

## Jennifer A. Hess

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### Education

- 2004 University of Oregon, Eugene, OR, **Ph.D**, Human Physiology
- 1996 University of Washington, Seattle WA, **Master of Public Health**
- 1989 Palmer College of Chiropractic-West, Santa Clara CA, **Doctor of Chiropractic**
- 1983 Western Washington University, Bellingham WA, **BS Biology**

### Employment

**Research Associate** *9/00-present*, University of Oregon, Labor Education and Research Center

- Recipient/participant in grants from the Center for Construction Research and Training (CPWR) for over nine years. These grants have entailed developing, promoting, and evaluating ergonomic innovations and sustainable ergonomic programs at Intel Corp., Portland, OR, and within the masonry, carpenters, laborers and other construction trades.
- Teach ergonomics, injury prevention, and fitness education to Oregon workers at high risk of musculoskeletal injury
- Principal investigator on studies evaluating ergonomic interventions to reduce low back and upper extremity injuries in high-risk populations such as home health workers, nursing assistants, construction workers, and firefighters
- Provide ergonomic consultation to Oregon employers in fields such as trucking, bottling, transit, and construction companies.
- Developed and taught an 8-hour fire and emergency medical service (EMS) ergonomic training curriculum and train-the-trainer classes in Oregon and Washington
- Principal investigator on study to develop and evaluate a model safe patient handling ergonomic 'Facility of Choice' in an Oregon long term care facility
- Participate in the Oregon Coalition for Healthcare Ergonomics (OCHE) a volunteer organization working to promote workplace injury prevention strategies in healthcare
- Participated in the Construction Ergonomic Initiative (CEI) group, composed of volunteers from the construction industry, OR OSHA, and academia, who met to promote ergonomics in construction. We organized the NexGen Construction Summit in 2006, a collaborative work session organized for executives of construction organizations and users of construction services to promote construction health and safety and ergonomics
- Participated in organization and presentation of two construction safety conferences: On the Leading Edge, 2001 and Design for Safety and Health in Construction, 2003, both held in Portland Oregon.

**Graduate Teaching Fellow/Student**, *9/99-6/04*, Department of Exercise and Movement Science (now Department of Human Physiology), University of Oregon

- Primary instructor for classes in Human Physiology Department
- Dissertation was a clinical trial to evaluate the clinical, motor control and biomechanical effects of high intensity strength-training to enhance balance ability in frail older adults, to reduce fall injury risk.

**Chiropractic Physician**, *1999 to present*, Hess Chiropractic, Eugene, OR

- Practice focuses on diagnosis and treatment of musculoskeletal injury, injury prevention, fitness, ergonomics, and nutrition

**Chiropractic Physician/Manager**, 9/89-8/98, Hess Chiropractic, Oak Harbor, WA and Family Chiropractic Clinic, Pullman WA

- Same as above

**Ergonomics Consulting**, 1997- present.

- Biomechanics and ergonomics jobsite evaluations to identify risk factors or causes of musculoskeletal injuries to workers, and develop solutions. Consultations include Best Western Hotel, Warner Bros., Boise-Cascade Mills, Southern Pacific Railroad, Fire and Spice Grill, and University of Oregon.

## **Courses Taught**

### *Credit*

- Ethics and Issues, Health 418/518, Oregon State University, 2006
- Exercise and Wellness Across the Lifespan, EMS 102, University of Oregon, 2000
- Exercise and Performance, EMS 103, University of Oregon, 2000, 2002
- Biomechanics lab, EMS 381, University of Oregon, 2000

### *Non-credit*

- Dental Ergonomics, Seven-part ergonomics program, VA, Portland, OR, Spring 2005
- Ergonomics for Fire and Emergency Medical Service Personnel, 2003 – 2005
- Health Care Ergonomics, 2004-2009
- Ergonomics for Long Term Care Facilities, 2007-present
- Construction Ergonomics, on going, 2000-2009

## **Publications**

**Hess JA**, Kincl, LD, Davis K, The impact of drywall handling tools on the low back, Applied Ergonomics, 2009, submitted for publication.

**Hess JA**, Kincl, LD, Amasay T, Peter Wolfe P, Ergonomic evaluation of masons laying concrete masonry units and aerated autoclaved concrete, Applied Ergonomics, 2009, submitted for publication.

**Hess JA**, Weinstein M, Welch L, Ergonomic solutions in masonry: Regional differences, Benefits and barriers, Journal of Safety Research, 2009, submitted for publication.

Amasay T, Zodrow K, Kincl L, **Hess J**, Karduna A, Validation of tri-axial accelerometer for the calculation of elevation angles, International Journal of Industrial Ergonomics, 2009, in press.

Leitz I, Mizner R, Anton D, and **Hess J**, Low back kinematics difference in masons using 1-person and 2-person lift team using 12 inch concrete block, Northwest Biomechanics Symposium, 2008.

**Hess JA**, Kincl LD, Albers JT, High RR, Ergonomic evaluation of an extension screw gun to improved work postures, Occupational Ergonomics, 2008, 8(1):27-40.

**Hess JA**, Kincl LD, Mandeville, DS, Comparison of three single person manual patient transfer techniques for bed to wheelchair transfers, Home Health Nursing, 2007, 25(9),572-579.

**Hess J**, Weinstein M, Innovations Reduce Injuries: Equipment, materials, and work practices are available to protect masons. Masonry Construction, 2007, 20(8); 22-28.

Weinstein M, Hecker S, **Hess JA**, Kincl L, A roadmap to diffuse ergonomic innovations in the construction industry: There is nothing so practical as a good theory, Int J Occup Environ Health. 2007;13:46-55.

**Hess JA**, Kincl L, Albers J, Evaluation of a Tool Extension to Reduce Low Back Injury in Carpenters” International, Proceedings from the International Ergonomics Association (IEA) 2006 Congress, Maastricht, Netherlands.

- Weinstein Marc, Hecker S, and **Hess, JA**, An action research plan to diffuse ergonomic innovations in the construction industry. Proceedings from the International Ergonomics Association (IEA) 2006 Congress, Maastricht, Netherlands.
- Hess JA**, Woollacott, MH, Shivitz, N. Ankle force and rate of force production increase following high intensity strength training in frail older adults, *Aging Clin Exp Res.* 2006; 18(2): 107-115.
- Hess JA**, Woollacott, MH. Effect of high intensity strength training on functional measures of balance ability in balance impaired older adults, *J Manipulative Physiol Ther.* 2005; 28(8): 582-590.
- Hecker SF, Schneider S, **Hess JA**, Kincl L. Ergonomics in Construction. In *Occupational Ergonomics Handbook*, 2nd edition, Marras WS, Karwowski W Eds. CRC Press, Boca Raton, FL. 2006.
- Hess JA**, Hecker S, Weinstein, M, Lunger M. A Participatory ergonomics intervention to reduce risk factors for low-back disorders in concrete laborers, *Applied Ergonomics*, 2004; 35(5): 427-441.
- Hess JA**, Hecker S. Danger: Men at Work: How ergonomics can make construction sites safer, *BioMechanics*, 2004; March, XI (3) 22-35.
- Hess JA**, Hecker S. Stretching at Work for Injury Prevention: Issues, Evidence and Recommendations, *App Occup Environ Health*, 2003, 18(5): 331-338.
- Anton D, Shibley LD, Fethke NB, **Hess J**, Cook TM, Rosecrance J. Effect of Overhead Drilling Position on Shoulder Moment and Electromyography, *Ergonomics*, 2001, 44(5): 489-501.
- Hess JA**, Mootz RD. Comparison of Work and Time Estimates by Chiropractic Physicians With Those of Medical and Osteopathic Providers, *J Manipulative Physiol Ther.* 1999; 22(5): 280-91.
- Hess JA**, Mootz RD, Madden CW, Perrin EB. Measurement of Work Values for Evaluation/Management and Manipulation Services by Chiropractic Physicians, *J Manipulative Physiol Ther.* 1997, 20(1): 13-23.
- Mootz RD, **Hess JA**, McMillin AD. Valuation of Chiropractic Services: The Challenge of Standardization, *Top Clin Chiro.* 1996; 3(2): 20-31.
- Mootz RD, **Hess JA**, McMillin AD. Resource-Based Relative Value Scales: Impacts and Recommendations Relative to Chiropractic Practice, *J Manipulative Physiol Ther.* 1995, 18(5): 271-84.
- Mootz RD, McMillin AD, **Hess JA**. Reimbursement for Chiropractic Services: Recommendations for a Standardized Approach, *ACA J Chiro.* 1994, 31(11): 30-38.
- Mootz RD, Dhami MSI, **Hess JA**, Cook RD, Schorr DB. Chiropractic Treatment of Chronic Episodic Tension Type Headache in Male Subjects: A Case Series Analysis, *J Canadian Chiro Assoc.* 1994; 38(30): 152-59.

### **Presentations, Posters and Classes**

- “Oregon’s Safe Patient Handling Facility of Choice Program,” Governors Occupational Safety and Health Conference, Portland, OR, 2009
- “Masonry Materials and Work Practices to Reduce the Risk of MSDs,” 19<sup>th</sup> Annual Construction Safety Conference, Rosemont, IL, 2009
- “Ergonomics in Construction,” University of Michigan, Center for Occupational and Environmental Health Ergonomics Conference Oakland, CA, 2008
- “Construction Ergonomics: A Practical Guide,” American Society of Safety Engineers (ASSE), Cascade Occupational Safety and Health Conference, Eugene, OR, 2008.
- “Ergonomic Innovations in Masonry,” 17<sup>th</sup> Annual Construction Safety Conference, Rosemont, IL, 2007.
- “Stretching: The Rest of the Story” Governors Occupational Safety and Health Conference, Portland OR, 2007.

“Participatory Ergonomics: A Practical Guide,” Governors Occupational Safety and Health Conference, Portland OR, 2007.

“Comparison of Three Single Person Manual Patient Handling Transfer Techniques for Workers in the Home Environment,” International Ergonomics Association (IEA), Maastricht, Netherlands, 2006.

“Evaluation of a Tool Extension to Reduce Low Back Injury in Carpenters” International Ergonomics Association (IEA), Maastricht, Netherlands, 2006.

“Action Research to Diffuse Ergonomic Innovations in the U.S. Construction Industry” International Ergonomics Association (IEA), Maastricht, Netherlands, 2006.

“Evaluation of Manual Patient Transfer Techniques by a Single Care Provider to Establish Best Practices.” The 6th Annual Safe Patient Handling and Movement Conference, Clearwater FL, 2006.

“Ergonomics Training Curriculum for EMS,” A 4-hour train-the-trainer curriculum taught in multiple locations across western Oregon, 2006.

“Evaluation of Manual Patient Transfer Techniques by a Single Care Provider to Establish Best Practices.” The 6th Annual Safe Patient Handling and Movement Conference, Clearwater FL, 2006.

“Ergonomics For Maintenance Workers: The Leg Bone's Connected to the Ankle Bone.” University of Oregon, Eugene, OR, 2005.

“Preventing Strains and Sprains in Construction: It’s More Than Just Stretching.” Governors Occupational Safety and Health Conference, Portland, OR, 2005.

“Construction Ergonomics: A Participatory Intervention to Reduce Low Back Disorder Risk in Concrete.” Construction Safety Conference, Chicago, IL, 2005.

“An Integrated Program to Prevent or Reduce Low-Back Injuries in the Workplace – Successes and Barriers in Practice.” NIOSH, Steps to a healthier Workforce Conference, Washington, DC, 2004.

“The Effect of High Intensity Strength Training on Ankle Inverse Dynamics in Balance Impaired Older Adults.’ Poster at The American Society of Biomechanics Portland, OR, 2004.

“Ergonomic Solutions for Emergency Medical Technicians and Community Based Health Care Workers.” with Laurel Kincl and Helen Moss, Health Care Ergonomics Conference, Portland, OR, 2004.

“Ergonomics for Eugene Firefighters and EMTs.” A series of one to three hour classes for municipal firefighters and emergency medical technicians, covering injury risk assessment, cumulative trauma physiology, bodymechanics and fitness, Eugene, OR, 2004.

“Preventing Strains & Sprains,” an ergonomics class for all levels of workers, at Activating Your Union on Safety & Health.” Unions Leading Safety Workshop, Portland, OR, 2003.

“An Ergonomic Intervention to Reduce the Risk of Low Back Injury In Construction Workers.” Northwest Occupational Health Conference, Seattle WA, 2003

“Ergonomics for Homecare Workers.” Portland, OR, 2003.

“Construction Ergonomics: An Intervention with Concrete Laborers.” International Society of Biomechanics, Dunedin, New Zealand, 2003.

“Construction Ergonomics: A Participatory Intervention with Concrete Laborers.” NIOSH National Occupational Research Agenda (NORA) Symposium, Washington DC, 2003.

“Ergonomics for Women.” Ergonomics and stretching education for women in construction trades, Portland, OR, 2002.

“Does Stretching at Work Prevent Injury: A Review of the Literature.” SAIF Loss Control Conference, Portland, OR, 2002.

“Worksite Stretching Programs: Do They Prevent Injury?” At the Leading Edge: Moving Ahead in Construction Safety Management Conference, Portland, OR May 2001.

“Foot Care and Ergonomics, Departments of Food and Custodial Services.” University of Oregon, Eugene, OR, 2000 - 2002.

“Chiropractic Care: An Overview.” A community health education program, Whidbey General Hospital, Coupeville WA, 1995.

“Determinants of Health: A Comparison of Nepal and Costa Rica.” International Studies Department of the University of Washington, Seattle WA, 1995.  
“Characterization of Back Pain, Injury and Management Among Hispanic Farmworkers in Skagit County Washington.” University of Washington, Seattle WA 1995.  
“Biomechanics Back School.” Adult community education classes, 1990-1998.

### **Licenses and Memberships**

Oregon State Chiropractic License, #3197, since 2000  
Washington State Chiropractic License, # 00002387, since 1989

### **Grants and Awards**

- Principal Investigator, Oregon OSHA Training Grant, “Long Term Care Center of Excellence Training,” 2007.
- Principal Investigator, Research grant subcontract from Eastern Washington University for the Center for Research (CPWR), “Ergonomic Controls in the Masonry Industry,” July 2006.
- Principal Investigator, Research grant, Collins Medical Trust, “Determining Manual Patient Transfer Best Practices to Improve Training of Community-Based Health Care Providers,” July 2005.
- Principal Investigator, Research contract, NIOSH, An Ergonomic Intervention in Construction: A Tool Extension to Reduce Stooped Postures in Carpenters, 2004.
- Dissertation research, “High Intensity Strength Training to Enhance Balance Control in Frail Older Adults,” Center for Study of Women in Society Stanton Scholarship for Health Research, July, 2001.
- Dissertation research, Northwest Health Foundation, “High Intensity Strength Training to Enhance Balance Control in Frail Older Adults,” 2001.
- Foundation for Chiropractic Education and Research Fellowship, 1998, 1999, 2000, 2001, annual support toward Ph.D education costs.
- Masters thesis research, Foundation for Chiropractic Education and Research, “Resource-Based Relative Value Scales for Chiropractic Work,” Therapy,” 1994, 1995-1995.
- Journal of the Canadian Chiropractic Association (JCCA), Award of Excellence for Best Case Series Manuscript, for headache case series article published in JCCA, 1996.