

# **CURRICULUM VITAE**

**J. P. Purswell**

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## **EDUCATION:**

Ph.D. Industrial and Systems Engineering (Human Factors Option) 1997. Virginia Tech, Blacksburg, Virginia.

M.S. Industrial Engineering 1989. The University of Oklahoma, Norman, OK.

B.S. Chemistry and Biology (double degrees) 1986. Oklahoma Baptist University, Shawnee, OK.

## **TEACHING AND RESEARCH INTERESTS:**

Dr. Purswell has taught ergonomics and safety engineering for more than two decades. He has conducted research dealing with occupational safety, including OSHA policies and procedures, consumer product safety including warnings and instructions, product usability, perception/reaction time issues, railroad work methods, and the ergonomics of manual material handling tasks.

## **PROFESSIONAL EXPERIENCE:**

**1999-Present, Vice President, Purswell & Purswell, Ergonomics & Safety Consulting, Colorado Springs, CO 80920**

- Consults with manufacturers, employers, and attorneys on ergonomics and safety issues.
- Performs hazard analyses of products for manufacturers.
- Consults with manufacturers on the development of warnings and instructions for new and redesigned products.
- Consults with employers on the design and implementation of OSHA-compliant work practices to address safety hazards and to mitigate ergonomic risk factors.
- Advises clients on OSHA's citation practices of ergonomic hazards under the "General Duty" clause as well as on OSHA's citation policy with respect to multiemployer workplaces.
- Advises clients on how to access and interpret OSHA compliance directives (CPLs) for a given standard.
- Advises clients on the use of the CPSC's NEISS injury database and the OSHA accident investigation database.
- Performs usability assessments of products to identify areas of potential user errors due to sub-optimal design.
- Performs consulting on railroad work methods.

Representative clients have included

- **attorneys** involved in litigation matters (list of prior litigation consultations available on request);
- **a hospital chain** (usability tests and assessment of ergonomic and safety risk factors of competing medical devices);
- **a manufacturer of agricultural equipment** (evaluation and mitigation of workplace ergonomic risk factors);
- **a manufacturer of a meat processor** (user manual and on-product warnings);
- **a manufacturer of a hot tub/spa** (user manual and on-product warnings);
- **a manufacturer of automotive cleaning products** (on-product warnings and Safety Data Sheets);
- **a manufacturer of candle-making products** (on-product warnings and Safety Data Sheets);
- **a manufacturer of warehouse storage rack systems** (set up and use instructions);
- **various offices on ergonomic issues** (Consultations on the selection and arrangement of components of a computer workstation to minimize ergonomic stressors);
- **a manufacturer of an alcohol monitoring system** (warnings and safety instruction sheet).

**1999-Present, Adjunct Professor, Engineering Department, Colorado State University Pueblo, Pueblo, CO 81001**

- Teaches the graduate ergonomics course and the senior level safety course for the Engineering department.
- Supervises student research on product safety and usability issues. As part of his involvement with CSU-Pueblo, Dr. Purswell has also initiated and supervised several graduate student ergonomics projects for Pueblo area manufacturing, warehousing, and retail establishments.

**1994-1999, Ergonomics and Safety Consultant, Purswell & Associates, Colorado Springs, CO 80920**

- Designed and conducted research concerning user perceptions and comprehension of potential product hazards.
- Developed experimental protocols and questionnaires, performed data collection, data reduction and analysis, and wrote reports for clients.
- Performed hazard analyses of consumer and industrial products, applied system safety principles of hazard abatement, including suggested redesign, guarding, and preparation of camera-ready copies of instructions and on-product warnings for clients. Representative products include an attic ventilator line, a deer stand manufacturer, and a brake pad manufacturer.
- Researched and interpreted OSHA, CPSC and ANSI standards for clients, including the legislative record for OSHA standards.
- Acquired familiarity with OSHA standards applicable to chemical safety, workplace/machine interface issues and construction/maintenance operations. These

include, for example, the Hazard Communication Standard, Lockout/Tag out Standard, Hearing Conservation Standard, Fall Protection Standards, etc.

- Performed forensic consulting for attorneys involved in workplace and product safety litigation, including preparation of reports and research applicable to a given issue involved in the litigation.

**1989-1992, Graduate Teaching/ Research Assistant, Virginia Tech, Blacksburg, Virginia, 24061**

- Assisted with *Introduction to Industrial Engineering* and *Probability and Queuing Systems* classes.
- Lectured in the absence of the professor.
- Prepared and graded homework and exams.
- Documented and analyzed railroad work methods. Prepared task descriptions and ergonomics/safety analyses of work methods. Recommended methods improvements and changes in tool design. Authored the project report.
- Researched finger strength capabilities. Designed the data collection equipment. Wrote the software routines to collect and reduce the data. Performed statistical analysis of the data. Authored the project report.

**Summer 1989, Industrial Engineer Intern, General Motors Assembly Division, Oklahoma City, OK 73135**

Performed analyses of assembly line ergonomics and safety issues. Prepared a safety and ergonomics training program for plant use.

**1987-1989, Graduate Teaching/Research Assistant, University of Oklahoma, Norman, OK 73072**

Interfaced a computerized data collection system with analog electrical instruments. Taught ergonomics labs.

**CERTIFICATIONS & LICENSES:**

Registered Professional Engineer by examination

Board Certified Professional Ergonomist by examination

**PROFESSIONAL AFFILIATIONS AND SERVICE:**

Member, Human Factors and Ergonomics Society. Served as a newsletter editor and paper reviewer for several technical groups. Instructor for the CPE prep course sponsored by the Rocky Mountain Chapter of HFES

Member, Society for Chemical Hazard Communication.

Senior Member (1997-2021) and Director of Professional Registration (2003-2009) for the Institute of Industrial Engineers. Responsible for preparing the Industrial Engineering P.E. licensure exam administered by NCEES. Served on the 2002-2003 and 2010-2011 committees to review and reformulate the Industrial Engineering P.E. content areas. Also served on the 2012 committee to re-specify content areas for the FE exam. Dr. Purswell continues to serve as a member on the committee that develops the exam specifications for the IE PE exam as well as continuing to write questions for the exam.

"Outstanding Reviewer" for the [International Journal of Industrial Ergonomics](#)

Program Chair (2004) 1<sup>st</sup> Annual Spring Symposium of the Rocky Mountain Chapter of the Human Factors and Ergonomics Society

Member (2001 to present) and Secretary (2003-5). [International Society for Occupational Ergonomics and Safety](#)

Served on the faculty search committee for the Engineering Department that recruited Dr. Ebisa Wollega to CSU-Pueblo (2014-2015).

Member, [American Industrial Hygiene Association](#) (2003-2015).

Member, Society for Chemical Hazard Communication (2022-4).

Member, Industrial Advisory Board, Industrial Engineering Department, CSU-Pueblo

Mentor for Trinidad State students completing ergonomic evaluations of workstations

Member (2011-2014), [Pikes Peak Regional Science Fair Board](#)

## **HONORS AND AWARDS**

Excellence in Adjunct Teaching from CSU-Pueblo (2017-2018)

Excellence in Adjunct Teaching from CSU-Pueblo (2023-2024)

Inducted into Alpha Pi Mu, the Industrial Engineering Honor Society (1990)

Recipient of the Gordon Fellowship from the University of Oklahoma (1986)

## **SHORT COURSES AND SEMINARS**

*NFPA 70E Low Voltage Qualified* 2/11/20

*NFPA 70E High Voltage Qualified* 2/12/20

*OSHA 511 Occupational Safety and Health Standards for General Industry, July 15-18, 2019*

*OSHA 510 Occupational Safety and Health Standards for the Construction Industry* 2/8-11/21

*EM385 Section 21-24 Hour Fall Protection and Rescue Competent Person Training, July 5-8, 2023*

*Silica in the Oilfield* seminar sponsored by NIOSH, 3/21/18.

*Psychometric Training* presented by the Chauncey Group, February 2004.

*Forklift Truck Operator Instructor Development* presented by the [Colorado Safety Association](#), August 2004.

*Welding Health and Ventilation for Hot Work in Confined Spaces PCIH*, 10/23/2005.

*Shielded metal arc (stick) welding*, Pikes Peak Community College, Spring, 2006.

Oxyfuel Welding, Pikes Peak Community College, Fall, 2005.

## FORENSIC CONSULTING

Dr. Purswell has been retained by attorneys around the US to evaluate the ergonomics and safety aspects of matters in litigation. He has testified at trial in Oklahoma, Arkansas, Illinois, New York, Georgia, Kansas, Wyoming, Missouri, Nevada, Pennsylvania, Minnesota and Colorado.

## PAPERS AND PRESENTATIONS

Purswell, J., & Chiemezie Udemba (2023) *Ergonomic hazards cited under the “General Duty” clause in the last decade*. The 35<sup>th</sup> Annual International Occupational Ergonomics and Safety Conference.

Udemba, Chiemezie & Purswell, J.P. (2022) *Causes of Oxygen Deficiency are identified in the OSHA Accident Database*. The 34<sup>th</sup> Annual International Occupational Ergonomics and Safety Conference.

Udemba, Chiemezie, Renita Tahsin, & J.P. Purswell, (2021) *The Effectiveness of Back-Up Alarms in Preventing Backing Vehicle-Pedestrian Accidents*. The 33<sup>rd</sup> Annual International Occupational Ergonomics and Safety Conference.

Udemba, Chiemezie and Purswell, J.P. (2020) Hazard Analysis of the Craftsman Drill Press. Annual International Occupational Ergonomics and Safety Conference.

Tahsin, Renita and Purswell, J.P. (2020) *A System Safety Analysis of an Arc Welding Machine*. Annual International Occupational Ergonomics and Safety Conference.

Poelman, Sarah and Purswell, J.P. (2019) *Hazard analysis of a gas-fired GMH8 Goodman furnace*. 10th International Conference on Applied Human Factors and Ergonomics.

Montoya, Franchesca and Purswell, J.P., (2019) *Hazard analysis of a handheld angle grinder*. 10th International Conference on Applied Human Factors and Ergonomics.

Udemba, Chiemezie and Purswell, J.P. (2019) *Injuries and Fatalities Involving Powerlines Classified by the Type of Employer and Cause*. Annual International Occupational Ergonomics and Safety Conference.

Purswell, J.P., (2013) *A usability analysis of critical care, med-surg and birthing hospital beds*. Proceedings of the 2013 Annual IIE Conference and Expo: Health Systems Track.

Baillargeon, Jay P. and Purswell, J.P. (2012). *The Impact of the 1998 Revision OSHA Forklift Standard on the Relative Frequency of Certain Accidents Involving Powered Industrial Trucks*. Proceedings of the XXIVth Annual International Occupational Ergonomics and Safety Conference.

Purswell, J.P., and Purswell, Jerry L. (2011). *Citation of Ergonomic Hazards under the ‘General Duty Clause’ – an Update*. Proceedings of the 23rd Annual International Occupational Ergonomics and Safety Conference. Boca Raton: CRC Press

Purswell, J.P., and Purswell, Jerry L. (2011). *Truck Crane Accident Patterns*. Proceedings of the 23rd Annual International Occupational Ergonomics and Safety Conference. Boca Raton: CRC Press.

Purswell, J.P., (2010). *The distribution of pedestrian-backing vehicle accidents by backup alarm status and vehicle type*. Advances in Human Factors, Ergonomics, and Safety in Manufacturing and Service Industries. CRC: Press (edited by Karwowski and Gavriel Salvendy).

Purswell, J.P. (2009). *Crawler Crane Accident Patterns*. Proceedings of the 21st Annual International Occupational Ergonomics and Safety Conference (edited by Robert Marley et al.).

Brickman, D. & Purswell, J.P. (2009). *Tree Chipper Human Perception-Reaction Testing*. Proceedings of the 21st Annual International Occupational Ergonomics and Safety Conference (edited by Robert Marley et al.).

Purswell, J.P. and Purswell, Jerry L. (2005). *OSHA's Recent Citation Practices of Ergonomic Hazards under the 'General Duty' Clause*. Proceedings of the 18<sup>th</sup> Annual International Occupational Ergonomics and Safety Conference (edited by Thurmon Lockhart).

Peleg, L., Stern, C. and Purswell, J.P. (2004). *A NIOSH Equation Multi-task Calculator*. Proceedings of the 17<sup>th</sup> Annual International Occupational Ergonomics and Safety Conference (edited by Lawrence J.H. Schulze).

Griffin, Michael, Vutra-Ukra, Pavitree and Purswell, J.P. (2004). *An Ergonomic Study of an MMH task in an Industrial Kitchen*. Proceedings of the 17<sup>th</sup> Annual International Occupational Ergonomics and Safety Conference (edited by Lawrence J.H. Schulze).

Peleg, Liran, Stern, Christopher, and Purswell, J.P. (2004). *Calculators for NIOSH Lifting Equation: The Single and Multi-Task Cases*. Proceedings of the 1<sup>st</sup> Annual Spring Symposium of the Rocky Mountain Chapter of the Human Factors and Ergonomics Society.

Purswell, J.P. (2004). *Development of an Online Database of Warnings Articles*. Proceedings of the Spring Symposium of the Rocky Mountain Chapter of the Human Factors and Ergonomics Society.

Gonzalez, R., and Purswell, J.P. (2003). *Usability of the CPSC Website - An Update*. 8th Annual International Conference on Industrial Engineering Theory, Applications & Practice. Las Vegas, Nevada.

Purswell, J.P. (2003). *Development of A Searchable Database of Warnings Articles*. 8th Annual International Conference on Industrial Engineering Theory, Applications & Practice. Las Vegas, Nevada.

Purswell, J.P. (June 2003). HF/E Texts: What are ETG Members Teaching from? *ETG News*.

Purswell, J.P. (2001). *OSHA's Citation Practices of Ergonomic Hazards under the 'General Duty' Clause*. The National Ergonomics Exposition, Las Vegas, Nevada.

Purswell, J.P. (2001). *An MS Access Implementation of an OSHA-300 Compliant Injury Data Tracking System*. Proceedings of the 6<sup>th</sup> Annual International Conference on Industrial Engineering – Theory, Applications, and Practice. San Francisco, CA, USA.

Lingo, M. Holland, A, Shrestha, S, and Purswell, J.P. (2001). *An Ergonomic Evaluation and Redesign of an Industrial Kitchen Work Station*. Proceedings of the 6th Annual International Conference on Industrial Engineering – Theory, Applications, and Practice. San Francisco, CA, USA.

Purswell, J.P. and Purswell, Jerry L. (2001). *OSHA's Citation Practices of Ergonomic Hazards under the 'General Duty' Clause*. Proceedings of the Human Factors and Ergonomics Society 45th Annual Meeting. p. 1110.

Purswell, J.P. & Apipat Vithakmontri. (2001). *A Preliminary Usability Analysis of the CPSC Website*. Proceedings of the Human Factors and Ergonomics Society 45th Annual Meeting p. 828.

Purswell, J.P., and Purswell, Jerry L. (2001). *The Effectiveness of Audible Backup Alarms as Indicated by OSHA Accident Investigation Records*. Advances in Occupational Ergonomics and Safety. IOS Press, pp. 444-450.

Gimlin, Dennis, & Purswell, J.P. (2001). *Ergonomic Challenges in Modern Endodontic Practices*. Advances in Occupational Ergonomics and Safety. IOS Press, pp. 163-170.

Purswell, J.P. (October 2000). *The OSHA Website*. Presentation to the Pueblo Safety and Health Promotion Council.

Purswell, J.P. (November, 2000). *The OSHA Ergonomics Standard*. Presentation to the Pueblo Safety and Health Promotion Council.

Purswell, J.P. (March, 1998). *A Review of OSHA's Confined Spaces Advisor 1.0*. The Synergist. Purswell, J.P. (February 26, 1998).

*Factory and Office Ergonomics*. Invited lecture to Residents of Occupational Medicine Program at the University Oklahoma Health Sciences.

Kasbaum, T., Purswell, J.L., Purswell, J.P., and Krenek, R.F. (1998). *Hot Water Burn Hazards: Warning Label Influence on User Temperature Adjustment*. International Journal of Cognitive Ergonomics 2 (1-2) 145-157.

Purswell, J.P. (1997). *The Effects of Perturbation Frequency, Magnitude, and Uncertainty during Static and Dynamic Tracking on the Estimated Level of Muscle Co-Contraction*. Unpublished doctoral dissertation, Virginia Polytechnic Institute & State University, Blacksburg, Virginia.

Bowen, D.J., Purswell, J.L., Schlegel, R.E., and Purswell, J.P. (1995). *Preferred tension psychophysical lifting limits with and without back belts*. Advances in Industrial Ergonomics and Safety VII. p. 735.

Purswell, J.P., and Woldstad, J.C. (1991). *Ergonomic evaluation of trackman activities*, Tech report submitted to the Association of American Railroads (Contract 4-36182). Blacksburg, VA: Virginia Tech, Industrial Ergonomics Laboratory.

Purswell, J.P. (1990). *Finger force capabilities in keying operations*. In K.H.E. Kroemer (ed.) Blacksburg, VA: Virginia Tech, Industrial Ergonomics Laboratory. Ternary Chorded Keys and Keyboards. Tech. Report submitted to the Center for Innovative Technology (Grant no. 4-42279), Industrial Ergonomics Laboratory, VPI & SU, Blacksburg.

Purswell, J.P. (1989). *Evaluating Alternative Composite Measures for SWAT Ratings*. Unpublished master's thesis, University of Oklahoma, Norman, OK.