

Kevin A. Rider, PhD, CPE

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Industrial and Management Systems Engineering
West Virginia University
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OBJECTIVE:

To utilize my knowledge and experience in human biomechanics and cognitive neuroscience to investigate unidentified causes of occupational injuries and implement novel methods to improve workplace safety through human-centered design of products and services.

EDUCATION:

Doctorate of Philosophy, Industrial and Operations Engineering, Biomechanics, Motor Control, 2006
The University of Michigan, Ann Arbor, MI
Dissertation: Effects of ride motion perturbation on the speed and accuracy of in-vehicle reaching tasks.
Advisor: Don B. Chaffin

Master of Science, Industrial Engineering, Human Factors/Ergonomics, Manufacturing, 2000
The University of Tennessee, Knoxville, TN
Thesis: 3-D Time-Based Ergonomic Analysis of the United States Postal Service's Delivery Bar Code Sorter and Sweep Operation. (Chair, Tyler A. Kress)

Bachelor of Science, Industrial Engineering, 1998
The University of Tennessee, Knoxville, TN

EXPERIENCE:

Assistant Professor, West Virginia University, Morgantown, WV
August 2006 to Present

- Developing multi-faceted research investigating the neurophysiology of whole-body human movements.
- Teaching Industrial Engineering and Safety Management courses.
- Advising Masters- and Doctoral-level graduate students.
- Faculty advisor for Alpha Pi Mu (Industrial Engineering Honor Society).

Ergonomics Consultant, United States Postal Service (USPS), Merrifield, VA
May 2002 to April 2004

- Used digital human modeling to investigate manual material handling injuries within USPS.
- Performed statistical analyses and developed linear regression models for injury prediction.
- Consulted in development of the corporate ergonomics training program currently being implemented.

Ergonomics and Simulation Consultant, Design Systems, Inc., Farmington Hills, MI
October 1999 to May 2002

- Lead investigator for ergonomic analyses via 3-D motion capture and digital human modeling.
- Developed and validated discrete-event simulation models for dozens of vehicle assembly plants.
- Served as principal liaison and point-of-contact for customers.
- Planned and conducted individual and collaborative research experiments.

INSTRUCTION:

Courses Taught:

SAFM 502	Controlling Environmental and Personnel Hazards
IENG 660	Human Factors Systems Design
SAFM 528	Economic Aspects of Safety

Graduate Student Research

David Cartwright	Analysis and design of railroad locomotive seating
Lauren Wolbert	Intrusion effects on whole body lifting and fatigue
Michelle Poland	Cognitive distractions associated with cell phone use while driving
Sundee Nadendla	Generalized processing application for large scale matrices of human motion data
Amie Heath	Effects of cell phone classification and experience on situational awareness

PUBLICATIONS:

Rider, K., Chaffin, D., Martin, B. (submitted) "Transitional role of feedback in visually-occluded three-dimensional reaching tasks under ride motion," *Experimental Brain Research*.

Rider, K., Chaffin, D., Martin, B. (in progress) "Effects of target and ride motion characteristics on the performance of reaching tasks in moving vehicles," *Human Factors*.

Rider, K., Chaffin, D., Martin B. (2007) "Development of Active Human Response Model to Ride Motion," *SAE Transactions – Journal of Passenger Cars, V115-7*: 1131-1137.

Rider, K. (2006) "Effects of ride motion perturbation on the speed and accuracy of in-vehicle pointing tasks," PhD Dissertation, University of Michigan.

Rider, K., Martin, B. (2005) "Feedback control of in-vehicle pointing tasks perturbed by ride motion," 35th Annual Meeting of the Society for Neuroscience, Washington, D.C.

Rider, K., Martin, B. (2005) "Superposition of optimal submovements in feedback-controlled reaching," XXth Congress of the International Society of Biomechanics, Cleveland, OH.

Rider, K., Martin, B. (2005) "Effects of ride motion on the speed and accuracy of in-vehicle pointing tasks," 49th Annual Meeting of the Human Factors and Ergonomics Society, Orlando, FL.

McDowell, K., Rider, K., Truong, N., Paul, V. (2005) "Effects of Ride Motion on Reaction Times for Reaching Tasks," *SAE Transactions: Journal of Commercial Vehicles (SP-1962)*. SAE International, Warrendale, PA.

Rider, K., Martin, B.J. (2004) "Degradation of exocentric reference in visually-occluded three-dimensional reaching tasks?" 34th Annual Meeting of the Society for Neuroscience, San Diego, California.

Rider, K., Chaffin, D., Nebel, K., Mikol, K. (2004) "Modeling In-Vehicle Reaches Perturbed by Ride Motion," *SAE Transactions: Journal of Aerospace* 113(1): 193-198.

Rider, K., Chaffin, D., Foulke, J., Nebel, K. (2004) "Analysis and Redesign of Battery Handling using Jack™ and HUMOSIM motions," *SAE Transactions: Journal of Materials and Manufacturing* 113(5): 824-828.

Dickerson, C., Rider, K., Chaffin, D. (2004) "Merging Biomechanical Models of the Shoulder with Digital Human Modeling," Tech. Paper 2004-01-2166. SAE International, Warrendale, PA.

Park, W., Chaffin, D., Rider, K., Martin, B. (2003) "Simulating Complex Multi-Phased Manual Handling Motions via Motion Modification," Technical Paper 2003-01-2227. SAE International, Warrendale, PA.

Rider, K., Park, W., Chaffin, D., Reed, M. (2003) "Redesigning Workstation Utilizing Motion Modification Algorithm," Technical Paper 2003-01-2195. SAE International, Warrendale, PA.

Rider, K., Chaffin, D., Nebel, K., Mikol, K., Reed, M. (2003) "A pilot study of the effects of vertical ride motion on reach kinematics," *SAE Transactions: Journal of Passenger Cars – Mechanical Systems* 112(6): 719-725.

TECHNICAL REPORTS:

Rider, K., Martin, B. (2006) "Ride motion effects on the accuracy of rapid pointing tasks," 1st American Conference on Human Vibration, Morgantown, West Virginia.

Rider, K. (2005) "Preview Control Model of Reaching Tasks Under Ride Motion," 15th Semi-annual HUMOSIM Partners' Meeting, Ann Arbor, Michigan.

Rider, K. (2004) "Motion effects on Operator Pointing Tasks," 14th Semi-annual HUMOSIM Partners' Meeting, Ann Arbor, Michigan.

Rider, K. (2004) "Evaluating human in-vehicle reach performance when perturbed by ride motion," 13th Semi-annual HUMOSIM Partners' Meeting, Ann Arbor, Michigan.

Rider, K., Chaffin, D.B. (2003) "Use of digital human modeling to evaluate vehicle maintenance," 12th Semi-annual HUMOSIM Partners' Meeting, Ann Arbor, Michigan.

Rider, K., Chaffin, D.B. (2003) "Vehicle ride motion effects on reach performance," 12th Semi-annual HUMOSIM Partners' Meeting, Ann Arbor, Michigan.

Rider, K. (2003) "Ergonomic analyses for motion prediction and modification modules in USPS manual handling tasks," 11th Semi-annual HUMOSIM Partners' Meeting, Ann Arbor, Michigan.

Rider, K. (2002) "Using motion modification to redesign USPS manual handling tasks," 10th Semi-annual HUMOSIM Partners' Meeting, Ann Arbor, Michigan.

PROFESSIONAL AFFILIATIONS:

Board of Certified Professional Ergonomists
Human Factors and Ergonomics Society
American Society of Safety Engineers
International Society of Biomechanics
American Society of Biomechanics
Society of Automotive Engineers
Society for Neuroscience

SKILLS:

Expert in digital human modeling (Jack) and motion capture systems (Ascension and VICON)
Proficient in MATLAB, JMP, and 3DSSPP
Demonstrated leadership and project management abilities
Excellent interpersonal and communication skills
Strong analytical and reasoning skills