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**DAVID KABER**

Distinguished Professor

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**EDUCATION:**

**Ph.D. Industrial Engineering.** Texas Tech University (TTU), Lubbock, TX, *August 1996*.

GPA: 3.947/4.0; Major Area of Specialization: Human Systems Engineering.

Dissertation: The Effects of Level of Automation and Adaptive Automation on Human Performance in Multitask Environments.

**M.S. Industrial Engineering.** University of Central Florida (UCF), Orlando, FL, *May 1993*.

GPA: 3.692/4.0; Major Area of Specialization: Human Factors and Ergonomics.

Thesis: Human Performance of Overhead Work: Design and Experimental Analysis.

**B.S. Industrial Engineering.** UCF, Orlando, FL, *August 1991*.

**CERTIFICATIONS / REGISTRATION:**

Certified Safety Professional (CSP), Board of Certified Safety Professionals – Certificate No. CSP-31744 (9/23/16)

Certified Human Factors Professional (CHFP), Board of Certified Professional Ergonomists – Certificate No. 1386 (6/7/06).

Engineer Intern, State of Florida - Registration No. 1091ET247.

**WORK EXPERIENCE:**

*March 2015-Present.*

**Distinguished Professor.** NCSU, Edward P. Fitts Department of Industrial & Systems Engineering (ISE), Raleigh, North Carolina.

*August 2014-Present.*

**Director of Research.** NCSU, The Ergonomics Center of North Carolina, Raleigh, North Carolina.

*May 2011-Present.*

**Visiting Professor.** Khon Kaen University (KKU), Faculty of Associated Medical Sciences, Khon Kaen, Thailand.

*October 2010-Present.*

**Associate Faculty.** NCSU, Department of Biomedical Engineering, Raleigh, North Carolina.

*January 2010-Present.*

**Graduate Faculty.** NCSU, Department of Psychology, Raleigh, North Carolina.

*August 2007-March 2015.*

**Professor.** NCSU, Edward P. Fitts Department of Industrial & Systems Engineering, Raleigh, North Carolina.

*August 2004-Present.*

**Visiting Professor.** University of Rostock (URO), College of Engineering, Institute for Automation, Rostock, Germany.

*August 2003-January 2010.*

**Associate Faculty.** NCSU, Department of Psychology, Raleigh, North Carolina.

*August 2002-August 2007.*

**Associate Professor.** NCSU, Edward P. Fitts Department of Industrial & Systems Engineering, Raleigh, North Carolina.

*August 2000-August 2002.*

**Assistant Professor.** NCSU, Department of Industrial Engineering, Raleigh, North Carolina.

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*July 1996-August 2000.* **Assistant Professor.** Mississippi State University (MSU), Department of Industrial Engineering, Mississippi State, Mississippi.  
*August 1994-June 1996.* **Research Assistant.** TTU, Department of Industrial Engineering, Lubbock, Texas.  
*May 1994-December 1994.* **Instructor.** Amarillo College, Amarillo, Texas.  
*August 1991-May 1993.* **Research Assistant.** UCF/NASA, Orlando, Florida.

## **ADMINISTRATIVE EXPERIENCE (descriptions of leadership positions since joining NCSU)**

**Director of Research, The Ergonomics Center of North Carolina (ECNC; Raleigh, NC).** *August 2014-present.*

Planning, developing and leading research collaborations between ECNC and NC State ISE Ergonomics Laboratory. Work with Director of Ergonomics Services and lead staff ergonomists in developing proposals for applied industry-sponsored research (e.g., Duke Energy (\$60K), Strong Arm (\$50K), John Deere (\$30K)) and Federally-funded research-to-practice projects (e.g., Centers for Disease Control). Support ECNC training mission through Ergonomics Lab programs for workshop trainees. Plan and direct graduate research team execution of industry-sponsored projects. Plan and coordinate staff ergonomist guest lectures through ISE Department courses.

**Program Director, Occupational Safety and Ergonomics (OSE) Program of NIOSH Southeastern Education and Research Center (ERC; Raleigh, NC).** *August 2007-present.*

Provided leadership to NIOSH (National Institute of Occupational Safety & Health)-funded program through Southeastern ERC for past 10 yrs., including: (1) planning student recruiting (for promotion of diversity), budget management (\$750K-\$1M every 5 yrs.), (2) student program development, (3) lab resource coordination, (4) organization of post-doc and student research team activities, and (5) program progress analysis (annual outcomes reporting to NIOSH). Also provided expertise to OSE Program students in identifying masters and dissertation research topics in the areas of cognitive ergonomics, physical ergonomics and occupational safety engineering. Will remain as administrator of OSE Program as part of NCOSHERC through 2022 with funding of \$1.05M over 5 yr. period. Will be responsible for recruiting new students to program, identifying program advisors for students, coordinating course offerings, assuring students meet curriculum requirements, and facilitating student research training. (NIOSH ERC Program Director is vetted role within Center requiring NIOSH administration approval.)

**Director/co-Director, NC State ISE Ergonomics Laboratory (Raleigh, NC).** *August 2004-present.*

Served as leader of Lab for past 13 yrs., including: (1) defining vision and research objectives, (2) securing external grants and internal funding to support research activities (with expenditures ranging between \$175K-\$750K/yr.), (3) recruiting graduate research assistants and post-docs (with staffing between 15-20 employees/yr.), (4) developing external research partnerships with domestic and international universities (e.g., Duke University, Chulalongkorn University (Memorandum of Understanding (MOU)), University of Rostock (MOU)), (5) supervising multiple simultaneous funded research projects and staff effort, (6) conducting performance evaluations as basis for appointment continuation decisions, (7) engaging external research clients for philanthropic contributions to Lab (e.g., Duke Energy, \$250K Safety & Ergonomics Research Endowment to College of Engineering), (8) initiating and facilitating Lab and research publicity through popular press and media (e.g., WNCN, WRAL coverage of driver distraction research), (9) completion of \$6M+ in funded research projects resulting 60+ technical reports to Federal agencies, (10) direction or co-direction of 20+ Ph.D.

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dissertations and 25+ masters theses, (11) nomination of Lab researchers for awards and honors (e.g., S-H Kim, “Most Outstanding Aviation-Related Research Dissertation” in 2009 by *ASEM*), and (12) recommending graduates for future careers (e.g., 5 Ph.D. students in faculty positions).

**RESEARCH EXPERIENCE (descriptions of some projects also listed in Grants section):**

**National Institute for Occupational Safety & Health (NIOSH), Education and Research Centers program (conducted at NCSU, Raleigh, NC). *July 2012-June 2017.***

Five-year grant (\$710K) for training graduate engineering students in occupational safety and ergonomics. Provides support for 4-5 masters and/or PhD students to take courses in areas of occupational biomechanics, human factors in systems design, human information processing and occupational and systems safety. Also provides support for student preparation of theses and dissertations based on studies through Ergonomics Lab.

**NC Department of Transportation (DOT), Traffic Mobility and Safety Branch (conducted at NCSU, Raleigh, NC). *July 2012-August 2016.***

Multiple driving simulator studies (\$307K) focused on driver visual behavior and performance in use of conventional destination guide signs and specific service (business) logo signs under various roadway conditions. Test conditions included driving while using navigation aids for route planning. Drivers experienced normal freeway driving and hazard conditions, including construction zones. Conditions also included simulated exit ramps. Results were used by DOT as basis for decision making on logo sign content and formatting.

**Federal Highway Administration (in progress at NCSU). *October 2010-November 2014.***

Four-year research project (\$721K) involving field evaluation of safety of double-crossover diamond interchanges. One aspect of project focused on recognition, evaluation and control of human factors issues in driver and pedestrian negotiation of interchanges. Specific problems addressed by research included driver and pedestrian attention to traffic flows and novel alerting mechanisms.

**National Science Foundation (NSF), Human-Centered Computing Research Award – Information & Intelligent Systems Division (in progress at NCSU and Duke University Medical Center, NC). *July 2009-April 2014.***

Four-year research program (\$654K) aimed at designing virtual reality-based simulations integrating haptic control devices for motor rehabilitation and fine motor skill training. Collaborated with Duke University and Durham Veterans Administration Medical Center to prototype computer-based systems using novel hardware and software technologies to assess motor capabilities of veterans suffering from minor traumatic brain injuries, and to support design of advanced therapy regimens for skill recovery. Prototypes included haptic controls allowing precision and power grip. Motor-task simulation software provided passive, resistive and assistive modes of skill development. Impact of technologies on human capability was assessed using neuropsychological tests and electromyography.

**NC DOT, Traffic Mobility and Safety Branch (conducted at NCSU, Raleigh, NC). *June 2010-April 2011.***

Comparison of highway logo signs, including nine-panel, overflow mixed-use signs and six-panel logo, in terms of driver visual distraction and performance using interactive driving simulation. Eye tracking system used with simulator to determine driver glance frequency and dwell time for each sign type. Performance impacts of nine-panel logo signs were measured for comparison with conventional six-

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panel signs. Results used as basis for DOT decision making on implementation of nine-panel logo signs at major interchanges throughout State.

**NASA, Langley Research Center - Aviation Safety Program (conducted at NCSU, Raleigh, NC). October 2006-September 2009.**

Three-year research project (\$386K) aimed at defining objective measure of aviation display clutter and assessing relationship with pilot performance. First phase defined physical dimensions of clutter in visual displays and determined associated perceptual dimensions for aviation display users. Multi-dimensional scaling methodology used in second phase to define model of clutter. Third phase established threshold values for perceptual dimensions of clutter leading to degradations in performance. NASA and avionics manufacturers may ultimately use threshold values for decisions regarding designs of new synthetic vision displays for pilots.

**NSF, Information Technology Research Award - Human-computer Interaction Program/Office of International Science and Engineering (conducted at NCSU, Raleigh, NC). October 2004-September 2007.**

Three-year research program (\$798K) to design and investigate intelligent and adaptive human-machine interfaces and automated control technologies for supporting supervisory controllers in biochemical screening (testing) towards development of new drug components. Project involved collaborative research with URO Center for Life Sciences Automation. Major steps included: (1) cognitive task analysis of screening operations with biochemists; (2) cognitive modeling of supervisory controller behavior; (3) process interface prototyping and usability evaluation; (4) development of remote process control applications (middleware) and approaches to assessing operator functional states during screening operations; and (5) development of a user interface management system for adaptation of content during actual chemical screening operations.

**ONR, Basic Research Grant - Human-Machine Systems Program (#342) (conducted at NCSU, Raleigh, NC). February 2001-December 2001.**

Research project (\$65K) to determine effectiveness of sensory cueing of automation-state changes in teleoperation system control on human performance. Study assessed effects of shifts in level of system automation (e.g., manual control versus supervisory control) on operator situation awareness and performance. Work examined symbolic visual cues, auditory cues (earcons) and bimodal cues of system state changes. Major steps included: (1) enhancing existing virtual reality simulation of remote-control of robotic rover for land mine disposal; and (2) experiment for systematic assessment of dynamic changes in state of robot automation on control performance and SA, as well as identification of superior modal and bimodal cues on changes.

**NASA, Langley Research Center, Cooperative Agreement – Crew/Vehicle Integration Branch, Psychological/Physiological Stressors & Factors program (conducted at NCSU, Raleigh, NC). January 2001-May 2005.**

Four-year research program (\$300K) to study implications of adaptive automation in air traffic control on human performance, situation awareness and workload. First year involved evaluation of automation of information acquisition and analysis, decision-making and response execution aspects of air traffic control. Results demonstrated adaptive automation of functions to be effective in comparison to static automation for managing controller workload. Second year involved assessment of levels of computer authority in dynamic allocations of air traffic control information processing functions between human operators and machine systems. Third year of project involved exploring controller situation awareness as basis for describing implications of adaptive automation in complex systems control. Fourth year

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involved use of neural networks for classification of operator functional states (workload and performance levels) during air traffic control simulation based on physiological measures. Networks were designed to predict most appropriate form of automation.

**NASA, Langley Research Center, New NASA Research Cooperative Agreement – Crew/Vehicle Integration Branch (conducted at MSU and NCSU). *January 1999-December 2001.***

Three-year research program (\$264K) involving study of modes of pilot-automation interaction in McDonald Douglas MD-11 aircraft. Research categorized 17 modes of MD-11 automation per theoretical taxonomy of levels of automation. Low-fidelity virtual environment simulation of MD-11 cockpit was developed and used as a test-bed for human factors experiments describing effects of various modes of MD-11 automation on pilot performance, situation awareness and workload. Research validated new measure of commercial pilot situation awareness.

**NSF, Faculty Early CAREER Development Award – Human Computer Interaction Program (conducted at MSU and NCSU). *May 1998-August 2003.***

Five-year research program (\$465K w/o REUs) involving study of telepresence, “sense of being present at a remote worksite,” in context of human control of teleoperated robots. Experiments assessed effect of technological and psychological factors on presence with virtual environments/virtual interfaces including: display and hand-control configuration; time lags and spatial-positioning disturbances in teleoperation; user training and expertise; and task difficulty and importance. Model of telepresence was developed in factors affecting incidence and strength of qualitative and quantitative telepresence measured by questionnaires and signal detection measures. Model was applied to different teleoperator setups and design guidelines formulated for virtual interface design. Model was also used to describe telepresence effect on teleoperator performance.

**MSU Office of Research, Research Initiation Program Grant (conducted at MSU, Mississippi State, MS). *January 1998-December 1999.***

Investigation of effect of visual display type, navigational aid and user spatial abilities on navigation training in virtual environment. Compared effect of immersive VR displays with conventional monitor, and a virtual map with written directions on presence and performance of users (with low and high spatial abilities) in simulated robotic rover navigation.

**GRANTS AND CONTRACTS:**

**Basic Research (in reverse chronological order).**

**(Awarded: \$6,709,801; Consulting grants in bold.)**

“Identification of Research Issues in Workload-based Design of Teleoperator Supervisory Control Interfaces,” NASA Ames Research Center, PI, \$150,000, 2016-2017.

“Design, Prototyping and Validation of an Exercise Regimen Guide for Worker Preparation for Gas Cylinder Handling,” Praxair, Inc., PI, \$30,000, 2015-2016

“Evaluation of Attentional Demands of Specific Service Signs and Driver Performance Under Freeway and Ramp Conditions.” NC Department of Transportation, PI, \$173,006, 2015-2016.

“Driver Behavior in Complex Navigation and Hazard Negotiation Under Distraction.” NC Department of Transportation, Principal Investigator (PI), \$133,517, 2012-2013.

“Field Evaluation of Double Crossover Diamond Interchanges.” Federal Highway Administration, co-PI (with Hummer & Roupail), \$721,098, 2010-2014.

“Driving Simulation of Nine-Panel Logo Signs.” NC Department of Transportation, PI, \$33,190, 2010.

“Testing and Validation of A Psychophysically Defined Metric of Display Clutter (Travel

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- Augmentation).” NASA Integrated, Intelligent Flight Deck Technologies Program, PI, \$7300, 2006-2009.
- “HCC-Medium: Haptic Simulation Design for Motor Rehabilitation and Fine Motor Skill Training.” NSF Human-Centered Computing Thrust Area, PI, \$654,373, 2009-2012.
- “ACM-DAS: Advanced Computational Models for the Design of Automated Systems.” NASA Aviation Safety Program, Subcontractor to Aptima Corp., \$165,602, 2007-2008.
- “Testing and Validation of a Psychophysically Defined Metric of Display Clutter,” NASA Aviation Safety Program, PI, \$386,500, 2006-2009.
- “A Multidimensional Scaling Analysis of Display Clutter and Development of a Clutter Measure,” NASA Langley Research Center, Human Measures & Performance Element, Airspace Systems, PI, \$70,000, 2006.
- “Investigation of Manual Control Performance Deficits in Adaptive Automation and a Cognitive Modeling Explanation,” NASA Langley Research Center, Human Measures & Performance Element, Airspace Systems, PI, \$37,810, 2005-2006.
- “Embedded Real-time Advisory System for Crew-Automation Reliability (ERTAS) Test-bed Evaluation,” NASA Langley Research Center, Human Measures & Performance Element, Airspace Systems, PI, \$22,500, 2005-2006.
- “PhysioErgonomisch Optimierte (PEO) Mensch-Maschine Interfaces und Datenschnittstellen in der Life Science Automation,” State Mecklenburg-Vorpommern (M-V) (Germany) Research Program, co-PI (with R. Stoll & K. Thurow), 637.800€ (~\$800K at time of award), 2005-2008.
- “Intelligent Human-Machine Interface & Control for Highly Automated Chemical Screening Processes,” NSF, ITR Program, PI, \$798,132, 2004-2007.
- “US-Germany Workshop Towards an International Research Partnership Program on Human-Automation Interaction in the Life Sciences,” NSF, OISE, PI, \$58,699, 2004-2005.
- “A Neural-network Based Approach to Adaptive Automation of Air Traffic Control Information Processing Functions,” NASA Langley Research Center, Psychological/Physiological Stressors & Factors Program, PI, \$110,000, 2004.
- “Measures for Assessing Situation Awareness in Virtual Environment Training of Small Infantry Squads,” U.S. Army Research Institute (ARI) for Social and Behavioral Sciences. (Phase II SBIR grant.), Consultant, \$748,977, 2003-2005.**
- “A Situation Awareness-Based Approach to Adaptive Automation,” NASA Langley Research Center, Psychological/Physiological Stressor & Factors Program, PI, \$100,000, 2003-2004.
- “New Measures of Situation Awareness for Use in Virtual Environment Training of Small Infantry Squads,” ARI, Consultant, \$99,477, 2003.**
- “Authority in Adaptive Automation Applied to Various Stages of Human-Machine System Information Processing,” NASA Langley research Center, Psychological/Physiological Stressors & Factors Program, PI, \$50,067, 2002.
- “Human Response to Adaptive Automation of Early Sensory/Information Acquisition Functions and Later Stages of Information Processing in Complex System Operations,” NASA Langley Research Center, Psychological/Physiological Stressors & Factors Program, PI, \$39,971, 2001
- “Automation-state Changes and Sensory Cueing in Complex System Control,” ONR, Human-Systems Program, PI, \$65,340, 2001.
- “Levels of Automation in the Commercial Aircraft Cockpit and Pilot Situation Awareness,” NASA Langley Research Center, Crew/Vehicle Integration Branch, PI, \$63,462, 2001.
- “CAREER: ARI Supplement: Telepresence in Teleoperations,” NSF, PI, \$9,560, 2000.
- “Virtual Environments and Virtual Interfaces for Oceanographic and Meteorological Scientific Data Visualization,” DEPSCoR – Department of Defense, PI, \$499,487, 2000.
- “Situation Awareness & Levels of Automation: Empirical Assessment of Levels of Automation in the

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Commercial Aircraft Cockpit.” NASA Langley Research Center, PI, \$110,043, 2000.  
“Situation Awareness & Levels of Automation,” NASA Langley Research Center, PI, \$90,080, 1998.  
“CAREER: Telepresence in Teleoperations,” NSF, PI, \$465,687, 1998.  
“The Effects of Visual Display, User Spatial Abilities and Navigational Aids on Performance in Virtual Environments for Navigation Training,” MSU, Research Initiation Program, PI, \$5,825, 1997.  
“New Production Facility Layout,” Alcoa Fujikura Ltd., PI, \$4,998, 1997.  
“Process Plan Analysis for Main Assembly Line,” Alcoa Fujikura Ltd., co-PI (with Usher), \$5,100, 1996.

**(Pending: \$499,908)**

“CHS: Small: Next-Generation UAV Workstation Design: Usability Features, Workload Modeling and Measurement, and Error Prevention,” NSF Cyber-Human Systems Program, PI (with Chen, Nam & Xu), \$499,908, 2016.

**Educational (in reverse chronological order).**

**(Awarded: \$2,138,716; 2012-2017 NIOSH “competing renewal” is disbursed as “continuation grant” with annual budgets.)**

“Continuation Grant for Occupational Safety & Ergonomics Program Area of UNC ERC,” NIOSH, PI, \$179,724, 2016-2017.  
“Analysis and Redesign of Police Vehicle Mobile Computer Terminal for Minimizing Officer Driving Distraction.” UNC Chapel Hill / NIOSH Occupational Safety & Health Education and Research Center (OSHERC), PI, \$9,624, 2015-2016. (Ph.D. student pilot research project.)  
“Continuation Grant for Occupational Safety & Ergonomics Program Area of UNC ERC,” NIOSH, PI, \$179,724, 2015-2016.  
“Continuation Grant for Occupational Safety & Ergonomics Program Area of UNC ERC,” NIOSH, PI, \$179,724, 2014-2015.  
“Continuation Grant for Occupational Safety & Ergonomics Program Area of UNC ERC,” NIOSH, Principal Investigator, PI, \$143,807, 2013-2014.  
“Biometric Evaluation of Psychomotor Test Performance.” UNC Chapel Hill / NIOSH OSHERC, PI, \$8,000, 2013-2014. (Ph.D. student pilot research project.)  
“Continuation Grant for Occupational Safety & Ergonomics Program Area of UNC ERC,” NIOSH, Principal Investigator, PI, \$190,768, 2012-2013.  
“North Carolina Education and Research Center Competing Renewal,” NIOSH, PI, \$710,035, 2012-2017.  
“A Study of the Perception of Fall Risk Associated with Extension Ladder Setup.” UNC Chapel Hill / NIOSH OSHERC, PI, \$11,909, 2011-2012. (Masters student pilot research project.)  
“Continuation Grant for Occupational Safety & Ergonomics Program Area of the NC OSHERC,” NIOSH, PI, \$145,814, 2011-2012.  
“A Study of Musculoskeletal Disorders of Veterinarians for Large Animals,” UNC Chapel Hill / NIOSH OSHERC, PI, \$13,000, 2010-2011. (Masters student pilot research project.)  
“Continuation Grant for Occupational Safety & Ergonomics Program Area of the NC OSHERC,” NIOSH, PI, \$120,510, 2010-2011.  
“Supplement to Continuation Grant for Occupational Safety & Ergonomics Program Area of the NC OSHERC,” NIOSH, PI, \$13,426, 2009-2010.  
“Continuation Grant for Occupational Safety & Ergonomics Program Area of the NC OSHERC,” NIOSH, PI, \$145,814, 2009-2010.  
“Investigation of Ergonomic Interventions for Scaffold Use in Nuclear Power Facility Maintenance Tasks,” UNC Chapel Hill / NIOSH OSHERC, PI, \$10,000, 2009. (Masters student pilot research project.)

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- “The Role of Pilot Individual Differences in Perceptions of Aviation Display Clutter and Performance.” NASA Aviation Research Mission Directorate, PI, \$90,000, 2008-2011. (Ph.D. student NASA graduate research fellowship.)
- “Continuation Grant for Occupational Safety & Ergonomics Program Area of the NC OSHERC,” NIOSH, PI, \$120,562, 2008-2009.
- “Safety and Ergonomics Program Area of the North Carolina (NC) OSHERC - UNC Chapel Hill,” NIOSH, PI, \$40,000, 2007-2008.
- “Safety and Ergonomics Program Area of the NC OSHERC – UNC Chapel Hill,” NIOSH, PI, \$120,562, 2006-2007.
- “Safety and Ergonomics Program Area of the UNC-ERC (continuation),” NIOSH, co-PI (with Mirka), \$107,516, 2005-2006.
- “Safety and Ergonomics Program Area of the UNC-ERC (continuation),” NIOSH, co-PI (with Mirka), \$97,038, 2004-2005.
- “Safety and Ergonomics Program Area of the UNC-ERC,” NIOSH Training Grant, co-PI (with Mirka), \$66,341, 2003-2004.
- “Occupational Safety and Health Training Grant,” NIOSH Training Grant, co-PI (with Sommerich and Mirka), \$37,584, 2002-2003.
- “REU Supplement (FY00-01): Telepresence in Teleoperations,” NSF, PI, \$10,186, 2001-2003.
- “Comparison of Physiological and Secondary Task Measures for Triggering Adaptive Automation,” NASA Langley Research Center, PI, \$66,000, 2001.
- “Learning Occupational Safety Engineering through the Web,” NCSU College of Engineering, Distance Education Programs and Course Development Award, PI, \$12,000, 2000.
- “Student Support for Automation and Situation Awareness Conference,” ONR, PI, \$10,050, 2000.
- “REU Supplement to “CAREER: Telepresence in Teleoperations,” NSF, PI, \$10,391, 1999.
- “REU Supplement: Telepresence in Teleoperations (Grant No. IIS-9734504),” NSF, PI, \$10,542, 1998.
- “Methods-Time Measurement Software for Supporting Industrial Research and Laboratory Instruction,” MSU, Research Facilities Award, PI, \$500, 1996.
- “Teleoperations and Telepresence,” Oak Ridge Associated Universities, PI, \$600, 1996.

**(Pending: \$1,049,999)**

- “North Carolina Education and Research Center Competing Renewal,” National Institute for Occupational Safety and Health (NIOSH), Co-principal Investigator, PI, \$1,049,999, 2017-2022.

**TEACHING AND ADVISING EXPERIENCE:**

**Undergraduate/Graduate Courses Developed and Taught (with NCSU evaluation data in bold).**

- NCSU ISE 352** – Work Analysis & Design - Work methods and production processes to improve operator effectiveness and reduce production costs. Techniques studied include operation analysis, motion study, value engineering, predetermined time systems, time study and line balancing. [Avg. course/instructor ratings: **4.26/4.41 (9 semesters)**]
- NCSU ISE 452** – Ergonomics: Worker - machine environment systems, design and evaluation; applications to consumer products tools, equipment and the workplace. Consideration of anatomical, physiological and psychological capabilities and limitations as related to systems design and human performance. Use of anthropometric data in design of display and control systems. [Avg. course/instructor ratings: **3.77/4.04 (10 semesters)**]
- NCSU ISE/PSY 540** - Human Factors in Systems Design: Basic concepts of human factors and their application to design of human-machine systems. Consideration of human cognitive and physical capabilities and limitations in design for human efficiency, safety and comfort. [Avg. course/instructor ratings: **4.21/4.44 (11 semesters)**]



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- NCSU ISE 541** – Occupational Safety Engineering: Occupational accident-injury study; investigation and analysis. Hazard control. Risk assessment; systems safety analysis. Product design, manufacturing defects, system failures and human error as causative factors. Safety program development. OSHA compliance; standards. **[Avg. course/instructor ratings: 4.35/4.61 (8 semesters; 13 sections)]**
- NCSU ISE 544** – Occupational Biomechanics - Anatomical, physiological, and biomechanical bases of physical ergonomics. Strength of biomaterials, human motor capabilities, body mechanics, kinematics and anthropometry. Use of bioinstrumentation, active and passive industrial surveillance techniques and the NIOSH lifting guide. Acute injury and cumulative trauma disorders. Static and dynamic biomechanical modeling. Emphasis on low back, shoulder and hand/wrist biomechanics. **[Avg. course/instructor ratings: 4.23/4.23 (2 semesters; 4 sections)]**
- NCSU ISE 637/639** – Advanced Directed Studies in Industrial Engineering (Computational Cognitive Modeling for Telerover Control; Usability Evaluation in Aviation Systems; Auditory Cue Design for Virtual Environments; Behavioral Based Safety; Computational Cognitive Modeling for Telerover Control; HCI Theory and Quantitative Usability Measures; Etiquette Expectations for Robots in Medicine Delivery; Ergonomic Interventions in Scaffolding; Domain and Dynamic Visual Factors in Perceived Clutter; Underlying Factors in Fatigue and the Relationship with Cognitive Errors in Healthcare Environments; Human Factors Issues in Telephone Voice Menu System Design; Cockpit Display Design for Traffic Information presentation; Driver Use of Roadway Guide and Logo Signs under Normal and Hazardous Driving Conditions; Virtual Reality Locomotion Interface Research; Exercise Design for Manual Handling Job-Readiness; Risk Factors in Manual Gas Cylinder Handling; Unmanned Aerial Vehicle Interface Evaluation).
- NCSU ISE/PSY 740** – Engineering Psychology of HCI: Exploration of usability of computer technology. Theory and practice of user-centered design for HCI applications. Course focuses on current usability paradigms and principles, psychology of users, iterative and participatory design processes, system requirements specification, prototyping, user support systems, usability evaluation and engineering, interface design guidelines and standards. **[Avg. course/instructor ratings: 4.14/4.24 (5 semesters)]**
- NCSU ISE 741** – Systems Safety Engineering: Course familiarizes students with techniques for identifying and recognizing potential safety hazards and the concept of risk assessment. Preliminary Hazard Analysis, Failure Modes and Effects Analysis, System and Subsystem Hazard Analysis, Fault Tree Analysis, Process Safety Management (29CFR1910.119) are explored together with applications to hazard analysis and control. Industrial situations and case studies are employed to illustrate usefulness of various system safety techniques. **[Avg. course/instructor ratings: 4.64/4.56 (5 semesters)]**
- NCSU ISE/PSY 745** – Human Performance Modeling: Study of theoretical models of human as an information processor; control theory as a basis for human performance models; cognitive and user modeling techniques; multiple task performance; task analysis in complex dynamic control scenarios; observational human factors experimentation; Goals, Operators, Methods and Selection modeling; functional-flow diagrams of cognitive processes. **[Avg. course/instructor ratings: 4.03/4.21 (4 semesters)]**
- NCSU ISE 794B/PSY 710U** – Cognitive Engineering: Review of approaches to cognitive work analysis and design methods, designing ecological interfaces for human performance, theoretical models of human cognition and validation through empirical study, measuring and modeling human decision making, computational modeling of cognition for predicting performance and evaluating interface designs, and identifying factors in team performance.

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**NCSU ISE 796** – Occupational Biomechanics Research Practicum: Biomechanics research topic development, literature evaluation, experimental design, use of bioinstrumentation, data collection, basic data interpretation, statistical analysis, manuscript preparation. [Avg. course/instructor ratings: 4.75/4.65 (2 semesters)]

NCSU IE 839 - Advanced Directed Studies in Industrial Engineering (Lag Tolerance in Haptic Device Use for Simulated Surgical Tasks; Utility of Virtual Reality for Studying Human Locomotion; Design and Usability Evaluation of a Dynamic Text Editing Device; Assessing Effects of Sensory Feedback on Patient Emotion and Motivation During Robot-aided Rehabilitation; Assessing Effects of Sensory Feedback on Patient Emotion and Motivation During Robot-aided Rehabilitation; Quantitative Methods for Classification of Human Motor Control Ability; Mathematical Models for Visual Attention Allocation; Biomechanical Issues Associated with Police Utility Belt Design).

MSU IE 3123 - Work Analysis and Design: Analysis and design of work tasks; principles of motion economy and manual work activities; work measurement by direct predetermined systems, and statistical techniques.

MSU IE 4000 – Undergraduate Directed Individual Study (Human Information Processing).

MSU IE 4113/6113 - Human Factors Engineering: Human capabilities and limitations affecting communications and responses in man-machine systems. Emphasis on physiological and psychological fundamentals.

MSU IE 4133/6133 - Ergonomics: Study of human capabilities pertinent to the design of products, equipment, work tasks, and environments. Emphasis on safety, productivity, performance and quality of work.

MSU IE 4173/6173 - Occupational Safety Engineering: Causes and prevention of industrial accidents. Analysis of hazardous processes and materials. Design of occupational safety systems and programs.

MSU IE 7000 – Directed Individual Studies (Advanced Human Factors in Virtual Environments; Human Factors in Virtual Environments; Virtual Environments for Scientific Data Visualization).

MSU IE 7003(1) – Advanced Directed Individual Study (Loss Assessment and Control): Advanced topics in worker safety and health; hazard recognition and analysis; system safety; product safety; and safety and health related workplace hazards.

MSU IE 7003(2) – Advanced Directed Individual Study (Systems Safety Engineering): Concepts and applications of system safety and risk assessment; hazard identification and risk analysis; components of risk; system safety techniques.

MSU IE 8153 - Cognitive Engineering: Implications of human perceptual, cognitive, and psychomotor capabilities on the design of systems for effective, efficient and safe human-machine performance.

MSU IE 8990 – Advanced Human Factors Engineering: Overview of human-computer interaction (HCI), current research issues. Coverage of interface design methodologies and specific design information/guidelines. Knowledge of interface design and an ability to structure and analyze research issues in HCI is emphasized.

### **Graduate Students – Supervised and Current.**

#### **(Masters with thesis (26 in chronological order) – Committee Chair or Co-Chair)**

Shivers, C., NCSU Master of Science Program, Industrial Engineering (IE; May 2001) (Co-chair with Mirka).

Warren, H., NCSU Master of Science Program, IE (May 2002) (Chair).

Ma, R., NCSU Master of Science Program, IE (December 2002) (Chair).

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Clamann, M., NCSU Master of Science Program, Psychology (December 2002) (Chair).  
Sheik-Nainar, M., NCSU Master of Science Program, Electrical and Computer Engineering (May 2003) (Co-chair with Chow).  
Liebsch, C., NCSU Master of Science Program, IE (August 2003) (Co-chair with Roberts).  
McClernon, C., NCSU Master of Science Program, IE (December 2003) (Chair).  
Shu, Y., NCSU Master of Science Program, IE (May 2005) (Co-chair with Mirka).  
Li, Y., NCSU Master of Science Program, IE (May 2007) (Chair).  
Lee, L., NCSU Master of Science Program, IE (May 2008) (Chair).  
Jin, S., NCSU Master of Science Program, Industrial & Systems Engineering (ISE; August 2008) (Chair).  
Zhang, Y., NCSU Master of Science Program, ISE (August 2009) (Chair).  
Zhu, B., NCSU Master of Science Program, ISE (August 2009) (Chair).  
Diering, M., NCSU Master of Science Program, ISE (May 2010) (Chair).  
Naylor, J., NCSU Master of Science Program, ISE (August 2010) (Chair).  
Gangakhedkar, S., NCSU Master of Science Program, ISE (December 2010) (Chair).  
Uy, C., NCSU Master of Science Program, ISE (August 2011) (Co-chair with Hsiang).  
Taylor, K., NCSU Master of Science Program, ISE (December 2011) (Chair).  
Rogers, M., NCSU Master of Science Program, ISE (December 2011) (Chair).  
Suresh, S., NCSU Master of Science Program, ISE (December 2011) (Chair).  
Heath, W., NCSU Master of Science Program, ISE (August 2012) (Co-chair with Hsiang).  
Pankok, C., NCSU Master of Science Program, ISE (May 2013) (Chair).  
Corbett, B., NCSU Master of Science Program, ISE (December 2013) (Co-chair with Nam).  
Zhang, W., NCSU Master of Science Program, ISE (August 2015) (Chair).  
Lau, M., NCSU Master of Science Program, ISE (June 2016) (Chair).  
Morejon, O., NCSU Master of Science Program, ISE (June 2016) (Chair).

**(Masters with thesis – Committee Member)**

Freeman, K., NCSU Master of Science Program, Psychology (May 2003) (Member).  
Drum, J., NCSU Master of Science Program, IE (August 2005) (Member).  
Freeman, J., NCSU Master of Science Program, IE (August 2005) (Member).  
Southard, S., NCSU Master of Science Program, IE (August 2005) (Member).  
St. Louis, M., NCSU Master of Science Program, Integrated Manufacturing & Systems Engineering (March 2006) (Member).  
Anderson, A., NCSU Master of Science Program, IE (May 2007) (Member).  
Rubenstein, C., NCSU Master of Science Program, Textiles Engineering (December 2014) (Member).

**(Masters with thesis – In Progress)**

Feltner, D., NCSU Master of Science Program, ISE (In progress) (Chair).  
Shirley, J., NCSU Master of Science Program, ISE (In progress) (Chair).  
Wadson, A., NCSU Master of Science Program, ISE (In progress) (Chair).

**(Masters non-thesis option (in chronological order) – Committee Chair or Member)**

Riley, J., MSU Master of Science (non-thesis) Program, IE (May 1998) (Member).  
Thorton, M., MSU Master of Science (non-thesis) Program, IE (May 1998) (Member).  
Bowman, C., MSU Masters of Science (non-thesis) Program, IE (August 2000) (Member).  
Hatfield, E., NCSU Master of Science (non-thesis) Program, ISE (May 2005) (Chair).  
Hatfield, N., NCSU Master of Science (non-thesis) Program, ISE (May 2005) (Chair).  
Vick, D., NCSU Master of Science (non-thesis) Program, ISE (December 2006) (Chair).  
Bing, H., NCSU Master of Science (non-thesis) Program, ISE (May 2008) (Chair).

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Lee, W., NCSU Master of Science (non-thesis) Program, ISE (May 2008) (Chair).  
Veil, T., NCSU Master of Science (non-thesis) Program, ISE (May 2009) (Chair).  
Beaver, L., NCSU Master of Science (non-thesis) Program, ISE (May 2011) (Chair).  
Singh, A., NCSU Master of Science (non-thesis) Program, ISE (December 2011) (Chair).  
Shields, D., NCSU Master of Science (non-thesis) Program, ISE (August 2013) (Chair).  
Liao, Y-F., NCSU Master of Science (non-thesis) Program, ISE (December 2015) (Chair).

**(Doctoral (18 in chronological order) – Committee Chair)**

Riley, J., MSU Doctor of Philosophy, IE (August 2001) (Chair).  
Wright, M., NCSU Doctor of Philosophy Program, IE (August 2002) (Chair)  
Ma, R., NCSU Doctor of Philosophy Program, IE (December 2005) (Chair).  
Segall, N., NCSU Doctor of Philosophy Program, IE (August 2006) (Chair).  
Sheik-Nainar, M., NCSU Doctor of Philosophy Program, IE (January 2007) (Chair).  
Green, R., NCSU Doctor of Philosophy Program, Psychology (May 2008) (Chair).  
Kim, S-H, NCSU Doctor of Philosophy Program, ISE (May 2009) (Chair).  
Zhang, T., NCSU Doctor of Philosophy Program, ISE (December, 2009) (Chair).  
Li, Y., NCSU Doctor of Philosophy Program, ISE (May 2010) (Co-chair with Lee).  
Wang, X., NCSU Doctor of Philosophy Program, ISE (December 2010) (Co-chair with Hsiang).  
Swangnetr, M., NCSU Doctor of Philosophy Program, ISE (December 2010) (Co-chair with Lee).  
Gil, G-H., NCSU Doctor of Philosophy Program, ISE (December 2010) (Chair).  
Zhang, Y., NCSU Doctor of Philosophy Program, ISE (December 2011) (Chair).  
Zhu, B., NCSU Doctor of Philosophy Program, ISE (December 2011) (Chair).  
Jeon, W., NCSU Doctor of Philosophy Program, ISE (December 2013) (Co-chair with Nam).  
Clamann, M., NCSU Doctor of Philosophy Program, ISE (January 2014) (Chair).  
Ma, W., NCSU Doctor of Philosophy Program, ISE (August 2014) (Chair).

**(Doctoral (in chronological order) – Committee Member)**

Lawrence, B., NCSU Doctor of Philosophy Program, IE (December 2002) (Member).  
Shaver, E., NCSU Doctor of Philosophy Program, Psychology (December 2003) (Member).  
Roddelpopf, T., URO, Doctor of Philosophy, Informatics and Electrical Engineering (November 2005) (Member (External))  
Shin, G., NCSU Doctor of Philosophy Program, IE (December 2005) (Member).  
Shu, Y., NCSU Doctor of Philosophy Program, IE (December 2006) (Member).  
Schroeder, R., URO, Doctor of Philosophy, Computer Science and Electrical Engineering (April 2007) (External Member)  
Jiang, Z., NCSU Doctor of Philosophy Program, IE (December 2007) (Member).  
Shu, Y., NCSU Doctor of Philosophy Program, ISE (December 2007) (Member).  
Xu, X., NCSU Doctor of Philosophy Program, ISE (May 2008) (Member).  
Bonto-Kane, M. NCSU Doctor of Philosophy Program, Computer Science (May 2010) (Member)  
Li, Y., NCSU Doctor of Philosophy Program, ISE (May 2014) (Member).

**(Doctoral – In Progress)**

Choi, I., NCSU Ph.D. Program, ISE (Passed preliminary exam – July 2016) (Member).  
Deng, Y., NCSU Ph.D. Program, ISE (Passed Ph.D. qualifying exam – August 2016) (Chair).  
Kaufmann, K., NCSU Ph.D. Program, Psychology (Passed preliminary exam - February 2010) (co-Chair with Mershon).  
Lau, M., NCSU Ph.D. Program, ISE (Passed Ph.D. qualifying exam – August 2016) (Chair).  
Liu, S., NCSU Ph.D. Program, ISE (Passed preliminary exam – August 2016) (Member).  
Perry, C., NCSU Ph.D. Program, ISE (Passed proposal defense – June 2005) (Chair).  
White, M., NCSU Ph.D. Program, ISE (Passed Ph.D. qualifying exam – August 2015) (Chair).

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Zahabi, M., NCSU Ph.D. Program, ISE (Passed preliminary exam – February 2016) (Chair).  
Zhang, W., NCSU Ph.D. Program, ISE (Passed Ph.D. qualifying exam – August 2014) (Chair).

### **Dissertations Directed (18).**

- Jennifer M. Riley**, “The Utility of Measures of Attention and Situation Awareness for Quantifying Telepresence.” (Defended - 5/01.) [**Initial position with SA Technologies.**]
- Melanie C. Wright**, “The Effect of Automation on Team Performance and Team Communication.” (Defended - 6/02.) [**Now with Trinity Health.**]
- Ruiqi Ma**, “The Effect of In-vehicle Automation and Reliability on Driver Situation Awareness and Trust.” (Defended - 12/06.) [**Initial position with Areva, Inc..**]
- Noa Segall**, “Design and Prototyping of a Cognitive Model-Based Decision Support Tool for Anesthesia Provider Management of Crisis Situations.” (Defended - 7/06.) [**Now with Duke University.**]
- Mohamed Sheik-Nainar**, “Situation Awareness and Gait Control in Mixed Cognitive and Physical Task Performance under Perturbations.” (Defended - 1/07.) [**Now with Synaptics.**]
- Rebecca Green**, “Design of Training for Supervisory Control of a High-throughput Biological Screening System.” (Defended - 5/08.) [**Initial position with SA Technologies.**]
- Sang-Hwan Kim**, “Examining and Explaining the Effects of Non-Iconic Conformal Features in Advanced Head-up Displays on Pilot Performance.” (Defended - 3/09.) [**Now with University of Michigan - Dearborn.**]
- Tao Zhang**, “Using Measures of Situation Awareness to Characterize Mental Models in Inductive Reasoning Tasks.” (Defended – 06/09.) [**Now with Purdue University.**]
- Yingjie Li**, “Development of a Haptic-based Rey-Osterrieth Complex Figure Testing and Training System with Computer Scoring and Force-feedback Rehabilitation Functions.” (Defended - 5/10.) [**Initial position with BobCAD.**]
- Xuezhong Wang**, “Application of Deterministic and Stochastic Components of the Ocular Dynamic System.” (Defended – 9/10.) [**Now with Design Interactive.**]
- Manida Swangnetr**, “Analysis of Patient-Robot Interaction Using Statistical and Signal Processing Methods.” (Defended – 9/10.) [**Now with Khon-Kaen University.**]
- Guk-Ho Gil**, “An Accessible Cognitive Modeling Tool for Evaluation of Human-Automation Interaction in the Systems Design Process.” (Defended – 11/10.) [**Now with Samsung.**]
- Yu (Zeno) Zhang**, “Visual and Cognitive Distraction Effects on Driver Behavior and an Approach to Distraction State Classification” (Defended – 9/11.) [**Now with DENSO.**]
- Biwen Zhu**, “Assessing the Effects of Feedback Type and Modality on Motor Skill Learning and Human Motivation” (Defended – 11/11.) [**Now with Monsanto.**]
- Wooram Jeon**, “Assessment of the Effectiveness of an Adaptive Virtual Reality-Based Simulation for Motor Skill Training” (Defended – 11/13.) [**Now with Samsung.**]
- Michael Clamann**, “Adaptive Haptic Forces in a Virtual Environment Improve Fine Motor Skill Training” (Defended – 1/14.) [**Now with Duke University.**]
- Wenqi (Janet) Ma**, “An Application of Quantitative Methods for Motor Ability Level Classification, Performance Prediction and Training Protocol Selection” (Defended - 5/14.) [**Now with Yanfeng Automotive.**]
- Carl Pankok**, “A Knowledge and Data-Driven Integrated Measure of Display Clutter with Attention Allocation Factors” (Defended - 11/15.) [**Now with Drexel University.**]

### **Theses Directed (26).**

- Carrie Shivers, “Developing Design Criteria for Pinch Grip Tasks.” (Co-chair with G. Mirka. Defended 4/01.) [**Initial position with Honda.**]

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- Heather L. Warren, "Auditory Cueing Effects on Human Performance with an Adaptive System." (Defended 5/02.)
- Ruiqi Ma, "Telepresence and Performance in an Immersive Virtual Environment and Sporting Task." (Defended 10/02.)
- Michael P. Clamann, "The Effects of Intermediate Levels of Invocation Authority on Adaptive Automation of Various Stages of Information Processing." (Co-chair with E. Wiebe. Defended 10/02.)
- Mohamed Sheik-Nainar. "The Effect of QoS adaptation on Internet-Based Teleoperation Involving Use of a Virtual Reality Interface." (Co-chair with M-Y. Chow. Defended 12/02.)
- Cindy Liebsch, "Simulation Input Modeling in the Absence of Data." (Co-chair with S. Roberts. Defended 8/03.)
- Christopher K. McClernon**, "Situation Awareness Effects of Adaptive Automation of Various Air Traffic Control Information Processing Functions." (Defended 11/03.) [**Now with U.S. Airforce.**]
- Yu Shu, "Effect of Wrist Splint Orthoses on Forearm Muscle Activity and Upper Extremity Kinematics." (Co-chair with G. Mirka. Defended 1/05.)
- Yingjie Li, "Modeling the Effects of Time Lag in a Virtual Reality (VR)-Based Haptic Surgical Simulator." (Co-chair with Y. Lee. Defended 2/07.)
- Lashanda Lee, "Assessing interactive system effectiveness with usability design heuristics and Markov models of behavior." (Defended - 12/07.)
- Sangeun Jin**, "The Effect of Driver Cognitive Abilities and Distraction on Situation Awareness and Performance under Hazard Conditions," (Defended 5/08.) [**Now with Samsung.**]
- Yu Zhang, "An Empirical Assessment of Driver Motivation and Emotional State, and Driving Conditions on Perceived Safety Margins." (Defended 6/09.)
- Biwen Zhu, "Design of Etiquette for Patient Robot Interaction in a Medicine Delivery Task." (Defended 6/09.)
- Matt Diering, "Ergonomic Evaluation of Scaffolding Task Interventions for Power Plant Maintenance." (Defended 12/09.) [**Initial position with 3M.**]
- James Naylor**, "The Influence of Dynamics, Flight Domain and Individual Flight Training & Experience on Pilot Perception of Clutter in Aviation Displays." (Defended – 5/10.) [**Now with U.S. Army**]
- Shruti Gangakhedkar**, "The Effects of Scaffolding Equipment Interventions on Muscle Activation and Task Performance in Frame Assembly and Disassembly Tasks." (Defended – 12/10.) [**Now with Boeing.**]
- Chad Uy, "The Effect of Handle Design on the Kinetics and Kinematics of a Pouring Task." (Defended – 8/11.)
- Kinley Taylor**, "Identifying and Modeling Perceptions of Risk Factors in Hand Hygiene during Healthcare Operations." (Defended – 10/11.) [**Now with UNC Healthcare**]
- Meghan Rogers**, "Identifying and Evaluating Risk Factors for Musculoskeletal Disorders in Equine Veterinary Work." (Defended – 12/11.) [**Now with Delta Airlines.**]
- Sameerajan Suresh, "Effects of Laptop Touchpad Texturing on User Performance and Usability Assessments." (Defended – 12/11.)
- Will Heath**, "An Assessment of Perceived Risk of Extension Ladder Set-Up Angles and Safety Label Effectiveness." (Defended – 6/12.) [**Now with Volvo Trucks.**]
- Carl Pankok, "Mitigating Biases in Time-To-Contact Judgments with General Aviation Cockpit Displays of Traffic Information." (Defended – 5/13.)
- Brendan Corbett, "The effects of haptic feedback and visual distraction on pointing task performance in 3D haptic virtual environments." (Defended – 9/13.)

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Wenjuan Zhang, “Validation of a Virtual-Reality Based Psychomotor Test Using Physiological and Workload Measures.” (Defended – 6/15).

Mei Lau, “Driving Performance, Adaptation and Cognitive Workload Costs of Logo Sign Panel Detection as Mediated by Driver Age.” (Defended – 6/16.)

**Olivia Morejon**, “Ergonomic Risk Assessment of Gas Delivery Operations and Job Readiness Recommendations.” (Defended – 6/16.) [**Now with Maine Health.**]

#### **Post-doctoral Advising (4).**

Manida Swangnetr, Ph.D. (North Carolina State University, NC). Supported through University of Rostock (Germany), Center for Life Science Automation (2013-2014).

Guk-Ho Gil, Ph.D. (North Carolina State University, NC). Supported through NCSU College of Engineering and Department of Industrial & Systems Engineering (2010-2012).

**Yulan Liang**, Ph.D. (University of Iowa, IA). Supported through NCSU College of Engineering and Department of Industrial & Systems Engineering (2009-2010). **Currently working as researcher at Liberty Mutual Research Center**, Hopkinton, MA.

**Prithima Mosaly**, Ph.D. (University of Wisconsin-Milwaukee, WI). Supported through NCSU College of Engineering and Department of Industrial & Systems Engineering (2007-2009). **Currently working as a researcher at UNC Healthcare**, Chapel Hill, NC.

#### **PUBLICATIONS (last 3 years in all categories; please see Appendix for all others):**

##### **Refereed Journal Articles (selected among 89 in print or in press) [position at time of publication]**

1. Zahabi, M., Pankok, C., **Kaber**, D. B., Machado, P., Lau, M-Y., Hummer, J. & Rasdorf, W. (accepted). On-road visual sign salience, driver attention allocation and 1 target detection accuracy. To appear in *Transportation Research Record* (Journal of the Transportation Research Board). [NCSU – Distinguished Prof.]
2. Pankok, C., Zahabi, M., Zhang, W., Choi, I., Liao, Y-F., Nam, C-S. & **Kaber**, D. B. (2017). The effects of interruption similarity and complexity on performance in a visual-manual mock assembly operation. *Applied Ergonomics*, 59(A), 94-103. DOI: 10.1016/j.apergo.2016.08.022. [NCSU – Distinguished Prof.]
3. White, M. M., Morejon, O. N., Liu, S. J., Lau, M. Y., Nam, C. S., & **Kaber**, D. B. (2017). Muscle loading in exoskeletal orthotic use in an activity of daily living. *Applied Ergonomics*, 58, 190-197. [NCSU – Distinguished Prof.]
4. **Kaber**, D. B., Jin, S., Zahabi, M. & Pankok, C. J. (2016). The effect of driver cognitive abilities and distractions in situation awareness and performance under hazard conditions. *Transportation Research Part F: Traffic Psychology and Behaviour*, 42(1), 177-194. [NCSU – Distinguished Prof.]
5. Zhang, Y. & **Kaber**, D. B. (2016). Evaluation of strategies for integrated classification of visual-manual and cognitive distractions in driving. *Human Factors*, 58(6), 944-58. [NCSU – Distinguished Prof.]
6. Zhang, W., Ma, W., Brandao, M., **Kaber**, D. B., Bloomfield, P. & Swangnetr, M. (2016). Biometric validation of a virtual reality-based psychomotor test for motor skill training. *Assistive Technology*, 24, 1-9. [NCSU – Distinguished Prof.]
7. Pankok, C., **Kaber**, D. B., Rasdorf, W. & Hummer, J. (2015). Effects of Guide and Logo Signs on Freeway Driving Behavior. *Transportation Research Record* (Journal of the Transportation Research Board), No. 2518, pp. 73-78. DOI: 10.3141/2518-10. [NCSU – Distinguished Prof.]
8. Pankok, C., Zahabi, M., Zhang, W. & **Kaber**, D. B. (2015). The effect of physical workload and modality of information presentation on cognitive inhibition in high-fit young males. To appear in

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- IIE Transactions on Occupational Ergonomics & Human Factors*, 4(2-3). DOI: 10.1080/21577323.2015.1066278. [NCSU – Distinguished Prof.]
9. Zahabi, M., **Kaber**, D. B. & Swangnetr, M. (2015). Usability and safety in electronic medical records: A review of literature and guideline formulation. *Human Factors*, 57(5): 805-34. DOI: 10.1177/0018720815576827. [NCSU – Prof.]
  10. **Kaber**, D. B., Pankok, C., Corbett, B., Ma, W., Hummer, J. & Rasdorf, W. (2015). Driver behavior in use of guide and logo signs under distraction and complex roadway conditions. *Applied Ergonomics*, 47, 99-106. [NCSU – Prof.]
  11. Sheiknainar, M., **Kaber**, D. B., Hsiang, S., Pankok, C. & Zahabi, M. (2015). Influence of cognitive and perceptual processing on multitask performance with locomotion. *Theo. Issues in Ergo. Sci.*, 16(3), 273-298. DOI: 10.1080/1463922X.2014.1001005. [NCSU – Prof.]
  12. Kim, S-H. & **Kaber**, D. B. (2014). Examining the effects of conformal terrain features in advanced head-up displays on flight performance and pilot situation awareness. *Human Factors & Ergonomics in Manufacturing and Service Industries*, 24(4), 386-402. DOI: 10.1002/hfm.20501. [NCSU – Prof.]
  13. Pankok, C. & **Kaber**, D. B. (2014). Design of cockpit displays of traffic information reduces pilot bias in time-to-contact judgments. *Aviation, Space and Environmental Medicine*, 85(5), 597-604, DOI: 10.3357/ASEM.3810.2014. [NCSU – Prof.]
  14. Swangnetr, M., **Kaber**, D. B., Phimphasak, C., Namkorn, P., Saenlee, K., Zhu, B. & Puntumetakul, R. (2014). The influence of rice plow handle design and whole body posture on grip force and upper extremity muscle activation. *Ergonomics*, 57(10), 1526-35. DOI: 10.1080/00140139.2014.934301. [NCSU – Prof.]
  15. Swangnetr, M., **Kaber**, D. B., Gross, M. T. & Puntumetakul, R. (2014). Ergonomics-related risk identification and pain analysis for farmers involved in rice cultivation. *Journal of Work*, 49(1), 63-71, DOI: 10.3233/WOR-131768. [NCSU – Prof.]
  16. Suresh, S., **Kaber**, D. B. & Clamann, M. (2014). Effects of laptop touchpad texturing on user performance. *Int. J. of Human-Computer Interaction*, 30:6, 470-479, DOI: 10.1080/10447318.2014.888502. [NCSU – Prof.]
  17. **Kaber**, D. B., Naylor, J. T., Gil, G-H, Pankok, C. & Kim, S-H (2014). The influence of flight domain and cockpit display dynamics on perceptions of clutter. *Journal of Aerospace Information Systems*, 10(12), 550-559, DOI: 10.2514/1.1010036. [NCSU – Prof.]

#### **Journal Article Manuscripts (12 in review or revision).**

1. Zahabi, M., Zhang, W., Pankok, C., Lau, M-Y., Shirley, J. & **Kaber**, D. B. (in review). Effect of physical workload and modality of information presentation on pattern recognition and navigation task performance by high-fit young males. Submitted to *Ergonomics* (12/31/16). [NCSU – Distinguished Prof.]
2. **Kaber**, D. B. & Zahabi, M. (in review). Enhanced hazard analysis and risk assessment for human in-the-loop systems. Submitted to *Human Factors* (11/30/16). [NCSU – Distinguished Prof.]
3. Zahabi, M., Machado, P., Pankok, C., Lau, M-Y., Liao, Y-F., Hummer, J., Rasdorf, W. & **Kaber**, D. B. (in review). The role of driver age in performance and attention allocation effects of roadway sign count, format and familiarity. Submitted to *Applied Ergonomics* (11/22/16). [NCSU – Distinguished Prof.]
4. **Kaber**, D. B. (in revision). Issues in human-automation interaction modeling: presumptive aspects of models of types and levels of automation. Submitted to *Journal of Cognitive Engineering & Decision Making* (Decision: 11/2/16). [NCSU – Distinguished Prof.]
5. **Kaber**, D. B. (in review). A conceptual framework of autonomy and the relation to automation. Submitted to *Theoretical Issues in Ergonomics Science* (10/31/16). [NCSU – Distinguished Prof.]



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6. White, M., Zhang, W., Winslow, A., Zahabi, M., Zhang, F., Huang, H. & Kaber, D. B. (in review). Usability comparison of conventional direct control vs. Pattern recognition control of an upper-limb prosthesis. Submitted to *IEEE Transactions on Human-Machine Systems* (9/19/16). [NCSU – Distinguished Prof.]
  7. Pankok, C. & Kaber, D. B. (in revision). An integrated measure of display clutter based on feature content, user knowledge, and attention allocation factors. Submitted to *Human Factors* (Decision: 10/21/16). [NCSU – Distinguished Prof.]
  8. Pankok, C. & Kaber, D. B. (in review). The effect of navigation display clutter on performance and attention allocation in presentation- and simulator-based driving experiments. Submitted to *Transportation Research Part F: Traffic Psychology and Behavior* (8/18/16). [NCSU – Distinguished Prof.]
  9. Zahabi, M., Machado, P., Pankok, C., Lau, M-Y., Liao, Y-F, Hummer, J., Rasdorf, W. & Kaber, D. B. (in review). Driver performance and attention allocation in use of logo signs on freeway exit ramps. Submitted to *Applied Ergonomics* (8/14/16). [NCSU – Distinguished Prof.]
  10. Puntumethakul, R., Namwongsa, S., Thotsathit, N., Kanjanarach, T., Kaber, D. B. & Boucaut, R. (in revision). Incidence and risk factors of neck and shoulder pain among sewing machine operators. Submitted to *Occupational Health* (12/18/15). [NCSU – Distinguished Prof.]
  11. Clamann, M. & Kaber, D. B. (in revision). Comparison of error amplification and virtual fixtures for fine motor skill training. Submitted to *IEEE Transactions on Haptics* (10/18/15). [NCSU – Distinguished Prof.]
  12. Kaber, D. B., Green, R. S. & Swangnetr, M. (in revision). Cognitive task analyses for life science automation training program design. Submitted to *Journal of Cognitive Engineering & Decision Making* (Decision: 7/15/15). [NCSU – Prof.]

### **Books (3).**

1. Kaber, D. B. (Ed.) (2013). *Human Performance in Teleoperation and Beyond* (in Human Factors Reviews, Vol. 9). Santa Monica, CA: HFES. [NCSU – Prof.]
2. Kaber, D. B. and Boy, G. (Eds.) (2010). *Advances in Cognitive Ergonomics* (in *Proceedings of the 3<sup>rd</sup> Applied Human Factors & Ergonomics Conference*). Boca Raton, FL: Taylor & Francis CRC Press. [NCSU – Prof.]
3. Kaber, D. B. and Endsley, M. R. (Eds.) (2000). *Human Performance, Situation Awareness and Automation: User-centered Design for the New Millennium* (Proceedings of the Fourth Automation Technology and Human Performance Conference and the Third Situation Awareness in Complex Systems Conference) (363 pp.). Madison, WI: OmniPress. [MSU/NCSU – Asst. Prof.]

### **Book Chapters (14).**

1. Swangnetr, M., Kaber, D. B., Zhu, B & Zhang, T. (in press). Improving patient-robot interaction in healthcare: Service robot feature effects on patient acceptance and emotional responses (Chap. 3, pp. 61-106). In Neustein, A. (Eds.). *Speech and Automata in Healthcare*. Berlin: De Gruyter. [NCSU – Prof.]
2. Kaber, D. B. (2013). Adaptive automation. In A. Kirlik & J. D. Lee (Eds.), *Handbook of Cognitive Engineering* (Chap. 40, pp. 594-609). New York: Oxford Press. [NCSU – Prof.]
3. Kaber, D. B. & Zhang, T. (2011). Virtual environments for human factors studies of mobility and haptic task performance. In P. DeLucia (Ed.), *Reviews of Human Factors & Ergonomics* (Vol. 7, pp. 323-366). Santa Monica, CA: HFES. [NCSU – Prof.]
4. Kaber, D. B., Wang, X. & Kim, S-H. (2011). Computational cognitive modeling of human-robot interaction using a GOMS methodology. In X. Wang (ed.), *Mixed Reality and Human Robot Interaction* (pp. 53-75). Dordrecht, The Netherlands: Springer. [NCSU – Prof.]

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5. Zhang, T., Zhu, B. & **Kaber**, D.B. (2010). Anthropomorphism in Robots and Human Etiquette Expectations for Interaction. In C. Hayes & C. Miller (eds.), *Human-Computer Etiquette* (pp. 231-259). London: Taylor & Francis. [NCSU – Prof.]
  6. Riley, J. M., **Kaber**, D. B., Sheik-Nainar, M. A. & Endsley, M. R. (2008). Enhancing situation awareness training in virtual reality through measurement and feedback. In D. Schmorow, J. Cohn & D. Nicholson (eds.), *The PSI Handbook of Virtual Environments for Training and Education: Developments for the Military and Beyond* (Chap. 16). London: Greenwood Publishing Group. [NCSU – Prof.]
  7. Jones, D. G. and **Kaber**, D. B. (2005). Situation awareness measurement and the situation awareness global assessment technique. In N. Stanton (Ed.), *Handbook of Human Factors Methods* (Chap. 42). London: Taylor & Francis. [NCSU – Assoc. Prof.]
  8. **Kaber**, D. B. & Wright, M. C. (2003). Adaptive automation of stages of information processing and the interplay with operator functional states. In G. R. J. Hockey, A. W. K. Gaillard & O. Burov (Eds.), *NATO Advanced Research Workshop - Operator Functional State: The Assessment and Prediction of Human Performance Degradation in Complex Tasks* (pp. 204-223). Amsterdam: IOS Press, NATO Science Series. [NCSU – Assoc. Prof.]
  9. **Kaber**, D. B., Draper, J. V. and Usher, J. M. (2002). Chapter 18: Influence of Individual Differences on Virtual Reality Application Design for Individual and Collaborative Virtual Environments. In K. M. Stanney (Ed.), *Handbook of virtual environments: Design, implementation and applications* (pp. 379-402). Mahwah, NJ: Lawrence Erlbaum & Assoc. [NCSU – Assoc. Prof.]
  10. **Kaber**, D. B. and Riley, J. R. (2001). Virtual reality for scientific data visualization. In D. Harris (Ed.), *Engineering Psychology and Cognitive Ergonomics Volume Six: Industrial Ergonomic, HCI, and Applied Cognitive Psychology* (Chap. 19, pp. 151-158). Aldershot, UK: Ashgate. [NCSU – Asst. Prof.]
  11. **Kaber**, D. B. and Riley, J. R. (2001). Task difficulty and user motivation effects on performance and telepresence in a teleoperation task. In D. Harris (Ed.), *Engineering Psychology and Cognitive Ergonomics Volume Six: Industrial Ergonomic, HCI, and Applied Cognitive Psychology* (Chap. 18, pp. 143-150). Aldershot, UK: Ashgate. [NCSU – Asst. Prof.]
  12. **Kaber**, D. B. and Draper, J. V. (2001). Human-machine System Design and Information Processing. In K. Zandin (Ed.), *Maynard's Industrial Engineering Handbook* (5<sup>th</sup> edn.) (Chap. 6.7, pp. 6.111-6.137). Pittsburgh, PA: Maynard. [NCSU – Asst. Prof.]
  13. **Kaber**, D. B. and Draper, J. V. (1999). Cognitive Engineering. In A. Mital, M.M. Ayoub, S. Kumar, M-J. Wang and K. Landau (Eds.), *Industrial and Occupational Ergonomics: Users' Encyclopedia (Encyclopedia of Ergonomics)*, ISBN 0-9654506-0-0. [MSU – Asst. Prof.]
  14. Draper, J. V. and **Kaber**, D. B. (1999). Human-Robot Interaction. In A. Mital, M.M. Ayoub, S. Kumar, M-J. Wang and K. Landau (Eds.), *Industrial and Occupational Ergonomics: Users' Encyclopedia (Encyclopedia of Ergonomics)*, ISBN 0-9654506-0-0. [MSU – Asst. Prof.]

### **Book Reviews (2).**

1. **Kaber**, D.B. (2006). Book review: An Introduction to Human Factors Engineering, by C.D. Wickens, J.D. Lee, Y.D. Liu and S. Gordon-Becker. *Theo. Issues in Ergo. Sci.*, 9(3), 269-271. [NCSU – Assoc. Prof.]
2. **Kaber**, D. B. (1997). Book review: Automation and Human Performance: Theory and Applications, by R. Parasuraman and M. Mouloua. *International Journal of Cognitive Ergonomics*, 1(1), 101-102. [MSU – Asst. Prof.]

### **Refereed Conference Proceedings (selected from 79 in print; see Appendix for 2013 and later).**

1. Ma, W. Q., & **Kaber**, D. B. (2016). An application of statistical modeling for classification of

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- human motor skill level. In *Proceedings of the 2016 International Conference on Industrial Engineering, Management Science and Applications (ICIMSA)*. DOI: 10.1109/ICIMSA.2016.7503990. Jeju, Korea (May 23-26): IEEE. [NCSU – Distinguished Prof.]
2. **Kaber**, D. B., Swangnetr, M. & White, M. (2016). A Cognitive Workload-Based Methodology for Human-Robot Interaction Design in Human Accessible and Tolerant Environments. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*. (Paper No. 1442). Norcross, GA: IIE. [NCSU – Distinguished Prof.]
  3. White, M. M., Morejon, O., Liu, S., Lau, M., Nam, C-S & **Kaber**, D. B. (2016). Biomechanical and Muscle Loading Implications of Exoskeletal Orthotic Use in Activities of Daily Living. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*. (Paper No. 268). Norcross, GA: IIE. [NCSU – Distinguished Prof.]
  4. Zahabi, M., White, M. M., Morejon, O., Zhang, W., Swangnetr, M. & **Kaber**, D. B. (2016). A Usability Evaluation of Electronic Medical Record Interface Design. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*. (Paper No. 243). Norcross, GA: IIE. [NCSU – Distinguished Prof.]
  5. Zahabi, M., Zhang, W., Pankok, C., Choi, I., Liao, Y-F, Nam, C-S & **Kaber**, D. B. (2016). The Effects of Interruption Similarity and Complexity on Assembly Operation Performance. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*. (Paper No. 203). Norcross, GA: IIE. [NCSU – Distinguished Prof.]
  6. **Kaber**, D. B. & Zahabi, M. (2016). An Enhanced Hazard Analysis and Risk Assessment Method. In *Proceedings of the 2016 Industrial and Systems Engineering Research Conference*. (Paper No. 964). Norcross, GA: IIE. [NCSU – Distinguished Prof.]
  7. Ma, W., Zhang, W., Brandao, M., **Kaber**, D. B., Swangnetr, M. & Clamann, M. (2015). A Biometric Evaluation of a Computerized Psychomotor Test for Motor Skill Training. In *Proc. of the IEA2015 – 19th World Congress on Ergonomics*. Melbourne, AUS (August 9-14): Elsevier. [NCSU – Distinguished Prof.]
  8. Pankok, C. J., Zahabi, M., Zhang, W. & **Kaber**, D. B. (2015). Interaction of Physical Workload and Information Presentation Modality on Cognitive Inhibition Performance. In *Proc. of the IEA2015 – 19th World Congress on Ergonomics*. Melbourne, AUS (August 9-14): Elsevier. [NCSU – Distinguished Prof.]
  9. Qin, X., Tupler, L. A., Ma, W., **Kaber**, D. B., Clamann, M., Hong, J. Y. & Lee, Y-S. (2015). Computer-based haptic control assessment of 3-D manipulation and drawing skill with analytical application of machining metrics. In *Proc. of the IEA2015 – 19th World Congress on Ergonomics*. Melbourne, AUS (August 9-14): Elsevier. [NCSU – Distinguished Prof.]
  10. Sheiknainar, M., Pankok, C. J., Zahabi, M. & **Kaber**, D. B. (2015). Effect of Locomotion Environment Familiarity and Cognitive Loading on Gait Control and Situation Awareness in Multitasking. In *Proc. of the IEA2015 – 19th World Congress on Ergonomics*. Melbourne, AUS (August 9-14): Elsevier. [NCSU – Distinguished Prof.]
  11. Swangnetr, M. & **Kaber**, D. B. (2015). Integration of Cognitive Task Analysis and Predetermined Time System for Laboratory Task Time Estimation. In *Proc. of the IEA2015 – 19th World Congress on Ergonomics*. Melbourne, AUS (August 9-14): Elsevier. [NCSU – Distinguished Prof.]
  12. Zahabi, M., **Kaber**, D. B. & Swangnetr, M. (2015). A Constrained Review of Safety Analyses of Electronic Medical Record Use and Recommendations for Enhanced Design. In *Proc. of the IEA2015 – 19th World Congress on Ergonomics*. Melbourne, AUS (August 9-14): Elsevier. [NCSU – Distinguished Prof.]
  13. Pankok, C., **Kaber**, D. B. & Zhang, Y. (2015). Driver behavior and performance effects of on-roadway signage design: An analysis of two simulator studies. In *Proceedings of the 2015*

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- ISERC Conference* (Paper No. 758; CD-ROM). Norcross, GA: IIE. [NCSU – Prof.]
14. Swangnetr, M., **Kaber**, D. B., Vorberg, E., Stoll, N. & Thurow, K. (in press). Robot feature design for human task assistance in life science processes. To appear in *Proceedings of the 2015 ISERC Conference* (Paper No. 194; CD-ROM). Norcross, GA: IIE. [NCSU – Prof.]
  15. Pankok, C., **Kaber**, D. B., Hummer, J. E. & Rasdorf, W. J. (2015). Driver attention and performance effects of guide and logo signs under freeway driving. In proceedings of the *Transportation Research Board 94<sup>th</sup> Annual Meeting* (Paper No. 15-1046). Washington, D.C.: Transportation Research Board. [NCSU – Prof.]
  16. Clamann, M., Ma, W., Jeon, W. & **Kaber**, D. B. (2014). Comparison of haptic control design for virtual-reality based assembly task training. In *Proceedings of the 2014 ISERC Conference* (Paper No. 561; CD-ROM). Norcross, GA: IIE. [NCSU – Prof.]

**Other Proceedings (selected from 59 in print or in press; see Appendix for 2013 and later).**

1. Lau, M. & **Kaber**, D. B. (accepted). Driving performance, adaptation, and cognitive workload costs of logo sign panel detection as mediated by driver age. To appear in *Proceedings of the 2017 Applied Human Factors & Ergonomics Conference*. Los Angeles, CA (July 17-21): CRC Press.
2. Ma, W., **Kaber**, D. B., Ma, W., Gil, G-H, Clamann, M., Jeon, W. & Zhu, B. (accepted). A comparison of virtual reality-based psychomotor task training with visual and haptic aiding. To appear in *Proceedings of the 2017 Applied Human Factors & Ergonomics Conference*. Los Angeles, CA (July 17-21): CRC Press.
3. Swangnetr, M., Karukunchit, U., Juntaracena, K., Puntumetakul, R., Gross, M. & **Kaber**, D. B. (2016). Relating Musculoskeletal and Disability Conditions of Occupation-Induced Musculoskeletal Disorders to Non-occupational Congenital Disabilities. In *Proceedings of the 2016 Applied Human Factors & Ergonomics Conference*. Orlando, FL (July 27-31): CRC Press.
4. Zhang, W., Swangnetr, M., Bloomfield, P. & **Kaber**, D. B. (2016). Electromyography (EMG) as a Tool for Computerized Psychomotor Test Validation. In *Proceedings of the 2016 Applied Human Factors & Ergonomics Conference*. Orlando, FL (July 27-31): CRC Press.
5. Swangnetr, M., **Kaber**, D. B., Vorberg, E., Fleischer, H. & Thurow, K. (2014). Workload assessment for manual and automated processes in life sciences. In *Proceedings of the 2014 Applied Human Factors & Ergonomics Conference* (Paper No. 1309). Boca Raton, FL: Taylor & Francis CRC Press. [NCSU – Prof.]
6. Swangnetr, M. & **Kaber**, D. B., (2014). Analysis of Novice and Experienced Rice Farmer Grip Force and Arm Muscle Activity in a Plowing Task. In *Proceedings of the 2014 Applied Human Factors & Ergonomics Conference* (Paper No. 24). Boca Raton, FL: Taylor & Francis CRC Press. [NCSU – Prof.]
7. Swangnetr, M., **Kaber**, D. B., Vorberg, E., Fleischer, H. & Thurow, K. (2014). Identifying automation opportunities in a life science process through operator task modeling and workload assessment. In *Proceedings of the 2014 Applied Human Factors & Ergonomics Conference* (Paper No. 40). Boca Raton, FL: Taylor & Francis CRC Press. [NCSU – Prof.]

**Technical Reports (selected from 63 reports to Federal and state agencies and industry).**

1. **Kaber**, D. B. & Prinzel, L. J. (2006). *Adaptive and adaptable automation design: A critical review of the literature and recommendations for future research*. (Tech. Memorandum.: NASA/TM-2006-214504). Washington, DC: NASA.
2. **Kaber**, D. B., Prinzel, L. J., Wright, M. C. & Clamann, M. P. (2002). *Workload-matched adaptive automation support of air traffic controller information processing stages* (Tech. Pub.: NASA/TP-2002-211932). Washington, DC: NASA.

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## TECHNOLOGICAL INNOVATION:

### Patent.

Kaber, D. B. & Diering, M. (December 2009). *Adjustable Lever-Action Couplers* (United States Provisional Patent Application). Pittsboro, NC: Lee Law, PLLC

## SCHOLARLY AND PROFESSIONAL HONORS:

- 2015 Elected Fellow of the Institute of Industrial Engineers.
- 2013 Recipient of *Certificate of Appreciation for Service as HFES Division of Internal Affairs Chair*. (Presented by HFES.)
- 2013 Recipient of *The C.A. Anderson Award for Outstanding Faculty for 2013*. (Presented by the NC State Department of Industrial & Systems Engineering for undergraduate teaching and advising.)
- 2012 Recipient of *Certificate of Appreciation for Service as HFES Council of Technical Groups Chair*. (Presented by HFES.)
- 2011 Elected Fellow of the Human Factors & Ergonomics Society.
- 2008 Recipient of *Certificate of Appreciation for Service as HFES Carolina Chapter President 2008* (Presented by HFES.)
- 2006 Recipient of *The Alcoa Foundation Engineering Research Achievement Award for 2006*. (Presented by the NC State College of Engineering.)
- 2006 Recipient of *The C.A. Anderson Award for Outstanding Faculty for 2006*. (Presented by the NC State Department of Industrial & Systems Engineering for undergraduate teaching and advising.)
- 2005 Recipient of the *Sigma Xi (Scientific Research Society) Research Award* (NC State University Chapter) (2005).
- 2005 Invited plenary speaker at CAES (*Computer-Aided Ergonomics & Safety*), "Human-centered Design for Human-robot Interaction". Kosice, Slovak Republic (May 2005).
- 2004 Keynote presenter at the *2<sup>nd</sup> Life Sciences Automation Symposium*, "Approaches to Advanced Human-Machine Interfaces for Life Sciences Automation," Rostock-Warnemünde, Germany (September 2004).
- 2004 Recipient of *The Outstanding Past Conference Chair Award for organization of the 2000 Human Performance, Situation Awareness and Automation Conference* (Awarded by 2004 HPSAA Scientific Committee, Daytona Beach, Florida.)
- 2002 Full member of Sigma Xi (2002-2016).
- 1999 Recipient of the Human Factors and Ergonomics Society, The Jerome H. Ely Human Factors *Article Award* for, "Telepresence," the most outstanding article in *Human Factors* during 1998 (September, 1999).
- 1998 Recipient of NSF Faculty Early Career Development Award (May 1998).
- 1998 Recipient of MSU Office of Research, 1998 Research Initiation Award.
- 1997 Associate of Sigma Xi (1997-2002).
- 1996 Recipient of MSU Office of Research 1996-1997 Research Facilities Award.
- 1995 Affiliate of Sigma Xi (Scientific Research Society) (1995-1997).
- 1995 Banasik IE Graduate Scholar at TTU, Department of Industrial Engineering (1995-1996).
- 1994 Recipient of Air Force Office of Scientific Research Training in Aviation Human Factors & Ergonomics Fellowship (August 1994 - August 1996).
- 1992 Member of Alpha Pi Mu (Industrial Engineering Honor Society) (November 1992-Present).

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## PROFESSIONAL ACTIVITIES:

### Society Memberships and Officer Positions (in alphabetical order by organization name).

- American Society for Engineering Education, Member (1998-present).  
Association for the Advancement of Artificial Intelligence (2010-2011).  
Human Factors and Ergonomics Society (HFES), Member (1996-2011), Fellow (2011-present).  
Internal Affairs Division Chair (2012-2013).  
Council of Technical Groups (COTG) Chair (2011-2012).  
Carolina Chapter of HFES, Director (2009-2011, 2013-2015).  
Carolina Chapter of HFES, President (2008-2009).  
Carolina Chapter of HFES, Member (2000-present).  
Cognitive Engineering and Decision-Making Technical Group (CEDM-TG) Chair (2009-2011).  
CEDM-TG Conference Program-Chair (2003-2005).  
CEDM-TG Conference Program-Chair Elect (2001-2003).  
CEDM-TG Webmaster (1995-2001).  
Institute of Industrial Engineers (IIE), Member (1988-2007), Senior Member (2007-2015), Fellow (2015-present).  
Safety, Human Factors & Ergonomics Track Co-chair for *2016 Industrial & Systems Engineering Research Conference*.  
Human Factors & Ergonomics Track Chair for *2015 Industrial & Systems Engineering Research Conference*.  
The Ergonomics Society, Member (1996-2009).  
The Institute for Ergonomics & Human Factors (2010-2016).  
The Institute of Electrical and Electronics Engineers (IEEE), Member (1999-2014), Senior Member (2014-present).

### Editorial Duties (administrative responsibility in bold).

- 2016-present Editor-in-Chief, *IEEE Transactions on Human-machine Systems*** (January 2016-Present; **Responsible for decisions on all manuscript submissions (476 in 2016) and assigning and managing activities of 63 Associate Editors, 1 Journal Administrator and 1 Production Editor.**)
- 2014-present Associate Editor, *Theoretical Issues in Ergonomics Science* (August 2014-Present)
- 2014-2016 Associate Editor, *IIE Transactions on Occupational Ergonomics & Human Factors* (January 2014-November 2016) – Also served as editorial liaison between Journal and IE Magazine for publication of research articles summaries in issues of magazine.
- 2014 Member of Editorial Board for *Theoretical Issues in Ergonomics Science* (July 2014-August 2014; promoted to Assoc. Editor)
- 2012-2015 Associate Editor, *IEEE Transactions on Human-Machine Systems* (October 2012-2015).
- 2013 Editor of Volume 9 of *Human Factors Reviews*, “Human Performance in Teleoperations and Beyond,” Santa Monica, CA: HFES (2013).
- 2011-present Member of Editorial Board for *Journal of Cognitive Engineering & Decision Making* (April 2011-Present)
- 2011 Editor of Special Issue of *Human Factors & Ergonomics in Manufacturing and Service Industries* on "Cognitive Engineering for Next Generation Transportation Systems," New York: Wiley, 2011.
- 2010-present Member of Editorial Board for *IIE Transactions on Occupational Ergonomics & Human Factors* (July 2010-January 2014; November 2016-present)
- 2010 Editor (with G. Boy) of *Advances in Cognitive Ergonomics* (in *Proceedings of the 3<sup>rd</sup> Applied Human Factors & Ergonomics Conference*), Boca Raton, FL: Taylor & Francis

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- CRC Press, 2010.
- 2008-2012 Associate Editor, *IEEE Transactions on Systems, Man and Cybernetics* (Part A: "Systems and Humans") (October 2008-October 2012).
- 2006-2013 Member of Editorial Board for *Journal of Human Factors* (January 2006-2013).
- 2003-2010 Member of Editorial Board for *International Journal of Industrial Ergonomics* (August 2003-December 2010).
- 2003-2011 Track Editor, *Journal of Cognitive Engineering & Decision Making* ("Studies in Simulations and Synthetic Environments") (October 2003-April 2011).
- 2001-present Member of Editorial Board for *Human Factors and Ergonomics in Manufacturing and Service Industries* (2001-Present).
- 2001-2008 Book Review and Information Editor for *Theoretical Issues in Ergonomics Science* (London: Taylor & Francis) (July 2001-June 2008).
- 2000 Co-Editor of Special Issue of *Human Factors and Ergonomics in Manufacturing* on "Cognitive Engineering in Automated Systems Design," New York: Wiley, 2000, pp. 363-490.
- 2000 Co-Editor of *Human Performance, Situation Awareness and Automation: User-centered Design for the New Millennium* (Proceedings of the Fourth Automation Technology and Human Performance Conference and the Third Situation Awareness in Complex Systems Conference), Madison, WI: OmniPress, 2000, 363 pp.

**Reviewer of Grants for Federal and State Agencies and Professional Organizations (in reverse chronological order of latest service).**

- Proposal Reviewer for NSF Panels (1996, 1998, 1999 (2), 2000-2003, 2005-2006, 2009, 2012, 2016)
- Proposal Reviewer for NC Occupational Safety and Health Education and Research Center (OSHERC; Fall 2010, 2014, 2015)
- Proposal Reviewer for NCSU-UNC Rehabilitation Engineering Center, Seed Grant Program (Fall 2012, 2013, 2014)
- Student Proposal Reviewer for Sigma Xi, Grants-in-Aid of Research Program, Engineering proposals (2005, 2006)
- Proposal Reviewer for Louisiana Board of Regents, Experimental Program to Stimulate Competitive Research (EPSCoR) (2003, 2004).
- Proposal Reviewer for South Carolina, Department of Defense, DEPSCoR (2002, 2003).

**Referee for Journals and Books (in order of journal name).**

- Reviewer for *Applied Ergonomics* (2006, 2008, 2010, 2014, 2015)
- Reviewer for *Ergonomics* (2003, 2005, 2014).
- Reviewer for *Fuzzy Optimization and Decision Making: A Journal of Modeling and Computation Under Uncertainty* (2002).
- Reviewer for *Human Factors* (2000-2006, 2014, 2015).
- Reviewer for *IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans* (2003-2012).
- Reviewer *IEEE Transactions on Systems, Man and Cybernetics*, Special Issue on Human-robot Interaction (2004).
- Reviewer for *IEEE Transactions on Systems, Man and Cybernetics*, Special Issue on Model-Based Cognitive Engineering in Complex Systems (2000).
- Reviewer for *IEEE Transactions on Nuclear Science* (2002-2004).
- Reviewer for *IIE Transactions* (1996).
- Reviewer for *International Journal of Cognitive Ergonomics* (2000-2001).

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Reviewer for *International Journal of Engineering Design and Automation* (1997-1999).  
Reviewer for *International Journal of Industrial Ergonomics* (1998-1999, 2001, 2003).  
Reviewer for *International Journal of Human-Computer Studies* (2005-2006).  
Reviewer for *International Journal of Human Factors & Ergonomics in Manufacturing* (1999-2001).  
Reviewer for *Journal of Computers and Industrial Engineering* (2002)  
Reviewer for *Maynard's Industrial Engineering Handbook*, Chapter Submissions to Editor (1998).  
Reviewer for *Reviews on Human Factors & Ergonomics (Vol. 6)*, Chapter Submission to Editor (2009).  
Reviewer for *Theoretical Issues in Ergonomics Science* (2002-2005).

### **External Requests and Reviews for Promotion and/or Tenure Cases.**

Department of Systems Engineering and Management, Air Force Institute of Technology (1 request)  
Department of Computer Science, Brigham Young University (1 review)  
School of Aerospace Engineering, Georgia Institute of Technology (1 request)  
Department of Industrial & Manufacturing Systems Engineering, Iowa State University (1 review)  
Department of Civil Engineering, Kansas State University (1 request)  
Department of Industrial Engineering, Montana State University (1 review)  
Department of Psychology, New Mexico State University (1 request)  
Department of Psychology, Old Dominion University (1 request)  
College of Liberal Arts, Rochester Institute of Technology (1 request)  
Department of Industrial & Systems Engineering, Texas A&M University (2 reviews)  
Department of Industrial Engineering, Texas Tech University (3 reviews)  
Department of Industrial & Systems Engineering, University of Arkansas (1 request)  
Department of Industrial & Systems Engineering, University of Buffalo (2 reviews)  
Department of Adult, Career, and Technology Education, University of Idaho (1 request)  
Department of Mechanical & Industrial Engineering, University of Iowa (2 requests)  
Department of Mechanical & Industrial Engineering, University of Toronto (pending)  
Department of Electrical Engineering and Computer Science, Vanderbilt University (1 review)  
Department of Industrial & Systems Engineering, Virginia Tech (1 review; 1 request)  
Department of Industrial & Systems Engineering, Wayne State University (1 review)

### **SERVICE:**

#### **University (activity with administrative responsibility in bold).**

2016-2017 Member of Search Committee for Director of The Institute for Transportation Research & Education (ITRE)  
**2006-2008 Chairman of NCSU Institutional Review Board for the Protection of Human Subjects.**  
2005-2006 NCSU Study Abroad Scholarship Committee Application Reviewer  
2001-2006 Member of NCSU Institutional Review Board for the Protection of Human Subjects (July 2001-September 2006).  
1999-2000 Member of the MSU Faculty Research Advisory Council (August 1999-May 2000).  
1999-2000 Member of MSU Institutional Review Board for the Protection of Human Subjects (June 1999-May 2000).  
1998 Member of MSU Search Committee for Research and Curriculum Unit Director (1998).  
1996-2000 Member of the MSU Psychology Department Committee on Cognitive Psychology/Science Ph.D. Program (1996-2000)



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**College.**

- 2012-2014 Member of Alcoa Research Awards Review Committee.  
2012-2013 Member of Search Committee for Co-Director of Textile Protection and Comfort Center (TPACC), School of Textiles.  
2011 Member of ISE Department Head Five Year Review Committee.  
2007 Member of NCSU College Teaching & Advising Awards Committee.  
1999 Organized and hosted MSU College of Engineering 1999 Engineering Entrepreneurs Lecture Series, including Dr. Thomas K. Miller III (NCSU), Patricia J. Parsons (AmerInd, Inc.), and Jack Hatcher (Eagle Ventures, Inc.).  
1998-2000 Chaired MSU College of Engineering, Hearin Committee on Entrepreneurship.  
1997-1998 Member of MSU College of Engineering, Hearin Committee on Entrepreneurship.  
1997 Reviewer on MSU Instructional Paper Competition Committee.

**Department.**

- 2016-2017 Member of Search Committee for NCSU ISE Data Analytics Faculty  
2015-2016 Chair of Search Committee for NCSU ISE Ergonomics Faculty  
2014-present Director of Research, The Ergonomics Center of North Carolina  
2012 Member of NCSU ISE Department Head Review Committee  
2010-2011 Member of Search Committee for NCSU ISE Faculty (Ergonomics and Manufacturing)  
2010-2013 Member of NCSU ISE Department Undergraduate Program Committee  
2009-2012 Member of NCSU ISE Department Graduate Program Committee  
2007-2009 Chair of Search Committee for NCSU ISE Ergonomics Faculty  
2007-present Director of Occupational Safety & Ergonomics Program of UNC/NIOSH Occupational Safety and Health Education and Research Center  
2006-2007 Member of Search Committee for NCSU ISE Department Head  
2005-present Member of Graduate Program Application Review Committee for NCSU ISE Department (2005-2007; 2010-present)  
2005-2016 Member of NCSU ISE Open House Committee, Ergonomics Area Coordinator (2005-2006, 2011-2016)  
2005-present Ergonomics Area Coordinator of NCSU ISE Department Ph.D. Qualifying Exam  
2005-2008 Faculty advisor of NCSU Student Chapter of Alpha Pi Mu (Alpha Rho), IE Honor Society  
2004-2005 Co-chair of NCSU IE Department Ergonomics Faculty Search Committee  
2003-2004 Member of Search Committee for Executive Director of The North Carolina Ergonomics Center  
2002-2003 Member of Search Committee for NCSU IE Department Ergonomics Faculty  
2002-2004 Member of NCSU IE Department, Distance Education Planning Committee  
2001-2002 Chair of NCSU IE Department, Distance Education Planning Committee  
2000-2007 Developer and director of the NCSU IE Cognitive Ergonomics Laboratory  
1998-2000 Member of MSU IE Department Ergonomics Technical Committee  
1997-2000 Member of MSU IE Department Committee on Graduate Education  
1996-2000 Developed and directed MSU, Cognitive Engineering and Systems Laboratory  
1996-1997 Member of MSU IE Department Committee on Information Systems in the IE Curriculum  
1996 Member of MSU IE Department Committee on Fundamental Concepts in Work Design

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**National and International (activities with administrative responsibility in bold).**

- 2016 Safety, Human Factors & Ergonomics Track Co-chair for *2016 Industrial & Systems Engineering Research Conference*, Anaheim, CA, May 21-May 24.
- 2015 Human Factors & Ergonomics Track Chair for *2015 Industrial & Systems Engineering Research Conference*, Nashville, TN, May 30-June 2.
- 2015 Reviewer *2015 IEEE International Conference on Multisensor Fusion and Information Integration (MFI 2015)*, San Diego, CA, Sept 14-16.
- 2015 Member of Scientific Committee for the *3<sup>rd</sup> International Conference on Human Factors in Road and Rail Transportation*, Caesar's Palace, Las Vegas, USA, July.
- 2013-2015 Director of Carolina Chapter of HFES.
- 2012-2013 Chair of HFES Internal Affairs Division – Responsible for overseeing and reporting on the progress of the annual conference committee, all local and student chapters, the HFES conference technical program committee, the student affairs committee and the early-career professionals committee.**
- 2014 Member of “Cognitive & Neuroergonomics” Scientific Advisory Board of the *5<sup>th</sup> International Conference on Applied Human Factors and Ergonomics*, Krakow, Poland, July 19-23.
- 2014 Member of Scientific Committee for the *2<sup>nd</sup> International Conference on Human Factors in Road and Rail Transportation*, Jagiellonian University, Krakow, Poland, July 19-23.
- 2013 Associate Editor on International Program Committee of the *21<sup>st</sup> IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2013)*, Gyeongju, Korea, August 26-29.
- 2011-2012 Chair of HFES Council of Technical Groups – Responsible for facilitating and overseeing the activities of all TGs within the Society.**
- 2012 Member of Scientific Committee for the *1<sup>st</sup> International Conference on Human Factors in Road and Rail Transportation*, San Francisco, CA, July 21-25.
- 2012 Member of “Cognitive & Neuroergonomics” Board of the *4<sup>th</sup> Int. Conference on Applied Human Factors and Ergonomics*, San Francisco, CA, July 21-25.
- 2011 Associate Editor on International Program Committee of the *20<sup>th</sup> IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2011)*, Atlanta, GA, July 31-August 3.
- 2011 Member of Technical Program for the *2010 IEEE Conference on Cognitive Methods in Situation Awareness and Decision Support*, Miami Beach, FL, February 22-24.
- 2011 Member of Technical Program Board for the *2011 Human-Computer Interaction International Conference (Virtual and Mixed Reality)*, Orlando, Florida, July 9-14.
- 2010 Member of Technical Program for the *2010 IEEE Conference on Automation Science and Engineering (Automation in Life Sciences and Healthcare Track)*, Toronto, Canada, August 21-24.
- 2009-2001 Chair of HFES, CEDM-TG – Responsible for developing and facilitating new TG initiatives to support members and students.**
- 2009-2011 Director of Carolina Chapter of HFES.
- 2010 Member of Technical Program Board (in cognitive ergonomics) for the *3<sup>rd</sup> International Conference on Applied Human Factors and Ergonomics (AHFE)*, Miami, FL, July 14-17.
- 2009 Member of Program Board for the *Human-Computer Interaction International (HCII) 2009 Virtual and Mixed Reality (VMR) Conference*, San Diego, CA, July, 19-24.
- 2008-2009 President of Carolina Chapter of HFES – Responsible for planning and**

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- organizes local chapter events, new member recruiting, fund raising, event budgeting, and chapter financial management.**
- 2007 Member of Program Committee for the *1<sup>st</sup> ACM Symposium on Computer Human Interaction for Management of IT (CHIMIT '07)*, Cambridge, MA, March 30-31.
- 2008 Member of Program Committee and “Cognitive Ergonomics Board” for the *2<sup>nd</sup> International Conference on Applied Ergonomics*, Las Vegas, July 13-17.
- 2005 Chair of Special Session on “Collaborative Virtual Environments Research” at *1<sup>st</sup> International VR Conference*, Las Vegas, NV, July 22-25.
- 2004-2005 Member of Distinguished Advisory Board for the *2<sup>nd</sup> Edition of the International Encyclopedia of Ergonomics & Human Factors* (Taylor & Francis Group/CRC, London).
- 2004 Chair of *2004 Human Interaction with Life Sciences Automation Workshop*, Rostock-Warnemünde, Germany, September 21-24.
- 2004 Member of the Scientific Committee for the *BioCon Valley Life Science for the Future – International Conference and Exhibition*, Rostock-Warnemünde, Germany, Sept. 8-10.
- 2004 Member of the Scientific Committee for the *Second Human Performance Situation Awareness and Automation Conference*, Dayton Beach, Florida, March 22-25.
- 2003-2005 Program Chair of HFES, CEDM-TG – Responsible for planning technical program for TG for annual Society meeting sessions.
- 2001-2003 Program-Chair Elect of HFES, CEDM-TG – Assistant to Program Chair in planning annual Society meeting sessions.
- 2000 Chair of 2000 Human Performance, Situation Awareness and Automation Conference, Savannah, Georgia, October 15-19 – Responsible for securing Federal funding for conference, negotiating hotel contract, purchasing conference equipment, planning and organizes all technical sessions and social activities, negotiating contract with publisher and preparing all camera-ready papers for print, and reporting outcomes of conference to funding agencies.**
- 1995-2001 Developer and Manager of HFES, CEDM-TG Web Site and List Server.

**OUTREACH (selected examples from among average of 4 activities per year):**

- 2016 NC State Engineering First-Year students tour Ergonomics Lab with research project briefings and demonstrations (3/19/16).
- 2015 Chinese Ministry of Transportation Delegation tour of Ergonomics Lab with research project briefings and demonstrations (12/18/15)
- 2015 Ergonomics Center of North Carolina training class tour of Ergonomics Lab with instruction and demonstrations of ergonomics measurement equipment (10/22/15; fall and spring ergonomics training classes and lab visits occur every academic year)
- 2014 IIE Raleigh Chapter 066 tour of Ergonomics Lab with research program overview, project briefings and demonstrations (5/15/14).
- 2014 NCSU Women in Science and Engineering (WISE) student organization tour of Ergonomics Lab with research project briefings and demonstrations (2/27/14).
- 2013 Engineering Open House tour of Ergonomics Lab including all current research projects (3/16/2013; Open House tours occur every spring semester)
- 2012 High school summer camp students tour of Ergonomics Lab, including current research equipment demonstrations (6/27/2012)
- 2012 Armed forces students tour of Ergonomics Lab, including driving simulator, flight simulator and brain computer interface research (4/3/2012)

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- 2012 IBM Pathfinder group tour of Ergonomics Lab, including current and previous research projects (3/30/2012)
  - 2011 Chulalongkorn University faculty tour of Ergonomics Lab including flight and driving simulators, service robot demonstration and overview of NSF-Haptic research (8/17/2011)
  - 2011 NC DOT engineer tour of Ergonomics Lab with focus on use of driving simulator (4/21/11).
  - 2010 Ergonomics Center of North Carolina training class tour of Physical and Cognitive Ergonomics Labs, including student project presentations (2/24/10).
  - 2009 IBM STG User Centered Design & User Interface Design Group tour of virtual environments research in NCSU ISE Ergonomics Lab (5/8/09)
  - 2006 Psychology Department undergraduate students tour of NCSU IE Department Ergonomics Lab (4/7/06).
  - 2004 German Ministry of Science, State of Mecklenburg-Vorpommern, visit to NCSU IE Department and Cognitive Ergonomics Lab (1/23/04).
  - 2002 NASA Langley Research Center (Psychological/Physiological Stressors & Factors Program) staff visit to NCSU IE Department and Ergonomics Labs (3/15/02).
  - 1999 MSU IE 1911 (Introduction to Industrial Engineering) tour of MSU Cognitive Engineering and Systems lab (11/15/99).
  - 1999 Mississippi School for Math & Science scholars tour of Cognitive Engineering and Systems lab with research project briefings and demonstrations (3/25/99).

#### POPULAR PRESS:

- 2016 Television coverage of research on, “NC State ISE Using Engineering to Improve Police and Community Safety”, NewsChannel14 - Carolina (Channel 14), Raleigh, NC, aired 10/31/16 (Available at: <https://youtu.be/-9RHACOr4qE>).
- 2015 Research featured in on-line version of *Occupational Health & Safety*, “The Importance of Worker Knowledge in Slips, Trips, and Falls and the Utility of Virtual Reality-based Locomotion Research,” December 1, 2015.
- 2015 Editorship covered in *IEEE Systems, Man & Cybernetics Magazine*, “Kaber is New Editor-in-Chief of *IEEE Transactions on Human-Machine Systems*,” October 2015, pp. 31-32.
- 2015 Research in *HFES Safety Technical Group Newsletter*, “Research Review: More Logos on “Blue” Freeway Signs Does not Increase Driving Safety Risk,” story by C. Pankok, D. Kaber & J. Hummer, Summer 2015.
- 2014 Research in *CCEE News* (Dept. of Civil, Construction & Environ. Engr., NC State), “Highway Logo Signs and Safety,” article by W. Rasdorf, D. Kaber & J. Hummer, Fall 2014.
- 2012 Research in *IE (Industrial Engineer) Magazine*, “Alleviating four-legged problems,” September 2012 story by M. Rogers, K. Taylor & D. B. Kaber.
- 2012 Research in *IE (Industrial Engineer) Magazine*, “NCSU IEs change angle of infant car seat handle to improve safety for parents, babies. March 2012 *Front Line* story.
- 2011 Research featured in *IE (Industrial Engineer) Magazine*, “Keeping Fido’s helpers healthy,” March 2011 cover story by M. Rogers, S. Gangakhedkar & D. B. Kaber.
- 2010 Research featured in *NC State University Results Magazine*, “Flight Controls,” Fall 2010.
- 2009 Research featured in *NC State University Results Magazine*, “Seniors Cautious About Life in the Fast Lane,” Fall 2009.
- 2008 Research update in *NC State Engineering Alumni Magazine*, “Simulating for Safety: Researchers use simulators to improve safety on the road and in the air,” Vol. IX, No. 3, Fall 2008.
- 2008 Research to be featured in *IE (Industrial Engineer) Magazine*, “Human Factors Studies in Simulators and Synthetic Environments,” Summer 2008.

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- 2008 Research featured in *APA Monitor on Psychology*, "Air Travel: The next generation," March 2008, pp. 31-33.
- 2007 Research covered in NCSU College of Engineering, *Engineering News*, "Duke Energy Invests in Safety & Ergonomics Research in the College of Engineering," Fall, 2007, Engineering Communications, College of Engineering, NCSU.
- 2006 Research featured in *IE Magazine*, "Hear me now: Hang up and drive," Front Line: News, Trends & Tactics, February 2006, p. 13.
- 2006 Television interview to discuss cell phone use and situation awareness in driving research, NewsChannel14 - Carolina (Channel 14), Charlotte, NC, aired 12/5-6/06.
- 2006 Television interview to discuss cell phone use and situation awareness in driving research, WRAL (Channel 3), Raleigh, NC, aired 12/4/06.
- 2005 Radio interview to discuss, "Hang-up and Drive," press release by NCSU, WUNC 91.5, Chapel Hill, North Carolina, aired 12/2/05 at 4:30pm.
- 2005 Research featured in NCSU College of Engineering, *Engineering News*, "Hang-up and Drive - Simulation Study Shows Cell Phone Use and Driving Don't Mix," 11/14/05, Engineering Communications, College of Engineering, NCSU.
- 2003 Research featured in *Cognitia* (the Newsletter of the CEDM-TG of the HFES), "Comparison of performance effect of adaptive automation applied to various stages of human-machine system information processing," Vol. 7, No. 1, Summer 2003, HFES.
- 2001 Research featured in NCSU *Bulletin*, "NC State research leads to air safety," 11/30/01, NC State News Services.
- 2001 Research featured in NCSU's Student Newspaper, the *Technician*, "Researchers question positives, negatives of airplane automation," 11/28/01, FRONT PAGE.
- 2001 Research featured in *Mechanical Engineering* magazine, "Being There," 6/01, Departments: Tech Focus, Pt. 2.
- 2001 Research featured in *NSPE's Engineering Times*, "NC State Researcher Fine Tunes Robotic Control with Virtual Reality," 6/01. National Society of Professional Engineers (<http://www.nspe.org/membonly/etmo/10-00briefs.asp>).
- 2001 Research featured in NC State University *NEWS RELEASE*, "NC State Researcher Fine Tunes Robotic Control with Virtual Reality," 4/9/01. NC State News Services Web page (<http://www.ncsu.edu/news>).
- 1999 Research honored in *The Jackson Clarion-Ledger*, "Engineers to receive 1999 Ely Award," 9/23/99, AWARDS/HONORS.
- 1999 Research featured in *The Jackson Clarion-Ledger*, "MSU engineer wins research award," 5/7/99, MISSISSIPPI REPORT.
- 1999 Research featured in *The Starkville Daily News*, "MSU engineers seek to bring movie 'action' to workplace," 5/13/99, p. 2.
- 1999 Research featured in *The Tupelo Daily Journal*, "The Desk Set," 9/16/99, pp. 1D, 2D.
- 1999 Radio interview to discuss the concept of telepresence in teleoperations, WMSV 90.1, Starkville, Mississippi, aired 5/99.
- 1999 Radio interview to discuss NSF CAREER award research on telepresence, WMSV 90.1, Starkville, Mississippi, aired 5/99.

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## APPENDIX

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### PUBLICATIONS (2013 and later; copies of most items can be provided):

#### Refereed Journal Articles (numbering continued from above).

18. Zhang, Y., **Kaber**, D. B., Rogers, M., Liang, Y. & Gangakhedkar, S. (2013). The effects of visual and cognitive distractions on operational and tactical driving behaviors. *Human Factors*, DOI: 10.1177/0018720813495279. [NCSU – Prof.]
19. Li, Y., Clamann, M., **Kaber**, D. B. (2013). Validation of a haptic-based simulation to test complex figure reproduction capability. *IEEE Transactions on Human-Machine Systems*, 43(6), DOI: 10.1109/TSMC.2013.2287341. [NCSU – Prof.]
20. **Kaber**, D. B., Riley, J. M., Sheik-Nainar, M. A., Zhang, T., Endsley, M. R. & Lampton, D. R. (2013). Measurement of infantry soldier situation awareness in virtual environment-based training research. *Military Psychology*, 25(4), 330-344. [NCSU – Prof.]
21. Suvarnnato, T., Puntumetakul, R., **Kaber**, D. B., Boonphakop, Y., Arayawichanon, P. & Kanlayanaphotporn, R. (2013). The effects of thoracic manipulation versus mobilization for chronic neck pain: A randomized controlled trial pilot study. *The Journal of Physical Therapy Science*, 25(7), 865-871, DOI: 10.1589/jpts.25.865. [NCSU – Prof.]
22. **Kaber**, D. B., Kaufmann, K., Alexander, A., Kim, S-H, Naylor, J. T., Prinzel, L., Pankok, C. & Gil, G-H (2013). Testing and validation of a psychophysically defined metric of display clutter. *Journal of Aerospace Computing, Information and Communication*, 10(8), 359-368, DOI: 10.2514/1.I010048. [NCSU – Prof.]
23. **Kaber**, D. B., Tupler, L., Clamann, M., Gil, G-H., Zhu, B., Swangnetr, M., Jeon, W., Zhang, Y., Qin, X., Ma, W. & Lee, Y-S (2013). Evaluation of an augmented virtual reality and haptic control interface for psychomotor training. *Assistive Technology*, DOI:10.1080/10400435.2013.800923. [NCSU – Prof.]
24. Eungpinichpong, W., Buttaga, V., Areudomwong, P., Pramodhyakul, N., Swangnetr, M., **Kaber**, D. B. & Puntumetakul, R. (2013). Effects of restrictive clothing on lumbar range of motion and trunk muscle activity in young adult worker manual material handling. *Applied Ergonomics*, 44, 1024-1032. [NCSU – Prof.]
25. Hancock, P., Jagacinski, R., Parasuraman, R., Wickens, C. D., Wilson, G. & **Kaber**, D. B. (2013). Human-automation interaction research: past, present and future. *Ergonomics in Design*, 21(2), 9-14 [NCSU – Prof.]
26. Swangnetr, M. & **Kaber**, D. B. (2013). Emotional state classification in human-robot interaction using wavelet analysis and statistics-based feature selection. *IEEE Human-Machine Systems*, 43(1), 63-76. [NCSU – Prof.]
27. Zhang, Y., Harris, E., Rogers, M., **Kaber**, D. B., Hummer, J. E. Rasdorf, W. & Hu, J. (2013). Driver Distraction and Performance Effects of Highway Logo Sign Design. *Applied Ergonomics*, 44, 472-479. [NCSU – Prof.]
28. Zhang, Y. & **Kaber**, D. B. (2013). An empirical assessment of driver motivation and emotional states in perceived safety margins under different driving conditions. *Ergonomics*, 56(2), 256-267. [NCSU – Prof.]
29. Salamati, K., Schroeder, B. J., Roupail, N. M., Cunningham, C. M., Zhang, Y. & **Kaber**, D. B. (2012). Simulator study of driver responses to pedestrian treatments at multilane roundabouts. *Transportation Research Record (Journal of the Transportation Research Board)*, Vol. 2312, 67-75. [NCSU – Prof.]
30. **Kaber**, D. B. (2012). Preface: cognitive engineering for next generation transportation systems.

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- Human Factors & Ergonomics in Manufacturing and Service Industries*, 22(5), 375-377. [NCSU – Prof.]
31. Gil, G-H & **Kaber**, D. B. (2012). An accessible cognitive modeling tool for evaluation of pilot-automation. *International Journal of Aviation Psychology*, 22(4), 319-342 [NCSU – Prof.]
  32. Alexander, A., **Kaber**, D. B., Kim, S-H., Stelzer, E., Kaufmann, K. & Prinzel, L. (2012). Measurement and modeling of display clutter in advanced flight deck technologies. *International Journal of Aviation Psychology*, 22(4), 299-318. [NCSU – Prof.]
  33. **Kaber**, D. B., Li, Y., Clamann, M. & Lee, Y-S. (2012). Investigating human performance in a virtual reality haptic simulator as influenced by fidelity and system latency. *IEEE SMC Part A*, 42(6), 1562-1566. [NCSU – Prof.]
  34. Keawduangdee, P., Puntumetakul, R., Chatchawan, U., **Kaber**, D. B., & Siritaratiwat, W. (2012). Prevalence and associated risk factors of low-back pain in textile fishing net manufacturing. *Human Factors & Ergonomics in Manufacturing and Service Industries*, 22(6), 562-570. [NCSU – Prof.]
  35. Gil, G-H., **Kaber**, D. B., Kaufmann, K. & Kim, S-H (2012). Effects of modes of cockpit automation on pilot performance and workload in a next generation flight concept of operation. *Human Factors & Ergonomics in Manufacturing and Service Industries*, 22(5), 395-406. [NCSU – Prof.]
  36. Segall, N., **Kaber**, D. B., Taekman, J. & Wright, M. C. (2012). Design of a cognitive model-based decision support tool for anesthesia provider crisis management. *Int. J. of Human-Computer Interaction*, DOI:10.1080/10447318.2012.681220. [NCSU – Prof.]
  37. **Kaber**, D. B., Zhang, Y., Jin, S., Mosaly, P., & Garner, M. (2012). Effects of hazard exposure on driver situation awareness and performance and the interaction with roadway complexity and driver age. *Transportation Research Part F: Traffic Psychology and Behaviour*, 15, 600-611. [NCSU – Prof.]
  38. **Kaber**, D. B., Liang, Y., Zhang, Y., Rogers, M., Gangakhedkar, S. (2012). Driver performance effects of simultaneous visual and cognitive distraction and adaptation behavior. *Transportation Research Part F: Traffic Psychology and Behaviour*, 15, 491-501. [NCSU – Prof.]
  39. Butttagat, V., Eungpinichpong, W., **Kaber**, D. B., Chatchawan, U. & Arayawichanon, P. (2012). Acute effects of traditional Thai massage on electroencephalogram in patients with scapulocostal syndrome. *Complementary Therapies in Medicine*, 20, 167-174. [NCSU – Prof.]
  40. Zhu, B. & **Kaber**, D. B. (2012). Effects of etiquette strategy on human-robot interaction in a simulated medicine delivery task. *International Journal of Intelligent Service Robotics*, 5(3), 199-210. [NCSU – Prof.]
  41. Areeudomwong, P., Puntumetakul, R., **Kaber**, D. B., Wanpen, S., Leelayuwat, N., & Chatchawan, U. (2012). Effects of handicraft sitting postures on lower trunk muscle fatigue. *Ergonomics*, 55(6), 693-703. [NCSU – Prof.]
  42. Rogers, M. L., Heath, W. B., Uy, C. C., Suresh, S. & **Kaber**, D. B. (2012). Effect of visual displays and locations on laparoscopic surgical training task. *Applied Ergonomics*, 43(4), 762-767. [NCSU – Prof.]
  43. Clamann, M., Zhu, B., Beaver, L., Taylor, K. & **Kaber**, D. B. (2012). Comparison of infant car seat grip orientations and lift strategies. *Applied Ergonomics*, 43(4), 650-657. [NCSU – Prof.]
  44. Kim, S-H., Prinzel, L., **Kaber**, D. B., Alexander-Horrey, A. L., Stelzer, E. M., Kaufmann, K. & Veil, T. (2011). Multidimensional measure of display clutter and pilot performance for advanced head-up display configuration. *Aviation, Space & Environment Medicine*, 82(11), 1013-1022. [NCSU – Prof.]
  45. **Kaber**, D. B., & Kim, S-H. (2011). Understanding cognitive strategy with adaptive automation in dual-task performance using computational cognitive models. *Journal of Cognitive Engineering & Decision Making*, 5(3), 309-331. [NCSU – Prof.]

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46. **Kaber**, D. B., Green, R. S., Kim, S-H. & Segall, N. (2011). Assessing usability of human-machine interfaces for life science automation through computational cognitive models. *Int. J. of Human-computer Interaction*, 27(6), 481-504. [NCSU – Prof.]
  47. Li, Y., **Kaber**, D. B., Lee, Y-S., & Tupler, L. (2010). Haptic-based virtual environment design and modeling of motor skill assessment for brain injury patient rehabilitation. *Computer-Aided Design and Applications*, 8(2), 149-162.
  48. Zhang, T., **Kaber**, D. B., Zhu, B., Swangnetr, M., Hodge, L. & Mosaly, P. (2010). Service robot feature design effects on user perceptions and emotional responses. *International Journal of Intelligent Service Robotics*, 3(2), 73-88. [NCSU – Prof.]
  49. Zhang, T., **Kaber**, D. B. & Hsiang, S. M. (2010). Characterization of mental models in a virtual reality-based multitasking scenario using measures of situation awareness. *Theo. Issues in Ergo. Sci.*, 11(1-2), 99-118. [NCSU – Prof.]
  50. **Kaber**, D. B., Stoll, N., Thurow, K., Green, R. S., Kim, S-H & Mosaly, P. (2009). Human-automation interaction strategies and models for life science applications. *Human Factors & Ergonomics in Manufacturing*, 19(6), 601-621. [NCSU – Prof.]
  51. Kim, S-H. & **Kaber**, D. B. (2009). Design and evaluation of dynamics text editing methods using foot pedals. *Int. J. of Industrial Ergonomics*, 39(2), 358-365. [NCSU – Prof.]
  52. Anderson A., Mirka, G. A., Joines, S. M B. & **Kaber**, D. B. (2009). Analysis of alternative keyboards using learning curves. *Human Factors*, 51(1), 35-45. [NCSU – Prof.]
  53. **Kaber**, D. B., Alexander, A. L., Stelzer, E. M., Kim, S-H., Kaufmann, K. & Hsiang, S. M. (2008). Perceived clutter in advanced cockpit displays: Measurement and modeling with experienced pilots. *Avia. Space & Env. Med.*, 79(11), 1007-1018. [NCSU – Prof.]
  54. **Kaber**, D. B., Segall, N. & Green, R. (2007). Metaphor-based design of high-throughput screening process interfaces. *Int. J. of Usability Studies*, 2(4), 190-210. [NCSU – Assoc. Prof.]
  55. Ma, R. & **Kaber**, D. B. (2007). Effects of in-vehicle navigation assistance and performance on driver trust. *Int. J. of Indus. Ergo.*, 37: 665-673. [NCSU – Assoc. Prof.]
  56. Ma, R. & **Kaber**, D. B. (2007). Situation awareness and driving performance in a simulated navigation task. *Ergonomics*, 50(8), 1351-1364. [NCSU – Assoc. Prof.]
  57. **Kaber**, D. B., Perry, C. M., Segall, N. & Sheik-Nainar. M. A. (2007). Workload state classification with automation during simulated air traffic control. *Int. J. of Avia. Psych.*, 17(4), 371-390. [NCSU – Assoc. Prof.]
  58. Sheik-Nainar, M. A. & **Kaber**, D. B. (2007). The utility of a virtual reality locomotion interface for studying gait behavior. *Human Factors*, 49(4), 696-709. [NCSU – Assoc. Prof.]
  59. Perry, C. M., Sheik-Nainar, M. A., Segall, N., Ma, R., **Kaber**, D.B. & Mirka, G.A. (2007). The effects of physical workload on situation awareness and cognitive task performance in multitasking. *Theo. Issues in Ergo. Sci.*, 9(2), 95-113. [NCSU – Assoc. Prof.]
  60. Endsley, M. R., Hoffman, R., **Kaber**, D. B. & Roth, E. (2007). Cognitive engineering and decision making: An overview and future course. *J. of Cognitive Engineering and Decision Making*, 1(1), 1-21. [NCSU – Assoc. Prof.]
  61. **Kaber**, D. B., Perry, C. M., Segall, N., McClernon, C. K. & Prinzel, L. P. (2006). Situation awareness implications of adaptive automation for information processing in an air traffic control-related task. *Int. J. of Industrial Ergonomics*, 36, 447-462. [NCSU – Assoc. Prof.]
  62. Ma, R. & **Kaber**, D. B. (2006). Presence, workload and performance effects of synthetic environment design factors. *Int. J. of Human-computer Studies*, 64, 541-552. [NCSU – Assoc. Prof.]
  63. **Kaber**, D. B., Wright, M. C. & Sheik-Nainar, M. (2006). Multimodal interface design for adaptive automation of a human-robot system. *Int. J. of Human-computer Studies*, 64, 527-540. [NCSU – Assoc. Prof.]



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64. **Kaber**, D. B., Segall, N., Green, R. S., Entzian, K. & Junginger, S. (2006). Using multiple cognitive task analysis methods for supervisory control interface design in high-throughput biological screening processes. *International Journal of Cognitive Technology & Work*, 8, 237-252. [NCSU – Assoc. Prof.]
  65. Ma, R. and **Kaber**, D. B. (2005). Situation awareness and workload in driving while using adaptive cruise control and a cell phone. *Int. J. of Industrial Ergonomics*, 35(10), 939-953. [NCSU – Assoc. Prof.]
  66. Wright, M. C. and **Kaber**, D. B. (2005). Effects of automation of information processing functions on teamwork. *Human Factors*, 47(1), 50-66. [NCSU – Assoc. Prof.]
  67. **Kaber**, D. B., Wright, M. C., Prinzel, L. P. and Clamann, M. P. (2005). Adaptive automation of human-machine system information processing functions. *Human Factors*, 47(4), 730-741. [NCSU – Assoc. Prof.]
  68. Sheik-Nainar, M. A., **Kaber**, D. B. and Chow, M-Y. (2005). Control gain adaptation in virtual reality mediated human-telerobot interaction. *Human Factors & Ergonomics in Manufacturing*, 15(3), 259-274. [NCSU – Assoc. Prof.]
  69. Clamann, M. P. and **Kaber**, D. B. (2004). Applicability of usability evaluation techniques to aviation systems. *International Journal of Aviation Psychology*, 14(4), 395-421. [NCSU – Assoc. Prof.]
  70. Leyman, E. L. C., Mirka, G. A., **Kaber**, D. B. and Sommerich, C. (2004). Assessing the relationship between cognitive load and cervicobrachial muscle response in a dual-task scenario. *Ergonomics*, 47(6), 625-645. [NCSU – Assoc. Prof.]
  71. Chen, C-L, **Kaber**, D. B. and Dempsey, P. D. (2004). Using feedforward neural networks and forward selection of input variables for an ergonomics data classification problem. *Human Factors & Ergonomics in Manufacturing*, 14(1), 31-50. [NCSU – Assoc. Prof.]
  72. **Kaber**, D. B. and Endsley, M. R. (2004). The effects of level of automation and adaptive automation on human performance, situation awareness and workload in a dynamic control task. *Theoretical Issues in Ergonomics Science*, 5(2), 113-153. [NCSU – Assoc. Prof.]
  73. Riley, J. M., **Kaber**, D. B. and Draper, J. V. (2004). Using measures of situation awareness and attention allocation to quantify telepresence experiences in teleoperation. *Human Factors & Ergonomics in Manufacturing*, 14(1), 51-68. [NCSU – Assoc. Prof.]
  74. **Kaber**, D. B., Tan, K-W and Riley, J. (2002). Improved usability of aviation automation through direct manipulation and graphical user interface design. *International Journal of Aviation Psychology*, 12(2), 153-180. [NCSU – Assoc. Prof.]
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  76. **Kaber**, D. B., Riley, J., Tan, K-W and Endsley, M. R. (2001). On the design of adaptive automation for complex systems. *International Journal of Cognitive Ergonomics*, 5(1), 37-57. [NCSU – Asst. Prof.]
  77. Chen, C-L., **Kaber**, D. B. and Dempsey, P. G. (2000). A new approach to applying feedforward neural networks to the prediction of musculoskeletal disorder risk. *Applied Ergonomics*, 31, 269-282. [NCSU – Asst. Prof.]
  78. **Kaber**, D. B., Onal, E. and Endsley, M. R. (2000). Design of automation for telerobots and the effect on performance, operator situation awareness and subjective workload. *Human Factors & Ergonomics in Manufacturing*, 10(4), 409-430. [MSU – Asst. Prof.]
  79. **Kaber**, D. B. and Usher, J. M. (2000). Preface: Cognitive engineering in automated systems design. *Human Factors and Ergonomics in Manufacturing*, 10(4), 363-368. [MSU – Asst. Prof.]
  80. Usher, J. M. and **Kaber**, D. B. (2000). Establishing information requirements for supervisory controllers in a flexible manufacturing system using goal-directed task analysis. *Human Factors*

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- and Ergonomics in Manufacturing*, 10(4), 431-452. [MSU – Asst. Prof.]
81. Draper, J. V., **Kaber**, D. B., and Usher, J. M. (1999). Speculations on the value of telepresence. *Cyberpsychology & Behavior*, 2, 349-262. [MSU – Asst. Prof.]
  82. Endsley, M. R. and **Kaber**, D. B. (1999). Level of automation effects on performance, situation awareness and workload in a dynamic control task. *Ergonomics*, 42(3), 462-492. [MSU – Asst. Prof.]
  83. **Kaber**, D. B. and Riley, J. (1999). Adaptive automation of a dynamic control task based on secondary task workload measurement. *International Journal of Cognitive Ergonomics*, 3(3), 169-187. [MSU – Asst. Prof.]
  84. Macedo, J. A., **Kaber**, D. B., Endsley, M. R., Powanusorn, P. and Myung, S. (1999). The effects of automated compensation for incongruent axes on teleoperator performance. *Human Factors*, 40(3), 541-553. [MSU – Asst. Prof.]
  85. Mital, A., Pennathur, A., Huston, R. L., Thompson, D., Pittman, M., Markle, G., **Kaber**, D. B., Crumpton, L., Bishu, R. R., Rajurkar, K. P., Rajan, V., Fernandez, J. E., McMulkin, M., Deivanayagam, S., Ray, P. S. and Sule, D. (1999). The need for worker training in advanced manufacturing technology (AMT) environments: A white paper. *International Journal of Industrial Ergonomics*, 24, 173-184. [MSU – Asst. Prof.]
  86. Pennathur, A., Mital, A., Rajan, V., **Kaber**, D. B., Ray, P., Huston, R., Thompson, D., Markle, G., Pitman, M. A., Bishu, R. R., Crumpton, L., Deivanayagam, S., Fernandez, J. E., McElwee, M., McMulkin, M. and Sule, D. (1999). A framework for training workers in contemporary manufacturing environments. *International Journal of Computer Integrated Manufacturing, Special Issue on Human Integration in Advanced Manufacturing*, 12(4), 291-310. [MSU – Asst. Prof.]
  87. Draper, J. V., **Kaber**, D. B., and Usher, J. M. (1998). Telepresence. *Human Factors*, 40(3), 354-375. (Winner of the Jerome H. Ely Human Factors *Article Award* for the most outstanding article in Human Factors during 1998.) [MSU – Asst. Prof.]
  88. **Kaber**, D. B. and Endsley, M. R. (1998). Team situation awareness for process control safety and performance. *Process Safety Progress*, 17(1), 43-48. [MSU – Asst. Prof.]
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18. Pankok, C., **Kaber**, D. B. & Currie, N. J. (2013). Mitigating biases in time-to-contact judgments with cockpit displays of traffic information. In *Proc. of the 2013 IEEE International Conference on Systems, Man, and Cybernetics* (CD-ROM). Manchester, England, October 13-16, 2013. [NCSU – Prof.]
19. Clamann, M. P., Ma, W. & **Kaber**, D. B. (2013). Evaluation of a virtual reality and haptic simulation of a block design test. In *Proc. of the 2013 IEEE International Conference on Systems, Man, and Cybernetics* (CD-ROM). Manchester, England, October 13-16, 2013. [NCSU – Prof.]
20. Salamati, K., Schroeder, B. J., Roupail, N. M., Cunningham, C. M., Zhang, Y. & **Kaber**, D. B. (2012). Simulator study of driver responses to pedestrian treatments at multilane roundabouts. In proceedings of the *Transportation Research Board 91<sup>st</sup> Annual Meeting* (Paper No. 12-0365).

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21. Clamann, M. P. & **Kaber**, D. B. (2012). The effects of haptic and visual aiding on psychomotor task strategy development. In *Proc. of the 56th Annual Meeting of the Human Factors and Ergonomics Society* (CD-ROM). Santa Monica, CA: Human Factors and Ergonomics Society. [NCSU – Prof.]
  22. Gangakhedkar, S., **Kaber**, D. B., Mosaly, P. & Diering, M. (2011). Effects of scaffolding equipment interventions on muscle activation and task performance. In *Proc. of the 55th Annual Meeting of the Human Factors and Ergonomics Society* (CD-ROM). Santa Monica, CA: Human Factors and Ergonomics Society. [NCSU – Prof.]
  23. Picciano, P., **Kaber**, D., Bruni, S., Gil, G., Howard, D., Kim, S-H., Jones, E., Kaufmann, K. & Roberts, M. (2010). Designing for designers: A prototype to support human-automation interaction decisions. In *proc. of 2010 International Conference on Human-Computer Interaction in Aerospace* (CD-ROM). Cape Canaveral, FL: ACM-SIGCHI. [NCSU – Prof.]
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  27. Kim, S-H & **Kaber**, D. B. (2009). Assessing the effects of conformal terrain features in advanced head-up displays on pilot performance. In *Proc. of the 53rd Annual Meeting of the Human Factors and Ergonomics Society* (CD-ROM). Santa Monica, CA: Human Factors and Ergonomics Society. **(Winner of the HFES Aerospace Systems Technical Group Best Student Paper Award for publication and presentation at the HFES meeting in 2009.)** [NCSU – Prof.]
  28. Alexander, A., Stelzer, E., Kim, S-H & **Kaber**, D. B. (2009). Data and knowledge as predictors of perceptions of display clutter, subjective workload and pilot performance. In *Proc. of the 53rd Annual Meeting of the Human Factors and Ergonomics Society* (CD-ROM). Santa Monica, CA: Human Factors and Ergonomics Society. [NCSU – Prof.]
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  34. Li, Y., Mosaly, P. & **Kaber**, D. B. (2009). A comparison of haptic devices for computer-based assessment of motor-control disabilities. In *Proc. of the IEA2009 – 17th World Congress on Ergonomics*. Beijing, China (August 9-14): Elsevier. [NCSU – Prof.]
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  64. Clamann, M. P. and **Kaber**, D. B. (2003). Authority in adaptive automation applied to various stages of human-machine system information processing. In *Proceedings of the 47th Annual Meeting of the Human Factors and Ergonomics Society* (pp. 543-547). Santa Monica, CA: Human Factors and Ergonomics Society. [NCSU – Assoc. Prof.]
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  68. **Kaber**, D.B. & Wright, M. C. (2003). Automation-state changes and sensory cueing in telerobot control. In *Proceedings of the XVth Triennial Congress of the International Ergonomics Association* (CD-ROM, Vol. 1, “Computers and Communications”). Seoul, Korea: The Ergonomics Society of Korea. [NCSU – Assoc. Prof.]
  69. Ma, R. and **Kaber**, D. B. (2003). Telepresence, performance and workload in an immersive virtual environment and sporting task. In *Proceedings of the XVth Triennial Congress of the International Ergonomics Association* (CD-ROM, Vol. 1, “Virtual Reality II”). Seoul, Korea: The Ergonomics Society of Korea. [NCSU – Assoc. Prof.]
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“Computers and Communications”). Seoul, Korea: The Ergonomics Society of Korea. [NCSU – Assoc. Prof.]

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72. Clamann, M. P., Wright, M. C. and **Kaber**, D. B. (2002). Comparison of performance effects of adaptive automation applied to various stages of human-machine system information processing. In *Proceedings of the 46<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society* (pp. 342-346). Santa Monica, CA: Human Factors and Ergonomics Society. (**Winner of the HFES Cognitive Engineering and Decision Making Technical Group Best Student Paper Award for publication and presentation at the HFES meeting in 2002.**) [NCSU – Assoc. Prof.]
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75. Song, D. and **Kaber**, D. B. (2000). Web-based interface design for teleoperation. In the *Proceedings of the XIV<sup>th</sup> Triennial Congress of the International Ergonomics Association and 44<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society* (pp. 449-452). Santa Monica, CA: Human Factors and Ergonomics Society. [MSU - Asst. Prof.]
76. Tan, K-W, **Kaber**, D. B., Riley, J. and Endsley, M. R. (2000). Human factors issues in the implementation of adaptive automation in complex systems. In the *Proceedings of the XIV<sup>th</sup> Triennial Congress of the International Ergonomics Association and 44<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society* (pp. 97-100). Santa Monica, CA: Human Factors and Ergonomics Society. [MSU - Asst. Prof.]
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79. Hosni, Y. A. and **Kaber**, D. B. (1993). An ergonomic support stand for overhead space shuttle maintenance procedures. In *Proceedings of the 2nd Industrial Engineering Research Conference* (pp. 178-182). Norcross, GA: Institute of Industrial Engineers. (UCF - Res. Asst.)

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9. Clamann, M., Gil, G-H, **Kaber**, D. B., Zhu, B., Swangnetr, M., Jeon, W., Zhang, Y., Qin, X., Ma, W., Tupler, L. A. & Lee, Y-S. (2012). Assessment of a virtual reality-based haptic

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  15. Rogers, M., **Kaber**, D. B. & Taylor, K. (2012). Identifying and evaluating risk factors for musculoskeletal disorders in equine veterinary work. In *Proceedings of the 2012 Applied Human Factors & Ergonomics Conference*. Boca Raton, FL: Taylor & Francis CRC Press. [NCSU – Prof.]
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