

CURRICULUM VITAE

Scott Allen Shappell, Ph.D.

Professor & Chair
Department of Human Factors and
Behavioral Neurobiology
Embry-Riddle Aeronautical University
600 S. Clyde Morris Blvd.
Daytona Beach, FL 32114
Mobile: (405)640-5479
scott.shappell@erau.edu



BIOGRAPHICAL

Birth Date: August 18, 1961
Married: Cindy Shappell
Children: Kimberly Shappell
Erin Shappell
Home Address: 118 Lazy Willow Court
Williamston, SC 29697

EDUCATION

WRIGHT STATE UNIVERSITY (1979-1983)

Bachelor of Science in Psychology
Honors in Psychology
Summa Cum Laude
University Scholar

UNIVERSITY OF TEXAS MEDICAL BRANCH (1983-1990)

Doctor of Philosophy in Neuroscience
Advisor: Earnest Barratt, Ph.D. (Texas Christian University)
Dissertation Title: The Utility of the Human Event-Related Potential as an Indice of Reaction Time

PROFESSIONAL AWARDS

- 1996** *Sonny Carter Memorial Award* for excellence in aviation safety. Awarded by the Society of U.S. Naval Flight Surgeons.
- 2002** *Williams E. Collins Award* for the outstanding publication in the field of human factors Awarded by the Aerospace Human Factors Association.
- 2002** *Admiral Louis de Florez Award* for significant contributions to aviation safety and accident prevention. Awarded by the Flight Safety Foundation, International.
- 2003** *Harry G. Moseley Award* for significant contributions to human factors and aerospace safety. Awarded by the Aerospace Medical Association.
- 2009** *Outstanding Contribution to the Advancement of Technical Methodology in Aircraft Accident Investigation*. Awarded by the International Society of Air Safety Investigators.
- 2010** *Henry L. Taylor Founder's Award* for outstanding contributions in the field of aerospace human factors. Awarded by the Aerospace Human Factors Association.
- 2011** *Raymond F. Longacre Award* for outstanding accomplishment in the psychological and psychiatric aspects of aerospace medicine. Awarded by the Aerospace Medical Association.
- 2017** *Paul R. Chatelier Lifetime Achievement Award* for outstanding accomplishments in the field of aerospace psychology. Awarded by the United States Naval Aerospace Experimental Psychology Society.

PROFESSIONAL AFFILIATIONS & COMMITTEES

Aerospace Medical Association

- **Elected Fellow - 2001**
- Scientific Program Committee Chair - 2004

Aerospace Human Factors Association

- **Elected Fellow - 2003**
- President - 2002

American Psychological Association

- **Elected Fellow - 2009**
- President, Division 21 – Applied Engineering and Experimental Psychology 2008-2009
- Secretary/Treasurer, Division 21 – Applied Engineering and Experimental Psychology 2002-2007; 2010-2013
- Member, Division 19 – Military Psychology

American Heart Association

- **Elected Fellow - 2017**
- Professional Member

Association of System Safety Engineers

- Professional Member

Human Factors and Ergonomics Society

- **Elected Secretary/Treasurer – 2009**
- Chair – Outreach Division 2011-2013
- Member, Aerospace Technical Group
- Member, Safety Technical Group

International Society of Air Safety Investigators

- Member

Institute of Industrial Engineering

- Professional Member

Institute of Medicine

- Workshop on NASA Evidence Reports

National Institute of Standards & Technology

- Latent Fingerprint Human Factors Working Group (2008-2011)
- Organization of Scientific Area Committees – Human Factors Committee (2014-2017)
- Questioned Document/Handwriting Human Factors Working Group (2015-2017)

Society for Cardiovascular Anesthesiology

- Career Scientist
- Human Factors Oversight Committee on FOCUS Project
- Quality and Leadership Committee (2014-2017)

National Institute of Justice Scientific Review Panel

- Member (2012-2016)

Leadership Committee of the American Heart Association Cardiovascular Surgery & Anesthesia (CVSA) Council

- Member (2013-2016)

ACADEMIC JOURNAL ACTIVITIES

Consulting Editor for *The International Journal of Aviation Psychology*

Reviewer for *Aviation, Space, and Environmental Medicine*

Reviewer for *Human Factors*

Reviewer for *Accident, Analysis, and Prevention*

Reviewer for *Journal of Applied Ergonomics*

Reviewer for *Theoretical Issues in Ergonomics Science*

Reviewer for *International Journal of Aviation Studies*

MILITARY

(Active Duty 1988-1999; Naval Reserve 1999-2010)

RANK	0-6 Captain
HISTORICAL OVERVIEW	1988 Officer Indoctrination School <i>Graduate with Academic Honors</i>
	1989 Naval Aerospace Medical Institute Designated: Aerospace Experimental Psychologist # 91 <i>Medical Service Corps Director's Award</i>
	1989-1991 U.S. Naval War College College of Command and Staff <i>Graduate with Distinction</i>
	1989-1992 Naval Aerospace Medical Research Laboratory Assigned as Aerospace Experimental Psychologist
	1993 Naval Aviation Safety Officer School, Monterey CA <i>Graduate with distinction</i> Designated: Naval Aviation Safety Officer
	1993-1997 Commander Naval Air Forces, U.S. Atlantic Fleet Assigned as Force Aerospace Psychologist/Aeromedical Safety Officer
	1997-1998 U.S. Naval Safety Center Assigned as the Chief, Human Factors Branch
	1999 NOMI Golden Apple Award for Teaching Excellence (Awarded 2 times)
	1999-2004 U.S. Naval Safety Center (Navy Reserve) Assigned as the Head, Aeromedical Department

AWARDS	Navy Meritorious Service Medal with one Bronze Star Navy Commendation Medal with one Bronze Star Navy Achievement Medal Navy Unit Commendation with one Bronze Star National Defense Service Medal Southwest Asia Service Ribbon with two Bronze Stars Sea Service Deployment Ribbon Kuwait Liberation Medal Navy Expert Pistol Shot
---------------	--

PROFESSIONAL AND TEACHING EXPERIENCE

DISSERTATIONS AND THESES

Theses (Committee Member)

- Bonnie Saxton (Embry-Riddle Aeronautical University) - 2009
- Rhonda Stubbs (Clemson University) – 2008
- Hrishikesh Kavade (Clemson University) – 2009
- Gary Palmer (Clemson University) – 2010
- Arjun Vijayanarayanan (Embry-Riddle Aeronautical University) – 2011
- Indraneel Dabhade (Clemson University) - 2011

Dissertations (Committee Chair)

1. Michael Sawyer (Clemson University) - 2009
2. Jessica Patterson (Clemson University) - 2009
3. Katie Berry (Clemson University) - 2010
4. Jaclyn Baron (Clemson University) - 2011
5. Chansik Kim (Clemson University) – 2011
6. Rebecca Iden (Clemson University) – 2012
7. Awatef Ergai (Clemson University) – 2013
8. Jim Cistone (Embry-Riddle Aeronautical University) – 2014
9. Tara Cohen (Embry-Riddle Aeronautical University) – 2017
10. Victoria Lew (Embry-Riddle Aeronautical University) – *in progress*

Dissertations (Committee Member)

1. Dominic Jones (University of Utah) – 2008
2. Beth Yoder (Clemson University)- 2009
3. Hassan Aly (Clemson University) – 2010
4. Paul Goethals (Clemson University) - 2011
5. Ping-Nan Chan (Clemson University) – 2011
6. Greg Boylen (Clemson University) – 2013
7. Buck Johnson (Embry-Riddle Aeronautical University) – 2013
8. Gary Palmer (Clemson University) – 2013
9. Tracy Litzenger (Embry-Riddle Aeronautical University) – 2017
10. Kristen Welsh (Embry-Riddle Aeronautical University) – 2017
11. LaTasha Burns (University of Houston) - 2017
12. Jeff Edwards (Saint Louis University) – *In progress*

EMBRY-RIDDLE AERONAUTICAL UNIVERSITY

2012-PRESENT Chair and Professor, Department of Human Factors and Behavioral Neurobiology

Honors and Awards

- 2014 Outstanding University Service Award

Courses Taught

- HFS 300: Introduction to Human Factors
- HF 325: Human Factors and System Safety
- HF 600: Human Factors
- HF 695b: Behavioral Neuroscience
- HF 695a: Accident Investigation/Expert Witness Testimony

CLEMSON UNIVERSITY

2005-2012 Professor of Industrial Engineering

Awards & Honors

- 2009 - Clemson University Board of Trustees Award for Faculty Excellence
- 2012 - Clemson University Board of Trustees Award for Faculty Excellence

Courses Taught

- IE 210: Design and Analysis of Work Systems
- IE 489/689: Industrial Ergonomics and Automation
- IE 418/618: Human Factors Accident Investigation and Expert Testimony
- IE 491/691: Human Factors and System Safety
- IE 800: Human Factors Engineering
- IE 813: Occupational Ergonomics
- IE 815: Research Methods in Ergonomics
- IE 857: Health, Safety, and the Environment

FEDERAL AVIATION ADMINISTRATION'S CIVIL AEROSPACE MEDICAL INSTITUTE

- 1998-2005** Manager, Human Factors Research Branch
FAA/Civil Aerospace Medical Institute
- Managed multi-million dollar Flight Deck and Air Traffic Research
 - Supervised 22 Ph.D. and Master Level personnel
 - Continued research in aviation accident investigation

SOUTHERN CALIFORNIA SAFETY INSTITUTE

- 2000-2006** Instructor and Course Developer
Courses Taught:
- Human Factors in Accident Investigation
 - Human Factors Safety Management Systems

TRANSPORTATION SAFETY INSTITUTE

- 1999-2014** Invited lecturer for 4 courses/year entitled *Human Factors in Accident Investigation*

EMBRY-RIDDLE AERONAUTICAL UNIVERSITY – EXTENDED/WORLDWIDE CAMPUS

- 1993-2005** Adjunct Professor, College of Continuing Education
Graduate Course Monitor:
- Human Factors in Aviation/Aerospace Industry
 - Sensation and Perception
 - Cognition
 - Applied Experimental Design
- Courses Taught:
- Human Factors in Aviation/Aerospace Industry
 - Aircraft Mishap Investigation
 - Sensation and Perception
 - Cognition
 - Research Design and Methods
 - Applied Experimental Design
 - Introduction to Probability and Statistics
- 2004 Professor of the Year – Oklahoma City Center*

NAVAL AEROSPACE MEDICAL INSTITUTE, PENSACOLA, FLORIDA

- 1993-2004** Taught Aviation Accident Investigation to Student Flight Surgeons
Topics included:
- Human Factors Analysis and Classification System
 - Crew Resource Management
 - Fatigue Management
 - Human Factors Councils/Human Factors Boards
 - Spatial Disorientation/Vestibular Physiology
- Two-time Golden Apple Award Winner as Outstanding Instructor*

PENSACOLA JUNIOR COLLEGE, PENSACOLA, FLORIDA

- 1991-1992** Adjunct Assistant Professor
College of Science
Courses Taught:
- Principles of Biology
 - Principles of Biology Laboratory
 - Human Anatomy and Physiology
 - Human Anatomy and Physiology Laboratory

RESEARCH

CLEMSON UNIVERSITY (2005 – 2012)

1. Assessment and Development of Safety Programs Targeting Human Error in General Aviation (Federal Aviation Administration, 2006-2009, \$559,580 – Principal Investigator)
2. Human Factors Analysis of Wind Turbine Unsafe Events (General Electric Energy, 2008, \$56,876 – Principal Investigator)
3. Scientific Approach to Crew Rest and Duty Restrictions in Commercial Space Flight (Aerospace Corporation/Volpe Center/FAA Office of Commercial Space Transportation, 2007-2009, \$100,000 – Principal Investigator)
4. A Human Factors Analysis of Queensland [Australia] Mining Accidents (Queensland Department of Mines & Energy, 2007-2008, \$107,000 – Principal Investigator)
5. National Advanced Safe Driving Program (Richard Petty Driving Experience, 2007-2008, \$336,333 – Co-Investigator)
6. HFEI: Incorporating Human Error into a GE Risk Assessment Model (General Electric Energy, 2009, \$57,000 – Co-Investigator)
7. Health Systems Oriented GHS Projects (Greenville Hospital System, 2009-2010, \$320,000 – Co-Investigator)
8. Fatigue, Shiftwork, and Human Performance: A Means for Quality Management in Latent Fingerprint Analysis (National Institute for Standards and Technology, 2012, \$80,000 – Principal Investigator)

FEDERAL AVIATION ADMINISTRATION, CIVIL AEROSPACE MEDICAL INSTITUTE (1999-2005)

- Implementation of HFACS into Civilian Organizations (FAA, NASA, NTSB)
- Development of HFACS and field tool for accident investigators
- Integration of HFACS with aviation maintenance operations
- Effect of shiftwork on U.S. air traffic controllers
- Identification of motivational factors associated with general aviation pilots who continue VFR flight into IMC
- Development of an intervention matrix for identifying accident/incident intervention strategies using human factors approaches
- Migration of system safety principles to human factors in high risk industrial settings (aviation, medicine, mining, etc.)

U.S. NAVAL SAFETY CENTER (1997-2004)

- Extension of Human Factors Analysis and Classification System (HFACS) into the U.S. Navy/Marine Corps
- Identification of interventions to prevent Naval aviation mishaps
- Implementation of HFACS into DoD and civilian organizations
- Identification of failure points associated with crew resource management accidents

COMMANDER NAVAL AIR FORCE, U.S. ATLANTIC FLEET (1992-1997)

- Investigation of human error associated with Naval aviation mishaps
- Predicting controlled flight into terrain using traditional models of human error
- Documentation and prevention of injuries to flight deck personnel assigned to aircraft carriers
- Prevalence and prediction of naval aviator attrition in the fleet

NAVAL AEROSPACE MEDICAL RESEARCH LABORATORY (1989-1992)

- Development of biomedical countermeasures of performance degradation during sustained flight operations.
- Effects of psychophysiological countermeasures on performance decrement during sustained flight operations.

UNIVERSITY OF TEXAS MEDICAL BRANCH (1985-1990)

- Dissertation Topic: The Utility of the Human Event-Related Potential as an Indice of Reaction Time
- The effects of phenytoin on cognitive augmenting/reducing utilizing brain topographic mapping of human event-related potentials.
- Event-related brain potential markers of semantic processing and brain laterality.

PUBLICATIONS

GOOGLE SCHOLAR CITATIONS (Aug 2017)

Citation Indices	All	Since 2012
Citations	4302	2024
h-index	28	20
i10-index	42	30

BOOKS

1. Wiegmann, D. and **Shappell, S.** (2003). A human error approach to aviation accident analysis: The human factors analysis and classification system. Ashgate Publishing Company: Aldershot, Great Britain.

BOOK CHAPTERS

1. Pritchard, W., **Shappell, S.**, and Brandt, M. (1991). Psychophysiology of N400. In: *Advances in Psychophysiology*, Volume IV. Ackles, P., Jennings, J., and Coles, M. (Eds.). JAI Press, Inc., pp. 43-106.
2. **Shappell, S.** and Wiegmann, D. (2010). Integrating human factors into system safety. In: *Human Performance Enhancement in High-risk Environments: Insights, Developments, and Future Directions from Military Research*. O'Connor, P. and Cohn, J. (Eds.). Praeger Security International, pp. 189-209.

PEER-REVIEWED JOURNALS

1. Pritchard, W., Brandt, M., O'Dell, T., **Shappell, S.**, and Barratt, E. (1985). Individual differences in visual event-related potentials: P300 cognitive augmenting/reducing parallels N100 sensory augmenting/reducing. *International Journal of Psychophysiology*, 3, 49-56.
2. Pritchard, W., Brandt, M., **Shappell, S.**, O'Dell, T., and Barratt, E. (1986). No decrement in visual P300 amplitude during extended performance of the oddball task. *International Journal of Neuroscience*, 29, 199-204.
3. **Shappell, S.** (1990). Characterization of the ERP Component N200 with Cognitive Match/Mismatch during Increasing Task Demands. Dissertation, University of Texas Medical Branch.
4. Neri, D., **Shappell, S.**, and DeJohn, C. (1992). Simulated sustained flight operations and performance. Part 1. Effects of fatigue. *Military Psychology*, 4, 137-155.
5. **Shappell, S.**, Neri, D., and DeJohn, C. (1992). Simulated sustained flight operations and performance. Part 2. Effects of dextro-methamphetamine. *Military Psychology*, 4, 267-287.
6. **Shappell, S.** and Neri, D. (1993). The effect of combat on aircrew subjective readiness during Operation Desert Shield/Storm. *International Journal of Aviation Psychology*, 3, 231-252.
7. Neri, D. and **Shappell, S.** (1993). The effect of combat on work/rest schedules and fatigue during Operation Desert Shield/Storm. *Military Psychology*, 6, 141-162.

8. Bohnker, B., Fraser, J., **Shappell, S.**, and Hart, S. (1994). The smoking lamp is out. *Navy Medicine*, 84, 1-3.
9. Hurtado, S., **Shappell, S.**, Bohnker, B., and Fraser, J. (1995). Tobacco use and smoking policy perceptions onboard an aircraft carrier. *Aviation, Space, and Environmental Medicine*, 66, 59-62.
10. Neri, D., Wiegmann, D., Stanny, R., **Shappell, S.**, McCardie, A., and McKay, A. (1995). The effects of tyrosine on cognitive performance during extended wakefulness. *Aviation, Space, and Environmental Medicine*, 66, 313-319.
11. **Shappell, S.** Naval flight deck injuries: A review of Naval Safety Center data. (1995). *Aviation, Space, and Environmental Medicine*, 66, 590-595.
12. Valentine, J., Kearns, G., Sparks, C., Letzig, L., Valentine, C., **Shappell, S.**, Neri, D., and DeJohn, C. (1995). GC/MS determination of amphetamine and methamphetamine in human urine for twelve hours following oral administration of dextro-methamphetamine: Lack of evidence supporting the established forensic guidelines for methamphetamine confirmation. *Journal of Analytical Toxicology*, 19, 1-10.
13. **Shappell, S.** and Wiegmann, D. (1996). U.S. naval aviation mishaps 1977-1992: Differences between single and dual piloted aircraft. *Aviation, Space, and Environmental Medicine*, 67, 65-69.
14. **Shappell, S.**, Kearns, G., Valentine, J., Neri, D., and DeJohn, C. (1996). Chronopharmacokinetics and chronopharmacodynamics of dextro-methamphetamine in man. *The Journal of Clinical Pharmacology*, 36, 1051-1063.
15. Wiegmann, D. and **Shappell, S.** (1997). Human factors analyses of post-accident data: Applying theoretical taxonomies of human error. *International Journal of Aviation Psychology*, 7, 67-81.
16. **Shappell, S.** and Wiegmann, D. (1998). A human error approach to accident investigation: The Taxonomy of Unsafe Operations. *International Journal of Aviation Psychology*, 7, 269-291.
17. Wiegmann, D. and **Shappell, S.** (1999). Human error and crew resource management failures in Naval Aviation mishaps: A review of U.S. Naval Safety Center Data, 1990-96. *Aviation, Space and Environmental Medicine*, 70, 1147-1151.
18. **Shappell, S.** and Wiegmann, D. (2001). Applying Reason: The human factors analysis and classification system (HFACS). *Human Factors and Aerospace Safety*, 1, 59-86.
19. Wiegmann, D. and **Shappell, S.** (2001). Human error perspectives in aviation. *International Journal of Aviation Psychology*, 11, 341-357.
20. Wiegmann, D. and **Shappell, S.** (2001). Human error analysis of commercial aviation accidents: Application of the Human Factors Analysis and Classification System (HFACS). *Aviation, Space and Environmental Medicine*, 72, 1006-1016.
21. von Thaden, T., Wiegmann, D., and **Shappell, S.** (2006). Organizational factors associated with commercial aviation accidents. *International Journal of Aviation Psychology*, 16, 239-261.
22. **Shappell, S.** Detwiler, C., Holcomb, K., Hackworth, C., Boquet, A., & Wiegmann, D. (2007). Human error and commercial aviation accidents: A comprehensive, fine-grained analysis using HFACS. *Human Factors*, 49, 227-242.
23. **Shappell, S.** and Wiegmann, D. (2009). Developing a methodology for assessing safety programs targeting human error in aviation. *The International Journal of Aviation Psychology*, 19, 252-269.
24. Patterson, J. and **Shappell, S.** (2010). Application of the human factors analysis and classification system to mining incidents/accidents in Queensland, Australia. *Accident, Analysis, and Prevention*, 42, 1379-1385.
25. Palmer, G., Abernathy, J., Swinton, G., Allison, D., Greenstein, J., **Shappell, S.**, & Reeves, S. (2013). Realizing improved patient care through human-centered operating room design (RIPCHORD): A human factors methodology for observing flow disruptions in the cardiothoracic operating room. *Anesthesiology*, 119, 1066-1077.
26. Wahr, J., Prager, R., Abernathy, J., Martinez, E., Salas, E., Seifert, P., Groom, R., Spiess, B., Searle, B., Sundt, T., Sanchez, J., **Shappell, S.**, Culig, M., Lazzara, E., Fitzgerald, D., Thourani, V., Eghtesady, P., Ikohomidis, J., England, M., Selke, F., & Nussmeier, N. (2013). Scientific

statement on patient safety in the cardiac operating room: *Human Factors and Teamwork. Circulation*, 128, 1139-1169.

27. Diller, T., Helmrich, G., Dunning, S., Cox, S., Buchanan, A., & **Shappell, S.** (2013). The Human Factors Analysis and Classification System (HFACS) applied to healthcare. *The American Journal of Medical Quality*, 29, 181-190.
28. Spiess, B., Rotruck, J., McCarthy, H., Suarez-Wincosci, O., Vigneshwar, K., Wahr, J., & **Shappell, S.** (2015). Human Factors Analysis of a Near Miss Event: Oxygen Supply Failure during Cardiopulmonary Bypass. *Journal of Cardiothoracic and Vascular Anesthesia*, 29(1), 204-209.
29. Cohen, T., Wiegmann, D., & **Shappell, S.** (2015). Evaluating the reliability of the Human Factors Analysis and Classification System. *Aviation, Space, and Environmental Medicine*, 86(8), 728-735.
30. Ergai, A., Cohen, T., Wiegmann, D., Sharp, J., Gramopadhye, A., & **Shappell, S.** (2015). Assessment of the Human Factors Analysis and Classification System (HFACS): Intra-rater and inter-rater reliability. *Safety Science*, (82), 393-398.
31. Cohen, T., Cabrera, J., Pohl, E., Sisk, O., Welsh, K., Abernathy, J., Reeves, S., **Shappell, S.**, & Boquet, A. (2016). Identifying workflow disruptions in the cardiovascular operating room. *Anaesthesia*, 71, 948-954.
32. Cohen, T., Wiegmann, D., Reeves, S., Boquet, A., and **Shappell, S.** (2016). Coding human factors observations in surgery. *American Journal of Medical Quality*, 32(5), 556-562.
33. Boquet, A., Cohen, T., Reeves, S., & **Shappell, S.** (2017). Flow disruptions impacting the surgeon during cardiac surgery: Defining the boundaries of the error space. *Perioperative Care and Operating Room Management*, 7(June), 1-6.
34. Boquet, A., Litzenger, T., Cohen, T., Cabrera, J., Fabien, M., Miles, S., Captain, K., & **Shappell, S.** (in press). Using Broken Window theory as a backdrop for a proactive approach to threat identification in healthcare. *Journal of Patient Safety*.
35. Cohen, T., Cabrera, J., Litzinger, T., Captain, K., Fabian, M., Miles, S., Reeves, S., **Shappell, S.**, & Boquet, A. (in press). Proactive safety management in trauma care: Applying the Human Factors Analysis and Classification System (HFACS). *Journal for Healthcare Quality*.

CONFERENCE PROCEEDINGS

1. **Shappell, S.** and Wiegmann, D. (1994). Upon Closer Inspection... U.S. Naval Aviation Mishap Rates 1977-1992. *Proceedings of the 14th Biennial Applied Behavioral Sciences Symposium*, Colorado Springs, Colorado, 80840-5701.
2. Wiegmann, D., Neri, D., Stanny, R., and **Shappell, S.** (1994). Tyrosine as a Counter-measure to Performance. *Proceedings of the 14th Biennial Applied Behavioral Sciences Symposium*, Colorado Springs, Colorado, 80840-5701.
3. Wiegmann, D and **Shappell, S.** (1995). Human factors in U.S. naval aviation mishaps: An information processing approach. *Proceedings of the Eighth International Symposium on Aviation Psychology*, Ohio State University.
4. **Shappell, S.** and Wiegmann, D. (1995). Controlled flight into terrain: The utility of an information processing approach to mishap causal factors. *Proceedings of the Eighth International Symposium on Aviation Psychology*, Ohio State University, 1300-1306.
5. **Shappell, S.** (1996). The Naval flight deck: An unforgiving environment for the untrained or complacent. *Proceedings of the 14th Biennial Applied Behavioral Sciences Symposium*, Colorado Springs, Colorado, 80840-5701.
6. **Shappell, S.** and Wiegmann, D. (1997). Why would an experienced aviator fly a perfectly good aircraft into the ground? *Proceedings of the Ninth International Symposium on Aviation Psychology*, Ohio State University, 26-32.

7. Wiegmann, D. and **Shappell, S.** (1997). U.S. Navy and Marine Corps Tactical Air and Rotary Wing Class A mishaps 1990 – 1996: A comprehensive analysis of crew resource management errors. *Proceedings of the Tenth International Symposium on Aviation Psychology*, Ohio State University, 1158-1160.
8. **Shappell, S.**, & Wiegmann, D. (1999). Human factors analysis of aviation accident data: Developing a needs-based, data-driven, safety program. In *Proceedings of the 3rd International Workshop on Human Error, Safety, and Systems Development* [CD-ROM]. Vienna, Austria: International Federation for Information Processing.
9. **Shappell, S.** and Wiegmann, D. (2000). Is proficiency eroding among U.S. Naval aircrews? A quantitative analysis using the Human Factors Analysis and Classification System. *Proceedings of the 44th Annual Meeting of the Human Factors and Ergonomics Society*, San Diego, California.
10. **Shappell, S.** and Wiegmann, D. (2001). Unraveling the mystery of general aviation controlled flight into terrain accidents using HFACS. *Proceedings of the Eleventh International Symposium on Aviation Psychology*, Ohio State University.
11. Pape, A., Wiegmann, D., and **Shappell, S.** (2001). Air traffic control and aviation accidents: A human factors analysis. *Proceedings of the Eleventh International Symposium on Aviation Psychology*, Ohio State University.
12. Wiegmann, D. and **Shappell, S.** (2001). Human error analysis of commercial aviation accidents: Application of the Human Factors Analysis and Classification System (HFACS). *Proceedings of the Eleventh International Symposium on Aviation Psychology*, Ohio State University.
13. **Shappell, S.** and Wiegmann, D. (2003). Reshaping the way we look at general aviation accidents using the human factors analysis and classification system. *Proceedings of the Twelfth International Symposium on Aviation Psychology*, pp. 1047-1052, Dayton, Ohio.
14. Knecht, W., Harris, H., and **Shappell, S.** (2003). Effects of visibility, cloud ceiling, and gain/loss frame on general aviation voluntary flight into adverse weather. *Proceedings of the Twelfth International Symposium on Aviation Psychology*, Dayton, Ohio.
15. Wilson-Donnelly, K. and **Shappell, S.** (2004). U.S. Navy/Marine Corps CRM Training: Separating Theory from Reality. *Proceedings of the 48th Annual Meeting of the Human Factors and Ergonomics Society*, New Orleans, Louisiana.
16. **Shappell, S.** and Wiegmann, D. (2004). HFACS Analysis of Military and Civilian Aviation Accidents: A North American Comparison. *Proceedings of the Annual Meeting of the International Society of Air Safety Investigators*, Gold Coast, Australia.
17. **Shappell, S.** and Wiegmann, D. (2005). Managing Human Error in Complex Environments. *Proceedings of the Annual Meeting of the Association of System Safety Engineers*, New Orleans, Louisiana.
18. Iden, R. and **Shappell, S.** (2006). A Human Error Analysis of U.S. Fatal Highway Crashes 1990-2004. *Proceedings of the 50th Annual Meeting of the Human Factors and Ergonomics Society*, San Francisco, CA.
19. **Shappell, S.** and Wiegmann, D. (2007). Developing a Methodology for Assessing Safety Programs Targeting Human Error in Aviation. *Proceedings of the 51st Annual Meeting of the Human Factors and Ergonomics Society*, Baltimore, MD.
20. Sawyer, M. and **Shappell, S.** (2009). Eye Tracking Analysis of the Effects of Experience and Training on Pilots' Ability to Identify Adverse Weather Conditions. *Proceedings of the 53rd Annual Meeting of the Human Factors and Ergonomics Society*, San Antonio, TX.
21. Shappell, S. and Wiegmann, D. (2009). Closing the Loop on the System Safety Process: The Human Factors Intervention Matrix (HFIX). *Proceedings of the 40th Annual Meeting of the International Society of Air Safety Investigators*, Orlando, FL.
22. Berry, K., Stringfellow, P., & **Shappell, S.** (2009). Considering Trends among Industrial Accidents: A Preliminary Meta Analysis of HFACS Causal Factors across Industries. *Proceedings of the 53rd Annual Meeting of the Human Factors and Ergonomics Society*, San Antonio, TX.
23. Taffe, K., **Shappell, S.**, Stringfellow, P., Greenstein, J., Garrett, S., & Gramopadhye, A. (2010). GHS + Clemson = A Recipe for Healthcare Improvement. *Proceedings of the 3rd International Conference on Applied Human Factors and Ergonomics*, Miami, FL.

24. Berry, K., Stringfellow, P., & **Shappell, S.** (2011). Examining Error Pathways: Analysis of Contributing Factors using HFACS in Non-Aviation Industries. *Proceedings of the 54th Annual Meeting of the Human Factors and Ergonomics Society*, San Francisco, CA.
25. Blickensderfer, E., Pharmed, J., Brunelle, N., & **Shappell, S.** (2011). Teaching the future human factors and ergonomics professionals to solve practical problems. *Proceedings of the 54th Annual Meeting of the Human Factors and Ergonomics Society*, San Francisco, CA.

TECHNICAL REPORTS AND OTHER PUBLICATIONS

1. **Shappell, S.** and Bartosh, B. (1992). Use of a commercially available flight simulator during aircrew performance testing. NAMRL Technical Memorandum 91-2. Naval Aerospace Medical Research Laboratory, Pensacola, Florida, 32508-5700.
2. **Shappell, S.** and Neri, D. (1992). The effect of combat on aircrew subjective readiness and LSO grades during Operation Desert Shield/Storm. NAMRL - 1369. Naval Aerospace Medical Research Laboratory, Pensacola, Florida, 32508-5700.
3. Neri, D. and **Shappell, S.** (1992). The effect of combat on the work/rest schedules and fatigue of A-6 and F-14 aviators during Operation Desert Shield/Storm. NAMRL - 1375. Naval Aerospace Medical Research Laboratory, Pensacola, Florida, 32508-5700.
4. DeJohn, C., **Shappell, S.**, and Neri, D. (1992). Effects of Dextro-methamphetamine on Subjective Fatigue. NAMRL - 1376. Naval Aerospace Medical Research Laboratory, Pensacola, Florida, 32508-5700.
5. DeJohn, C., **Shappell, S.**, and Neri, D. (1992). Subjective Fatigue in A-6, F-14, and F/A-18 Aircrews during Operations Desert Shield and Storm. NAMRL-1377. Naval Aerospace Medical Research Laboratory, Pensacola, Florida, 32508-5700.
6. Neri, D. and **Shappell, S.** (1993). Work/rest Schedules and Performance of S-3 Aviators during Fleet Exercise 1992. NAMRL-1382. Naval Aerospace Medical Research Laboratory, Pensacola, Florida, 32508-5700.
7. **Shappell, S.** and Neri, D. (1993). Work/rest Schedules and Performance of F/A-18 Aviators during Fleet Exercise 1992. NAMRL-1383. Naval Aerospace Medical Research Laboratory, Pensacola, Florida, 32508-5700.
8. Wiegmann, D., Neri, D., Stanny, R., **Shappell, S.**, McCardie, A., and McKay, D. (1994). Behavioral effects of tyrosine during sustained wakefulness. NAMRL-1392. Naval Aerospace Medical Research Laboratory, Pensacola, Florida, 32508-5700.
9. **Shappell, S.** and Wiegmann, D. (1995). How much sleep do you really need? *Approach*, 40, 9. (Reprinted in *Royal New Zealand Air Force Safety Insight*, 1995)
10. Hurtado, S. and **Shappell, S.** (1995). Effect of a no-smoking policy aboard a U.S. Navy aircraft carrier. NHRC Report No. 95-15. Naval Health Research Center, San Diego, CA 92186-5122.
11. **Shappell, S.** and Wiegmann, D. (1997). Strategic napping. *Approach*, 42, 24-25.
12. **Shappell, S.** and Wiegmann, D. (1997). Beware, the sleep monster cometh. *Approach*, 42, 42-43.
13. Wiegmann, D., Rich, A. & **Shappell, S.** (2000). *Human error and accident causation theories, frameworks and analytical techniques: An annotated bibliography*, (Technical Report ARL-00-12/FAA-00-7). Savoy, IL: University of Illinois, Aviation Research Lab.
14. **Shappell, S.** and Wiegmann, D. (2000). The Human Factors Analysis and Classification System – HFACS. Office of Aviation Medicine Technical Report No. DOT/FAA/AM-00/7. Civil Aeromedical Institute, Oklahoma City, OK 73125.
15. Wiegmann, D. and **Shappell, S.** (2001). A human error analysis of commercial aviation accidents using the Human Factors Analysis and Classification System (HFACS). Office of Aviation Medicine Technical Report No. DOT/FAA/AM-01/3. Civil Aeromedical Institute, Oklahoma City, OK 73125.
16. **Shappell, S.** and Wiegmann, D. (2003). A human error analysis of general aviation controlled flight into terrain (CFIT) accidents occurring between 1990-1998. Office of Aerospace Medicine Technical Report No. DOT/FAA/AM-03/4. Civil Aerospace Medical Institute, Oklahoma City, OK 73125.

17. Knecht, W., Harris, H., and **Shappell, S.** (2005). The influence of visibility, cloud ceiling, financial incentive, and personality factors on general aviation pilots' willingness to take off into marginal weather, Part I: The data and preliminary conclusions. Office of Aerospace Medicine Technical Report No. DOT/FAA/AM-05-07. Civil Aerospace Medical Institute, Oklahoma City, OK 73125.
18. Wiegmann, D., Boquet, A., Detwiler, C., Holcomb, K., Faaborg, T., and **Shappell, S.** (2005). Human error and general aviation accidents: A comprehensive, fine-grained analysis using HFACS. Office of Aerospace Medicine Technical Report No. DOT/FAA/AM-05-24. Office of Aerospace Medical Institute, Oklahoma City, OK 73125.
19. Detwiler, C., Boquet, A., Holcomb, K., Hackworth, C., Wiegmann, D., and **Shappell, S.** (2006). Beyond the tip of the iceberg: A human factors analysis of general aviation accidents in Alaska and the rest of the United States. Office of Aerospace Medicine Technical Report No. DOT/FAA/AM-06/07. Office of Aerospace Medical Institute, Oklahoma City, OK 73125.
20. **Shappell, S.**, Detwiler, C., Holcomb, K., Hackworth, C., Boquet, A., and Wiegmann, D. (2006). Human error and commercial aviation accidents: A comprehensive, fine-grained analysis using HFACS. Office of Aerospace Medicine Technical Report No. DOT/FAA/AM-06/18. Office of
21. **Shappell, S.** and Wiegmann, D. (2006). Developing a methodology for assessing safety programs targeting human error in aviation. Office of Aerospace Medicine Technical Report No. DOT/FAA/AM-06-24. Office of Aerospace Medical Institute, Oklahoma City, OK 73125.
22. **Shappell, S.**, Hackworth, C., Holcomb, K., Lanicci, J., Bazargan, M., Baron, J., Iden, R., and Halperin, D. (2010). Developing proactive methods for general aviation data collection. Office of Aerospace Medicine Technical Report No. DOT/FAA/AM-10/16. Office of Aerospace Medical Institute, Oklahoma City, OK 73125.
23. Lanicci, J., Halperin, D., **Shappell, S.**, Hackworth, C., Holcomb, K., Bazargan, M., Baron, J., & Iden, R. (2012). General aviation weather encounter case studies. Office of Aerospace Medicine Technical Report No. DOT/FAA/AM-12/11. Office of Aerospace Medical Institute, Oklahoma City, OK 73125.
24. Kaye, D. et al. (33 authors including **Shappell, S.**), (2012). Expert Working Group on Human Factors in Latent Print Analysis. *Latent Print Examination and Human Factors: Improving the Practice through a Systems Approach*. U.S. Department of Commerce, National Institute of Standards and Technology.

PRESENTATIONS

INVITED ADDRESSES AND KEYNOTES

1. **Shappell, S.** (2000). The Human Factors Analysis and Classification System (HFACS). Invited address to *Staff at the Canadian Defense Ministry*.
2. **Shappell, S.** (2002). A Human Factors Approach to General Aviation Accident Investigation. Invited address to the *General Aviation Air Safety Investigators Annual Meeting*.
3. **Shappell, S.** (2002). Exposing the Face of Human Error in General Aviation. Invited address to the *General Aviation Air Safety Investigators Annual Meeting*.
4. **Shappell, S.** (2003). Fatigue Management in Aviation Safety. Invited address to the *International Psychology Symposium, Bogotá, Columbia*.
5. **Shappell, S.** (2003). Culture in Aviation Accidents. Invited address to the *International Psychology Symposium, Bogotá, Columbia*.
6. **Shappell, S.** (2003). The Human Factors Analysis and Classification System (HFACS): A Joint Project of the FAA and the University of Illinois. Invited address to the *Human Error in Occupational Safety Symposium sponsored by the American Society of Safety Engineers*.

7. **Shappell, S.** (2004). Myths, Legends, and Reality: A Human Factors Analysis of Alaskan Aviation Accidents. Invited address to the *Annual Meeting of the Alaskan Air Carriers Association, Fairbanks, Alaska.*
8. **Shappell, S.** (2004). Aviation Accident Intervention Strategies: Are We Using a Screwdriver to Pound in Nails? Keynote address delivered at the *Canadian Air Safety Seminar, Toronto, Canada.*
9. **Shappell, S.** (2004). Military, Commercial, and General Aviation: Have We Invented New Ways to Crash Planes? *Department of Defense Human Factors Technical Advisory Group, Atlantic City, New Jersey.*
10. **Shappell, S.** (2004). Aviation Safety: Where Have we been and Where are we Going? Keynote Address delivered at the *Spectacular Seaplane Seminar 2004.*
11. **Shappell, S.** (2004). Aviation Accident Intervention Strategies. Invited address to the *SafeFlight 21 Safety Conference, Dallas, TX.*
12. **Shappell, S.** (2004). Are We Using a Hammer to Pound Nails in General Aviation? Invited address presented to the *General Aviation Air Safety Investigators Annual Meeting, Kansas City, MO.*
13. **Shappell, S.** (2005). Corporate Culture and Human Factors. Keynote address delivered at the *Federal Aviation Safety Officers (ASO) Workshop, Las Vegas, NV.*
14. **Shappell, S.** (2005). Unraveling the Mystery behind Human Error in Aviation. Invited address presented at the *2005 Rolls-Royce Air Safety Investigation Workshop, Indianapolis, IN.*
15. **Shappell, S.** (2005). Putting a face on Human Error. Invited address presented at the *2005 National Oceanic and Atmospheric Administration (NOAA) Safety Conference, Tampa, FL.*
16. **Shappell, S.** (2005). Crew Resource Management: Are We Training the Right Skills? Invited address presented at the *2005 National Oceanic and Atmospheric Administration (NOAA) Safety Conference, Tampa, FL.*
17. **Shappell, S.** (2006). Managing Human Factors in Complex Systems. Keynote Address presented at the *2006 Lyondell Worldwide Reliability Conference, Channelview, TX.*
18. **Shappell, S.** (2006). Managing Human Error in Complex Systems. Keynote Address presented at the Chamber of Minerals and Energy of Western Australia *2006 Occupational Safety and Health Conference, Perth, Western Australia.*
19. **Shappell, S.** (2006). System Safety & Error Management. Invited address presented at a conference entitled, *Human Factors in Healthcare: Practical Applications to Improve Patient Safety, Mayo Clinic, Rochester, MN.*
20. **Shappell, S.** (2007). Managing Human Error in Complex Systems. Keynote address presented at the *Wood Group North American Regional Health, Safety, and Environment Conference, Houston, TX.*
21. **Shappell, S.** (2007). Commercial Space Travel: Human Factors Considerations. Invited panel address presented at the *10th Annual Commercial Space Transportation Conference, Washington, DC.*
22. **Shappell, S.** (2007). Managing Fatigue and Shiftwork in the Workforce. Keynote address to the *Chamber of Minerals and Energy of Western Australia 2007 Occupational Safety and Health Conference, Perth, Western Australia.*
23. **Shappell, S.** (2007) Brief overview of HFACS and HFIX. Keynote address to the *Canadian Helicopters Corporation Safety & Quality Summit, Vancouver, British Columbia.*
24. **Shappell, S.** (2007) A data driven approach to managing human factors within the mining industry. Keynote address presented to the *Queensland Mining Industry Health and Safety Conference, Townsville, Queensland, Australia.*
25. **Shappell, S.** (2008) Fatigue management in aviation. Invited address presented to *General Services Administration Safety Forum, Dallas, TX.*

26. **Shappell, S.** (2008) Human Factors Science and the Aviation Model for Improvement. Keynote address presented to the *South Carolina Hospital Association, 5 Million Live Campaign Educational Forum, Columbia, SC.*
27. **Shappell, S.** (2008) A Human Factors Approach to Medical Excellence. Grand rounds presented to the *Department of Anesthesia, Yale University School of Medicine as part of the Visiting Professor Lecture Series.*
28. **Shappell, S.** (2009) Fatigue Management. Invited address presented to the *Annual Safety Conference of the National Association of Air Traffic Controllers, Las Vegas, NV.*
29. **Shappell, S.** (2009) *Human Factors System Safety.* Invited address presented to the *North American Flight Test Safety Workshop, Ottawa, Ontario.*
30. **Shappell, S.** (2009) So You Got Drunk Last Night? A Case for Human Factors Engineering. Invited address presented to *FedFleet 9th National Motor Vehicle [SEP] and [SEP] Aviation Exposition and Workshops, Chicago, IL.*
31. **Shappell, S.** (2009) Seeing is Not Believing. Invited address presented to *General Services Administration Safety Forum, Chicago, IL.*
32. **Shappell, S.** (2009) Integrating Human Factors into Safety Management Systems. Presidential address presented to the *117th Meeting of the American Psychological Association, Toronto, Ontario.*
33. **Shappell, S.** (2009) Human Factors Analysis. Invited address presented at the *2009 Coalition of Airline Pilots Association Leadership in Safety Conference, Dallas, TX.*
34. **Shappell, S.** (2009) To Err is Human, but Can We Manage It? Invited address presented at the *Balfour Beatty Zero Harm Summit, London, UK.*
35. **Shappell, S.** (2010). The human factors of FOCUS. Invited address presented at the *Society of Cardiovascular Anesthesiologists 32nd Annual Meeting & Workshops, New Orleans, LA.*
36. **Shappell, S.** (2010). Human Factors and Lessons from Aviation Accident Investigations. Invited address as part of Workshop 1: Human Factors, Human Error Reduction and the Cardiac Operating Room Experience: A One Day Symposium presented at the *Society of Cardiovascular Anesthesiologists 15th Annual Update on Cardiopulmonary Bypass, Whistler, BC, Canada.*
37. **Shappell, S.** (2010). What is Human Factors Engineering? Invited address as part of Workshop 1: Human Factors, Human Error Reduction and the Cardiac Operating Room Experience: A One Day Symposium presented at the *Society of Cardiovascular Anesthesiologists 15th Annual Update on Cardiopulmonary Bypass, Whistler, BC, Canada.*
38. **Shappell, S.** (2010). Revealing the face of human error. Keynote address delivered to the *2010 Florida Student Conference for Human Factors and Applied Psychology, Daytona Beach, FL.*
39. **Shappell, S.** (2010). Attending surgeons should be held to an 80-hour workweek. C. Walton Lillehei Point/Counterpoint Session of the *36th Annual Meeting of the Western Thoracic Surgical Association, Ojai, CA.*
40. **Shappell, S.** (2010). Human factors in accident investigation. Invited address as part of the *Annual Meeting of the United States Society of Air Safety Investigators, Oklahoma City, OK.*
41. **Shappell, S.** (2010). Perspectives on Error Rate in Forensic Casework and Testimony. Invited panel as part of the *Impression and Pattern Evidence Symposium, Clearwater Beach, FL.*
42. **Shappell, S.** (2010). Managing human factors in extreme environments. Invited address as part of the *2010 US Customs and Border Protection Air and Marine Safety Symposium, Oklahoma City, OK.*
43. **Shappell, S.** (2010). The Human Factors Analysis and Classification System: It works in aviation, why not in healthcare? Invited address as part of the *MedStar Innovation Forum: Innovations in Patient Safety. Columbia, MD.*

44. **Shappell, S.** (2010). Human Factors and Cardiac Care: Improving our delivery systems. Invited address as part of the Kaiser Permanente *12th Annual National Cardiovascular Medicine and Surgery Conference, San Francisco, CA.*
45. **Shappell, S.** (2010). Strengthening Forensic Science in the United States: A Path Forward. Invited panel as part of the *2010 National Forensic Academy Best Practices Symposium, Nashville, TN.*
46. **Shappell, S.** (2011). Fatigue and human performance. Invited panel member for Patient Safety Symposium Using Simulation Training and Human Factors Management to Improve Safety and Performance in Cardiothoracic Surgery. *Society of Thoracic Surgeons Annual Meeting, San Diego, CA.*
47. **Shappell, S.** (2011). What does death, destruction, the economy, and technology transfer have in common? Keynote address presented to the *Annual Meeting of the Association of University Technology Managers, Las Vegas, NV.*
48. **Shappell, S.** (2011). The Human Factors Analysis and Classification System. Invited address presented to the *2011 Flight Safety Seminar for CAAs and Operators, Seoul, Korea.*
49. **Shappell, S.** (2012). A human factors approach to managing error in complex systems. *North American Transmission Forum, Webinar.*
50. **Shappell, S.** (2012). Got Sleep? How Human Factors Such as Fatigue Effects Work Performance. Invited presentation presented at the *64th Annual Meeting of the American Association of Forensic Science, Atlanta, GA.*
51. **Shappell, S.** (2012). Applying the Human and System Perspective Analysis of Error to the Ray Krone Case. Invited Panel presented at the *64th Annual Meeting of the American Association of Forensic Science, Atlanta, GA.*
52. **Shappell, S.** (2012). Human Factors Analysis and Classification System (HFACS) for Tracking and Preventing Accidents. *American Society of Safety Engineers SeminarFest, Las Vegas, NV.*
53. **Shappell, S.** (2012). Managing human error in complex systems. *American Society of Safety Engineers Professional Development Conference, Greenville, SC.*
54. **Shappell, S.** (2012). Fatigue management. *American Society of Safety Engineers Professional Development Conference, Greenville, SC.*
55. **Shappell, S.** (2012). Managing sleep and fatigue in today's healthcare environment: Tricks of the Trade. Keynote Address presented to the *American Association of Thoracic Surgery, San Francisco, CA.*
56. **Shappell, S.** (2012). Managing human error in complex systems. *US Forest Service Safety Manager's Workshop, Portland, OR.*
57. **Shappell, S.** (2012). Achieving Excellence in a Limited Budget Environment. Invited Panel presented at the *Impression and Pattern Evidence Symposium, Clearwater, FL.*
58. **Shappell, S.** (2012). Managing human factors in the forensic sciences. Invited address to the *70th Annual Meeting of the American Society of Questioned Document Examiners (ASQDE), Charleston, SC.*
59. **Shappell, S.** (2012). Human factors analysis. Invited workshop presented at the *National Oilwell Varco (NOV) HSE Conference, Woodlands, TX.*
60. **Shappell, S.** (2012). Managing human factors in the forensic sciences. Invited workshop presented to the *California Association of Criminalists (CAC), San Jose, CA.*
61. **Shappell, S.** (2012). Human factors analysis and classification system (HFACS) for tracking and preventing accidents. Invited presentation to the *Colorado Intergovernmental Risk Sharing Agency (CIRSA), Montrose, CO.*
62. **Shappell, S.** (2012). Managing human factors in forensic sciences. Invited address to the *Annual Meeting of the Indiana Division of the International Association of Identification, Indianapolis, IN.*

63. **Shappell, S.** (2012) Managing shiftwork and fatigue in healthcare. Grand rounds presented to the Departments of Surgery and Anesthesiology at the Medical University of South Carolina (MUSC), Charleston, SC.
64. **Shappell, S.** (2013). Human Factors Analysis and Classification System (HFACS) for Tracking and Preventing Accidents. Invited workshop presented to the *American Society of Safety Engineers SeminarFest*, Las Vegas, NV.
65. **Shappell, S.** (2013). Managing shiftwork and fatigue in the forensic laboratory. Invited address presented to the *American Society of Crime Lab Directors*, Durham, NC.
66. **Shappell, S.** (2013). Human error and fatigue management. Invited address presented to the *American Eurocopter Safety Standdown*, Grand Prairie, TX.
67. **Shappell, S.** (2013). Human Factors Analysis and Classification System (HFACS) for Tracking and Preventing Accidents. Invited workshop presented to the *American Society of Safety Engineers Pre/Post Seminar*, Las Vegas, NV.
68. **Shappell, S.** (2013). General aviation human factors: Prescribing a remedy without proper diagnosis is malpractice. Invited address presented to the *General Aviation Air Safety Investigators*, Wichita, KS.
69. **Shappell, S.** (2013). A human factors approach to error management. Invited address presented to the *Human & Organizational Performance Summit*, Woodlands, TX.
70. **Shappell, S.** (2013). Helicopter human factors. Invited address presented to the *HAI & FAA Safety Team Helicopter Safety Seminar*, Pensacola, FL.
71. **Shappell, S.** (2013). Managing human error in the workplace. Invited address presented to the *HEICO Safety Summit*, Chicago, IL.
72. **Shappell, S.** (2013). Fatigue management. Invited address presented to the *Lifeflight Eagle Safety Symposium*, Kansas City, MO.
73. **Shappell, S.** (2013). Improved learning from incident investigations – Insights from the human factors analysis and classification system (HFACS). Invited address presented to the *Mercer ORC Network Executive Business Issues Forum*, Ft. Lauderdale, FL.
74. **Shappell, S.** (2013). Aeronautical decision-making. Invited address presented to the *Midwest Aviation Safety Summit*, Omaha, NE.
75. **Shappell, S.** (2013). Fatigue and shiftwork management. Invited address presented to the *Minnesota International Association for Identification*, Mankato, MN.
76. **Shappell, S.** (2013). Human error in forensics. Invited address presented to the *Minnesota International Association for Identification*, Mankato, MN.
77. **Shappell, S.** (2013). Human factors in high risk environments. Invited workshop presented to the *National Air Security Operations Center Safety Standdown*, Corpus Christi, TX.
78. **Shappell, S.** (2013). Moving from a reactive to a proactive safety culture using human factors. Keynote address presented to the *Qantas Group Safety & Health Conference*, Sydney, Australia.
79. **Shappell, S.** (2014). Human Factors Analysis and Classification System (HFACS) for Tracking and Preventing Accidents. Invited workshop presented to the *American Society of Safety Engineers SeminarFest*, Las Vegas, NV.
80. **Shappell, S.** (2014). The Human Factors Analysis and Classification System (HFACS). Invited address presented to the *Cessna Aircraft Company Annual Safety Standdown*, Wichita, KS.
81. **Shappell, S.** (2014). Man and machine. Invited address presented to the *2014 Norwegian Civil Aviation Conference*. Bodo, Norway
82. **Shappell, S.** (2014). Human Factors Analysis and Classification System (HFACS) for Tracking and Preventing Accidents. Invited workshop presented to the *American Society of Safety Engineers Pre/Post Seminar*, Orlando, FL.
83. **Shappell, S.** (2014). Aeronautical decision-making and experience. Invited address presented to the *Airbus Helicopters Incorporated Customer Safety Symposium*, Fort Worth, TX.

84. **Shappell, S.** (2014). Shiftwork, fatigue, and performance. Invited workshop presented to the Los Angeles Police Department Forensics Laboratory Annual Training, Los Angeles, CA.
85. **Shappell, S.** (2014). Human factors associated with helicopter EMS. Invited address presented to the *2013 Annual Hospital Wing Fling EMS Educational Conference*, Memphis, TN.
86. **Shappell, S.** (2014). Life in the balance – The science behind critical decision-making. Keynote address presented to the *Pinnacle 2014 EMS Leadership & Management Conference*, Phoenix, AZ.
87. **Shappell, S.** (2014). Managing human error in complex systems. Invited address presented to the *Missouri EMS Conference and Expo*, Branson, MO.
88. **Shappell, S.** (2015). Managing human factors in high-risk industries. Keynote address presented to the *ASSE/AIHA Professional Development Conference*, St. Louis, MO.
89. **Shappell, S.** (2015). Shiftwork and Fatigue Management. Keynote address presented to the *Department of the Interior/US Forest Service Aviation Safety Conference*. St. Louis, MO.
90. **Shappell, S.** (2015). Shiftwork and Fatigue Management. Invited address presented to the *IAGSA Safety Forum*. Toronto, Ontario, Canada.
91. **Shappell, S.** (2015). Helicopter EMS – A human factors analysis of EMS accidents. Invited address presented to the *Michigan EMS Provider's Safety Day*. Saginaw, MI.
92. **Shappell, S.** (2015). Managing human error in the workplace. Invited address presented to the *Michigan EMS Provider's Safety Day*. Saginaw, MI.
93. **Shappell, S.** (2015). Aeronautical decision-making. Invited address presented to the *Northwest Medstar Safety Day*. Spokane, WA.
94. **Shappell, S.** (2015). Expert decision-making in healthcare. Grand Rounds presented to *M.D. Anderson*. Houston, TX.
95. **Shappell, S.** (2015). Managing fatigue and shiftwork in forensic science. Invited address presented to the *National Forensic Academy Symposium*. Nashville, TN.
96. **Shappell, S.** (2015). Aeronautical decision making. Invited address presented to the *CHC Regional Safety Conference*. Rio de Janeiro, Brazil.
97. **Shappell, S.** (2015). Embracing a human factors taxonomy. Invited address presented to the ECRI Institute, Plymouth Meeting, PA.
98. **Shappell, S.** (2015). Fatigue management and shiftwork in forensic science. Invited Colloquium presented to the National Institute of Standards and Technology, Gaithersburg, MD.
99. **Shappell, S.** (2016). Human Factors, Safety, & OR Design: Empowering the Perfusionist. Invited panel speaker presented to the 37th Annual Seminar on Cardiovascular Perfusion.
100. **Shappell, S.** (2016). Managing human factors in forensic science. Invited Plenary Address presented to the American Society of Crime Lab Directors (ASCLD) Symposium, Bellvue, WA.
101. **Shappell, S.** (2016). New developments in HFACS for healthcare. Invited address presented to the CHRISTUS Health Symposium, Las Colinas, TX.
102. **Shappell, S.** (2016). Managing human factors in forensic science. Invited Address presented to the Defense Forensic Science Institute, Atlanta, GA.
103. **Shappell, S.** (2016). Managing human factors in forensic science labs. Invited address presented to the Gordon Research Conference: Forensic Analysis of Human DNA, Waterville Valley, NH.

ABSTRACTS AND SCIENTIFIC PRESENTATIONS

1. Pritchard, W., Brandt, M., **Shappell, S.**, O'Dell, T., and Barratt, E. (1985). P300 amplitude/prestimulus EEG power relationships. *Psychophysiology*, 22, 609.
2. **Shappell, S.**, Pritchard, W., Brandt, M., and Barratt, E. (1986). The specificity of N400 to semantic mismatches. *Psychophysiology*, 23, 460.

3. **Shappell, S.**, Brandt, M., and Barratt, E. (1987). ERP component markers of increased performance on a short-term memory-scanning task. *Psychophysiology*, 24, 611.
4. Brandt, M., Jansen, B., **Shappell, S.**, and Barratt, E. (1988). The relationship between prestimulus EEG and the early components of the visual evoked potentials. *Psychophysiology*, 25, 436.
5. **Shappell, S.**, Brandt, M., and Gonzales, P., and Barratt, E. (1988). Temporal relationships of N2, P3, and reaction time following speed and accuracy instructions during increasing memory load. *Psychophysiology*, 25.
6. Barratt, E., **Shappell, S.** and Brandt, M. (1988). Effects of acute phenytoin on cortical event-related potentials. *Society for Neuroscience*.
7. DeJohn, C., **Shappell, S.**, Marr, M., and Owasoyo, J. (1990). The effects of methamphetamine on mood and behavior during simulated sustained flight operations. *61st Annual Meeting of the Aerospace Medical Association*.
8. DeJohn, C., **Shappell, S.**, and Neri, D. (1990). Methamphetamine effects of mood and tracking performance in simulated sustained flight. *Annual Meeting American Psychological Association*.
9. Neri, D., **Shappell, S.**, DeJohn, C., and Reeves, D. (1990). Effect of simulated sustained flight operations on cognitive performance, grip strength, and mood. *Proceedings of the Twelfth Psychology in the DOD Symposium*.
10. Neri, D., **Shappell, S.**, (1991). DeJohn, C. Simulated sustained flight operations and performance. I. Effects of Fatigue. *62nd Annual Meeting of the Aerospace Medical Association*.
11. **Shappell, S.**, Neri, D., and DeJohn, C. (1991). Simulated sustained flight operations and performance. II. The effects of methamphetamine on cognitive performance. *62nd Annual Meeting of the Aerospace Medical Association*.
12. Neri, D. and **Shappell, S.** (1991). Work/rest schedules of F-14 and A-6 aircrew onboard the USS America (CV-66) during operations Desert Shield/Storm. *26th Meeting of the DOD Human Factors Engineering Technical Working Group*.
13. **Shappell, S.** and Neri, D. (1991). Work/rest schedules of F-14 and A-6 aircrew onboard the USS America (CV-66) during operations Desert Shield/Storm. *Western Regional Failsafe Conference*.
14. **Shappell, S.** and Neri, D. (1991). A-6 and F-14 work/rest cycles during Operation Desert Shield/Storm I. The effect of combat on pilot subjective readiness scores and LSO scores. *27th Meeting of the DOD Human Factors Engineering Technical Working Group*.
15. Neri, D. and **Shappell, S.** (1991). A-6 and F-14 work/rest cycles during Operation Desert Shield/Storm. II. Circadian considerations. *27th Meeting of the DOD Human Factors Engineering Technical Working Group*.
16. **Shappell, S.** and Neri, D. (1992). Operational consequences of A-6 and F-14 work/rest cycles during Desert Shield/Storm. I. Effect of operational tasking on LSO Scores and subjective readiness. *63rd Annual Meeting of the Aerospace Medical Association*.
17. Neri, D. and **Shappell, S.** (1992). Operational consequences of A-6 and F-14 work/rest cycles during Desert Shield/Storm. II. Circadian consideration. *63rd Annual Meeting of the Aerospace Medical Association*.
18. DeJohn, C., **Shappell, S.**, and Neri, D. (1992). Subjective fatigue of A-6 and F/A-18 aircrews during Operations Desert Shield and Desert Storm. *63rd Annual Meeting of the Aerospace Medical Association*.
19. Neri, D. and **Shappell, S.** (1993). Predicting combat readiness of carrier airwing pilots using work/rest cycles and operational tasking. *64th Annual Meeting of the Aerospace Medical Association*.
20. **Shappell, S.** and Kearns, G., and Neri, D. (1993). The chronopharmacokinetics of dextromethamphetamine and its relationship to performance and subjective fatigue. *64th Annual Meeting of the Aerospace Medical Association*.
21. **Shappell, S.** and Borowsky, M. (1994). Naval flight deck injuries: A review of Naval Safety Center data from 1977-1991. *65th Annual Meeting of the Aerospace Medical Association*.
22. McKay, D., Wiegmann, D., **Shappell, S.**, and Neri, D. (1994). Preliminary observations of work/rest schedules and fatigue levels in aircraft carrier flight deck personnel. *65th Annual Meeting of the Aerospace Medical Association*.

23. **Shappell, S.** (1995). Aircrew fatigue, sleep loss, and circadian dysrhythmia associated with U.S. Naval aviators. *66th Annual Meeting of the Aerospace Medical Association.*
24. Wiegmann, D., **Shappell, S.**, and Schmidt, J. (1996). Cognitive failure analysis of aviation post-accident data. *67th Annual Meeting of the Aerospace Medical Association.*
25. **Shappell, S.**, Wiegmann, D., and Schmidt, J. (1996). The model of unsafe operations: A human factors approach to accident investigation. *67th Annual Meeting of the Aerospace Medical Association.*
26. **Shappell, S.** and Wiegmann, D. (1997). Inter-service reliability using the taxonomy of unsafe operations. *68th Annual Meeting of the Aerospace Medical Association.*
27. Wiegmann, D. and **Shappell, S.** (1997). Human error in aviation: The role of latent failures in accident causation. *68th Annual Meeting of the Aerospace Medical Association.*
28. **Shappell, S.**, Squier, H., Abad, G., and Wiegmann, D. (1998). An analysis of U.S. Navy and Marine Corps mishaps using the failure analysis classification system: Implications for prevention. *69th Annual Meeting of the Aerospace Medical Association.*
29. **Shappell, S.** & Wiegmann, D. (1998). Failure analysis classification system: A human factors approach to accident investigation. *SAE: Advances in Aviation Safety Conference and Exposition, Daytona Beach, FL.*
30. Wiegmann, D. & **Shappell, S.** (1998). Human factors accident investigation: A much needed, but seldom called upon, investigative science. *SAE: Advances in Aviation Safety Conference and Exposition, Daytona Beach, FL.*
31. Squier, H. and **Shappell, S.** (1999). Naval Aviation's response to command climate as a mishap cause factor. *70th Annual Meeting of the Aerospace Medical Association.*
32. **Shappell, S.** and Wiegmann, D. (1999). Human error in commercial and corporate aviation: An analysis of FAR Part 121 and 135 mishaps using HFACS. *70th Annual Meeting of the Aerospace Medical Association.*
33. **Shappell, S.**, Wiegmann, D., Fraser, J., Gregory, G., Kinsey, P., and Squier, H. (1999). Beyond mishap rates: A human factors analysis of U.S. Navy/Marine Corps TACAIR and Rotary Wing mishaps using HFACS. *70th Annual Meeting of the Aerospace Medical Association.*
34. Pounds, J., Scarborough, A., and **Shappell, S.** (2000). A human factors approach to the investigation and analysis of Air Traffic Control and flightdeck incidents and accidents. *108th Annual Meeting of the American Psychological Association.*
35. Wiegmann, D., **Shappell, S.**, Cristina, F., and Pape, A.. (2000). A Human Factors analysis of aviation accident data: An empirical evaluation of the HFACS framework. *71st Annual Meeting of the Aerospace Medical Association.*
36. **Shappell, S.**, Wiegmann, D., and Nesthus, T. (2000). A human error analysis of General Aviation controlled flight into terrain accidents. *71st Annual Meeting of the Aerospace Medical Association.*
37. **Shappell, S.**, Wiegmann, D., Fraser, J., Tanner, G., Kinsey, P., and Reddix, M. (2000). Tracking aircrew error trends in Naval aviation mishaps using HFACS. *71st Annual Meeting of the Aerospace Medical Association.*
38. Pounds, J., Scarborough, A., and **Shappell, S.** (2000). A human factors analysis of Air Traffic operational errors. *71st Annual Meeting of the Aerospace Medical Association.*
39. Tanner, G., Fraser, J., Reddix, M., **Shappell, S.**, Wiegmann, D. & Kinzey, P. (2000). Skill-based errors in Navy/Marine Corps aviation. *First International Symposium on Military Accidents: Causes, Costs, and Countermeasures, Farnborough, U.K.*
40. Wiegmann, D. and **Shappell, S.** (2001). Uncovering human error trends in fatal general aviation accidents using HFACS. *72nd Annual Meeting of the Aerospace Medical Association.*
41. **Shappell, S.** and Wiegmann, D. (2001). Assessing the reliability of HFACS within a context of aviation. *72nd Annual Meeting of the Aerospace Medical Association.*
42. Wiegmann, D., **Shappell, S.** & Fraser, J. (2002). HFACS analysis of aviation accidents: A North American comparison. *73rd Annual Meeting of the Aerospace Medical Association.*
43. Wiegmann, D. & **Shappell, S.** (2002). HFACS analysis of accidents involving CFR part 135 nonscheduled air carriers, 1990-1997. *73rd Annual Meeting of the Aerospace Medical Association.*

44. Tanner, G., Reddix, M., Webster, N., Fraser, J., **Shappell, S.**, & Wiegmann, D. (2002). Skill based error mishaps: The danger zones. *73rd Annual Meeting of the Aerospace Medical Association*.
45. **Shappell, S.**, & Wiegmann, D. (2002). HFACS analysis of general aviation data 1990-98: Implications for training and safety. *73rd Annual Meeting of the Aerospace Medical Association*.
46. **Shappell, S.** (2002). A Comparison of U.S. Military and Civilian Fixed-Wing and Rotary-Wing Accidents. *Annual Meeting of the American Helicopter Association, Montreal, Canada*.
47. **Shappell, S.**, & Wiegmann, D. (2003). A human factors analysis of military and civilian aviation accidents. *2003 APA Division 19 & 21 Symposium*.
48. Knecht, W., Harris, H., & **Shappell, S.** (2003). Money talks, weather walks: Effects of visibility, cloud ceiling, and financial incentive on GA pilots' willingness to take off into marginal weather. *2003 APA Division 19 & 21 Symposium*.
49. **Shappell, S.** and Wiegmann, D. (2003). The human factors analysis and classification system: A joint project of the FAA and University of Illinois. *American Society of Safety Engineers Human Error in Occupational Safety Symposium*.
50. **Shappell, S.**, Wiegmann, D., and Fraser, J. (2003). A comparison of U.S. military and civilian aviation accidents using the human factors analysis and classification system (HFACS). *Twelfth International Symposium on Aviation Psychology, Dayton, Ohio*.
51. **Shappell, S.** (2003). Closing Plenary Session. *Twelfth International Symposium on Aviation Psychology, Dayton, Ohio*.
52. Cruz, C., Boquet, A., Nesthus, T., Holcomb, K., and **Shappell, S.** (2003). The effect of short-duration countermeasures on the night shift. *74th Annual Meeting of the Aerospace Medical Association*.
53. **Shappell, S.** and Wiegmann, D. (2003). Human error associated with general aviation controlled flight into terrain. *74th Annual Meeting of the Aerospace Medical Association*.
54. Faaborg, T., Wiegmann, D., **Shappell, S.** (2003). Decision errors and general aviation accidents: A fine-grained analysis using HFACS. *74th Annual Meeting of the Aerospace Medical Association*.
55. **Shappell, S.** and Wiegmann, D. (2003). Human Error Comparison of Military and Civilian Aviation Accidents using HFACS. *111th Annual Meeting of the American Psychological Association*.
56. Scarborough, A., Detwiler, C., Wiegmann, D., and **Shappell, S.** (2004). Human Error Analysis of General Aviation Accidents: Identification of Factors Associated with Phase of Flight. *75th Annual Meeting of the Aerospace Medical Association*.
57. Detwiler, C., Scarborough, A., Wiegmann, D., and **Shappell, S.** (2004). Beneath the Tip of the Iceberg: An In-depth Analysis of General Aviation Accidents in Alaska and the Rest of the United States. *75th Annual Meeting of the Aerospace Medical Association*.
58. Boquet, A., Detwiler, C., **Shappell, S.**, Wiegmann, D. (2004). A human factors approach to accident analysis and prevention. Presented at the *Alaska Airman's Association Meeting*, Anchorage, AK.
59. Boquet, A., Detwiler, C., **Shappell, S.**, and Wiegmann, D. (2004). HFACS analysis of aviation accidents: A North American comparison. Presented at the *7th GAIN World Conference*.
60. Boquet, A., **Shappell, S.**, and Detwiler, C. (2005). A human factors analysis of rotorcraft accidents in the U.S. *2005 HeliExpo, Anaheim, CA*.
61. Boquet, A., Detwiler, C., and **Shappell, S.** (2005). An HFACS analysis of maintenance-related general aviation accidents. *Professional Aviation Mechanics Association's 34th Annual Maintenance Symposium, Las Vegas, NV*.
62. Detwiler, C. Boquet, A., and **Shappell, S.** (2005). An HFACS analysis of maintenance related general aviation accidents. *Annual Meeting of the Alaska Air Carrier's Association, Anchorage, AK*.

63. Detwiler, C., Holcomb, K., Boquet, A., Wiegmann, D., and **Shappell, S.** (2005). Land of the Midnight Sun: Shedding Light on Differences in GA Accidents in Alaska Versus the Rest of the United States. *13th International Symposium of Aviation Psychology*, Oklahoma City, OK.
64. Detwiler, C., Holcomb, K., Boquet, A., Wiegmann, D., and **Shappell, S.** (2005). A Human Error Analysis of General Aviation and Commercial Air Tour Accidents. *76th Annual Meeting of the Aerospace Medical Association*, Kansas City, MO.
65. Boquet, A., Detwiler, C., Wiegmann, D., Roberts, C., Jack, D., Holcomb, K., and **Shappell, S.** (2005). To Torque or Not to Torque: Human Factors in the Maintenance of General Aviation Aircraft. *76th Annual Meeting of the Aerospace Medical Association*, Kansas City, MO.
66. **Shappell, S.**, Detwiler, C., Holcomb, K., Boquet, A., & Wiegmann, D., (2005). Human factors analysis of commercial aviation accidents. *113th Annual Meeting of the American Psychological Association*, Washington, DC.
67. Detwiler, C., Holcomb, K., Boquet, A., Wiegmann, D., & **Shappell, S.**, (2005). Human factors analysis of general aviation accidents. *113th Annual Meeting of the American Psychological Association*, Washington, DC..
68. Boquet, A., Detwiler, C., Holcomb, K., Wiegmann, D., **Shappell, S.**, (2005). Human factors analysis of maintenance errors and aviation accidents. *113th Annual Meeting of the American Psychological Association*, Washington, DC.
69. Holcomb, K., Detwiler, C., Hackworth, C., Boquet, A., Wiegmann, D., and **Shappell, S.** (2006). Human factors analysis of agricultural aviation accidents. *76th Annual Meeting of the Aerospace Medical Association*, Orlando, FL.
70. **Shappell, S.** and Wiegmann, D. (2006). A methodology for identifying human factors interventions in aviation. *76th Annual Meeting of the Aerospace Medical Association*, Orlando, FL.
71. Hackworth, C., Detwiler, C., Holcomb, K., Bates, C., Boquet, A., Wiegmann, D., and **Shappell, S.** (2006). Aviation maintenance accidents: An analysis using HFACS. *76th Annual Meeting of the Aerospace Medical Association*, Orlando, FL.
72. Detwiler, C., Holcomb, K., Hackworth, C., Boquet, A., Wiegmann, D., and **Shappell, S.** (2006). Human error associated with commercial aviation accidents. *76th Annual Meeting of the Aerospace Medical Association*, Orlando, FL.
73. Boquet, A., Holcomb, K., Detwiler, C., Hackworth, C., Wiegmann, D., and **Shappell, S.** (2006). A human factors analysis of helicopter emergency medical services: 1990-2003. *76th Annual Meeting of the Aerospace Medical Association*, Orlando, FL.
74. Holcomb, K., Detwiler, C., Hackworth, C., and **Shappell, S.** (2007). Analysis of rotorcraft accidents using the human factors analysis and classification system (HFACS). *76th Annual Meeting of the Aerospace Medical Association*, New Orleans, LA.
75. Hackworth, C., Holcomb, K., Detwiler, C., and **Shappell, S.** (2007). An analysis of instructional flight accidents using the human factors analysis and classification system (HFACS). *76th Annual Meeting of the Aerospace Medical Association*, New Orleans, LA.
76. Detwiler, C., Holcomb, K., Hackworth, C., and **Shappell, S.** (2007). An in-depth analysis of general aviation accidents associated with visual flight rules (VFR) into instrument meteorological conditions (IMC). *76th Annual Meeting of the Aerospace Medical Association*, New Orleans, LA.
77. Iden, R. and **Shappell, S.** (2007). National legislation for driver error: What does the data say? *115th Annual Meeting of the American Psychological Association*, San Francisco, CA.
78. Baron, J., Detwiler, C., Holcomb, K., Boquet, A., and **Shappell, S.** (2007). Aircrew error associated with air tour operations. *115th Annual Meeting of the American Psychological Association*, San Francisco, CA.
79. **Shappell, S.** and Wiegmann, D. (2007). Human factors assessment of existing safety strategies within civil aviation. *115th Annual Meeting of the American Psychological Association*, San Francisco, CA.

80. **Shappell, S.** and Wiegmann, D. (2008) A Methodology for Identifying Human Error and Targeting Interventions in High Risk Industries. *Annual Meeting of the Institute of Industrial Engineers*, Seattle, WA.
81. Hackworth, C., Holcomb, K., **Shappell, S.**, Baron, J., Iden, R., Lanicci, J., Bazargan, M., & Halperin, D. (2009). Developing proactive methods for general aviation data collection. *77th Annual Meeting of the Aerospace Medical Association*, Boston, MA.
82. **Shappell, S.** (2010). Human factors and lessons from aviation accident investigation. *15th Annual Update on Cardiopulmonary Bypass: An Interdisciplinary Approach to the Care of the Cardiac Surgery Patient*, Whistler, BC, Canada.
83. **Shappell, S.** (2010). What is human factors engineering? *15th Annual Update on Cardiopulmonary Bypass: An Interdisciplinary Approach to the Care of the Cardiac Surgery Patient*, Whistler, BC, Canada.
84. **Shappell, S.** (2010). The human factors of FOCUS. *32nd Meeting of the Society of Cardiovascular Anesthesiology*, New Orleans, LA.
85. **Shappell, S.** (2011). Exploring strategies for how errors can be reasonably controlled or prevented. Presentation as part of a workshop entitled “*Identifying and Managing Errors in Case Analysis: Introduction to Human Error Analysis*” presented at the *63rd Annual Meeting of the American Academy of Forensic Science*, Chicago, IL.
86. Patel, J., Whetsel, S., Patel, B., Harris, J., Teodori, M., Kurz, M., **Shappell, S.** (2011). Exploring Petroleum Industry Safety by Data Mining HFACS Analysis. *61st Annual Institute of Industrial Engineers Conference and Expo*, Reno, NV.
87. Kim, C., **Shappell, S.**, & Wiegmann, D. (2012). The impact of a weather training tool (WeatherWise) on pilot decision-making. *80th Annual Meeting of the Aerospace Medical Association*, Boston, MA.
88. Allison, D., **Shappell, S.**, & Abernathy, J. (2012). Mapping and graphically analyzing tasks to understand and inform operating room design for improved safety outcomes. *2012 Healthcare Design Conference*, Phoenix, AZ.
89. **Shappell, S.** (2012). Got sleep? How human factors such as fatigue effects work performance. *62nd Annual Institute of Industrial Engineers Conference and Expo*, Atlanta, GA.
90. **Shappell, S.** (2012). A human factors approach to root cause analysis. *24th Annual National Forum on Quality Improvement in Health Care*, Orlando, FL.
91. Allison, D., Abernathy, J., **Shappell, S.**, & Swinton, G. (2012). Tasks & Disruptions in the OR. *2012 Healthcare Design Conference*, Phoenix, AZ.
92. **Shappell, S.** (2013). Operating room layout and architecture. *2013 Symposium on Human Factors and Ergonomics in Health Care*, Baltimore, MD.
93. Cabrera, J., Sisk, O., Welsh, K., Cohen, T., Pohl, E., **Shappell, S.**, Boquet, A. (2014) Using human factors to identify system failures in the cardiovascular operating room. Paper presented at the *Human Factors and Ergonomics in Health Care: Leading the Way*, Chicago, IL.
94. Cabrera, J., Sisk, O., Welsh, K., Cohen, T., Pohl, E., **Shappell, S.**, Boquet, A. (2014) Using human factors to identify system failures in the cardiovascular operating room. Paper presented at the *Human Factors and Applied Psychology Student Conference*, Daytona Beach, FL.
95. Welsh, K., Sisk, O., Cabrera, J., Cohen, T., Pohl, E., **Shappell, S. A.**, Boquet, A., (2014) Communication in the cardiovascular operating room: Developing a new taxonomy. Paper presented at the *International Symposium on Human Factors and Ergonomics in Healthcare*, Chicago, IL.
96. Sisk, O., Cabrera, J., Welsh, K., Cohen, T., Pohl, E., **Shappell, S.**, Boquet, A., (2014). Providing another lens on cardiovascular surgery using RIPCHORD. Paper presented at the *Human Factors and Ergonomics in Health Care: Leading the Way*, Chicago, IL.
97. Welsh, K., Sisk, O., Cabrera, J., Cohen, T., Pohl, E., **Shappell, S.**, Boquet, A., (2014) Communication in the cardiovascular operating room: Developing a new taxonomy. Paper presented at the *Human Factors and Applied Psychology Student Conference*, Daytona Beach, FL.
98. Cabrera J., Cohen T., Lizinger T., **Shappell, S.**, Captain, K., Miles, S. & Fabian, M. (2015). A

prospective investigation to identify and classify flow disruptions in a level II trauma center. Paper presented at the *International Symposium on Human Factors and Ergonomics in Healthcare*, Baltimore, MD.

99. Cohen, T., Sisk, O., Cabrera, J., Welsh K., Pohl, E., Boquet, A., **Shappell, S.**, Abernathy, J., & Reeves, S. (2015) The impact of flow disruptions on three key members of the cardiac surgical team: Anesthesia, Perfusion, and the circulating nurse. Paper presented at the *Applied Human Factors and Ergonomics Conference*, Las Vegas, NV.
100. Pohl, E., Sisk, O., Cabrera, J., Cohen, T., Welsh, K., **Shappell, S.**, Boquet, A., Abernathy, J., & Reeves, S. (2015). Observations and categorization of process inefficiencies related to cardiopulmonary bypass. Paper presented at the *American Society of Extracorporeal Technology*, Tampa, FL.
101. Sisk, O.D., Cabrera, J.S., Welsh, K.W., Cohen, T.N., Pohl, E.E., **Shappell, S. A.**, Boquet, A.J., (2014, March) Providing another lens on cardiovascular surgery using ripchord. Paper presented at the *Human Factors and Applied Psychology Student Conference*, Daytona Beach, FL.
102. Welsh, K., **Shappell, S.**, & Boquet, A. (2015). Applying flow disruption driven methodology to appropriately apply TeamSTEPPS tools. Paper presented at the *TeamSTEPPS National Conference*, Denver, Colorado.
103. Welsh, K., Sisk, O., Pohl, E., Cabrera, J., Cohen, T., Boquet, A., & **Shappell, S.** (2015) Optimizing the flow of cardiovascular surgery for the circulating nurses using a proactive approach to quality improvement. Poster presented at *AORN Surgical Conference & Expo*, Denver, Colorado.
104. Cohen, T., Sisk, O., Cabrera, K., Welsh, K., Pohl, E., Boquet, A., **Shappell, S.**, Abernathy, J., & Reeves, S. (2015). The impact of flow disruptions on three key members of the cardiac surgical team: Anesthesia, perfusion, and the circulating nurse. Paper presented at the 6th *International Conference on Applied Human Factors and Ergonomics*, Las Vegas, NV.
105. Cohen, T. & **Shappell, S.** (2016). Identifying latent failures in the cardiovascular operating room. Paper presented at the 7th *International Conference on Applied Human Factors and Ergonomics*, Orlando, FL.
106. Litzinger, T., Boquet, A., Cabrera, J., Captain, K., Fabian, M., Miles, S., **Shappell, S.**, & Cohen, T. (2016). Process inefficiencies threatening the optimal delivery of traumatic care of motorcycle crash victims. Paper presented at the 7th *International Conference on Applied Human Factors and Ergonomics*, Orlando, FL.
107. Cohen, T., **Shappell, S.** (2016). *Using the Human Factors Analysis and Classification System (HFACS) to Identify Threats to Patient Safety in the Cardiovascular Operating Room*. Panel discussion at the American Psychological Association, Denver, CO.
108. Cohen, T., Cabrera, J., Pohl, E., Sisk, O., Welsh, K., Reeves, S., Abernathy, J., **Shappell, S.**, Boquet, A., (2016). *Broken Windows in the CVOR: A Prospective Study of Disruptions During Cardiothoracic Surgery*. Paper presented at the *Human Factors and Ergonomics in Health Care: Shaping the Future*, San Diego, CA.
109. Litzinger, T., Cabrera, J., Cohen, T., **Shappell, S.**, Miles, S., Fabien, M., Captain, K., Boquet, A., (2016). *A Method for Developing Data-Driven Interventions in a Level II Trauma Center*. Paper presented at the *Human Factors and Ergonomics in Health Care: Shaping the Future*, San Diego, CA.

WORKSHOPS PRESENTED

A Human Factors Approach to Aviation Accident Investigation and Prevention: The Human Factors Analysis and Classification System (HFACS) presented at the Annual Meeting of the:

- Aerospace Medical Association (2001, 2002, 2003, 2004)
- American Psychological Association (2002)
- Applied Ergonomics Society (2001)
- Australian Association of Aviation Psychology (2000)

- Canadian Aviation Safety Seminar (1998, 1999, 2004)
- Human Factors and Ergonomics Society (1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2008)
- International Symposium on Aviation Psychology (1997, 1999, 2001, 2003)
- Association of System Safety Engineers (2013, 2014, 2015)
- Association of System Safety Engineers SeminarFest (2012, 2013, 2014, 2015)

Managing Error in Industrial Settings: Identifying Hazards and Developing Interventions presented at the Annual Meeting of the:

- Applied Ergonomics Society (2005)

Managing Error in Complex Systems presented at the Annual Meeting of the:

- Association System Safety Engineers (2005)
- Association of System Safety Engineers Region VI Professional Development Conference (2005)

Managing Human Factors in Risk in the Workplace presented at the:

Alaska Airlines Safety (2007)
 Chamber of Minerals and Energy of Western Australia Occupational Safety and Health Conference, (2007).
 Queensland Resource Council (2007)
 Queensland Department of Mines and Energy (2007)

Identifying and Managing Errors in Case Analysis: Introduction to Human Error Analysis presented at the:

- 63rd Annual Scientific Meeting of the American Academy of Forensic Sciences

EXPERT WITNESS

RETAINED W/O DEPOSITION OR TRIAL TESTIMONY TO DATE

- 2006** for the plaintiffs in the matter of *Washington v Comair* (Accident on August 27, 2006 involving a Bombardier Canadair Regional Jet CRJ-100ER). Takeoff from wrong runway. Human factors: Fatigue, Crew Resource Management, Decision Error. Attorney: Bill Garmer, Garmer & O'Brien
- 2007** for the defense in the case of *Aubrey v Precision Airmotive, Inc.* (Accident on October 12, 2003 involving a Piper PA-28-180).
- 2009** for the defense in the case of *Miller v Precision Airmotive, Inc.* (Accident on August, 1, 2002 involving a Grumman American AA-5B).
- 2009** for the defense in the case of *Young v Precision Airmotive, Inc.* (Accident on March 13, 2005 involving a Grumman American AA-5)
- 2009** for the defense in the matter of *Johnson v Avco* (Accident on September 10, 2005 involving a Piper PA-32-300)
- 2009** for the defense in the case of *Stewart v Precision Airmotive, Inc.* (Accident on March 27, 2005 involving a Piper PA-28-235).
- 2009** for the defense in the case of *Titov v Precision Airmotive, Inc.* (Accident on May 28, 2005 involving a Grumman American AA-1A).
- 2009** for the defense in the matter of *Roberto Tazoe v TAM Linhaus Aereas & Airbus, S.A.S.* (Accident on July 17, 2007 involving an Airbus A320).
- 2010** for the defense in the matter of *Orr v Grayson* (Accident on November 21, 2006 involving a Hughes 369E).

- 2010** for the defense in the matter of *McCormick v Avidyne* (Accident on June 28, 2007 involving a Piper Meridian PA-46).
- 2011** for the defense in the matter of *Otoski v Avidyne* (Accident on February 16, 2008 involving a Lancair LC41).
- 2011** for the defense in the matter of *Lunn v Beech Aircraft Corporation* (Accident on October 17, 2007 involving a Beech A36)
- 2013** for the defense in the matter of *Gardner v Pilatus and Honeywell* (Accident on September 29, 2009 involving a Pilatus PC-12) – Crash on approach to airport. Human factors: Fatigue, medication (antihistamine and amphetamine).

DEPOSITION & TRIAL TESTIMONY

- 2000** for the Department of Justice in the matter of *Korean Air Lines v U.S.* (Accident of August 6, 1997 involving a Boeing 747-400). Controlled flight into terrain on approach. Human factors: Fatigue (chronic and acute), Crew Resource Management. Attorney: Deborah Fowler, DOJ
- 2001** for the Department of Justice in the matter of *ERA Helicopters v U.S.* (Accident on May 30, 1998 involving a Aérospatiale AS 350B2 and a Cessna 172RG). Midair collision. Human factors: Fatigue (chronic - lack of sleep and acute – long flight), organizational failure (flawed safety program). Attorney: Deborah Fowler, DOJ
- 2004** for the Department of Justice in the matter of *Kowalczyk v U.S.* (Accident on March 29, 2001 involving a Gulfstream III). Crash on approach into Aspen. Human factors: Crew Resource Management, Sterile Cockpit, Pressure, Attorney: Deborah Fowler, DOJ
- 2006** for the defense in the matter of *Karr et al. v Minuteman Aviation, Inc.* (Accident on June 21, 2005 involving a Cessna 320).
- 2007** for the defense in the matter of *Mazaki v Eurocopter* (Accident on September 23, 2003 involving an AS350).
- 2008** for the defense in the matter of *Jacoby v Avidyne* (Accident on February 22, 2006 involving Lancair Company LC41-550FG). Crash following missed approach. Human factors: Fatigue, get-home-itis, limited experience, and spatial disorientation. Attorney: Henry Willett, Christian & Barton
- 2009** for the plaintiffs in the matter of *Braunstein v Honeywell International, Inc.* (Accident on May 16, 2002 involving a Socata TB-21)
- 2009** for the defense in the matter of *Larry Sliffe, etc. v Garmin* (Accident on October 14, 2005 involving a Lancair 235 and Cessna 172L)
- 2011** for the plaintiff in the matter of *Orr v Moon Lake Electric* (Accident on November 21, 2006 involving a Hughes 369E)
- 2014** for the defense in the matter of *Karoly and Milot v SIMCOM* (Accident on February 2, 2007 involving a Socata TBM 700)
- 2016** for the plaintiff in the matter of *Anders v USA* (Accident on January 4, 2013 involving a Beechcraft H35 Bonanza)
- 2017** for the defense in the matter of *Torres v Garmin v Torres* (Accident on December 27, 2014 involving the grounding of a boat in the Okeechobee Waterway).