

PATRICK E. PATTERSON, PhD, PE, CPE

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Ransom Canyon, Texas 79366
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EDUCATION

PhD Industrial Engineering (Ergonomics), Texas A&M University, 1984
M Ed Adapted and Developmental Physical Education, Cleveland State University, 1978
BS Health, Physical Education and Recreation, Springfield College, 1972

PROFESSIONAL CREDENTIALS

Professional Engineer, Iowa (#11721)
Certified Professional Ergonomist (#1538)

ACADEMIC POSITIONS

2006-Present Texas Tech University, Department of Industrial Engineering

- Director, Center for High Reliability Organizations and Processes (2013-present)
- Chair (2006-2012)

1984-2006 Iowa State University

- Department of Industrial and Manufacturing Systems Engineering
 - Chair (2000-2006)
 - Director of Undergraduate Studies (1993-2000)
- Industrial Education and Technology Department
 - Interim Chair (2002-2004, concurrent with IMSE Chair)
- Additional Faculty Involvement:
 - Biomedical Engineering Program (1984-1999; interdisciplinary)

1978-1984 Texas A&M University (Instructor; Department of Health and Kinesiology and the Department of Industrial Engineering)

PROFESSIONAL RECOGNITION

- Fellow, Institute of Industrial Engineers (IIE)
- International Fellow, Chinese Industrial Engineering Institution
- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
- President's Award for Significant Contributions, Rocky Mountain Bioengineering Society (RMBS)

RELATED EXPERIENCES

- 2006-2012 Guest Researcher, Institute of Intelligent and Communications Technology,
Konan University, Kobe, Japan.
- Summers, Research Faculty Fellow, Brooke Army Medical Center, Burn Unit, and U.S.
1987 and Army Institute and of Surgical Research, United States Army Summer
1988 Faculty Research Engineering Program

RESEARCH INTERESTS

Biomechanics
Physical Ergonomics
Cognitive Ergonomics
Computational Intelligence
Human-Computer Interaction
Rehabilitation Engineering
Safety Engineering

PROFESSIONAL MEMBERSHIPS

Association for Psychological Science
American Society of Engineering Educators
American Society of Safety Engineers
Engineering in Medicine and Biology Society
Human Factors and Ergonomics Society
International Association for Continuing Engineering Education
Institute of Electrical and Electronics Engineers (Senior Member)
Institute of Industrial and Systems Engineers (Fellow)
International Society of Occupational Ergonomics and Safety
Rocky Mountain Bioengineering Society
Sigma Xi
System Dynamics Society

PROFESSIONAL ACTIVITIES

National and International

- Accreditation Board for Engineering and Technology (ABET)
- Program Evaluator for EAC and TAC, 1999-present.
 - Technology Accreditation Commission (TAC), Institute of Industrial Engineers
Commissioner, 2010-2015.
 - Technology Accreditation Commission (TAC), Institute of Industrial Engineers
Alternate, 2009-2010.

Indo-US Collaboration for Engineering Education (IUCEE), Board Member, 2013-present.

International Organization for Standardization (ISO), Member, ISO/TC159/SC4/WG10 (Accessible Design for Consumer Products), 2007-Present.

International Organization for Standardization (ISO), Member, US Technical Advisory Group (TAG) to ISO TC159/SC4, 2014-present.

International Program Committee (IPC) member for the IASTED International Conference on Telehealth and Assistive Technologies, April 16-18, 2008, Baltimore, Maryland.

National Council of Examiners for Engineering and Surveying, Standard Setting Study, December 8-10, 2005.

Proposal Review Panel Service

- NSF CAREER Review Panel, Service Enterprise Systems, 2008.
- U.S. Civilian Research and Development Foundation. Science and Technology Center in Ukraine (STCU) Program, 2000.
- U.S. Army Medical Research and Materiel Command (USAMRMC). Broad Agency Announcement BAA 99-1, 2000.
- U.S. Army Medical Research and Material Command, Broad Agency Announcement, 1998.
- National Aeronautics and Space Administration (NASA), NRA 96-OLMSA-01A, "Research Opportunities in Space Life Sciences," 1996.
- National Aeronautics and Space Administration (NASA), NRA 96-OLMSA-01B, "Advanced Life Support and Environmental Technologies for Human Exploration and Development of Space," 1996.
- National Aeronautics and Space Administration (NASA), NRA 95-OLMSA-01, "Ground-based and Small Payloads Research in Space Stations," 1995.
- National Aeronautics and Space Administration (NASA), NRA 94-OLMSA-01, "Mir Station (U.S. Flights)," 1994.
- National Aeronautics and Space Administration (NASA), NRA 93-OLMSA-07, "Ground-based and Small Payloads Research in Space Stations," 1994.
- National Institutes of Health, RFP PHS-94-2, "Hand Orthoses," 1994.

Institute of Industrial Engineers

- Membership Commission, Academic/Transitional Team, 2003-2004.
- Participant, 1st IIE International Forum, Dallas, Texas, May 20, 2001.

Conference Paper Reviewer and Session Chair for

- Human Factors and Ergonomics Society
- Institute of Industrial Engineers
- International Ergonomics Association
- Rocky Mountain Bioengineering Symposium

State

Member, Iowa Rehabilitation Technology Coalition, 1988-1989.

Adaptive Equipment Services Advisory Committee, State of Iowa, Rehabilitation, Education, and Services Branch, Department of Public Instruction, 1986.

University

Iowa State University

University Chairs Cabinet, 2004-2006.
Advisor, Association of Norwegian Students Abroad, 1999-2006.
Supervisory Committee for Entrepreneurship Minor, 2000-2006.
Supervisory Committee for Biomedical Engineering Program, 1987-2003.
Mentor, Ronald E. McNair Post-baccalaureate Achievement Program, 1996-1997; 1999-2000.
Mentor, Freshman Honors Mentor Program, 1992, 1993, 1994, 1996, 1997, 1998, 1999, 2002.
ADA Self-Evaluation Administrative Group, 1993.
Iowa State University Faculty Conference, April 2-3, 1993.
Committee on University ADA Compliance, 1992-1993.
University Committee on Annuities and Insurance, 1992-1995.
Council on Judiciary and Appeals, Vice-chair, 1991-1993.
Faculty Senate, 1991-1994.
University Committee on Disabilities, 1990-1994; Chair, 1991-1994.
Faculty Council, 1987-1988.
Physical Facilities Planning Committee, 1987-1988.

College

Texas Tech University

Director, Center for High Reliability Organizations and Processes (CEHROP), 2014-present.
Dean's Council Entrepreneurship Committee Liaison, 2007-2011.

Iowa State University

ABET Task Force, 1998-2001.
Supervisory Committee for Engineering Operations, 1998-2003.
Engineering College Curriculum Committee, 1993-2000.
Undergraduate Student Services Committee, 1993-1999.
Committee on Computer and Calculator Calculus, 1993-1995.
Engineering College Honors Committee, 1992-1993.
Research and Graduate Studies Committee, 1990-1993.
Seminar Committee, 1990-1991.
Dean's Scholarship Committee, 1989-1991.
Research Grants Committee, 1988-1991.
Computer Planning Committee, 1989-1992.
Computer Planning and Policy Committee, 1986-1989.

Department

Texas Tech University

Advisor, Institute of Industrial Engineers (IIE) Student Chapter, 2011-present.
Undergraduate Advisor, 2015-present.

Iowa State University

Director of Undergraduate Studies, 1993-2000.
Department ABET Committee, Chair, 1997-2000.
Academic Standards Committee, 1998-1999.
Curriculum, Assessment and Standards Committee, 1993-2000 (Chair, 1997-2000).
Graduate Committee, 1996-2000.
Curriculum Committee, 1985-1991; 1997-1999 (Chair, 1997-1999).
Faculty Advisor/Coordinator, 1987 Industrial Engineering European Summer Tour.

Other

Board Member, Indo-US Collaboration for Engineering Education, 2013-present.
Member, Roscoe (TX) STEM Advisory Committee, 2014-present.
Guest Editor for a special issue on Biomechanics for IEEE Engineering in Medicine and Biology, September 1987.
Review of Book Drafts
Methods, Standards & Work Design (11th Edition), by Niebel and Freivalds; for McGraw- Hill
Work Design (6th Edition), by Konz; for Publishing Horizons, Inc.
Work Design (5th Edition), by Konz; for Publishing Horizons, Inc.
Biomedical Engineering Handbook (2nd Edition), by Bronzino; for McGraw-Hill
Human Factors in Simple and Complex Systems, by Proctor and Van Zandt; for Allyn and Bacon.
Motion and Time Study (10th edition), by Niebel and Freivalds; for McGraw-Hill
Production Process Human-Machine Interface Design Reference, by Caldwell; for Industrial Press.
Evaluated Applied Cognitive Task Analysis multimedia instructional software for Klein Associates, Fairborn, Ohio.

Reviewed Papers for:

Australian Journal of Science and Medicine in Sport
Biomedical Instrumentation & Technology
Computers & Industrial Engineering
Disaster Journal
Ergonomics
Human Factors
Human Factors and Ergonomics in Manufacturing & Service Industries
IEEE Transactions on Systems, Man, and Cybernetics
IIE Transactions

International Journal of Applied Engineering Education
International Journal of Human-Computer Interaction
International Journal of Engineering Education
International Journal of Industrial Ergonomics
Journal of Aerospace Engineering (Part G)
Journal of Neuroscience Methods
Journal of Rehabilitation Research and Development
Journal of the Royal Society Interface
Safety Science

International visits to develop academic partnerships and research collaborations:

Universities in the Pacific Rim:

Ming Hsin University of Science and Technology, Taiwan, 2008
National Taipei University of Technology, Taiwan, 2008
Nanjing University of Aeronautics and Astronautics, China, 2008
Hefei University of Technology, China, 2008
Tsing Hua University, China, 2008
Kasetsart University, Bangkok, Thailand, 2007
Konan University, Kobe, Japan, 2006, 2008
Waseda University, Tokyo, Japan, 2006
Rangsit University, Bangkok, Thailand, 2004
King Mongkut's Institute of Technology, Bangkok, Thailand, 2004
Jiao Tong University, Shanghai, China, 2004
National Taiwan University of Science and Technology, Taiwan, 2003, 2004,
2008
National Chiao-Tung University, Taiwan, 2003, 2004
National Tsing Hua University, Taiwan, 2003, 2004, 2008
University of Newcastle, Australia, 2004
Tunghai University, Taiwan, 2003
Providence University, Taiwan, 2003
National University of Singapore, Singapore, 2002
Nanyang Technological University, Singapore, 2002

Universities in the Americas and Caribbean:

Pontifical Catholic University, Valparaiso, Chile, 2012
Adolfo Ibanez University, Santiago, Chile, 2010, 2012
Federico Santa Maria Technical University, Valparaiso, Chile, 2012
University of São Paulo, São Paulo, Brazil, 2005
Business School São Paulo, São Paulo, Brazil, 2005
Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico
Monterrey Campus: 1996, 1997, 1998, 1999, 2000, 2001, 2003, 2004, 2005,
2006
Toluca Campus: 2002, 2003, 2005, 2008
Morelia Campus: 2006, 2008
University of Puerto Rico, Mayaguez Campus, 2002

Universities in Europe:

Prague Technological University, Prague, Czech Republic, 2010

Jade Hochschule Wilhelmshaven, Wilhelmshaven, Germany, 2010
University of Salford, Manchester, England, 2004
University of Strathclyde, Glasgow, Scotland, 2003, 2004
University of Limerick, Shannon, Ireland, 2001
Fachhochschule Mannheim, Mannheim, Germany, 2000, 2003, 2010
Bergen College, Bergen, Norway, 1997
The Engineering College of Odense, Odense, Denmark, 1997
College of Swansea, Swansea, Wales, 1985

POSITIONS IN PROFESSIONAL ORGANIZATIONS

Editorial Board Member, *Safety*, 2014-present.

Editorial Board Member, *Journal of Industrial Engineering and Management Innovation*, 2013-present.

Editor-in-Chief, *Journal of Ergonomics*, 2012-2013.

Human Factors and Ergonomics Society

Chair, Product Design Technical Group, 2006-2008.

Council of Technical Chairs, 2006-2008.

Executive Committee, Product Design Technical Group, 2004-2011.

Newsletter Editor and Webmaster, Virtual Environments Technical Group, 2004-2006.

Institute of Industrial Engineers

Council of Industrial Engineering Department Heads, 2000-2012.

Past Chair, 2010-2011

Chair, 2009-2010

Chair-elect, 2008-2009

Accreditation Advisory Council, 2010-present.

Regional Vice President, 2005-2006.

Chapter Development Fund Committee

Society for Work Science: Secretary, 1999-2003; Newsletter Editor, 2002-2003.

President, Central Iowa Chapter, Institute of Industrial Engineers, 1989-1990; 2002- 2003.

President-elect, Central Iowa Chapter, Institute of Industrial Engineers, 1988-1989.

Board member, Central Iowa Chapter, Institute of Industrial Engineers, 1986-1988;
1990-1997; 1999-2001; 2003- 2006.

Newsletter Editor, Central Iowa Chapter, Institute of Industrial Engineers, 1986-1989.

National Fire Protection Association

Principal Member, Technical Committee on Carbon Monoxide (CO) and Fuel Gas Detectors,
2000-2002.

Rocky Mountain Bioengineering Society

Board of Directors, 1996-present.

Vice-President, 1998-2001.

Executive Council, Member-at-large, 1997-1998, 2004-2005.

Rehabilitation Engineering Society of North America
Co-Editor, *RESNA News*, 1991-1992.
Publications Committee, 1991-1992.

CONFERENCE MANAGEMENT

Conference Co-chair, 48th Annual Rocky Mountain Bioengineering Symposium, Denver, CO, April 15-17, 2011.

Co-Chair, New Faculty Colloquium, Institute of Industrial Engineers Annual Conference, Vancouver, Canada, May 17, 2008.

Co-Chair, New Faculty Colloquium, Institute of Industrial Engineers Annual Conference, Nashville, TN, May 19, 2007.

Conference Co-chair, 42nd Annual Rocky Mountain Bioengineering Symposium, Copper Mountain, CO, April 8-10, 2005.

Conference Co-chair, 2002 NSF Design, Service and Manufacturing Grantees and Research Conference, San Juan, Puerto Rico, January 7-10, 2002.

Conference Co-chair, Workshop: Civil Infrastructure and Manufacturing, San Juan, Puerto Rico, January 6-8, 2002.

Conference Co-chair, Workshop: NSF-European Community Nanomanufacturing and Processing, San Juan, Puerto Rico, January 5-7, 2002.

Conference Chair, 36th Annual Rocky Mountain Bioengineering Symposium, Copper Mountain, CO, April 16-18, 1999.

Conference Co-chair, Ninth International Symposium on Biomechanics in Sports, Ames, IA, June 29-July 3, 1991.

Conference Co-chair, Iowa Rehabilitation Technology Conference, Ames, IA, March 17-18, 1989.

HONOR SOCIETIES AND AWARDS

Sigma Xi (Scientific Research Society)

Alpha Pi Mu (Industrial Engineering Honor Society)

Phi Epsilon Kappa (Physical Education Honor Society)

Iowa State Engineering Student Council Leadership Award, 2001

Outstanding Professor in the Iowa State University Department of Industrial and Manufacturing Systems Engineering: 1986, 1988, 1989, 1990, 1992, 1993, 1994, 1995, 1998, 2001.

PUBLICATIONS

Published Papers

Papers by Specialty:

Ergonomics:	25
Rehabilitation Engineering:	17
Education:	5

1. Xuan Han and Patrick Patterson. The effect of information availability in a user interface (UI) on in-vehicle task performance: A pilot study. *International Journal of Industrial Ergonomics*, 2017, Vol. 61, pp. 131-141.
2. Medha Patel, Devarshi Mehta, Patrick Patterson, Rakesh Rawal. Applying Back Propagation Algorithm for Classification of Fragile Genome Sequence. *IOSR Journal of Computer Engineering*, 2016, Vol. 18, Issue 5, pp. 1-10.
3. Calvo-Amodio, J., Patterson, P.E., Smith, M.L., Burns, J.L. Application of Transition-Phase Management Model for an Electronic Health Record System Implementation: A Case Study. *Engineering Management Journal*, 2015, Vol 27, Issue 3, pp. 131-140.
4. Javier Calvo-Amodio, Patrick E. Patterson, Milton L. Smith, and James R. Burns. "A Generalized System Dynamics Model for Managing Transition-Phases in Healthcare Environments." *Journal of Industrial Engineering and Management Innovation*, 2014, 1, 1.
5. Po-Hung Lin and Patrick Patterson. "Investigation of Perceived Image Quality and Colorfulness in Mobile Displays for Different Cultures, Ambient Illumination, and Resolution." *Ergonomics*, 2012, 55, 12, 1502-1512.
6. Y. Batu Salman, Hong-In Cheng, and Patrick E. Patterson. "Icon and User Interface Design for Emergency Medical Information Systems: A Case Study." *International Journal of Medical Informatics*, 2012, 81, 1, 29-35.
7. Hidetoshi Nakayasu, Tetsuya Miyoshi, and Patrick Patterson. "Evaluation of Aircraft Evacuation Strategies using a Virtual Simulation." *International Journal on Computer Science and Information Systems*, 2012, 6, 3, 70-87.
8. Miyoshi, T., Nakayasu, H., Ueno, Y., Patterson, P. "An Emergency Aircraft Evacuation Simulation Considering Passenger Emotions." *Computers & Industrial Engineering*, 2012, 62, 746-754.
9. Chun, Young J; Patterson, Patrick E. "A usability gap between older adults and younger adults on interface design of an Internet-based telemedicine system." *Work: A Journal of Prevention, Assessment and Rehabilitation*, 2012, 1, 349-352.
10. Hidetoshi Nakayasu, Masao Nakagawa, Tetsuya Miyoshi and Patrick Patterson. "Human Cognitive Reliability Analysis on Drivers using Simulator Experiments." *Journal of the Japan Industrial Management Association*, 2012, 62, 278-285.
11. Hidetoshi Nakayasu, Tetsuya Miyoshi, Nobuhiko Kondo, Hirokazu Aoki and Patrick Patterson, "Analysis of Driver Perceptions and Behavior When Driving in an Unfamiliar Traffic Regulation." *Journal of Advanced Computational Intelligence and Intelligent Informatics*, 2011, 15, 8, 1038-1048.
12. Guo-Feng Liang, Jhih-Tsong Lin, Sheue-Ling Hwang, Min-Yang Eric Wang, and Patrick Patterson. "Preventing Human Errors in Aviation Maintenance Using an On-Line Maintenance Assistance Platform." *International Journal of Industrial Ergonomics*, 2010, 40, 3, 356-367.
13. Yucel Batu Salman, Hong-In Cheng, Ji Young Kim, and Patrick E. Patterson. "Medical

- Information System with Iconic User Interfaces.” *International Journal of Digital Content Technology and its Applications*, 2010, 4, 1, 137-148.
14. Yasuhiro Seya, Hidetoshi Nakayasu, and Patrick Patterson. “Visual search of trained and untrained drivers in a driving simulator.” *Japanese Psychological Research*, 2008, 50, 4, 242-252.
 15. Baldus, Thorsten and Patterson, Patrick. “Usability of pointing devices for office applications in a moving off-road environment.” *Applied Ergonomics*, 2008, 39, 671–677.
 16. Cheng, Hong-In and Patterson, Patrick. “An Interaction Model for Long Pull-down Menus.” *The Ergonomics Open Journal*, 2008, 1, 20-26.
 17. Jaruwan Klamklay, Nantakrit Yodpijit, Angoon Sungkhapong, and Patrick E Patterson. “Anthropometry of the Southern Thai Population.” *International Journal of Industrial Ergonomics*, 2008, 38, 111–118.
 18. Nester CJ, Liu AM, Ward E, Howard D, Cocheba J, Derrick T, and Patterson P. “In vitro study of foot kinematics using a dynamic walking cadaver model.” *Journal of Biomechanics*, 2007, 40, 9, 1927-1937.
 19. P.H. Ball, H.J. Grierson, J. Min, J.K. Jackman, and P. Patterson. “Working on an assignment with people you'll never meet!-Case Study on Learning Operations Management in International Teams.” *International Journal of Engineering Education*, 2007, 23, 2, 368-377.
 20. Cheng, Hong-In and Patterson, Patrick. “Iconic hyperlinks on e-commerce websites.” *Applied Ergonomics*, 2007, 38, 65-69.
 21. Yearns, Mary; Patterson, Patrick; and Bice, Andrew. “Developing cabinet prototypes for a universal kitchen.” *Housing and Society*, 2005, 32, 2, 81-100.
 22. Ward, ED; Smith, KM; Cocheba, JR; Patterson, PE; and Phillips, RD. “In vivo forces in the plantar fascia during the stance phase of gait.” *Journal of the American Podiatric Medical Association*, 2003, 93, 6, 429-442. (Winner of the 2003 William J. Stickel Gold Award)
 23. Cheng, Hong-In and Patterson, Patrick. “Usable web based simulated annealing and tabu search for the facility layout problem.” *Journal of American Academy of Business*, 2003, 2, 2, 516-523.
 24. Ward, Erin D.; Phillips, Robert D.; Patterson, Patrick E. and Werkhoven, Guy J. “The effects of extrinsic muscle forces on the forefoot-to-rearfoot loading relationship *in vitro*.” *Journal of the American Podiatric Medical Association*, 1998, 88, 10, 471-482. (Winner of the 1998 William J. Stickel Gold Award)
 25. Patterson, Patrick and Draper, Scott. “A neural net representation of experienced and non-experienced users during manual wheelchair propulsion.” *Journal of Rehabilitation Research and Development*, 1998, 35, 1, 43-51.
 26. Jurgens, Jennifer and Patterson, P.E. “Development and evaluation of an inexpensive sensor system for use in measuring relative finger positions.” *Medical Engineering and Physics*, 1997, 19, 1, 1-6.
 27. Patterson, P.E. and Eason, Jay. “The effects of prophylactic brace construction materials on the reactive responses of the MCL during repetitive impacts.” *Journal of Athletic Training*, 1996, 31, 4, 329-333.
 28. Hofstad, Michael and Patterson, P.E. “Modeling the propulsion characteristics of a standard wheelchair.” *Journal of Rehabilitation Research and Development*, 1994, 31, 2, 129-137.
 29. Latweson, Annette and Patterson, P.E. “Identification of lower arm motions using electromyographic signals of shoulder muscles.” *Medical Engineering and Physics*, 1994, 16, 2, 113-121.
 30. Eckrich, K. and Patterson, P.E. “Dynamic pressure changes during wheelchair locomotion.” *Innovation et Technologie en Biologie et Medicine*, 1994, 15, 1, 1-9.
 31. Patterson, P.E. and Katz, Judd. “The design and evaluation of a sensory feedback system that

- provides grasping pressure in a myoelectric hand." *Journal of Rehabilitation Research and Development*, 1992, 29, 1, 1-8.
32. Eckrich, Karl and Patterson, P.E. "Dynamic interface pressure between seated users and their wheelchairs." *International Journal of Industrial Ergonomics*, 1991, 8, 4, 115-123.
 33. Luster, Stephen, Patterson, P.E., Cioffi, William G., Mason, Arthur D., Jr. "A device to quantify joint stiffness in the burned hand." *Journal of Burn Care and Rehabilitation*, 1990, 11, 4, 312-317.
 34. Patterson, P.E., Zhang, Anqi and Brockman, W.H. "Characterization of the knee joint by digital accelerometry." *Innovation et Technologie en Biologie et Medicine*, 1989, 10, 5, 553-566.
 35. Patterson, Patrick E. and Brown, Lewis. "Biomechanical waveform analysis in the frequency domain." *IEEE Engineering in Medicine and Biology*, 1987, 6, 12-16.
 36. Patterson, Patrick E.; Congleton, Jerome; Koppa, Rodger; and Huchingson, R.D. "The effects of load knowledge on stresses at the lower back during lifting." *Ergonomics*, 1987, 30, 539-549.
 37. Patterson, Patrick E.; Koppa, Rodger; Congleton, Jerome; and R. D. Huchingson. "Low back stress, muscle usage, and the appearance of transient load movement during manual lifting." *The International Journal of Industrial Ergonomics*, 1986, 1, 137-143.
 38. Patterson, Patrick and Shea, Charles H. "Augmented auditory information in the control of upper-limb prostheses." *Archives of Physical Medicine and Rehabilitation*, 1985, 66, 243-245.
 39. Patterson, Patrick E. and Gabbard, Carl. "A hydraulic transducer for assessing grip strength." *Human Factors*, 1982, 24, 245-247.
 40. Patterson, Patrick E. "The effects of time limitations on the performance of educable mentally retarded children on a selected manipulative motor task." *Education and Training of the Mentally Retarded*, 1982, 17, 137-140.
 41. Pender, Robert H. and Patterson, Patrick E. "A comparison of selected motor fitness items between congenitally deaf and hearing children." *The Journal for Special Educators*, 1982, 18, 71-75.
 42. Gabbard, Carl and Patterson, Patrick E. "Movement pattern analysis on the horizontal ladder among children 4-9 years." *Perceptual and Motor Skills*, 1981, 52, 937-938.
 43. Gabbard, Carl, Patterson, Patrick E. and Elledge, Jerry. "Grip and forearm position effects on tests of static and dynamic upper body endurance." *Research Quarterly*, 1981, 52, 2, 174-179.
 44. Gabbard, C. P. and Patterson, P. E. "Relationship and comparison of selected anthropometric measures to muscular endurance and strength in children ages 3 to 5 years." *Annals of Human Biology*, 1980, 7, 6, 583-586.
 45. Patterson, Patrick E. "Simulations in therapeutic recreation training programs." *Therapeutic Recreation Journal*, 1980, 14, 3, 15-20.
 46. Gabbard, C. P. and Patterson, P. E. "Grip preferences of children on ladder apparatus." *Perceptual and Motor Skills*, 1980, 50, 1169-1170.
 47. Gabbard, Carl, Kirby, Tim and Patterson, Patrick E. "Reliability of the straight-arm hang for testing muscular endurance among children 2-5." *Research Quarterly*, 1979, 50, 4, 735-738.

Conference Proceedings

Refereed Conference Proceedings with Presentation

Refereed Proceedings by Specialty:

Ergonomics:	32
Rehabilitation Engineering:	15
Education:	10

1. M. Natalia Russi-Vigoya and Patrick Patterson. "Relationship between situation awareness and experience during conditions of equipment failure and poor visibility," Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, Denver, CO, March 2017.
2. Patrick Patterson. "Use of a Neural Network to Determine the Effects of Distraction Types on Gender in a Driving Simulator," Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, Denver, CO, March 2017.
3. Youngji Chun and Patrick Patterson. "Use of Recurrence Plots to Characterize Search Strategies of an Elderly Population Using Web-based Telemedicine Systems," Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, Denver, CO, March 2017.
4. Natalia Russi-Vigoya, PE "Pat" Patterson. "Relationship between situation awareness and experience," 11th Annual One-Day Symposium of Human Factors and Ergonomics, May 2015.
5. Javier Calvo-Amodio, Ean Ng, Hector Vergara, Salvador Hernandez, and Pat Patterson. "A Proposed Integrated Framework for Identifying Special Signal Patterns from Near-Real Time Data: Application to Geocoded Social Media Data," 35th International Annual Conference of the American Society for Engineering Management, October 2014.
6. Chaitanya Bhavaraju, Patrick Patterson, and Supriya Patibanda. "The Influence of Distractions on Response Time: An ERP Pilot Study." Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, Denver, CO, April 4-6, 2014.
7. Bhavaraju, C., Patterson, P. "A Pilot Study of the EEG Patterns of Subjects with Corrected Vision," 50th Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, Colorado Springs, CO, April 2013.
8. Medha Patel, Devarshi Mehta, and Patrick Patterson. "An introduction to back propagation learning and its application in classification of genome data sequence." 2nd International Conference on Soft Computing for Problem Solving, December 2012.
9. Javier Calvo-Amodio, Patrick Patterson, and Milton Smith. "A Conceptual System Dynamics Model for Managing Transition-phases in Healthcare Environments." American Society for Engineering Management, October 2012.
10. Kurt McElwain, Mike Bromley, Jaime Cantu, Janice Tolk, Patrick Patterson, James Simonton, and Mario Beruvides. "Using quantitative analysis to establish a basis for a high reliability organization." American Society for Engineering Management, October 17-20, 2012.
11. Hidetoshi Nakayasu, Tetsuya Miyoshi and Patrick Patterson. "Integrated Analysis of Driver Behavior by Vehicle Trajectory and Eye Movement." 4th International Conference on Applied Human Factors and Ergonomics, San Francisco, CA, July 21-25, 2012.
12. Urban, S., Urban, J., Mengel, S., Marcy, W., Patterson, P. "The Software and Systems Engineering Masters Program at Texas Tech University: A Computer Science and Industrial Engineering Collaborative Effort." American Society for Engineering Education 2012, San Antonio, TX, June 2012.

13. Russi-Vigoya, N., Patterson, P. "Identification of factors that affect pilot decision making with their respective measurement tools." Institute of Industrial Engineers Annual Conference, May 2012.
14. Russi-Vigoya, N., Patterson, P. "A Pilot Study to Evaluate Gaze Behavior in Aircraft Simulations." 49th Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, March 2012.
15. Miyoshi, T., Nakayasu, H., Patterson, P. "Analysis of Driving Behavior based on Driving Experience using DS." SCIS-ISIS, Osaka, Japan, 2012.
16. Youngji Chun and Patrick Patterson. "A Usability Gap between Older Adults and Younger Adults on Interface Design of an Internet-based Telemedicine System." International Ergonomics Association Congress, Recife, Brazil, February 2012.
17. Youngji Chun and Patrick Patterson. "A Suggestion for Future Research on Interface Design of an Internet-based Telemedicine System for the Elderly." International Ergonomics Association Congress, Recife, Brazil, February 2012.
18. Patterson, Pat and Sinzinger, Eric. "A Control and Training System for Rehabilitation Devices." Interfaces and Human Computer Interaction Conference, Rome, July 2011.
19. H. Nakayasu, Masao Nakagawa, Tetsuya Miyoshi, and Pat Patterson. "Improvement of Detection Probability by Inspection Panel by Multi-modal Interfaces." Interfaces and Human Computer Interaction Conference, Rome, July 2011.
20. Hidetoshi Nakayasu, Hirokazu Aoki, Tetsuya Miyoshi, and Pat Patterson. "Concurrent Study on Perception and Behavior of Driver by Measurement of Emotional Interfaces in Simulated Driving." Interfaces and Human Computer Interaction Conference, Rome, July 2011.
21. Yuki Ueno, Hidetoshi Nakayasu, Tetsuya Miyoshi, and Patterson, Pat. "Evaluation of Aircraft Evacuation Considering Panicked Passengers Using a Psychological Internal Model." Intelligent Systems and Agents Conference, Rome, July 2011. (Awarded "Outstanding Paper")
22. Farris, J., Matis, T., Patterson, P., Phillips, A., Ballan, M., Heinz, M. "Development of a Safety Culture Assessment Methodology at B&W Pantex." Spring 2011 CELDi IAB Meeting, Center for Engineering Logistics and Distribution, Denver, CO, April 2011.
23. Guo-Feng Liang, Patrick Patterson, and Sheue-Ling Hwang. "Survey of Workload Factors for Technicians in Wind Turbine Maintenance Tasks: A Pilot Study." 3rd International Conference on Applied Human Factors and Ergonomics (AHFE), Miami, Florida, July 17-20, 2010.
24. Farris, J., Matis, T., Patterson, P., Phillips, A., Balan, M., Heinz, M. "Design of Safety Culture Survey for Pantex Plant." Technology Partnering Conference, Canyon, Texas, May 2010.
25. JongMyong Choi and Patrick Patterson. "Effects of semantic relatedness on selection in pull-down menus." 47th Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, April 2010.
26. Manuel Meza, Patrick Patterson, and Hidetoshi Nakayasu. "Useful field of view of aging drivers as a product design tool for in-vehicle visual aids." Human Factors and Ergonomics Society, 53rd meeting, San Antonio, TX, October 19-23, 2009.
27. Manuel Mesa, Patrick Patterson, and Hidetoshi Nakayasu. "Analysis of visual performance and useful field of view among experienced, inexperienced and older drivers." IEA 17th World Congress on Ergonomics, Beijing, China, August 9-14, 2009.
28. Guo-Feng Liang, Jih-Tsong Lin, Sheue-Ling Hwang, Eric Min-Yang Wang, Patrick Patterson, and Jiun-Fa Li. "Web-Based Training System for Improving Aviation Maintenance Performance." HCI International, San Diego, CA, July 19-24, 2009. Published in *Lecture Notes in Computer Science*, 2009, Volume 5613/2009, 731-740.
29. Manuel Meza, Patrick Patterson, and Hidetoshi Nakayasu. "Comparing visual performance and useful field of view of older and younger drivers." Rocky Mountain Bioengineering

- Symposium, published in *Biomedical Sciences Instrumentation*, 2009, 45, 83-88.
30. P.-H. Lin, P. Patterson, S.-H. Hwang. "Effects of culture, ambient illumination, and resolution on the perceived image quality of mobile displays." The 15th Annual Display Workshops, Workshop on Image Quality, Niigata, Japan, December 3-5, 2008.
 31. P. Patterson and J. Klamklay. "The role of attention in task performance and situation awareness," International Applied Human Factors and Ergonomics Conference, July 14-17, Las Vegas, NV, 2008.
 32. Patterson, Patrick and Mitchell, Ron. "Innovation and Entrepreneurship: Merging Engineering and Business," ICEE 2007, Coimbra, Portugal, September 2007.
 33. Hidetoshi Nakayasu, Yasuhiro Seya, Tetsuya Miyoshi, Nir Keren, and Patrick Patterson. "Measurement of Visual Attention and Useful Field of View during Driving Tasks using a Driving Simulator," Mid-Continent Transportation Research Symposium, Ames, Iowa, August 16-17, 2007.
 34. Madsen, Jessica, Mozrall Jacqueline, Schaub Diane, and Patrick Patterson. "An Industrial Engineering Body of Knowledge?" American Society of Engineering Education Conference, Honolulu, HI, June 24-27, 2007.
 35. Min, Jackman, Ryan, Patterson, Wingerter, Bailey, and Trede, "Citizen-Based Assessment and Improvement of E-Government Services for Small and Medium-Sized Communities," 8th Annual International Digital Government Research Conference, Philadelphia, Pennsylvania, May 2007.
 36. H. Nakayasu, P. Patterson, T. Miyoshi, and T. Yagi. "Evaluation of Reliability and Safety for Human Factors on Driving Work by Simulator," ICPR19, Valparaiso, Chile, July 29, 2007.
 37. Patterson, PE. "A systematic approach for introducing innovative product design in courses with engineering and nonengineering students," Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation Biomedical Sciences Instrumentation*, 2007, 43, 91-94.
 38. Patterson, PE. "Supporting undergraduate biomedical entrepreneurship," Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation Biomedical Sciences Instrumentation*, 2004, 40, 491-494.
 39. Klamklay, Jaruwat and Patterson, Patrick E. "The effect of automation, pace, and task duration on operator situation awareness and performance," International Ergonomics Association Conference, Seoul, Korea, August 24- 29, 2003.
 40. Derrick, T.R., Budihardjo I. and Patterson P. "Influence of knowledge of load magnitude on L5/S1 compressive forces during lifting," American College of Sports Medicine Conference, San Francisco, California, May 27- May 31, 2003.
 41. Cheng, Hong-In and Patterson, Patrick E. "The grid menu: efficient and robust selection of menu-items," 46th Annual Human Factors and Ergonomics Society, Baltimore, MD, September 30-October 4, 2002.
 42. Patterson, PE. "Development of a learning module using virtual reality to demonstrate EMG and telerobotic control principles," Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 2002, 38, 313-316.
 43. Patterson, P.E. "Employing 3D virtual reality games to develop ANN for device control: A pilot study," Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 2001, 37, 475-478.
 44. P.E. Patterson and Melanie Anderson, "The use of self-organizing maps to evaluate myoelectric signals," Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 1999, 35, 147-152.
 45. Madhumathi Sakthival, Patrick E. Patterson, and Carolina Cruz-Neira, "Gender differences in

- navigating virtual worlds,” Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 1999, 35, 353-359.
46. Patterson, P.E. and Distel, Matthew. “Development of an underwater weighing system for determining body composition,” Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 1998, 34, 363-367.
 47. Patterson, Patrick and Draper, Scott. “Selected comparisons between experienced and non-experienced individuals during manual wheelchair propulsion,” Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 1997, 33, 477-481.
 48. Shih, Pei-Shin and Patterson, P.E. “Predicting joint moments and angles from EMG signals,” Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 1997, 33, 191-196.
 49. Patterson, P.E. “Evaluation of a neural net approach for assessing the rehabilitation status of ACL injuries,” Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 1996, 32, 275-277.
 50. Nichols-Ketchum, Martha and Patterson, P.E. “An experimental analysis of joint kinetics in the Tkatchev release move,” ASME Bioengineering Conference, Beaver Creek, Colorado, June 28 - July 2, 1995.
 51. Patterson, P.E. “Development of an inexpensive environmental control system for a quadriplegic individual,” Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 1995, 31, 275-280.
 52. Patterson, P.E. and Katz, J.A. “A sensory feedback system for grasping pressure in a myoelectric hand,” IEEE Engineering in Medicine and Biology Society 10th Annual International Conference, New Orleans, LA, November 4-7, 1988.
 53. Patterson, P.E. and Chappell, D. “Development of a Braille training device,” Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, 1994, 30, 159-161.
 54. Eason, J. and Patterson, P.E. “Effects of material selection on brace protection of the MCL,” Biomechanics in Sports IX, Ninth International Symposium on Biomechanics in Sports, Ames, Iowa, June 29-July 3, 1991.
 55. Roberts EM, Tant CL, Patterson PE, and York SL. “Tracking velocity in motion,” Biomechanics in Sports IX, Ninth International Symposium on Biomechanics in Sports, Ames, Iowa, June 29-July 3, 1991.
 56. Patterson, Patrick E. “The relationship between low back stress, muscle usage, and the appearance of transient load movement during manual lifting,” International Conference on Systems, Man, and Cybernetics, Tucson, AR., November 12-15, 1985.
 57. Adams, Keith and Patterson, Patrick E. “An undergraduate laboratory exercise on the biomechanics of lifting,” Human Factors Society Annual Meeting, Baltimore, MD, September 30 - October 3, 1985.

Non-refereed Conference Proceedings with Presentation

Non-refereed Proceedings by Specialty:

Ergonomics:	11
Rehabilitation Engineering:	3
Education:	3

1. Patterson, Patrick and Klamklay, Jarawan. "Modeling Human Reliability to Develop Improved Global Product Interfaces," The 22nd Annual Meeting on Materials and Structural Reliability, Tokyo, Japan, December 5, 2006.
2. Ying-Lien Lee, Patrick Patterson, Sheue-Ling Hwang, and Min-Yang Eric Wang. "Automation of Performance Data Collection and Evaluation based upon GOMS Model," The 7th Asia-Pacific Conference on Computer-Human Interaction, Taipei, Taiwan, October 11-14, 2006.
3. Jo Min, John Jackman, Patrick Patterson, Jie Li, Shantha Daniel, and Leopoldo E. Cárdenas-Barrón. "US-Mexico Student Teams for a Global Supply Chain Course Project," International Conference on Engineering Education, San Juan, Puerto Rico, July 23-28, 2006.
4. Patterson, Patrick and Min, K. Jo. "Tools for Enhancing Creativity and Innovation for Product Design," International Conference on Aging, Disability, and Independence, St. Petersburg, Florida, February 1-3, 2006.
5. Years, Mary and Patterson, Patrick. "Kitchen Cabinet Prototypes with Universal Appeal: Responses from Senior Housing Providers," International Conference on Aging, Disability, and Independence, St. Petersburg, Florida, February 1-3, 2006.
6. Min K. Jo and Patterson Patrick. "Access Technology-Oriented Assessment of Telemedicine in Small and Medium-Sized Communities," International Conference on Aging, Disability, and Independence, St. Petersburg, Florida, February 1-3, 2006.
7. Hong-In Cheng, Kyonghee Lee, Jaehyun Bae, and Patrick E. Patterson. "A comparative study of mouse-based interactions," 7th International Conference on Work with Computing Systems, WWCS 2004, Kuala Lumpur, Malaysia June 29-July 2, 2004.
8. Liu, A., Nester C.J., Ward E., Howard D., Derrick T., Cocheba J. and Patterson P. "Development of an improved rigid body model of the foot," Foot and Ankle Retreat II, Los Angeles, CA, April 30-May 1, 2004.
9. Patterson, Patrick and Peters, Frank. "An approach to introducing ergonomics into the steel foundry industry." Applied Ergonomics Conference, Dallas, Texas, March 10-14, 2003.
10. Cheng, Hong-In and Patterson, Patrick E. "Evaluation of e-Bookstore characteristics," The Economics & International Business Research Conference, Miami, Florida, December 17-22, 2002.
11. Cheng, Hong-In and Patterson, Patrick E. "Data input design on hotel reservation web sites," International Conference on Business, Waikiki, Hawaii, June 18-22, 2002.
12. Derrick, T.R., Budihardjo, I. and Patterson P. "Estimation of L5/S1 joint compressive forces during dynamic lifting activities," Biomechanics Invitational Symposium, Las Vegas, Nevada, February 2002.
13. Peters, F., J. Anderson, A. Menefee and P. Patterson, "Solutions to improve ergonomics and productivity," Steel Founders' Society of America-Technical and Operating Conference, Chicago, Illinois, November 2001.
14. Patterson, Patrick; Peters, Frank; Menefee, Avery; Hoffman, Trevor; and O'Connor, Gabriel. "Development of ergonomic improvements for the steel foundry industry," Steel Founders' Society of America Technical and Operating Conference, Chicago, November 2-5, 2000.

15. Openshaw, S. and Patterson, PE. "Development of a myoelectric software trainer," World Congress on Medical Physics and Biomedical Engineering. Chicago, Illinois, July 27, 2000.
16. Patterson, Patrick and Ashlock, Daniel, "Evolved software agents for dealing with information overload in complex systems," 4th Annual Symposium on Situational Awareness, Piney Point, Maryland, June 8-9, 1999.
17. Lehmkuhl, Kim, Patterson, Patrick E. and Barta, Thomas A. "A comparison of graphic versus tabular output in the analysis of simulation results," The Society for Computer Simulation Eastern Simulation Conference, Orlando, Florida, April 18-21, 1988.

Trade Publications

1. Patterson, Patrick. "Teaming up for globalization." *ISA InTech*, May 2008.
2. Patterson, PE. "Iowa State University's Human Factors Program." *Product Design Technical Group Newsletter*, Summer, 2005.
3. Patterson, Patrick. "Preventing Work Injuries: Ergonomics." *Iowa Textile and Apparel News*, 2001, 7, 1, Supplement, 1-2.
4. Peters, Frank and Patterson, PE. "Using an Ergonomic Approach in Your Operation." *Modern Casting*, 2000, 90, 10, 58-59.

Book Chapters, Reviews, Manuals, and Proceedings Editor

1. Millet, B. and Patterson, P. "User Centered Design." Chapter in *Design and Designing*. Oxford: Berg Publishers, 2012.
2. Patterson, Patrick and Rivero, Iris (Editors), *Proceedings of the 48th Annual Rocky Mountain Bioengineering Symposium*, Denver, Colorado, 2011.
3. James L. Smith, Jeffery C. Woldstad, and Patrick Patterson. "Ergonomics of Manual Materials Handling." Chapter 2 in *Environmentally Conscious Materials Handling*, CRC Press, 2009.
4. Gillette, Jason and Patterson, Patrick (Editors), *Proceedings of the 42nd Annual Rocky Mountain Bioengineering Symposium*, Copper Mountain, Colorado, 2005.
5. Patterson, PE, Review of "A Guide to Methodology in Ergonomics" by N.A. Stanton and M.S. Young. *International Journal of Cognitive Ergonomics*, 2000, 4(3), 269-270.
6. PE Patterson (Editor), *Proceedings of the 36th Annual Rocky Mountain Bioengineering Symposium*, Copper Mountain, Colorado, 1999.
7. Patterson, P.E. "KIOWA Time Study Project Manual", written for KIOWA Time Study Project, November 21-22, 1994.
8. Tant, Cynthia L., Patterson, Patrick E., and York, Sherril L. (Editors). *Proceedings, Biomechanics in Sports IX, Ninth International Symposium on Biomechanics in Sports*, Ames, Iowa, 1991.
9. Patterson, P.E. "USAISR Finger Project Manual," written for the Institute for Surgical Research, Brooke Army Medical Center, Ft. Sam Houston, Texas, July 1989.
10. Patterson, PE, Review of "Engineering Physiology: Physiologic Basis of Human Factors/Ergonomics" by K.H.E. Kroemer, H.J. Kroemer, and K.E. Kroemer-Elbert. *International Journal of Industrial Ergonomics*, 1988, 2, 243-244.

Course manuals developed:

- Patterson, P.E. "Applied Ergonomics Lab Manual"
- Patterson, P.E. "Designing for the Worker in Industrial Systems"
- Patterson, P.E. "Operations Analysis Lab Manual"
- Patterson, P.E. "Rehabilitation Technology Lab Manual"
- Patterson, P.E. "Applied Ergonomics and Work Design Lab Manual"

Technical Reports

1. Beruvides, M., Tolk, J., McElwain, K., Bromley, M., Cantu, J., Patterson, P., Simonton, J. (2013). *High Reliability Operations Research Project: Systems Dynamic and Economic Analysis Models for B&W Pantex Plant High Explosives Operations*. Amarillo, TX: Department of Energy.
2. Johnson, J., Farris, J., Matis, T., Patterson, P., Ballan, M., Crittendon, P. (2012). *Plant Wide Safety Culture Survey Project: Supplemental Report* (pp. 51). Texas Tech University.
3. Johnson, J., Farris, J., Matis, T., Patterson, P., Ballan, M., Crittendon, P. (2012). *Plant Wide Safety Culture Survey Project Final Report* (pp. 187). Texas Tech University.
4. Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: Manufacturing Division* (pp. 135). Texas Tech University.
5. Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: Safeguards & Security Division* (pp. 134). Texas Tech University.
6. Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: CIO Division* (pp. 124). Texas Tech University.
7. Ballan, M., Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: CFO Division* (pp. 99). Texas Tech University.
8. Ballan, M., Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: General Manager and Legal Divisions* (pp. 103). Texas Tech University.
9. Ballan, M., Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: Maintenance Division* (pp. 122). Texas Tech University.
10. M. B., Crittendon, P., Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: Projects Division* (pp. 122). Texas Tech University.
11. Johnson, J., Ballan, M., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: Quality Division* (pp. 120). Texas Tech University.
12. Johnson, J., Ballan, M., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: Special Nuclear Materials Division* (pp. 121). Texas Tech University.
13. Johnson, J., Crittendon, P., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: Supply Chain Management Division* (pp. 126). Texas Tech University.
14. Crittendon, P., M. B., Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: DSW Division* (pp. 81). Texas Tech University.
15. Johnson, J., Crittendon, P., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: Engineering Division* (pp. 124). Texas Tech University.
16. M. B., Johnson, J., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: ES&H Division* (pp. 135). Texas Tech University.
17. Johnson, J., Crittendon, P., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: HR Division* (pp. 88). Texas Tech University.
18. Johnson, J., Crittendon, P., Farris, J., Matis, T., Patterson, P. (2012). *Plant Wide Safety Culture Survey Project Report: RTBF Division* (pp. 85). Texas Tech University.

19. Farris, J., Matis, T., Patterson, P., Phillips, A., Ballan, M., Heinz, M. (2011). *Development of a Safety Culture Assessment Methodology at B&W Pantex* (pp. 9). Texas Tech University.
20. Farris, J., Phillips, A., Ballan, M., Heinz, M., Matis, T., Patterson, P. (2011). *Development of a Safety Culture Assessment Methodology at B&W Pantex* (pp. 268). Texas Tech University.
21. Farris, J., Phillips, A., Ballan, M., Heinz, M., Matis, T., Patterson, P. (2011). *The Assessment of the Safety Culture within the Pantex Plant: Explosives Technology Division* (pp. 268). Texas Tech University.

PRESENTATIONS

Conference Keynotes and Plenary

1. The 20th International Conference on Industrial Engineering and Engineering Management, *Keynote*, “Developing the Next Generation of IEs: Industrial Engineering Education in the USA,” Baotou, China, August 17, 2013.
2. International Occupational Safety and Health Conference, *Keynote*, “Systems and Ergonomics: Seven Concepts that will Improve Your Occupational Safety Program,” Beijing, China, May 21, 2013.
3. Rocky Mountain Bioengineering Symposium, *Keynote*, “Bioethics Challenges,” Denver, CO, April 15, 2011.
4. Mile High Industrial and Automation Conference, *Keynote*, “Our Workforce- Where to from here? The Role of Academia,” Denver, CO, March 31, 2009.
5. National Science Council Industrial Engineering and Management Grantees Conference, *Keynote*, “Influences and Trends in US Industrial Engineering Education: One Perspective,” National Chinyi University of Technology, Tai-chung, Taiwan, November 15, 2008.
6. The 22nd Annual Meeting on Materials and Structural Reliability, Special International Session on Human Reliability, *Keynote*, “Modeling Human Reliability to Develop Improved Global Product Interfaces,” Tokyo, Japan, December 5, 2006.
7. International Workshop on Exploring Complexity in Collaborative Design and Solutions, *Keynote*, “Managing Design Complexity: Tales from Six Projects,” London, UK, June 24, 2005.

Invited Presentations

Research Themes

1. Virtual University: Indo-US Collaboration for Engineering Education, “Brain-computer Interface: An Emerging Field,” May 7, 2014.
2. Alaska Occupational Safety Summit, “Evolution and Application of Human Error in Safety Management Systems,” Anchorage, Alaska, September 14-15, 2010.
3. National Taiwan University of Science and Technology, “Culturally-developed bias: source of product error?” Taipei, Taiwan, November 13, 2008.
4. Konan University, “Workload and Driving Performance,” Kobe, Japan, June 16, 2008.
5. Nanjing University of Aeronautics and Astronautics, “Considerations for reducing human error in globally-distributed product interfaces,” Nanjing, China, June 13, 2008.

6. Hefei University of Technology, "Modeling Human Error for Product Design: Culture, Gender, and Psychological Factors," Hefei, China, June 11, 2008.
7. Human Factors and Ergonomics Society Annual Meeting, Design Chautauqua Workshop, "Ethnography as a Tool in Product Design," Baltimore, Maryland, October 1, 2007.
8. University of Iowa Faculty-Student Seminar Series, "Understanding and Reducing User Error in Complex Systems," Iowa City, Iowa, November 10, 2005.
9. National Chiao-Tung University. "The Use of Virtual Reality to Optimize the Impact of Ergonomics in Product and Process Design," Taipei, Taiwan, November 10, 2003.
10. Iowa Division of Vocational Rehabilitation Services, "Basic biomechanics and job injuries related to faulty biomechanical designs," Ankeny, Iowa, February 13, 1996.

Educational Themes

1. Roscoe Collegiate STEM Advisory Meeting, "Elements of Engineering Education Embedded in UAVs," Roscoe, TX, April 27, 2015.
2. Harmony School of Excellence, "Brain-Computer Interface: What it is and where we are going," a Skype presentation to Houston, TX, October 23, 2013.
3. American Society of Safety Engineers (Lubbock, TX, Chapter), "The Holidays thru the Eyes of a Safety Grinch," Lubbock, TX, December 14, 2010.
4. Industrial Engineering International Congress, "The Global Industrial Engineer: Predicting the skills needed to manage the challenges of the future," ITESM Campus Morelia, Morelia, Mexico, September 23, 2006.
5. International Industrial Engineering Program students, "Globalization and the Industrial Engineer: A Perspective," Toluca, Mexico, August 12, 2005.
6. Iowa State University Entrepreneurship Learning Community, "The Web-based Business," Ames, Iowa, February 8, 2005.
7. Institute of Industrial Engineers, Doctoral Colloquium, "Building an Academic Reputation: Enhancing External Reputation," Houston, TX, May 15, 2004.
8. Institute of Industrial Engineers, New Faculty Colloquium, "A Chair's Expectations for New Faculty," Houston, TX, May 15, 2004.
9. Chapter 111 Central Iowa Institute of Industrial Engineers. "The Effects of Incentive and Lean Systems on Worker Ergonomics," Ames, Iowa, February 26, 2004.
10. ITESM Campus Toluca Ph.D. Seminar Series. "Human Factors in Product Design," Toluca, Mexico, September 13, 2002.
11. IX Industrial Engineering Symposium. "The Role of Industry in Shaping the Industrial Engineering Curriculum," Toluca, Mexico, September 12, 2002.
12. Iowa-Iowa State Executive Engineering Dual MS. Two presentations: "Ergonomics and the Systems Engineer" March 23, 2001, and "Human Factors in Cognition, HCI, and VR" March 30, 2001.
13. Iowa Chapter of the American Welding Society, "Ergonomics in the Welding Workplace: What's the Problem and What to do About It," Knoxville, Iowa, October 12, 1999.
14. Steel Founders' Society of America T & O Meeting, "Ergonomics Injury Patterns and Associated Risk Factors," Milwaukee, Wisconsin, September 17, 1999.
15. The Re-engineering Casting Production Project Review Meeting, Steel Founders' Society of America, "Ergonomics- What's it all about and how can it help me?" Chicago, Illinois, October 13, 1998.
16. Jackson County Safety Consortium, "Carpal Tunnel Prevention," Maquoketa, Iowa, July 7,

- 1997.
17. Mercy Hospital, "Workplace Ergonomics," a seminar for the staff, Des Moines, Iowa, April 3, 1997.
 18. John Deere Ergonomic Coordinators' Meeting, "The Ergonomic Experience," Ankeny, Iowa, August 16, 1995.
 19. ISU Physiology Council Spring Mini-symposium, "Research perspectives concerning pathological gait patterns," Ames, Iowa, May 3, 1993.
 20. Iowa Textile and Apparel Association, "Keys to Developing a User Friendly Workplace," and "A Systematic Approach to Analyzing Your Jobs," Des Moines, Iowa, October 13, 1992.
 21. Midwest Easter Seals Society Staff Meeting, "Innovations and Directions in Rehabilitation Technology," panelist, Ankeny, Iowa, October 14, 1988.
 22. Iowa Association for Retarded Citizens, "Adaptive Equipment," West Des Moines, Iowa, October 17, 1987.
 23. Iowa Parks and Recreation Association, "Rehabilitation Engineering," Mason City, Iowa, October 8, 1987.
 24. Veterinary Physiology and Pharmacology (VPP) Seminar Series, "Rehabilitation Engineering Perspectives," Iowa State University, April 6, 1987.
 25. Parents of Children with Neuromotor Disabilities (United Cerebral Palsy of Iowa), "Environmental Modifications and the Handicapped Child," Des Moines, Iowa, June 8, 1986.
 26. American Corrective Therapy Association Annual Meeting, "Model to aid in the assessment of and programming for children in adapted physical education classes," Houston, Texas, July 11, 1983.

Conference Presentations

Conference Presentations by Specialty:

Ergonomics:	34
Rehabilitation Engineering:	33
Education:	16

1. Chaitanya Bhavaraju, Patrick Patterson, and Supriya Patibanda. "The Influence of Distractions on Response Time: An ERP Pilot Study." Rocky Mountain Bioengineering Symposium, Denver, CO, April 4-6, 2014.
2. Bhavaraju, C., Patterson, P. "A Pilot Study of the EEG Patterns of Subjects with Corrected Vision," 50th Rocky Mountain Bioengineering Symposium, Colorado Springs, CO, April 2013.
3. Medha Patel, Devarshi Mehta, and Patrick Patterson. "An introduction to back propagation learning and its application in classification of genome data sequence." 2nd International Conference on Soft Computing for Problem Solving, December 18-20, 2012.
4. Javier Calvo-Amodio, Patrick Patterson, and Milton Smith. A Conceptual System Dynamics "Model for Managing Transition-phases in Healthcare Environments. American Society for Engineering Management." October 17-20, 2012.
5. Kurt McElwain, Mike Bromley, Jaime Cantu, Janice Tolk, Patrick Patterson, James Simonton, and Mario Beruvides. "Using quantitative analysis to establish a basis for a high reliability organization." American Society for Engineering Management, October 17-20, 2012.
6. Hidetoshi Nakayasu, Tetsuya Miyoshi and Patrick Patterson. "Integrated Analysis of Driver Behavior by Vehicle Trajectory and Eye Movement." 4th International Conference on Applied Human Factors and Ergonomics, San Francisco, CA, July 21-25, 2012.

7. Russi-Vigoya, N., Patterson, P. "A Pilot Study to Evaluate Gaze Behavior in Aircraft Simulations." 49th Rocky Mountain Bioengineering Symposium, published in *Biomedical Sciences Instrumentation*, March 2012.
8. Miyoshi, T., Nakayasu, H., Patterson, P. "Analysis of Driving Behavior based on Driving Experience using DS." SCIS-ISIS, Osaka, Japan, 2012.
9. Youngji Chun and Patrick Patterson. "A Usability Gap between Older Adults and Younger Adults on Interface Design of an Internet-based Telemedicine System." International Ergonomics Association Congress, Recife, Brazil, February 2012.
10. Youngji Chun and Patrick Patterson. "A Suggestion for Future Research on Interface Design of an Internet-based Telemedicine System for the Elderly." International Ergonomics Association Congress, Recife, Brazil, February 2012.
11. Russi-Vigoya, N., Patterson, P. Identification of factors that affect pilot decision making with their respective measurement tools. Institute of Industrial Engineers Annual Conference, Orlando, FL, May 20-23, 2012.
12. Patterson, Pat and Sinzinger, Eric. A Control and Training System for Rehabilitation Devices. Interfaces and Human Computer Interaction Conference, Rome, July 2011.
13. Patrick Patterson, Manuel Mesa, Hidetoshi Nakayasu. Design Characteristics of Older and Younger Drivers. International Conference on Ageing, Disability and Independence, Newcastle, UK, September 8-11, 2010.
14. Guo-Feng Liang, Patrick Patterson, and Sheue-Ling Hwang. Survey of Workload Factors for Technicians in Wind Turbine Maintenance Tasks: A Pilot Study. 3rd International Conference on Applied Human Factors and Ergonomics (AHFE), Miami, Florida, July 17-20, 2010.
15. Farris, J.A., Matis, T.I., Patterson, P., Phillips, A., Ballan, M., Heinz, M. Design of Safety Culture Survey for Pantex Plant. Technology Partnering Conference, Canyon, TX, 2010.
16. Farris, J.A., Matis, T.I., Patterson, P., Phillips, A., Ballan, M., Heinz, M. Development of a Safety Culture Assessment Methodology for B&W Pantex. Center for Engineering Logistics and Distribution Spring Research Conference, Atlanta, GA, 2010.
17. JongMyong Choi and Patrick Patterson. Effects of semantic relatedness on selection in pull-down menus. 47th Rocky Mountain Bioengineering Symposium, Laramie, WY, April 9-11, 2010.
18. Manuel Meza, Patrick Patterson, and Hidetoshi Nakayasu. Useful Field of View of Aging Drivers as a Product Design Tool for In-Vehicle Visual Aids. Human Factors and Ergonomics Society, 53rd meeting, San Antonio, TX, October 19-23, 2009.
19. Guo-Feng Liang, Jih-Tsong Lin, Sheue-Ling Hwang, Eric Min-Yang Wang, Patrick Patterson, and Jiun-Fa Li. Web-Based Training System for Improving Aviation Maintenance Performance. HCI International, San Diego, CA, July 19-24, 2009.
20. Manuel Meza, Patrick Patterson, and Hidetoshi Nakayasu. Comparing visual performance and useful field of view of older and younger drivers. 46th Rocky Mountain Bioengineering Symposium, Milwaukee, WI, April 17-19, 2009.
21. P-H. Lin, P. Patterson, S.-H. Hwang. Effects of culture, ambient illumination, and resolution on the perceived image quality of mobile displays. The 15th Annual Display Workshops, Workshop on Image Quality, Niigata, Japan, December 3-5, 2008.
22. P. Patterson and J. Klamklay. The role of attention in task performance and situation awareness. International Applied Human Factors and Ergonomics Conference, Las Vegas, NV, July 14-17, 2008.
23. Manuel Meza-Arroyo, Hidetoshi Nakayasu, and Patrick Patterson. Relationship between Visual Attention and the Surrounding Environment during Driving Tasks. INFORMS Southwest Regional Conference, College Station, TX, April 18-19, 2008.

24. Patterson, Patrick. What Services and Products Should You Provide? Using QFD to Discover What, When, and How. Conference for Industry and Education Collaboration, New Orleans, LA, February 13-15, 2008. (awarded "Best Session")
25. Hidetoshi Nakayasu, Yasuhiro Seya, Tetsuya Miyoshi, Nir Keren, and Patrick Patterson. Measurement of Visual Attention and Useful Field of View during Driving Tasks using a Driving Simulator. The 2007 Mid-Continent Transportation Research Symposium, Ames, Iowa, August 16-17, 2007.
26. Madsen, Jessica, Mozrall Jacqueline, Schaub Diane, and Patrick Patterson. An Industrial Engineering Body of Knowledge? American Society of Engineering Education Conference, Honolulu, HI, June 24-27, 2007.
27. Madsen, Jessica, Mozrall Jacqueline, Schaub Diane, and Patrick Patterson. Engineering Curriculum Design: Benchmarking Other Engineering Disciplines. Institute of Industrial Engineering Annual Conference, Nashville, TN, May 19-23, 2007.
28. Ying-Lien Lee, Patrick Patterson, Sheue-Ling Hwang, and Min-Yang Eric Wang. Automation of Performance Data Collection and Evaluation based upon GOMS Model. The 7th Asia-Pacific Conference on Computer Human Interaction, Taipei, Taiwan, October 11-14, 2006.
29. Jo Min, John Jackman, Patrick Patterson, Jie Li, Shantha Daniel, and Leopoldo E. Cárdenas-Barrón. US-Mexico Student Teams for a Global Supply Chain Course Project. International Conference on Engineering Education, San Juan, Puerto Rico, July 23-28, 2006.
30. Connors Mandy, Cruz-Neira Carolina, Patterson Patrick, Zhao Yue, and Baumhover Brian. Should virtual reality be classified as a mind body intervention? CyberTherapy 2006, Gatineau, Quebec, Canada, June 12-15, 2006.
31. Matson Jessica, Patterson Patrick, Mozrall Jacqueline, and Schaub Diane. Identifying a Common Set of Industrial Engineering Program Outcomes. Institute of Industrial Engineers Annual Conference, Orlando, Florida, May 20-24, 2006.
32. Klamklay, Jaruwat and Patterson, Patrick. Anthropometry of the Thai Population. Institute of Industrial Engineers Annual Conference, Orlando, Florida, May 20-24, 2006.
33. Min Jo, Jackman John, Gemmill Doug, and Patterson Patrick. Continuous Improvement Efforts for Objective Evaluation and Outcome Assessment of an Industrial Engineering Program. Best Assessment Symposium, Rose-Hulman Institute of Technology, Terre Haute, Indiana, February 26-28, 2006.
34. Patterson, Patrick and Klamklay, Jaruwat. Automation, Pace, and Task Duration: Effects on Operator Performance. Habitation 2006, Orlando, Florida, February 6-8, 2006.
35. Patterson, Patrick and Min, K. Jo. Tools for Enhancing Creativity and Innovation for Product Design. International Conference on Aging, Disability, and Independence, February 1-3, 2006.
36. Yearns, Mary and Patterson, Patrick. Kitchen Cabinet Prototypes with Universal Appeal: Responses from Senior Housing Providers. International Conference on Aging, Disability, and Independence, February 1-3, 2006.
37. Min K. Jo and Patterson Patrick. Access Technology-Oriented Assessment of Telemedicine in Small and Medium-Sized Communities. International Conference on Aging, Disability, and Independence, February 1-3, 2006.
38. Min K. Jo, Jackman John, Patterson Patrick, Daniel Shantha, Kumsaikaew Piyamart, Li Jie, and Somchan Vuthipadadon. Global Enterprise Perspective Initiative in a Production Systems Course. ASEE Annual Conference, June 12-15, 2005.
39. Yearns, M. H., A. Bice, and P. E. Patterson. Kitchen prototypes with universal design features: Which components do consumers prefer? Joint Conference of the American Society on Aging and the National Council on the Aging, Philadelphia, Pennsylvania, March 2005.

40. Yearns Mary H., Bice Andrew, and Patterson Patrick E. Do consumers prefer a kitchen with universal design features? Housing Education and Research Association Conference, Chicago, IL, October 20-23, 2004.
41. Cheng Hong-In, Lee Kyonghee, Bae Jaehyun, and Patterson Patrick E. A comparative study of mouse-based interactions. 7th International Conference on Work with Computing Systems, Kuala Lumpur, Malaysia, June 29-July 2, 2004.
42. Freeman SA, Schwab CV, and Patterson PE. Quantifying farm stressors: a pilot study. National Institute for Farm Safety Annual Meeting and Conference, Keystone, CO, June 20-24, 2004.
43. Liu, A., Nester C.J., Ward E., Howard D., Derrick T., Cocheba J. and Patterson P. Development of an improved rigid body model of the foot. Foot and Ankle Retreat II, Los Angeles, CA, April 30-May 1, 2004.
44. Patterson, PE. Supporting Undergraduate Biomedical Entrepreneurship. 41st Annual Rocky Mountain Bioengineering Symposium, Ft. Collins, CO, April 23-25, 2004.
45. Patterson, Patrick, Yearns, Mary, and Bice, Andrew. Aging in Place: An Ergonomic and Biomechanical Analysis of Kitchen Use. Joint Conference of the American Society on Aging and the National Council on the Aging, San Francisco, CA, April 14-17, 2004.
46. Yearns, M., Bice, A., Patterson, P. A Quest for Better Kitchens for Older Women: The Universal Design Kitchen Project. International Conference on Aging, Disability and Independence, Washington DC, December 4-7, 2003.
47. Klamklay, Jaruwat and Patterson, Patrick E. The Effect of Automation, Pace, and Task Duration on Operator Situation Awareness and Performance. International Ergonomics Association Conference, Seoul, Korea, August 24-29, 2003.
48. Derrick, T.R., Budihardjo I. and Patterson P. Influence of knowledge of load magnitude on L5/S1 compressive forces during lifting. American College of Sports Medicine Conference, San Francisco, California, June 2003.
49. Patterson, Patrick and Peters, Frank. An Approach to Introducing Ergonomics into the Steel Foundry Industry. Applied Ergonomics Conference 2003, Dallas, Texas, March 10-14, 2003.
50. Cheng, Hong-In and Patterson, Patrick E. Evaluation of E-Bookstore Characteristics. The Economics & International Business Research Conference, Miami, Florida, December 17-22, 2002.
51. Patterson, Patrick E. An Active Learning Environment for IT Across the Curriculum. INFORMS Annual Meeting, San Jose, California, November 17-22, 2002.
52. Cheng, Hong-In and Patterson, Patrick E. The Grid Menu: Efficient and Robust Selection of Menu-items. 46th Annual Human Factors and Ergonomics Society, Baltimore, MD, September 30-October 4, 2002.
53. Cheng, Hong-In and Patterson, Patrick E. Data Input Design on Hotel Reservation Web Sites. Hawaii International Conference on Business, Waikiki, Hawaii, June 18-22, 2002.
54. Patterson, PE. Development of a Learning Module Using Virtual Reality to Demonstrate EMG and Telerobotic Control Principles. 39th Annual Rocky Mountain Bioengineering Symposium, Copper Mountain, CO, April 12-14, 2002.
55. Patterson, P.E. Employing 3D Virtual Reality Games to Develop ANN for Device Control: A Pilot Study. 38th Annual Rocky Mountain Bioengineering Symposium, Copper Mountain Resort, CO, April 20-22, 2001.
56. Patterson, Patrick; Peters, Frank; Menefee, Avery; Hoffman, Trevor; and O'Connor, Gabriel. Development of Ergonomic Improvements for the Steel Foundry Industry. Steel Founders' Society of America Technical and Operating Conference, Chicago, November 3, 2000.
57. Openshaw, S. and Patterson, PE. Development of a Myoelectric Software Trainer. World Congress on Medical Physics and Biomedical Engineering. Chicago, Illinois, July 27, 2000.

58. Patterson, Patrick. A User-Defined Formatting System for Information Presentation and Interpretation. Industrial Engineering Research Conference 2000, Cleveland, Ohio, May 21, 2000.
59. Patterson, Patrick and Ashlock, Daniel. Evolved Software Agents for Dealing with Information Overload in Complex Systems. 4th Annual Symposium on Situational Awareness, Piney Point, Maryland, June 8-9, 1999.
60. P.E. Patterson and Melanie Anderson. The Use of Self Organizing Maps to Evaluate Myoelectric Signals. 36th Annual Rocky Mountain Bioengineering Symposium, Copper Mountain Resort, CO, April 16-18, 1999.
61. Patterson, P.E. and Distel, Matthew. Development of an underwater weighing system for determining body composition. Rocky Mountain Bioengineering Symposium, Copper Mountain, Colorado, April 16-19, 1998.
62. McGilvrey, Max and Patterson, Patrick. Partnering for assistive technology- a win-win program. American Association on Mental Retardation Annual Conference, Omaha, Nebraska, September 28-30, 1997.
63. Patterson, Patrick and Draper, Scott. Selected comparisons between experienced and non-experienced individuals during manual wheelchair propulsion. Rocky Mountain Bioengineering Symposium, Dayton, Ohio, April 11-13, 1997.
64. Shih, Pei-Shin and Patterson, P.E. Predicting joint moments and angles from EMG signals. Rocky Mountain Bioengineering Symposium, Dayton, Ohio, April 11-13, 1997.
65. Patterson, P.E. Evaluation of a neural net approach for assessing the rehabilitation status of ACL injuries. Rocky Mountain Bioengineering Symposium, Colorado Springs, Colorado, April 13, 1996.
66. Nichols-Ketchum, Martha and Patterson, P.E. An experimental analysis of joint kinetics in the Tkatchev release move. ASME Bioengineering Conference, Beaver Creek, Colorado, June 28 - July 2, 1995.
67. Patterson, P.E. Development of an inexpensive environmental remote control system for a quadriplegic individual. Rocky Mountain Bioengineering Symposium, Copper Mountain, Colorado, April 9, 1995.
68. Patterson, P.E. and Chappell, D. Development of a Braille training device. Rocky Mountain Bioengineering Symposium, Kansas State University, April 23, 1994.
69. Patterson, P. and J. Eason. The effects of brace rigidity on protection of the MCL. 9th International Symposium on Biomechanics in Sports, July 1, 1991.
70. Varbaek, A. and P.E. Patterson. Muscle work, energy, and joint moment changes during extended treadmill running. Iowa Academy of Science, 102nd Annual Meeting, April 21, 1990.
71. Zhang, A. and P.E. Patterson. The transmissibility function as a technique for understanding the knee joint. Iowa Academy of Science, 102nd Annual Meeting, April 21, 1990.
72. Luster, Stephen H.; Patterson, Patrick E.; Cioffi, William G.; Mason, Jr., Arthur D.; McManus, William F., and Basil A. Pruitt, Jr. An evaluation device for quantifying joint stiffness in the burned hand. American Burn Association Annual Meeting, New Orleans, March 29 - April 1, 1989.
73. Patterson, P.E. and Katz, J.A. A sensory feedback system for grasping pressure in a myoelectric hand. IEEE Engineering in Medicine and Biology Society 10th Annual International Conference, New Orleans, November 5, 1988.
74. Lehmkuhl, Kim, Patterson, Patrick E. and Barta, Thomas A. A comparison of graphic versus tabular output in the analysis of simulation results. Society for Computer Simulation Eastern Simulation Conference, Orlando, Florida, April 18-21, 1988.

75. Patterson, P.E. and Ayers, G. A low-cost, voice-controlled computer system. International MONTECH '87 Conference, Montreal, Canada, November 11, 1987.
76. Patterson, P. E. and Zhang, A. Non-invasive waveform analysis of normal and osteoarthritic knees. The Association for the Advancement of Medical Instrumentation, Los Angeles, California, May 18, 1987.
77. Patterson, Patrick. The use of frequency analysis in determining the severity of athetosis and tremor. American Association for the Advancement of Science Annual Meeting, Philadelphia, Pennsylvania, May 27, 1986.
78. Patterson, Patrick. Use of the FFT to differentiate normal and pathological knees. Poster presentation at the University of Iowa College of Medicine Research Day XI, Iowa City, Iowa, May 8, 1986.
79. Patterson, Patrick E., The relationship between low back stress, muscle usage, and the appearance of transient load movement during manual lifting. The International Conference on Systems, Man, and Cybernetics, Tucson, Arizona, November 15, 1985.
80. Patterson, Patrick E. Feedback effects in positioning prosthetic limbs vs. natural. The 38th Annual Conference on Engineering in Medicine and Biology, Chicago, September 30, 1985.
81. Patterson, P.E. and Burger, C.P. Spectral changes during a fatiguing repetitive impact activity. Fourth International Symposium on Hand-Arm Vibration, Helsinki, Finland, May 6-8, 1985.
82. Patterson, Patrick E. An apparatus for measuring force and endurance characteristics under varying conditions. The Association for the Advancement of Medical Instrumentation Annual Meeting, Dallas, Texas, May 1983.
83. Patterson, Patrick E. The effects of augmented-concurrent feedback for natural and prosthetic limbs. American Alliance for Health, Physical Education, Recreation and Dance National Convention, Houston, Texas, April 24, 1982.

FUNDED PROJECTS

1. Patrick Patterson. "Human Risk to Catastrophic Error," Pantex, 2015 (\$25,269)
2. Farris J. and Patterson P. "A Systems Response to Safety," Anonymous Industry Sponsor, 2014 (\$48,858)
3. Beruvides, M., Simonton J., and Patterson P. "High Reliability Operations Research Project: Systems Dynamic and Economic Analysis Models for B&W Pantex Plant High Explosives Operations." Department of Defense, 2011-2012 (\$109, 441)
4. Jennifer A. Farris, Timothy I. Matis, Patrick E. Patterson. "B&W Pantex Site-Wide Safety Culture Survey." B&W Pantex, LLC, 2011-2012 (\$192,013).
5. Jennifer A. Farris, Timothy I. Matis, Patrick E. Patterson. "Assessing and Improving the Safety Culture at the Pantex Plant." National Science Foundation, Spring-Summer 2010 (\$102,764).
6. Patterson, Patrick. "Human Factors Engineering Training." B&W Pantex LLC, 2009-2010 (\$133,525).
7. Patterson, Patrick. "Using Assistive Technology to Improve Access to Healthcare in Rural West Texas." West Texas Rural EXPORT Center (NIH), March-August 2007 (\$21,975).
8. Min Jo, Jackman John, Patterson Patrick, and Sarah Ryan. "Citizen-Based Assessment and Improvement of E-Government Services for Small and Medium-Sized Communities in Midwestern States." Alfred P. Sloan Foundation, July 2005-June 2007 (\$45,000).
9. Patterson, Patrick and Gillette, Jason. Support Grant for the 42nd Annual Rocky Mountain Bioengineering Symposium, Whitaker Foundation, 2005 (\$4,500).
10. Berleant, Daniel, Patterson, Patrick, and Smith, Shana. "Web Site Usability, Phase I,"

- Invitrogen, January 15 – July 14, 2005 (\$34,000).
11. Patterson, Patrick. “IMSE Pacific Rim University Collaboration Visits.” Iowa State University College of Engineering IMPACT Program, March 25 – April 10, 2004 (\$17,000).
 12. Schwab, C, Freeman, S, Derrick, T, and Gillette, J. “Evaluation of Occupational Carrying Tasks for Farm Youth.” National Institute for Occupational Safety and Health, 2003-2006 (\$766,500 total award; Subcontract \$20,775).
 13. Bice, Andrew, Patterson, Patrick, and Yearns, Mary. “Development of a Universal Kitchen,” Department of Health and Human Services, US Administration on Aging, 2001-2004 (\$488,575).
 14. Nester, C., Howard, D., Ward, E., and Patterson, P. “Development of an Improved Biomechanical Model of the Foot,” United Kingdom Engineering and Physical Sciences Research Council, 2002-2004 (\$127,960).
 15. DeVries, WR and Patterson, PE. “2002 NSF Design, Service and Manufacturing Grantees and Research Conference,” San Juan, Puerto Rico; January 7-10, 2002, National Science Foundation, 2001-2002 (\$299,897).
 16. DeVries, WR and Patterson, PE. “Workshop: Civil Infrastructure and Manufacturing,” January 6-8, 2002, San Juan, Puerto Rico; National Science Foundation, 2001-2002 (\$74,551).
 17. DeVries, WR and Patterson, PE. “Workshop: NSF-European Community Nanomanufacturing and Processing,” January 5-7, 2002, San Juan, Puerto Rico; National Science Foundation, 2001-2002 (\$81,352).
 18. Peters, F. and Patterson, PE. “Ergonomic Improvements for Foundries,” Department of Energy, Idaho Operations Office, 2000-2002 (\$129,350).
 19. Peters, F. and Patterson, PE. “Industrial Support for Ergonomic Improvements for Foundries,” Several Companies, 2000-2002 (\$16,000).
 20. Patterson, Patrick. Support Grant for the 36th Annual Rocky Mountain Bioengineering Symposium, The Whitaker Foundation, 1999 (\$5,000).
 21. Ward, E., Smith, K., Patterson, P., and Cocheba, J. “Sequential release of the plantar fascia during the stance phase of gait,” Iowa Osteopathic Education Foundation, 1999-2001 (\$16,000).
 22. Ward, E., Patterson, P., and Cocheba, J. “Posterior tibial dysfunction: an in vivo dynamic cadaver study,” Iowa Osteopathic Education Foundation, 1999-2001 (\$4,000).
 23. Patterson, P.E. “Ergonomic Evaluation of NSK Corporation’s Manufacturing Processes,” 1997 (\$5,000).
 24. Patterson, P.E. “Development of a Moment of Inertia Measurement Device,” University of Osteopathic Medicine and Health Sciences, 1997 (\$1,500).
 25. Patterson, Patrick E. “Rehabilitation Technology Designs and Prototyping,” Woodward (Iowa) State Hospital, 1997-2006 (Total: \$659,800).
 26. Patterson, P.E. Principal Investigator, “Assistive Technology Design and Development,” Woodward (Iowa) State Hospital, \$1,500, 1993; renewals: 1994-2003 (Total \$16,500).
 27. Patterson, Patrick E. “Instructional Courseware Development,” ECSS Steering Committee, Iowa State University, 1994 (\$1,000).
 28. Patterson, Patrick E. “Development of a Lightweight Skate Sole and Alignment Device,” U.S. Olympic Foundation and the University of Osteopathic Medicine and Health Sciences, 1991 (\$6,000).
 29. Patterson, Patrick E. “Miniaturization of an Evaluation Device for MCP Stiffness of the Burned Hand,” Brooke Army Medical Center, 1989 (\$20,000).
 30. Patterson, Patrick E. “Stiffness Properties of Experimental Elite Figure Skates,” U.S. Olympic Foundation and the University of Osteopathic Medicine and Health Sciences, 1989 (\$3,000).
 31. Patterson, Patrick E. “Quantification of Dynamic Splint Forces on Metacarpophalangeal

- Function Recovery,” Brooke Army Medical Center, 1988 (\$20,000).
32. Patterson, Patrick E. Boeing Foundation Grant, Boeing Corporation, 1986 and 1987 (\$20,000 total).
33. Patterson, Patrick E. Faculty Grant, 3M Corporation, 1985 (\$10,000).

PATENTS

- Patterson, P. E. and Katz, J. A. Tactile Stimulus Receptor for a Hand Prosthesis (United States Patent 4,808,187)
- Patterson, P.E. and Girard, L. Ice Skate Blade Alignment Mechanism (United States Patent 5,137,290)

SEMINARS AND WORKSHOPS PRESENTED

1. B&W Pantex, Human Factors Engineering Training, a workshop in two parts: Parts I and II, (4 two-day workshops), Amarillo, TX, Fall 2014.
2. Gujarat Technological University, a workshop “Computational Intelligence Basics to Aid Medical Decision-making,” Ahmedabad, India, March 23 and 25, 2013.
3. B&W Pantex, Human Factors Engineering Training, a workshop in two parts: Parts I and II, (4 two-day workshops), Amarillo, TX, Fall 2013.
4. B&W Pantex, Human Factors Engineering Training, a workshop in two parts: Parts I and II, (4 two-day workshops), Amarillo, TX, Fall 2012.
5. B&W Pantex, Human Factors Engineering Training, a workshop in two parts: Parts I and II, (4 two-day workshops), Amarillo, TX, Fall 2011.
6. Society for Health Systems, a workshop “Identifying and Preventing Error in Healthcare Systems,” Orlando, FL, February 17, 2011.
7. Safety & Training Consultants, Inc., a workshop “Understanding Human Error and Your Safety Climate in the HRO Process,” Bakersfield, CA, February 10, 2011.
8. B&W Pantex, Human Factors Engineering Training, a workshop in two parts: Parts I and II, (4 two-day workshops), Amarillo, TX, Fall 2010.
9. B&W Pantex, Human Factors Engineering Training, a workshop in two parts: Part I, Fall, 2009 (8 two-day workshops); Part II, (7 two-day workshops), Amarillo, TX, Spring 2010.
10. Steel Founders Society of America Safety Committee, a workshop “Ergonomic Concepts for the Steel Foundry Industry,” Moline, IL, August 23, 2006.
11. Rocky Mountain Bioengineering Symposium, a workshop for participants, “Grant Writing for the Newly Independent Researcher,” Copper Mountain, CO, April 8, 2005.
12. Lennox Manufacturing Inc., a workshop for engineers, "Ergonomic Concepts for Tool, Equipment, and Process Design and Evaluation," Marshalltown, IA, February 22, 2002.
13. Lennox Manufacturing Inc., a workshop for floor supervisors and coaches, "Ergonomic Concepts for Job Improvement," Marshalltown, IA, February 20, 2002.
14. Steel Founders' Society of America, Member Workshop Series, “Ergonomic Awareness for Everyone,” Chicago, Illinois, October 2001, with Frank Peters.
15. Steel Founders Society of America, a workshop “Ergonomic Solutions- A Work Session,” Chicago, Illinois, March 8, 2001.
16. EMC Insurance Companies, a workshop “Ergonomic Evaluation of the Workplace,” Des Moines, Iowa, February 7-9, 2001.

17. Lennox Manufacturing Inc., a workshop "Ergonomic Concepts for Tool, Equipment, and Process Evaluation," Marshalltown, Iowa, August 8-9, 2000.
18. Steel Founders' Society of America , "Ergonomic Concepts for the Steel Foundry Industry," a workshop series presented in: Chicago, Illinois, June 29, 2000; Atlanta, Georgia, July 13, 2000; Allentown, Pennsylvania, July 18, 2000; Portland, Oregon, July 20, 2000.
19. Iowa Textile and Apparel Association, a workshop "Designing and Re-designing Jobs in the Textile Industry: Ergonomically and Productively," Des Moines, Iowa, April 20, 2000.
20. Hawkeye Rubber Company, a workshop "Time Study," Cedar Rapids, Iowa, April 4-6, 2000.
21. Iowa State University, a workshop "Ergonomics in the Office," Ames, Iowa, November 12, 1999.
22. Iowa State University, a workshop "Ergonomics in Manufacturing and Industry," Ames, Iowa, November 11, 1999.
23. Iowa Textile & Apparel Association, a workshop "Using Ergonomics in the Textile Industry," West Des Moines, April 22, 1999.
24. NSK-AKS Corporation, a workshop "Cumulative Trauma Problems and Work Design," Clarinda, Iowa, May 21, 1998.
25. NSK Corporation, a workshop "Carpal Tunnel Problems and Work Design," Clarinda, Iowa, April 9, 1998.
26. Iowa State University, a continuing education workshop "Essential Ergonomics- Fundamentals and Procedures," Ames, Iowa, May 22-24, 1996.
27. Maytag Corporation, a workshop "Ergonomic Fundamentals," Newton, Iowa, December 7 and December 14, 1995.
28. Iowa State University, a continuing education workshop, "Ergonomic Fundamentals- Analyzing and Designing Jobs in the Workplace," Ames, Iowa, May 31-June 1, 1995.
29. Agricultural Machinery Conference, a workshop "Introduction to Practical Ergonomics," Cedar Rapids, Iowa, May 1, 1995.
30. Square D Company, a workshop "Ergonomic Considerations in Light Assembly Work," Cedar Rapids, Iowa, April 28, 1994.
31. Southeastern Community College, a workshop "Ergonomic Analysis of the Workplace," Burlington, Iowa, July 22-23, 1993.
32. Rockwell International, a series of workshops for operators, supervisors, and upper management "Workplace Ergonomics," Fairfield, Iowa, during January 1992.
33. Rolscreen Company, a workshop "Developing an Ergonomics Program," Pella, Iowa, October 7, 1989.
34. Rockwell International, Collins Avionics Group, a workshop "Cumulative Trauma Injury Prevention in the Workplace," Mason City, Iowa, April 4, 1989.
35. J.I. Case Company, two workshops "Reducing Cumulative Trauma and Low Back Injuries," Burlington, Iowa, December 8 and 13, 1988.
36. Chapter 111, Institute of Industrial Engineers, a workshop "Ergonomics in the Workplace," Des Moines, Iowa, December 3, 1988.
37. Iowa State University, mini-workshop included in Work Design Seminar "Ergonomics in Work Design," Ames, Iowa, October 20, 1988.
38. Iowa State University, mini-workshop included in Work Design Seminar "Ergonomics in Work Design," October 18, 1987.
39. Ames City Employees, a workshop "Ergonomics in the Automated Workplace," Ames, Iowa, November 18, 1985.

TEACHING EXPERIENCE

Courses Taught

Texas Tech University

Graduate Courses

IE 5305	Cognitive Engineering (both on-campus and distance delivery)
IE 5306	Safety Engineering (both on-campus and distance delivery)
IE 5307	Loss Assessment and Control (both on-campus and distance delivery)
IE 5309	Human Factors in Engineering and Design (both on-campus and distance delivery)
IE 5371	Bioengineering Systems (both on-campus and distance delivery)

Undergraduate Courses

IE 3328	Manufacturing Systems Control
IE 4361	Engineering Design for People
IE 4363	Work and Product Safety Engineering

Specialty Course

Developed online course “Wind Power Safety Engineering” for University College, Texas Tech University

Iowa State University

Graduate Courses

IE 521	Biomechanics
IE 570	Systems Engineering and Project Management (both on-campus and distance delivery)
IE 572	Design and Evaluation of the Human Computer Interface (both on-campus and distance delivery)
IE 575	Advanced Ergonomic Analysis (both on-campus and distance delivery)
IE 576	Human Factors in Product Design (both on-campus and distance delivery)
IE 590	Special Topics - Ergonomics
IE 601	Research Basics and Communications
BME 520	Biomechanics
BME 579	Rehabilitation Technology
BME 590	Special Topics – Rehabilitation Engineering
BME 690B	Simulation
BME 690E	Information Processing

Undergraduate Courses

IE 250	Introduction to Industrial Engineering
IE 271	Applied Ergonomics and Work Design
IE 277	Applied Ergonomics
IE 304	Engineering Economy
IE 352	Hospital Management Engineering
IE 373	Operations Analysis
IE 375	Introductory Production Systems

IE 462 Industrial Systems Engineering
IE 476 Designing for the Worker in Industrial Systems
IE 490 Special Topics - Ergonomics
USt 321C Biomechanics: Comparison of Human and Animal Locomotion

Iowa State University – University of Iowa Dual Degree Program (MS and MBA)

IE 576 Human Factors in Product Design (course variation developed for this audience; Spring 2003, Fall 2003, and Spring 2008)
IE 570 Systems Engineering and Project Management (course variation developed for this audience; Spring 2005)

Des Moines University (formerly the University of Osteopathic Medicine and Health Science), Des Moines, Iowa

12211 Basic Biomechanics (Fall 1993 and Fall 1994)

Texas A&M University

PHE 424 Kinesiology
PHE 429 Adaptive Physical Education
IEN 434 Engineering Biomechanics