Pandemic on Workers' Physical Activity. *Clemson University 5th Annual Summer CI + UR Showcase Poster Symposium*. Clemson, SC.

23. **Anton N.E.**, Huffman E.M., Ahmed R., Cooper D., Athanasiadis D.I., Cha J.S., Stefanidis D., Lee N.K. (2021, April 22) Stress and resident interdisciplinary team performance: results of a pilot trauma simulation. *Indiana University School of Medicine Annual Education Research Day*. Indianapolis, IL.
24. **Anton N.E.**, Whiteside J.A., Cha J., Perkins L.A., Martin M., Stefanidis, D. (2021, April 22) Characterizing robotic surgical expertise: an exploratory study of neural activation during mental imagery of robotic suturing. *Indiana University School of Medicine Annual Education Research Day*. Indianapolis, IL.
25. **Nunez, L.*, Mazur, K.*,** Lin, J., Cha, J. (2021, April 1-2) Happy Body, Happy Boss?: Evaluating Mind-Body Interventions on Health Outcomes Among Office-based Workers. *Clemson University 16th Annual Focus on Creative Inquiry Forum*, Clemson, SC.

Professional Society Membership

Human Factors and Ergonomics Society, Member	2015 – Present
Institute of Industrial Engineers, Member	2021 – Present

Referee/Reviewer

Source
Peer-reviewed journal articles
Human Factors, Applied Ergonomics, Ergonomics, Journal of Safety Research, IISE Transactions on Occupational Ergonomics and Human Factors, IEEE Transactions on Human-Machine Systems, American Journal of Surgery, BMC Medical Education, International Journal of Industrial Ergonomics
Conference proceedings/abstracts
Human Factors & Ergonomics Society Annual Conference, Human Factors & Ergonomics Society Health Care Symposium, IEEE International Conference on Systems, Man, and Cybernetics (SMC), International Ergonomics Association (IEA) Congress
Proposals
National Science Foundation (NSF), panels 2022– 2024

STUDENTS

Current Doctoral Students

1. Alec Gonzales, Industrial Engineering, Chair, began Fall 2021
2. Holden Duffie, Industrial Engineering, Chair, began Fall 2022
3. Matthew Ball, Industrial Engineering, Chair, began Fall 2023
4. Patrick Fuller, Industrial Engineering, Chair, began Fall 2024

Graduate Research Supervision

1. Uche Iwuchukwu, Industrial Engineering MS student, Research Assistant (Summer 2024 – Present)
2. Charanjit Singh, Computer Science MS student, Research Assistant (Spring 2023 – Present)
3. Saurabh Sharma, Computer Science MS student, Research Assistant (Spring – Summer 2023)
4. Connor Moore, Biomedical Data Science and Informatics MS student, Research Assistant (Fall 2022)

Completed MS Thesis

1. Matthew Ball, Industrial Engineering, Chair (co-chair with A. Khademi), Spring 2024
   Title: "Application of an Information Gain Model in a Motor Learning Task: An Application in a Laparoscopic Surgical Skills Task"
2. Patrick Fuller, Industrial Engineering, Chair, Summer 2024
   Title: "Understanding the Challenges to Robotic-Assisted Surgery Adoption from the perspectives of the Human-Interaction, Built Environment, and Training"

Completed Student Committee

1. Steven Foster, Industrial Engineering, PhD student, Summer 2024
   Title: Identification and Validation of a Measurement of Emergency Physician (EP) Workload During End of Shift Patient Handoffs

Current Student Committee

1. Sara Kennedy, Architecture+Health Design, PhD student, Summer 2025 (expected)
   Title: Understanding the Impact of the Built Environment on Workflows and Team Communication during Robotic-Assisted Surgery

Undergraduate Research Supervision

1. Tyler Mosca (Summer 2024)
2. Max Livesey (Summer 2024)
3. Emery Driver (Summer 2024)
4. Lauren Knipschild (Spring 2024 – Summer 2024)
5. Voné Whaley (Spring 2024)
6. Zachary Thompson (Spring 2024)
7. Lauren Ashley (Spring 2024)
8. Calvin McCurley (Fall 2023 – Spring 2024)
9. Sydney (Hope) Lanier (Summer 2023, Spring 2024)
10. Ayushi Patel (Spring 2023)
11. Patrick Fuller (Fall 2022 – Spring 2023)
12. Riya Patel (CS student) (Fall 2022 – Spring 2023)
13. Daniel Ludden (Summer 2022 – Spring 2023)
14. Richard Bozard (CS student) (Spring 2022 – Summer 2022)
15. Corbin Goodwin (BME student) (Spring 2022)
16. Matthew Ball (Spring 2022)
17. Hannah Stribling (Honors student) (Fall 2021 – Spring 2022)
18. Gregory Robichaud (Fall 2021)
19. Holden Duffie (Fall 2021 – Spring 2022)
20. Keegan Mazur (Spring 2021 – Spring 2022)
21. Luis Nunez (Spring – Fall 2021)
22. Savannah Witt (Spring, Summer 2021)
23. Chavah Green (Spring 2021)

Medical Student Research Supervision

Through University of South Carolina School of Medicine Greenville

1. Shuvangee Dhar (Summer 2023-Present)
2. Kathleen Fallon (Summer 2024)
3. Joshua Wiggins (Summer 2024)
4. Melanie Gainey (Spring 2023-Spring 2024)
5. Tyler Haselman (Summer 2023)
6. Yousuf Mohammad (Summer 2023)

RESEARCH ACTIVITIES

Total Research Funding: $1,873,873; PI Share: $1,198,636
*Industry and seed grants are not listed.

1. HCC: CAREER: Redefining Skill Requirements and Evaluating Interaction Dynamics in Human-Robot Surgical Teams
   Sponsor: National Science Foundation. $574,834
   PI: Jackie Cha, 6/2024 – 5/2029

2. CICI: UCSS: Human-Centered Cybersecurity in Robotic Surgery (HCCRS) - Coordinating the Human and Cyber Infrastructure for Cybersecurity
   Sponsor: National Science Foundation. $599,982
   PI: Jackie Cha, 7/2023 – 6/2026

3. FW-HTF-P: Adapting to the Future of Robotic Surgery: Understanding Training and Design Environments for Human-Robot Teams
   Sponsor: National Science Foundation. $149,913
   PI: Jackie Cha, 10/2022 – 9/2023

4. Investigating the Use of Exoskeletons for Reducing Musculoskeletal Injuries in Surgical Care Tasks
   Sponsor: Agency of healthcare Research and Quality (AHRQ). $99,910
   PI: Jackie Cha, Project period: 9/2022 – 9/2024

TEACHING AND MENTORING

Course	Title	Semester	Enrollment
IE 4880	Human Factors Engineering	Spring 2024	79
		Spring 2022	57
		Spring 2021	89
IE 4500/6500	Human Factors in Device Design & Analysis	Fall 2023	28
		Fall 2022	30
IE 4910/6910	Human Factors in Device Design & Analysis	Fall 2021	77
IE 4890/6890	Industrial Ergonomics & Automation	Fall 2023	30
IE 8900	PhD Seminar (co-teach with T. Sharkey)	Fall 2021	15

Student Team Mentoring

- Spring 2021, 2022, 2023, 2024: Exoskeletons in Healthcare, Seminar in Human-Computer Interaction, California State University, Long Beach
- Spring 2023: Coach for HFES Healthcare Student mHealth Design Competition, PeaceofMind (Michelle Lai from University of Toronto), winning team

Other Mentoring

- Engineering Academic Career Club (EACC) Summer Mentoring Circles, Purdue University, Summer 2022

SERVICE

Department Service

2023- Clemson IE Scholarships, Awards, and Honors Committee, Member

2021-2022

2022-2023 Clemson IE Graduate Program Committee, Member
2021-2022 Clemson IE Seminar Series Organizer
2022 Clemson IE Associate Chair Search Committee, Member

College/ University Service

2021-2024 Creative Inquiry research symposium, Judge
2021-2022 Clemson Graduate Research and Discovery Symposium (GRADS) research competition, Judge
2021 STEM Camp, IE Session Leader

Professional Society and Other Service

Editorial Activities

2023- *IISE Transactions on Occupational Ergonomics and Human Factors*, Editorial Board member
2022- Preferred Reviewer for *Human Factors*, Provisional Editorial Board member

Society Leadership & Activities

2024- Society of Surgical Ergonomics, Program Committee Member
2024- HFES Augmented Cognition Technical Group Program Chair
2024 HFES Jerome H. Ely Human Factors Article Award Committee Member
2023- HFES Computer Systems Technical Group Program Chair
2023- Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) Robotics Committee, Member
2023- HFES Health Care Robotics Summit, Organizing Committee
2023-2024 HFES Augmented Cognition Technical Group Secretary Treasurer / Program Chair Elect
2020-2023 HFES Augmented Cognition Technical Group Newsletter Editor
2017-2019 HFE Women's Organization for Mentoring and Networking Luncheon Subcommittee Member

Conference Activities

2023 HFES Occupational Ergonomics Technical Group Awards Committee, Member
2023 HFES Computer Systems Session Chair
2023 IISE Annual Meeting Doctoral Colloquium Judge
2022 HFES Annual Meeting Healthcare Technical Group Best Student Paper Award, Reviewer
2022 IISE Annual Meeting Healthcare 1 Session Chair
2022 IISE Annual Meeting Physical Ergonomics 1 Session Chair
2021- HFES Annual Meeting Chapanis Best Student Paper Award Committee, Member
2021 HFES Annual Meeting K-HFES Best Student Paper Award Committee, Reviewer
2021 HFES Annual Meeting Healthcare Session Chair
2019 HFES Annual Meeting Augmented Cognition Session Chair
2019 HFES Annual Meeting Student Forum Session Co-Chair
2019- HFES Annual Meeting Reviewer
2018-2019 HFES Annual Meeting Student Volunteer
2017 International Symposium on Human Factors and Ergonomics in Healthcare, Student Volunteer

Certifications

2022- Certified Professional Ergonomist (CPE), Board of Certification in Professional Ergonomics (BCPE)