

## ELLEN J. BASS

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Interim Senior Associate Dean for Research, College of Computing & Informatics  
Professor, Health Systems and Sciences Research, College of Nursing & Health Professions  
Professor, Information Science, College of Computing & Informatics  
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### EDUCATION

- Ph.D.** 2002 Georgia Institute of Technology  
Atlanta, GA  
Major: Industrial and Systems Engineering  
Major area of specialization: Human-machine systems  
Minor area of specialization: Artificial intelligence  
Dissertation: Human-Automated Judgment Learning: A Research  
Paradigm Based on Interpersonal Learning to Investigate Human  
Interaction with Automated Judgments of Hazards
- M.S.** 1989 State University of New York at Binghamton  
Binghamton, NY  
Major: Advanced Technology
- B.S. Eng.** 1983 University of Pennsylvania  
Philadelphia, PA  
Major: Bioengineering
- B.S. Econ.** 1983 University of Pennsylvania  
Philadelphia, PA  
Major: Finance

### FELLOWSHIPS

- 1995-1996 Link Foundation Fellowship for Advanced Simulation and Training  
1992-1994 Patricia Roberts Harris Fellowship, U. S. Department of Education

## PROFESSIONAL APPOINTMENTS

- 2020-pres. **Interim Senior Associate Dean for Research**, College of Computing & Informatics, Drexel University, Philadelphia, PA
- 2020-pres. **Adjunct Professor**, Department of Anesthesiology and Critical Care, University of Pennsylvania, Philadelphia, PA
- 2017-pres. **Department Chair**, Department of Health Systems and Sciences Research, College of Nursing and Health Professions, Drexel University, Philadelphia, PA
- 2013-pres. **Professor**, Department of Information Science, College of Computing & Informatics (formerly the College of Information Science and Technology (iSchool)), Drexel University, Philadelphia, PA  
**Professor**, Department of Health Systems and Sciences Research, College of Nursing and Health Professions, Drexel University, Philadelphia, PA  
**Affiliate Professor**, School of Biomedical Eng., Science, and Health Systems, Drexel University, Philadelphia, PA
- 2015-17 **Department Head**, Department of Information Science, College of Computing and Informatics (CCI), Drexel University, Philadelphia, PA
- 2008-12 **Associate Professor**, Department of Systems and Information Engineering, University of Virginia, Charlottesville, VA
- 2002-08 **Assistant Professor**, Department of Systems and Information Engineering, University of Virginia, Charlottesville, VA
- 2000-02 **Senior Staff Engineer**, Search Technology, Norcross, GA
- 1999-2001 **Research Engineer II**, Georgia Institute of Technology, Atlanta, GA
- 1996-2000 **Staff Engineer**, Search Technology, Norcross, GA
- 1995-96 **Senior Research Engineer**, Search Technology, Norcross, GA
- 1994-95 **Graduate Research Assistant**, University of Nottingham, Department of Psychology, Nottingham, UK
- 1993 **Student Research Scientist**, San Jose State University Research Foundation, NASA Ames Research Center, Mountain View, CA
- 1991-92 **Senior Systems Engineer**, Science Applications International Corporation, McLean, VA
- 1988-91 **Systems Engineer**, International Business Machines Corporation, Federal Sector Division, Rockville, MD
- 1986-88 **Integration and Test Engineer**, International Business Machines Corporation, Federal Systems Division, Manassas, VA
- 1984-86 **Sub-system Engineer**, International Business Machines Corporation, Federal Systems Division, Owego, NY

## HONORS

Fellow, Human Factors and Ergonomics Society (since 2015)

Senior member of the American Institute of Aeronautics and Astronautics (AIAA) (since 2013)

Senior member of the IEEE (since 2003)

## AWARDS

- 2019 Ben-Gurion University of the Negev President's International University Professor Travel Award (to visit with the Agricultural, Biological and Cognitive (ABC) Robotics Initiative and the Department of Industrial Engineering and Management)
- 2017 Best Human Performance Modeling Paper Award from the Human Performance Modeling Technical Group of the Human Factors and Ergonomics Society for: Simulating human performance of task sharing: Modeling task delay and delegation of authority. *The 61<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society*.
- 2016 Outstanding Contribution Award from the IEEE Systems, Man and Cybernetics (SMC) Society: for serving as the founding Editor in Chief of the *IEEE Trans. on Human-Machine Systems*
- 2015-16 Xi'an Jiaotong University President's International University Professor Travel Award (to visit with the Department of Automation Science and Technology)
- 2011 Franklin V. Taylor Memorial Award for the Best Paper (of 612 accepted papers): Evaluating human-automation interaction using task analytic behavior models, strategic knowledge-based erroneous human behavior generation, and model checking. *2011 IEEE Int. Conf. on Systems, Man, and Cybernetics*.
- 2010 University of Virginia Serpentine Society Outstanding Service Award: for pioneering leadership on diversity and equity issues.
- 2009 Best Student Paper Award (advised student: Don Rude): Impact of increased spatio-temporal radar data resolution on forecaster wind assessments. *2009 IEEE Int. Conf. on Systems, Man, and Cybernetics*.
- 2009-10 University of Virginia Equal Opportunity Programs (EOP) Champion Award
- 2009-10 University of Virginia EOP Champion Award to UVaPride
- 2009 National Youth Traffic Safety Month 50 Best Award for "Foxfield Racing Impaired Driving Prevention" hosted by National Organizations for Youth Safety (NOYS) and sponsored by the Allstate Foundation
- 2008 NASPA (Student Affairs Administrators in Higher Education) Excellence Award (Bronze) in the category of "Student Health, Wellness, Counseling, and Related" for "Using Curriculum Infusion to Decrease Adverse Consequences During Celebratory Drinking Events"
- 2006 Best in Track Award for the Transportation Systems Track: Assessment and enhancement of Synthetic Vision Systems experimentation software. *2006 IEEE Systems and Information Engineering Design Symposium*.
- 2004 Best in Track Award for the Transportation Systems Track: Content development for a web-based system devoted to flight dispatcher icing training. *2004 IEEE Systems and Information Engineering Design Symposium*.
- 2002 Best Student Paper Award (student: Ellen Bass) Human-Automated Judgment Learning: Applying interpersonal learning to investigate human interaction with alerting systems. In *Proc. of the 21st Digital Avionics Systems Conf.*

## **ACADEMIC LEADERSHIP DEVELOPMENT**

2015-16 **Executive Leadership in Academic Technology and Engineering<sup>®</sup>** (ELATE at Drexel<sup>®</sup>), participant,

2010-12 **Leadership in Academic Matters (LAM)** at the University of Virginia, participant

## **ACADEMIC LEADERSHIP FACILITATION**

### **Executive Leadership in Academic Technology and Engineering<sup>®</sup> (ELATE at Drexel<sup>®</sup>)**

Institutional Action Plan (IAP) Moderator:

- Moderated IAP Project Symposium, March 20, 2019
- Moderated session: Faculty/ clinician development: skills development, recruitment & retention, March 7, 2018

Institutional Action Plan (IAP) Consultation:

- Presented IAP example and facilitated trainee review of IAPs using the step-back consulting process, August 8, 2019
- Presented IAP example and facilitated trainee review of IAPs using the step-back consulting process, August 9, 2018
- Facilitated trainee review of IAPs using the step-back consulting process, November 15, 2017
- Presented IAP example and facilitated trainee review of IAPs using the step-back consulting process, August 10, 2017

### **Hedwig van Ameringen Executive Leadership in Academic Medicine<sup>®</sup> (ELAM<sup>®</sup>)**

Workshop development and facilitation:

- Workshop: Designing the System for the Healthcare Practitioners- Enhancing healthcare through the integration of human factors engineering, 2019 ELAM Alumnae Professional Development Program, Philadelphia, PA, Jan. 17, 2019.
- Systems Thinking Workshop, 2018 ELUM Professional Development Program, Denver, CO, Jan. 11-13, 2018.
- Systems Engineering/thinking in Healthcare Workshop, 2017 ELUM Professional Development Program, Denver, CO. Co-developed and facilitated with Yuehwen Yi of Purdue University. Jan. 12-14, 2017

## **PROFESSIONAL SERVICE**

### **Professional Society Memberships**

American Institute of Aeronautics and Astronautics (AIAA): Senior member

American Medical Informatics Association (AMIA)

Association for Aviation Psychology (AAP)

Human Factors and Ergonomics Society (HFES): Fellow

- Member of HFES
- Member of Delaware Valley (DelVal) Chapter

Institute of Electrical and Electronics Engineers (IEEE): Senior member

Systems, Man and Cybernetics Society (SMCS)

Institute of Industrial and Systems Engineers (IISE)

### **International Service**

#### **Israel Science Foundation**

2016 Grant Review

#### **United States Army Research Laboratory (ARL) and United Kingdom Defence Science and Technology Laboratory (Dstl) International Technology Alliance (ITA): DAIS ITA**

2020 Peer Review Panelist, Annual Fall Meeting, September 14-18, 2020, virtual

2019 Peer Review Panelist, Annual Fall Meeting, September 9-13, 2019, Weybridge, UK

2018 Peer Review Panelist, Annual Fall Meeting, September 10-12, 2018, New York, NY

2017 Peer Review Panelist, Annual Fall Meeting, September 25-27, 2017, London UK

### **National (U.S.) Service**

#### **Federal Aviation Administration**

2015-pres. Institutional Co-PI, Center of Excellence for Unmanned Aircraft Systems:

Alliance for System Safety of UAS through Research Excellence (ASSURE)

2016-8 Institutional Co-PI, Center of Excellence for Technical Training and Human Performance (TTHP)

#### **National Aeronautics and Space Administration (NASA)**

2018 Presenter, 2<sup>nd</sup> Workshop on “Human-Automation Interaction Considerations for Unmanned Aerial System Integration:” sponsored by NASA, May 16-17, 2018

#### **U.S. National Academies of Sciences, Engineering, and Medicine (NASEM)**

Board Member

2013-18 Board Member, Board on Human-Systems Integration (BOHSI) in the Division of and Social Sciences and Education (DBASSE), January 2013 – December 2018

#### Committee member

- 2019 Committee member, Panel on Human Factors Science at the Army Research Laboratory sponsored by the Army Research Laboratory Technical Assessment Board in the Division on Engineering and Physical Sciences (DEPS), April 9 – December 31, 2019
- 2018 Committee member, 1<sup>st</sup> Workshop on “Human-Automation Interaction Considerations for Unmanned Aerial System Integration:” sponsored by NASA, January 10-11, 2018
- 2016-18 Committee member, Consensus study “Advancing Social and Behavioral Science Research and Application within the Weather Enterprise” sponsored by NOAA Office of Oceanic and Atmospheric Research, NOAA National Weather Service, and DOT Federal Highway Administration, June 14, 2016- March 7, 2018
- 2017 Committee member, Panel on Information Science at the Army Research Laboratory sponsored by the Army Research Laboratory Technical Assessment Board in the Division on Engineering and Physical Sciences (DEPS), February 17- December 31, 2017

#### Reviewer

- 2017 Draft final report *The Future of Emergency Alert and Warning Systems: Research Directions* prepared by the Committee on Computer Science and Telecommunications Board, June, 2017
- 2016 Draft final report *NASA Space Technology Roadmaps and Priorities Revisited* prepared by the Committee on NASA Space Technology Roadmaps, National Academies Aeronautics and Space Engineering Board (ASEB), May-June, 2016
- 2013 Draft final report *Assessment of Staffing Needs of Systems Specialists in Aviation* prepared by the Committee on Staffing Needs of Systems Specialists in Aviation of BOHSI; Division on Behavioral and Social Sciences and Education (DBASSE)
- 2011 Draft final report of the NASA Space Technology Area Roadmaps (STARS): *TA11 Modeling, Simulation, Information Technology, and Data Processing* (one of fourteen), National Academies Aeronautics and Space Engineering Board (ASEB), November-December 2011: NRC Steering Committee for NASA Technology Roadmaps (2012). *NASA Space Technology Roadmaps and Priorities: Restoring NASA's Technological Edge and Paving the Way for a New Era in Space*
- 2005 *Modeling and Simulation, Systems Engineering, and Cost and Risk Analysis*, one of ten panels to review NASA's Capability Roadmaps, Aeronautics and Space Engineering Board (ASEB) April 5-7, 2005
- 2004 *Integrated Plan for a Next Generation Air Transportation System* prepared by the Joint Planning and Development Office (JPDO), Aeronautics and Space Engineering Board (ASEB), October 6-7, 2004

#### **National Science Foundation**

- 2014 National Science Foundation Panelist
- 2005 National Science Foundation Panelist
- 2004 National Science Foundation Panelist

### **Organization Board Membership**

- 2020-22 Member, Jewish Senior Housing and Healthcare Service (JSHHS) Board of Trustees
- 2020-22 Member, JSHHS Quality Oversight & Risk Management Committee
- 2008-12 Advisory Board Member for ROSMY Blue Ridge (now Side by Side, VA)

### **Organization Offices Held**

- 2002-12 Member of Equality Virginia
- 2007-08 President, OYBR (now Side by Side)
- 2003-07 Treasurer, OYBR (now Side by Side)
- 2007 Treasurer for the 2<sup>nd</sup> Annual Q-munity Fair, Charlottesville, VA

### **Public Service**

- 2017 The Philadelphia Youth Network (PYN), Inc.  
WorkReady Philadelphia, lecture on unmanned aircraft systems and lab tour to 10 interns sponsored by Drexel University, August, 9 2017
- 2003-12 Youth facilitator for OutYouth of the Blue Ridge (OYBR) and ROSMY Blue Ridge (now Side by Side)\*  
\*OutYouth of the Blue Ridge (OYBR) merged with Richmond Organization for Sexual Minority Youth (ROSMY). ROSMY was later rebranded as Side by Side, VA

### **Editorships**

- 2013-2015 Editor-in-Chief (founding) for *IEEE Transactions on Human-Machine Systems*
- 2012 Co-editor of “Innovations in Cognitive Engineering and Decision Making,”  
March and June 2012 special issues of the journal *Cognitive Engineering and Decision Making*

### **Editorial Boards**

- 2020-pres. Member, editorial board for *Journal of Cognitive Engineering and Decision Making*
- 2011-pres. Member, editorial board for *IIE Transactions on Occupational Ergonomics and Human Factors* (formerly *IIE Transactions on Occupational Ergonomics and Human Factors*)
- 2011-pres. Associate Editor for the Sociotechnical System Analysis department, *IIE Transactions on Healthcare Systems Engineering*
- 2005-pres. Member, editorial board for *Human Factors*
- 2003-13 Contributing Editor of *The International Journal of Applied Aviation Studies*
- 2010-12 Associate Editor-in-Chief for *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans*
- 2002-09 Associate Editor for *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans*

### **Professional Society Offices Held and Committee Assignments**

- 2020-2023 Secretary/Treasurer, Human Factors and Ergonomics Society (HFES)
- 2020-2021 Secretary/Treasurer Elect

- 2021-2022 Secretary/Treasurer
- 2022-2023 Secretary/Treasurer
- 2017-pres. HF/E Academic Leadership (HEAL) Council co-facilitator
- 2019-21 Member, Fellow Selection Committee, HFES
- 2019-20. Member, Ethics Task Force, HFES
- 2017-20 At-Large Executive Council Member, HFES
- 2017-19 Member, Jerome H. Ely Human Factors Article Award for Best Paper in *Human Factors* Review Subcommittee, HFES
- 2018-19 Chair, Mid-career Taskforce, HFES
- 2018 HFES-National Academies of Sciences, Engineering, and Medicine BOHSI liaison
- 2016 Member, 2016 Human Factors Prize “Human Factors and Ergonomics on Big Data” Review Committee, HFES
- 2002-15 Member, Human-Computer Interaction Technical Committee, IEEE Systems, Man, and Cybernetics Society (SMCS)
- 2013-15 Member, Human-machine Systems Committee, IEEE SMCS
- 2013-15 Member, Publications Committee, IEEE SMCS
- 2013-15 Member, Distinguished Lecturer Committee, IEEE SMCS
- 2013-15 Chair, Cognitive Engineering and Decision Making (CEDM) Technical Group of the HFES
- 2011-13 Chair Elect, Cognitive Engineering and Decision Making (CEDM) Technical Group of the HFES
- 2002-12 Faculty advisor to the University of Virginia student chapter of the HFES
- 2009-11 Program Chair, Cognitive Engineering and Decision Making (CEDM) Technical Group of the HFES
- 2008-09 Vice President of Human-Machine Systems, IEEE Systems, Man, and Cybernetics Society (SMCS)
- 2007-09 Program Chair Elect, Cognitive Engineering and Decision Making (CEDM) Technical Group of the HFES
- 2005-09 Member, Board of Governors, IEEE SMCS
- 2005-07 Co-chair, Human Machine Systems Technical Committee, IEEE SMCS
- 2005-07 Secretary/Treasurer, CEDM Technical Group of the HFES
- 2005-07 Member, Membership and Student Activities Committee, IEEE SMCS
- 2003-05 Newsletter Editor, CEDM Technical Group of the HFES
- 2000-01 President of the Georgia Tech student chapter of the HFES
- 1999-2000 Vice President of the Georgia Tech student chapter of the HFES

### **Conference Organizing**

- 2012-pres. Member, program committee for the Health Care IT track for the HFES Symposium on Human Factors & Ergonomics in Health Care
- 2019-2020 Member, international steering committee for the 1st IEEE International Conference on Human-Machine Systems (ICHMS 2020)
- 2018 Coach, Philly Codefest at Drexel University, April 14-15, 2018
- 2003-15 Member, program committee for the IEEE International Conference on Systems, Man & Cybernetics



- 2014 Co-organizer of the Modeling in Human-Machine Systems: Challenges for Formal Verification symposium at the 2014 AAAI Spring Symposium Series, March 24–26, 2014
- 2012-13 Member, program committee for the International Conference on Application and Theory of Automation in Command and Control Systems
- 2011 Co-organizer of panel “Pioneers in Cognitive Engineering & Decision Making Research - Foundational Contributions to the Science of Human-Automation Interaction” for the 55th Annual Meeting of the Human Factors and Ergonomics Society. Las Vegas, NV, September 19-23, 2011  
2009-2011 Program Chair, Cognitive Engineering and Decision Making (CEDM) Technical Group of the Human Factors and Ergonomics Society
- 2007-09 Program Chair Elect, Cognitive Engineering and Decision Making (CEDM) Technical Group of the Human Factors and Ergonomics Society
- 2009 IEEE Systems & Information Engineering Design Symposium: Finance chair
- 2008 Member, program committee for the IEEE International Conference on Distributed Human-Machine Systems
- 2008 IEEE Systems & Information Engineering Design Symposium: Finance chair
- 2005 IEEE Systems & Information Engineering Design Symposium: Publications chair
- 2004 IEEE Systems & Information Engineering Design Symposium: Program chair
- 2003 IEEE International Conference on Systems, Man & Cybernetics: Special Sessions Chair
- 2003 IEEE Systems & Information Engineering Design Symposium: Program co-chair

### **University Service at External Institutions**

#### **Service to Ben-Gurion University of the Negev, Be'er-Sheva, Israel**

- 2019-20 Reviewer as part of the annual international review of the Agricultural, Biological, & Cognitive (ABC) Robotics Initiative

#### **Service to Xi'an Jiaotong University, Xi'an, China**

- 2015-16 Reviewer of the research in the Department of Automation Science and Technology, School of Electronic and Information Engineering

## **University Service at Home Institution**

### **Service to Drexel University (DU), Philadelphia, PA**

- 2020 Reviewer, Drexel University Research & Development Fund - Racial Inequality
- 2020 Member, University Research Preparedness Subcommittee
- 2017-20 Member, Tenure Appeals Committee
- 2019 STAR Scholars Summer Showcase Evaluator
- 2019 Queer Professionalism panelist, sponsored by the Queer Student Union and the Center for the Advancement of STEM Teaching and Learning Excellence (CASTLE), May 1, 2019
- 2014 Member, Health Sciences Task Force
- 2014 Member, Health and Wellness Informatics Workgroup of the Health Sciences Task Force

### **Service to the College of Computing & Informatics at DU (formerly the College of Information Science and Technology (i-School))**

- 2020 Member, CCI Return to Campus Task Force
- 2015-17, Member, Dean's Council
- 2020
- 2014-15 Co-chair, CCI Strategic Planning Committee
- 2013-14 Member, Research Operations Council
- 2013-14 Member, Search Committee

### **Service to the College of Medicine at DU**

- 2013-14 Reviewer for the Drexel College of Medicine Commonwealth Universal Research Enhancement (CURE) Program Grants
- 2013 Reviewer for the Drexel College of Medicine Simulation Grants Initiative (Independence Blue Cross)

### **Service to the College of Nursing and Health Professions at DU**

- 2015-pres. Mentor to Paulina Sockolow, Associate Professor
- 2015-18 Mentor to Layla Booshehri, Research Assistant Professor
- 2015-18 Mentor to Jerome Dugan, Assistant Professor
- 2017-18 Mentor to Jaime Slaughter, Assistant Professor
- 2013-15 Mentor to Paulina Sockolow, Assistant Professor

### **Service to the School of Biomedical Engineering, Science and Health Systems at DU**

- 2017 Biomed Academy, lecture on unmanned aircraft systems and lab tour, July 20, 2017

### **Service to Department of Information Science at DU**

- 2013-20 Course coordinator
  - 2019 INFO 150 Ubiquitous Computing
  - 2013-2020 INFO 608 Human-Computer Interaction
  - 2017-2019 INFO 540 Perspectives on Information Systems
- 2017-19 Ph.D. Instructor of Record Program mentor (INFO 608), Houda El mimouni
- 2017-18 Member, Promotion Committee for Christopher Yang
- 2013-15 Chair, PhD Information Studies Review Panel
- 2013-14 Member, Informatics Tenure and Promotion Committee

### **Service to the University of Virginia (UVa), Charlottesville, VA**

- 2008-12 Participant in the Survivor Support Network
- 2003-12 Member, Speakers Bureau
- 2002-12 Member of UVA Pride, 2008-2012, Co-convener
- 2002-12 Participant in the Safe Space program
- 2011 Participant in Engaging Difference: Diverse Women in STEM Building Careers, Creating Alliances, August 2011
- 2010 Table host for UVa's Office of Equity and Diversity table at the Equality Virginia's 7<sup>th</sup> Annual Commonwealth Dinner
- 2009 Participant in School of Medicine's Transition and Change Seminar on Generational Differences, April 21, 2009
- 2008 First Year Seminar participant
- 2008-09 Member, Investigator Advisory Committee (IAC) to support the HSR-IRB, SBS-IRB and IACUC
- 2008 Speaker at Women's Work, December 8, 2008
- 2007-08 Member, Committee on Benefits
- 2006-08 Member, Advisory Committee on Alcohol and Substance Abuse
- 2007 Participant in Forum on Supporting Early-Career Underrepresented Faculty ("Honing Your Mentoring of Junior Faculty"), Oct. 12, 2007
- 2002-03 Faculty advisor to Girls Excited about Math and Science
- 2002-03 Member, Ad hoc committee on the delivery of education in statistics

### **Service to the School of Engineering and Applied Science (SEAS) at UVa**

- 2005-09 Member, SEAS Rules and Courses Committee
- 2002-09 Common Reading Experience Leader
- 2003-08 TCC 101/STS 101 Research Interview
- 2002-08 First year advisor
- 2002-08 UVA Society of Women Engineers High School Visitation Speaker
- 2005-07 Supported development of Aerospace Systems Engineering curriculum with senior Systems and Information Engineering and Mechanical and Aerospace Engineering faculty
- 2003-05 Member of SEAS Open House Committee
- 2005 Faculty marshal for final exercises
- 2002-08 Member of SEAS Student Affairs Committee, Chair 2004-2008; Member 2002-2004

**Service to the Department of Systems and Information Engineering at UVa**

- 2007-12 Member, Undergraduate Committee
- 2006-12 Chair, Executive committee for the National Library of Medicine training grant “A Systems Engineering Focus on Medical Informatics,” 2010-2012; Member 2006-2010
- 2004-08 Chair, Equipment Committee, 2007-2008; member 2004-2007
- 2005-07 Member, Graduate Committee
- 2002-05 Member, Undergraduate Committee
- 2002-03, 2004-07 Member, assistant professor search committee

## **RESEARCH INTERESTS**

Develop theories of human performance, quantitative modeling methodologies, and associated decision support and visualizations that can be used to design and to evaluate human-automation interaction and human-human collaboration in the context of total system performance.

Research contributions can be decomposed into four synergistic areas:

- Characterizing human judgment and decision making
- Modeling human judgment when supported by information automation
- Computational models of human-human coordination and human-automation interaction
- Design and evaluation of interventions to improve human judgment and decision making

Research outcomes can be used in the systems engineering process: to inform system requirements, procedures, design support tools, control and display designs, and training interventions and to support system evaluation.

## **FIELD EXPERIENCE**

- Jump seat observations of flight deck operations of a major domestic airline
- On the job observations of emergency managers during severe weather operations
- On the job observations of commercial airline and regional flight dispatchers
- On the job observations of commercial airline meteorologists
- On the job observations of commercial airline flight attendants
- On the job observations of commercial unmanned aircraft systems (UAS)/remotely piloted aircraft (RPA)
- On the job observations of tower, TRACON, and en route air traffic controllers
- On the job observations of National Weather Service forecasters
- On the job observations of home care admission nurses
- On the job observations of nurses on acute care hospital wards (pediatrics)
- On the job observations of physicians on acute care hospital wards (pediatrics, internal medicine, and emergency medicine)
- On the job observations of pharmaceutical product manufacturing
- On the job observations of process control operators at refineries
- Private pilot (single engine land)

## INVITED KEY NOTE, PANEL, AND OTHER INVITED PRESENTATIONS

### Key Note Addresses

1. “Model-based human-systems evaluation and analysis to inform human-centered design in complex systems”, 2019 Doctoral Research Symposium, School of Systems and Enterprises, Stevens Institute of Technology, Hoboken, NJ, May 20, 2019
2. “How a human factors engineer has embraced the social norms approach,” 2010 National Conference on the Social Norms Approach, Philadelphia, PA, July 10-12, 2010

### Invited Conference Presentation (Total: 2)

1. “Human Factors in Mechanical Circulatory Support (MCS) Design,” Gordon Research Conference: Assisted Circulation, Stowe, VT, June 25-30, 2017.
2. “Integration of formal methods and human factors for artificial organs,” American Society for Artificial Internal Organs (ASAIO) 58<sup>th</sup> Annual Conference, San Francisco, CA, June 16, 2012.

### Invited Webinars

1. “Weather forecaster decision making and tornado warning communication,” Human Factors and Ergonomics Society, July 30, 2012

### Invited Panels (Total: 8)

1. “Diversity and Inclusion in Professional Development,” Student Career & Professional Development Day (October 28, 2019), *The 63rd Annual Meeting of the Human Factors and Ergonomics Society*, Seattle, WA, October 28-Nov. 1, 2019.
2. “ASSURE-X Technology Fair,” AUVSI XPONENTIAL 2018, Denver, CO, April 30 – May 3, 2018.
3. “Near-term HSI Challenges with UAS Automation,” *The National Academies of Sciences, Engineering, and Medicine Workshop on Human-Automation Interaction Considerations for Unmanned Aerial System Integration*, Washington, DC, January 10-11, 2018.
4. “ASSURE Research and Outreach Fair,” AUVSI XPONENTIAL 2017, Dallas, TX, May 8-11, 2017.
5. “ASSURE Research Panel: Status of UAS Research and Rulemaking,” AUVSI XPONENTIAL 2016, New Orleans, LA, May 2-5, 2016.
6. “Publishing in the Field of Human Factors” at the *58th Annual Meeting of the Human Factors and Ergonomics Society*, Chicago, Illinois, October 27–31, 2014
7. “Modeling Hurts,” Modeling in Human-Machine Systems: Challenges for Formal Verification symposium at the 2014 AAAI Spring Symposium Series, Stanford, CA, March 24-26, 2014
8. “Improving Patient Safety and Decreasing Error during the Handoff of Surgical Patients,” 96<sup>th</sup> Annual Clinical Congress of the American College of Surgeons, Washington DC, October 4, 2010.

### Invited Seminars/Presentations (Total: 55)

1. "Human-robot interaction research: collaborative work and telepresence," BGU/Philadelphia Academic Bridge, November 10, 2020

2. "LGBTQ+ activism for equity in academia," Human Factors & Ergonomics Society LGBTQ Affinity Group, July 13, 2020
3. "Advancing equity and diversity: Progress through sustained collective action" Transportation Human Factors Division, V-314, U.S. Department of Transportation Volpe National Transportation Systems Center, Cambridge, MA, May 30, 2020
4. "An approach to function allocation: bridging the gap between task analysis and function allocation recommendations," Agricultural, Biological & Cognitive (ABC) Robotics Initiative, Ben-Gurion University of the Negev, Be'er Sheva, Israel, February 2, 2020
5. "A formal methods framework to support medical device usability with respect to the end user's tasks, motor capabilities and signifier interpretation," Department of Industrial Engineering, Tel Aviv University, Tel Aviv, Israel, January 28, 2020
6. "Opportunities in mechanical and industrial engineering", Department of Manufacturing & Industrial Engineering, Northeastern University, Boston, MA, January 23, 2020.
7. "An integrated framework for modeling and verifying human-device interaction with respect to the end users' tasks, motor capabilities and signifier interpretations," Department of Industrial Engineering & Management, Ben-Gurion University of the Negev, Be'er Sheva, Israel, November 25, 2019
8. "Opportunities in industrial and manufacturing engineering", Harold and Inge Marcus Department of Industrial & Manufacturing Engineering, Pennsylvania State University, State College, Pennsylvania, November 5, 2019.
9. "An integrated framework for modeling and verifying usability with respect to the end user's tasks, motor capabilities and signifier interpretations," University College London Interaction Centre (UCLIC), University College London, London, UK, September 18, 2019
10. "Enhancing healthcare through the integration of human factors engineering," NewCourtland Center for Transitions and Health, School of Nursing, University of Pennsylvania, Philadelphia, PA, May 7, 2019
11. "Exploring opportunities in industrial engineering," Department of Industrial Engineering, Clemson University, Clemson, SC, January 24, 2019
12. "Moving forward the poly way," The Polytechnic School, Arizona State University, Mesa, AZ, December 20, 2018
13. "An approach to integrating psychological theory into a formal method approach to support usability analysis in human-interactive systems," Department of Psychology, Georgia Institute of Technology, November 28, 2018
14. "An integrated information processing and task-based approach to making function allocation decisions," Department of Industrial Engineering, Clemson University, Clemson, SC, October 19, 2018
15. "Transitions in care from hospital to home care: Identifying informatics opportunities to support nurse decision making through improved health information technology," Grand Rounds, Division of Health Sciences Informatics, Johns Hopkins School of Medicine, Baltimore, MD, September 7, 2018
16. "Human-automation interaction considerations for unmanned aerial system integration," 2<sup>nd</sup> Workshop on "Human-Automation Interaction Considerations for Unmanned Aerial System Integration," May 16-17, 2018
17. "Human factors in mechanical circulatory support (MCS) design," CorWave, SA, Paris, France, September 28, 2017.

18. "Taxonomy for function allocation strategies to support human-automation interaction recommendations," School of Electronics and Information Engineering, Xi'an Jiaotong University, Xi'an, China, November 9, 2016.
19. "Analyzing human-computer interaction using formal task analytic and signifier models," Center for Survey Measurement, U.S. Census Bureau, Suitland, MD, September 22, 2016.
20. "Analyzing human-automation interaction and human-human coordination using formal task analytic methods," School of Electronics and Information Engineering, Xi'an Jiaotong University, Xi'an, China, September 10, 2015.
21. "Improving handover of care between residents in the in-patient setting," Human Factors & Ergonomics Society Virginia Tech Chapter, Blacksburg, VA, April 18, 2014.
22. "Integrated model checking and simulation of NextGen authority and autonomy," Joint Planning and Development Office, Washington, DC, February 27, 2014.
23. "Analyzing Human-human Coordination and Human-automation Interaction via Model Checking using Formal Task Analytic Methods and Automated Error Generation," Department of Computer Science, Brigham Young University, February 4, 2014.
24. "Patient handover assessment: factors and considerations," Human Factors & Ergonomics Society Delaware Valley Chapter, Philadelphia, PA, November 21, 2013.
25. "Analyzing human-automation interaction and human-human communication using formal task analytic models," Epstein Department of Industrial and Systems Engineering, University of Southern California, October 1, 2013.
26. "A systematic approach to analyzing human-automation interaction using formal task analytic models," School of Biomedical Engineering, Science and Health Systems, Drexel University, May 10, 2013.
27. "Resident physicians as human information systems: Sources yet seekers," College of Nursing & Health Professions, Drexel University, April 29, 2013.
28. "Reducing risky behaviors associated with 21st birthdays," The Center to Promote Effective Youth Development (Youth-Nex), University of Virginia, March 21, 2013.
29. "A systematic approach to analyzing human-automation interaction using formal task analytic models," Human Research & Engineering Directorate, U.S. Army Research Lab, November 16, 2012.
30. "A systematic approach to analyzing human-automation interaction using formal task analytic models," Department of Industrial and Systems Engineering, University of Washington, October 30, 2012.
31. "A systematic approach to analyzing human-automation interaction using formal task analytic models," United Technologies Research Center, October 10, 2012.
32. "Characterizing hospitalist patient handover quality at change of shift," Department of Industrial and Systems Engineering, College of Engineering, University of Wisconsin-Madison, June 25, 2012.
33. "Using formal human task analytic models to verify human-automation interaction in safety critical systems," Smart Information Flow Technologies (SIFT) LLC, Minneapolis, MN, May 22, 2012.
34. "Human-automation interaction with information analysis automation: A methodology for examining human interaction with automated judges," College of Information Science and Technology, Drexel University, May 8, 2012.



35. "Human-automation interaction with information analysis automation: A methodology for examining human interaction with automated judges," School of Industrial Engineering, Purdue University, May 4, 2012.
36. "Using formal human task analytic models to verify human-automation interaction in safety critical systems," Department of Mechanical and Industrial Engineering, University of Massachusetts, Amherst, April 9, 2012.
37. "A systematic approach to analyzing human-automation interaction using formal task analytic models," School of Industrial Engineering, Purdue University, March 22, 2012.
38. "Improving in-patient handover quality at physician change of shift," Department of Industrial Engineering Seminar, University at Buffalo, State University of New York, December 8, 2011.
39. "Using task analytic behavior models and model checking to evaluate human-automation interaction," Department of Mathematics & Computer Science's seminar on Mathematical Science and Applications, Virginia State University, November 18, 2011.
40. "Characterizing hospitalist patient handover quality at change of shift," Grand Rounds, Division of Health Sciences Informatics, School of Medicine, Johns Hopkins University, November 11, 2011.
41. "A systematic approach to analyzing human-automation interaction using formal task analytic models," Department of Industrial Engineering Seminar, University at Buffalo, State University of New York, July 14, 2011.
42. "How a human factors engineer has embraced the social norms approach: One engineering professor's experience in engaging students in reducing alcohol abuse," The Office of the Provost, Lafayette College, Easton, PA, March 9, 2011
43. "An approach to model checking human-automation interaction using formal task-analytic models," Department of Aeronautics and Astronautics, Massachusetts Institute of Technology, Cambridge, MA, March 11, 2010
44. "Engineers as consumers of communication analysis methods," Communications Analysis Workshop sponsored by the Office of Naval Research, Tempe, AZ, February 16-18, 2010
45. "Formal verification of human-automation interaction: A method for predicting erroneous human behavior and system failure," The Daniel Guggenheim School of Aerospace Engineering at the Georgia Institute of Technology, Atlanta, GA, February 9, 2010
46. "Human-automation interaction with alerting systems: Signal Detection Theory and Event Prediction and Mitigation," Center for Operator Performance Fall 2009 Meeting, Richmond, CA, November 5, 2009
47. "Impact of increased spatio-temporal radar data resolution on forecaster wind assessments, warning, and confidence," Department of Electrical and Computer Engineering, University of Massachusetts, Amherst, MA, October 28, 2009.
48. "Impact of increased spatio-temporal radar data resolution on forecaster wind assessments," School of Industrial Engineering, University of Oklahoma, Norman, OK, April 3, 2009
49. "Spatial awareness for synthetic vision systems: Using spatial and temporal judgments and subjective measures to evaluate texture and field of view and to identify spatial biases," Department of Psychology, University of Virginia, Charlottesville, VA, Oct. 30, 2008.
50. "Human interaction with information analysis automation," Department of Mechanical & Industrial Engineering Seminar, University of Iowa, Iowa City, IA, February 14, 2008.

51. "Measuring human-automated judge interaction in complex systems," Department of Industrial Engineering Seminar, University at Buffalo, State University of New York, March 26, 2004.
52. "Human-automated judge learning: A methodology for examining human interaction with automated judges," Department of Psychology, University of Virginia, Charlottesville, VA, March 18, 2004.
53. "Human-automation interaction with complex systems: Empirical studies and methodological approaches," The Harold and Inge Marcus Department of Industrial & Manufacturing Engineering, The Pennsylvania State University, University Park, PA, February 8, 2001.
54. "Human-automation interaction with complex systems: Empirical studies and methodological approaches," Department of Systems & Information Engineering, The University of Virginia, Charlottesville, VA, February 2, 2001.
55. "Turbulence assessment and decision making in commercial aviation: Studies investigating the current state of practice and the effects of possible technology interventions," National Transportation Safety Board, Washington, DC, December 5, 2000.

## PUBLICATIONS

Student, post-doctoral, and fellow co-authors mentored by Bass for the subject publication are underlined

### National Academies Reports (Total: 5)

1. National Academies of Sciences, Engineering, and Medicine (2020). 2019-2020 Assessment of the Army Research Laboratory: Interim report. Washington, DC: The National Academies Press.
2. National Academies of Sciences, Engineering, and Medicine (2019). 2017-2018 Assessment of the Army Research Laboratory. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25419>.
3. National Academies of Sciences, Engineering, and Medicine. (2018). Human-Automation Interaction Considerations for Unmanned Aerial System Integration into the National Airspace System. Washington, DC: The National Academies Press. doi: <https://doi.org/10.17226/25009>
4. National Academies of Sciences, Engineering, and Medicine (2018). 2017-2018 Assessment of the Army Research Laboratory: Interim Report. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25011>
5. National Academies of Sciences, Engineering, and Medicine (2017). Integrating Social and Behavioral Sciences Within the Weather Enterprise. Washington, DC: The National Academies Press. <https://doi.org/10.17226/24865>

### Book Chapters (Total: 8)

1. **Bass, E.J.** (accepted). An engineering faculty's journey into undergraduate alcohol abuse prevention. In D. S. Anderson & T. Hall (Eds.) *Leading Campus Drug and Alcohol Abuse Prevention: Grounded Approaches for Student Impact*. NASPA.
2. **Bass, E.J.** (2019). A human factors engineer's journey into enhancing LGBT status in academia. In R. D. Roscoe, E. K. Chiou, & A. R. Wooldridge (Eds.) *Advancing Diversity*,

*Inclusion, and Social Justice through Human Systems Engineering* (pp. 103-108). Boca Raton, FL: CRC Press.

3. Bolton, M.L. & Bass, E.J. (2017). Enhanced Operator Function Model (EOFM): A task analytic modeling formalism for including human behavior in the verification of complex systems. In B. Weyers, J. Bowen, A. Dix, and P. Palanque, (Eds.) *The Handbook of Formal Methods in Human-Computer Interaction*. Springer. (pp. 343-377)
4. Smith, P. J. & Bass, E.J. (2017). Distributed work in the National Airspace System: Traffic flow management and airline operations control. In S. Landry (Ed.) *Handbook of Human Factors in Air Transportation Systems*. CRC Press. (pp. 107-114)
5. Bolton, M.L. & Bass, E.J. (2011). Comparing perceptual judgment and subjective measures of spatial awareness. In E. Salas & A.S. Dietz (Eds.). *Situation Awareness* (pp. 211-21). Aldershot, UK: Ashgate.  
Reprint of: Bolton, M.L. & Bass, E.J. (2009). Comparing perceptual judgment and subjective measures of spatial awareness. *Applied Ergonomics*, 40(4), 597–607.
6. Borowitz, S.M., Waggoner-Fountain, L.A., Bass, E.J., & DeVoge, J. (2008). Resident Sign-Out: a precarious exchange of critical information in a fast paced world. In K. Henriksen, J.B. Battles, M.A. Keyes & M.L. Grady (Eds.). *Advances in Patient Safety: New Directions and Alternative Approaches. Vol. 2: Culture and Redesign*, AHRQ Publication Nos. 08-0034 (1-4). July 2008. Rockville, MD: Agency for Healthcare Research and Quality
7. Bass, E.J. & Pritchett, A.R. (2006). Human–Automated Judgment Learning: Enhancing interaction with automated judgment systems. In A. Kirlik (Ed.). *Working with Technology in Mind* (pp. 114-126). New York, NY: Oxford University Press.
8. Small, R.L. & Bass, E.J. (2000). Certify for success: A methodology for human-centered certification of advanced aviation systems. In J.A. Wise & V.D. Hopkin (Eds.), *Human Factors in Certification* (pp. 139-150). Mahwah, NJ: Lawrence Erlbaum Associates.

#### **Demonstrations (Total:1)**

1. Shephard, A. et al. (2017). Live, Virtual & Constructive UAS Demo with Sinclair National UAS Training and Certification Center from its Mobile Ground Control Station, *GEOINT 2017 Symposium*, San Antonio, TX, June 4, 2017

#### **Encyclopedia entries (Total: 1)**

1. Bass, E.J. (2012). Human–Automated Judgment Learning. In N. M. Seel (Ed.) *Encyclopedia of the Sciences of Learning, Vol. 3* (pp. 1462-4). New York, NY: Springer.

#### **Journals Edited (Total: 4)**

1. Bass, E.J. ed. (2016). “IEEE Transactions on Human-machine Systems: Year in Review for 2015,” *IEEE Transactions on Human-machine Systems*, 46(1), 1-8.
2. Bass, E.J. ed. (2015). “IEEE Transactions on Human-machine Systems: Year in Review for 2014,” *IEEE Transactions on Human-machine Systems*, 45(1), 1-12.
3. Bass, E.J. ed. (2014). “IEEE Transactions on Human-machine Systems: Year in Review for 2013,” *IEEE Transactions on Human-machine Systems*, 44(1), 1-12.
4. Bass, E.J. ed. (2013). “IEEE Systems, Man, and Cybernetics Society’s continuing legacy in human–machine systems,” *IEEE Transactions on Human-machine Systems*, 43(1), 1-7.

### Special Journal Issues Edited (Total: 2)

1. Bisantz, A. M., **Bass, E.J.** and Ockerman, J.J. eds. (2012). “Editors’ introduction to the special issue on innovations in cognitive engineering and decision making, Part I,” *Journal of Cognitive Engineering and Decision Making*, 6(1), 3-4.
2. Bisantz, A. M., **Bass, E.J.** and Ockerman, J.J. eds. (2012). “Editors’ introduction to the special issue on innovations in cognitive engineering and decision making, Part II,” *Journal of Cognitive Engineering and Decision Making*, 6(2), 139-140.

### Editorials (Total: 1)

1. Lane-Fall, M. & **Bass, E.J.** (2020). “Nonroutine Events” as a nonroutine outcome for perioperative systems research. *Anesthesiology* , 133, 8-10.

### Archival Journal Publications (Total: 56)

1. Champion, C., Sockolow, P.S., Bowles, K.B., Potashnik, S., Yang, Y., Pankok, Jr., C., Le, N., McLaurin, E. & **Bass, E.J.** (in press). Getting to complete and accurate medication lists during the transition to home health care. *Journal of the American Medical Directors Association* <https://doi.org/10.1016/j.jamda.2020.06.024>
2. Sockolow, P., Bowles, K., Pankok, Jr., C., Zhou, Y., Potashnik, S., & **Bass, E.J.** (in press). Planning the episode: Home care admission nurse decision-making regarding the patient visit pattern. *Home Health Care Management & Practice*
3. Sockolow, P.S., Bowles, K. B., Topaz, M., Koru, G., Hellesø, R., O’Connor, M., & **Bass, E.J.** (in press). The time is now: Informatics research opportunities in home health care. *Applied Clinical Informatics*
4. Sockolow, P.S., Le, N. B., Potashnik, S., **Bass, E.J.**, & Bowles, K.B. (in press). There’s a problem with the problem list: Incongruence of patient problem information across the home care admission. *Journal of the American Medical Directors Association* <https://doi.org/10.1016/j.jamda.2020.06.032>
5. Throckmorton, A. L., **Bass, E.J.**, Ferrick, B., Ramakrishnan, A., Eichmann, S., Catucci, N., Eshelman, B., McNamara, J., Sundquist, E., Beatson, N., Hirschhorn, M., Menon, P., Datner, E., Stevens, R., & Marcolongo, M. (in press). A cross-community COVID-19 leadership rapid-response effort: Design-build of Drexel AJFlex Face Shields. *Annals of Biomedical Engineering*
6. Campbell, E. A., Qian, T., Miller, J. M., **Bass, E.J.**, & Masino, A. J. (2020). Identification of temporal condition patterns associated with pediatric obesity incidence using sequence mining and big data. *International Journal of Obesity*, 44,1753-1765
7. Campbell, E. A., **Bass, E.J.**, & Masino, A. J. (2020). Temporal condition pattern mining in large, sparse electronic health record data: A case study in characterizing pediatric asthma incidence. *Journal of the American Medical Informatics Association*, 27(4), 558-566.
8. Jazayeri, A. & **Bass, E. J.** (2020). Agent-oriented methodologies evaluation frameworks: A review. *International Journal of Software Engineering and Knowledge Engineering*, 30(9), 1337-1370.
9. Sockolow, P.S., Bowles, K.B., Wojciechowicz, C., & **Bass, E.J.** (2020). Incorporating home health care nurses’ admission information needs to inform data standards. *Journal of the American Medical Informatics Association* , 27(8), 1278–1286

10. Abbate, A.J. & **Bass, E.J.** (2019). A formal approach to connectibility affordances. *IEEE Transactions on Human-machine Systems*, 49(6), 518-528.
11. Yang, Y., **Bass, E.J.**, Bowles, K. B. & Sockolow, P. S. (2019). Impact of home care admission nurses' goals on electronic health record documentation strategies at the point of care. *CIN: Computers, Informatics, Nursing*, 37(1), 39-46.
12. Abbate, A.J. & **Bass, E.J.** (2018). A formal methods approach to semiotic engineering. *The International Journal of Human-Computer Studies*, 115, 20-39.
13. Abbate, A.J., Throckmorton, A.L., & **Bass, E.J.** (2016). A formal task analytic approach to medical device alarm troubleshooting instructions. *IEEE Transactions on Human-machine Systems*, 46(1), 53-65.
14. Throckmorton, A.L., Patel-Raman, S. M., Fox, C. S., & **Bass, E.J.** (2016). Beyond the VAD: Human factors engineering for mechanically assisted circulation in the 21st century. *Artificial Organs*, 40(6), 539-548.
15. Baumgart, L.A., **Bass, E.J.**, Voss, J., & Lyman, J. A. (2015). Effect of pooled comparative information on judgments of quality. *IEEE Transactions on Human-machine Systems*, 45(6), 773-781.
16. **Bass, E.J.**, Baumgart, L.A. & Shepley, K.K. (2013). The effect of information analysis automation display content on human judgment performance in noisy environments. *Journal of Cognitive Engineering and Decision Making*, 7(1), 49-65.
17. **Bass, E.J.**, Bruce, S. E. & Lee, D.W. (2013). The effect of a birthday card intervention on 21st birthday celebratory drinking behaviors. *Journal of Alcohol and Drug Education*, 47(2), 47-65
18. **Bass, E.J.**, DeVoge, J.M., Waggoner-Fountain, L.A., & Borowitz, S.M. (2013). Resident physicians as human information systems: Sources yet seekers. *Journal of the American Medical Informatics Association*, 20, 736-742.
19. Bolton, M.L. & **Bass, E.J.** (2013). Generating erroneous human behavior from the strategic knowledge in task analytic models and evaluating its impact on system safety with model checking. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 43(3), 1314-1327.
20. Bolton, M.L., **Bass, E.J.** & Siminiceanu, R.I. (2013). Using formal verification to evaluate human-automation interaction, a review. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 43(3), 488-503.
21. Bolton, M.L., Göknur, S. & **Bass, E.J.** (2013). Framework to support scenario development for human-centered alerting system evaluation. *IEEE Transactions on Human-machine Systems*, 43(6), 595-607.
22. Borowitz, S.M., Waggoner-Fountain, L.A., & **Bass, E.J.** (2013). Impact of a computerized system on resident sign-out. *Biomedical Instrumentation & Technology: Human Factors & IT*, 47(s2), 68-72.
23. Meth, S., **Bass, E.J.** & Hoke, G. (2013). Considering factors of and knowledge about patients in handover assessment. *IEEE Transactions on Human-machine Systems*, 43(5), 494-498.
24. Vargo, E.P., **Bass, E.J.** & Cogill, R. (2013). Belief propagation for large domain optimization on factor graphs: An application to decentralized radar coordination. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 43(2), 460-466.
25. Bolton, M.L. & **Bass, E.J.** (2012). Using model checking to explore checklist-guided pilot behavior. *The International Journal of Aviation Psychology*, 22(4), 343-366.

26. Bolton, M.L., **Bass, E.J.** & Siminiceanu, R.I. (2012). Generating phenotypical erroneous human behavior to evaluate human-automation interaction using model checking. *The International Journal of Human-Computer Studies*, 70(11), 888-906.
27. Colligan, R.L. & **Bass, E.J.** (2012). Interruption handling strategies during paediatric medication administration. *BMJ Quality & Safety*, 21, 912–917.
28. Helms, A.S., Perez, T.E., Baltz, J., Donowitz, G., Hoke, G., **Bass, E.J.**, Plews-Ogan, M.L. (2012). Use of an appreciative inquiry approach to improve resident sign-out in an era of multiple shift changes. *Journal of General Internal Medicine*, 27(3), 287-291.
29. Lee, D.W., **Bass, E.J.**, Patek, S.D., Alexandrov, N., & Kincaid, R.R. (2012). Minimax network flow model for assessing impacts of airport capacity perturbations. *Journal of Guidance, Control, and Dynamics*, 35(5), 1616-1624.
30. Rude, D.J., **Bass, E.J.** & Philips, B. (2012). Quantifying the impact of gap filling data: Forecaster wind assessments, warnings, and confidence with additional radar data. *Meteorological Applications*, 19, 355–370.
31. Wohlaer, M., Arora, V., Horwitz, L.I., **Bass, E.J.**, Mahar, S., & Philibert, I. (2012). The patient handoff: A comprehensive curricular blueprint for resident education to improve continuity of care. *Academic Medicine*, 87(4), 411–418.
32. Bolton, M.L., Siminiceanu, R.I., & **Bass, E.J.** (2011). A systematic approach to model checking human-automation interaction using task-analytic models. *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans*, 41(5), 961-976.
33. Carayon, P., **Bass, E.J.**, Bellandi, T., Gurses, A.P., Hallbeck, M.S., & Mollo, V. (2011). Socio-technical systems analysis in health care: A research agenda. *IIE Transactions on Healthcare Systems Engineering*, 1(3), 145-160.
34. Foster, H.A., **Bass, E.J.** & Bruce, S. E. (2011). Are students drinking hand over fifth? Understanding participant demographics in order to curb a dangerous practice. *Journal of Alcohol and Drug Education*, 55, 41-60.
35. Baumgart, L.A., Gerling, G.J. & **Bass, E.J.** (2010). Characterizing the range of simulated prostate abnormalities palpable by digital rectal examination. *Cancer Epidemiology*, 34, 79-84.
36. Bolton, M.L. & **Bass, E.J.** (2010). Formally verifying human-automation interaction as part of a system model: Limitations and tradeoffs. *Innovations in Systems and Software Engineering*, 6(3), 219-231.
37. Brotzge, J., Hondl, K., Philips, B., Lemon, L., **Bass, E.**, Rude, D., & Andra, D. (2010). Evaluation of Distributed Collaborative Adaptive Sensing for detection of low-level circulations and implications for severe weather warning operations. *Weather and Forecasting*, 25(1), 173-189.
38. League, C.E., Díaz, W., Philips, B., **Bass, E.J.**, Kloesel, K.A., Gruntfest, E.C., & Gessner, A. (2010). Emergency manager decision-making and tornado warning communication. *Meteorological Applications*, 17(2), 163-172.
39. Sierk, M.L., Smoot, M.E., **Bass, E.J.**, & Pearson, W. R. (2010). Improving pairwise sequence alignment accuracy using near-optimal protein sequence alignments. *BMC Bioinformatics*, 11:146.
40. **Bass, E.J.**, Baumgart, L.A., Philips, B., Kloesel, K., Dougherty, K., Rodríguez, H., Díaz, W., Donner, W., Santos, J., & Zink, M. (2009). Incorporating emergency management needs in the development of weather radar networks. *Journal of Emergency Management*, 7(1), 45-52.

41. Bolton, M.L. & **Bass, E.J.** (2009). Comparing perceptual judgment and subjective measures of spatial awareness. *Applied Ergonomics*, 40(4), 597–607.
42. Boyd, J., **Bass, E.J.**, McDaniel, J.C. & Bowles, R. (2009). A framework for analyzing simulated aircraft wake vortex encounters to inform aircraft spacing criteria. *International Journal of Applied Aviation Studies*, 9(1), 57-84.
43. **Bass, E.J.** & Pritchett, A.R. (2008). Human-Automated Judge Learning: A methodology for examining human interaction with information analysis automation. *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans*, 38(4), 759-776.
44. Baumgart, L.A., **Bass, E.J.**, Philips, B. & Kloesel, K. (2008). Emergency management decision-making during severe weather. *Weather and Forecasting*, 23(6), 1268–1279.
45. Bolton, M.L. & **Bass, E.J.** (2008). Using relative position and temporal judgments to identify biases in spatial awareness for Synthetic Vision Systems. *The International Journal of Aviation Psychology*, 18(2), 183-206.
46. Borowitz, S.M., Waggoner-Fountain, L.A., **Bass, E.J.**, & Sledd, R.M. (2008). Adequacy of information transferred at resident sign-out (inhospital handover of care): A prospective survey. *Quality and Safety in Healthcare*, 17, 6-10.
47. Lee, D.W., **Bass, E.J.**, Patek, S.D., & Boyd, J. (2008). A traffic engineering model for air taxi services. *Transportation Research Part E: The Logistics and Transportation Review*, 44, 1139-1161.
48. Bolton, M.L., **Bass, E.J.** & Comstock, J.R. (2007). Spatial awareness in Synthetic Vision Systems: Using spatial and temporal judgments to evaluate texture and field of view. *Human Factors*, 49(6), 961-974.
49. DeVoge, J.M. & **Bass, E.J.** (2007). Job specific or general training: A quantitative assessment. *The International Journal of Aviation Psychology*, 17(4), 333-351.
50. **Bass, E.J.** (2006). Comparison of four quantitative methods of measuring human judgment performance in a simulated horizontal air traffic conflict prediction task. *International Journal of Applied Aviation Studies*, 6(1), 25-46.
51. Smoot, M.E., **Bass, E.J.**, Guerlain, S.A., & Pearson, W.R. (2005). A system for visualizing and analyzing near-optimal protein sequence alignments. *Information Visualization*, 4, 224-237.
52. **Bass, E.J.**, Ernst-Fortin, S.T., Small, R.L., & Hogans, Jr., J.T. (2004). Architecture and development environment of a knowledge-based monitor that facilitate incremental knowledge-base development. *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans*, 34(4), 441-449.
53. **Bass, E.J.** (2002). Turbulence assessment and decision-making in commercial aviation: Investigating the current state of practice and the effects of technology interventions. *The International Journal of Applied Aviation Studies*, 2(1), 11-22.
54. **Bass, E.J.**, Kvam, P., Campbell, R.H., Castaño, D.J. & Jones, W.M. (2002). Measuring the seat of the pants: Commercial airline pilot turbulence assessments in a full-motion simulator. *The International Journal of Aviation Psychology*, 12(2), 123-136.
55. **Bass, E.J.** (2001). Turbulence assessment and decision making on the flight deck and in the cabin. *Human Factors and Aerospace Safety*, 1(3), 267-294.
56. **Bass, E.J.**, Castaño, D.J., Jones, W.M., & Ernst-Fortin, S.T. (2001). The effect of providing automated clear air turbulence assessments to commercial airline pilots. *The International Journal of Aviation Psychology*, 11(4), 317-339.

### Peer Reviewed Panels with Articles (Total: 9)

1. **Bass, E.J.**, Caldwell, B., Cao, C., Lee, J.D., & Miller, C. (in press). Planning the sabbatical: Potential benefits, options and strategies. *The 64th International Annual Meeting of the Human Factors and Ergonomics Society*, October 5-9, 2020, Chicago, IL
2. **Bass, E.J.**, Bisantz, A., Cao, C., Carayon, P., Cooke, N., & Pritchett, A.R. (2019). Moving forward from the mid-career: Path options and strategies for mid-career academics. *The 63rd Annual Meeting of the Human Factors and Ergonomics Society*, Seattle, WA, October 28-Nov. 1, 2019, 484-487.
3. Warden, T., **Bass, E.J.**, Kalsher, K., Ling, C. & O'Brien, M. (2018). The National Academies Board on Human System Integration Panel: Integrating social and behavioral sciences within the weather enterprise. *The 62nd Annual Meeting of the Human Factors and Ergonomics Society*, Philadelphia, PA, October 1-5, 2018, 1818-1820.
4. Hancock, G.M., Stowers, K., **Bass, E.J.**, Cooke, N., Cuevas, H. M., Gawron, V., & Larson, N. (2018). Women's Leadership in HF/E: Past, Present & Future, *The 62nd Annual Meeting of the Human Factors and Ergonomics Society*, Philadelphia, PA, October 1-5, 2018, 1572-1574.
5. Madhavan, P., Cooke, N.J., **Bass, E.J.**, Meyer, J., & Roth, E. M. (2015). The National Academies Board on Human Systems Integration Panel: Applying human-systems integration to cyber security. *The 59th Annual Meeting of the Human Factors and Ergonomics Society*, Los Angeles, CA, October 26-30, 2015, 405-408.
6. Pennathur, P.R., Perry, S.J., Mosher, H.J., Persoon, T. J., **Bass, E.J.** & Fairbanks, R. J. (2013). Healthcare systems design at a crossroads: Challenges, opportunities and strategies. *The 57th Annual Meeting of the Human Factors and Ergonomics Society*, San Diego, CA, September 30-October 4, 2013, 713-717.
7. Pennathur, P.R., **Bass, E.J.**, Rayo, M.F., Perry, S.J., Rosen, M. & Gurses, A. (2012). Handoff communication: Implications for design. *The 56th Annual Meeting of the Human Factors and Ergonomics Society*. Boston, MA, Oct. 22-26, 2012, 863-866.
8. O'Brien, M.A., **Bass, E.J.**, Bliss, J.P., Cooke, N.J., Kalsher, M.J., & Mayhorn, C.B. (2012). Improving public response to disaster warnings: A discussion panel. *The 56th Annual Meeting of the Human Factors and Ergonomics Society*. Boston, MA, Oct. 22-26, 2012, 2036-2039.
9. Mosier, K.L., Kirlik, A., Bisantz, A., Pritchett, A., Rothrock, L., & **Bass, E.** (2004). Brunswik's Lens Model in human factors research: Modern applications of a classic theory. *The 48th Annual Meeting of the Human Factors and Ergonomics Society*. New Orleans, LA, Sept. 20-24, 2004, 350-354.

### Peer Reviewed Conference Publications (Total: 62)

1. **Bass, E.J.**, Abbate, A.J., Noaiseh, Y., & DiMaria-Ghalili, R. A. (2020). User-centered requirements for patient fluid intake monitoring support, *The 64th International Annual Meeting of the Human Factors and Ergonomics Society*, virtual, October 5-9, 2020, 736-740.
2. College, P.A. & **Bass, E.J.** (2020). Enhancing safety in the security and alarm monitoring industry: A case study in the development of job hazard analyses, *The 64th International Annual Meeting of the Human Factors and Ergonomics Society*, virtual, October 5-9, 2020, 1671-1675
3. McLaurin, E.J. & **Bass, E.J.** (2020). Patterns of interaction with information sources: A case study of a home healthcare admission nurse completing medication-related activities. *The*



- 64th International Annual Meeting of the Human Factors and Ergonomics Society*, virtual, October 5-9, 2020, 415-419.
4. Salzer, Y., & **Bass, E.J.** (2020). Using function allocation methods to inform research roadmaps: A human-robot interaction case study for Medjool date thinning, *The 64th International Annual Meeting of the Human Factors and Ergonomics Society*, virtual, October 5-9, 2020, 354-358.
  5. Lee, D.L., **Bass, E.J.**, & Pankok, C. (2020). Developing operator-in-the-loop timeline requirements with a case study involving non-cooperative encounters with unmanned aircraft, *1st IEEE International Conference on Human-Machine Systems (ICHMS 2020)*, September 7-9, 2020, virtual, 6 pages
  6. **Bass, E.J.**, College, P.A., & Bruce, S. (2019). The interplay of plans and intentions: a pledge based intervention to reduce participation in a single hazardous event. *The 63rd Annual Meeting of the Human Factors and Ergonomics Society*, Seattle, WA, October 28-Nov. 1, 2019, 307-311.
  7. Sockolow, P., **Bass, E.J.**, Yang, Y., Le, N. B., Potashnik, S. & Bowles, K. H. (2019). Availability and quality of information used by nurses while admitting patients to a rural home care agency. *MedInfo 2019*, August 26-30, 2019, Lyon, France, 798 – 802.
  8. Sockolow, P., Le, N. B., Yang, Y., Potashnik, S., **Bass, E.J.**, & Bowles, K. H. (2019). Incongruence of patient problem information across three phases of home care admission: There's a problem with the problem list. *MedInfo 2019*, August 26-30, 2019, Lyon, France, 803-807.
  9. Abbate, A.J. & **Bass, E.J.** (2018). CURATe measures for human-integrated systems: A model checking approach. *The 62nd Annual Meeting of the Human Factors and Ergonomics Society*, October 1-5, 2018, Philadelphia, PA, 646-650.
  10. Pankok, C. & **Bass, E.J.** (2018). Information content requirements for remote pilot handover of control of unmanned aircraft systems in the National Airspace. *The 62nd Annual Meeting of the Human Factors and Ergonomics Society*, October 1-5, 2018, Philadelphia, PA, 81-85.
  11. Yang, Y., **Bass, E.J.**, Sockolow, P., & Bowles, K. H. (2018). Knowledge elicitation of homecare admission decision making processes via focus group, member checking and data visualization. *AMIA 2018 Annual Symposium*, November 3-7, 2018, San Francisco, CA. 1127-1136
  12. Sockolow, P., Wojciechowicz, C., Holmberg, A., **Bass, E.J.**, Potashnik, S., Yang, Y., & Bowles, K. H. (2018). Home care admission information: What nurses need and what nurses have. A mixed methods study. *Nursing Informatics 2018 (NI 2018): ICT to Improve Quality and Safety at the Point of Care*, June 6-8, 2018, Guadalajara, Mexico. 164-168.
  13. Sockolow, P., Yang, Y., **Bass, E.J.**, Bowles, K. H., Holmberg, A., & Potashnik, S. (2017). Data visualization of home care admission nurses' decision-making. *AMIA 2017 Annual Symposium*, November 4-8, 2017, Washington DC., 1597-1606.
  14. Abbate, A.J. & **Bass, E.J.** (2017). Modeling affordance using formal methods. *The 61st Annual Meeting of the Human Factors and Ergonomics Society*. October 9-13, 2017, Austin, TX, 723-727.
  15. Lee, D.W., Fitzick, D.W. & **Bass, E.J.** (2017). Simulating human performance of task sharing: Modeling task delay and delegation of authority. *The 61th Annual Meeting of the Human Factors and Ergonomics Society*. October 9-13, 2017, Austin, TX, 786-790.

16. Pankok, C. & **Bass, E.J.** (2017). A decadal revisiting of the assessment of pilot control interfaces for unmanned aircraft systems. *The 61<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society*. October 9-13, 2017, Austin, TX, 63-67.
17. Yang, Y., **Bass, E.J.**, & Sockolow, P. (2017). Distributed electronic documentation practices of homecare admission: Informing electronic health record design guidelines. *The 61<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society*. October 9-13, 2017, Austin, TX, 573-577.
18. Abbate, A. & **Bass, E.J.** (2016). A formal language for specifying visual interface signifiers. *The 60<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society*. September 19-23, 2016, Washington D.C., 1098-1102.
19. Sockolow, P., **Bass, E.J.**, Eberle, C. L., & Bowles, K. H. (2016). Homecare nurses' decision-making during admission care planning. In W. Sermeus, P.M. Procter, & P. Weber, (Eds). *Nursing Informatics 2016: Studies in Health Technology and Informatics*, June 25-29, 2016, Geneva, Switzerland, 28-32.
20. Abbate, A. & **Bass, E.J.** (2015). Using computational tree logic methods to analyze user documentation navigation: A formal reachability approach. *The 59<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society*. October 26–30, 2015, Los Angeles, CA, 1481-1485. **Received 2nd place in the Safety Technical Group student paper competition**
21. Abbate, A., Throckmorton, A., & **Bass, E.J.** (2015). Using formal task analytic models to support user manual development: An LVAD case study. *2015 International Symposium on Human Factors and Ergonomics in Health Care*, April 26–29, 2015, Baltimore, MD, 114-117.
22. Lee, D.W. & **Bass, E.J.** (2015). Simulating task sharing with delegation for autonomy and authority in air traffic control. *2015 IEEE International Conference on Systems, Man, and Cybernetics*. October 9-12, 2015, Hong Kong, China, 962-968.
23. Kang, Z. & **Bass, E.J.** (2014). Supporting the eye tracking analysis of multiple moving targets: Design concept and algorithm. *2014 IEEE International Conference on Systems, Man, and Cybernetics*. October 5-8, 2014, San Diego, CA, 3191-3196.
24. Kang, Z., **Bass, E.J.** & Lee, D.W. (2014). Air traffic controllers' visual scanning, aircraft selection, and comparison strategies in support of conflict detection. *The 58<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society*. October 27–31, 2014, Chicago, IL, 77-81.
25. Lee, D.L. & **Bass, E.J.** (2014). Delegation for authority and autonomy: An assignment and coordination model. *2014 IEEE International Conference on Systems, Man, and Cybernetics*. October 5-8, 2014, San Diego, CA, 1759-1766.
26. **Bass, E.J.**, Brantley, K., Perez, T., Bolton, M. L., Helms, A., Bartelt, L., Hall, R., Hoke, G. Plews-Ogan, M., Waggoner-Fountain, L.A., & Borowitz, S.M. (2013). Information, data entry, and reporting requirements for a resident handoff of care support tool. *2013 IEEE International Conference on Systems, Man, and Cybernetics*. October 13-16, 2013, Manchester, England, 675-680.
27. **Bass, E.J.**, Waggoner-Fountain, L.A., Sledd, R., DeVoge, J. & Borowitz, S.M. (2013). Characterization of pediatric resident handover at change of shift to inform process improvement. *2013 IEEE International Conference on Systems, Man, and Cybernetics*. October 13-16, 2013, Manchester, England, 693-698.
28. Bolton, M. L. & **Bass, E.J.** (2013). Evaluating human-human communication protocols with miscommunication generation and model checking. In G. Brat, N. Rungta, & A. Venet

- (Eds.). *NASA Formal Methods, Lecture Notes in Computer Science. Vol. 7871* (pp. 48–62). Berlin Heidelberg: Springer-Verlag.
29. Kang, Z. & **Bass, E.J.** (2013). Computationally tractable approaches to modeling the coverage of weather sensor networks. *2013 IEEE International Conference on Systems, Man, and Cybernetics*. October 13-16, 2013, Manchester, England, 4905-4912.
  30. **Bass, E.J.**, Bolton, M.L., Feigh, K.M., Griffith, D., Gunter, E., Mansky, W. & Rushby, J. (2011). Toward a multi-method approach to formalizing human-automation interaction and human-human communications. *2011 IEEE International Conference on Systems, Man, and Cybernetics*. October 9-12, 2011, Anchorage, Alaska, 1817-1824.
  31. **Bass, E.J.**, Feigh, K.M., Gunter, E. & Rushby, J. (2011). Formal modeling and analysis for interactive hybrid systems. *4th International Workshop on Formal Methods for Interactive Systems (FMIS)*, June 21, 2011, Limerick, Ireland.
  32. **Bass, E.J.**, Hogan, B., Rude, D., Philips, B., Westbrook, D., League, C., Brotzge, J., Marsh, P., Riley, R. & Lemon, L. (2011). A method for investigating real-time distributed weather forecaster-emergency manager interaction. *2011 IEEE International Conference on Systems, Man, and Cybernetics*. October 9-12, 2011, Anchorage, Alaska, 2809-2815.
  33. Bolton, M.L. & **Bass, E.J.** (2011). Evaluating human-automation interaction using task analytic behavior models, strategic knowledge-based erroneous human behavior generation, and model checking. *2011 IEEE International Conference on Systems, Man, and Cybernetics*. October 9-12, 2011, Anchorage, Alaska, 1788-1794. **Franklin V. Taylor Memorial Award for the Best Conference Paper (of 612 accepted papers)**
  34. Hogan, B. & **Bass, E.J.** (2011). Toward an evaluation framework for gap filling radars in adaptive distributed sensor networks. *2011 IEEE International Conference on Systems, Man, and Cybernetics*. October 9-12, 2011, Anchorage, Alaska, 1998-2003. **One of 5 papers nominated for the Franklin V. Taylor Memorial Award for the Best Conference Paper (of 612 accepted papers)**
  35. Baumgart, L.A., **Bass, E.J.**, Lyman, J. A., Springs, S., Voss, J., Hayden, G.F., Hellems, M.A., Hoke, T.R., Schlag, K.A., & Schorling, J.B. (2010). Supporting physicians' practice-based learning and improvement (PBLI) and quality improvement through exploration of population-based medical data. *The 54th Annual Meeting of the Human Factors and Ergonomics Society*. San Francisco, CA, September 27-October 1, 2010, 845-849.
  36. Baumgart, L.A., Gerling, G.J. & **Bass, E.J.** (2010). Psychophysical detection of inclusions with the bare finger amidst softness differentials. *2010 Haptics Symposium*, March 25-26, 2010, Waltham, Massachusetts.
  37. Bolton, M. L. & **Bass, E.J.** (2010). Using task analytic models and phenotypes of erroneous human behavior to discover system failures using model checking. *The 54th Annual Meeting of the Human Factors and Ergonomics Society*. San Francisco, CA, September 27-October 1, 2010, 992-996.
  38. Bolton, M. L. & **Bass, E.J.** (2010). Using task analytic models to visualize model checker counterexamples. *2010 IEEE International Conference on Systems, Man, and Cybernetics*. October 10-13, 2010, Istanbul, Turkey, 2069-2074.
  39. Hogan, B., **Bass, E.J.** & Westbrook, D. (2010). A human-automation interaction approach to the evaluation of resource allocation strategies in adaptive distributed sensor networks. *2010 IEEE International Conference on Systems, Man, and Cybernetics*. October 10-13, 2010, Istanbul, Turkey, 1755-1762.

40. Perez, T., **Bass, E.J.**, Helms, A., & Plews-Ogan, M. (2010). Comparison of patient data in parallel records: The sign-out sheet and the electronic medical record. *2010 IEEE International Conference on Systems, Man, and Cybernetics*. October 10-13, 2010, Istanbul, Turkey, 1884-1888.
41. Bolton, M. L. & **Bass, E.J.** (2009). A method for the formal verification of human-interactive systems. *The 53rd Annual Meeting of the Human Factors and Ergonomics Society*. San Antonio, TX, October 19-23, 2009.
42. Bolton, M. L. & **Bass, E.J.** (2009). Building a formal model of a human-interactive system: Insights into the integration of formal methods and human factors engineering. E. Denney, D. Giannakopoulou, C.S. Păsăreanu (Eds.) *The First NASA Formal Methods Symposium (NFM 2009)*, pp. 6-15, April 6 - 8, 2009 Moffett Field, CA.
43. Bolton, M. L. & **Bass, E.J.** (2009). Enhanced Operator Function Model: A generic human task behavior modeling language. *2009 IEEE International Conference on Systems, Man, and Cybernetics*. October 11-14, 2009, San Antonio, TX.
44. DeVoge, J.M., **Bass, E.J.**, Atia, M., Bond, M., Waggoner-Fountain, L., & Borowitz, S.M. (2009). The development of a web-based resident sign-out training program. *2009 IEEE International Conference on Systems, Man, and Cybernetics*. October 11-14, 2009, San Antonio, TX.
45. Rude, D.J., **Bass, E.J.** & Philips, B. (2009). Impact of increased spatio-temporal radar data resolution on forecaster wind assessments. *2009 IEEE International Conference on Systems, Man, and Cybernetics*. October 11-14, 2009, San Antonio, TX. **Received the Best Student Paper Award.**
46. Philips, B., Westbrook, D., Pepyne, D., **Bass, E.**, Rude, D. & Brotzge, J. (2008). User evaluations of adaptive scanning patterns in the CASA Spring Experiment 2007. *2008 IEEE International Geoscience & Remote Sensing Symposium (IGARSS 2008)*. Boston, MA, July 6-11, 2008.
47. Bolton, M. L. & **Bass, E.J.** (2007). Spatial awareness: Comparing judgment and subjective based measures. *2007 IEEE International Conference on Systems, Man, and Cybernetics*. October 7-10, 2007, Montréal, Quebec.
48. Baumgart, L. A., **Bass, E.J.**, Philips, B. & Kloesel, K. (2006). Emergency management decision-making during severe weather. *The 50th Annual Meeting of the Human Factors and Ergonomics Society*. San Francisco, CA, October 16-20, 2006.
49. Baumgart, L. A. & **Bass, E.J.** (2006). Presenting information in simulated real-time to support part-task weather scenarios. *2006 IEEE International Conference on Systems, Man, and Cybernetics*. October 8-11, 2006, Taipei, Taiwan.
50. Bolton, M. L., **Bass, E.J.**, & Comstock, J.R. (2006). Using relative position and temporal judgments to assess the effects of texture and field of view on spatial awareness in synthetic vision systems displays. *The 50th Annual Meeting of the Human Factors and Ergonomics Society*. San Francisco, CA, October 16-20, 2006.
51. Bolton, M. L., **Bass, E.J.**, & Comstock, J.R. (2006). Using videos derived from simulations to support the analysis of spatial awareness in synthetic vision displays. *2006 IEEE International Conference on Systems, Man, and Cybernetics*. October 8-11, 2006, Taipei, Taiwan.
52. Counihan, R. F., DeVoge, J.M. & **Bass, E.J.** (2006). A web architecture to support collaborative training content development and evaluation. *2006 IEEE International Conference on Systems, Man, and Cybernetics*. October 8-11, 2006, Taipei, Taiwan.

53. Sledd, R., **Bass, E.J.**, Borowitz, S., & Waggoner-Fountain, L. (2006). Characterization of sign-out in pediatric acute care wards to inform process improvement. *The 50th Annual Meeting of the Human Factors and Ergonomics Society*. San Francisco, CA, October 16-20, 2006.
54. Sledd, R., **Bass, E.J.**, Waggoner-Fountain, L. & Borowitz, S. (2006). Supporting the characterization of sign-out in acute care wards. *2006 IEEE International Conference on Systems, Man, and Cybernetics*. October 8-11, 2006, Taipei, Taiwan.
55. Bolton, M. & **Bass, E.J.** (2005). Cognitive Systems Engineering Educational Software (CSEES): Educational software addressing quantitative models of performance. *2005 IEEE International Conference on Systems, Man, and Cybernetics*. Hawaii, October 10-12, 2005.
56. Cummings, M. L., Guerlain, S. & **Bass, E.J.** (2004). Informing design of a command and control decision support interface through an abstraction hierarchy. *The 48th Annual Meeting of the Human Factors and Ergonomics Society*. New Orleans, LA, Sept. 20-24, 2004.
57. Göknur, S., Bolton, M., & **Bass, E.J.** (2004). Adding a motor control component to the Operator Function Model Expert System to investigate air traffic management concepts using simulation. *2004 IEEE International Conference on Systems, Man, and Cybernetics*. October 10-13 2004, The Hague, The Netherlands.
58. **Bass, E.J.** & Pritchett, A. R. (2002). Human-automated judgment learning: A methodology to investigate human interaction with automated judges. *The 46th Annual Meeting of the Human Factors and Ergonomics Society*. Baltimore, MD, Sept. 30-Oct. 4, 2002.
59. **Bass, E.J.** & Rudra, S. (2002). Comparing three methods of measuring human judgment performance in an air traffic conflict prediction task. *2002 IEEE International Conference on Systems, Man, and Cybernetics*.
60. Shapiro, R. G., Andre, A. D., Young, K. R., Lund, A. M., Robertson, M. M., **Bass, E.J.**, Karsh, B. T., Lin, J. H., de Falla, C. (2002) Maximizing your opportunities in a competitive job market. *The 46th Annual Meeting of the Human Factors and Ergonomics Society*. Baltimore, MD, Sept. 30-Oct. 4, 2002.
61. **Bass, E.J.** (1998). Architecture for an intelligent instructor pilot decision support system. In *Proceedings of the 1998 IEEE International Conference on Systems, Man, and Cybernetics*, San Diego, CA, October 11-14, 1998, 891-896.
62. **Bass, E.J.** (1998). Towards an intelligent tutoring system for situation awareness training in complex, dynamic environments. In B.P. Goettl, H.M. Half, C.L. Redfield, V.J. Shute (Eds.). *Lecture Notes in Computer Science, Vol. 1452* (pp. 26-35). Berlin: Springer-Verlag.

#### **Peer Reviewed Magazine, Newsletter and Other Articles (Total: 4)**

1. **Bass, E.J.**, Bruce, S. E., Odioso, M.S., Purvis, M.C., Weaver, M., White, M.H., Wingfield, R.A., Larance, D. A. & Guha, P.N. (2009). Integrating health promotion with the undergraduate engineering capstone experience. *Creative College Teaching Journal*, 44-57.
2. DeVoge, J.M., **Bass, E.J.**, Sledd, R.M.D., Borowitz, S., & Waggoner-Fountain, L. (2009). Collaborating with physicians to redesign a sign-out tool: An iterative, multifaceted approach with users - even busy ones - can yield a satisfying and efficient product. *Ergonomics in Design, Winter 2009*, 20-28.
3. **Bass, E.J.** (2001). Recent studies show variance in pilot perception of inflight turbulence and the appropriate response, with possible safety implications. *The ICAO Journal*, 56(7), 12-14, 28-29.

4. **Bass, E.J.**, Baxter, G. D., & Ritter, F. E. (1995). Creating models to control simulations: A generic approach. *AISB Quarterly*, 93, 18-25.

#### **Peer Reviewed Posters (Total: 12)**

1. Abbate, A., **Bass, E.J.** & Throckmorton, A.L. (2016). Formal usability methods to support the expedited access paradigm: A pediatric blood pump case study. *62nd Annual Conference of the American Society for Artificial Internal Organs*, June 15-18, 2016, San Francisco, CA
2. Abbate, A., **Bass, E.J.**, & Throckmorton, A. L. (2015). Formal usability methods in the expedited access paradigm: A pediatric blood pump case study. *8th Annual Mid-Atlantic Healthcare Informatics Symposium*, October 23, 2015, Philadelphia, PA.
3. Sockolow, P., **Bass, E.J.**, Bowles, K. & Eberle, C. (2015). Homecare nurses' decision-making information needs during admission. Home Healthcare and Hospice Information Technology Conference (H3IT), October 27, 2015, Nashville, TN.
4. Baumgart, L.A., Voss, J., **Bass, E.J.**, & Lyman, J. A. (2012). Supporting assessment of population-based hypertension care quality. *AMIA 2012 Annual Symposium*, November 3-7, 2012, Chicago, IL.
5. Baumgart, L.A., **Bass, E.J.**, Lyman, J. A., & Voss, J. (2012). Supporting the investigation of clinical practice through interactive population-based reporting. *2012 Symposium on Human Factors and Ergonomics in Health Care: Bridging the Gap*, March 12–14, 2012, Baltimore, MD
6. Colligan, R.L. & **Bass, E.J.** (2011). Benefits of a paper cognitive artifact used by pediatric nurses to support nursing workflow. *AMIA 2011 Annual Symposium*, Washington, DC, Oct. 22-26, 2011, p. 1725.
7. Hugine, A., **Bass, E.J.**, Guerlain, S. (2011). Factors that affect interpretation of data displayed in treemaps. *AMIA 2011 Annual Symposium*, Washington, DC, Oct. 22-26, 2011, p. 1811.
8. **Bass, E.**, Perez, T., Meth, S., Plews-Ogan, M., Helms, A., & Bartelt, L. (2010). Assessing the quality of residents' night float sign-out using post-call surveys. *33rd Annual Meeting of the Society of General Internal Medicine*, Minneapolis, MN, April 28-May 1, 2010.
9. Waggoner-Fountain, L.A., DeVoge, J.M., **Bass, E.J.**, & Borowitz SM. (2010). Use of a computerized module to educate and train residents about patient sign-out. Abstract # E08, Innovations in Medical Education Meeting, Pasadena, California, March 13, 2010.
10. Rude, D.J., **Bass, E.J.**, & Philips, B. (2009). CASA's impact on radar-based wind assessments. *The 89th American Meteorological Society Annual Meeting, Fourth Symposium on Policy and Socio—Economic Research*, Phoenix, AZ, January 11-15, 2009.
11. Cunha, V. F., Peckinpaugh, A. J., Giesecke, P. K., **Bass, E.J.**, Guerlain, S., Gomes, J. O., Ferrari, F.S., Machado, B.V.Z., Hubbard, B.E., Dias, R.L.M., & Souza, S.F. (2008). Requirements for an ergonomics problem reporting system. *9th International Symposium on Human Factors in Organizational Design and Management (ODAM)*. São Paulo, Brazil, March 19-21, 2008.
12. Pelletier, S., Lyman, J., Dalton, J., Tropello, S., Dembling, B., Scully, K., Boyd, J., Beling, P., Guerlain, S., **Bass, E.**, Knaus, W., & Brown, D. (2002). Design approach for a database system integrating and interpreting demographic, clinical and biological data. *American Society of Human Genetics*.

### Peer Reviewed Conference Presentations/Abstracts (Total: 30)

1. Khan, A., Parente, V., Baird, J. D., Patel, S. J., Cray, S., Graham, D., Halley, M., Knoebel, E., Lewis, K. D., Liss, I., Romano, E., Trivedi, S., Spector, N. D., Landrigan, C. P., **Patient and Family Centered I-PASS SCORE Scientific Oversight Committee** (under review). Disparities in family safety experience by language proficiency. *Pediatric Academic Societies (PAS 2021) Virtual Meeting*, Apr 30– May 4, 2021
2. Patel, S., Khan, A., Cray, S., Markle, P., Vara, T., Anderson, M., Baird, J., Liss, I., Graham, D., **Bass, E.J.**, Knighton, A. and I-PASS Score Implementation Committee (2020). Attitudes and behavior gaps amongst families, nurses, and physicians about family centered rounding. *13<sup>th</sup> Annual Conference on the Science of Dissemination and Implementation*, December 15-17, 2020
3. Sockolow, P., Bowles, K., Pankok, Jr., C., Zhou, Y., Potashnik, S., & **Bass, E.J.** (2020). Home Care Admission Nurse Decision-Making Regarding Patient Visit Pattern. *International Conference on Home Healthcare and Hospice Information Technology (H3IT)*, October 17, 2020, Tampa, FL.
4. Champion, C., Sockolow, P., Bowles, K., Potashnik, S., & **Bass, E.J.** (2019). Variation in medication lists during the transition to home health care: How can health information technology help? *International Conference on Home Healthcare and Hospice Information Technology (H3IT)*, October 12, 2019, Seattle, WA.
5. Sockolow, P., Le, N., Potashnik, S., **Bass, E.J.** & Bowles, K. (2019). There's a problem with the problem list: Discordance of patient problem information across the home care admission. *International Conference on Home Healthcare and Hospice Information Technology (H3IT)*, October 12, 2019, Seattle, WA.
6. Sockolow, P., **Bass, E.J.**, Bowles, K., Yang, Y., Potashnik, S., Wojciechowicz, C. & Le, N. (2018). Electronic health record design recommendations for a rural home care agency's admission process. *International Conference on Home Healthcare and Hospice Information Technology (H3IT)*, October 6, 2018, Grapevine, TX.
7. Bowles, K., Sockolow, P., Le, N., Yang, Y., Potashnik, S. & **Bass, E.J.** (2018). Home care admission: Using the Omaha System to track formation of the problem list, implications for information technology improvements. *International Conference on Home Healthcare and Hospice Information Technology (H3IT)*, October 6, 2018, Grapevine, TX.
8. Sockolow, P., **Bass, E.J.**, Bowles, K., Holmberg, A., Yang, Y., & Potashnik, S. (2017). Information needs identified by home care admission nurses. *Home Healthcare and Hospice Information Technology Conference (H3IT)*, November 3, 2017, Washington, DC.
9. Sockolow, P., **Bass, E.J.**, & Bowles, K. (2015). A mixed methods approach to system design through shared understanding. *Improbable Dialogues: Interprofessional Mixed Methods Research Collaborations*, June 19, 2015, Philadelphia, PA.
10. Lee, D.W., Alexandrov, N., **Bass, E.**, Kincaid, R., & Patek, S. (2013). A minimax network flow model for assessing air traffic congestion impacts. *The 13th INFORMS Computing Society Conference (ICS)*, January 6 -8th, 2013, Santa Fe, New Mexico.
11. **Bass, E.J.**, Bolton, M.L., Feigh, K.M., Gunter, E.L., & Rushby, J. (2012). Toward an integrated model checking, theorem proving and simulation framework for analyzing authority and autonomy. *Workshop on Formal Methods in Human-Machine Interaction (Formal H)*, May 28, 2012, London, UK.

12. Bolton, M.L. & **Bass, E.J.** (2012). Model checking human-automation interaction with enhanced operator function model. *Workshop on Formal Methods in Human-Machine Interaction (Formal H)*, May 28, 2012, London, UK.
13. West, S.C., **Bass, E.J.**, Lakkis, R.R., Borowitz, S., Matherne, G.P., & Hoke, T.R. Clinical quality of pediatric cardiology daily progress notes at the University of Virginia (2011). *2011 National Conference and Exhibition of the American Academy of Pediatrics*. Boston, MA, October 15-18, 2011.
14. League, C., Philips, B., **Bass, E.J.**, Brotzge, J., Rude, D., Hogan, B., Cravens, E., Tankersley, J., & Kuhlman, L. (2011). CASA Alert! How new radar technology supported emergency management decision-making and enhanced communications during the May 10, 2010 Oklahoma tornado outbreak. *2011 National Severe Weather Workshop*, Norman, OK, March 3-5, 2011.
15. **Bass, E.J.**, Perez, T., Meth, S., DeVoge, J., Helms, A., Bartelt, L., Plews-Ogan, M., & Hoke, G. (2010). Supporting hand-off of care: Sign-out support tools, process and evaluation. *The 2010 ACM Conference on Computer Supported Collaborative Work*, Savannah, GA, Feb. 6-10, 2010.
16. Borowitz, S.M., Waggoner-Fountain, LA., DeVoge, JM. & **Bass, E.J.** (2010). Senior night float improves inpatient continuity of care. Platform presentation. *2010 Pediatric Academic Societies Annual Meeting*. May 1-4, 2010.
17. Waggoner-Fountain, LA., DeVoge, JM., Borowitz, S.M. & **Bass, E.J.** (2010). Educational training of residents for patient handoffs. Platform presentation. *2010 Pediatric Academic Societies Annual Meeting*. May 1-4, 2010.
18. Philips, B., League, C., Nimrod, J., Whitworth, G., Diaz, W., **Bass, E.J.**, Westbrook, D., Gessner, A., & Lim, S. H. (2009). CASA radar systems for improved decision making. *2009 Fall Meeting of the Oklahoma Emergency Management Association*, Tulsa, OK, September 28-30, 2009.
19. Philips, B., Przybylinski, R., Brotzge, J., Rude, D.J., Diaz, W., Dolan, B., & **Bass, E.J.** (2009) The leading edge: using CASA radars to detect lower troposphere winds in quasi-linear convective systems. *The 89th American Meteorological Society Annual Meeting, 13th Conference on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface*, Phoenix, AZ, January 11-15, 2009.
20. Bolton, M.L. & **Bass, E.J.** (2008). Formal modeling of erroneous human behavior and its implications for model checking. *The Sixth NASA Langley Formal Methods Workshop*, Hampton, VA, April 30 - May 2, 2008.
21. Borowitz, S.M., Waggoner-Fountain, LA., **Bass, E.J.**, DeVoge, JM. & Sledd, R.M. (2008). Impact of a computerized sign-out system on the effectiveness of resident sign-out. Platform presentation. *2008 Pediatric Academic Societies Annual Meeting*. May 3-8, 2008.
22. Patek, S.D., **Bass, E.J.**, & Kincaid, R.R. (2008). Multi-scale tools for airspace modeling and design. *Eighteenth International Symposium on Mathematical Theory of Networks and Systems (MTNS2008)*. Blacksburg, Virginia, July 28-August 1, 2008.
23. Philips, B., Westbrook, D., Pepyne, D., **Bass, E.**, & Rude, D.J. (2008). Evaluation of the CASA system in the NOAA Hazardous Weather Test Bed. *The 88th American Meteorology Society Annual Meeting, 24th Conference on International Conf. on Interactive Information Processing Systems (IIPS)*, New Orleans, LA, January 20-24, 2008.



24. Philips, B., Krzysztofowicz, R., Donner, W., **Bass, E.**, Pepyne, D., Rodriguez, H., Diaz, W. & Kloesel, K.A. (2008). *Designing an end-to-end decision model for CASA networks*, 88<sup>th</sup> American Meteorology Society Annual Meeting, New Orleans, LA, January 20-24, 2008.
25. Andra, D., Foster, M., **Bass, E.**, Brotzge, J., Burgess, D.W., Heinselman, P.L., Manross, K., Scharfenberg, K., Smith, T.M., Ferree, J.T., Kelleher, K., Philips, B., Quotone, L., & Stumpf, G.J. (2007). The NOAA Hazardous Weather Testbed's Experimental Warning Program. *National Weather Association 2007 Meeting*, Reno, NV, October 15, 2007.
26. Borowitz, S.M., Tomney, BA, Waggoner-Fountain, LA., DeVoge, JM, & **Bass, E.J.** (2007). Interruptions during sign-out. Platform presentation. *2007 Pediatric Academic Societies Annual Meeting*. May 5-8, 2007.
27. Borowitz, S.M., Waggoner-Fountain, LA., **Bass, E.J.**, DeVoge, JM, & Sledd, R.M. (2007). Characterization of an ideal sign-out: Definition, content, and process. Platform presentation. *2007 Pediatric Academic Societies Annual Meeting*. May 5-8, 2007.
28. Philips, B., **Bass, E.**, Brotzge J., Chandresakar, V., Diaz, W., Kloesel, K., McLaughlin, D., Pepyne, D., Rodriguez, H., Westbrook, D., & Zink, M. (2007). Users, impacts, and radar networks: The CASA experience in designing an end-to-end system. Extended Abstract. *International Symposium on X-band Weather Radar Networks, National Research Institute for Earth Science and Disaster Prevention*, Tskuba, Japan, October 5, 2007.
29. Waggoner-Fountain, LA., Tomney, BA, DeVoge, JM, **Bass, E.J.**, & Borowitz, S.M. (2007). Questions asked and answers located: What really happens on-call after sign-out. Platform presentation. *2007 Pediatric Academic Societies Annual Meeting*. May 5-8, 2007.
30. Borowitz, S.M., Waggoner-Fountain, LA., **Bass, E.J.**, Sledd, R.M. (2006). Sign-out - A precarious exchange of critical information in a fast paced world. Platform presentation. *2006 Pediatric Academic Societies Annual Meeting*. April 29-May 2, 2006.

#### **Other Published Manuscripts Not Critically Reviewed (Total: 54)**

1. **Bass, E.J.**, Sefcik, J., McLaurin, E., & DiMaria-Ghalili, R (under review). Considerations for translating medical devices under development from the clinic to the home: A case study in providing chronic wound care. *2021 International Symposium on Human Factors and Ergonomics in Health Care*, April, 12-16, 2021.
2. McLaurin, E., **Bass, E.J.**, Bowles, K., & Sockolow, P. (2020). Assessing the usability of medication information layouts in a home healthcare electronic health record. *2020 International Symposium on Human Factors and Ergonomics in Health Care*, May 18-21, 2020.
3. **Bass, E.J.** (2020). The changing landscape in home care: human factors opportunities. *2020 International Symposium on Human Factors and Ergonomics in Health Care*, May 18-21, 2020.
4. **Bass, E.J.**, Foster, H.A., Lee, D. W., Bruce, S., & Bailey, R. R. (2019). Curriculum infusion through case studies: Engaging undergraduate students in course subject material and influencing behavior change. *10th International Conference on Applied Human Factors and Ergonomics (AHFE 2019)*, Washington D.C. USA, July 24-28, 2019, 203-214
5. **Bass, E.J.**, Pankok, C., Yang, Y., Potashnik, S., Bowles, K. H., Sockolow, P.S. (2019). A staged approach for facilitating joint end-user, vendor, and multi-disciplinary subject matter expert input to health information technology recommendations. *2019 International Symposium on Human Factors and Ergonomics in Health Care*, March 24-27, 2019, Chicago, Ill, 47-51.

6. League, C.E., Philips, B. & Bass, E.J. (2012). Tornado warning communication and emergency manager decision-making. *Weather and Society Watch*, 6(1), 10-12.
7. Burke, C.M., Ceballos, C.R., Chaudoin, R.D., Mezzanotte, J.C., Minzenmayer, E.A., Bass, E.J., West, S.C., & Hoke, T.R. (2011). Scaffolding physician communication through a daily progress note redesign. *2011 IEEE Systems and Information Engineering Design Symposium (SIEDS 2011)*. Charlottesville, VA, April 29, 2011.
8. Comfort, J.R., Warner, T.R., Vargo, E.P., & Bass, E.J. (2011). Parallel coordinates plotting as a method in process control hazard identification. *2011 IEEE Systems and Information Engineering Design Symposium (SIEDS 2011)*. Charlottesville, VA, April 29, 2011.
9. Incerto, M.B., Montealegre L-E., Tuttle, C.A., Bruce, S.E. Foster, H.A. & Bass, E.J. (2011). Penalty for excessive celebration: An evaluation of a social marketing campaign to reduce celebratory drinking. *2011 IEEE Systems and Information Engineering Design Symposium (SIEDS 2011)*. Charlottesville, VA, April 29, 2011.
10. Montealegre L-E., Bass, E.J., Bruce, S.E. & Foster, H.A. (2011). Cavman, Wonder Woman, or too drunk to tell: An evaluation of the effectiveness of a Halloween social norms marketing campaign. *2011 IEEE Systems and Information Engineering Design Symposium (SIEDS 2011)*. Charlottesville, VA, April 29, 2011.
11. Warner, T.R., Comfort, J.R., Vargo, E.P., & Bass, E.J. (2011). Principal component analysis variable selection for logistic models in plant hazard event prediction applications. *2011 IEEE Systems and Information Engineering Design Symposium (SIEDS 2011)*. Charlottesville, VA, April 29, 2011.
12. Bolton, M., Bass, E.J. & Siminiceanu, R.I. (2008). Using formal methods to predict human error and system failures. *2nd International Conference on Applied Human Factors and Ergonomics (AHFE 2008)*. Las Vegas, NV, July 14-17, 2008.
13. Hubbard, B.E., Ferrari, F.S., Bass, E.J., & Gomes, J.O. (2008). The design of a management decision support tool for an ergonomics problem reporting system. *2008 IEEE Systems and Information Engineering Design Symposium (SIEDS 2008)*. Charlottesville, VA, April 25, 2008.
14. Purvis, M.C., Odioso, M.S., Weaver, M., White, M.H., Bass, E.J. & Bruce, S. E. (2008). Did you see a horse at Foxfield? A social norms approach for targeting the negative consequences of hazardous drinking. *2008 IEEE Systems and Information Engineering Design Symposium (SIEDS 2008)*. Charlottesville, VA, April 25, 2008. **Received honorable mention (2<sup>nd</sup> place) in the Best in Track Award competition for the Human Factors and Socio-Technical Systems Track.**
15. White, M.H., Odioso, M.S., Weaver, M., Purvis, M.C., Bass, E.J. & Bruce, S. E. (2008). Horses? There are horses at Foxfield? An analysis of college student hazardous drinking and related decision making behaviors. *2008 IEEE Systems and Information Engineering Design Symposium (SIEDS 2008)*. Charlottesville, VA, April 25, 2008.
16. Bolton, M. & Bass, E.J. (2007). Spatial awareness biases in Synthetic Vision Systems displays. *Fourteenth International Symposium on Aviation Psychology (ISAP 2007)*. Dayton, OH, April 23-26, 2007.
17. da Silva, A.V., Makowski, B.G., Bass, E.J., Danziger, E., Bassols, F.F. & de Macedo Guimarães, L.B. (2007). Analysis of alternative advisory systems for truck dispatching. *2007 IEEE Systems and Information Engineering Design Symposium (SIEDS 2007)*. Charlottesville, VA, April 27, 2007.

18. de Faria Cunha, V., Giesecke, P.K., Peckinpaugh, A.J., Bass, E.J., & Gomes, J.O. (2007). Preliminary requirements for an ergonomics problem reporting system. *2007 IEEE Systems and Information Engineering Design Symposium (SIEDS 2007)*. Charlottesville, VA, April 27, 2007.
19. DeVoge, J.M. & Bass, E.J. (2007). Developing job specific and general training content and assessments. *Fourteenth International Symposium on Aviation Psychology (ISAP 2007)*. Dayton, OH, April 23-26, 2007.
20. Guha, P.N., Bass, E.J., & Bruce, S. E. (2007). I drink, I get drunk, I fall down, no problem: An analysis of college binge drinking and related decision making behaviors. *2007 IEEE Systems and Information Engineering Design Symposium (SIEDS 2007)*. Charlottesville, VA, April 27, 2007.
21. Philips, B., Pepyne, D., Westbrook, D., Bass, E., Brotzge, J., Diaz, W., Kloesel, K., Kurose, J., McLaughlin, D., Rodriguez, H., & Zink, M. (2007). Integrating end user needs into system design and operation: The Center for Collaborative Adaptive Sensing of the Atmosphere (CASA). *87th American Meteorological Society (AMS) Annual Meeting*. San Antonio, TX, January 14-18, 2007.
22. Baumgart, L. A., Bass, E.J., & Gerber, K.M. (2006). An analysis of university rank and the inclusion of sexual orientation and gender identity nondiscrimination policy statements. *2006 IEEE Systems and Information Engineering Design Symposium (SIEDS 2006)*. Charlottesville, VA, April 28, 2006.
23. Bolton, M., Bass, E.J., & Comstock, J.R. (2006). A toolset to support the development of spatial and temporal judgment experiments for synthetic vision systems. *2006 IEEE Systems and Information Engineering Design Symposium (SIEDS 2006)*. Charlottesville, VA, April 28, 2006.
24. Bolton, M.L., Hagan, T., Kustu, D., LaChance, L., Li, S., & Bass, E.J. (2006). Assessment and enhancement of Synthetic Vision Systems experimentation software. *2006 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 28, 2006.  
**Received the Best in Track Award for the Transportation Systems Track.**
25. Boyd, J.A., Bass, E.J., Patek, S.D., & Lee, D.W. (2006). Investigation of future air taxi services using discrete event simulation. *2006 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 28, 2006.
26. DeVoge, J.M. & Bass, E.J. (2006). Design of an instructional system for flight dispatcher icing training. In *Proceedings of the 44th AIAA Aerospace Sciences Meeting and Exhibit*. Reno, NV, January 9-12, 2006.
27. Guha, P.N., Bass, E.J., & Bruce, S. E. (2006). A survey to investigate student drinking norms at Foxfield. *2006 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 28, 2006.
28. Lee, D.W., Bass, E.J., & Patek, S.D. (2006). Characterizing the aggregate behavior of an air taxi network. *11th AIAA ISSMO Multidisciplinary Analysis and Optimization*. September 6-8, Portsmouth, VA.
29. Akan, K. D., Bass, E.J. & Xu, P. (2005). Developing a web-based tool for the annotation of the *Streptococcus Sanguis* genome. *2005 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 29, 2005.
30. Counihan R., DeVoge, J. & Bass, E.J. (2005). A web architecture to support the tailoring of training content and learner assessment. *2005 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 29, 2005.

31. Lee, D. W., **Bass, E.J.** & Patek, S. D. (2005). Towards a transportation network model for air taxi dispatch planning. *2005 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 29, 2005.
32. Buenafe, K.Q., Brown, D.E. & **Bass, E.J.** (2004). Preliminary study of information sharing technology adoption by crime analysts. *2004 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 16, 2004.
33. Brophy, M., Lane, C., Li, R., Swigler, R., **Bass, E.J.**, & DeVoge, J. (2004). Content development for a web-based system devoted to flight dispatcher icing training. *2004 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 16, 2004. **Received the Best in Track Award for the Transportation Systems Track.**
34. Walls, Jr., T. L. & **Bass, E.J.** (2004). A regression-based predictive model of student attendance at UVA men's basketball games. *2004 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 16, 2004.
35. **Bass, E.J.** & Quil, C.J. (2003). Toward requirements for a web-based icing training program for flight dispatchers. *2003 FAA In-flight Icing/Ground De-icing International Conference*. Chicago, IL, June 16-20, 2003.
36. **Bass, E.J.** & Radzio, M. (2003). Applying Stewart's 1990 decomposition of human forecasting performance to a simulated air traffic conflict prediction task. *Twelfth International Symposium on Aviation Psychology*. Columbus, OH, April 14-17, 2003, 76-81.
37. Quil, C., Young, I., Reeder, J., Burns, J. & **Bass, E.J.** (2003). Toward a web-based flight dispatcher training tool on icing. *2003 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 24-25, 2003.
38. Radzio, M., Walls, T.L., Joiner, G.V., Rogers, B.T., & **Bass, E.J.** (2003). Where are the students? Modeling and improving basketball attendance. *2003 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 24-25, 2003.
39. **Bass, E.J.**, Minsk, B., Lindholm, T. & Politovich, M. (2002). Terminal area diagnostic and forecast icing displays for flight dispatchers. In *Proceedings of the 21st Digital Avionics Systems Conference*, Irvine, CA, October 27-31, 2002.
40. **Bass, E.J.** & Pritchett, A. R (2002). Human-Automated Judgment Learning: Applying interpersonal learning to investigate human interaction with alerting systems. In *Proceedings of the 21st Digital Avionics Systems Conference*, Irvine, CA, October 27-31, 2002. **Received the Best Student Paper award sponsored by the AIAA Digital Avionics Technical Committee.**
41. **Bass, E.J.** & Castaño, D.J. (2001). The effect of providing clear air turbulence assessments to commercial airline pilots. *Eleventh International Symposium on Aviation Psychology*. Columbus, OH, March 5-8, 2001.
42. **Bass, E.J.** & Minsk, B. (2001). Toward integrating real-time and forecast weather hazards information for improved pilot decision making. *Eleventh International Symposium on Aviation Psychology*. Columbus, OH, March 5-8, 2001.
43. **Bass, E.J.**, Jones, W. M., & Castaño, D.J. (2000). The effect of providing real-time objective clear air turbulence assessments to commercial airline pilots. *Human Performance, Situation Awareness and Automation Conference*, Savannah, GA, October 15-19, 2000, 94-100.
44. **Bass, E.J.**, Castaño, D.J., Jones, W. M., Campbell, R. H. & Kvam, P. (2000). An analysis of commercial airline pilot turbulence assessments in a full motion simulator. *19th Digital Avionics Systems Conference*, Philadelphia, PA, October 7-12, 2000, 5.E.1-1 – 5.E.1-8.

45. Castaño, D. J & Bass, E.J. (2000). A usability study for a real-time flight deck turbulence assessment and monitoring system. *19<sup>th</sup> Digital Avionics Systems Conference*, Philadelphia, PA, October 7-12, 2000, 5.A.3-1 – 5.A.3-8.
46. Bass, E.J. (1999). Toward a pilot-centered turbulence assessment and monitoring system. *18<sup>th</sup> Digital Avionics Systems Conference*, St. Louis, MO, October 24-29, 1999, 6.D.3-1 - 6.D.3-8.
47. Bass, E.J. (1999). Turbulence assessment and decision making on the flight deck and in the cabin. *18<sup>th</sup> Digital Avionics Systems Conference*, St. Louis, MO, October 24-29, 1999, 4.A.4-1 - 4.A.4-8.
48. Bass, E.J. & Ernst-Fortin, S. T. (1999). Pilot decision aid requirements for a real-time turbulence assessment system. *Tenth International Symposium on Aviation Psychology*. Columbus, OH, May 2-6, 1999, 44-50.
49. Bass, E.J., Ernst-Fortin, S. T., & Duncan, P. C. (1998). An intelligent debriefing tool for situation awareness training. In *Proceedings of the Eleventh Florida Artificial Intelligence Research Symposium (FLAIRS 98)*. Menlo Park, CA: AAAI Press, 168-172.
50. Baxter, G. D. & Bass, E.J. (1998). Human error revisited: Some lessons for situation awareness. In *Proceedings of the Fourth Annual Symposium on Human Interaction with Complex Systems*. Los Alamitos, CA: IEEE Computer Society Press, 81-87.
51. Bass, E.J., Ernst-Fortin, S. T., & Small, R. L. (1997). Knowledge base development tool requirements for an intelligent monitoring aid. In *Proceedings of the Tenth Florida Artificial Intelligence Research Symposium (FLAIRS '97)*, Daytona Beach, FL: Florida AI Research Society, 412-416.
52. Bass, E.J., Small, R. L., & Ernst-Fortin, S. T. (1997). Knowledge requirements and architecture for an intelligent monitoring aid that facilitate incremental knowledge base development. In D. Potter, M. Matthews, & M. Ali (Eds.), *Proceedings of the Tenth International Conference on Industrial & Engineering Applications of Artificial Intelligence & Expert System*. Amsterdam, The Netherlands: Gordon & Breach Science Publishers, 63-68.
53. Bass, E.J., Zenyuh, J. P., Small, R. L., & Fortin, S. T. (1996). A context-based approach to training situation awareness. In *Proceedings of the Third Annual Symposium on Human Interaction with Complex Systems*. Los Alamitos, CA: IEEE Computer Society Press, 89-95.
54. Bass, E. (1995). Learning through reflection after problem solving. In *Proceedings of the Fifteenth Soar Workshop*. Pittsburgh, PA, 30-32.

### **Presentations/Abstracts Not Critically Reviewed (Total: 16)**

1. Bruce, S., Foster, H., & Bass, E. (2020). Substance Misuse Prevention Through Curriculum Infusion Case Studies. NASPA Alcohol, Other Drug, and Campus Violence Prevention Conference (part of 2021 NASPA Strategies Conferences), January 12-15, 2021.
2. Le, N.B., Yang, Y., Potashnik, S., **Bass, E.J.**, Bowles, K.H. & Sockolow, P. S. (2019). Communication of patient problem information. *2019 Omaha System International Conference*, Eagan, MN, April 3-5, 2019.
3. Pankok, C. & **Bass, E.J.** (2017). Human-automation function allocation for unmanned aircraft system operation in the National Airspace System, *The 61<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society*. October 9-13, 2017, Austin, TX, 723-727.
4. Pankok, C. & **Bass, E.J.** (2017). ASSURE research project: UAS human factors considerations, *The Third Annual Unmanned Systems Academic Summit*, Dayton, Ohio August 15, 2017
5. Price, T., **Bass, E.J.**, Perez, T., Meth, S., & Plews-Ogan, M. (2012). The impact of resident shift schedule on handoff of care. *NLM Informatics Training Conference*, Madison, WI, June 26-27, 2012.
6. Baumgart, L.A., **Bass, E.J.**, Lyman, J.A. & Voss, J. (2011). Supporting self-assessment in healthcare through exploration of population-based medical data. *INFORMS Healthcare 2011*, Montreal, Canada, June 20-22, 2011.
7. **Bass, E.J.** & Bruce, S. (2011). Health Promotion Education in the Systems Engineering Curriculum. *Inauguration Academic Symposium: Using Evidence to Improve Teaching and Learning in Higher Education*, University of Virginia, Charlottesville, VA, April 14, 2011.
8. Borowitz, S., Waggoner-Fountain, L, DeVoge, J., & **Bass, E.J.** (2011). Resident sign-out: a precarious exchange of critical information in a fast paced world. *Inauguration Academic Symposium: Using Evidence to Improve Teaching and Learning in Higher Education*, University of Virginia, Charlottesville, VA, April 14, 2011.
9. DeVoge, J., **Bass, E.J.**, Borowitz, S., & Waggoner-Fountain, L. (2011). Supporting human information systems in health care, *NLM Informatics Training Conference*, Bethesda, MD, June 28-30, 2011.
10. Lee, D.W., Patek, S.D., Alexandrov, N., **Bass, E.J.**, & Kincaid, R. K. (2011). A minimax network flow model for assessing global impacts of congestion management in transport systems. *2011 Airspace Systems Program Technical Integration Meeting*, San Diego CA, March 29-31, 2011.
11. **Bass, E.J.** (2010). Engaging Faculty in Prevention Efforts. *Virginia College Substance Abuse Prevention Workshop*, Charlottesville, VA, Feb. 25, 2010.
12. **Bass, E.J.** (2010). Engaging Students in the Social Norms Process: One Engineering Professor's Experience. July 12, 2010 at the 2010 National Conference on the Social Norms Approach, Philadelphia, PA, July 10-12, 2010.
13. **Bass, E.J.**, Perkins, H. W. & Hancock, L. (2010). How to Engage the Academic, Researcher and Practitioner in the Social Norms Approach. July 12, 2010 at the 2010 National Conference on the Social Norms Approach, Philadelphia, PA, July 10-12, 2010.
14. Baumgart, L., **Bass, E.J.**, & Lyman, J. (2010). Supporting Practice-Based Learning and Improvement with Population-Based Data. *NLM Informatics Training Conference*, Denver, CO, June 15-16, 2010.

15. Philips, B., **Bass, E.**, Brotzge, J., Rude, D. & Lemon, L. (2009). The benefits of CASA radar networks for warning and response. *34th Annual Meeting of the National Weather Association*, Norfolk, Virginia, October 17–22, 2009.
16. Bolton, M.L., **Bass, E.J.**, & Siminiceanu, R.I. (2008). Using formal methods to predict human error and system failures. *NLM Informatics Training Conference*, Bethesda, MD, July 8-9, 2008.

**Posters Not Critically Reviewed (Total: 17)**

1. McLaurin, E., **Bass, E.J.**, Bowles, K., Sockolow, P. (2020). Navigating the medication maze: Informing EHR design to support home healthcare medication management services workflow and communication. *2020 International Symposium on Human Factors and Ergonomics in Health Care*, Toronto, Ontario.
2. Khan, A., Patel, S.J., O’Toole, J.K., Rosenbluth, G., Ashland, M., Baird, J.D., Ramotar, M., Goldstein, J., Howell, E., Calaman, S., **Bass, E.J.**, Knighton, A., Srivastava, R., Starmer, A.J., West, D.C., Sectish, T.C., Spector, N.D., & Landrigan, C.P. (2018). Disseminating & implementing patient and family centered I-PASS to improve patient safety. *PCORI Annual Meeting*, Washington, DC, October 31-November 1, 2018.
3. Lee, D., Fitzick, D., & **Bass, E.J.** (2016). Simulating human performance with delegation assignment and coordination. *Drexel University International Research Showcase*, Philadelphia, PA, May 26, 2016.
4. Lee, D. & **Bass, E.J.** (2015). Simulating task sharing with delegation for authority and autonomy for air traffic control. *Drexel University Research Day 2015*, Philadelphia, PA, May 1, 2015.
5. Hugine, A., **Bass, E.J.**, & Guerlain, S.A. (2012). Rectangular area judgments as a function of size difference and placement. *NLM Informatics Training Conference*, Madison, WI, June 26-27, 2012.
6. League, C.E., Philips, B., **Bass, E.J.** & Diaz, W. (2012). Emergency management tornado warning policies: There’s no one-size-fits-all.” *37th Annual Natural Hazards Research and Applications Workshop*, Broomfield, CO, July 14-17, 2012.
7. League, C., Philips, B., **Bass, E.J.** & Diaz, W. (2012). Tornado warning communication and emergency manager decision-making. *7th Symposium on Policy and Socio-Economic Research. 92nd American Meteorological Society (AMS) Annual Meeting*, New Orleans, LA, January 22-26, 2012.
8. Noonan, T.E., Powell, S.M., Raber, K.M., Saltan, O., Luse, H.T., Blackmon, A.R., Bruce, S. E., & **Bass, E.J.** (2012). The analysis of data involving alcohol and 21st birthday celebration. *2012 IEEE Systems and Information Engineering Design Symposium*. Charlottesville, VA, April 27, 2012.
9. Philips, B., League, C., Brotzge, J. & **Bass, E.J.** (2012). Emergency manager use of high resolution radar data during the May 24, 2011 Oklahoma tornado outbreak: A lesson in socio-technical system design. *92nd American Meteorological Society (AMS) Annual Meeting*, New Orleans, LA, January 22-26, 2012.
10. Hugine, A., **Bass, E.J.**, & Guerlain, S.A. (2011). Factors that affect interpretation of data displayed in treemaps. *NLM Informatics Training Conference*, Bethesda, MD, June 28-30, 2011.

11. Rude, D., **Bass, E.J.**, Philips, B., & Quetone, E.M. (2011). Decision making process for severe weather warnings. *The 10th International Conference on Naturalistic Decision Making (NDM-2011)*. Orlando, FL, May 31-June 3, 2011.
12. Baumgart, L.A., Gerling, G.J., **Bass, E.J.**, Martin, M.L., & Childress, R.M. Characterizing the range of simulated prostate abnormalities palpable by digital rectal examination. *UVA School of Medicine 2010 Academy of Distinguished Educators (ADE) 5<sup>th</sup> Medical Education Research Poster Session*. Charlottesville, VA, February 24, 2010.
13. **Bass, E.**, Perez, T., DeVoge, J., Helms, A., Bartelt, L., & Plews-Ogan, M. (2009). Developing a process support tool for written sign-out. *UVA Institute for Quality & Patient Safety Richardson Dinner*, Charlottesville, VA, September 28, 2009.
14. Baumgart, L.A., Gerling, G.J. & **Bass, E.J.** (2009). Characterizing the range of simulated prostate abnormalities palpable by digital rectal examination. *NLM Informatics Training Conference*, Portland, OR, July 23-24, 2009.
15. Bolton, M. L. & **Bass, E.J.** (2009). A methodology for the formal verification of medical, human-interactive systems. Presented at the *NLM Informatics Training Conference*, Portland, OR, July 23-24, 2009.
16. Perez, T., Meth, S., **Bass, E.**, Plews-Ogan, M., & Hoke, G. (2009). Characterizing verbal sign-out: Does it have value? Presented at the *UVA Institute for Quality & Patient Safety Richardson Dinner*, Charlottesville, VA, September 28, 2009.
17. DeVoge, J.M., **Bass, E.J.**, Sledd, R.M., Borowitz, S., & Waggoner-Fountain, L. (2008). A collaborative design in healthcare: Developing a sign-out support tool. Presented at the *NLM Informatics Training Conference*, Bethesda, MD, July 8-9, 2008.

#### **Newsletter abstracts (Total:2)**

1. **Bass, E.J.**, Baumgart, L.A. & Shepley, K. K. (2014). The effect of information analysis automation display content on human judgment performance in noisy environments. In *The Brunswick Society Newsletter*, November, 2014.
2. **Bass, E.J.** (2002). Human-Automated Judgment Learning: A methodology to investigate human interaction with automated judges. In *The Brunswick Society Newsletter*, October, 2002, 5-6.



## MEDIA COVERAGE

### Podcasts (Total: 1)

1. HumanFactorsCast (2018, October 4). #HFES2018 Bonus Interview With Gaby Hancock And Ellen Bass <https://soundcloud.com/humanfactorscast/hfes2018-bonus-interview-with-gaby-hancock-and-ellen-bass>

### News Media (Total: 7)

1. Hott, K. (2010, April 4). Gay rights forum being held at UVa. *NBC News Charlottesville*. <http://www.nbc29.com/story/12254785/gay-rights-forum-being-held-at-uva>
2. Deegan, M. (2010, March 16). Casteen rebukes Attorney General's letter on gays. *C-ville Weekly*. [http://www.c-ville.com/Casteen\\_rebukes\\_Attorney\\_Generals\\_letter\\_on\\_gays/-W38IK5NKiL8](http://www.c-ville.com/Casteen_rebukes_Attorney_Generals_letter_on_gays/-W38IK5NKiL8)
3. Governor overrides Cuccinelli decision. (2010, March 11). *Charlottesville Daily Progress*. [https://www.dailyprogress.com/news/governor-overrides-cuccinelli-decision/article\\_d737fb41-3f61-5e88-88e3-1104c5fc8eb1.html](https://www.dailyprogress.com/news/governor-overrides-cuccinelli-decision/article_d737fb41-3f61-5e88-88e3-1104c5fc8eb1.html)
4. McNeill, B. (2010, March 10). Gay community awaits UVa response to letter. *Charlottesville Daily Progress*. [https://www.dailyprogress.com/news/gay-community-awaits-uva-response-to-letter/article\\_d0d4b32b-966a-5700-afe1-d8815c204a74.html](https://www.dailyprogress.com/news/gay-community-awaits-uva-response-to-letter/article_d0d4b32b-966a-5700-afe1-d8815c204a74.html)
5. McGilvery, K. (2010, March 9). Gay rights supporters meet at UVa. *NBC News Charlottesville*. <http://www.nbc29.com/story/12111454/gay-rights-supporters-meet-at-uva>
6. Geiger, J. (2007, June 20). UVa extends gym benefits to domestic partners. *Charlottesville Daily Progress*. [https://www.dailyprogress.com/news/uva-extends-gym-benefits-to-domestic-partners/article\\_13ea52fc-473f-5cb7-81c3-9572ca0c65ad.html](https://www.dailyprogress.com/news/uva-extends-gym-benefits-to-domestic-partners/article_13ea52fc-473f-5cb7-81c3-9572ca0c65ad.html)
7. Fain, P. (2004, February 17). Benefits struggle begins again. *C-ville Weekly*. [http://www.c-ville.com/Local\\_News/-W38H4JNKiL9](http://www.c-ville.com/Local_News/-W38H4JNKiL9)

### Government Media (Total: 1)

1. FAA Center of Excellence for Technical Training and Human Performance (TTHP): Air Traffic and Tech Ops JTA Workbooks Database (Project AN006) <https://coetthp.org/research-projects/at-to-jta-workbooks-database/>

### Industry Media (Total: 1)

1. White Horse Village (2020, June 30). White Horse Village Receives Donation of 250 Face Shields from Drexel University. <https://www.whitehorsevillage.org/white-horse-village-receives-donation-of-250-face-shields-from-drexel-university/>

### Drexel University (Total: 30)

1. Drexel 3D Face Shield Printing Project Responding to COVID-19 Pandemic Achieves 30K+ Donation Milestone. December 23, 2020. <https://drexel.edu/cci/news/2020/December/drexel-3d-face-shield-printing-project-responding-to-covid-19-achieves-30k-milestone/>
2. Downey, B.A., Falcone, A., Faulstick, B., Sherwood, S., & Miller, J. (Summer 2020). 19 Ways Dragons Came to the Rescue During COVID-19. <https://drexelmagazine.org/2020/19-stories-of-drexel-dragons-helping-others-during-covid-19/>

3. Mijares , M.P. (2020, May 15) Numerous Drexel urgent-action research teams working to defeat the pandemic. *The Triangle*. <https://www.thetriangle.org/news/numerous-drexel-urgent-action-research-teams-working-to-defeat-the-pandemic/>
4. Drexel Team Comes Together To Make Personal Protective Equipment for Local Hospitals and Health Systems. April 29, 2020. Current News of the College of Nursing and Health Professions. <https://drexel.edu/cnhp/news/current/archive/2020/April/Drexel%20Team%20Comes%20Together%20to%20Make%20Personal%20Protective%20Equipment/>
5. Faculty Member Selected to Join Editorial Board. February 10, 2020. *Daily Dose*. <https://drexel.edu/cnhp/news/daily-dose/Items/2020/February/>
6. Faculty to Give Invited Talk. January 27, 2020. *Daily Dose*. <https://drexel.edu/cnhp/news/daily-dose/Items/2020/January/>
7. Career Panel Day (Human Factors and Ergonomics Society's Student Career Day), October 31, 2019. *Daily Dose*. <https://drexel.edu/cnhp/news/daily-dose/Items/2019/October/>
8. Presentation at University College London Interaction Centre. September 24, 2019. *Daily Dose*. <https://drexel.edu/cnhp/news/daily-dose/Items/2019/September/>
9. Drexel Professor Ellen Bass Presents on the Positive Benefits of Infusing Health Promotion Knowledge in Curricula, August 8, 2019 <https://drexel.edu/ci/news/2019/August/ellen-bass-presents-on-the-positive-benefits-of-infusing-health-promotion-knowledge-in-curricula/>
10. Faculty Presenting at International Symposium. March 20, 2019. *Daily Dose*. <https://drexel.edu/cnhp/news/daily-dose/Items/2019/March/>
11. ASSURE-X Technology Fair, May 14, 2018. *Daily Dose*. <http://drexel.edu/cnhp/news/daily-dose/Items/2018/May/>
12. Ellen Bass contributes to National Academies report encouraging weather enterprise to invest more in social and behavioral scientists, December 14, 2017. <http://drexel.edu/ci/news-events/news/2017/December/ellen-bass-in-national-academies-report-on-investing-more-in-social-and-behavioral-scientists/>
13. Professor Ellen Bass wins best paper at Human Factors and Ergonomics Society 2017 Annual Meeting, November 6, 2017. <http://drexel.edu/ci/news-events/news/2017/November/professor-ellen-bass-wins-best-paper-at-human-factors-and-ergonomics-society-2017-annual-meeting/>
14. Faculty accolades (Ellen Bass, PhD was appointed chair of the College's Department of Health Systems and Sciences Research effective September 1, 2017), September 15, 2017 <https://drexel.edu/cnhp/news/current/archive/2017/September/2017-09-17-special-acknowledgements/>
15. CCI students recognized at 2017 Honors & Awards Ceremony, June 5, 2017. <http://drexel.edu/ci/news-events/news/2017/June/ci-students-recognized-at-2017-honors-awards-ceremony/>
16. Drexel is helping the FAA modernize technical training, March 30, 2017. <http://drexel.edu/conquer/news/recent/2017/March/Drexel-Is-Helping-the-FAA-Modernize-Technical-Training/>
17. Drexel students launch Human Factors and Ergonomics Society Chapter, October 6, 2016. <http://drexel.edu/ci/news-events/news/2016/October/drexel-students-launch-human-factors-and-ergonomics-society-chapter/>

18. CCI students recognized at 2016 Honors & Awards Ceremony, June 17, 2016. <http://drexel.edu/cci/news-events/news/2016/June/cci-students-recognized-at-2016-honors-awards-ceremony/>
19. CCI faculty complete one-year Executive Leadership in Academic Technology and Engineering Program, May 2, 2016. <http://drexel.edu/cci/news-events/news/2016/May/cci-faculty-complete-one-year-executive-leadership-in-academic-technology-and-engineering-program/>
20. Faculty awarded Agency for Healthcare Research and Quality grant to study technology's impact on homecare, April 27, 2016. <http://drexel.edu/cci/news-events/news/2016/April/faculty-awarded-agency-for-healthcare-research-and-quality-grant/>
21. CCI Professor Ellen Bass examines human factors in unmanned aircraft systems, February 24, 2016. <http://drexel.edu/cci/news-events/news/2016/February/cci-professor-ellen-bass-examines-human-factors-in-unmanned-aircraft-systems/>
22. CCI faculty receive Healthcare IT grant for collaborative project with Johns Hopkins School of Medicine, January 22, 2016. <http://drexel.edu/cci/news-events/news/2016/January/drexel-faculty-receive-health-it-grant-for-collaborative-project-with-johns-hopkins/>
23. Faculty Highlights - Winter 2015, January, 2016. *DrexelNOW*. <http://drexel.edu/now/your-news/facstaff/Faculty-Highlights-Winter-2015/>
24. Ellen Bass, PhD elected Fellow in Human Factors and Ergonomics Society, December 5, 2015. <https://drexel.edu/cnhp/news/current/archive/2015/December/2015-12-08-ellen-bass-phd-elected-fellow-in-human-factors-and-ergonomics-society/>
25. Drs. Amy Throckmorton and Ellen Bass receive a 2015-2018: Drexel BIOMED Interdisciplinary Collaboration And Research Enterprise (ICARE) for Healthcare GAANN Grant, September 21, 2015. <http://drexel.edu/biomed/news-and-events/news/2015/September/Drs-Amy-Throckmorton-and-Ellen-Bass-Receive-a-2015-2018-GAANN-Grant/>
26. Professor Ellen Bass, PhD elected Fellow in Human Factors and Ergonomics Society, August 28, 2015. <http://drexel.edu/cci/news-events/news/2015/August/professor-ellen-bass-phd-elected-fellow-in-human-factors-and-ergonomics-society/>
27. CCI announces new and expanded undergraduate programs in data science, computing and security technology, July 30, 2015. <http://drexel.edu/cci/news-events/news/2015/July/cci-announces-new-and-expanded-undergrad-programs-in-data-science-computing-and-security-technology/>
28. Ellen Bass, PhD and Jane Greenberg, PhD selected as 2015-16 fellows in Drexel national leadership program, May 20, 2015. <http://drexel.edu/cci/news-events/news/2015/May/ellen-bass-phd-and-jane-greenberg-phd-selected-as-2015-16-fellows-in-national-leadership-program/>
29. Ellen Bass, PhD appointed as Head of CCI's Department of Information Science, May 1, 2015. <http://drexel.edu/cci/news-events/news/2015/May/ellen-bass-phd-appointed-as-head-of-cci-department-of-information-science/>
30. The College of Computing & Informatics announces new leadership, May 1, 2015. <http://drexel.edu/cci/news-events/news/2015/April/the-college-of-computing-informatics-announces-new-interim-leadership/>

### University of Virginia (Total: 12)

1. Hull, R. (2013, January 13). Two U.Va. faculty collaborative teams awarded annual Arts in Action project grants. *UVAToday*. <https://news.virginia.edu/content/two-uva-faculty-collaborative-teams-awarded-annual-arts-action-project-grants>
2. Kaler K. & Xu, S. (2012, February 20). Study finds STEM fields lack women faculty. *Cavalier Daily*. <http://www.cavalierdaily.com/article/2012/02/study-finds-stem-fields-lack-women-faculty-2>
3. Arrington, R. P. (2011, September 16). Five U.Va. faculty members funded for research promoting effective youth development. *UVAToday*. <https://news.virginia.edu/content/five-uva-faculty-members-funded-research-promoting-effective-youth-development>
4. Daniels, E. (2011, September 11). Youth-Nex awards 2011 seed grants. <https://curry.virginia.edu/news/youth-nex-awards-2011-seed-funding>
5. Christenson, T. (2011, August 29). Gay at U.Va.: Part I: Is the University doing enough to support its LGBTQ employees? *Cavalier Daily*. <http://www.cavalierdaily.com/article/2011/08/gay-at-u-va-part-1>
6. Park, S. (2010, April 7). UVaPride arranges forum on diversity. *Cavalier Daily*. <http://www.cavalierdaily.com/article/2010/04/uvapride-arranges-forum-on-diversity>
7. Kirschner, K. (2010, March 16). Statement regarding policies spurs action. *Cavalier Daily*. <http://www.cavalierdaily.com/article/2010/03/statement-regarding-policies-spurs-action>
8. Bromley, A. E. (2009, November 3). U.Va. Office of Equal Opportunity Programs honors every day champions who ‘lift everyone up’. *UVAToday*. <https://news.virginia.edu/content/uva-office-equal-opportunity-programs-honors-everyday-champions-who-lift-everyone>
9. Bromley, A. E. (2008, December 22). Study that tackles binge drinking wins award. *UVAToday*. <https://news.virginia.edu/content/study-tackles-binge-drinking-wins-award>
10. Samarrai, F. (2008, November 18). U.Va. engineering students use study to tackle student binge drinking. *UVAToday*. <https://news.virginia.edu/content/uva-engineering-students-use-study-tackle-student-binge-drinking>
11. Barbour, S.A. (2007, February 19). University of Virginia named newest site for National Library of Medicine Informatics Research Training Program. *UVAToday*. <https://news.virginia.edu/content/university-virginia-named-newest-site-national-library-medicine-informatics-research>
12. Brumby, S. (2005, April 15). Ensuring equality on Grounds. *Cavalier Daily*. <http://www.cavalierdaily.com/article/2005/04/ensuring-equality-on-grounds>

## TEACHING

### Professional Development

Preparing for the Academic Job Market Series:

1. How To Prepare The Application For An Academic Faculty Position

Presented on Thursday, July 30, 2020

Also available on YouTube at <https://www.youtube.com/watch?v=wDZSKAEtptE&t=6s>

2. How To Prepare For An Academic Faculty Position Interview

Presented on August 27, 2020

Also available on YouTube at

<https://www.youtube.com/watch?v=5JGUEJTG534&feature=youtu.be>

3. How To Negotiate For An Academic Faculty Position

Presented on Thursday, October 1, 2020

Also available on YouTube at <https://www.youtube.com/watch?v=cUpkUiwodbk>

### Continuing Education Teaching

City of Philadelphia Legal Department:

Drones: Uses, Regulations and Legal Implications: This City of Philadelphia Legal Department Continuing Legal Education (CLE) course, delivered on July 14, 2016, highlighted the legal issues and regulatory framework developing in response to Unmanned Aircraft Systems (UAS). The course addressed issues such as: What are the safety risks posed by drones, and how are FAA current and proposed regulations attempting to mitigate these risks? What role, if any, do municipalities have when it comes to regulating drones to protect the privacy and safety of citizens? This course also examined the potential drones hold to transform our economy and daily lives by exploring the wide variety of uses for drones in the private and public sectors. Co-taught with Dean E. Griffith, Unmanned Aircraft Systems Regulatory Policy & Outreach Team and Lead, FAA Office of the Chief Counsel; Eric Smith, Partner, Kaplan Kirsch & Rockwell; James A. Robb, Acting Risk Manager-City of Wilmington, DE; and David Day, Executive Vice President, Keystone Aerial Surveys, Inc.

### Graduate teaching

Drexel University:

INFO 540 Perspectives on Information Systems: Examines various types of information systems and the ways in which these systems support activities of individuals and organizations. Investigates application architectures that occur commonly in information systems. Provides an overview of knowledge domains that comprise the information systems discipline.

INFO 608 Human-Computer Interaction: Focuses on the physiological, psychological and engineering basis of design and evaluation of human-computer interfaces covering such topics as; theoretical foundation of HCI; cognitive modeling of user interactions; task analysis techniques for gathering design information; iterative design cycles; formative and summative usability testing; and project planning and report writing.

INFO 610 Analysis of Interactive Systems: Examines current methods in the analysis of interactive systems. Topics address the rationale and practices associated with techniques for assessing and evaluating how well system designs meet user and organizational needs and how well they fit social and institutional contexts of use. The course provides opportunities for both hands-on analysis work and reflection on theoretical foundations of interactive-systems analysis.

INFO 812 Research Statistics: This course provides the knowledge and tools necessary for conducting and understanding many types of empirical studies in the field of information science. It examines the fundamentals of descriptive and inferential statistics, and hypothesis testing. It covers analysis of variance and introduces regression. Students gain practical experience with a statistical package such as SPSS.

NHP 818 Scholarship Question Development: This course consists of identifying the research question or project for scholarship, developing a timeline for completion, and reviewing the relevant literature.

RSCH 823 Research Practicum: Prepares the student for dissertation research through faculty-supervised research experiences. Focuses on one or more stages of the research process, such as developing a question, literature review, design and method, IRB, grant writing, subject recruitment, instrumentation, measurement, data collection, data analysis, interpretation of results, and/or dissemination of results.

University of Virginia:

SYS 7027 Quantitative Models of Human Judgment and Decision Making: Provides an introduction to quantitative methods of measuring human performance in complex systems. The focus of the selected methodologies is based on providing insight into human performance in order to guide design and/or training. Assignments involve applying the methods to a human-machine system problem.

SYS 7097 Human Factors in Healthcare and Patient Safety: Addresses the state-of-the-art knowledge on concepts and methods of human factors and ergonomics, and their applications to help improve quality, safety, efficiency, and effectiveness in patient care.

### **Undergraduate teaching**

University of Virginia:

SYS 2202 Data and Information Engineering: Provides students with the background necessary to develop information systems to support decision-making. The course addresses concepts

related to modeling, storing, manipulating, and exchanging information. It incorporates both theoretical concept and application including technology standards, such as SQL and XML. It covers the development of conceptual models for describing data and their relationships; relational models; effective use of SQL for data definition and manipulation; web-based technologies for disseminating information; and the major components of modern information systems. The course emphasizes application of these technologies through the analysis, design, and implementation of web-enabled database systems.

SYS 3023 Human-Machine Interaction: Introduces the fundamentals for the analysis, design and evaluation of human-centered systems. The goal is to promote productive interaction between people and the systems they use. For example, decision support systems can be designed to leverage the strengths of both humans and machines for control of semi-automated processes. Course topics include analysis of human-systems interaction, interface design, usability testing, experimental design, and human-centered lifecycle design. Topics also include a focus on human cognitive and sensory abilities as they impact total system design. The course is practitioner oriented and includes a semester-long group project.

SYS 3034 System Evaluation: Focuses on the evaluation of candidate system designs and design performance measures. Includes identification of system goals; requirements and performance measures; design of experiments for performance evaluation; techniques of decision analysis for trade-studies (ranking of alternatives); presentation of system evaluation and analysis results. Illustrates the concepts and processes of systems evaluations using case studies.

SYS 4053 Senior Design I: A design project extending throughout the fall semester. Involves the study of an actual open-ended situation, including problem formulation, data collection, analysis and interpretation, model building for the purpose of evaluating design options, model analysis, and generation of solutions. Includes an appropriate computer laboratory experience.

SYS 4054 Senior Design II: A design project extending throughout the spring semester (continuation of SYS 4053 Senior Design I).

USEM 170 LGBTQ in Virginia: Past and Future: At the nation level, lesbian, gay, bi-sexual, transgender and queer (LGBTQ) Americans suffer discrimination and have fewer civil rights solely based on the virtue of being LGBTQ. In Virginia, LGBTQ citizens had even fewer rights than those in other states. This University Seminar surveyed the past and current status of LGBT civil rights at the national and state level. It provided students with a basic understanding of the following topics affecting LGBTQ Virginians: access to employment and housing, hate crimes, health and insurance related concerns, the influence of faith traditions, marriage/family/parenting issues, and the specific issues affecting LGBTQ youth, people of color, and personnel in the military.

## ADVISING

### Fellowship Advising

At the University of Virginia:

#### Scholarship Oversight Committee

1. R. Lacey Colligan, M.D. Supported through the Neonatal Fellowship Program in the Department of Pediatrics, University of Virginia Children's Hospital (2011-2013)  
*Lacey is the CEO of Sharp End Advisory, LLC*

### Post-doctoral Advising (Total: 10)

At the University of Pennsylvania:

1. Bat-zion Hose, (Ph.D., University of Wisconsin-Madison, 2021). Supported through National Heart, Lung, and Blood Institute (NHLBI) R01HL153735 (2021-present). Co-advisor: Meghan Lane-Fall

At Drexel University:

2. Olivia Hernandez, (Ph.D., The Ohio State University, 2019). Supported through National Institute of Nursing Research (NINR) 3R01NR015995-04S1(2021-present).
3. Elease McLaurin, (Ph.D., University of Wisconsin-Madison, 2019). Supported through College of Nursing and Health Professions Postdoctoral Research Fellowship (2019-present). Co-advisor: Paulina Sockolow
4. Rachel Amey, (Ph.D., University of Delaware, 2020). Supported through the FAA Center of Excellence on Unmanned Aircraft Systems (2020-present).  
*Rachel is currently a Research Psychologist for the Army Research Institute.*
5. Carl Pankok, Jr, (Ph.D., North Carolina State University, 2015). Supported through the FAA Center of Excellence for Technical Training and Human Performance, FAA Center of Excellence on Unmanned Aircraft Systems, RDRTec, Inc., and AHRQ (2016-2018)  
*Carl is a Human Factors Engineer for Sikorsky Aircraft Corporation*
6. Andrew J. Abbate (Ph.D., Drexel University, 2017). Supported through the FAA Center of Excellence for Technical Training and Human Performance and FAA Center of Excellence on Unmanned Aircraft Systems (2017-2018)  
*Andrew is a Senior Human Factors Engineer for Pacific Science and Engineering Group*
7. Yushi Yang (Ph.D., Clemson University, 2015). Supported through Agency for Healthcare Research and Quality (AHRQ) R01HS024537 (2017-2018). Co-advisor: Paulina Sockolow  
*Yushi is a Human Factors Specialist at the Armstrong Institute for Patient Safety and Quality of Johns Hopkins Hospital/Johns Hopkins Health System.*

At Drexel University and at the University of Virginia:

8. Douglas W. Lee (Ph.D., University of Virginia, 2011). Supported through YouthNex, NASA Ames Research Center (NNA10DE79C), the FAA Center of Excellence on Unmanned Aircraft Systems, and RDRTec, Inc. (2011-2017).
9. Ziho Kang (Ph.D., Purdue University, 2012). Supported through NSF, Cooperative Agreement No. EEC-0313747 (2012-2014).



*Ziho is an associate professor in the School of Industrial and Systems Engineering at the University of Oklahoma*

At the University of Virginia:

10. Sharon Meth, (M.D., Tufts University, 1999). Supported through National Library of Medicine T-15 Training Grant: A Systems Engineering Focus on Medical Informatics (2009-2011).

*Sharon is an M.D., Internal Medicine, at Sentara Blue Ridge Internal Medicine*

### **Undergraduate and Graduate Student Mentoring Highlights**

Advisor to:

- Elizabeth Campbell, Recipient of the American Health Information Management Association Merit Scholarship, 2018
- Andrew Abbate, Student Member with honors in the Human Factors and Ergonomics Society, 2016
- Andrew Abbate, Recipient of the Second Best Student Paper Award submitted to the Safety Technical Group at the 2015 Annual Meeting of the Human Factors and Ergonomics Society
- Leigh Baumgart, Recipient of the UVa Dept of Systems and Information Engineering 2011 Robert T. Ferguson III Memorial Award (awarded based on graduate student input)
- Matthew Bolton, Recipient of the UVa Dept of Systems and Information Engineering 2011 Louis T. Rader Outstanding Graduate Student award
- Leigh Baumgart, Student Member with honors in the Human Factors and Ergonomics Society, 2009
- Leigh Baumgart, UVa Dept of Systems and Information Engineering Ruth Oxford Award for the Most Promising Graduate Student in Systems Engineering, 2009
- Don Rude, Recipient of Best Student Paper Award at the 2009 *IEEE International Conference on Systems, Man, and Cybernetics* for the paper “Impact of increased spatio-temporal radar data resolution on forecaster wind assessments”
- Matthew Bolton, Recipient of the UVa School of Engineering and Applied Science 2008 Award for Excellence in Scholarship in the Sciences & Engineering
- Doug Lee, Recipient of the UVa School of Engineering and Applied Science 2008 UVEF Fellowship
- Justin DeVoge, Recipient of the UVa Dept of Systems and Information Engineering Louis T. Rader Outstanding Master’s Student Award, 2007
- Justin DeVoge, Student Member with Honors in the Human Factors and Ergonomics Society in 2007
- Matthew Bolton, Student Member with Honors in the Human Factors and Ergonomics Society in 2007
- Matthew Bolton, The ARCS Foundation, Inc. scholarship awarded by the Metropolitan Washington chapter, 2006-2007
- Matthew Bolton, Governor’s Fellowship recipient, spring 2007
- Matthew Bolton, Recipient of the UVa Dept of Systems and Information Engineering Louis T. Rader Outstanding Master’s Student Award, 2006
- Jeffrey Boyd, finalist for the 2006 SEAS Undergraduate Research and Design Symposium

- Michael Smoot, Recipient of the UVA Dept of Systems and Information Engineering Louis T. Rader Outstanding Ph.D. Student Award, 2005
- Matthew Bolton, National Institute of Aerospace's Rising Star Fellowship recipient, 2004-2006
- Roger Counihan, selected for the SEAS 2004 Summer Science and Engineering Scholars Program

### Ph.D. Advising (Total: 8)

At Drexel University

1. Polly College, Information Science, Expected June 2022
2. Andrew J. Abbate, Biomedical Science, March 2017, Model-Based Usability Analysis of Safety-Critical Systems: A Formal Methods Framework. Co-advisor: Amy Throckmorton  
*Andrew is a Senior Human Factors Engineer for Pacific Science and Engineering Group*

At the University of Virginia:

3. Justin DeVoge, Systems Engineering, May 2014, Preparation, Exchange, and Utilization: A Three-Phase Approach Toward Improving Resident Physician Handoffs. Co-advisor: R. Reid Bailey
4. Holly Foster, Higher Education, May 2014, Celebratory drinking among college students: Facilitating prevention with social norms marketing and curriculum infusion models in an interdisciplinary environment. Co-advisor: Brian Pusser  
*Holly is an Assistant Professor of Student Affairs/Higher Education in the Department of Educational Research and Administration at The University of Southern Mississippi*
5. Leigh Baumgart, Systems Engineering, August 2012, A conceptual framework to guide the design and evaluation of human interaction with information automation to support judgment. Co-advisor: Gregory Gerling, James Harrison  
*Leigh is Senior Director of Product Management at ConcertAI*
6. Douglas W. Lee, Systems Engineering, August 2011, Network flow models for strategic air traffic management. Co-advisor: Stephen Patek
7. Matthew L. Bolton, Systems Engineering, August 2010, Using task analytic behavior modeling erroneous human behavior generation, and formal methods to evaluate the role of human-automation interaction in system failure (**earned the Louis T. Rader Outstanding Ph.D. Student Award**).  
*Matthew is an Associate Professor in the Department of Industrial and Systems Engineering at the University at Buffalo*
8. Michael E. Smoot, Systems Engineering, May 2005, Analyzing, exploring, and visualizing near-optimal protein sequence alignments (**earned the Louis T. Rader Outstanding Ph.D. Student Award**). Co-advisor: Stephanie Guerlain  
*Michael is Senior Staff Software Engineer at Illumina*

### Ph.D. External Examiner (Total: 2)

1. Wayne Chi Wei Giang (Department of Mechanical and Industrial Engineering, University of Toronto, 2018)
2. Tom Robinson (Systems Design Engineering, University of Waterloo, 2013)

### **Ph.D. Committees (Total: 8)**

1. Kisha Hawthorne (Information Science, Drexel University, June 2018)
2. Luther Tychonievich (Computer Science, University of Virginia, 2013)
3. Ray Buse (Computer Science, University of Virginia, 2012)
4. Jonathan Bakdash (Psychology, University of Virginia, 2010)
5. Scott Crino (Systems Engineering, University of Virginia, 2006)
6. Tracy Kline (Psychology, University of Virginia, 2005)
7. Sy Miin Chow (Psychology, University of Virginia, 2004)
8. Missy Cummings (Systems Engineering, University of Virginia, 2003)

### **Doctorate Advising (Total: 1)**

1. Cyrille “Tsayo” Lonyem (Doctorate of Health Science, Drexel University, Expected June 2021)

### **Ph.D. Mentoring (Total: 3)**

1. Samuel A. Olatunji (Department of Industrial Engineering and Management, Ben Gurion University of the Negev, 2019-20)
2. Elizabeth Campbell (Department of Information Science, Drexel University, 2017-20)
3. Ali Jazayeri (Department of Information Science, Drexel University, 2016-19)

### **M.S. Advising (Total: 15)**

At the University of Virginia:

1. Kim Brantley, Systems Engineering, December 2011, “Information, data entry, and reporting requirements for a multiple-service resident sign-out support tool”  
*Kim is Senior Production Content and Media at Expedia Group*
2. Sharon Meth, Systems Engineering, August 2011, “Characterization of patient handovers by hospitalists at change of shift”  
*Sharon is an M.D., Internal Medicine, at Sentara Blue Ridge Internal Medicine*
3. Thomas “Ted” Perez, Systems Engineering, May 2010, “The impact of physician and patient factors on verbal sign-out content and duration”  
*Ted is Senior User Experience Analyst and Designer at Booz Allen Hamilton*
4. Donald Rude, Systems Engineering, December 2009, Impact of increased spatio-temporal radar data resolution on forecaster wind assessments, warnings, and confidence  
*Don is a Principal Data Scientist at CounterFlow AI, Inc.*
5. Jeffrey A. Boyd, Systems Engineering, January 2008, A methodology for analyzing an aircraft wake vortex encounter  
*Jeffrey is a Systems Engineer at Qualcomm in San Diego, CA*
6. Jonathan H. Evans, Systems Engineering, January 2008, Design interventions to support error correction in a reading aloud system  
*Jonathan is Director Of User Experience at Artemis Intelligence*
7. K. Doruk Akan, Systems Engineering, January 2007, Validation of the aggregation and integration of protein signatures using the InterPro metadatabase  
*Doruk is Enterprise Executive Architect at IBM*
8. Roger Counihan, Systems Engineering, August 2006, An analysis of two heuristics for solving the forward reserve problem

- Roger is Chief Revenue Officer at CognitOps*
9. Justin DeVoge, Systems Engineering, August 2006, A framework for the development of aviation weather training content re-use (earned the Louis T. Rader Outstanding Master Student Award).
  10. Leigh Baumgart, Systems Engineering, May 2006, Using part-task scenarios to understand emergency manager decision-making  
*Leigh is Senior Director of Product Management at ConcertAI*
  11. Richard Sledd, Systems Engineering, May 2006, Characterization of sign-out in pediatric acute care wards to inform process improvement  
*Rick Lead Associate at Booz Allen Hamilton*
  12. Matthew L. Bolton, Systems Engineering, January 2006, An investigation of the effects of texture and field of view on spatial awareness in synthetic vision head-down displays (earned the Louis T. Rader Outstanding Master Student Award).  
*Matthew is an associate professor in the Department of Industrial and Systems Engineering at the University at Buffalo*
  13. Sinem C. Göknur, Systems Engineering, August 2005, Measuring operator conformance with air traffic self-separation alerting systems  
*Sinan (formerly Sinem) is Adjunct Faculty in the Department of Art, Art History, & Visual Studies at Duke University*
  14. Aaron M. Gussman, Systems Engineering, August 2005, Identification of ambiguous and conflicting information in protein classification metadatabases  
*Aaron is Customer Engineer, Google Cloud Platform*
  15. Kathryn A. Klein, Systems Engineering, August 2005, The effects of cognitive feedback on trust and performance while using information analysis automation  
*Katie (Klein) Shepley is Director, Integration and Operations at the MITRE Corporation's Center for Advanced Aviation System Development (CAASD)*

#### **M.S. Committees (Total: 12)**

1. Tiffany K. Tse (Biomedical Engineering, Drexel University, 2016)
2. Oliver Platt-Mills (Systems Engineering, University of Virginia, 2011)
3. Sarah Rigsbee (Systems Engineering, University of Virginia, 2009)
4. Daine Lesniak (Systems Engineering, University of Virginia, 2008)
5. M. Anthony Aiello (Computer Science, University of Virginia, 2005)
6. Kelly O'Hargan (Systems Engineering, University of Virginia, 2005)
7. Jianhong Lv (Systems Engineering, University of Virginia, 2004)
8. Kristina Buenafe (Systems Engineering, University of Virginia, 2003)
9. David Okano (Systems Engineering, University of Virginia, 2003)
10. Tom Shin (Systems Engineering, University of Virginia, 2003)
11. Steve Tropello (Systems Engineering, University of Virginia, 2003)
12. Nicole White (Systems Engineering, University of Virginia, 2003)

#### **M.E. projects supervised (Total: 5)**

At the University of Virginia:

1. Susan Calhoun, Reducing risky behaviors associated with 21st birthdays, Summer 2012
2. Danielle Gilason, Development of a medical student training program for introduction to medical communication and sign-out, Fall 2009

3. Jackson Kwok, Integrating the Tower of Hanoi into Cognitive Systems Engineering Educational Software (CSEES), Spring 2008
4. Richard Anderson, Information modeling in UVA's Pediatric hospital ward, Fall 2007
5. Claribel Wendling: Distributed Laser Ranging: A system concept for spaceborne laser imaging, Fall 2003

### **NLM Short-term Training Position Trainees Supervised (Total: 3)**

1. Thomas "Ted" Perez (Summer 2009)
2. Mangwi Atia (Summer 2008)
3. Sherry Springs (Summer 2008)

### **Undergraduate theses and senior design projects supervised**

At Drexel University:

2017-2018 (5 students)

- FAA Job Task Analysis Database: Taiyu Chen, Benjamin Fiore, Charles Maguire, Kshitij Kumar, William Zawisa (co-adviser with Jeffrey Salvage)

At the University of Virginia:

2011-2012 (6 students)

- The effect of a birthday card intervention on 21st birthday celebratory drinking behaviors: Angelina R. Blackmon, Hayden T. Luse, Thomas E. Noonan, Sarah M. Powell, Katherine M. Raber, Onur Saltan

2010-2011 (8 students)

- Scaffolding physician communication through a daily progress note redesign: Catherine M. Burke, Carlos R. Ceballos, Raymond D. Chaudoin, Jillian C. Mezzanotte, Ellen A. Minzenmayer
- Penalty for excessive celebration: An evaluation of a social marketing campaign to reduce celebratory drinking: Michael B. Incerto, Laura-Elisa Montealegre, Cara R. Tuttle

2007-2008 (6 students)

- Requirements and prototype evaluation for an ergonomics problem reporting system (Sistema de informação de SMS do abastecimento (SISA)) : Blair Hubbard, Patrick Giesecke
- Developing a social norms marketing campaign to influence binge drinking at the Foxfield Races: Marin Odioso, Michael Purvis, Monica Weaver
- Development of a web-based information system for describing the inpatient clinical experiences of medicine housestaff: Matthew White,

2006-2007 (6 students)

- A systems approach to health system policy: A case study of the Russian health system: Matthew Burnham
- Developing a resource allocation advisory system: Truck routing in Rio Grande do Sul: Eric Danziger, Glenn Keaton
- Improving Sistema de informação de SMS do abastecimento (SISA): Designing potential solutions to Petrobras's ergonomic reporting system: Nicole Cobb, Kathy Tejano
- Testing the capabilities and limits of airspace analysis software: Complexity Density Analysis: Thomas Wu

2005-2006 (6 students)

- Discrete event simulation model for future air taxi services: Jeffrey Boyd, **Finalist for the 2006 SEAS Undergraduate Research and Design Symposium**
- Protip Neil Guha, An analysis of student drinking norms at Foxfield
- Enhancement and assessment of synthetic vision systems experimentation software: Thomas Hagan, Deniz Kustu, Lancen LaChance, Steven Li

2004-2005 (2 students)

- A web-based tool to facilitate annotation of the *Streptococcus sanguis* genome: K. Doruk Akan
- The development of content and an web-based delivery architecture for a training tool for flight dispatchers on icing: Roger Counihan

2003-2004 (5 students)

- Development of a web-based icing training system for flight dispatchers: Matthew Brophy, Courtney Lane, Ricky Li, Ryan Swigler
- Jason Chou, Preferences with respect to medical research

2002-2003 (10 students)

- Preliminary accomplishments in the development of a completely integrated genome sequencing pipeline: Aaron Gussman
- Requirements analysis and design of a student ticket distribution online registration system: Greg Joiner, Martin Radio, Brandon Rogers, Thomas
- Icing training for flight dispatchers: Jason Burns, Carolyn Quil, Joshua Reeder, Ivan Young
- Protein database research forum: Rebecca Um

### **Undergraduate Research Assistants (Total: 21)**

At Drexel University

1. Oluwatobi Bakare, fall 2020-winter 2021
2. Christina Harry, fall 2020-winter 2021
3. Jessica Jha (STAR Scholars program), summer 2019
4. Christine Wojciechowicz, spring-fall 2016, spring-fall 2017, spring-fall 2018 (co-advised with P. Sockolow)
5. Daniel Fitzick, fall 2015-winter 2016

At the University of Virginia:

6. Amy Daniels, summer 2011
7. James Comfort, spring 2011
8. Thomas Warner, spring 2011
9. Richard Magana, summer 2010
10. Laura-Elisa Montealegre, summer 2010
11. Robert Turverey, spring 2009; fall 2009 and spring 2010
12. Sara Hoffberg, summer 2009
13. Vicente Cunha, summer 2007
14. Rachel Kammerer, summer 2007
15. Matthew White, summer 2007
16. Kerem Doruk Akan, summer 2004 and summer 2005
17. Roger Counihan, summer 2004

18. Shawn Menz, summer 2004
19. Nicholas Ward, summer 2004
20. Jason Chou, summer 2003
21. Eric Issadore, fall 2002 and spring 2003

**GRANTS, COOPERATIVE AGREEMENTS, CONTRACTS AND OTHER AWARDS**

Presented by end date

**Center and task order awards: Total awards \$214M**

<b>Role</b>	<b>Period</b>	<b>Minimum Budget</b>	<b>Sponsor</b>	<b>Title</b>
Consultant (C. H. Watson, PI (VCP), A. Masalonis, PI (SST))	9/24/19-9/23/24	\$25,000,000	Department of Veterans Affairs (prime: Visionary Consulting Partners, LLC; subcontractor: Spectrum Software Technology)	Veterans Health Administration (VHA), Office of Health Informatics (OHI) , Human Factors Services Indefinite Delivery/Indefinite Quantity (IDIQ) Contract 36C77619D0018
Institutional Co-PI	8/14/18-8/13/25	\$98,000,000	Federal Aviation Administration (FAA)	Center of Excellence (COE) for Unmanned Aircraft Systems (UAS) IDIQ
Institutional Co-PI	8/12/16-8/11/21	\$5,000,000	FAA	Center of Excellence for Technical Training and Human Performance (COE TTHP)
Institutional Co-PI	5/7/15-4/30/25	\$50,000,000	FAA	Center of Excellence (COE) for Unmanned Aircraft Systems (UAS): Alliance for System Safety of UAS through Research Excellence (ASSURE)
Institutional PI	9/24/03-8/31/15	\$36,024,767	National Science Foundation (NSF)	Engineering Research Center (ERC): Center for Collaborative Adaptive Sensing of the Atmosphere (CASA): NSF, Cooperative Agreement No. EEC-0313747



**Other awards summary (external and internal): \$14.1M (\$8.8M PI/Institutional PI, \$4.6M Co-PI/Co-I, \$0.6M other)**

External awards

\* in Budget column is part of COE for UAS: ASSURE

Δ in Budget column is part of COE for UAS IDIQ

\*\* in Budget column is part of COE for TTHP: TTHP

+ in Budget column is part of NSF ERC CASA

<b>Role</b>	<b>Start</b>	<b>End</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
Institutional PI (M. Lane-Fall, PI)	9/1/20	6/30/25	Drexel U. \$396,350 (of 3,630,938)	National Heart, Lung, and Blood Institute (NHLBI) R01HL153735	Handoffs and Transitions in Critical Care – Understanding Scalability (HATRICC-US)
Institutional PI (J. Adams, PI)	2/12/20	2/11/22	*\$192,000 from FAA (\$393,600 with match); Drexel U. share of \$500,000 from FAA, \$1,025,000 with match	FAA Center of Excellence for UAS (FAA Cooperative Agreement 15-C-UAS-DU-07)	Establish Pilot Proficiency Requirements: Multi-UAS Components (A26)
Co-I (C. Landrigan, PI), I-PASS SCORE Implementation Committee and Scientific Oversight Committee	10/15/18	10/14/21	Drexel U. \$206,236 (\$1,864,888)	Patient-Centered Outcomes Research Institute (PCORI) DI-2017C3-9232	Disseminating & Implementing Patient and Family Centered I-PASS <sup>1</sup> to Improve Patient Safety

<sup>1</sup> I-PASS mnemonic stands for Illness severity, Patient summary, Action list, Situation awareness and contingency planning, Synthesis by receiver

<b>Role</b>	<b>Start</b>	<b>End</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
Institutional PI (P. Smith, PI)	9/9/19	9/8/21	*\$180,000 from FAA (\$369,000 with match); Drexel U. share of \$1,497,279 from FAA, \$3,051,672 with match)	FAA Center of Excellence for UAS (FAA Cooperative Agreement 15-C-UAS-DU-06)	A21: Integrating Expanded and Non-Segregated UAS Operations into the NAS: Impact on Traffic Trends and Safety
Peer reviewer	8/18/20	8/19/21	\$11,200	U.S. Army Research Office Scientific Services Program W911NF19D0005 (Subcontract from Edmond Scientific)	Peer Review for the U.S./UK Distributed Analytics & Information Sciences International Technology Alliances (DAIS ITA) Program (AFM 2020)
Co-I (P. Lewin, PI)	8/9/19	6/30/21	\$127,303 co-PI share of \$382,389	National Institute of Nursing Research (NINR) 3R01NR015995-04S1	Enhanced ultrasound treatment of chronic wounds with monitoring of healing and quality of life outcomes
Peer reviewer	8/5/19	4/30/20	\$31,100	U.S. Army Research Office Scientific Services Program W911NF-11-D-0001 (Subcontract from Edmond Scientific)	Peer Review for the U.S./UK Distributed Analytics & Information Sciences International Technology Alliances (DAIS ITA) Program (AFM 2019)
Co-PI (P. Sockolow, PI)	4/1/16	3/31/20	\$740,305	Agency for Healthcare Research and Quality (AHRQ) R01HS024537	Information Needs of Homecare Nurses During Admission and Care Planning
Peer reviewer	9/6/18	4/30/19	\$11,399	U.S. Army Research Office Scientific Services Program W911NF-11-D-0001 (Subcontract from Battelle Memorial Institute)	Peer Review for the U.S./UK Distributed Analytics & Information Sciences International Technology Alliances (DAIS ITA) Program (AFM 2018)
Co-PI (A. Throckmorton, PI)	9/1/15	8/31/19	\$590,556	Department of Education P200A150023	GAANN 2015: Interdisciplinary Collaboration and Research Enterprise (iCARE) for Healthcare

<b>Role</b>	<b>Start</b>	<b>End</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
Co-PI (K. Izzetoglu PI)	8/14/18	12/31/18	Δ\$9,623	FAA Contract 692M15-18-D-00017; Task Order No.: 692M15-18-F-00477	UAS COE IDIQ Kickoff Meeting
Peer reviewer	9/13/17	9/07/18	\$18,052	U.S. Army Research Office Scientific Services Program W911NF-11-D-0001 (Subcontract from Battelle Memorial Institute)	Peer Review for the U.S./UK Distributed Analytics & Information Sciences International Technology Alliances (DAIS ITA) Program (AFM 2017)
PI	10/3/16	6/30/18	\$220,677	The Children's Hospital of Philadelphia (CHOP)	CHOP-Drexel Research Fellowship Program: Informatics and Analytics Collaborative Research
PI	9/29 /17	6/30/18	**\$50,000 from FAA (\$100,000 with match)	FAA Center of Excellence for TTHP (AN006) FAA Cooperative Agreement 16-C-TTHP-DU-004	Air Traffic and Tech Ops JTA Workbooks Database
PI	9/29 /16	12/28/17	**\$70,000 from FAA (\$140,000 with match)	FAA Center of Excellence for TTHP (AN002) FAA Cooperative Agreement 16-C-TTHP-DU-003)	Analysis of Technical Operations Job Tasks
PI	12/9 /15	12/31/17	*\$349,350 from FAA (\$698,700 with match); Drexel U. share of \$750,000 from FAA, \$1,500,000 with match	FAA Center of Excellence for UAS (FAA Cooperative Agreement 15-C-UAS-DU-01)	A7: UAS Human Factors Considerations: UAS Human Factors Control Station Design Standards (plus Function allocation, Training, Visual Observer)
Co-I (A. Fontecchio, Inst. PI)	10/1/16	9/30/17	**\$40,000 (for Inst. PI)	FAA Center of Excellence for TTHP (SA002) FAA Cooperative Agreement 16-C-TTHP-DU-002)	18: International Integration and Harmonization

<b>Role</b>	<b>Start</b>	<b>End</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
Institutional PI (R. Stansbury, PI)	8/8 /16	8/31/17	*\$210,000 from FAA (\$420,000 with match); Drexel U. share of \$900,000 from FAA, \$1,800,000 with match	FAA Center of Excellence for UAS (FAA Cooperative Agreement 15-C-UAS-DU-02)	A10: Human Factors Considerations of UAS Procedures & Control Stations
Institutional PI (S. W. Theis, PI)	4/29/16	08/02/17	\$224,921 (Drexel U. share of \$749,885)	Navy STTR N13A-T003 Phase II (subcontract from RDRTec Inc.)	Maneuver Prediction and Avoidance Logic for Unmanned Aircraft System (UAS) Encounters with Non-Cooperative Air Traffic
Institutional co-I (P. Dalrymple, Institutional PI)	6/29/15	6/28/17	\$75,064 (Drexel U. share)	Department of Health and Human Services: (ONC) 90WT0005 (subcontract from Johns Hopkins University)	Mid-Atlantic HIT Workforce Training for Health Care Professionals
Institutional PI (A. Pritchett, PI)	1/1/14	6/30/16	\$384,724 (Drexel U. share)	NASA NNX13AB71A (subcontract from Georgia Tech Research Corporation)	Scenario-Based Verification and Validation of Autonomy and Authority
Consultant (R. DiMaria-Ghalili, PI)	09/05/14	3/31/16	\$6,300 for subcontract	National Institute of Nursing Research 1R41NR015191-01 (subcontract from Smart Activity of Daily Living, LLC)	A Wireless Device to Monitor and Track Fluid Consumption in At-Risk Older Adults
Institutional PI (D. McLaughlin PI)	9/01/04	12/31/13	+\$813,235 (for Institutional PI)	NSF, Cooperative Agreement No. EEC-0313747 (subcontract from University of Massachusetts, Amherst)	Engineering Research Center: Collaborative Adaptive Sensing of the Atmosphere
PI	7/30 /10	12/15/13	\$2,533,574	NASA Ames Research Center (NNA10DE79C/NNA13AB02)	NextGenAA: Integrated model checking and simulation of NextGen authority and autonomy

<b>Role</b>	<b>Start</b>	<b>End</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
PI	3/01/13	5/30/13	\$28,362	North Central Texas Council of Governments (NCTCOG)	Health Care System Integrated Warning Assessment
Guerlain PI; Bass PI; Harrison, PI	7/1/07 7/1/09 1/1/13	6/30/09 12/31/12 6/30/13	\$3,488,180: \$1,827,169 \$1,201,587 \$459,424	National Library of Medicine (NLM) T15LM009462	National Library of Medicine T-15 Training Grant: A Systems Engineering Focus on Medical Informatics
Consultant	8/24/11	5/31/13	\$60,000 for subcontract	NASA Phase II SBIR NNX11CA03C (subcontract from Barron Associates)	Integrated Design and Analysis Environment for Safety Critical Human-Automation Systems
Co-PI (S. Bruce, PI)	8/1/11	6/30/12	\$5,760	Virginia Department of Alcoholic Beverage Control	Celebratory Drinking Prevention Program
PI	9/01/11	2/29/12	\$16,606	NASA Langley Research Center (LaRC), subcontract from National Institute of Aerospace (NIA) Cooperative Agreement NCC1002043 UVA-03-01, Sub-Award 2881-VA	Multi-commodity Network Flow Model for Strategic Air Transportation
Collaborator (J. Schorling, PI)	9/1/10	8/31/11	\$241,000 direct (for Year 3) total	Department of Health and Human Services, Health Resources and Services Administration (HRSA)	Systems and Practice Analysis for Resident Competencies (SPARC): A Curriculum and Web-based Resident Profiling Tool to support Training in Practice-Based Learning and Improvement
PI	5/01/09	6/30/11	\$50,000	Center for Operator Performance at Wright State University	Event Prediction and Mitigation
Consultant	2/1/10	8/31/10	\$30,000 for subcontract	NASA Phase I SBIR NNX10CC01P (subcontract from Barron Associates)	Integrated Design and Analysis Environment for Safety Critical Human-Automation Systems

<b>Role</b>	<b>Start</b>	<b>End</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
PI	9/01/06	8/31/10	\$241,304	NASA Langley Research Center (LaRC), subcontract from National Institute of Aerospace (NIA) Cooperative Agreement NCC1002043 UVA-03-01, Sub-Awards 2623-VA and 2723-VA	Formal Methods to Inform Human Computer Interface Design for Ground-based Spacecraft Logistical Planning Automation
Co-PI (S. Guerlain, PI)	9/15/06	8/31/10	\$75,000	National Science Foundation: IRES program (NSF 04-036)	International: US-Brazil Cognitive Systems Engineering Exchange Program: Training Industrial Engineers to Manage High-Risk, Complex Systems
Co-PI (S. Bruce, PI)	8/1/09	6/30/10	\$9,000	Virginia Department of Alcoholic Beverage Control	Celebratory Drinking Prevention Program
Co-PI (S. Patek, PI)	3/01/08	5/28/10	\$242,763	NASA LaRC, NNX08AH39A	Multi-scale Tools for Airspace Modeling and Design
Co-PI (S. Guerlain, PI)	9/01/07	8/31/09	\$50,000	Fund for the Improvement of Postsecondary Education (FIPSE)/and the Fundacao Coordenacao de Aperfeicoamento de Pessoal de Nivel Superior (CAPES), Brazilian Ministry of Education	Training Industrial Engineers on Cognitive Engineering Approaches to Manage High Risk, Complex Systems
Co-PI (D. Brown, PI)	6/01/08	8/30/09	\$97,300	National Technical Alliance	Simplify Dynamic Tailoring, Phase 1
Co-PI (S. Bruce, PI)	8/1/08	6/30/09	\$9,000	Virginia Department of Alcoholic Beverage Control	Celebratory Drinking Prevention Program
Institutional PI	9/07/06	9/25/08	\$52,292	NASA LaRC NASI-02117, subcontract from NIA UVA-03-01, Sub-Award 6073-VA	Wake Encounters Investigation

<b>Role</b>	<b>Start</b>	<b>End</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
PI	9/1/04	9/25/07	\$130,230	NIA, UVA-03-01, Sub-Award 3650-VA	NIA Langley Professor Program in Air Transportation Systems
PI	6/17/04	9/30/06	\$84,028	NASA LaRC, subcontract from NIA UVA-03-01, Sub-Award 4817-VA	Synthetic Vision Systems – NIA/NASA Graduate Research Assistantship (M. Bolton)
Co-PI (L. Waggoner-Fountain, PI)	8/29/05	8/28/06	\$8,700	The Association of Pediatric Program Directors (APPD)	Resident Sign-Out - A Precarious Exchange of Critical Information in a Fast Paced World
PI	11/3/03	5/31/06	\$100,000	NASA Glenn Research Center (GRC), NNC04GA39G	Flight Dispatcher Icing Training
PI	11/1/03	8/30/05	\$66,394	NASA LaRC, subcontract from NIA UVA-03-01, Sub-Award 3035-VA	Evaluating Measures of Human-Automation Interaction in Pilot Self-separation Tasks
PI	11/1/03	6/30/05	\$81,425	NASA LaRC, subcontract from NIA UVA-03-01, Sub-Award 3036-VA	Network modeling to support operational concept development for on-demand air transportation
PI	2/01/03	6/30/05	\$100,000	NIA, UVA-03-01, Sub-Award 3029-VA	Human-Automation Interaction Methodologies for Personal Air Vehicle Systems with Pilots with Varying Skills
Col-laborator (W. Pearson, PI)	1/30/03	6/30/05	\$49,403 (for Collaborator)	NLM	Comparison of Protein Sequences
Col-laborator (W. Pearson, PI)	1/30/03	12/30/04	\$55,522 (for Collaborator)	National Institute of General Medical Science	Cell Migration Consortium

<b>Role</b>	<b>Start</b>	<b>End</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
Col-laborator (W. Knaus, PI)	6/30/03	6/30/04	\$15,931 (for Collaborator)	Fund for Excellence in Science and Technology	Project to Understand Biologic Systems, Learn to Integrate, Interpret and Communicate Their Findings (PUBLIIC)
Col-laborator (W. Knaus, PI)	10/1/02	6/30/04	\$5590 (for Collaborator)	Virginia Tobacco Settlement Fund	Tobacco Digital Patient Record-Human Gene Expression project
Consultant	2/6/04	4/8/04	\$10,000	Progeny	Literature review on judgment under uncertainty
Consultant	2/20/04	2/21/04	\$2,000	American Academy of Nursing	Creating a Technology Enhanced Practice Environment
PI	12/17/02	7/30/03	\$15,000	NASA GRC, NAG3-2845	Flight Dispatcher Icing Training
PI	10/1/02	5/30/03	\$39,493	NASA LaRC, NAG1-02113	Evaluating Measures of Human-Automation Interaction in Pilot Self-separation Tasks
PI	3/12/01	3/30/02	\$60,000	NASA GRC, PO C-74790-N	Aircraft Icing Weather Data Reporting and Dissemination System
PI	2/16/01	8/15/01	\$67,630	NASA LaRC, NAS1-01017	Weather Hazard Integrated Display System
PI	12/10/99	6/9/00	\$69,967	NASA GRC, NAS3-00071	In-flight Icing Assessment and Reporting System
PI	3/10/98	3/9/00	\$582,600	NASA LaRC, NAS1-98014	Turbulence Assessment and Monitoring System (TAMS)
PI	4/25/97	1/25/98	\$99,994	USAF, F41624-97-C-5027	A Context-Based Approach to Training and Aiding Situation Awareness



External awards for conference support (\$10K)

<b>Role</b>	<b>Period</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
PI	4/01/07-5/31/07	\$1,000	NIA, NIA-3495-07	2007 Systems & Information Engineering Design Symposium (SIEDS '07)
PI	2/16/06-6/30/06	\$2,000	NIA, NCC-1-02043 4401-UV	2006 Systems & Information Engineering Design Symposium (SIEDS '06)
PI	3/1/05-2/28/06	\$2,500	NIA, NCC-1-02043 4402-UV	2005 Systems & Information Engineering Design Symposium (SIEDS '05)
PI	2/27/04-9/30/04	\$4,500	NIA, NCC-1-02043 4205-UV	2004 Systems & Information Engineering Design Symposium (SIEDS '04)

Internal awards at Drexel University

<b>Role</b>	<b>Period</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
Co-PI (A. Throckmorton, PI)	4/17/20-7/31/20	\$10,000	COVID-19 Rapid Response Research & Development Fund	Covid-19: Design-Build of “AJflex Shield” for Hospitals and Health Systems in the Philadelphia Region
PI	9/23/19-8/31/20	\$9,103	Louis and Bessie Stein Family Fellowship	Human Factors Considerations of Human-autonomy Teaming with Multiple UAS
PI	9/21/15-3/20/16	\$7,250	Steinbright Career Development Center	Research Co-op Award

Internal awards at the University of Virginia (\$0.2M)

<b>Role</b>	<b>Period</b>	<b>Budget</b>	<b>Sponsor</b>	<b>Title</b>
Co-I (J. Shatlin, PI)	1/1/13-12/31/13	\$21,040	UVa Office of the Vice Provost for the Arts	Being in Time
PI	8/15/11-8/14/13	\$40,000	Youth-Nex: The UVA Center to Promote Effective Youth Development	Academic and Student Affairs Partnership for Substance Abuse Prevention: Reducing Risky Behaviors Associated With 21st Birthdays
PI	2/1/09-1/13/11	\$32,417	UVa Institute for Quality for Patient Safety	Supporting Hand-Off of Care: Sign-out Support Tools, Process & Evaluation
Co-PI, (L Waggoner-Fountain, PI)	11/1/08-10/31/10	\$50,000	UVa Graduate Medical Education	Sign-out Training Development and Evaluation
PI	11/1/09-6/30/10	\$2,000	UVa Learning Assessment Grant	Curriculum Infusion: Evaluating Alcohol Education Delivered via Systems Engineering Case Studies
PI	11/1/08-6/30/09	\$1,350	UVa Parents Committee	Celebratory Drinking Prevention Program
PI	7/1/08-6/30/09	\$2,000	UVa Office of Health Promotion	Foxfield 2008 Data Analysis
PI	10/29/07-6/30/08	\$3,100	UVa Parents Committee	Foxfield Races Binge Drinking Prevention Program
PI	11/07/07-5/30/08	\$137	Z Society	Reducing Alcohol Abuse at the Foxfield Races
PI	5/23/07-8/30/07	\$4,000	UVa Office of Health Promotion	Social Norms Marketing
Co-PI, (S. M. Borowitz, PI)	6/1/05-5/30/07	\$50,000	UVa Graduate Medical Education	Resident Sign-Out - A Precarious Exchange of Critical Information in a Fast Paced World