

G. TALLEY HOLMAN

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EMPLOYMENT HISTORY

Consultant, Independent, Blakely, GA, 2002-2018

Assessment, prototype design, or expert opinion for industrial projects requiring research methods, statistics, ergonomics, human factors, or LEAN where human systems and decision making dictate operational reliability and efficiency

Adjunct Professor, **Industrial Engineering**, University of Louisville, Louisville, KY, 2014-2018

Mentoring (Doctoral Dissertations)

- Develop a compensation strategy based on worker job type, nationality, culture, etc., *Carsten Becker*, Graduation 2019 (Chair)
- Develop artificial feedback systems in hybrid sports cars to improve driver lap times, *Thomas Gruenter*, Graduation 2019 (Chair)

Senior eHealth Systems Analyst, *American Academy of Family Physicians*, Leawood, KS, 2014-2016

Using an interdisciplinary approach to analyze and quantify healthcare environments, workflow, and procedures as it relates to primary care for defining best methods, reduce error, redesign layout, model, and develop standards

- Evaluated Meaningful Use's benefit and burden on physicians (2015-2016, \$75,000) PI, Sponsor AAFP (6 publications)
Disciplines: Engineering (statistics, workflow, data mining, human factors), Public Health (policy), Healthcare (family physicians)
- *Proposed Research:* (1) Deeper dive into meaningful use criteria with significant physician burden associated with basic/routine patient care (\$244,000), Co-PI, submitted AAFP
(2) Assessment of healthcare professionals first 5 years of practice: physical & mental

Director, **Center for Ergonomics**, University of Louisville, Louisville, KY, 2009-2014

Administration & Infrastructure

- Managed assets: physical & financial audits, facilities allocation/certification, funding (internal & external proposals)
- Successfully completed board-of-trustees five year review; approval given five year continuation (2012)
- Built the **Human Sciences Laboratory** designed for simultaneous acquisition of cognitive and physical data (2011)

Healthcare Research (selected)

- Designed a new individualized extension limiting cervical collar (ongoing) (1 publication)
Disciplines: Engineering (ergonomics, biomechanics, additive manufacturing), Healthcare (surgeons, orthotics, patient treatments)
 - Collaborative effort to improve spinal pathologies treatment (2014-2015, \$10,000) Co- PI, Sponsor Ky EPSCoR
 - (Proposed) Creation of extension limiting semi-rigid cervical orthotic (\$100,000), Co- PI, Submitted Coulter Group
- Modeled "real world" workflows and interactions of physician-nurse teams treating patients simultaneously (7 publications)
Disciplines: Engineering (simulation, operations research, reliability, statistics, workflow, LEAN, human factors), Economics, Psychology (interview, focus groups), Healthcare (physicians, surgeons, nursing)
 - Determined how an employee's job affects their perception of workflow and how to support it (2 Publication)
 - Quantified cost of wait-times in healthcare: workflow efficiency, patient safety, satisfaction, economic (2 Publication)
 - (Proposed) Evaluate how case turnover affects operating room efficiency (\$51,871), PI, Submitted UofL Hospital
- Created a real-time decision support system for healthcare and public health to manage pandemic scenarios (2011-2013, \$3,314,000), Co-investigator, Sponsor National Institute for Hometown Security
- (Proposed) Development of an asthma management & monitoring smart phone peripheral device and app for patients

Industrial Research (selected)

- Used evolutionary algorithms to gain consensus in decision making and design (ongoing) (3 publications)
Disciplines: Engineering (statistics, data mining, variable sensitivity mapping, evolutionary algorithms, human factors, safety), Psychology (human-computer interaction, cognition, focus groups), Computer Science (coding/programming)
 - Used hand drawn images to determine design parameters for improving stereotype production method for warning symbol design using evolutionary computation software
 - Designed symbols to improve patient comprehension during provider's subjective assessment
 - Developing internet-based software to get consensus between professional without direct interaction (ongoing)
- Developed and performed ergonomics workshop/training (2013-2014, \$6200), PI, Sponsor Greenlee-Textron, Inc.
- Developed time standard(s) from time study of main production lines (2012-2013, \$27,303), PI, Sponsor Hussey Copper
- (Proposed) Create a cost basis tool from time study of facility operations (\$246,000), PI, Submitted Hussey Copper
- (Proposed) Develop in-house ergonomic and design standards (\$98,729), PI, Submitted Dynacraft Inc.
- (Proposed) Develop behavioral safety culture program (\$160,398), PI, Submitted Linak Inc.

Assistant Professor, **Industrial Engineering**, University of Louisville, Louisville, KY, 2009-2014

Service (selected committees & activities)

- Graduate Curriculum Committee (2013-2014)
- Survivor's guide to on-line teaching, Continuing Education (2013)
- INSPIRE, minorities in engineering program (2011-2012)
- Graduate Admissions Committee (2009-2014)
- ABET recertification (2009-2010, 2012)
- Critical thinking Initiative (2009-2011)

Teaching Taught 5-7 courses a semester domestically and internationally

- *Workplace Techniques & Management* (Graduate, 2010-2014)
- *Engineering Economics* (Undergraduate, 2014)
- *Human Factors/Ergonomics* (Undergraduate/Graduate, 2009-2013)
- *Lean Systems* (Graduate, 2011-2014)
- *Work Design* (Undergraduate, 2014)
- *Research Methods* (Graduate, 2012)

Mentoring Mentored US, Panamanian, and German students in industrial, systems, and mechanical engineering

Doctoral (*recipient of Industrial Engineering outstanding dissertation award)

- *Scott Hoover (2013, Co-Chair)
- Thomas Gruenter (graduation 2019, Chair)
- Carsten Becker (graduation 2019, Chair)

Masters (*recipient of National 2011-12 Alpha Pi Mu Wolter J. Fabrycky award)

- Nicole Knapp (ME) (2016, Committee)
- Samantha Knight (2014, Chair)
- Laura Anzola (2014, Chair)
- Andrew Dreisbach (2014, Chair)
- Ramón Avilés (2014, Chair)
- Brad Cottrell (ME) (2013, Chair)
- *Abby Wooldridge (2012, Co-Chair)
- Andrew Johnson (2012, Chair)
- Matt Stenger (2011, Chair)
- Alessandro F. Reichert (2011, Chair)
- Scott Hoover (2010, Committee)

Projects (selected)

- Evaluated of heel-strike relative to gait to compare lower extremity joint impact
- Evaluated performance difference in people working from 4pm to 12midnight and 8am to 5pm
- Proposed technique to reduce inter-rater variability of pressure ulcer classifications for better patient outcomes (1 publication)
- Improved acceleration performance of a SAE Baja vehicle based on soil saturation
- Created a responsive system for material handling products utilizing lean strategy that increased productivity

Contracts

- SPD-IE External German Doctoral Program (2009-2012, \$499,800), Instructor Sub-Contract, Intakes 1 and 2
- SPD-IE External Panama Masters Program (2009-2013, \$1,008,000), Instructor Sub-Contract, Intake 10,11,12

Research Associate, Center for Quality & Productivity Improvement, University of Wisconsin-Madison, Wisconsin, 2008-2009
Assessed risk in medication after hospital transitions. (2008-2009, \$411,000), Investigator, Sponsor NIH-AHRQ (5 publications)

- Developed tandem observations protocol to collect team dynamics and system level data (1 publication)

Graduate Teaching/Research Assistant, Industrial & Systems Engineering, Auburn University, Auburn, AL, 2001-2007
Laboratory Technician, 2005-2007

- Designed, built, and maintained ISE's human factors laboratory capable of simultaneous data capture

Network Administrator, 2003-2007

- Performed installation and maintenance of ISE occupational safety and ergonomics laboratories and offices

Graduate Teaching Assistant, Marketing, Auburn University, Auburn, AL, 2003-2004

Ergonomic Intern, Delta Airlines, Atlanta, GA, 2003

Member of reservation center training team for Salt Lake City, USA and Santiago, Chile

- Performed ergonomic training and evaluations that developed multi-level impact versus cost recommendations

Emergency Responder, Shaw Industries, Inc., Andalusia, AL, 1998 – 2001

Member of facility/county emergency response team; incident commander, 1998-1999

- Hazardous waste response (Hazmat) Technician Level training
- Incident command first response team training
- Incipient Fire Team training
- Confined Space and Rescue training

Manager / Supervisor, Shaw Industries, Inc., Andalusia, AL, 1995 – 2001

Managed 30 to 55 employees in main production and support departments that set production records and lowered waste

- Chaired or participated on teams:
 - Headed shift safety & ergonomic committees (1997-2001)
 - Streamlined a series of department mergers (1999)
 - Developed operational (SOPs) and safety (JSAs) (1996-2001)
 - Created behavioral safety program (1999)
 - Facility turnover reduction team (1998)
 - Candidate behavioral interviewing team (1999-2001)

EDUCATION

Doctorate of Philosophy, Industrial & Systems Engineering, Auburn University, Auburn, AL, 2007

Specialization: Human factors, biomechanics, ergonomics & safety

Sponsor: NIOSH Deep South Center Education & Research Center

- Interdisciplinary training: nursing, physicians, public health, industrial hygiene

Program: Occupational Injury & Prevention Research & Training Program (OIPRT)

- Research Exchange, *University of Algarve*, Faro, Portugal, 2007
- Completed *University of Alabama Birmingham's* School of Public Health graduate core curriculum

Dissertation: Patient Handling: Conditions & Restrictions (6 publication)

- *Funding:* Effects of Restricted Space on Patient Handling in Hospitals. (2005-2007, \$16,560), PI, Sponsor ASSE

Master of Science, Industrial & Systems Engineering, Auburn University, Auburn, AL, 2004

Master of Business Administration, Auburn University, Auburn, AL, 2004

Bachelor of Science, Physics, Georgia Southern University, Statesboro, GA, 1995

Bachelor of Science in Manufacturing, Industrial Management, Georgia Southern University, Statesboro, GA, 1995

PROFESSIONAL

Certification Professional Engineer (PE), Kentucky, 2017

Activities • Manuscript reviewer for professional journals and conferences (2008-2017)

- Active member and/ or faculty advisor to professional societies (2003-2018)

- Grant reviewer for NIOSH, Kentucky Engineering & Science Foundation, National Science Foundation (2009-2017)