

# Curriculum Vita

## Stephen B. Gilbert

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### EDUCATION

1997	Massachusetts Institute of Technology	Brain & Cognitive Sciences	Ph.D.
1992	Princeton University	Civil Engineering & Operations Research	B.S.E.

### CAREER AT IOWA STATE UNIVERSITY

2022	<b>Visiting Professor</b>	University of Namibia
2019 – present	<b>Director of Grad. Ed.</b>	Director of Graduate Program in Human Computer Interaction
2018 – present	<b>Associate Professor</b>	Industrial & Manufacturing Systems Engineering, Courtesy Appts. in Psychology, Gerontology.
2012 – 2018	<b>Assistant Professor</b>	Industrial & Manufacturing Systems Engineering, Graduate Program in Human Computer Interaction, Courtesy Appointment in Psychology.
2010 – 2011	<b>Research Assistant Professor</b>	Psychology Department, Graduate Program in Human Computer Interaction.
2009 – present	<b>Associate Director</b>	Virtual Reality Applications Center, Focused on Graduate Program in Human Computer Interaction;
2007 – 2010	<b>Lecturer</b>	Psychology Department, Virtual Reality Applications Center, Graduate Program in Human Computer Interaction.
2004 - 2006	<b>Collaborator</b>	Center for Technology in Learning and Teaching

### INDUSTRY CAREER

2004 – 2009	<b>President</b>	Clearsighted, Inc.	Developed authoring software for intelligent tutoring systems.
2001 - 2004	<b>Director of Course Interactivity</b>	UNext/Cardean University	Mentored teams in interactive course design; defined instructional templates for courses, set usability standards, and designed interface of an online learning environment

2000 - 2001	<b>Course Director</b>	UNext/Cardean University	Supervised teams during design and development of online MBA courses; maintained relations with supervising university faculty.
1999 – 2000	<b>Learning Architect</b>	UNext/Cardean University	Designed and built usability lab supervised by Don Norman; developed online MBA courses.

## EARLY ACADEMIC EXPERIENCE

1997 - 1999	<b>Postdoctoral Fellow</b>	Center for Innovation in Product Development, MIT	Collaborated with David Bell at Xerox PARC on enterprise learning; evaluated MIT's distance learning SDM degree program.
1994 - 1996	<b>Teaching Assistant</b>	MIT	<i>Introduction to Psychology</i> , Steve Pinker <i>Tools for Thought</i> , MIT Media Lab, with Mitchel Resnik, Whitman Richards, Justine Cassell, and Matthew Brand <i>Story: Representation &amp; Process</i> , MIT Media Lab, with Ken Haase and Glorianna Davenport
1992	<b>Undergraduate Research Assistant</b>	Princeton University	Designed and built software for experiments on gender differences in computer learning with Joel Cooper.
1990 – 1991	<b>Undergraduate Research Assistant</b>	Princeton University, Cyprus	Field surveyor and GIS designer, led surveying team and used the Silicon Graphics GL programming library to build Geographic Information System (GIS) for the Polis Archaeological Expedition, Cyprus

## GRANTS & CONTRACTS

Gilbert, S., Winer, E., Dorneich, M., Lathrop, J. **Collins Aerospace (DARPA):** Modeling and Analysis Toolkit for Realizable Intrinsic Cognitive Security (MATRICS). 7/2024 – 6/2027. \$1,201,000.

This project uses formal methods to guarantee the cognitive safety of XR headsets in the military.

Sherer, J., Plummer, P., Winer, E., Gilbert, S. **USDA-APHIS:** Extended Reality (XR) Based Training for On-Demand, Rapidly Deployable, and Scalable NADPRP Training: Captive Bolt Euthanasia as a Proof-of-Concept. 5/2024 – 4/2026, \$299,744.

This project will create XR training for captive bolt euthanasia in agricultural settings.

Bahng, E.G., Coffman, C., Gilbert, S., Shelley, M. **ISU Miller Grant:** STEMLEAD AI for BIOL 101: STEM Learning Enhancement and Development through Artificial Intelligence for Undergraduate Students in Introductory Biology Courses, 7/2024 – 6/2025, \$50,000.

This project uses generative AI to improve teaching for BIOL 101 undergraduates.

Kelly, J., Dorneich, M., Gilbert S. **National Science Foundation:** HCC: Small: Adaptation to Cybersickness. 5/2023 – 5/2026, \$600,000.

This project attempts to decrease cybersickness in virtual reality via methods of adaptation.

Krishnamurthy, A., Gilbert, S. **Design Mill (DoD Navy):** SDAT Shipboard Dimensional Analysis Tool Phase 2 Additional. 7/2023-7/2025, \$220,000.

This SBIR supports Navy engineers in facilitating training with 3D digital twins of ships.

Dorneich, M. & Gilbert, S. **361 Interactive (DoD Air Force):** STTR Collaborative Research Teaming Testbed. 7/2023 – 4/2024, \$53,711.

This STTR supports AFRL researchers in evaluating updates to teaming software.

Gilbert, S. & Dorneich, M. **Election Systems & Software:** Voting Machines Usability Analysis 2023. 3/15/23-8/31/23.

Gilbert, S., Winer, E. **National Science Foundation:** REU Site: Summer Program for Interdisciplinary Research and Education - Emerging Interface Technologies. 05/01/23 - 04/30/26, \$382,500.

This fifth NSF renewal supports a summer program to expose underrepresented undergraduates to research in HCI.

Gilbert, S. & Marshall, J. **US Dept of State:** Iowa State University and University of Namibia: Strengthening University Systems to Improve Rural Education. 10/01/22-9/30/24. \$199,999.

This project builds a partnership between ISU and UNAM to improved rural education and each university's approach to administration.

Dorneich, M., & Gilbert, S. **Election Systems & Software:** Voting Machines Usability Testing 2021. 9/23/21-5/15/22.

Winer, E., MacKenzie, C., Li, B., Gilbert, S., **The Boeing Company:** Development of a Model-Based Digital Twin Design and Production System to Examine Scenario-based Trade-Off Decisions. 8/16/21-12/31/21. \$212,569.

This project explores the application of digital twin concepts to Boeing manufacturing.

Dorneich, M., Gilbert S. **InfoSciTex Corporation (DoD AFRL):** Analysis of Video Game Interfaces for Agent Control. 11/1/20-3/31/23. \$200,000.

This project leverages successful video game-based interfaces for autonomous agent control for use with the U.S. Air Force.

Baran, E., Gilbert, S., Karabulut-Ilgu, A., Jiang, S. **National Science Foundation:** An Integrated Faculty Professional Development Model Using Classroom Sensing and Machine Learning to Promote Active Learning in Engineering Classrooms. 10/1/20 – 8/31/23. \$299,879.

This project uses computer vision in classrooms to give instructors automated feedback on their active learning pedagogy.

Winer, E., Gilbert, S. **Soldier Strong:** Investigation of a Virtual Reality Exposure Therapy System for Veterans. 1/1/20 – 12/31/20. \$200,543.

This project supports an effort to deploy VR to aid VA hospitals in addressing veterans' PTSD.

Sarkar, S., Gilbert, S., Marshall, J. **National Science Foundation:** CPS: Medium: Collaborative Research: Active Shooter Tracking and Evacuation Routing for Survival (ASTERS), 10/1/19 – 9/30/23, \$649,982.

This project uses camera-based systems to track active shooters and communicate optimal evacuation routes for those threatened.

Gilbert, S., Oliver, J. **Raytheon Technologies (ARPA-E):** SCOTTIE - Systematic Communication Objectives and Teleportation Technology Investigations and Evaluation. 6/14/19 – 6/12/22, \$589,445.

This project addresses an ARPA-E challenge to decrease business travel by improving the quality of remote collaboration software.

Krishnamurthy, A., Gilbert, S. **Design Mill (DoD Navy):** SDAT Shipboard Dimensional Analysis Tool Phase 2 Proposal. 8/1/19-1/31/21, \$248,953.

This SBIR supports Navy engineers in design tradeoffs that might affect cargo loading.

Gilbert, S., Radkowski, R. **Deere & Company:** Deere Financial: Innovation with User-Centered Technologies. 1/1/19-5/15/19, \$62,112.

This project explored augmented reality for financial systems innovation.

Kelly, J., Gilbert S. **National Science Foundation:** CHS:Small: A Spatial Cognitive Framework for Personalizing Locomotion in Virtual Environments. 8/1/18 – 7/31/22, \$499,722.

This project explores methods of locomotion in virtual environments that reduce cybersickness while also allowing users to build accurate mental spatial maps.

Gilbert, S. **Deere & Company:** Deere Financial: Innovation with User-Centered Technologies. 1/15/18-12/31/18, \$64,243.

This project applies user-centered design principles and cutting-edge technologies to financial systems innovation.

Krishnamurthy, A., Gilbert, S. **Design Mill (DoD Navy):** SDAT Shipboard Dimensional Analysis Tool. 11/1/17-10/31/18, \$43,251.

This SBIR supports Navy engineers in design tradeoffs that might affect cargo loading.

Sharma, A., Gilbert, S., Dorneich, M., Claussen, J. **Federal Highway Administration:** InterchangeSE: A Federated Multi-Modal Simulation Environment for Studying Interactions Between Different Modes of Travel. 9/29/17-9/28/20, \$1,265,169.

This project offers the FHWA a mixed reality platform for simulating the interactions between autonomous vehicles, traditional vehicles, pedestrians, construction workers, etc.

Gilbert, S., Winer, E. **National Science Foundation:** Workshop: Research Roadmap for Virtual Reality Sim Sickness. 11/16/16-11/15/17, \$59,955.

This workshop of international experts seeks to define the research needed to solve sim sickness.

Gilbert, S., Winer, E. **National Science Foundation:** REU Site: Summer Program for Interdisciplinary Research and Education - Emerging Interface Technologies. 6/1/16-5/31/17, \$20,000.

Supplement to involve two K12 teachers in REU site, RETs.

Gilbert, S. **National Science Foundation:** REU Site: Summer Program for Interdisciplinary Research and Education - Emerging Interface Technologies. 1/1/17-5/15/17, \$16,788.

Supplement to host a workshop for new CISE REU PIs.

Winer, E., Gilbert, S., Oliver, J. **The Boeing Company:** Augmented Reality Hardware and Software Evaluation for Shop Floor Assembly Application. 1/1/17-12/1/17, \$275,000.

This industry study further evaluates augmented reality on the factory floor.

Gilbert, S., Winer, E., Dorneich, M. **Army Research Lab:** Team Tutoring with GIFT. 2/25/16-5/15/18. \$270,897.

This effort creates an intelligent tutoring system for teams using GIFT software.

Gilbert, S., Winer, E. **National Science Foundation:** New CISE REU PI Resources. 8/15/16-5/31/18, \$79,499.

This project focused on creating a website of online resources for REU site PIs.

Gilbert, S. **Election Systems & Software:** Voting Machines: Summative Usability Tests. 11/22/16-6/30/17.

Winer, E., Radkowski, R., Gilbert, S., Oliver, J. **Digital Manufacturing and Design Innovation Institute (DMDII):** Authoring Augmented Reality Work Instructions by Expert Demonstration. 07/01/16 - 12/31/17, \$1,006,912.

This project works with industry partners to commercialize a prototype software tool for creating augmented reality factory work instructions more quickly.

Jeong, D., Chukharev-Khudilaynen, E., Gilbert, S. **National Science Foundation:** A Natural Language Based Data Retrieval Engine for Automated Digital Data Extraction for Civil Infrastructure Projects. 09/01/16 – 02/28/19, \$285,304.

This effort improves communication among contractors, designers, managers and other stakeholders in a civil engineering project by using machine learning to extract common language from their different terms of art.

Sharma, A., Hawkins, N., Sarkar, S., Gilbert, S., Tirthapura, S. **National Science Foundation:** PFI:BIC-A Smart Service System for Traffic Incident Management Enabled by Large-data Innovations (TIMELI). 08/01/2016 – 07/31/2019, \$1,000,000.

This effort will save lives by enhancing software used by traffic incident managers using cognitive work analysis and data analytics.

Gilbert, S. **John Deere:** Creating Breakthroughs in User Experience (Phase 2). 1/19/16-6/30/16, \$39,647.

This research explored cutting edge prototypes of internal software.

Gilbert, S., Winer, E. **National Science Foundation:** REU Site: Summer Program for Interdisciplinary Research and Education - Emerging Interface Technologies. 05/01/15 - 04/30/18, \$405,195.

This 4th NSF renewal supports a summer program to expose undergraduates to research in HCI.

Winer, E., Gilbert, S., Radkowski, R., Oliver, J. **The Boeing Company:** Mixed Reality Work Guidance Authoring and Wearables. 04/01/15 - 12/31/15, \$300,000.

This industry study evaluates the value of wearables and augmented reality on the factory floor.

Gilbert, S. **John Deere:** Creating Breakthroughs in User Experience. 02/23/15 - 5/15/15, \$21,048.

This research conducted a user study and redesign of internal software.

Luecke, G., Gilbert S. **John Deere:** Combine Simulation - New Generation Operator Interface Integration. 1/1/15 - 12/31/15. \$54,156.

This industry contract focuses on evaluating a set of new user interfaces within combines.

O'Connor, A., Chapelle, C., Coetzee, J., Cotos, E., De Brabanter, K., Gilbert, S., MacDonald, R. **ISU Presidential Initiative for Interdisciplinary Research (PIIR):** An interdisciplinary approach to developing an Automated Functional Language EXtraction (AFLEX) system to transform the translation of STEM research to society. Fall 2015 – Summer 2018. \$595,217.

This internal ISU funding is designed to facilitate this highly interdisciplinary group applying for significant external grants.

Gilbert, S., Winer, E., Dorneich, M. **Army Research Lab:** Team Tutoring with GIFT. 11/10/14 - 11/09/15, \$92,792.

This effort creates an intelligent tutoring system for teams using GIFT software.

Keren, N., Gilbert, S., Winer, E., Franke, W. **Army Research Lab:** Evaluating the Value of Dynamic Terrain Simulation on Training Quality. 10/2/14 - 7/31/15, \$63,700.

This research study evaluated a Construction Equipment Virtual Trainer (CEVT).

Moon, J. (MEI Research), Dorneich, M., Welk, G., Gilbert, S., & Seeger, C. (ISU), **National Cancer Institute** PHS 2014-1, Topic number 333 (ISU sub to MEI Research): Integration of Self, Context and Objective Information Reported in Real Time for Research and Healthcare 10/1/14 – 6/30/15, \$63,000.

This Phase 1 STTR focuses on allowing lay data analysts such as urban planners to easily integrate data from multiple sources.

Gilbert, S., Dorneich, M. **John Deere:** Deep Operator Understanding: Harvest Preparation, 9/1/14 – 12/31/14, \$50,000.

This industry contract focuses on analyzing the process of harvesting.

Keren, N., Franke, W., Gilbert, S., Winer, E. **Army Research Lab:** Evaluating the Value of Dynamic Terrain Simulation on Training Quality. 03/31/14 – 03/30/15, \$55,000

This federal grant evaluates the value of simulation fidelity in training.

Gilbert, S., Dorneich, M., Winer, E. **Army Research Lab:** Team Tutoring with GIFT. 03/31/14 – 03/30/15, \$149,642

This federal grant attempts to build intelligent tutoring systems for teams using GIFT software.

Luecke, G., Gilbert, S. **John Deere:** Harvester Simulator Development, 1/1/14 – 12/31/14, \$149,306.

This industry contract focuses on analyzing the training potential of combine simulators.

Gilbert, S., Dorneich, M. **John Deere:** Deep Operator Understanding: Operator Preparation, 1/1/14 – 7/31/14, \$40,000.

This industry contract focuses on analyzing the process of farmer planting.

Winer, E., Gilbert, S., Oliver, J. **The Boeing Company:** Mixed Reality Work Guidance, 1/1/14 – 12/31/14, \$400,000.

This industry contract continues researching augmented reality for manufacturing.

Gilbert, S., Winer, E. **NSF:** REU Site: Summer Program for Interdisciplinary Research and Education: Emerging Interface Technologies. 5/1/12 – 4/30/15, \$358,135 (3<sup>rd</sup> renewal).

This NSF award supports an annual summer program to expose undergraduates to research in human computer interaction.

Winer, E., Gilbert, S., Oliver, J. **The Boeing Company:** Augmented Reality Prototyping, 10/1/13 – 12/31/13, \$65,000.

This industry contract focused on new hardware for augmented reality.

Winer, E., Gilbert, S., Oliver, J. **The Boeing Company:** Factory of the Future Study, 3/15/13 – 12/31/13, \$359,300.

This industry contract focused on augmented reality for manufacturing.

Luecke, G., Gilbert, S. **John Deere:** Advanced VR-Can Combine Simulation and Interface, 1/1/13 – 12/31/13, \$276,464.

This industry contract focused on analyzing the impact of automation on combine operators.

Chang, M., Chu, C., Gilbert, S., Kamal, A. **DARPA:** Capturing Cognitive Processing Time for Active Authentication, 6/1/12 – 5/31/13, \$499,992.

This research project focused on active authentication, identifying a cognitive fingerprint for people based on how they type and mouse.

Gilbert, S., Winer, E. **NCHCI:** PJ Medical Simulation Project, 2/10/12 – 10/31/13, \$66,819.

This effort developed extended reality software to train pararescue warfighters (PJs).

Luecke, G., Gilbert, S. **John Deere:** Operator Performance Evaluation, 9/15/11 – 9/14/12, \$200,062.

This industry contract focused on analyzing the impact of automation on combine operators.

Winer, E., Gilbert, S. **The Boeing Company:** Tanker Receiver Simulation, 9/1/11 – 12/30/11, \$200,000

This industry contract focused on research pilot training for Boeing.

Cotos, E., Graves, W., Gilbert, S., Chapelle, C., Aist, G., Nelson, C. **Iowa State University Computation Advisory Committee:** The Research Writing Tutor (RWT) Program, 12/1/10 – 12/31/12, \$654,554 (including matching funds).

This research project seeks to develop and validate the Research Writing Tutor, a natural language processing tool that analyzes academic writing and gives feedback specific to a discipline.

Jackman, J., Hagge, M., Starns, G., Gilbert, S., Aist, G., Faidley, L. **NSF IEECI:** Personalized Guidance System for Engineering Problem Solving. 9/1/10 – 8/31/13, \$400,000

This federal grant attempts to identify frequent engineering student misconceptions and built a software tool that promotes student reflection, automatically identifies misconceptions, and offers student feedback using an intelligent tutoring system.

Gilbert, S. **Caterpillar:** Virtual Visual Management. 7/1/10 – 12/31/10, \$49,996.

This industry contract focused on research on touch-based management systems.

Gilbert, S., Oliver, J., Winer, E. **Army Research Lab:** Advanced Live, Virtual, and Constructive Training Systems 2010. 9/29/10 – 9/28/13, \$2,686,000.

This federal grant builds on previous military training research and focused on human perception within a mixed reality synthetic training environment.

Gilbert, S., Winer, E. **The Boeing Company:** Virtual Prototype Collaboration. 3/1/10 – 7/31/10, \$50,098.

This industry contract focused on research on the VBS2 game engine for Boeing.

Gilbert, S., Oliver, J., Winer, E. **Army RDECOM: Advanced Live, Virtual, and Constructive Training Systems.** 8/16/09 – 8/15/10, \$1,595,000.

This federal grant focuses on research improving virtual environments for Army training, including studies of the cognitive load of information displays, effectiveness of multimodal interfaces, and effective technologies for tracking the human body and creating mixed reality experiences.

Winer, E., Gilbert, S. **Mechdyne Corporation: Device Interaction Study For Google Earth For Command and Control Operations (GEC2O).** 7/1/09 – 8/31/10, \$130,000.

This contract explores the use of mobile devices in a military context in collaboration with the Mechdyne GEC2O software.

Vance, J.M., Birch, L., Gilbert, S. **NSF GOALI: A Hybrid Method to Support Natural Interaction of Parts in a Virtual Environment.** 8/15/09 – 8/14/12, \$336,000.

This NSF award supports the creation of improved methods for simulating the virtual assembly of manufacturing parts in collaboration with John Deere. A significant evaluation component includes observational and ethnographic work at John Deere as well as lab-based controlled experiments on software effectiveness.

Gilbert, S., Winer, E., Oliver, J. **NSF REU Site: Summer Program for Interdisciplinary Research and Education: Emerging Interface Technologies.** 5/1/09 – 4/30/12, \$299,964.

This NSF award supports an annual summer program to expose undergraduates to research in human computer interaction. Grant funding supports the stipends, room and board of undergraduate interns only. Additional match funding from Iowa State University's Graduate College, College of Engineering, College of Liberal Arts and Sciences, and the Program for Women and Science and Engineering contribute to the program.

Gilbert, S., Oliver, J. **Grow Iowa Values Fund/ISU VPRED, Multi-touch Technology: Applications to Homeland Security and ISU Research.** 11/1/07 – 5/31/09, \$100,000.

This award supported the development of multi-touch technology at Iowa State University that could be commercialized by industry partner, Priority 5, Inc.

Gilbert, S., Winer, E., Wurtele, E., Chan, C. **Mechdyne Corporation. Mechdyne-VRAC-Gilbert.** 7/1/07 – 12/31/09, \$35,664.

This gift to the ISU Foundation supported research in virtual reality technologies.

Oliver, J., Winer, E., Stoytchev, A., Gilbert, S. **AFOSR Virtual Teleoperation for Unmanned Aerial Vehicles.** 5/15/07 – 5/14/11, \$4,302,900.

This federal grant focuses on improving the interfaces for simultaneous command and control of multiple UAVs, including studies of 3D situational awareness, attentional focus on alerts using multiple sensory modalities, vigilance, collaborative decision making, and emerging interface technologies.

### **As President of ClearSighted, Inc.**

Gilbert, S. **NSF ERC – SBIR/STTR Collaborative Request: VaNTH Engineering Research Center for Bioengineering Education, Subcontract from Vanderbilt University,** 8/1/07 – 8/31/08, \$111,815

This contract supported ClearSighted's construction of an intelligent tutoring system for Vanderbilt University's web-based learning environment called CAPE.



Gilbert, S. NSF SBIR Phase II: Developing a Cost-Effective Method for Creating Cognitive Models for Cognitive Tutors, 1/1/06 – 12/31/07, \$499,999. RET 2006 Supplement: \$10,000; RET 2007 Supplement: \$10,000; REU 2007 Supplement: \$12,000.

This grant supported ClearSighted's further refinement and commercialization of the intelligent tutoring authoring system called xPST, partnered with Carnegie Learning, Inc.

Gilbert, S. NSF SBIR Phase I: Developing a Cost-Effective Method for Creating Cognitive Models for Cognitive Tutors, 1/1/05 – 6/30/05, \$99,638.

This grant supported ClearSighted in partnering with Carnegie Learning, Inc. to create a more usable system for authoring intelligent tutoring systems.

## **TEACHING & INSTRUCTIONAL DESIGN EXPERIENCE**

### **Iowa State University Teaching**

IE 681 – Cognitive Engineering (Fall 13, Fall 14, Fall 15, Fall 17, Fall 18, Fall 19, Fall 20, Fall 21, Fall 23)

- On-campus (~7 students) and online (~20 students)

IE 576 – Human Factors in Product Design (Fall 21)

- On-campus (5 students)

ENGR 160 – Engineering Problems with Computer Applications Lab (Spr 19, Fall 19, Fall 20: 2 sections)

- On-campus (~20 students)

IE 148 – Information Engineering (Spr 12, Fall 12, Spr 15, Spr 16, Spr 17, Spr 18, Fall 18, Spr 19, Spr 20, Spr 23, Spr 24)

- On-campus (~50 students in fall, ~25 in spring)

HCI 598X – HCI Masters Capstone Course (Spr 09, Spr 12)

- Online only (19 students most recently)

HCI 596X – Emerging Practices in Human-Computer Interaction (Sum 09)

- On-campus (4 students) and online (5 students)
- Supervised teaching of graduate student Mike Oren

HCI 591 – Seminar in HCI (Spr 08, Fall 08, Spr 09, Fall 09)

- On-campus (~25 students) and online (~5 students)

HCI / Psychology 521 — Cognitive Psychology of HCI (Fall 07, Fall 08, Fall 23)

- On-campus (~25 students) and online (~25 students)

### **Iowa State University Instructional Design**

HCI/Psych 521 Cognitive Psychology of HCI – Updated final exam and other assessments to prevent completion using ChatGPT.

- IE/HCI 681 Cognitive Engineering – Published project assignments as Open Educational Resource (OER), 2022: <https://www.engage-csedu.org/find-resources/interaction-metrics-projects-human-computer-interaction>
- IE 576 Human Factors in Product Design – Fall 2021 added an entrepreneurship module to align with ISU campus-wide emphasis on innovation.
- ENGR 160 Engineering Problems with Computer Applications Lab – In Summer 2020 renovated course with Martha Selby so that it could be taught completely online.
- IE/HCI 681 Cognitive Engineering – In 2013 renovated this course based on related curricula at nine universities and new book *The Oxford Handbook of Cognitive Engineering* by Lee & Kirlik.
- HCI 587 Models and Theories in Human Computer Interaction - In 2013 supervised HCI graduate student Norene Kelly in development and instruction of this course based on topics specified by HCI Curriculum Committee.
- HCI 573 User Interface Implementation for Web Applications – In 2012 supervised HCI graduate student Bennett Stone in creation and instruction of this course focused on web interaction design.
- HCI 570 UX Lab Studies: Eyetracking & Other UX Tools (1 credit seminar) – In 2012 supervised graduate student Andrea Peer in creation of this seminar to highlight the capabilities of VRAC's UX Lab.
- HCI 596 Emerging Practices in HCI – Worked with Ph.D. student Mike Oren to create this course to follow HCI 521 and focus more on current trends in user-centered design and usability.
- HCI/Psych 521 The Cognitive Psychology of HCI – Created a new version of this core course from scratch in 2007 for both on- and off-campus students.

### **UNext.com / Cardean University Instructional Design**

From 1999-2004, supervised development and instructional design of high-quality online courses:

- Managing Organizations (M.B.A.), with Eric Abrahamson, Columbia University
- Pricing and Market Entry Decisions (M.B.A.), with Judy Chevalier, University of Chicago
- Managing Innovation and Product Development (M.B.A.), with Sunil Gupta and Atul Nerkar, Columbia University
- Protecting the Brand (Corporate Training), with Eric Abrahamson, Columbia University
- Business Strategy for the Information Economy series (Continuing Ed.), with Hal Varian and Carl Shapiro, UC Berkeley
- Business Law I (B.S.), with Juli Crabtree, Attorney
- College Composition I (B.S.), with Chris Land, Cardean University
- Human Resource Management (B.S.), with Beth Rubin, Cardean University

## **HONORS AND AWARDS**

- Student Arthur Perron: winner of People’s Choice Award for his poster in the IMSE Research Symposium, 2023
- Omurtag Research Excellence Award from IMSE Department, 2021
- Student Jameel Kelley: winner of Iowa State University Graduate Student Teaching Impact award, 2020
- Student Nathan Sepich: winner of the People’s Choice Award for his poster in the IMSE Research Symposium, 2020
- 2019 Raymond S. Nickerson Award for the best paper in the *Journal of Experimental Psychology: Applied*
- Education/Human Performance – Team Award, awarded as one of the National Training & Simulation Association (NTSA) Modeling & Simulation Awards 2019

- Student Kaitlyn Ouverson: winner of ACM XRDS essay contest on the Future of Everyday Life, 2019
- ISU College of Engineering Dean's Diversity & Inclusion Excellence Award, 2018
- RADM Fred Lewis I/ITSEC Postgraduate Scholarship for student Kaitlyn Ouverson, 2018 (\$5000).
- Iowa State University 2018 HCI Teaching Excellence Award for Ph.D. student Anna Slavina.
- Iowa State University 2017 Industrial Engineering Teaching Excellence Award for Ph.D. student Mostafa Amin-Naseri.
- Iowa State University 2016 HCI Research Excellence Award for Ph.D. student Norene Kelly: "The WEAR Scale: Development of a measure of the social acceptability of a wearable device"
- Received 2013-2014 Miller Fellowship (\$15,000) to improve teaching within the College of Veterinary Medicine using virtual reality. CoPI with PI Diana Peterson and CoPI Eliot Winer.
- Received a Coleman Fellow award for FY11 (\$5000) from the Coleman Foundation and the ISU Pappajohn Center for Entrepreneurship for promoting entrepreneurship on campus. Participated in monthly teleconferences with Coleman Fellows and attended C-E-O conference in Chicago as part of that role.
- Award for Outstanding Service to the Boeing Ground Forces Training Team at the Ft. Leonard Wood Integrated Immersive Training Environment, 2010
- HCI Faculty Member of the Year Award, 2009
- Lguide Editor's Choice Award for national excellence in online learning courses, 2001
- MIT Angus N. MacDonald Award for Excellence in Teaching Brain & Cognitive Sciences, 1997
- Best Paper Award, Association for the Advancement of Computing in Education's ED-MEDIA 1996
- Princeton University Kenneth H. Condit Award for Outstanding Civil Engineering Thesis, 1992

## PEER-REVIEWED RESEARCH PUBLICATIONS

\* Indicates graduate student co-author; \*\* Indicates undergraduate co-author

Online repositories of work:

- [Google Scholar](#)
- [ORCID](#)
- [ResearchGate](#)
- [SemanticScholar](#)
- [Iowa State University Digital Repository](#)
- [NCBI My Bibliography](#)

### Journal Articles

1. Nkwo, M. S., Sakpere, A., Gilbert, S. B., Alhasani, M., & Orji, R. (under review). Factors Associated with Problematic Mobile Phone Use among Sub-Saharan African Populations: Moderating Effect of Gender. *Human Behavior and Emerging Technologies*.
2. Kelly, J. W., Hayes, N. L., \*Doty, T. A., Gilbert, S. B., & Dorneich, M. C. (under review). Field of view restriction and snap turning as cybersickness mitigation tools. *Displays*.  
<https://osf.io/preprints/psyarxiv/xn5ua>
3. Kelly, J. W., \*Doty, T. A., Gilbert, S. B., & Dorneich, M. C. (under review). Field of view restriction and snap turning as cybersickness mitigation tools. *IEEE Transactions on Visualization and Computer Graphics*.

4. \*Sanaei, M., Gilbert, S. B., \*\*Perron, A. J., Dorneich, M., & Kelly, J. W. (under review). An Examination of Scene Complexity's Role in Cybersickness. *Ergonomics*.
5. \*Liefbrig, K., & Gilbert, S. B. (under review). Investigating the feasibility of utilizing virtual reality to perform ergonomic assessment. *Ergonomics*.
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## High-Impact Conference Proceedings

Acceptance rates  $\leq$  25%.

1. Kelly, J. W., \*Cherep, L. A., \*Lim, A. F., \*Doty, T., & Gilbert, S. B. (2021). Who Are Virtual Reality Headset Owners? A Survey and Comparison of Headset Owners and Non-Owners. In *Proceedings of IEEE VR 2021* (pp. 687-694). <https://doi.org/10.1109/VR50410.2021.00095>. Acceptance rate  $<$  25%.
2. \*Cherep, L. A., \*Lim, A., Kelly, J. W., \*Miller, A., & Gilbert, S. B. (2020). Individual differences in teleporting through virtual environments: A latent profile analysis. *Proceedings of IEEE VR 2020*, Atlanta, GA. Acceptance rate  $<$  25%.
3. \*Kelly, N., & Gilbert, S. (2016). The WEAR Scale: Developing a Measure of the Social Acceptability of a Wearable Device. *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*, Santa Clara, California, USA. Acceptance rate: 20%
4. \*Peterson A., Gilbert, S., Winer, E., Welch, J., De la Cruz, J. and Gonzalez, H. (2013) "OmniScribe - Enhancing AAR in an LVC Environment," *The Interservice/Industry Training, Simulation & Education Conference (IITSEC)*. Acceptance rate 25%.
5. \*Boonsuk, W., Gilbert, S., & Kelly, J. W. (2012) The Impact of Three Interfaces for 360-Degree Video on Spatial Cognition. *Proceedings of ACM SIG Computer-Human Interaction (CHI 12)*, Austin. Acceptance rate 23%.
6. \*Pollock, B., \*Burton, M., Kelly, J., Gilbert, S., Winer, E. (2012) The right view from the wrong location: Depth perception in stereoscopic multi-user virtual environments. *Proceedings of IEEE VR 2012*. Acceptance rate 16%.
7. \*Oren, M., \*Carlson, P., Vance, J., Gilbert, S. (2012) Puzzle assembly training: Real world vs. virtual environment. *Proceedings of IEEE VR 2012*. Acceptance rate 16%.
8. \*Lokuge, I., Gilbert, S., & Richards, W. (1996) Structuring information with mental models: A tour of Boston. *Proceedings of ACM SIG Computer-Human Interaction (CHI 96)*, Vancouver, 413-419. Acceptance rate 21%.

## Conference Proceedings & Presentations

9. \*Salehi, M., \*Javadpour, N., \*\*Beisner, B. N., \*Sanaei, M., & Gilbert, S. (accepted). Cybersickness Detection through Head Movement Patterns: A Promising Approach. *Human-Computer Interaction International*, Washington, D.C.
10. \*Sanaei, M., Gilbert, S. B., \*\*Perron, A. J., \*Javadpour, N., \*Sabouni, H., Dorneich, M. C., & Kelly, J. W. (accepted). The Correlations of Scene Complexity, Workload, Presence, and Cybersickness in a Task-Based VR Game. *Human-Computer Interaction International*, Washington, D.C.
11. \*\*Perron, A. J., \*\*Hall, N., \*Sabouni, H., \*\*McArthur, C. H., \*\*Nelson, K. T., \*Sanaei, M., \*Javadpour, N., & Gilbert, S. B. (2024). Using Agent-Based Modeling to Calculate an Ease Score: Evacuation With Acceptable Simplicity in Emergencies. *Annual Modeling and Simulation Conference (ANNSIM)*, Washington, D.C.



12. \*Newendorp, A. K., \*Sanaei, M., \*\*Perron, A. J., \*Sabouni, H., \*Javadpour, N., \*\*Sells, M. J., \*\*Nelson, K. T., Dorneich, M. C., & Gilbert, S. B. (2024). Apple's Knowledge Navigator: Why Doesn't that Conversational Agent Exist Yet? *Proceedings ACM SIG Computer-Human Interaction (CHI 2024)*, Honolulu. **Honorable Mention Award.** <https://doi.org/10.1145/3613904.3642739>
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23. \*Stonewall, J., Dorneich, M. C., Winer, E., \*Miller, J., Kalivarapu, V. K., \*Kohl, A. R., Gilbert, S. B., & Sharma, A. (2022). *A Federated Multimodal Simulation Environment for Studying*

*Interactions between Different Modes of Travel*. Interservice/Industry Training, Simulation, and Education Conference (IITSEC), Orlando.

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26. \*Sanaei, M., \*Sepich, N. C., \*Schaffhausen, K. M., & Gilbert, S. B. (2022). Metrics for Assessing the Quality of NFL Announcers. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (Vol. 66, pp. 422-426). <https://doi.org/10.1177/1071181322661232>
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28. \*Farah, Y., Dorneich, M., & Gilbert, S. (2022). Evaluating Team Metrics in Cooperative Video Games. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (Vol. 66, pp. 70-74). SAGE. <https://doi.org/10.1177/1071181322661240>
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34. \*Jasper, A., \*Doty, T., \*Sepich, N., Dorneich, M., Gilbert, S., & Kelly, J. (2021). The Relationship Between Personality, Recalled Cybersickness Severity, and Recalled Cybersickness Recovery Time. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting*.

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36. \*Sepich, N., Dorneich, M. C., & Gilbert, S. B. (2021). Human-Agent Team Game Analysis Framework: Case Studies. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting*.
37. \*Kalu, C. U., Gilbert, S. B., Kelly, J. W., & \*Hoover, M. (2021). Translating Virtual Reality Research into Practice as a Way to Combat Misinformation: The DOVE Website. *Human Computer Interaction International, Virtual*.
38. \*Alzoubi, D., \*Kelley, J., Baran, E., Gilbert, S., Jiang, S., & Karabulut-Ilgu, A. (2021). *Designing the TEACHActive Feedback Dashboard: A Human Centered Approach*. 11th International Conference on Learning Analytics and Knowledge (LAK21), Online.
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40. Gilbert, S. B., \*Jasper, A., \*Sepich, N. C., \*Doty, T., Kelly, J. W., & Dorneich, M. C. (2021). *Individual Differences & Task Attention in Cybersickness: A Call for a Standardized Approach to Data Sharing*. IEEE Conference on Virtual Reality and 3D User Interfaces: Workshop on Immersive Sickness Prevention (WISP), Virtual.
41. Kelly, J. W., & Gilbert, S. B. (2021). *The Effectiveness of Locomotion Interfaces Depends on Self-Motion Cues, Environmental Cues, and the Individual*. Workshop on Finding a Way Forward in VR Locomotion at IEEE VR, Virtual.
42. \*Hoover, M., \*Cherep, L., Kelly, J., & Gilbert, S. (2021). *Ensuring the Reliability of Remote VR Research Data*. The First XR Remote Research Workshop at ACM SIG CHI 2021, Virtual.
43. \*Ouverson, K., \*Jasper, A., Gilbert, S. B., Wilson, N., & Wu, P. (2021). *Adaptive Moderated Research: Lessons Learned in Redesigning a Moderated Virtual Reality Collaboration Study*. The First XR Remote Research Workshop at ACM SIG CHI 2021, Virtual.
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46. Kelly, J. W., & Gilbert, S. B. (2021). The Effectiveness of Locomotion Interfaces Depends on Self-Motion Cues, Environmental Cues, and the Individual. *Workshop on Finding a Way Forward in VR Locomotion at IEEE VR*, Lisbon / Online.

47. \*Ouverson, K., \*Hoover, M., Gilbert, S. B., Dorneich, M. C., & Winer, E. (2020). *Situational Awareness Methods in Virtual Reality Training: A Scoping Review*. Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC), Orlando, FL.
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53. \*Dianiska, R. E., \*Peasley, C. J., \*Wilson, N., \*Barnett, N., \*\*Hammel, L., \*\*Purdy, B., Wu, P., Shirtcliff, E., Oliver, J. H., & Gilbert, S. B. (2020). Do You Need to Travel? Mapping Face-to-Face Communication Objectives to Technology Affordances. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (Vol. 64, pp. 1069-1073). Sage Publications. <https://doi.org/10.1177/1071181320641256>.
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57. Gilbert, S. B., & Richards, W. (2019). The Classification of Representational Forms. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (Vol. 63, pp. 2244-2248). <https://doi.org/10.1177/1071181319631530>.
58. \*Ostrander, A., Gilbert, S., & Dorneich, M. (2019). Team Data Analysis Using FATE: Framework for Automated Team Evaluation. In A. M. Sinatra & J. A. DeFalco (Eds.), *Proceedings of the Approaches and Challenges in Team Tutoring Workshop* (pp. 5-14): Springer.

59. \*Ostrander, A., \*Ouverson, K., Dorneich, M., & Gilbert, S. (2019). *Evaluating Team Communication via Audio Segmentation and Interaction Identification*. Paper presented at Technology, Mind & Society 2019, Washington, D.C.
60. \*Walton, J., \*Ostrander, A., \*Ouverson, K., Gilbert, S., Dorneich, M., Winer, E., & Sinatra, A. (2018). Feedback Design Considerations for Intelligent Team Tutoring Systems. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (pp. 1974-1978). Philadelphia, PA.
61. \*Tokadli, G., \*Ouverson, K., \*Meusel, C., \*\*Garcia, A., Gilbert, S. B., & Dorneich, M. C. (2018). *An Analysis of Video Games Using the Dimensions of Human-Agent Interaction*. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (pp. 716-720). Philadelphia, PA.
62. Sinatra, A. M., Gilbert, S., Dorneich, M., Winer, E., Ostrander, A., \*Ouverson, K., Johnston, J., & Sottolare, R. (2018). Considerations for Dealing with Real-Time Communications in an Intelligent Team Tutoring System Experiment. In *Proceedings of Workshop on Assessment and Intervention during Team Tutoring at AIED2018* (pp. 28-35): CEUR-WS.org.
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64. \*Ouverson, K., \*Stonewall, J., Gilbert, S., & Dorneich, M. (2018). *Toward Strategic Training on Reading the Mind in the Eyes*. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (pp. 1562-1566). Philadelphia, PA.
65. \*Ouverson, K., \*Ostrander, A., \*MacAllister, A., \*Kohl, A., \*Walton, J., Gilbert, S. B., Dorneich, M. C., Winer, E., & Sinatra, A. M. (2018). *Team Training for Enemy Identification Using an Intelligent Tutoring System*. Paper presented at the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC), Orlando, FL.
66. \*Ouverson, K., \*Iglesias Pena, M., \*Walton, J., Gilbert, S., & Dorneich, M. (2018). Applying Human-Agent Team Concepts to the Design of Intelligent Team Tutoring Systems. In *Proceedings of Intelligent Tutoring Systems 2018* (pp. 457-459). Montreal.
67. \*Ouverson, K., \*Iglesias Pena, M., \*Walton, J., Gilbert, S., & Dorneich, M. (2018). What Intelligent Team Tutoring Systems Can Learn from Human-Agent Teams. In *Proceedings of Technology, Mind & Society* (Article 28). New York, NY.
68. \*\*Monaghan, Q., \*Walton, J., Gilbert, S., & Sharma, A. (2018). *The Software-Based Challenges Faced by Traffic Incident Managers*. Paper presented at the Transportation Research Board, Washington, D.C.
69. \*Le, T., Le, C., Jeong, D., Gilbert, S., & Chukharev-Hudilainen, E. (2018). Requirement Text Detection from Contract Packages to Support Project Definition Determination. In I. Mutis & T. Hartmann (Eds.), *Advances in Informatics and Computing in Civil and Construction Engineering*. Springer, Cham.

70. Kelly, N., & Gilbert, S. (2018). *The Wearer, the Device, and its Use: Advances in Understanding the Social Acceptability of Wearables*. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (pp. 1027–1031). Philadelphia, PA.
71. \*Iglesias Pena, M., Gilbert, S. B., & Payton, J. (2018). *The Research Experience for Undergraduates (REU) Principal Investigators (PI) Guide: Development of a best practices website*. Paper presented at the ASEE Annual Conference, Salt Lake City.
72. \*\*Helgerson, A., \*Walton, J., \*\*Loya, C., \*\*Kawell, C., \*\*Atwell, K., \*\*Monaghan, Q., \*Ahuja, L., Hassan, H., Gilbert, S. B., & Sharma, A. (2018). *Developing an Optimized UI for Traffic Incident Managers*. In *Proceedings of the Human Factors and Ergonomics Society (HFES) Annual Meeting* (pp. 292-296). Philadelphia, PA.
73. Gilbert, S., Steinberg, M., Casallas, J., Danielescu, A., & Gombolay, M. (2018). *The Challenges of AI in Human Factors*. Paper presented at the Human Factors and Ergonomics Society (HFES) Annual Meeting, Philadelphia, PA.
74. Burns, M., Manganelli, J., Wollman, D., Boring, R., Gilbert, S., Griffor, E., Lee, Y., Nathan-Roberts, D., & Smith-Jackson, T. (2018). *Elaborating the Human Aspect of the NIST Framework for Cyber-Physical Systems*. In *Proceedings of the Human Factors & Ergonomics Society (HFES) Annual Meeting* (pp. 450–454). Philadelphia, PA.
75. \*Le, T., Jeong, D., Gilbert, S. B., & Chukharev-Hudilainen, E. (2018). *Parsing Natural Language Queries for Extracting Data from Large-Scale Transportation Asset Repositories*. Paper presented at the Construction Research Congress (CRC), New Orleans.
76. \*\*Monaghan, Q., \*Walton, J., Gilbert, S., & Sharma, A. (2018). *The Software-Based Challenges Faced by Traffic Incident Managers*. Paper presented at the Transportation Research Board, Washington, D.C. Acceptance rate 50%.
77. Gilbert, S., Sinatra, A. M., \*MacAllister, A., \*Kohl, A., Winer, E., Dorneich, M., et al. (2017). *Analyzing Team Training Data: Aspirations for a GIFT Data Analytics Engine*. In R. Sottolare (Ed.), *Proceedings of 5th Annual GIFT Users Symposium (GIFTSym5)*: U.S. Army Research Laboratory.
78. Gilbert, S. B., \*Doty, K., \*\*Garcia, A., \*\*Krone, N., \*Jang, W., & \*Ramezani, M. (2017). *Re-Solution - Katrina Edition: Moving a Face-to-Face Game Online*. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Austin, TX: SAGE Publications. Acceptance rate ~70%.
79. \*Bonner, D., \*Ouverson, K., Gilbert, S., Sinatra, A. M., Dorneich, M. C., Winer, E., et al. (2017). *Operationalizing the C's of Teamwork*. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Austin, TX: SAGE Publications. Acceptance rate ~70%.
80. \*Bonner, D., Gilbert, S., Winer, E., Dorneich, M., \*MacAllister, A., \*Kohl, A., et al. (2017). *Military Team Training Utilizing GIFT*. Paper presented at the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC), Orlando, FL. Acceptance rate 35-40% based on previous years.
81. \*MacAllister, A., \*Hoover, M., Gilbert, S., Oliver, J., Radkowski, R., \*Garrett, T., et al. (2017). *Comparing Visual Assembly Aids for Augmented Reality Work Instructions*. Paper presented at the

Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC), Orlando, FL.  
Acceptance rate 35-40% based on previous years.

82. \*MacAllister, A., \*Kohl, A., Gilbert, S., Winer, E., Dorneich, M., \*Bonner, D., \*Slavina, A. (2017). *Analysis of Team Tutoring Training Data*. Paper presented at the MODSIM World 2017, VA Beach.
83. Ososky, S., Sinatra, A. M., Goldberg, B. S., Johnson, C., Gilbert, S. B., & Dorneich, M. (2017). The Future of Adaptive Tutoring: Wrangling Complexity Across Domains, Applications, and Platforms. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. Austin, TX: SAGE Publications. Acceptance rate ~70%.
84. \*Ouverson, K., \*Kelly, N., & Gilbert, S. (2017). *Fashion and technology: Implications for the social acceptability of a wearable device*. Paper presented at the HCI International, Vancouver. Acceptance rate 56%.
85. \*Ramezani, M., Kalivarapu, V., Gilbert, S., Huffman, S., Cotos, E., & O'Connor, A. (2017). *Rapid Tagging and Reporting for Functional Language Extraction in Scientific Articles*. Paper presented at the 6th International Workshop on Mining Scientific Publications at the Joint Conference on Digital Libraries, Toronto. Acceptance rate varied by workshop.
86. Gilbert, S., Keren, N., Winer, E., Franke, W., \*Godby, K., \*MacAllister, A., \*McPherson, C., De La Cruz, J., Lyons, J. (2016). *Evaluating the Value of Dynamic Terrain Simulation on Training Quality*. Paper presented at the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC), Orlando, FL.
87. \*Hoover, M., \*MacAllister, A., \*Holub, J., Gilbert, S., Winer, E., & Davies, P. (2016). *Assembly Training Using Commodity Physiological Sensors*. Paper presented at the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC), Orlando, FL.
88. \*MacAllister, A., Gilbert, S., \*Holub, J., Winer, E., & Davies, P. (2016). *Comparison of Navigation Methods in Augmented Reality Guided Assembly*. Paper presented at the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC), Orlando, FL.
89. Gilbert, S., \*Kamdar, N., Kalivarapu, V., \*Amin-Naseri, M., Cotos, E., & O'Connor, A. (2016). *Extraction of Relevant Text from PDF Research Articles Using Font Analysis*. Paper presented at the Workshop on Mining Scientific Publications at the Joint Conference on Digital Libraries, Newark, NJ.
90. \*Bonner, D., Gilbert, S., Dorneich, M. C., Winer, E., Sinatra, A. M., \*Slavina, A., \*MacAllister, A., \*Holub, J. (2016). *The Challenges of Building Intelligent Tutoring Systems for Teams*. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 60, pp. 1974-1978). SAGE Publications. Acceptance rate ~75%.
91. \*Meusel, C., \*\*Grimm, C., Gilbert, S., & Luecke, G. (2016). *An Agricultural Harvest Knowledge Survey to Distinguish Types of Expertise*. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 60, pp. 2041-2045). SAGE Publications. Acceptance rate ~75%.
92. \*Peck, B., Gilbert, S., Winer, E., & \*Ray, R. C. (2016). *HomCam A Wireless 360-Degree Wearable Streaming Camera for Remote Situational Awareness*. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 60, pp. 799-803). SAGE Publications. Acceptance rate ~75%.

93. \*Bonner, D., \*Slavina, A., \*MacAllister, A., \*Holub, J., Gilbert, S., Sinatra, A. M., Dorneich, M., Winer, E. (2016). The Hidden Challenges of Team Tutor Development. In R. Sottolare & S. Ososky (Eds.), *Proceedings of 4th Annual GIFT Users Symposium (GIFTSym4)* (pp. 49-60): U.S. Army Research Laboratory.
94. Krejci, C. C., Stone, R. T., Dorneich, M. C., & Gilbert, S. B. (2015). *Evaluating Producer Selection Policies in Intermediated Regional Food Distribution Systems: An Agent-Based Approach*. 2015 Computational Social Science Society of the Americas Conference, Santa Fe, NM.
95. \*Walton, J., Gilbert, S., Winer, E., Dorneich, M., & \*Bonner, D. (2015). *Evaluating Distributed Teams with the Team Multiple Errands Test*. Paper presented at the Interservice/Industry Training, Simulation, and Education Conference (I/ITSEC), Orlando, FL.
96. Gilbert, S., Winer, E., \*Holub, J., \*Richardson, T., Dorneich, M., & Hoffman, M. (2015). "Characteristics of a Multi User Tutoring Architecture," *3rd Annual Generalized Intelligent Framework for Tutoring (GIFT) Users Symposium (GIFTSym3)*. Orlando, FL: Army Research Laboratory, June 17-18.
97. \*Meusel, C., \*Kelly, N., Gilbert, S., Dorneich, M., Gilmore, B., & Newendorp, B. (2015, September). Operator-Centered Task Analysis: A hybrid methodology for human-machine interaction observation in the field. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 59, No. 1, pp. 841-845). SAGE Publications. Acceptance rate 65-70%.
98. \*Curtis, M. K., \*\*Dawson, K., \*\*Jackson, K., \*\*Litwin, L., \*Meusel, C., Dorneich, M. C., Gilbert, S., Kelly, J, Stone, R. & Winer, E. (2015, September). Mitigating Visually Induced Motion Sickness A virtual hand-eye coordination task. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 59, No. 1, pp. 1839-1843). SAGE Publications. Acceptance rate 65-70%.
99. \*Walton J., \*Bonner, D., \*\*Walker, K., \*\*Mater, S., Gilbert, S., Dorneich, M. and West, R. (2015) "The Team Multiple Errands Test: A Platform to Evaluate Distributed Teams", In *Proceedings of the 18th ACM Conference Companion on Computer Supported Cooperative Work & Social Computing (CSCW)*, Vancouver, CA. Acceptance rate 28%.
100. \*Bonner, D., \*Walton, J., Dorneich, M. C., Gilbert, S. B., Winer, E., & Sottolare, R. A. (2015). The Development of a Testbed to Assess an Intelligent Tutoring System for Teams. In *Workshop on Developing a Generalized Intelligent Framework for Tutoring (GIFT): Informing Design through a Community of Practice* (p. 9).
101. Gilbert, S., \*Amin-Naseri, M. (2015) Modeling Video Games to Teach Cognitive Engineering. *Proceedings of the Industrial and Systems Engineering Research Conference (ISERC)*, Nashville. Acceptance rates not released.
102. \*Amin-Naseri M, \*Guo E, Gilbert S., Jackman, J., Starns, G., Hagge, M., and Faidly, L. (2015) "Decision based learning for a sophomore level thermodynamics course", *122<sup>nd</sup> ASEE Annual Conference*. Acceptance rate ~75%.
103. \*Richardson T., Gilbert S., \*Holub, J., \*Thompson, F., \*MacAllister, A., Radkowski, R., Winer, E., Davies, P., Terry, S. (2014) "Fusing Self-Reported and Sensor Data from Mixed-Reality Training", *The Interservice/Industry Training, Simulation & Education Conference (I/ITSEC)*. Acceptance rate 36%.



104. \*Walton J., Dorneich, M., Gilbert, S., \*Bonner, D., Winer, E., and \*Ray, C. (2014) "Modality and Timing of Team Feedback: Implications for GIFT", In *Proceedings of the 2nd Annual Generalized Intelligent Framework for Tutoring (GIFT) Users Symposium*. Army Research Laboratory. Pittsburgh, PA. Acceptance Rate: 68%.
105. \*Bonner, D., Gilbert, S., Dorneich, M., Burke, S., \*Walton J., \*Ray, C., and Winer, E. (2014) "Taxonomy of Teams, Teams Tasks, and Tutors", In *Proceedings of the 2nd Annual Generalized Intelligent Framework for Tutoring (GIFT) Users Symposium*. Army Research Laboratory. Pittsburgh, PA. Acceptance Rate: 68%.
106. \*Guo, E., & Gilbert, S. (2014). Instructional Strategies in Diagram-based ITSs: Lessons Learned from Two Tutoring Systems. In Workshop of ITS2014 on *Pedagogy That Makes A Difference: Exploring Domain-Independent Principles across Instructional Management Research within the ITS Community*, Intelligent Tutoring Systems, Honolulu.
107. \*Amin-Naseri, M., & Gilbert, S. (2014). A System Dynamics Approach to Building Team Trust Models: Exploring the Challenges. In Workshop of ITS2014 on *Pedagogy That Makes A Difference: Exploring Domain-Independent Principles across Instructional Management Research within the ITS Community*, Intelligent Tutoring Systems, Honolulu.
108. \*Guo, E., Gilbert, S., Jackman, J., Starns, G., Hagge, M., Faidly, L., \*Amin-Naseri, M. (2014). StaticsTutor: Free Body Diagram Tutor for Problem Framing. In the *Proceedings of the 12th International Conference on Intelligent Tutoring Systems (ITS)*. Acceptance rate 43%.
109. \*Wu, P.-Y., \*Fang, C.-C., Chang, J. M., Gilbert, S. B., & Kung, S.-Y. (2014). Cost-Effective Kernel Ridge Regression Implementation for Keystroke-Based Active Authentication System. Paper presented at the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2014), Florence, Italy. Acceptance rate 48%.
110. \*Guo, E., Jackman, J., Starns, G., Hagge, M., Faidly, L., Gilbert, S., \*Amin-Naseri, M. (2014). A Decision-Centric Intelligent Tutoring System for Problem Framing. *Proceedings of the 2014 Industrial and Systems Engineering Research Conference*, Montreal. Acceptance rates not released.
111. \*Prater, D., Gilbert, S., & Winer, E. (2013, March). Analysis of factors for wearable simulator feedback: a tactile vest architecture. In *IS&T/SPIE Electronic Imaging* (pp. 86490J-86490J). International Society for Optics and Photonics. Acceptance rate 88%.
112. J. Jackman, S. B. Gilbert, G. Starns, M. Hagge & L. E Faidley (2013) Problem Framing Behavior in Statics and Thermodynamics. *Proceedings of the 13 ASEE Annual Conference*, June 23 - 26, 2013 Atlanta, Georgia. Acceptance rate ~75%.
113. Jackman J., Faidley, L. E., Hagge, M., Starns, G., & S.B. Gilbert. (2013) What Contributes to Problem Complexity in Engineering Problem Solving?, *Proceedings of the 2013 Industrial and Systems Engineering Research Conference*, A. Krishnamurthy and W.K.V. Chan, eds., May 18-22, San Juan Puerto Rico. Acceptance rates not released.
114. \*Ray, R. C., Gilbert, S. (2013). Bringing Authoring Tools for Intelligent Tutoring Systems and Serious Games Closer Together: Integrating GIFT with the Unity Game Engine. *Proceedings of the workshops at the 16th International Conference on Artificial Intelligence in Education AIED 2013*, Memphis, USA. Acceptance rates varied by workshop.

115. \*Amin-Naseri, M., \*Guo, E., Gilbert, S., Jackman, J., Hagge, M., Starns, G., Faidly, L. (2013). Authoring a Thermodynamics Cycle Tutor Using GIFT. *Proceedings of the workshops at the 16th International Conference on Artificial Intelligence in Education AIED 2013*, Memphis, USA. Acceptance rates varied by workshop.
116. Gilbert, S., \*\*Civate, A., \*Thompson, F., \*\*Smith, A., \*Kopecky, K., Winer, E., de la Cruz, J. (2013) "Comparing Training Performance With Vibrotactile Hit Alerts vs. Audio Alerts," The Interservice/Industry Training, Simulation & Education Conference (I/ITSEC), Orlando, FL, December 2-5. Acceptance rate 33%.
117. Kelly, J., Winer, E., Gilbert, S., \*Curtis, M., \*Rubio, E., \*Kopecky, K., \*Holub, J., de la Cruz, J. (2013) "Assessing Multiple Participant View Positioning in Virtual Reality-Based Training," The Interservice/Industry Training, Simulation & Education Conference (I/ITSEC), Orlando, FL, December 2-5. Acceptance rate 33%.
118. \*Kopecky, K., Gilbert, S., Winer, E., \*\*Civate, A., de la Cruz, J. (2013) "A Software Approach to Manage and Maintain Warfighter Training Systems," The Interservice/Industry Training, Simulation & Education Conference (I/ITSEC), Orlando, FL, December 2-5. Acceptance rate 33%.
119. Stone, R., Dorneich, M., Gilbert, S., & \*McLaurin, E. (2013). Human Differences in Navigational Approaches during Tele-Robotic Search. Paper presented at the Human Factors and Ergonomics Society, San Diego, CA. Acceptance rate 65-70%.
120. Cotos E., Gilbert, S. and \*Link, S., "Scaling Up Automated Writing Evaluation for Learning", Computer Assisted Language Instruction Consortium (CALICO), (2012). Acceptance rate unknown.
121. \*Oren, M., Gilbert, S. (2012) "Reducing distributed animosity: A tool for building affinity among distributed team members." *Proceedings of ACM CSCW 2012*. Acceptance rate 40%.
122. \*Pollock, B., Winer, E., Gilbert, S., De la Cruz, J. (2012) LVC interaction within a mixed-reality training system. *Proceedings of IS&T/SPIE Electronic Imaging 2012*. Acceptance rate 87%.
123. Gilbert S., Pontius, J., \*Kelly, N., De la Cruz, J., and Gonzalez, H. (2012) "Perception of Presence in a Mixed-Reality Training Environment", *Proceedings of the Industrial and Systems Engineering Research Conference (ISERC)*. Acceptance rates not released.
124. Blessing S., \*Devasani, S., and Gilbert, S. (2012) "Evaluating ConceptGrid: An Authoring System for Natural Language Responses", *Proceedings of the Twenty-Fifth International FLAIRS Conference*, Marco Island, FL, USA,. Acceptance rate ~50%.
125. \*Burton, M., \*Pollock, B., Kelly, J., Gilbert, S., Winer, E. (2012) Diagnosing perceptual distortion present in group stereoscope viewing. *Proceedings of IS&T/SPIE Electronic Imaging 2012*. Acceptance rate 87%.
126. Gilbert, S., \*Boonsuk, W., Kelly, J. (2012) Virtual displays for 360-degree video. *Proceedings of IS&T/SPIE Electronic Imaging 2012*. Acceptance rate 87%.
127. \*Devasani, S., Gilbert, S., and Blessing, S. (2012) "Evaluation of Two Intelligent Tutoring System Authoring Tool Paradigms: Graphical User Interface-Based and Text-Based." *Proceedings of the*

*Twenty-First Conference on Behavior Representation in Modeling and Simulation (BRIMS)*, Amelia Island, FL, USA. Acceptance rate ~68%.

128. Vance, J. M., Gilbert, S. B., \*Oren, M., \*Pavlik, R., & \*Carlson, P. (2011). *GOALI: A Hybrid Method to Support Natural Interaction of Parts in a Virtual Environment*. 2011 NSF Engineering Research and Innovation, Atlanta.
129. \*Devasani, S., Gilbert, S., \*Shetty, S., \*Ramaswamy, N., & Blessing, S. (2011). Authoring Intelligent Tutoring Systems for 3D Game Environments. *Proceedings of the Authoring Simulation and Game-based Intelligent Tutoring Workshop at the Fifteenth Conference on Artificial Intelligence in Education*, Auckland. Acceptance rate 100%.
130. Sottolare, R., Gilbert, S., "Considerations for adaptive tutoring within serious games: authoring cognitive models and game interfaces." *Proceedings of the Authoring Simulation and Game-based Intelligent Tutoring Workshop at the Fifteenth Conference on Artificial Intelligence in Education*, (2011). Acceptance rate 100%.
131. Blessing, S., \*Devasani, S., Gilbert, S. (2011) Evaluation of WebxPST: A Browser-Based Authoring Tool for Problem-Specific Tutors. *Proceedings of the 14th International Conference on Artificial Intelligence in Education*. Acceptance rate 32%.
132. \*Newendorp, B., \*Noon, C., \*Holub, J., Winer, E., Gilbert, S., De La Cruz, J. (2011) Configuring Virtual Reality Displays in a Mixed-Reality Environment for LVC Training. *Proceedings of the World Conference on Innovative VR 2011*.
133. \*Noon, C., \*Newendorp, B., Gilbert, S., Winer, E., Ragusa, C. (2011) "A Software Architecture Combining Multiple Game Engines, Tracking Systems & Immersive Displays for LVC Training" *Proceedings of ITEC 2011*. Acceptance rate ~75%.
134. \*Koehring, A., \*Laughlin+, Gilbert, S., Winer, E., De la Cruz, J., Gonzalez, H. (2011) "Mobile Interface For The Communication And Reference Of Dynamic Tactical Information", *Proceedings of ITEC 2011*. Acceptance rate ~75%.
135. \*Devasani, S., Aist, G., Blessing, S., Gilbert, S. (2011). Lattice-Based Approach to Building Templates for Natural Language Understanding in Intelligent Tutoring Systems. *Proceedings of the 15th International Conference on Artificial Intelligence in Education (AIED)*. Acceptance rate 32%.
136. \*Oren, M., Gilbert, S. (2011). Framework for Measuring Group Social Affinity for Computer Supported Cooperative Work. In *Proceedings of the 29th of the International Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '11)*. ACM, New York, NY, USA. Acceptance rate 42%.
137. Gilbert, S., \*Devasani, S., \*Kodavali, S., Blessing, S. (2011). Easy Authoring of Intelligent Tutoring Systems for Synthetic Environments. *Proceedings of the Twentieth Conference on Behavior Representation in Modeling and Simulation (BRIMS)*. Acceptance rate 68%.
138. \*Kodavali, S., Gilbert, S., Blessing, S. B. (2010) Expansion of the xPST Framework to Enable Non-Programmers to Create Intelligent Tutoring Systems in 3D Game Environments. In the *Proceedings of the 10th International Conference on Intelligent Tutoring Systems (ITS)*. Acceptance rate 38%.

139. \*Oren, M., & Gilbert, S. (2010). Building Better Design Teams: Enhancing Group Affinity to Aid Collaborative Design. In J. S. Gero (Ed.), *Design Computing and Cognition '10* (pp. 601-620): Springer Netherlands. Acceptance rate 30%.
140. \*Oren, M., Gilbert, S. (2010) "Interfaces for Communication Intervention: Utilizing social theory to support interdisciplinary design communication." In the *Proceedings of the Design Communication Workshop at Design, Creativity, and Cognition (DCC) 2010* Stuttgart, Germany.
141. Oliver, J., Gilbert, S., Winer, E., \*Marsh, W., \*Swartzentruber, L., \*Holub, J. (2010) Interfaces for 3D Flight Path Visualization. *Proceedings of the World Conference on Innovative VR 2010*.
142. \*Rolgten, J., Gilbert, S. (2010) Wayfinder: Evaluating Multitouch Interaction in Supervisory Control of Unmanned Vehicles. *Proceedings of the World Conference on Innovative VR 2010*.
143. Gilbert, S., Shill, P., Saunders, K. (2009) Successful Use of Teams in a Human Computer Interaction REU: Combining Intensive Instruction with Strong Mentoring. *Proceedings of 116th Annual American Society for Engineering Education Conference (ASEE 2009)*. Acceptance rate ~75%.
144. Gilbert, S., Blessing, S. B., \*Kodavali, S. (2009) The Extensible Problem-Specific Tutor (xPST): Evaluation of an API for Tutoring on Existing Interfaces. *Proceedings of the 14th International Conference on Artificial Intelligence in Education (AIED)*. Acceptance rate 32%.
145. Gilbert, S. B., Blessing, S. B., \*Blankenship, E. (2009) The Accidental Tutor: Overlaying an Intelligent Tutor on an Existing User Interface. In *CHI '09 Extended Abstracts on Human Factors in Computing Systems*. Acceptance rate 34%.
146. \*Oren, M. & Gilbert, S. (2009). "ConvoCons: Encouraging Affinity on Multitouch Interfaces". In the *Proceedings of Human-Computer Interaction International 2009*. San Diego, CA. Acceptance rate 61%.
147. \*Ramanahally, P., Gilbert, S., \*\*Niedzielski, T., \*\*Velázquez, D., \*\*Anagnost, C. (2009) Sparsh UI: A Multi-Touch Framework for Collaboration and Modular Gesture Recognition. *Proceedings of the World Conference on Innovative VR 2009*.
148. Blessing, S., Gilbert, S., \*Blankenship, L., & \*Sanghvi, B. (2009) From SDK to xPST: A New Way to Overlay a Tutor on Existing Software. *Proceedings of the Twenty-Second International FLAIRS Conference*. Acceptance rate 50%.
149. \*Hategekimana, C., Gilbert, S., Blessing, S. (2008) Effectiveness of using an intelligent tutoring system to train users on off-the-shelf software. In the *Proceedings 19th Annual Conference of the Society for Information Technology & Teacher Education*. Acceptance rate 25-39%.
150. Roselli, R., Gilbert, S., Howard, L., Blessing, S., Raut, A., \*Pandian, P. (2008) Integration of an Intelligent Tutoring System with a Web-based Authoring System to Develop Online Homework Assignments with Formative Feedback. *Proceedings of 115th Annual American Society for Engineering Education Conference*.
151. Blessing, S., Gilbert, S. (2008) Evaluating an Authoring Tool for Model-Tracing Intelligent Tutoring Systems. In the *Proceedings of the 9th International Conference on Intelligent Tutoring Systems (ITS)*. Acceptance rate 30%.

152. Blessing, S., Gilbert, S., Ourada, S., & Ritter, S. (2007). Lowering the Bar for Creating Model-Tracing Intelligent Tutoring Systems. *Proceedings of the 13th International Conference on Artificial Intelligence in Education (AIED)*. Acceptance rate ~35%.
153. Blessing, S. B., Gilbert, S., & Ritter, S. (2006). Developing an authoring system for cognitive models within commercial-quality ITSs. In *Proceedings of the Nineteenth International FLAIRS Conference*. Acceptance rate 53%.
154. Gilbert, S., \*Ngo, L., and Breisch, L. (1998) Analysis of hybrid distance learning: Corporate employees in academic courses. *Proceedings of the Third International Conference of the Learning Sciences*. Acceptance rate 31%.
155. Gilbert, S. (1997) An objective approach to trajectory mapping through simulated annealing. *Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society*, Palo Alto, California. Acceptance rate 43%.
156. Gilbert, S. (1996) The web as a student communication medium: What's different? *Proceedings of Association for the Advancement of Computing in Education ED-MEDIA 96, Boston*, 115-120. Best Paper Award.
157. \*Lokuge I., Gilbert S., & Richards, W. (1995) Visualizing information space: A tour through Boston. Poster presented at the European Conference Visual Perception '95, Tübingen. Abstract in *Perception*, 24 Supplement.
158. Gilbert, S. & Richards, W. (1994) Using trajectory mapping to analyze musical intervals. *Proceedings of the Conference of the Cognitive Science Society*, Atlanta, 363-368. Acceptance rate estimated at ~50%.
159. Chorover S., Gilbert S., & \*\*Lafayette, J. (1994) A collaborative approach to environmental education using hypertext. Poster presented at *Association for the Advancement of Computing in Education ED-MEDIA 94*, Vancouver.
160. Lubin, J., Huber, E., Gilbert, S., & Kornhauser A. (1992) Lateral control of an autonomous road vehicle in a simulated highway environment using adaptive resonance neural networks. *Proceedings of the IEEE Intelligent Vehicles '92 Symposium*.

## OTHER PUBLICATIONS & PRESENTATIONS

### **Book Chapters**

1. Blessing, S., Gilbert, S. B., & Ritter, S. (2023). Authoring tools to build AIED systems. In B. du Boulay, A. Mitrovic, & K. Yacej (Eds.), *Handbook of Artificial Intelligence in Education* (pp. 273-285). Edward Elgar Publishing.
2. Foltz, P. W., & Gilbert, S. B. (2023). Team Tutoring in Intelligent Tutoring Systems SWOT Analysis. In A. M. Sinatra, A. C. Graesser, X. Hu, G. Goodwin, & V. Rus (Eds.), *Design Recommendations for Intelligent Tutoring Systems: Volume 10 - Strengths, Weaknesses*,

*Opportunities and Threats (SWOT) Analysis of Intelligent Tutoring Systems* (Vol. 10). US Army Combat Capabilities Development Command - Soldier Center.

3. Gilbert, S. B., Dorneich, M. C., \*Walton, J., & Winer, E. (2018). Five Lenses on Team Tutor Challenges: A Multidisciplinary Approach. In J. Johnston, R. Sottolare, A. M. Sinatra & C. S. Burke (Eds.), *Building Intelligent Tutoring Systems for Teams* (pp. 247-277). Bingley, UK: Emerald Publishing.
4. Brawner, K., Sinatra, A. M., & Gilbert, S. (2018). Lessons Learned Creating a Team Tutoring Architecture: Design Reconsiderations. In R. Sottolare, A. Graesser, X. Hu & A. M. Sinatra (Eds.), *Design Recommendations for Intelligent Tutoring Systems: Volume 6 - Team Learning and Taskwork* (Vol. 6). Orlando, FL: U.S. Army Research Laboratory.
5. Boyce, M. W., Sinatra, A. M., Gilbert, S., & Sottolare, R. (2018). Developing the GIFT Event Report Tool to Support Experimentation for Teams. In R. Sottolare (Ed.), *Design Recommendations for Intelligent Tutoring Systems: Volume 6 - Team Learning and Taskwork* (Vol. 6, pp. 227-236).
6. Blessing S, V Aleven, S Gilbert, N Heffernan, N Matsuda, and A Mitrovic, “Authoring Example-based Tutors for Procedural Tasks”, *Design Recommendations for Adaptive Intelligent Tutoring Systems: Authoring Tools (Volume 3)*, R Sottolare, X Hu, A Graesser (Eds.) US Army Research Laboratory, (2015).
7. Gilbert S and S Blessing, “Invisible Intelligent Authoring Tools”, *Design Recommendations for Adaptive Intelligent Tutoring Systems: Authoring Tools (Volume 3)*, R Sottolare, X Hu, A Graesser (Eds.) US Army Research Laboratory, (2015).
8. Harms C, D Niederhauser, N Davis, M Roblyer, and S Gilbert, “Educating educators for virtual schooling: Communicating roles and responsibilities”, *Teaching and learning with technology: Beyond constructivism*, Chapter 4, C. Stewart, C. Schifter, and Markaridian Selverian (Eds.) Routledge, (2010).
9. Gilbert, S. (1999) Different roles the Web can play. In M. Selinger and J. Pearson (Eds.), *Telematics in Education: Trends and Issues*, New York: Pergamon.

### **Other Scholarly Contributions**

Lieffrig, K., & Gilbert, S. B. (2024). Testing virtual reality for ergonomic assessment. *ISE Magazine*, 56(3), 28-31.

Gilbert, S. (2022, July 20). Stream Switching: What UX, Zoom, VR, and Conflicting Truths Have in Common. *ACM Interactions*. <https://interactions.acm.org/blog/view/stream-switching-what-ux-zoom-vr-and-conflicting-truths-have-in-common>

Gilbert, S., Payton, J. and Pena, M. (2017). *CISE New REU PI Resources*. <https://www.vrac.iastate.edu/cise-reu-pi-resources/> Created website to bring new PIs of REU sites up to speed quickly. This website still referenced annually by NSF program officers to the REU PI community.

### **PATENTS**

Apparatus and methods for augmented reality vehicle condition inspection.

S Gilbert, E Winer, J Miller, A Renner, N Sepich, V Sankaranthi, C Gallant, D Wehr, R Radkowski, C Song. Patent No. US 11,580,628 B2. Issued Feb 14, 2023.

Apparatus and methods for augmented reality measuring of equipment

S Gilbert, E Winer, J Miller, A Renner, N Sepich, V Sankaranthi, C Gallant, D Wehr, R Radkowski, C Song. Patent No. US 11,587,315 B2. Issued Feb 21, 2023.

## INVITED TALKS

1. *Human-AI Teaming: Successful Design Patterns*, invited lecture in ISU CS4370: Computer Game and Media Programming, Mar 1, 2024.
2. *Future of Learning*, invited talk to University of Namibia Faculty of Education, Oshikati, Namibia, Apr 5, 2022.
3. *Learning Engineering Through Real-World Projects*, invited talk to University of Namibia Faculty of Engineering, Ongwediva, Namibia, Apr 6, 2022
4. *Measuring What's Difficult to Measure: Examples of Human-System Interaction from Boeing, John Deere, the DoT, and the Army*, invited talk at Accenture Labs Distinguished Research Speaker Series, Feb 23, 2021.
5. *What's in a Gamer's Head?*, invited lecture in ISU CS437: Computer Game and Media Programming, Feb 11, 2021.
6. *Human-Agent Teaming*, invited TEDx ISU 2020 talk. Cancelled due to COVID-19.
7. *The Future of Learning*, invited talk at Namibia University of Science and Technology, Oct 9, 2019.
8. *Applications of Human-Agent Teamwork to Intelligent Tutoring Systems*, presentation at Computer Science and Engineering Department at University of Minnesota Twin Cities, Minneapolis, Dec 4, 2017.
9. *Developing an Optimized User Interface for Traffic Incident Managers*, presentation at Interaction Design Centre, School of Science and Technology, Middlesex University, London, Oct 18, 2017.
10. Payton J and S Gilbert, *Best Practices for CISE REU PIs*, NSF CISE New REU PI Workshop, Washington, D.C., Mar 22-23, 2017.
11. *Recent Advances in Virtual and Augmented Reality*. Invited presentation at "Knowledge on Tap" community seminar series, Ames, IA, Aug 3, 2016.
12. *UX Crash Course: Library Edition*, presentation with PhD student Chase Meusel to ISU Library staff about conducting User Experience (UX) analysis of their websites, Feb 5, 2016.
13. *Implementing Team Tutoring*, NATO Symposium on "Adaptive Team Tutoring" conducted under North Atlantic Treaty Organization Human Factors & Medicine Panel's Research Task Group (NATO HFM-RTG) 237 on "Assessment of Intelligent Tutoring System Technologies and Opportunities," Oct 30, 2014.

14. *Virtual and Augmented Reality*, Keynote at GameTech 2014: Defense Users Conference, Sept 4, 2014.
15. *Evaluation of Human-Computer Interaction in Simulations and Intelligent Tutoring Systems*, 3M (St. Paul, MN; May 21, 2014).
16. *The Pros and Cons of Interdisciplinary Research*, Keynote at Graduate And Professional Student Research Conference, Iowa State University, (4/4/2014). <http://vimeo.com/92246617>
17. *Design and User Experience Study of the Automated Research Writing Tutor*. Presentation at the Technology for Second Language Learning Conference (TSL) 2012, Ames, IA, Sept 22.
18. *Designing Multimedia*. Presentation at the University of Milan's *eLearning* conference, Milan, November 12, 2002.
19. *Digital Approaches to Montessori: Who needs an Electronic Pink Tower?* Featured presentation with Seymour Papert at the American Montessori Association Spirit of Education Conference, March 17-20, 2000.
20. Workshop on What Everyone Should Know About Information Technology, Committee on Information Technology Literacy of the National Research Council's Computer Science and Telecommunications Board, January 14-15, 1998.
21. PBS teleconference panelist on web-based learning. *The Web Plays Different Roles*. The Eighth National Conference on College Teaching and Learning, The Center for the Advancement of Teaching and Learning, Florida Community College at Jacksonville, April 17.
22. Workshop on Spatial Navigation by Humans, Animals, and Robots, Office of Naval Research, NAS Woods Hole Study Center; September 1995

## PROFESSIONAL SOCIETY MEMBERSHIPS

- Institute of Industrial Engineers (IIE) 2012 – present
- Human Factors & Ergonomics Society (HFES) 2012 - present
- American Society of Mechanical Engineers (AMSE) 2010 - present
- Association for Computing Machinery (ACM) 2009 – present
- American Society of Engineering Education (ASEE) 2008 – present
- Association for the Advancement of Artificial Intelligence (AAAI) 2007 - 2018
- Sigma Xi, 1991 – present

## SERVICE

### To Profession

- Member, Diversity, Equity, Inclusion, and Accessibility (DEIA) Committee of the Virtual Experience Research Accelerator (VERA), a national NSF-funded project (<https://sreal.ucf.edu/vera/>)
- Chair, HFES Technical Group on Cognitive Engineering & Decision Making, 2022-2023



- Special Issue Guest Editor for *International Journal of Artificial Intelligence in Education*, 2020
- Chair Elect, HFES Technical Group on Cognitive Engineering & Decision Making, 2020-2021
- Program Chair, HFES Technical Group on Cognitive Engineering & Decision Making, 2017-2019
- Co-Organizer of 2nd Workshop of the International Collaboration for the Automation of Systematic Reviews, Oct 3-4, 2016, hosted by National Institute of Environmental Health Sciences.
- Program Chair Elect, HFES Technical Group on Cognitive Engineering & Decision Making, 2014-2016
- Secretary/Treasurer, HFES Technical Group on Cognitive Engineering & Decision Making, 2013-2014
- Treasurer, HFES Technical Group on Virtual Environments, 2013-2015
- Member of the 2014 GIFT-IIS Advisory Board, where GIFT is the Generalized Intelligent Framework for Tutoring and IIS is the University of Memphis Institute for Intelligent Systems.
- Member of the Information Design Advisory Board, an online Masters program at Northwestern University, 2013 – 2015
- Served on NSF Review Panels: 2010 – present, average 1 panel per year
- NSF CISE REU Site Assessment Committee, 2009 – 2010
- Judge for IEEE VR 2020 Dissertation Prize
- Reviewer for ACM EduCHI, 2024
- Reviewer for ACM SIGCHI, 2024
- Reviewer for *International Journal of Human-Computer Studies*, 2024
- Reviewer for *Frontiers in VR*, 2024
- Reviewer for IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2023
- Reviewer for ACM SIGGRAPH, 2023
- Reviewer for *Scientific Reports*, 2023
- Reviewer for *Frontiers in Human Media Interaction*, 2021
- Reviewer for *Multimodal Technologies and Interaction*, 2021
- Reviewer for *Human-Computer Interaction*, 2020
- Reviewer for *Multimedia Tools and Applications*, 2020
- Reviewer for *Interactive Learning Environments*, 2020
- Reviewer for *IEEE Transactions on Visualization and Computer Graphics*, 2019-2020
- Reviewer for *Educational Psychology*, 2019
- Reviewer for *Cognitive Research: Principles and Implications*, 2019
- Reviewer for *IEEE Computer*, 2019
- Reviewer for *Applied Ergonomics*, 2018
- Reviewer for *Computers in Human Behavior*, 2018
- Reviewer for *SoftwareX*, 2018
- Reviewer for *International Journal of Industrial Economics*, 2018-present
- Reviewer for *IEEE Transactions on Learning Technologies*, 2016-2019
- Reviewer for *IEEE Transactions on Human-Machine Systems*, 2013-2019
- Reviewer for ITS/AIED conferences, 2013-present
- Reviewer for Human Factors and Ergonomics Society Conference, 2013-present
- Reviewer for *International Journal of Artificial Intelligence in Education*, 2013-2021
- Reviewer for *Virtual Reality*, 2009-2021
- Reviewer for AMSE IDETC, 2013-2014
- Reviewer for *Journal of Mechanical Design*, 2012-2013
- Reviewer for *Military Psychology*, 2011
- Reviewer for Cognitive Science Conference, 2010
- Reviewer for ACM SIGCHI, 2010
- Reviewer for *International Journal of Science Education*, 2009

- Session Chair for AMSE World Conference on Innovative Virtual Reality 2010
- Co-Chair of Team vs. Individual Learners Workshop at Intelligent Tutoring Systems Conference 2014
- Maintained open source code repository for Sparsh-UI, a platform independent multitouch API for developing research-oriented multitouch applications (<http://code.google.com/p/sparsh-ui>, over 1500 downloads)
- Maintained open source code repository for xPST, an intelligent tutoring authoring tool (<http://code.google.com/p/xpst>, over 100 downloads)

#### **To ISU**

- Member of Lecture Series Committee, 2024-present
- Member of Faculty Search Committee, School of Education, 2024
- Invited by Bill Graves to Council of Graduate Schools focus group on inclusion, Nov 1, 2023
- Member of Gender and Sexuality Equity Awards Committee, 2019
- Member of review committee for Brown Graduate Fellowship, 2019
- Faculty Judge, Annual GMAP Symposium, 2009 – 2019
- Served on Graduate and Post-doc Program Excellence Subcommittee, part of President Leath's Enhancing Institutional Excellence initiative, 2013-2014
- Faculty Judge, Center for Ag Entrepreneurship, 2013
- Faculty Judge, College of Human Sciences Entrepreneurship Showcase, 2012, 2013
- Served on Curriculum & Instruction faculty search committee, 2011
- Mentor for Preparing Future Faculty student, 2009, 2020

#### **To ISU College of Engineering**

- Diversity and Inclusion Strategic Committee, 2019 – present
- Entrepreneurship E-Leaders Committee 2008 – 2021

#### **To ISU Industrial & Manufacturing Systems Engineering**

- IMSE Entrepreneurship Fellow, 2023-present
- Diversity & Inclusion Committee, 2019-present (Chair in Fall 2020)
- Honors & Awards Committee, 2017-2021
- Staff search committee, 2019
- Curriculum Committee, 2017-2018
- Manufacturing faculty search committee, 2017
- PR Committee, 2015 – 2017
- Computer and Software on Campus Committee, 2015
- Graduate Committee, 2013 – 2014

#### **To ISU Human Computer Interaction Graduate Program**

- Led HCI 20<sup>th</sup> Anniversary Celebration, 2024
- Re-started HCI Recruiting Open House post COVID, 2023
- Director of Graduate Education, 2019-present
- Chair, HCI Curriculum Committee FY13
- Hosted visiting speaker John Rogers, CEO of Local Motors, 2013
- Hosted visiting speaker Dr. Beth Quinn from Filament Games, 2012
- Co-Hosted visiting author Scout McCloud with Debra Satterfield for special HCI-only seminar, 2011
- Hosted HCI Design Challenge design competition in honor of World Usability Day, 2010-2013
- HCI Supervisory Committee, Fall 2008 - present
- Faculty Advisor to HCI Student Organization, 2008 – 2013

## To ISU Virtual Reality Applications Center

- Member of Research Scientist search committee, 2023
- Conduct tours for industry and academic visitors, 2007 – present
- Chair of Emerging Technologies Conference, 2011, 2012, 2013
- Co-Chair of Emerging Technologies Conference, 2009

## To the Community

- Invited panelist on Ask Me Anything re REU sites, Coltie.com, Jan 30, 2024
- Member of Leadership Team for VREP (Virtual Reality Educational Pathfinders), 2009 – 2015.
- Co-Leader of the Ames IT Collaborative monthly lunch seminar for IT professionals within Ames, 2011-2014
- Coordinator of Ignite Ames 2008 – 2013
- Invited Speaker at Topics II Dinner Club, Dallas, Texas, about Virtual Reality (~100 people) on October 6, 2012.
- Invited Speaker at the Ames Rotary Monday lunch (200+ people) about Virtual Reality on Nov 21, 2011.
- Visiting Scholar at 4-H Club at the Science Center of Iowa, Oct 29, 2009. Facilitated students doing paper prototyping of mobile apps for the Science Center.
- Panelist on Industry Day on Entrepreneurship, Ames Chamber of Commerce Leadership Ames Program, Mar 23, 2006

## Second Language: German

## GRADUATE STUDENTS

\* Indicates Co-Major Professor.

### Graduated

Amanda Newendorp	MS, IE/HCI	Spring 24
Kaitlyn Ouverson	PhD, HCI	Spring 23
Kathryn Lieffrig	MS, IE	Spring 23
Chidinma Kalu	MS, HCI	Spring 23
Jameel Kelley (*J Dickerson, J. Lathrop)	MS, HCI/CprE	Fall 22
Angelica Jasper	PhD, HCI	Summer 22
Nathan Sepich	MS, IE/HCI	Summer 22
Michael Poole	MS, HCI	Summer 21
Adel Sulaiman (*Les Miller)	PhD, HCI/CS	Summer 19
Kaitlyn Overson	MS, HCI	Summer 19
Jamiahus Walton	PhD, HCI	Summer 19
Mahmood Ramezani	MS, HCI	Fall 18
Mostafa Amin-Naseri (*M. Hong, A. Sharma)	PhD, IE	Summer 18
Anna Slavina	PhD, HCI	Summer 18
Mariangely Iglesias-Pena	MS, HCI	Spring 18
Chase Meusel	PhD, HCI	Summer 17
Andrea Peer	PhD, HCI	Spring 17
Norene Kelly	PhD, HCI	Summer 16
Jingyu Liu	MS, IE/HCI	Summer 16
Enruo Guo (*Les Miller)	PhD, HCI/CS	Summer 15
Jamiahus Walton	MS, IE	Summer 15
Amanda Skinner	MS, HCI	Spring 15

Mostafa Amin-Naseri	MS, IE	Fall 14
Michael Curtis	MS, HCI	Fall 14
Chase Meusel	MS, HCI	Fall 14
Eduardo Rubio	MS, HCI	Fall 14
Rachel Graham (*Anne Foegen)	PhD, HCI/Ed	Fall 14
José Camou	MS, HCI	Fall 13
Deepan Babu (*Jin Tian)	MS, HCI/CS	Spring 13
Melissa Burton	MS, HCI	Spring 13
David Prater (*James Oliver)	MS <sup>†</sup> , HCI	Fall 12
Nandhini Ramaswami (*Jin Tian)	MS, HCI/CS	Summer 12
Ankit Agrawal (*Pavan Aduri)	MS, HCI	Fall 11
Shrenik Devasani (*Les Miller)	MS, HCI	Fall 11
Wutthigrai Boonsuk (*Jonathan Kelly)	MS, HCI	Summer 11
Mike Oren (*William Woodman)	PhD, HCI/Soc	Spring 11
Sateesh Kodavali (*Vasant Honavar)	MS, HCI	Fall 10
Jay Roltgen (*James Oliver)	MS, HCI	Summer 10
Simon Setterstrom (*Ann Thompson)	MS, HCI	Summer 10
Lucas Bonansea (*Vasant Honovar)	MS, HCI	Summer 09
Claver Hategekimana (*Anthony Townsend)	PhD, HCI	Fall 08

### Current

Amin Sanaei	PhD, IE, HCI	Exp. Fall 24
Nikoo Javadpour	MS, IE	Exp. Summer 24
Ghazal Shahabadi	PhD, IE	Exp. Spring 26
Hila Sabouni (*Chengde Wu)	PhD, HCI	Exp. Spring 27

Have served on other thesis and dissertation committees of over 150 on-campus PhD and MS students.