

# ABIGAIL R. WOOLDRIDGE, Ph.D.

## Curriculum Vitae

---

Department of Industrial and Enterprise Systems Engineering (217) 300-8086  
Grainger College of Engineering (502) 544-2328  
University of Illinois at Urbana-Champaign [arwool@illinois.edu](mailto:arwool@illinois.edu)  
117 Transportation Building [wooldridge.abigail.r@gmail.com](mailto:wooldridge.abigail.r@gmail.com)  
104 South Mathews Avenue <https://ise.illinois.edu/directory/profile/arwool>  
MC-238 <https://hfss.ise.illinois.edu>  
Urbana, Illinois 61801 [Google Scholar](#)

## EDUCATION

- 2015 – 2018 University of Wisconsin – Madison  
Degree: Doctor of Philosophy in Industrial Engineering (2018)  
Thesis: *Team Cognition Distributed in Spatio-Temporal Processes: A Macroergonomic Approach to Trauma Care*  
Focus: Human Factors and Ergonomics  
Minor: Mixed Methods in Field Research
- 2012 – 2013 University of Wisconsin – Madison  
Degree: Master of Science in Industrial and Systems Engineering (2013)  
Focus: Human Factors and Ergonomics
- 2007 – 2012 University of Louisville  
Degree: Master of Engineering in Industrial Engineering (2012; **Summa Cum Laude**)  
Thesis: *Modeling the Workflow of One Primary Care Physician-Nurse Team*  
Focus: Operations Research and Applied Statistics,  
Degree: Bachelor of Science, Industrial Engineering (2011; **Summa Cum Laude**)

## PROFESSIONAL EXPERIENCE

### University of Illinois at Urbana-Champaign, Urbana, Illinois

2018 – Present

- Assistant Professor, Department of Industrial and Enterprise Systems Engineering, Grainger College of Engineering, 2018 – Present
- Affiliate Faculty (0%), Beckman Institute for Advanced Science and Technology, 2018 – Present
- Courtesy (0%) Appointment, Kinesiology and Community Health, College of Applied Health Sciences, 2019 – Present
- Courtesy (0%) Appointment, School of Information Sciences, 2019 – Present

- Courtesy (0%) Appointment, Computer Science, Grainger College of Engineering, 2020 – Present
- Courtesy (0%) Appointment, Department of Biomedical and Translational Sciences, Carle Illinois College of Medicine, 2020 – Present
- Courtesy (0%) Appointment, Coordinated Science Laboratory, 2021 – Present
- Lecturer, August – October 2018
- Adjust Research Affiliate, April – August 2018

**Order of Saint Francis Healthcare System, Peoria, Illinois**

2024 - Present

- ARCHES Faculty Fellow

**University of Wisconsin-Madison, Madison, Wisconsin**

2015 –2018

- Research Assistant, Center for Quality and Productivity Improvement and Department of Industrial and Systems Engineering  
Research Projects:  
Care Transitions and Teamwork in Pediatric Trauma: Implications for Health Information Technology Design (AHRQ Grant # R01-HS23837).  
Understanding Primary Care Teamwork in Context: Implications for Health Information Technology Design (AHRQ Grant # R01-HS022505).

**University of Miami, Miami, Florida**

2013 –2015

- Senior Decision Support Analyst, Bascom Palmer Eye Institute, Miller School of Medicine

**University of Wisconsin-Madison, Madison, Wisconsin**

2012 –2013

- Research Assistant, Center for Quality and Productivity Improvement and Department of Industrial and Systems Engineering  
Research Project:  
Keystone Beacon Community Proposal for a Rural Community-Wide Medical Home (US Office of the National Coordinator Award # 90BC001301).

**Advanced Solutions, Inc., Louisville, Kentucky**

2011 – 2012

- Industrial and Systems Engineer

**University of Louisville, Louisville, Kentucky**

2008 – 2011

- Student Assistant, Department of Engineering Fundamentals
- Tutor, Athletic Academic Services,

**TechSolve, Inc.**, Cincinnati, Ohio

2009 – 2010

- Industrial Engineering Intern, Spring 2009, Fall 2009, Summer 2010

**Stonestreet One**, Louisville, Kentucky

2007

- Quality Assurance Intern

## AWARDS AND HONORS

### National Awards

2022, 2023	HFES Gold Award for Student Chapters, Chapter Advisor
2021	The Robert L. Wears Early Career Award, Healthcare Technical Group, Human Factors and Ergonomics Society
2020	National Science Foundation Smart and Connected Health Aspiring PI Award, 2020 Advancing Health Through Science Workshop
2016	Human Factors and Ergonomics Society Alphonse Chapanis Student Paper Award Semi-Finalist (Top 10)
2011 – 2012	Tau Beta Pi Fife Fellow
2011 – 2012	Alpha Pi Mu Wolter J. Fabrycky Scholarship
2007	National Merit Scholar

### University Awards

2021	University of Illinois System's Presidential Medallion <i>Note: This is the highest award in the University of Illinois System</i>
2021	Grainger Engineering COVID-19 Wall of Recognition in Engineering
2020	Teacher Ranked as Excellent Fall 2020 for IE 598 – Job and Organization Design
2020	Teacher Ranked as Excellent Fall 2020 for IE 598 – Field Research in Health Care
2020	Teacher Ranked as Excellent Spring 2020 for IE 340
2019	Teacher Ranked as Excellent Spring 2019 for IE 340
2013	AHRQ T32 Training Grant Trainee (PI: Maureen Smith, Department of Population Health Sciences)

2012	Wisconsin Distinguished Graduate Fellow
2012	Outstanding Student Award (Speed School Honor Graduate)
2012	Lewis S. Streng Award
2007 – 2012	University of Louisville Dean's Scholar
2007 – 2012	University of Louisville Honors Program
2008	Highest Panhellenic Cumulative GPA
2007	Grawemeyer Scholarship

### **Departmental Awards**

2020	ISE Department Head Teaching Award
2017	Antoinette Derjani-Bayeh Scholarship for women/minority students interested in socially active causes
2016	UW Industrial and Systems Engineering Department Graduate Student Travel Award

### **Other Recognition**

2021	Advisor of Winner, HFES Health Care Technical Group Marilyn Sue Bogner Student Paper Award
2020	Advisor of Winner, HFES Health Care Technical Group Marilyn Sue Bogner Student Paper Award
2019	Winner, Best Paper Award, International Conference on Quantitative Ethnography 2019
2017	UW-Madison Teaching Academy Affiliate
2011	Kentucky Derby Festival Princess
2011	Alfred T. Chen Memorial Scholarship
2010	Greater Louisville Manufacturing & Logistics Network Scholarship
2008, 2009	Sigma Kappa Most Outstanding Student
2007	Howard B. Dillon Scholarship

## **RESEARCH FUNDING**

**TOTALS: \$2,812,918**

\$2,077,633 (PI)

\$253,337 (co-PI)

\$422,057 (startup)

### **Current Funding**

Title: Safe and Equitable Maternal Care through Systems-Focused, Technology-Based Solutions

Dates: 01/15/2024 – 08/01/2024

Funding Agency: OSF Faculty Fellowship

Total Award Amount: \$66,735

Role: Principal Investigator

Title: Stress and Mental Health: A Needs Assessment of Midwestern Veterinarians and Staff

Dates: 02/01/2024 – 04/30/2025

Funding Agency: Healthier Workforce Center of the Midwest

Total Award Amount: \$29,891

Role: Co-Investigator

Title: Elucidating the Drivers and Mechanisms of Moral Injury Among Frontline Healthcare Workers: A Mixed-Methods Study

Dates: 8/15/2023-8/14/2024

Funding Agency: CHAD Pilot Proposal

Total Award Amount: \$30,000.00

Role: Co-Investigator

Title: Patient Safety Learning Laboratory: Human-Centered, Utility-Focused Alarm Design to Preserve Maternal Lives and Health

Dates: 1/1/2023-6/1/2024

Funding Agency: Jump ARCHES through the Health Care Engineering Systems Center

Total Award Amount: \$99,985.00

Role: Principal Investigator

Title: Monitoring the ‘Health’ of the Hospital: Using Wearable Sensors to Monitor Nursing Stress

Dates: 1/1/2022-12/31/2023 *no-cost extension*

Funding Agency: Jump ARCHES through the Health Care Engineering Systems Center

Total Award Amount: \$78,810.00

Role: Principal Investigator

Title: Startup Package

Funding Agency: University of Illinois at Urbana-Champaign

Total Award Amount: \$422,057.00

### **Completed Funding**

Title: An observatory for infection genomics  
Dates: 5/16/2022-5/15/2023  
Funding Agency: Grainger College of Engineering Strategic Research Initiative 2022  
Total Award Amount: \$75,000.00  
Role: Co-Principal Investigator (PI Nguyen, Department of Civil and Environmental Engineering)

Title: A Human Factors Approach to Food Security  
Dates: 3/1/2020-2/28/2022  
Funding Agency: Jump ARCHES through the Health Care Engineering Systems Center  
Total Award Amount: \$75,000.00  
Role: Principal Investigator

Title: mobileSHIELD: A Proposal to Broaden Impact of SHIELD T3 Through Mobile Labs  
Dates: 7/15/2020-12/31/2020  
Funding Agency: University of Illinois System  
Total Award Amount: \$1,700,000.00  
Role: Principal Investigator

Title: Using Simulation to Evaluate and Improve Team Cognition in Handoffs  
Dates: 3/1/2019-2/29/2020; no cost extension through 3/1/2021  
Funding Agency: Jump ARCHES through the Health Care Engineering Systems Center  
Total Award Amount: \$57,093.00  
Role: Principal Investigator

Title: The i-AREA-p; an intelligent mobility-based augmented reality simulation application for pediatric resuscitation training  
Dates: 3/1/2019-2/29/2020; no cost extension through 3/1/2021  
Funding Agency: Jump ARCHES through the Health Care Engineering Systems Center  
Total Award Amount: \$96,769.00 (Wooldridge component \$46,435.00)  
Role: Co-Principal Investigator (PI Croland, University of Illinois College of Medicine at Peoria)

Title: Pediatric Sepsis Guidance System  
Dates: 3/1/2019-2/29/2020  
Funding Agency: Jump ARCHES through the Health Care Engineering Systems Center  
Total Award Amount: \$81,568.00 (Wooldridge component \$5,739.00)  
Role: Co-Investigator (PI Sha, Department of Computer Science)

### **Pending Funding**

Title: Margin Diagnostics (MarginDx): Intraoperative Label-Free Multi-Scale Multi-Modal Optical Surgical Imaging, Guidance, and Decision-Making Platform

Dates: 04/2024-03/2029

Funding Agency: Advanced Research Projects Agency for Health (ARPA-H)

Total Award Amount: \$44,837,312 (Wooldridge Component: \$3,083,140)

Role: Co-Investigator (PI Boppart)

Title: Socio-Cyber-Physical Foundations for Predictive Modeling of Emergent Disease Dynamics in Human Systems

Dates: 07/2024-06/2031

Funding Agency: NSF

Total Award Amount: \$18,000,000

Role: Senior Personnel (PI Beck)

Title: A Sociotechnical Systems Approach to Understand the Impact of AI on Physician Wellness

Dates: 05/2024-05/2026

Funding Agency: The Physicians Foundation

Total Award Amount: \$109,368

Role: Principal Investigator

## RESEARCH PUBLICATIONS

### **Books**

1. Roscoe, R. (Ed.), Chiou, E. (Ed.), **Wooldridge, A.** (Ed.). (2020). *Advancing Diversity, Inclusion, and Social Justice Through Human Systems Engineering*. Boca Raton: CRC Press, <https://doi.org/10.1201/9780429425905>. *Note: Winner of the Choice Outstanding Academic Title 2020 Award; the Choice OAT Award represents the highest caliber of scholarly titles that have been reviewed by Choice and conveys the extraordinary recognition of the academic community.*

### **Published or Accepted Refereed Archival Journal Publications**

\*Students I directly supervised

\*\*Students I supervised for the paper, but are directly supervised by other faculty

1. Kieren, M., Sprackling, C. M., Nacht, C. L., Moreno, **Wooldridge, A. R.**, Kelly, M. M. (2024). Adolescent access to clinicians' notes: adolescent, parent, and clinician perspectives. *Journal of Adolescent Health*, 74(1), 155-160.
2. Luo, B.T., Barton, H.J., **Wooldridge, A.R.**, Kelly, M.M. (2023). Human Factors Engineering for the Pediatric Hospitalist. *Hospital Pediatrics*, 13(11), e365-e370. Note: this was an invited contribution; I am the senior Human Factors/Ergonomics author.
3. \*Mayes, E., Gehlbach, J. A., Jeziorciak, J., **Wooldridge, A. R.** (2023) Machine Learning to Operationalize Team Cognition: A Case Study of Patient Handoffs. *Human Factors in Healthcare*, 100036. <https://doi.org/10.1016/j.hfh.2023.100036>
4. \*Hale-Lopez, K. L., Goldstein, M.H., **Wooldridge, A. R.** (2023). Sociotechnical System Design to Support Disaster Intervention Development Teams. *Applied Ergonomics*, 108, 103948. <https://doi.org/10.1016/j.apergo.2022.103948>
5. \*Leite, C. & **Wooldridge, A. R.** (2022). Prediction of Nursing Burnout: A Scoping Review of the Literature from 1970 to 2021. *IISE Transactions on Healthcare Systems Engineering*, 1-20. <https://doi.org/10.1080/24725579.2022.2149638>
6. **Wooldridge, A. R.**, \*Morgan, J., \*\*Ramadhani, W. A., Hanson K., Vazquez-Melendez, E., Kendhari, H., Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K. T., Abbott, Z. R., Farmer, J. N., Ebert-Allen, R. & Croland, T. (2022). Emergent Properties in Sociotechnical Systems: Achieving Balance in the Use of an Augmented Reality Mobile Application. *Human Factors*. <https://doi.org/10.1177/00187208221093830>
7. Carayon, P., Hose, B.-Z., **Wooldridge, A. R.**, Brazelton, T., Dean, S., Eithun, B., Kelly, M., Kohler, J., Ross, J., Rusy, D., Hoonakker, P. L. T. (2022) Human-Centered Design of Team Health IT for Pediatric Trauma Care Transitions. *International Journal of Medical Informatics*, 162, 104727. <https://doi.org/10.1016/j.ijmedinf.2022.104727>
8. **Wooldridge, A. R.**, Carman, E.-M, Xie, A. (2022) Human Factors and Ergonomics (HFE) Applications in Responses to the COVID-19 Pandemic: Lessons Learned and Considerations for Methods. *Applied Ergonomics*, 102, 103733. <https://doi.org/https://doi.org/10.1016/j.apergo.2022.103733>
9. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P. L. T., Hose, B.-Z., Shaffer, D. W., Brazelton, T., Eithun, B., Rusy, D., Ross, J., Kohler, J., Kelly, M., Springman, S., & Gurses, A. P. (2022). Team Cognition in Handoffs: Relating System Factors, Team Cognition Functions and Outcomes in Two Handoff Processes. *Human Factors*. <https://doi.org/https://doi.org/10.1177/00187208221086342>
10. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P. L. T., Hose, B.-Z., \*\*Schroeer, K., Brazelton, T., Eithun, B., Rusy, D., Ross, J., Kohler, J., Kelly, M., Dean, S., Rahal, R., Springman, S. & Gurses, A. P. (2022) Care Transitions of Trauma Patients: Processes with Articulation Work Before and After Handoff. *Applied Ergonomics*. <https://doi.org/10.1016/j.apergo.2021.103606>
11. Hanson K., Shaikh, N., **Wooldridge, A. R.**, Kendhari, H., Krzyzaniak, S., Riech, T., Vazquez-Melendez, E., Mischler, M., Ebert-Allen, R., Barton, G., Formella, K. T.,



- Abbott, Z. R., Wolfe, D., Croland, T. Use of an Augmented Reality Application for Pediatric Code Cart and Resuscitation Training. (2021) *BMJ Innovations*. doi: 10.1136/bmjinnov-2020-000628
12. **Wooldridge, A. R.**, \*\*Ramadhani, W. A., Hanson K., Vazquez-Melendez, E., Kendhari, H., Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K. T., Abbott, Z. R., Farmer, J. N., Ebert-Allen, R. & Croland, T. (2021). Walking the Line: Performance Barriers and Facilitators in an Augmented Reality Mobile Application for Pediatric Code Cart Training. *Ergonomics*, 65(3), 334-347. <https://doi.org/https://doi.org/10.1080/00140139.2021.1954685>
13. **Wooldridge, A. R.** (2021). The Time is Now: Developing Ergonomics for Equity and Justice through Intersectionality. *Ergonomics SA : Journal of the Ergonomics Society of South Africa*, 32(1), 10-18. <https://doi.org/doi:10.4314/esa.v32i1.3>.
14. Kianfar, S., Hundt, A. S., Hoonakker, P. L. T., Salek, D., **Wooldridge, A. R.**, Carayon, P. (2021) Understanding Care Transition Notifications for Chronically Ill Patients. *IISE Transactions on Healthcare Systems Engineering*. <https://doi.org/10.1080/24725579.2021.1912217>
15. King, W. P., Amos, J., Azer, M., Baker, D., Bashir, R., Best, C., Bethke, E., Boppart, S. A., Bralts, E., Dietkus, R., Durack, G., Elbel, S., Elliott, G., Fava, J., Goldenfeld, N., Goldstein, M. H., Hayes, C., Herndon, N., Jamison, S., Johnson, B., Johnson, H., Johnson, M., Kolaczynski, J., Lee, T., Maslov, S., McGregor, D., Milner, D., Moller, R., Mosley, J., Musser, A., Newberger, M., O'Bryan, L., O'Leary, J., Pagano, A., Philpott, M., Pianfetti, B., Pille, A., Pizzuto, L., Rubessa, M., Rylowicz, S., Shipleys, C., Stewart, B., Switzky, R., Tawfick, S., Wheelers, M., White, K., Wood, E., Wood, C., & **Wooldridge, A. R.** (2020). Emergency ventilator for COVID-19. *PLOS One*, 15(12), e0244963.
16. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P., Hose, B.-Z., Eithun, E., Brazelton, T., Ross, J., Kohler, J. E., Kelly, M. M., Dean, S. M., Rusy, D., Gurses, A. P. (2020). Work System Barriers and Facilitators in Inpatient Care Transitions of Pediatric Trauma Patients. *Applied Ergonomics*, 85, 103059. <https://doi.org/https://doi.org/10.1016/j.apergo.2020.103059>.
17. Carayon, P., **Wooldridge, A. R.**, Hoonakker, P., Hundt, A. S., Kelly, M. M. (2020). SEIPS 3.0: Human-Centered Design of the Patient Journey. *Applied Ergonomics*, 84, 103033. <https://doi.org/https://doi.org/10.1016/j.apergo.2019.103033>.
18. Hoonakker, P., **Wooldridge, A.**, Hose, B. Z., Carayon, P., Eithun, B., Brazelton, T., ... & Rusy, D. (2019). Things Falling Through the Cracks: Information Loss During Pediatric Trauma Care Transitions. *Internal and Emergency Medicine*, 14(5): 797-805. <https://doi.org/10.1007/s11739-019-02110-7>
19. Hose, B.-Z., Hoonakker, P. L. T., **Wooldridge, A. R.**, Ross, J., Kohler, J., Brazelton, T., Eithun, B., Kelly, M., Dean, S., Rusy, D., Gurses, A., Feckler, J. & Carayon, P. (2019)

- Physicians' Perceptions of the Problem List in Pediatric Trauma Care. *Applied Clinical Informatics*, 10(1):113-122.
20. Carayon, P., **Wooldridge, A. R.**, Hose, B.-Z., Salwei, M. & Benneyan, J. (2018) Improving Patient Safety Through Human Factors and Systems Engineering: Opportunities and Challenges. *Health Affairs*, 37(11), 1862-1869.
  21. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P. L. T., Hose, B.-Z., Ross, J., Kohler, J., Brazelton, T., Eithun, B., Kelly, M., Dean, S., Rusy, D., Durojaiye, A. & Gurses, A. P. (2019). Complexity of the Pediatric Trauma Care Process: Implications for Multi-Level Awareness. *Cognition, Technology and Work*, 21: 397-416. doi:10.1007/s10111-018-0520-0.
  22. **Wooldridge, A. R.**, Carayon, P., Eagan, B., & Shaffer, D. W. (2018). Quantifying the Qualitative with Epistemic Network Analysis: A Human Factors Case Study of Task-Allocation Communication in a Primary Care Team. *IIEE Transactions on Healthcare Systems Engineering*. DOI: 10.1080/24725579.2017.1418769
  23. **Wooldridge, A. R.**, Carayon, P., Hundt, A. S., & Hoonakker, P. L. T. (2017). SEIPS-based process modeling in primary care. *Applied Ergonomics*, 60, 240-254.
  24. Carayon, P., Kianfar, S., Li, Y., Xie, A., Alyousef, B., & **Wooldridge, A.** (2015). A systematic review of mixed methods research on human factors and ergonomics in health care. *Applied Ergonomics*, 51, 291-321.

### **Submitted Refereed Archival Publications**

1. \*Hale-Lopez, K.L. & **Wooldridge, A.R.** A Network Analysis Approach to Describe Membership Interdependencies in an Inter-Organizational Multi-Team System Developing Interventions During a Pandemic. *Theoretical Issues in Ergonomics Science*.
2. \*Hale-Lopez, K. L., & **Wooldridge, A. R.** Network Analysis of Intra- and Inter-Team Transactive Memory Systems – An Exploratory Study of a Multiteam System. *Human Factors*.

### **Refereed Archival Publications in Preparation**

1. **Wooldridge, A. R.**, \*Mayes, E., Gehlbach, J. A., Jezioriack, J. Network Analysis of Team Cognition in Simulated Care Transitions. *Ergonomics*.
2. **Wooldridge, A. R.**, \*Hale-Lopez, K. L., Goldstein, M. Designing Health Information Technology to Support Processes through SEIPS-Based Process Modeling.
3. \*Mayes, E., **Wooldridge, A. R.**, Jeziorczak, P. M., Gehlback, J. A. Modeling the Work System of Pediatric Care Transitions.
4. \*Mayes, E., **Wooldridge, A. R.**, Jeziorczak, P. M., Gehlback, J. A. Modeling Team Communication in Pediatric Care Transitions.

### **Invited Book Chapters**

1. **Wooldridge, A. R.** & Rogers, W. (2021) Patient Ergonomics in Disability and Aging. In R. Holden & R. Valdez (Ed.), *The Patient Factor: Applications of Patient Ergonomics, Volume II* (pp. 139-162). Boca Raton: CRC Press
2. Carayon, P., & **Wooldridge, A. R.** (2020). Improving Patient Safety in the Patient Journey: Contributions from Human Factors Engineering. In A. E. Smith (Ed.), *Women in Industrial and Systems Engineering: Key Advances and Perspectives on Emerging Topics* (pp. 275-299). Cham: Springer International Publishing.
3. Carayon, P., Kianfar, S., Li, Y., & **Wooldridge, A.** (2015). Organizational design: Macroergonomics as a foundation for human systems integration. In D. A. Boehm-Davis, F. T. Durso & J. D. Lee (Eds.), *APA Handbook of Human Systems Integration* (1 ed., pp. pp.573-588). Washington, D.C.: American Psychological Association.

### **Items at Conferences**

\*Students I directly supervised

\*\*Students I supervised for the paper, but are directly supervised by other faculty

### **Refereed Published Conference Proceedings (Oral Presentations)**

1. \*Hale-Lopez, K.L., Goldstein, M.H., **Wooldridge, A.R.** (2023). Work System Barriers, Facilitators, and Strategies of Women Leading Work Teams. *Accepted to the 14th Organizational Design and Management Conference*. Bordeaux, France.
2. **Wooldridge, A.R.** & \*Hale-Lopez, K.L. (2023). The Use of Systems Engineering Initiative for Patient Safety (SEIPS)-Based Process Analysis to Guide the Design of Process-Centered Digital Health Technology. *Accepted to the 14th Organizational Design and Management Conference*. Bordeaux, France.
3. \*Hale-Lopez, K.L., \*Saenz, M.M., Handler, J.A., Bond, W.F., **Wooldridge, A.R.** (2023). Process Modeling of Patient Care Tasks During Postpartum Hemorrhage Response. *Institute of Industrial and Systems Engineers Annual Conference and Expo 2023*. New Orleans, Louisiana.
4. **Wooldridge, A.R.** & \*Hale-Lopez, K.L. (2023). Systems Engineering and Human Factors in the Design of a Mobile COVID-19 Diagnostic System. *Institute of Industrial and Systems Engineers Annual Conference and Expo 2023*. New Orleans, Louisiana.
5. **Wooldridge, A. R.**, \*Mayes, E. (In Press). Team Cognition as a Lens to Evaluate Handoff Communication. *Healthcare Systems Ergonomics and Patient Safety 2022 @ TU Delft*.

6. **Wooldridge, A. R.**, \*Morgan, J., \*\*Ramadhani, W. A., Hanson K., Vazquez-Melendez, E., Kendhari, H., Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K. T., Abbott, Z. R., Farmer, J. N., Ebert-Allen, R. & Croland, T. (2022). Professional Differences in Use and Perceptions of an Augmented Reality Code Cart Application. In *International Conference on Healthcare Systems Ergonomics and Patient Safety* (pp. 333-340). Cham: Springer Nature Switzerland.
7. \*Leite, C., Chronopoulou, A. & **Wooldridge, A. R.** (2022). Analyzing the Work System Elements Impacting Burnout of Health Care Professionals in a COVID-19 Testing Laboratory. In *International Conference on Healthcare Systems Ergonomics and Patient Safety* (pp. 289-300). Cham: Springer Nature Switzerland.
8. \*Carvalho Manhaes Leite, C., Chronopoulou, A., \*Irem Yuceel, A., & **Wooldridge, A. R.** (2022). Detecting Burnout of Health Care Professionals in a COVID-19 Testing Laboratory. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 66, No. 1, pp. 570-574). Sage CA: Los Angeles, CA: SAGE Publications.
9. \*Hale-Lopez, K. L., & **Wooldridge, A. R.** (2022). Understanding Multiple-Team Membership and Team Effectiveness: A Social Network Analysis of an Ephemeral Multi-Team System Responding to a Public Health Crisis. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 66, No. 1, pp. 585-586).
10. \*Yuceel, A. I., \*Leite, C., Chronopoulou, A., **Wooldridge, A. R.** (2022) Analyzing the Usability and Acceptability of Wearable Sensors for Health Care Workers. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 66(1), 213–215. <https://doi.org/10.1177/1071181322661130>
11. **Wooldridge, A. R.**, Grant, C., Widdowson, A., Rogers, C. C., & Figueroa Jacinto, R. (2022). Developing the Human Factors/Ergonomics Discipline to Support Diversity, Equity and Inclusion. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 66, No. 1, pp. 139-141). Sage CA: Los Angeles, CA: SAGE Publications.
12. Solomon, D., Parmasad, V., Wiegmann, D., Keebler, J., Parker, S., Patterson, B., **Wooldridge, A. R.** (2022) The Role of Human Factors in Supporting the Implementation of Innovative Practices in Healthcare Setting. *HFES International Annual Meeting*.
13. \*\*Madiol, M. J., Goldstein, M. H., **Wooldridge, A. R.**, \*Hale-Lopez, K. Modeling in a university-industry collaboration: Deep and surface approaches. Proceedings of the American Society for Engineering Education Annual Conference and Exposition, June 2022, Minneapolis, Minnesota.
14. Shum, S B., Irgens, G. A., Moots, H., Phillips, M., Shah, M., Vega, H. & **Wooldridge, A. R.** (2021). Participatory Quantitative Ethnography. Symposium at the *International Conference on Quantitative Ethnography 2021*. Note: symposium papers not included in proceedings.
15. Boisvenue, J. J., Jung, H. S., Jung, S., Poplov, V., Ruis, A. R., **Wooldridge, A. R.**, Zorgo, A. (2021). Considerations for the use of Quantitative Ethnography in Healthcare.

- Symposium at the *International Conference on Quantitative Ethnography 2021*. Note: symposium papers not included in proceedings.
16. Robertson, M., Hallbeck, S., Cohen, T., Parush, A., **Wooldridge, A. R.**, Waterson, P. (2021). Human Factors/Ergonomics and Systems in Healthcare – Session II. Panel at *INCOSE HSI2021*.
  17. \*Hale-Lopez, K. L., **Wooldridge, A. R.**, Goldstein, M. H. (2021). Using Technology to Support Distributed Teams: A Work System-Based Study of an Interdisciplinary Team Responding to COVID-19. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 65(1), 174–178. <https://doi.org/10.1177/1071181321651062>. Note: Winner of Health Care Technical Group Marilyn Sue Bogner Student Paper Award.
  18. \*\*Lusebrink, R., **Wooldridge, A. R.**, \*Spiwak, M., (2021). Advancing Equitable and Just Practices in Human Factors and Ergonomics. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 65(1), 530-534. <https://doi.org/10.1177/1071181321651074>
  19. \*Spiwak, M., **Wooldridge, A. R.**, \*\*Lusebrink, R. (2021). Increasing Diversity and Inclusion in Human Factors. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 65(1), 541–545. <https://doi.org/10.1177/1071181321651184>
  20. **Wooldridge, A. R.**, Rogers, C. C., Reid, C. R., Valdez, R. S., Endsley, M., Holden, R. J., Sommerich, C. M., Thatcher, A. (2021). Being Bold: How HFES Can Encourage Responsible, Timely and Participative Ergonomics to Address Societal Issues. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. 2021;65(1):1039-1043. doi:10.1177/1071181321651035
  21. **Wooldridge, A. R.**, DiFilippo, K. N., Holden, R. J., Ozkaynak, M., Yu, D. (2021). Improving Health Through the Application of Ergonomics to Food Practices. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 65(1), 1162–1166. <https://doi.org/10.1177/1071181321651039>.
  22. **Wooldridge, A. R.** (2021). The Application of Systems Ergonomics to the Design of a Mobile COVID-19 Laboratory. In: Black N.L., Neumann W.P., Noy I. (eds) *Proceedings of the 21st Congress of the International Ergonomics Association (IEA 2021)*. IEA 2021. Lecture Notes in Networks and Systems, vol 222. Springer, Cham. [https://doi.org/10.1007/978-3-030-74611-7\\_92](https://doi.org/10.1007/978-3-030-74611-7_92).
  23. Jung, S., Popov, V., Ruis, A. R., Wooldridge, A. R., Zörger, S. (2021). Quantitative Ethnography in the Clinic. In: Ruis, A. R. & Lee, S. B. (eds) *Second International Conference on Quantitative Ethnography Conference Proceedings Supplement* (pp. 98-104). The International Society for Quantitative Ethnography.
  24. \*\*Heuck, E. & **Wooldridge, A. R.** (2020). Comparing Physician and Nurse Opinions of Team and Individual Handoffs: Does Role Influence Preference? In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 613-617). Sage CA: Los Angeles, CA: SAGE Publications.



25. \*Morgan, J., **Wooldridge, A. R.**, \*Composto, A., \*\*Mitchell, A., \*\*Ramadhani, W., \*\*Roychowdhury, J., Hanson, K., Vazquez-Melendez, E., Kendhari, H., Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K. T., Abbott, Z. R., Farmer, J. N., Ebert-Allen, R., Croland, T. (2020). Evaluating the Efficacy of a Mobile, Augmented Reality Pediatric Code Cart Education Application. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 1028-1032). Sage CA: Los Angeles, CA: SAGE Publications. *Note: Winner of Health Care Technical Group Marilyn Sue Bogner Student Paper Award.*
26. **Wooldridge, A. R.**, Roscoe, R. D., Roberts, S. C., Valdez, R. S. (2020). Designing for Diversity: Implications for Research and Practice. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 563-567). Sage CA: Los Angeles, CA: SAGE Publications.
27. Rogers, C., Valdez, R., Gilbert, J. E., Morales, K. L., Montague, E., Rogers, W., Thatcher, A., **Wooldridge, A. R.** (2020). Scaling Our Impact: Emerging Human Factors Applications Addressing Societal Challenges. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 863-867). Sage CA: Los Angeles, CA: SAGE Publications.
28. Beadle, S., Spain, R., Goldberg, B., Ebnali, M., Bailey, S., Ciccone, B., Wilson, R., Rubensky, S., Carroll, M., Bennett, W., Hu, X., Reiner, A., Vasquez, H., **Wooldridge, A. R.**, Lee, L., Verma, P., Jeong, H., Gisick, L., French, J., & Keebler, J. (2020). Virtual reality, augmented reality, and virtual environments: Demonstrations of current technologies and future directions. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 2119-2123). Sage CA: Los Angeles, CA: SAGE Publications.
29. **Wooldridge, A. R.**, \*\*Heuck, E., Jeziorczak, P. M., Gehlback, J. A. (2020). "Accidental" Design in Participatory Simulation. In Charles, R. & Golightly, D. (eds) *Contemporary Ergonomics and Human Factors 2020*. Chartered Institute of Ergonomics and Human Factors: Birmingham, UK. <https://publications.ergonomics.org.uk>. *Note: these are proceedings of Organizational Design and Management 2020 and Ergonomics of Human Factors Conference 2020; this paper was submitted to Organizational Design and Management.*
30. **Wooldridge, A. R.**, \*\*Ramadhani, W., \*\*Roychowdhury, J., \*\*Mitchell, A., Croland, T., Hanson, K., Vazquez-Melendez, E., Kendhari, H., Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K. T., Abbott, Z. R., Farmer, J. N., Ebert-Allen, R. (2020). Systemic Consequences of an Augmented Reality Mobile Paediatric Code Cart Application. In Charles, R. & Golightly, D. (eds) *Contemporary Ergonomics and Human Factors 2020*. Chartered Institute of Ergonomics and Human Factors: Birmingham, UK. <https://publications.ergonomics.org.uk>. *Note: these are proceedings of Organizational Design and Management 2020 and Ergonomics and Human Factors Conference 2020; this paper was submitted to Organizational Design and Management.*

31. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P., Hose, B.-Z., Kelly, M. M., Brazelton, T. B., Eithun, B., Dean, S. M., Kohler, J. E., Ross, J. C., Rusy, D., Gurses, A. P. (2020). Contextual Factors Influencing Barriers and Facilitators in Paediatric Trauma Care Transitions. In Charles, R. & Golightly, D. (eds) *Contemporary Ergonomics and Human Factors 2020*. Chartered Institute of Ergonomics and Human Factors: Birmingham, UK. <https://publications.ergonomics.org.uk>. Note: these are proceedings of *Organizational Design and Management 2020 and Ergonomics and Human Factors Conference 2020*; this paper was submitted to *Ergonomics and Human Factors*.
32. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P., Hose, B.-Z., Brazelton, T., Eithun, B., Dean, S., Kelly, M. M., Kohler, J., Ross, J., Rusy, D., Gurses, A. P. (2019). Team Cognition as a Barrier and Facilitator in Care Transitions: Implications for Work System Design. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 63, No. 1, pp. 648-652). Sage CA: Los Angeles, CA: SAGE Publications.
33. **Wooldridge, A. R.**, Benda, N., Smith-Jackson, T. L., Nguyen, T., Gomes, K., Valdez, R., Wesley, D. B., Stonewall, J. (2019). HFE in Diversity, Inclusion and Social Justice: A Practical Primer. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 63, No. 1, pp. 636-639). Sage CA: Los Angeles, CA: SAGE Publications.
34. **Wooldridge A.R.** & \*Haefli R. (2019) Using Epistemic Network Analysis to Explore Outcomes of Care Transitions. In: Eagan B., Misfeldt M., Siebert-Evenstone A. (eds) *Advances in Quantitative Ethnography. ICQE 2019*. Communications in Computer and Information Science, vol 1112. Springer, Cham. Note: *Recognized as Best Paper of the conference*.
35. Hoonakker, P., **Wooldridge, A.**, Hose, B. Z., Carayon, P., Eithun, B., Brazelton, T., ... & Rusy, D. (2018, August). Things Falling Through the Cracks: Information Loss During Pediatric Trauma Care Transitions. In *Congress of the International Ergonomics Association* (pp. 479-488). Springer, Cham. doi:10.1007/978-3-319-96098-2\_60
36. Hose, B. Z., Carayon, P., Hoonakker, P., **Wooldridge, A.**, Brazelton, T., Dean, S., ... & Gurses, A. (2018). Challenges of disposition decision making for pediatric trauma patients in the emergency department. In S. Bagnara, Y. Fujita, R. Tartaglia, S. Albolino, & T. Alexander (Eds.), *Proceedings of the 20th Congress of the International Ergonomics Association (IEA 2018) - Volume I: Healthcare Ergonomics* (pp. 339-345). (Advances in Intelligent Systems and Computing; Vol. 818). Springer Verlag. DOI: 10.1007/978-3-319-96098-2\_44
37. Waterson, P., **Wooldridge, A.**, Wooldridge, A., Sesto, M., Gurses, A., Holden, R., ... & Waterson, P. (2018, September). Improving Care Transitions in Healthcare: A Human Factors/Ergonomics (HFE) Approach. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 62, No. 1, pp. 551-555). Sage CA: Los Angeles, CA: SAGE Publications.
38. **Wooldridge, A. R.**, Nguyen, T., Valdez, R., Montague, E., Milner, M. N., Dorneich, M. C., & Roscoe, R. (2018, September). Human Factors and Ergonomics in Diversity,

- Inclusion and Social Justice Research. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 62, No. 1, pp. 447-449). Sage CA: Los Angeles, CA: SAGE Publications.
39. Chiou, E., **Wooldridge, A. R.**, Price, M., Mosqueda, E., & Roscoe, R. (2017). The Diversity Committee – Challenges and Opportunities for Involvement. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 61(1) 498-500.
  40. **Wooldridge, A. R.**, Hoonakker, P. L. T., Gurses, A. P., Carman, E.-M., Waterson, P., & Sesto, M. (2017). Designing and Managing Healthcare Transitions. In M. Fraser and M. Robertson (Eds.), *Human Factors in Organizational Design and Management - XII* (pp.538-541) Banff, Canada: Association of Canadian Ergonomists.
  41. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P., Musa, A., & Bain, P. (2016). Technology-Mediated Communication between Patients and Primary Care Clinicians and Staff: Ambiguity in Secure Messaging. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 60(1), 556-560.
  42. Carayon, P., Kianfar, S., Li, Y., Xie, A., Alyousef, B., & **Wooldridge, A. R.** (2014). The use of mixed methods in healthcare human factors and ergonomics research. In O. Broberg, N. Fallentin, P. Hasle, P. L. Jensen, A. Kabel, M.E. Larsen & T. Weller (Eds.), *Human Factors in Organizational Design and Management – XI* (pp. 615-619). Copenhagen, Denmark: CPH Conference.

#### **Refereed Published Conference Abstracts (Oral Presentations)**

1. \*Leite, C. & **Wooldridge, A. R.** (2023). Prediction of Nursing Burnout – a Scoping Review of the Literature from 1980 to 2019. *Healthcare Systems Ergonomics and Patient Safety 2022 @ TU Delft*.
2. \*Hale-Lopez, K. L., **Wooldridge, A. R.**, Goldstein, M. H. (2023). Work System Design to Support Interdisciplinary Disaster Response. *Healthcare Systems Ergonomics and Patient Safety 2022 @ TU Delft*.
3. **Wooldridge, A. R.**, \*\*Ramadhani, W., Hanson, K., Vazquez-Melendez, E., Kendhari, H., Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K. T., Abbott, Z. R., Farmer, J. N., Ebert-Allen, R., Croland, T. (2021). Achieving Balance Between Work System Barriers and Facilitators in the Use of an Augmented Reality Mobile Application. *Presented at the 21<sup>st</sup> Triennial Congress of the International Ergonomics Association*.
4. **Wooldridge, A. R.** & \*Hale-Lopez, K. (2021). Human Factors/Ergonomics-Based Process Analysis and Improvement of a COVID-19 Laboratory Testing Process. *Presented at the Healthcare Systems Process Improvement Conference 2021*.

#### **Refereed Conference Abstracts (Poster Presentations)**



1. Shah, M., Jung, S., Ruis, A., **Wooldridge, A. R.** (2022). Communicating QE: A Two-Part Resource for Quantitative Ethnographers in Health Education and Health Care Contexts (Part 1 of 2). *International Conference on Quantitative Ethnography*.
2. Ruis, A., **Wooldridge A. R.**, Shah, M., Jung, S. (2022). Communicating QE: A Two-Part Resource for Quantitative Ethnographers in Health Education and Health Care Contexts (Part 2 of 2). *International Conference on Quantitative Ethnography*.
3. **Wooldridge, A. R.**, Tan, Y. & Eagan, B. (2021). Integrating Interdependence and Temporality in the Analysis of Team Cognition: Comparing ENA and dENA. In: Wasson, B. & Zörgó, S. (eds) *Third International Conference on Quantitative Ethnography: Conference Proceedings Supplement* (pp. 38-42). The International Society for Quantitative Ethnography.
4. **Wooldridge, A. R.**, Roychowdhury, J., Mitchell, A., Hanson, K., Vazquez-Melendez, E., Kendhari, H., Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K. T., Abbott, Z. R., Farmer, J. N., Ebert-Allen, R., Croland, T. (2020). Negotiating Time and Space: Investigating the Pediatric Code Cart Augmented Reality Application. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 1365-1366). Sage CA: Los Angeles, CA: SAGE Publications.
5. **Wooldridge, A. R.**, Pascale Carayon, Peter Hoonakker, Bat-Zion Hose, Tom Brazelton, Ben Eithun, Joshua Ross, Jonathan Kohler, Michelle M. Kelly, Shannon Dean, Deborah Rusy, Ayse P. Gurses. (2019) A Macroergonomic Framework to Understand Team Cognition in Care Transitions. *2019 Human Factors and Ergonomics in Healthcare Symposium*, March 24-27, 2019, Chicago, Illinois.
6. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P., Hose, B.-Z., Ross, J., Kohler, J., Brazelton, T., Eithun, B., Kelly, M., Dean, S., Rusy, D., Gurses, A. (2017). Understanding Team Complexity in Pediatric Trauma Care. *Human Factors and Ergonomics in Healthcare Symposium*, March 5-8, New Orleans, Louisiana.
7. Hose, B.-Z., Carayon, P., Hoonakker, P., **Wooldridge, A. R.**, Ross, J., Kohler, J., Brazelton, T., Eithun, B., Kelly, M., Dean, S., Rusy, D., Gurses, A. (2017). Information Need of Physicians in Pediatric Trauma Care. *Human Factors and Ergonomics in Healthcare Symposium*, March 5-8, New Orleans, Louisiana.
8. **Wooldridge, A. R.**, Hoover, S. R., & Holman, G. T., (2013). "Evaluation of Current Simulation Methods in and their Impact in Healthcare." *Society for Health Systems Conference 2013*, March 1 – 4, New Orleans, Louisiana.
9. **Wooldridge, A. R.**, Kello, J., Mueller, M., (2011). "Using Simulation to Develop a Productivity Standard in a Pre-Admission Testing Department." *INFORMS 2011 Annual Meeting*, November 13 – 16, Charlotte, North Carolina.
10. Gentry, E., **Wooldridge, A. R.**, DePuy, G. W., (2011). "Applying the Analytical Hierarchy Process to Improving Patient Throughput Time." *Society for Health Systems Conference 2011*, February 17 – 20, Orlando, Florida.

**Presentations at Local Conferences and Research Forums**

1. \*Carvalho, C., \*Yuceel, A. I., **Wooldridge, A. R.**, Chronopoulou, A. (2023) Investigating the Use of a Wearable Sensor to Predict Risk of Burnout in Nurses. *Chittenden Symposium*, October 4, 2023, Urbana, Illinois.
2. \*Hale-Lopez, K. L., \*Saenz, M. M., Goldstein, M., Handler, J. A., Bond, W. F., **Wooldridge, A. R.** (2023) A SEIPS-Based Analysis of Complex Teams in Health Care and Public Health Settings. *Chittenden Symposium*, October 4, 2023, Urbana, Illinois.
3. \*Saenz, M.M., \*Hale-Lopez, K.L., **Wooldridge, A.R.** (2023) SEIPS-Based Process Modeling of Postpartum Hemorrhage Care. *The Grainger College of Engineering Spring 2023 Engineering Research Fair*, February 2, 2023, Urbana, Illinois
4. \*Hale-Lopez, K. L., \*Saenz, M., **Wooldridge, A. R.** (2022) Organizational Barriers and Facilitators to Team Effectiveness in an Ephemeral Multi-Team System Responding to a Public Health Crisis. *The Grainger College of Engineering Fall 2022 Engineering Research Fair*, September 27, 2022, Urbana, Illinois
5. \*Hale-Lopez, K. L., \*Angdoko, G. A., **Wooldridge, A. R.** (2021) Using SEIPS-based process modeling to design a mobile laboratory for SARS-CoV-2 diagnostic testing. *The Grainger College of Engineering Fall 2021 Engineering Research Fair*, September 30, 2021, Urbana, Illinois.
6. \*Carvalho, C., \*Yuceel, A. I., \*Composto, A., Chronopoulou, A., **Wooldridge, A. R.** (2021) Monitoring Stress of Healthcare Workers at the Veterinary Diagnostic Laboratory. *The Grainger College of Engineering Fall 2021 Engineering Research Fair*, September 30, 2021, Urbana, Illinois.
7. \*\*Sprackling, C. M., Kieren, M. Q., Nacht, C. L., Moreno, M. A., **Wooldridge, A. R.**, Kelly, M. M. (2021) Stakeholder perspectives of sharing clinician notes with teens. *Annual Medical Student Research Forum*, University of Wisconsin Medicine and Public Health.
5. \*\*Mitchell, A., **Wooldridge, A. R.**, \*\*Ramadhani, W., \*\*Roychowdhury, J., Croland, T., Hanson, K., Melendez, E., Kendhari, L. Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K., Abbott, Z., Ebert-Allen, R. (2019) Evaluation of an Augmented Reality Code Cart Application Using Eye-Tracking Technology. *2019 Society for Hispanic Professional Engineers National Conference Engineering Science Symposium*, October 30 – November 3, Phoenix, Arizona. *Note: Won third place in poster competition.*
6. \*\*Roychowdhury, J., **Wooldridge, A. R.**, \*\*Ramadhani, W., \*\*Mitchell, A., Croland, T., Hanson, K., Melendez, E., Kendhari, L. Shaikh, N., Riech, T., Mischler, M., Krzyzaniak, S., Barton, G., Formella, K., Abbott, Z., Ebert-Allen, R. (2019) Examining Perceived Usefulness of Features of an Augmented Reality (AR) Code Cart Education Application. *2019 iSchool Research Showcase*, October 30, 2019, Urbana, Illinois.

7. \*\*Mitchell, A., **Wooldridge, A. R.**, \*\*Ramadhani, W., \*\*Roychowdhury, J. (2019) Evaluation of an Augmented Reality Code Cart Application Using Eye-Tracking Technology. *The Grainger College of Engineering Research Fair and International Research Symposium*, September 5, 2019, Urbana, Illinois.
8. \*Burgard, M. & **Wooldridge, A. R.** (2019) Work System Factors Influencing Team Cognition in Handoffs. *The Grainger College of Engineering Research Fair and International Research Symposium*, September 5, 2019, Urbana, Illinois.
9. \*\*Kaufman, M. L., **Wooldridge, A. R.**, Pionke, J. J. (2019) A Review of Human Factors Engineering Research to Address Health Inequity. *The Grainger College of Engineering Research Fair and International Research Symposium*, September 5, 2019, Urbana, Illinois.
10. **Wooldridge, A. R.**, Pascale Carayon, Peter Hoonakker, Bat-Zion Hose, Tom Brazelton, Ben Eithun, Joshua Ross, Jonathan Kohler, Michelle M. Kelly, Shannon Dean, Deborah Rusy, Ayse P. Gurses. (2018) A Macroergonomic Framework to Understand Team Cognition in Care Transitions. Johns Hopkins Symposium on Engineering in Healthcare, November 19, 2018, Baltimore, Maryland.
11. **Wooldridge, A. R.**, Pascale Carayon, Peter Hoonakker, Bat-Zion Hose, Tom Brazelton, Ben Eithun, Joshua Ross, Jonathan Kohler, Michelle M. Kelly, Shannon Dean, Deborah Rusy, Ayse P. Gurses. (2018) A Macroergonomic Framework to Understand Team Cognition in Care Transitions. *5<sup>th</sup> Health Care Engineering Systems Symposium and Interactive Medical Simulation Exposition*, September 17, 2018, Champaign, Illinois.
12. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P. L. T., Hose, B.-Z., Ross, J., Kohler, J., Brazelton, T., Eithun, B., Kelly, M., Dean, S., Rusy, D., Durojaiye, A. & Gurses, A. (2018) Complexity of the Pediatric Trauma Care Process: Understanding Patient Pathways. *National Academy of Engineering Regional Meeting and Symposium: Transforming Healthcare Through Engineering*, May 3, Madison, Wisconsin.
13. **Wooldridge, A. R.**, Carayon, P., Hoonakker, P. L. T., Hose, B.-Z., Ross, J., Kohler, J., Brazelton, T., Eithun, B., Kelly, M., Dean, S., Rusy, D., Durojaiye, A. & Gurses, A. (2018) Complexity of the Pediatric Trauma Care Process: Understanding Patient Pathways. *Wisconsin Institute for Healthcare Systems Engineering 2018 Conference*, May 2, Madison, Wisconsin.
14. McGeorge, N. M., Durojaiye, As. B., Fackler, J. C., Xie, A., Rosen, M. A., Hunt, E. A., Stewart, D., Puett, L. L., **Wooldridge, A. R.**, Carayon, P., Hoonakker, P., Gurses, A. P. (2016). Pediatric Trauma Care Transitions: Understanding Teamwork for Health IT Design. *Seventh Annual Johns Hopkins Medicine Patient Safety Summit: Working Together to Achieve Zero Preventable Harm*, October 2016, Baltimore, MD.
15. Cartmill, R., **Wooldridge, A. R.**, Cheema, S., Hoffmann, A., Steege, L., Du, S., Beasley, J., Hahn, D., Smith, P., Vidaver, R., Wetterneck, T. B. (2016). "The Complicated Application of GDTA to Primary Care." *I-Practise Annual Conference*, April 24-26, Madison, Wisconsin.

16. **Wooldridge, A. R.**, Carayon, P., Hundt, A. S., Cartmill, R., Hoonakker, P., Kianfar, S. (2016). "SEIPS-Based Workflow Modeling in Primary Care." *UW Resident and Student Quality Improvement Symposium*, April 14, Madison, Wisconsin.
17. **Wooldridge, A. R.**, Goldstein, R., (2006). "The Genetics of Familial Non-Medullary Thyroid Cancer," *Junior Science and Humanities Symposium 2006*, Albuquerque, New Mexico.

### **Conference Papers and Abstracts Under Review**

1. \*Zoaktafi, M., Russell, M., Bansal, A., Ozaltin, O., **Wooldridge, A. R.** Evaluating the Safety and Quality of Intraoperative Anesthesia Handoffs. Submitted to ASPIRE – the HFES International Annual Meeting 2024.
2. \*Hale-Lopez, K. L., Verma, N., Chakravarthy, S., Handler, J., Ebert-Allen, R., Bond, W. B., **Wooldridge, A. R.** Using the SEIPS Model to Assess a Maternal Hemorrhage Risk Alert Tool. Submitted to ASPIRE – the HFES International Annual Meeting 2024.
3. \*Yuceel, A. R., \*Leite, C., McCarter, D., Johnson, M. A., Blankenship, M., Chronopoulou, A., **Wooldridge, A. R.** The Influence of Past Experience with Wristbands and Exposure Length on Perceived Usability of Wrist-Worn Sensors by Nurses. *Submitted to the 22<sup>nd</sup> Triennial Congress of the International Ergonomics Association.*
4. \*Hale-Lopez, K.L., Verma, N., Chakravarthy, S., Handler, J., Ebert-Allen, R., Bond, W.F., **Wooldridge, A.R.** Describing Team Membership During Maternal Hemorrhage Events. *Submitted to the 22<sup>nd</sup> Triennial Congress of the International Ergonomics Association.*

### **Technical Reports**

1. **Wooldridge, A. R.**, Mueller, M., Kello, J., (2011). Norton PAT Productivity Standard. Technical report performed for large regional hospital system.

### **Other Publications**

1. **Wooldridge, A. R.** (2020) Human Factors and Health Equity During the Pandemic. HFES Health Care Technical Group Newsletter. August 2020, 30 (2). *Note: Invited contribution.*
2. Roscoe, R., Chiou, E., **Wooldridge, A. R.** (2018). Call for Book Chapters on Diversity, Inclusion and Social Justice. HFES Bulletin Newsletter. October 2017, 60(11).
3. Chiou, E., Roscoe, R., **Wooldridge, A. R.** (2017). HFES Diversity Committee 2017 Annual Meeting Wrap-Up. HFES Bulletin Newsletter. October 2017, 61(18).

### **INVITED PRESENTATIONS**

**External Presentations**

- 2023 “Human factors approaches to reducing maternal hemorrhage: A SEIPS-based approach to alert design,” Obstetrics and Gynecology Grand Rounds. University of Illinois College of Medicine Peoria, September 28.
- 2023 “Quantifying qualitative data to model interactions in sociotechnical systems: Human factors engineering to improve pediatric care transitions,” North Carolina State University, March 24.
- 2023 “The Systems Engineering Initiative for Patient Safety as a framework to improve perioperative care transitions,” Grand Rounds, University of West Virginia School of Medicine, February 8.
- 2022 “Modeling interactions in complex health care sociotechnical systems: Challenges and opportunities to improve pediatric care transitions,” University of Virginia, October 21.
- 2022 Panelist, Optimizing technology for safe and equitable care coordination: A social and behavioral science perspective, Health Care Engineering Systems Symposium, Peoria, Illinois, September 30.
- 2022 Panelist, Equality, Diversity and Inclusion – how human factors can make a difference, Chartered Institute of Ergonomics and Human Factors, February 2.
- 2022 “Modeling interactions in complex health care sociotechnical systems: Challenges and opportunities for improving pediatric patient safety,” University of Wisconsin-Madison, Madison, Wisconsin, January 13.
- 2021 Panelist, Human Factors/Ergonomics and Systems in Healthcare – Session II, INCOSE Human Systems Integration 2021 Conference, November 17
- 2021 Panelist, Participatory Quantitative Ethnography, International Conference on Quantitative Ethnography 2021, November 9
- 2021 Panelist, Considerations for the use of Quantitative Ethnography in Healthcare, International Conference on Quantitative Ethnography 2021, November 9
- 2021 The Bellwether Problem: Publishing the First QE Studies in a New Field, International Society for Quantitative Ethnography, Webinar Series, May 3, 2021
- 2021 “Debating Inclusion Practices in Human Factors,” HFES Inter-University Workshop, University at Buffalo, State University of New York, Buffalo, New York, April 10, 2021.
- 2021 “Traversing a Winding Trail: My Career Path Across Industrial Engineering in Industry and Academia,” Graduate Student Seminar, University of Louisville, Louisville, Kentucky, February 26, 2020.

- 2021 “Human Factors and Quantitative Ethnography: Exploring Interactions to Improve Systems,” International Conference on Quantitative Ethnography 2020 Keynote Address, Virtual Conference January 21 – February 2, 2021.
- 2020 “Barriers and Facilitators in Trauma Care Transitions: Implications for Work System Design,” Human Factors in Engineering, Stevens Institute of Technology, Hoboken, New Jersey, October 5, 2020
- 2019 “Further Fields: Introducing Quantitative Ethnography to New Academic Disciplines and Research Areas,” 1<sup>st</sup> International Conference on Quantitative Ethnography, Madison, Wisconsin, October 20.
- 2011 “Norton PAT Productivity Standard.” *Norton Audubon and Norton Healthcare Network Management*, Louisville, Kentucky, April 26.

### **University of Illinois Invited Presentations**

- 2023 “Understanding and Using the Systems Engineering Initiative for Patient Safety (SEIPS) Model,” Innovation, Design, Engineering and Analysis (IDEA) course, Carle Illinois College of Medicine, Urbana, Illinois, June 2.
- 2023 “Human factors engineering and work design: Designing health care systems for clinicians.” The Future of Work Research Showcase - *The Future of Work and Technology*, School of Labor and Employment Relations and Center for Social and Behavioral Science, Urbana, Illinois, April 28.
- 2023 “What is human factors/ergonomics and why does it matter?” Carle Illinois College of Medicine First Year Students Brown Bag, Carle Illinois College of Medicine, Urbana, Illinois, March 20.
- 2022 Panelist, Writing in Engineering and Physical Sciences, Doctoral Research Support Program, University of Illinois Library, October 21.
- 2022 “Understanding and Using the Systems Engineering Initiative for Patient Safety (SEIPS) Model,” Innovation, Design, Engineering and Analysis (IDEA) course, Carle Illinois College of Medicine, Urbana, Illinois, June 10.
- 2022 “What is human factors/ergonomics and why does it matter?” Carle Illinois College of Medicine First Year Students Brown Bag, Carle Illinois College of Medicine, Urbana, Illinois, March 24.
- 2022 “Understanding and Using the Systems Engineering Initiative for Patient Safety (SEIPS) Model,” Innovation, Design, Engineering and Analysis (IDEA) course, Carle Illinois College of Medicine, Urbana, Illinois, January 21.



- 2021 Designing Sociotechnical Systems to Support Teams in Health Care and Health-Related Context, Master of Health Technology Speaker Series, October 22.
- 2021 Industrial and Systems Engineering in COVID-19 Response: Design and Development of Mobile Laboratories, Industrial and Enterprise Systems Engineering Seminar Series, September 10.
- 2021 COVID-19 Research Lightning Talk: mobile SHIELD and sociotechnical system design for teams during pandemics, Campus Research Administrators Working Group, June 4.
- 2021 “What is human factors/ergonomics and why does it matter?” Carle Illinois College of Medicine First Year Students Brown Bag, Carle Illinois College of Medicine, Urbana, Illinois, April 8.
- 2021 One Way the Pandemic Improved My Teaching: Designing Usable Classes for Connectedness, Academy for Excellence in Engineering Education Spring 2021 Lightning Symposium, March 30, 2021.
- 2020 MobileShield, Grainger College COVID-19 Research-Driven Initiatives Webinar, November 12, 2020.
- 2020 “Understanding and Using the Systems Engineering Initiative for Patient Safety (SEIPS) Model,” Innovation, Design, Engineering and Analysis (IDEA) course, Carle Illinois College of Medicine, Urbana, Illinois, May 29.
- 2020 “Using Epistemic Network Analysis in Human Factors Research” Human Factors & Aging Laboratory, University of Illinois at Urbana-Champaign, Urbana, Illinois, April 27.
- 2020 “What is human factors/ergonomics and why does it matter?” Carle Illinois College of Medicine First Year Students Brown Bag, Carle Illinois College of Medicine, Urbana, Illinois, April 17.
- 2019 “Using Simulation to Evaluate and Improve Team Cognition in Handoffs,” 6<sup>th</sup> Health Care Engineering Systems Symposium and Interactive Medical Simulation Exposition, University of Illinois, October 9.
- 2019 “What is human factors/ergonomics and why does it matter?” Carle Illinois College of Medicine First Year Students Brown Bag, Carle Illinois College of Medicine, Urbana, Illinois, April 12.
- 2019 “Human Factors Approaches to Improving Care Transitions: A Macroergonomic Approach to Team Cognition,” 2018-2019 Kinesiology and Community Health Colloquium, Kinesiology and Community Health, University of Illinois at Urbana-Champaign.
- 2016 “Communication in the Wild: The Use of Epistemic Network Analysis to Study Task-Allocation Communication in a Primary Care Team,” Center

- for Quality and Productivity Improvement, University of Wisconsin – Madison, June 24.
- 2012 “The Simulation of a Primary Care Team,” Center for Quality & Productivity Improvement, University of Wisconsin – Madison, February 10.
- 2011 Simulation of the Walk-Up Portion of H1N1 Vaccination Clinic.” Real-time decision support system for healthcare and public health faculty, University of Louisville, Kentucky, September 6.

## TECHNOLOGY TRANSLATION

1. MobileSHIELD Laboratory Information Management System. Role: PI. Licensed to SHIELD T3. Total SHIELD T3 Licensing Fees to date: \$1.8 million (MobileShield attributed 30%)
2. RapidVent. Role: Contributor. Open license.
3. Code Cart AR. Role: co-PI. Licensure ongoing.

## TEACHING AND MENTORING

### Graduate Classroom Instruction

- Fall 2023 Human Factors in Healthcare Engineering Systems (4 credit hours, lecture). Class size: 20 students. University of Illinois at Urbana-Champaign.  
ICES Scores: Overall teaching effectiveness = 4.44; Overall quality of course = 4.22 (scales: 1-5).
- Fall 2022 Human Factors in Healthcare Engineering Systems (4 credit hours, lecture). Class size: 17 students. University of Illinois at Urbana-Champaign.  
ICES Scores: Overall teaching effectiveness = 4.27; Overall quality of course = 4.09 (scales: 1-5).
- Fall 2021 Job and Organization Design (3 credit hours for undergraduates in IE 498, 4 credit hours for graduates in IE 598, lecture). Class size: 7 students. University of Illinois at Urbana-Champaign.  
ICES Scores: Overall teaching effectiveness = 4.2; Overall quality of course = 4.6 (scales: 1-5).
- Fall 2020 Field Research in Health Care (IE 598, 4 credit hours, lecture, online). Class size: 5 students. University of Illinois at Urbana-Champaign.  
ICES Scores: Overall teaching effectiveness = 4.6; Overall quality of course = 4.6 (scales: 1-5).



- Fall 2020 Included on “List of Teachers Ranked as Excellent by Their Students.” Job and Organization Design (IE 598, 4 credit hours, lecture, online). Class size: 7 students. University of Illinois at Urbana-Champaign. ICES Scores: Overall teaching effectiveness = 4.83; Overall quality of course = 5.0 (scales: 1-5).
- Fall 2019 Included on “List of Teachers Ranked as Excellent by Their Students.” Job and Organization Design (3 credit hours for undergraduates in IE 498, 4 credit hours for graduates in IE 598, lecture). Class size: 6 students (2 in IE 498, 4 in IE 58). University of Illinois at Urbana-Champaign. ICES Scores: Overall teaching effectiveness = 4.5 (IE 498), 4.7 (IE 598); Overall quality of course = 5.0 (IE 498), 4.7 (IE 598) (scales: 1-5). Too small for “List of Teachers Ranked as Excellent by Their Students.”
- Fall 2016 Job and Organization Design, grader and lecturer. I taught three lectures on questionnaire design, job rotation, enlargement and enrichment and teamwork (September 28, October 3, November 14). Professor: Pascale Carayon. Class size: 20 students. University of Wisconsin – Madison, Madison, Wisconsin.

### **Undergraduate Classroom Instruction**

- Spring 2024 Human Factors (IE 340 and PSYC 358, 4 credit hours, lecture and lab). Class size: 87 students. University of Illinois at Urbana-Champaign.
- Spring 2022 Human Factors (IE 340 and PSYC 358, 4 credit hours, lecture and lab). Class size: 79 students. University of Illinois at Urbana-Champaign. *Note: Graduate level version offered as independent study with more rigorous laboratory and individual project assignments.* ICES Scores: Overall teaching effectiveness = 4.41; Overall quality of course = 4.41 (scales: 1-5).
- Spring 2021 Human Factors (IE 340 and PSYC 358, 4 credit hours, lecture and lab, online). Class size: 73 students. University of Illinois at Urbana-Champaign. ICES Scores: Overall teaching effectiveness = 3.84; Overall quality of course = 4.0 (scales: 1-5).
- Spring 2020 Human Factors (IE 340 and PSYC 358, 4 credit hours, lecture and lab). Class size: 57 students. University of Illinois at Urbana-Champaign. ICES Scores: Overall teaching effectiveness = 4.64; Overall quality of course = 4.59 (scales: 1-5).
- Spring 2019 Included on “List of Teachers Ranked as Excellent by Their Students.” Human Factors (IE 340 and PSYC 358, 4 credit hours, lecture and lab). Class size: 45 students. University of Illinois at Urbana-Champaign.

ICES Scores: Overall teaching effectiveness = 4.6; Overall quality of course = 4.4 (scales: 1-5).

Included on “List of Teachers Ranked as Excellent by Their Students.”

### **Guest Lectures**

- Spring 2023      TSM 441: Agricultural Safety. I taught one lecture introducing human factors. Professor: Sala Fuad Issa. Class size: 45
- Spring 2022      TSM 441: Agricultural Safety. I taught one lecture introducing human factors. Professor: Sala Fuad Issa. Class size: 46
- Fall 2021        SE 100: Introduction to ISE. I taught one lecture introducing human factors. Professor: Girish Krishnan. Class size: 125 students.
- Fall 2018        CHLH 456: Organization of Health Care. I taught one lecture introducing human factors. Professor: Kristen DiFilippo. Class size: 45 students. University of Illinois at Urbana-Champaign.
- Fall 2011        Biomedical Engineering Course on Economics Ethics and FDA Regulations. I taught one lecture on project management and Microsoft Project (September 1). Professors: Robert Keynton and John Usher. Class size: 24 students. University of Louisville, Louisville, Kentucky

### **Course Development**

IE 441: Work and Organization Design (3 or 4 credit hours). Proposed to Department Courses and Curriculum Committee, Spring 2021. Approved by College Courses and Curriculum committee, Fall 2021.

### **Graduate Student Mentoring**

#### **PhD Advisees:**

Carolina Carvalho Manhães Leite, PhD Advisee and Research Assistant, 2020 – Present

Kaitlyn Hale-Lopez, PhD Advisee and Research Assistant, 2020 – Present  
 Winner of Health Care Technical Group Student Travel Grant, HFES 2021 Annual Meeting  
 Winner of Health Care Technical Group Marilyn Sue Bogner Student Paper Award, 2021  
 Selected to attend NextProf Pathfinder, 2021  
 Invited speaker at Indiana University-Purdue University Indianapolis, January 12, 2021  
 HFES Student Member with Honors, 2023

Mojgan Zoaktafi, PhD Advisee and Research Assistant, 2024 – Present

**Masters Thesis Advisees:**

Emma Mayes, Master's Advisee and Research Assistant, 2021 – 2022

Data Science for All/Women cohort, Fall 2021

Angela Chan, Master's Advisee and Research Assistant, 2022 – 2023

Irem Yuceel, Master's Advisee and Research Assistant, 2022 – 2023

Anya Knecht, Master's Advisee, 2023 – Present

**Master's Project Advisees:**

Ruixuan Gong, Fall 2021

Deelaka Bandara, Spring 2022

Mar Gonzalez Calvo, Spring 2022 *Note: Master's Thesis Equivalent for exchange student from Escola Tecnica Superior de Ingenieria Industrial (ESTII), Universitat Politecnica de Valencia (Spain)*

**Qualifying Exam Committee Member:**

Nowsheen Sharmili, Industrial and Enterprise Systems Engineering, 2023

Parth Bansal, Industrial and Enterprise Systems Engineering, 2021

Zheng Liu, Industrial and Enterprise Systems Engineering, 2021

**Master's Thesis Committee Member:**

Taylor Tucker, Curriculum and Instruction, 2021

**External Examination:**

Jason Card, MSc in Human Kinetics and Ergonomics, Rhodes University, 2020.

Thesis: "An Ergonomics Approach to Understanding Perceived Barriers to the Provision of High-Quality Healthcare: A Sarah Baartman District Clinics Case Study"

**Other:**

Ryan Santens, PhD Student and Research Assistant, 2021 – Present

Talia Scheck-Long, MS Student and Research Assistant, 2020 – Present

Amrutha Kumaran, MS in Health Technology Capstone, 2020-2021

Rory (Alina) Lusebrink, PhD Student and Research Assistant, 2020 – 2021

Brittany (Sondria) Cottrell, PhD Student and Research Assistant, 2020 – 2021

Widya Ramadhani, PhD Student and Research Assistant, 2019 – 2021

Winner of Health Care Technical Group Student Travel Grant, HFES 2020 Annual Meeting

Emily Heuck, MS Student and Research Assistant, 2019 – 2021  
Winner of Health Care Technical Group Student Travel Grant,  
HFES 2020 Annual Meeting

Jyotika Roychowdhury, MS Student and Research Assistant, 2019

Sadia Ashrafi, PhD Student and Research Assistant, 2019

Bat-Zion Hose, PhD Student and Research Assistant, 2016 – 2018

Megan Salwei, PhD Student and Research Assistant, 2016 – 2018

Jordan Ramsey, MS Student and Project Assistant, 2017 – 2018

Janette Garcia, MBA Student and Database Analyst, 2014 – 2015

### **Undergraduate Student Mentoring**

Audrey Freeman, Undergraduate Research Assistant, 2023 – Present  
Research Experience for Undergraduates, Spring 2023: “Monitoring Stress and Burnout of Health Care Workers”

Madelyn Saenz, Undergraduate Research Assistant, 2022 – Present  
GearUP through Engineering Pathways Program  
Research Experience for Undergraduates, Fall 2022: “SEIPS-Based Process Modeling of Postpartum Hemorrhage Care”  
Research Experience for Undergraduates, Spring 2023: “Alarms and Machine Learning in Hemorrhage Response - A scoping review of the literature”

Irem Yuceel, Undergraduate Research Assistant, 2021 – 2022  
Research Experience for Undergraduates, Fall 2021: “Monitoring Stress and Burnout of Health Care Workers”  
Research Experience for Undergraduates, Spring 2022: “Monitoring Stress and Burnout of Health Care Workers”

Kristen Whalen, Bachelor of Arts Thesis Advisee, 2021 – 2022

Gary Angdoko, Undergraduate Research Assistant, 2021  
Research Experience for Undergraduates, Summer 2021: “Discrete Event Simulation for Capacity Assessment and Improvement of the mobileSHIELD COVID-19 Laboratory”

Mia Spiwak, Undergraduate Research Assistant, 2019 – 2021

John Morgan, Undergraduate Research Assistant, 2019 – 2020  
Research Experience for Undergraduates, Fall 2019: “Analyzing the Usability and Satisfaction for Code Cart Application”  
Research Experience for Undergraduates, Fall 2020: “Network Analysis to Investigate Relationships Between Work System Barriers and Facilitators”  
Winner of Health Care Technical Group Student Travel Grant, HFES 2020 Annual Meeting

Winner of Health Care Technical Group Marilyn Sue Bogner Student Paper Award, 2020

Anthony Composto, Undergraduate Research Assistant, 2019 – Present

Research Experience for Undergraduates, Fall 2019: “Evaluating the Efficacy of a Mobile, Augmented Reality Education Application Using Eye Tracking Data”

Research Experience for Undergraduates, Spring 2021: “Piloting Wearable Sensors to Predict Occupational Stress and Burnout”

Ashley Mitchel, Undergraduate Research Assistant, 2019 – Present

Ariel Alexander, Undergraduate Research Assistant, 2019 – 2020

McNair Scholars Capstone: “We Can’t Design for All Humans if We Only Understand Some Humans”

Maya Burgard, Undergraduate Research Assistant, 2018 – 2020

Maddie L. Kaufman, Undergraduate Research Assistant, 2019

RuthAnn Haefli, Undergraduate Research Assistant, 2018 – 2019

Research Experience for Undergraduates, Fall 2018: “Comparing Care Transition Outcomes in Pediatric and Adult Trauma Patients”

Katherine Schroeer, Undergraduate Research Assistant, 2017 – 2018

### **Visiting Scholars**

Katharina Wenderott, DAAD Scholar, January – June 2024 (100%)

Home Institution: Institute for Patient Safety, University Bonn

Project: Impact of Workflow Integration of AI-tools in clinical practice on Patient Safety – Challenges and Opportunities seen by Human Factors Experts

### **Senior Design Projects**

Spring 2024	Feeding and Watering Process Automation Design, Timberline Fisheries
Fall 2022	Concrete Castings Analysis for Efficiency and Throughput Improvements, Stonecasters, LLC/Henri Studio
Spring 2022	Sign Production Process and Layout Efficiency Improvement, South Water Signs, LLC
Fall 2021	Tangle Free Dog Leash Ergonomic and Safety Design Improvements – Barrington High School Dogware
Spring 2021	Book Block Layout and Material Handling Optimization – R & R Bindery Service, Inc.
Fall 2019	Analysis for Cost-Effective Improvement of Transportation Services – Clark-Lindsey Village

### **Carle Illinois Medicine Capstone Projects**

2021 Breasy Project Proposal: A Novel Approach to Incentive Spirometer Design

### **Carle Illinois Medicine Clerkship Engineering Partner**

2024 Internal Medicine, August – December

2023 Internal Medicine, August – December

2022 Internal Medicine, May – July

## **SERVICE**

### **Professional Societies**

Human Factors and Ergonomics Society

Institute of Industrial and Systems Engineers

International Society for Quantitative Ethnography

Institute for Operations Research and the Management Sciences (previous member)

Tau Beta Pi Engineering Honors Society

Alpha Pi Mu

### **Professional Service**

2023 – 2025 Human Factors and Ergonomics Society Healthcare Technical Group Chair

2023 IISE Doctoral Colloquium 3 Minute Pitch Judge

2021 – 2023 Chair, Human Factors and Ergonomics Society Diversity and Inclusion Committee

2021 – 2023 Member, Human Factors and Ergonomics Society Membership Committee

2021 – 2023 Member, Human Factors and Ergonomics task force to rename awards

2021 – 2023 Human Factors and Ergonomics Society Healthcare Technical Group Chair-Elect

2022 General Co-Chair, 1<sup>st</sup> Interdisciplinary Workshop on XR + AI Integration for Healthcare Applications. *IEEE/ACM Conference on Connected Health Applications, Systems, and Engineering Technologies (CHASE 2022)*

2022 Reviewer, John R. Evans Leaders Fund, Canada Foundation for Innovation

- 2022 Referee, Enhancing Cultures of Safety, National Institute for Health and Care Research (NIHR, United Kingdom) Greater Manchester Patient Safety Translational Research Centre
- 2021 Panelist, NSF SBIR/STTR Phase 1: Personalized and Mental Health Digital Interventions
- 2021 Quantitative Ethnography Community 2021 Data Challenge Team Mentor
- 2020 – Present Member of International Ergonomics Association K. U. Smith Award Committee
- 2020 Reviewer, International Conference on Quantitative Ethnography 2020
- 2020 Chair, Doctoral Consortium, International Conference on Quantitative Ethnography 2020
- 2020 Quantitative Ethnography Community COVID Data Challenge Planning Group
- 2020 Quantitative Ethnography Community COVID Data Challenge Team Mentor
- 2020 Panelist, NSF Smart and Connected Health
- 2019 – 2021 Human Factors and Ergonomics Society Healthcare Technical Group Secretary/Treasurer
- 2018 – 2019 Human Factors and Ergonomics Society Societal Impact Committee Member; lead of conference panel subcommittee (2019-2020)
- 2018 – 2019 Conference Committee Member, International Conference on Quantitative Ethnography
- 2017 – Present Human Factors and Ergonomics Society Diversity Committee Member: Lead of annual meeting programming subcommittee (2018-2019) HFES Seed Grants Targeting the Intersections of HF/E and Anti-Racism/Anti-Bias subcommittee member (2020-2021)
- 2013 – 2014 Tau Beta Pi Inaugural Student Advisory Board Member
- 2011 – 2012 Tau Beta Pi Chapter President, Convention Delegate
- 2011 Tau Beta Pi National Awards Committee Chair
- 2011 – 2012 Alpha Pi Mu Chapter Vice-President
- 2011 – 2012 Institute for Operations Research and the Management Sciences Chapter Secretary

### **Editorial Activities**

- 2022 – Present *BMJ Open*, Reviewer
- 2022 – Present *IIE Transactions on Occupational Ergonomics and Human Factors*, Reviewer
- 2022 – Present *Frontiers in Pediatrics*, Reviewer
- 2022 – Present *Journal of Cognitive Engineering and Decision Making*, Reviewer



- 2021 – Present *Ergonomics*, Editorial Board Member
- 2021 – Present *Human Factors in Healthcare*, Editorial Board Member
- 2021 – Present *Value in Health*, Reviewer
- 2020 – Present International Ergonomics Association Triennial Congress, Healthcare Ergonomics Technical Committee Reviewer
- 2019 – Present *JAMIA Open*, Reviewer
- 2019 – Present International Conference on Quantitative Ethnography Reviewer
- 2019 – Present *BMJ Quality & Safety*, Reviewer
- 2019 – Present *Journal of Patient Safety and Risk Management*, Reviewer
- 2018 – Present, *International Journal of Medical Informatics*, Reviewer
- 2018 – Present *Ergonomics*, Reviewer
- 2018 – Present *Applied Ergonomics*, Reviewer
- 2018 – Present *Applied Clinical Informatics*, Reviewer
- 2018 – Present *Cognition, Technology and Work*, Reviewer
- 2018 – Present *Research in Social and Administrative Pharmacy*, Reviewer
- 2017 – Present *IIE Transactions on Healthcare Systems Engineering* (formerly *IIE Transactions on Healthcare Systems Engineering*), Reviewer
- 2017 – Present Human Factors and Ergonomics Society Healthcare Technical Group Student Paper Competition Reviewer
- 2016 – Present Human Factors and Ergonomics Society Annual Meeting Reviewer

### **Conferences, Panels and Symposia (organizer)**

- 2023 Scientific Board Member, Organizational Design and Management
- 2022 General Co-Chair, 1<sup>st</sup> Interdisciplinary Workshop on XR + AI Integration for Healthcare Applications. *IEEE/ACM Conference on Connected Health Applications, Systems, and Engineering Technologies (CHASE 2022)*.
- 2022 Chair, The Systems Engineering Initiative for Patient Safety: Designing the Past, Present and Future of Healthcare, Healthcare Systems Ergonomics and Patient Safety 2022
- 2022 Member, American Diabetes Association Scientific Sessions Healthcare Delivery Economics/Quality Improvements Subcommittee
- 2022 Chair, Developing the Human Factors/Ergonomics Discipline to Support Diversity, Equity and Inclusion, Human Factors and Ergonomics 2022 Annual Meeting
- 2021 Chair, Improving Health Through the Application of Ergonomics to Food Practices, Human Factors and Ergonomics 2021 Annual Meeting
- 2021 Chair, Being Bold: How HFES Can Encourage Responsible, Timely and Participative Ergonomics to Address Societal Issues, Human Factors and Ergonomics 2021 Annual Meeting



- 2021 Chair, COVID-19\_4, International Ergonomics Association Triennial Congress
- 2020 Chair, Designing for Diversity: Implications for Research and Practice, Human Factors and Ergonomics 2020 Annual Meeting
- 2019 Chair, HFE in Diversity, Inclusion and Social Justice: A Practical Primer, Human Factors and Ergonomics 2019 Annual Meeting
- 2018 Chair, Human Factors and Ergonomics in Diversity, Inclusion and Social Justice Research, Human Factors and Ergonomics Society 2018 Annual Meeting
- 2018 Co-chair, Improving Care Transitions in Healthcare: A Human Factors Approach, Human Factors and Ergonomics Society 2018 Annual Meeting
- 2017 Co-chair, The Diversity Committee: Challenges and Opportunities for Involvement, Human Factors and Ergonomics Society 2017 Annual Meeting
- 2017 Co-chair, Tools, Technologies, and Provider Performance, Human Factors and Ergonomics Society 2017 Annual Meeting
- 2017 Panel Organizer, Designing and Managing Healthcare Transitions, ACE-Organization Design and Management 2017
- 2016 Co-chair, Macroergonomics Across Domains, Human Factors and Ergonomics Society 2016 Annual Meeting

### **University of Illinois at Urbana-Champaign Service**

- 2024 Workshop on AI Rural Health, University of Illinois at Urbana-Champaign, March 18
- 2023 – Present Chair, Research and Scholarly Enhancement, Industrial and Enterprise Systems Engineering
- 2023 IS 266: Community Innovation Course Proposal Evaluation Subcommittee
- 2023 ISE Coordinator for Grainger College of Engineering Recruitment and Outreach Summer Camps (What it Takes: Exploring Engineering Online, Discover Engineering, Exploring Your Options Residential)
- 2022 – 2025 Steering Committee Member, Collaborations in Health, Aging, Research and Technology (CHART)
- 2022 – 2023 Faculty Meeting Secretary, Industrial and Enterprise Systems Engineering
- 2022 Qualifying Exam Ad Hoc Committee, Industrial and Enterprise Systems Engineering
- 2022 – Present Member, Diversity Committee, Industrial and Enterprise Systems Engineering
- 2022 Member, Director of the Health Care Engineering Systems Center Search Committee, The Grainger College of Engineering

---

2022	ISE Coordinator for Grainger College of Engineering Recruitment and Outreach Summer Camps (What it Takes: Exploring Engineering Online, Discover Engineering, Exploring Your Options Residential)
2021	Participant, The Grainger College of Engineering Leadership Retreat, Fall 2021
2021	ISE Graduate Student Lunch and Learn, October 20.
2021	Capstone Sponsor, Master's in Health Technology, University of Illinois at Urbana-Champaign
2021	Reviewer for Grassroots Initiatives to Address Needs Together (GIANT) grant proposals, Institute for Inclusion, Diversity, Equity and Access (IDEA) Institute, Grainger College of Engineering, University of Illinois at Urbana-Champaign
2021	Participant, The Grainger College of Engineering Leadership Retreat; Bridging the Social Divide Breakout Group, Spring 2021
2020 – 2021	Faculty Meeting Secretary, Industrial and Enterprise Systems Engineering
2020	CEE 435: Public Health Engineering Course Proposal Evaluation Subcommittee
2020	Co-organizer and contributor to Summer ISE Incoming Freshman Program (a retention effort)
2019 – 2023	Member, Graduate Program Committee, Industrial and Enterprise Systems Engineering
2019 – 2020	Member, Department Head Search Committee, Industrial and Enterprise Systems Engineering
2019 – 2020	Member, Associate or Full Professor of Health Technology Search Committee, Kinesiology and Community Health
2019	Participant, The Grainger College of Engineering Leadership Retreat
2019	ISE Representative, New Student Convocation
2019	Developed Human Factors/Ergonomics Track Option
2019 – 2020	Faculty Meeting Secretary, Industrial and Enterprise Systems Engineering
2019	Member, Assistant Director of Research for the Living in Interactive Future Environments (LIFE) Home Search Committee
2018 – 2019	Member, Undergraduate Program Committee, Industrial and Enterprise Systems Engineering
2018	UW Educational Environment in Engineering (E3) Survey Graduate Student Task Force, Member
2010 – 2011	University of Louisville Speed School of Engineering Committee to Review Industrial Engineering Department Chair Member
2011	Presenter for Engineering Lab Demonstration, Speed School of Engineering Career Days

### **Extracurricular Service**

2019 – Present Chapter Advisor, HFES Student Chapter at University of Illinois at Urbana-Champaign

### **Outreach Activities**

2024 Speaker for Women Inventors Badge, American Heritage Girls, Troop IL 1926, Urbana, Illinois, March 19

2023 ISE Coordinator for Grainger College of Engineering Recruitment and Outreach Summer Camps (What it Takes: Exploring Engineering Online, Discover Engineering, Exploring Your Options Residential)

2022 ISE Coordinator for Grainger College of Engineering Recruitment and Outreach Summer Camps (What it Takes: Exploring Engineering Online, Discover Engineering, Exploring Your Options Residential).

2021 Presenter, Virtual Alumni Event, April 21

2021 Presenter, ISE Virtual Information Days for Prospective Students, March 2

2020 Lead, mobileSHIELD, Grainger College of Engineering, University of Illinois at Urbana-Champaign, Discovery Partners Institute, Veterinary Diagnostic Laboratory. <https://grainger.illinois.edu/news/features/illinois-mobile-shield>

2020 Grainger College COVID-19 Research-Driven Initiatives Webinar, November 12, 2020.

2020 COVID-19 Response Panel, Bioengineering Section of What It Takes Camp, University of Illinois at Urbana-Champaign, July 15, 2020

2020 COVID-19 Response Panel, Bioengineering Section of What It Takes Camp, University of Illinois at Urbana-Champaign, July 1, 2020

2020 Member, User Experience Sub-Team, Illinois RapidVent Team, Grainger College of Engineering and Carle College of Medicine

2019 Welcome to ISE (WISE) Department Orientation

2019 Industrial and Enterprise Systems Engineering Department, Exploring Your Options 2, Survey of Engineering Camp, University of Illinois at Urbana-Champaign, June 28, 2019

2019 Industrial and Enterprise Systems Engineering Department, Exploring Your Options 1, Survey of Engineering Camp, University of Illinois at Urbana-Champaign, June 21, 2019

2019 Industrial and Enterprise Systems Engineering Department Introduction, Uni High Summer Enrichment Camp, University Laboratory High School, June 5, 2019

2019                   Presenter, May 2019 Advisory Board Meeting

**Health System Innovation and Quality Improvement Activities**

2022-2023           Carle Foundation Hospital Quality Meetings

2013 – 2015       Member, Anne Bates Leach Eye Hospital Quality Assessment and Improvement Committee

2013 – 2015       Member, Anne Bates Leach Eye Hospital Operating Room Efficiency Committee

**DIVERSITY, EQUITY AND INCLUSION ACTIVITIES**

2022                   GearUP through Engineering Pathways Program Research Advisor

2022                   Panelist, Equality, Diversity and Inclusion – how human factors can make a difference, Chartered Institute of Ergonomics and Human Factors, February 2, 2022

2021 – Present     Chair, Diversity and Inclusion Committee, Human Factors and Ergonomics Society

2020 – Present     Core Member, Institute for Inclusion, Diversity, Equity and Access (IDEA) Institute, Grainger College of Engineering, University of Illinois at Urbana-Champaign

2020                   Chair, Designing for Diversity: Implications for Research and Practice, Human Factors and Ergonomics 2020 Annual Meeting

2019                   Chair, HFE in Diversity, Inclusion and Social Justice: A Practical Primer, Human Factors and Ergonomics 2019 Annual Meeting

2018                   Chair, Human Factors and Ergonomics in Diversity, Inclusion and Social Justice Research, Human Factors and Ergonomics 2018 Annual Meeting

2018                   Empowering People to Break the Prejudice Habit: Creating Inclusion and Overcoming Bias, University of Wisconsin-Madison, April 4.

2018 – Present     Societal Impact Committee Member, Human Factors and Ergonomics Society

2017 – Present     Diversity Committee Member, Human Factors and Ergonomics Society

2017                   Teaching Inclusively, Center for the Integration of Research, Teaching and Learning (CIRTL) Online Event, CIRTL Network

2017                   Co-chair, The Diversity Committee: Challenges and Opportunities for Involvement, Human Factors and Ergonomics Society 2017 Annual Meeting

2017                   Selected to attend NextProf Fall Engineering Workshop focusing on increasing diversity in the academy, University of Michigan, September 26 – 29.

**MEDIA COVERAGE**

1. [WEEK.COM NBC 25 — August 10, 2020](#) — University of Illinois working to expand COVID-19 saliva testing nationally
2. [CBS 2 Chicago — August 19, 2020](#) — FDA Approves ‘Game Changing’ COVID-19 Saliva Test Developed At The University Of Illinois
3. [WILL — August 19, 2020](#) — U Of I’s Saliva-Based COVID-19 Test Receives FDA Emergency Authorization
4. [The St. Louis American — August 22, 2020](#) — COVID-19 saliva test allows three U. of I campuses to open in-person
5. [Insider – August 26, 2020](#) — The University of Illinois COVID-19 testing plan is so aggressive that it accounts for 20% of the state's tests
6. [Crain’s Chicago Business — August 31, 2020](#) — Why the University of Illinois’ COVID test may have legs
7. [WLSN — September 3, 2020](#) — Durbin, Duckworth, LaHood & Davis Pen Letter to HHS To Deploy U of I Saliva-Based COVID Rapid Test
8. [The Daily Herald — September 9, 2020](#) — When will U of I’s saliva test see wider rollout
9. [WQAD 9 ABC — September 17, 2020](#) — University of Illinois to expand saliva-based COVID-19 testing platform nation-wide
10. [JAVMA News — September 30, 2020](#) — University of Illinois creates rapid saliva test for COVID-19 virus
11. [Chicago Sun Times — October 6, 2020](#) — To get out of this mess, we need bold thinking. Here’s what city leaders should do
12. [C&EN — November 1, 2020](#) — How one university built a COVID-19 screening system
13. [WMTV — November 5, 2020](#) — UW Madison to expand COVID-19 testing this spring
14. [WCIA — November 6, 2020](#) — Mobile laboratory able to “rapidly deploy” U of I’s saliva-based COVID-19 test
15. [The Doctors – November 6, 2020](#)— Breakthrough COVID Testing Developed?
16. [The News Gazette — November 25, 2020](#) — 'The SHIELD program lets us see the whole iceberg, not just the tip'
17. [Chicago Tribune — December 4, 2020](#) — University of Illinois’ COVID-19 saliva test reaches 1 million mark
18. [ABC 7 News — December 12, 2020](#) — Bloom Energy in San Jose builds new lab to expand COVID-19 testing
19. [Business Wire — December 14, 2020](#) — Bloom Energy and El Camino Health Deploy Shield T3 to Curb COVID-19
20. [NASDAQ — December 14, 2020](#) — Bloom Energy and El Camino Health Deploy Shield T3 to Curb COVID-19

21. [Patch — December 15, 2020](#) — University Of Illinois' SHIELD Test Could Be Used At Other Colleges In Illinois
22. [Illinois Newsroom — December 25, 2020](#) — U Of I Needs FDA Authorization To Expand Access To COVID-19 Testing In Illinois
23. [WCIA — December 26, 2020](#) — SHIELD Illinois testing to expand to Northern Illinois University
24. [The Chicago Tribune – January 5, 2021](#) — University of Illinois’ COVID-19 saliva test moves closer to FDA approval, but not fast enough to meet the demand: ‘Every school district in Illinois would love to have this’

## PROFESSIONAL TRAINING AND DEVELOPMENT

Spring 2024	Inclusive Leaders Sponsorship Program (ILSP), University of Illinois System.
2/26/2024	Grainger Engineering Live Wire Media Training.
2023	I-Engage: Community Engagement Program for Early Career Faculty, April 28
5/16-18/2022	Grant Writing Workshop, Grainger College of Engineering
Spring 2022	NIH Writing Club, Meg Bouvier Medical Writing and Grainger College of Engineering, February – June.
12/14/2021	NIH Faculty Researcher Successes panel, Grainger College of Engineering.
12/20/2021	Workshop for Assistant Professors – Constructing a Holistic Teaching Dossier for Promotion and Tenure, University of Illinois at Urbana-Champaign.
2021 – 2022	Grainger Engineers Accelerating Research, Grainger College of Engineering
Spring 2021	DoD Grant Seeking Workshop, IHSI, University of Illinois at Urbana-Champaign, January 27, February 3 and 10, 2021
04/06-08/2020	2020 CISE CAREER Proposal Writing Workshop, Computer and Information Science and Engineering, National Science Foundation, virtual conference.
Summer 2020	Grainger Teaching Academy, Leaning into 2020 Activity #3: Assessment Activities
Spring 2020	NSF CAREER Workshops #1 (2/6), #2 (4/1) and mock panel review (5/21), Office of Research, Grainger College of Engineering, University of Illinois at Urbana-Champaign
01/06-07/2020	2020 Advancing Health Through Science Workshop, National Science Foundation, Alexandria, Virginia. <i>Note: Attended as an Aspiring PI</i>

- Awardee; this workshop is part of the Smart and Connected Health Program.*
- Fall 2019 Finding and Engaging with Funding Sources Program Grainger Cohort (September – November, 2019), Office of Research, Grainger College of Engineering, University of Illinois at Urbana-Champaign
- 03/27-28/2019 Big Ten’s Women’s Workshop for Junior Faculty, Big Ten Academic Alliance.
- Fall 2018 NIH Grant Writing Series, Interdisciplinary Health Sciences Institute, University of Illinois at Urbana-Champaign.
- 2018-2019 Collins Scholars Program, Academy for Excellence in Engineering Education, University of Illinois at Urbana-Champaign.
- 06/21/2018 Faculty Advising: What you Need to Know and How to Do It Well, Delta Program for Research, Teaching and Learning University of Wisconsin-Madison.
- 04/04/2018 Empowering People to Break the Prejudice Habit: Creating Inclusion and Overcoming Bias, University of Wisconsin-Madison.
- 12/05/2017 Teaching Inclusively, Center for the Integration of Research, Teaching and Learning (CIRTL) Online Event, CIRTL Network.
- 09/26-29/2017 NextProf Fall Engineering Workshop focusing on increasing diversity in the academy, University of Michigan.
- 12/02/2016 Active Teaching with Technology, UW-Madison Teaching Academy, University of Wisconsin-Madison.
- 10/04/2016 Tailoring Teaching Strategies to Optimize Student Engagement: Large Versus Small Classrooms, UW-Madison Teaching Academy, University of Wisconsin-Madison.
- 09/28/2016 Addressing Student Behaviors: A Range of Approaches and Outcomes, UW-Madison Teaching Academy, University of Wisconsin-Madison.
- 08/17/2017 Enhancing STEM Communication through Improv, Delta Program for Research, Teaching and Learning, University of Wisconsin-Madison.
- 08/23-24/2016 UW-Madison: The Teaching Assistant Learning Environment and Pedagogics Program, UW-Madison Teaching Academy, University of Wisconsin-Madison.
- 04/09/2011 Passed the Fundamentals of Engineering Exam.