

**PROFESSIONAL VITA**  
**BARRY T. BATES**

PROFESSOR EMERITUS  
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**EDUCATION**

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<u>INSTITUTION</u>	<u>LOCATION</u>	<u>DATE</u>	<u>DEGREE</u>
Princeton University	Princeton, NJ	1960	B.S.E.
East Stroudsburg State College	East Stroudsburg, PA	1970	M.Ed.
Indiana University	Bloomington, IN	1973	Ph.D.

\*Undergraduate Major Area: Engineering

\*Graduate Major Area: Human Performance: Biomechanics/Kinesiology

\*Graduate Minor Area: Motor Learning, Computer Science, Statistics and Design

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**PROFESSIONAL EXPERIENCE**

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<u>DATES</u>	<u>POSITION</u>	<u>INSTITUTION</u>
1997-	Professor Emeritus	University of Oregon Eugene, Oregon
1997-	President	Human Performance & Wellness, Inc. Eugene, Oregon
1985-1997	Professor Director: Biomechanics Laboratory	University of Oregon Eugene, Oregon
1991-1996	Head: Dept. of Exercise & Movement Science	University of Oregon Eugene, Oregon

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**PROFESSIONAL EXPERIENCE (cont.)**

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1984-	President	BioDynamics Foundation Eugene, Oregon
1984-1990	Vice President Senior Scientist	Bio-Dynamics Corporation Eugene, Oregon
1982-1984	Founder, President Senior Scientist	Bio-Dynamics Corporation Eugene, Oregon
1979-1985	Associate Professor Director: Biomechanics Lab	University of Oregon Eugene, Oregon
1974-1979	Assistant Professor Director: Biomechanics Lab	University of Oregon Eugene, Oregon
1973-1974	Assistant Professor	University of Massachusetts Amherst, Massachusetts
1970-1973	Graduate Student	Indiana University Bloomington, Indiana
1968-1970	Director of Athletics	Blair Academy Blairstown, New Jersey
1964-1970	Teacher of Mathematics, Head Coach, Football	Blair Academy Blairstown, New Jersey
1963-1964	Teacher of Mathematics, Assistant Coach, Football and Wrestling	Randor High School Wayne, Pennsylvania
1960-1963	Officer, U.S. Navy	U.S. Navy

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## **PROFESSIONAL ORGANIZATIONS**

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American Academy of Kinesiology and Physical Education  
American Alliance for Health, Physical Education, Recreation and Dance  
American Board of Forensic Examiners  
American College of Sports Medicine  
American Society for Testing and Materials  
American Society of Biomechanics  
Human Factors and Ergonomics Society  
International Society of Biomechanics  
International Society for Biomechanics in Sports  
Society of Automotive Engineers

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## **SELECTED HONORS AND PROFESSIONAL RECOGNITION**

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Visiting Professor, Swiss Federal Institute of Technology, Zurich, Switzerland, September, 1979.

Member, American College of Sports Medicine Committee on International Relations  
Delegation to the Soviet Union, Moscow, U.S.S.R., October, 1979.

Invited Lecturer, Division of Sports Medicine, American Academy of Orthopedic Surgeons,  
"Biomechanics of Running - New Concepts", San Francisco, California, 1979.

Invited Lecturer, American Orthopedic Foot Society, Inc., Twelfth Annual Meeting,  
Biomechanics of the Foot and Shoe Selection", New Orleans, Louisiana, 1982.

Keynote Address, International Symposium of Biomechanics Aspects of Sports Protective  
Equipment, "Testing and Evaluation of Running Shoes", Waterloo, Ontario, Canada,  
1983.

Recipient, Runner's World "Sportsmedicine All-Star Team", One of 25 international sports  
medicine experts named by peers for "contributions to the physical and emotional health  
of elite athletes and recreational runners, and to rapidly advancing sports medicine  
and knowledge", 1984.

Invited Participant, NASA Glove Workshop, sponsored by NASA Technology Applications  
Team, Houston, Texas, 1985.

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## **SELECTED HONORS AND PROFESSIONAL RECOGNITION (cont.)**

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Elected Member, American Academy of Kinesiology and Physical Education, 1986.

Visiting Professor, Beijing Institute of Physical Education, Beijing, People's Republic of China, July, 1988.

Lifetime Member, President's Associates, University of Oregon, 1992.

Keynote Speaker, International Society of Biomechanics in Sports, "Individual Accommodation Strategies to Running and Landing Impact Forces", Amherst, Massachusetts, 1993.

Invited Lecturer, Biomechanics Academy Symposium, "Lower Extremity Function: Injury and Performance Factors", Portland, Oregon, 1995.

Invited Speaker, International Conference on Women, "Lower Extremity Function During Running and Landing", Alexandria, Egypt, 1995.

Invited Speaker, International Conference on Women, "Landing Models: Evaluation of Elite Volleyball Players", Alexandria, Egypt, 1995.

Invited Speaker, American College of Sports Medicine, "Biomechanics of Running", Cincinnati, Ohio, 1996.

Invited Speaker, American College of Sports Medicine, "The Value of the Individual in the Research Paradigm: Single Subject Methodology", Cincinnati, Ohio, 1996.

Invited Speaker, Eighth National Measurement and Evaluation Symposium, "Experimental and Statistical Design Issues in Human Movement Research", Corvallis, Oregon, 1996.

Selected as member of ASICS International Sport Science and Sports Medicine Forum, 1996.

Fellow, American College of Forensic Examiners, 1997.

Recipient, "*Ruth B. Glassow Honor Award*", For Contributions in Applied Biomechanics Research, Biomechanics Academy, Boston, Massachusetts, 1999.

Keynote Speaker, Australasian Podiatry Conference, Methven, New Zealand, 1999.

Invited Participant, Oregon State Bar Convention, "Using Expert Witnesses to Win", Seaside, Oregon, 1999.

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**SELECTED HONORS AND PROFESSIONAL RECOGNITION (cont.)**

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Invited Scholar Lecture, Texas Tech University, “The Hows and Whys of Lower Extremity Injury”, Lubbock, Texas, 2001.

Scholar Lecturer, University of Nevada, Las Vegas, “Running Injury Models, Las Vegas, Nevada, 2002.

Hall of Fame Inductee, Muhlenberg High School, Laureldale, PA, 2002.

Invited Speaker, University of Massachusetts-Amherst, “Founders’ Day Award Recipient: J. Hamill”, Amherst, Massachusetts, 2005.

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## GRANTS

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Developed the Biomechanics Laboratory and co-developed the Biomechanics/Sports Medicine Laboratory. Organized an interdisciplinary research team and was primary administrator for all laboratory grants identified below.

Bates, B.T., Haven B.H. and Ward P. Women's U.S. Olympic Track and Field Research Project. Indiana University, A.I.A.W. and U.S. Olympic Committee, \$5,000, Summer, 1972.

Bates, B.T. and Osternig, L.R. Kinematic and Kinetic Analysis of the Foot During the Support Phase of Running. Faculty Research Grant, University of Oregon, \$1,750, Academic Year, 1975-76.

Bates, B.T., James, S.L. and Osternig, L.R. The Development of Dynamic Objective Tests for the Evaluation of Joint Function During Normal and Abnormal Walking and Running. Northwest Area Foundation, \$60,000, June, 1976-June 1978.

Bates, B.T., James, S.L. and Osternig, L.R. The Development of Dynamic Objective Tests for the Evaluation of Joint Function During Normal and Abnormal Walking and Running. Northwest Area Foundation, \$71,264, January, 1979-December, 1980.

Bates, B.T., James, S.L. and Osternig, L.R. Equipment Grant to Allow for Greater Indepth Studies Related to Lower Extremity Function. University of Oregon Bio-Med Funds, \$3,000, Spring, 1978.

Bates, B.T., James, S.L. and Osternig, L.R. Equipment Grant to Allow for Greater Indepth Studies Related to Lower Extremity Function. Prefontaine Foundation, \$2,500, September, 1978.

Bates, B.T. Equipment Grant to Expand General Laboratory Research Function. Biomechanical Systems Analysis, \$15,000, Summer, 1979.

Bates, B.T. Travel Grant, Osaga/Kid Power, \$5,000, 1980-81.

Bates, B.T. Equipment Grant to Expand General Laboratory Function. Bio-Dynamics Research and Development Corporation, \$10,000, Summer, 1981.

Bates, B.T. Educational Equipment Grant to Expand General Laboratory Research Function. Tektronix, Inc., \$8,650, Summer, 1981.

Bates, B.T. Equipment Grant to Expand General Laboratory Research Function. TransEra, \$4,450, Summer, 1981.

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Bates, B.T. Travel Grant, Osaga/Kid Power, \$5,000, 1981-82.

Bates, B.T. Equipment Grant to Expand General Laboratory Research Function. Bio-Dynamics Research and Development Corporation, \$6,000, Spring/Summer, 1982.

Bates, B.T. General Operating Grant for Biomechanics Laboratory, ASICS Tiger Corporation, \$5,000, 1982-84.

Bates, B.T. Travel Grant to Support Professional Travel. ASICS Tiger Corporation, \$10,000, 1982-84.

Bates, B.T. Model Biomechanics Laboratory Project in conjunction with the Olympic Scientific Congress, Bio-Dynamics Foundation and ten equipment manufacturers, \$250,000, 1984.

Bates, B.T. General Operating Grant for Biomechanics Laboratory. ASICS Tiger Corporation, \$2,500, 1984-85.

Bates, B.T. Travel Grant to Support Professional Travel. ASICS Tiger Corporation, \$5,000, 1984-85.

Bates, B.T. Graduate Research Assistant Grant. B.T. Bates, \$4,500, 1984-85.

Bates, B.T. Basic Research Grant. Langer Biomechanics, \$8,000, 1984-86.

Bates, B.T. Computer Software Grant. Bio-Dynamics Foundation, \$4,400, 1985.

Bates, B.T. General Operating Grant for Biomechanics Laboratory. ASICS Tiger Corporation, \$2,500, 1985-86.

Bates, B.T. Travel Grant to Support Professional Travel. ASICS Tiger Corporation, \$5,000, 1985-86.

Bates, B.T. Graduate Research Assistance Grant. B.T. Bates, \$5,500, 1985-86.

Bates, B.T. Travel Grant to Support Professional Travel. ASICS Tiger Corporation, \$3,000, 1986-87.

Bates, B.T. Basic Research Grant. Langer Biomechanics, \$5,000, 1986-87.

Bates, B.T. Graduate Research Assistance Grant. B.T. Bates, \$11,600, 1986-88.

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Bates, B.T. General Operating Grant for Biomechanics Laboratory. Bio-Dynamics Foundation, \$1,000, 1986.

Bates, B.T. General Operating Grant for Biomechanics Laboratory. Biomechanical Systems Analysis, \$1,000, 1986.

Bates, B.T. General Operating Grant for Biomechanics Laboratory. Biomechanical Systems Analysis, \$2,000, 1987.

Bates, B.T. Graduate Research Assistance Grant. B.T. Bates, \$11,600, 1988-90.

Bates, B.T. Travel Grant to Support Professional Travel. ASICS Tiger Corporation, \$3,000, 1987-88.

Bates, B.T. and Dufek, J.S. Biomechanical Characteristics of Lower Extremity Function During Walking, Running and Transition. The Rockport Walking Institute, \$2,500, 1988.

Bates, B.T. et al, (Principal Investigator). Data Acquisition, Analysis and Display System. Computer Equipment Grant, Hedco Foundation, \$47,539, 1988.

Bates, B.T. et al, (Principal Investigator). Equipment Grant: Computer, University of Oregon Bio-Med Funds, \$6,600, 1988.

Bates, B.T. and Robertson, R.N. Equipment Grant. Novell Education Foundation, \$4,800, January, 1989.

Bates, B.T. et al, (Principal Investigator). Aging and Transfer of Training: An Exercise Intervention. NIA: Health and Effective Function in Middle and Later Years, \$118,811 (2 years), January, 1989-December, 1990.

Bates, B.T. Travel Grant to Support Professional Travel, ASICS Tiger Corporation, \$4000, 1989-90.

Bates, B.T. Graduate Research Assistance Grant. B.T. Bates, \$5,800, 1990-91.

Bates, B.T. Laboratory Operating Funds, ASICS Tiger Corporation, \$15,000, 1990.

Bates, B.T. Equipment Grant, Ariel Life Systems, \$50,000, 1990.

Bates, B.T. Equipment Grant, ASICS Tiger Corporation, \$74,500, 1990.

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Bates, B.T. Equipment Grant, Biomechanical Systems Analysis, \$9,900, 1990.

Bates, B.T. Equipment Grant, Exeter Research, \$4,000, 1990.

Bates, B.T. Equipment Grant, Motion Analysis Corporation, \$10,000, 1990.

Bates, B.T. Equipment Grant, University of Oregon Graduate School, \$10,000, 1990.

Bates, B.T. Equipment Grant, Precor USA, \$9,500, 1991.

Bates, B.T. Software Grant, Motion Analysis Corporation, \$4,500, 1991.

Bates, B.T. and Dufek, J.S. Biomechanical analyses of barcode scanning, Spectra-Physics, Inc., \$12,750, 1991-92.

Dufek, J.S. and Bates, B.T. Equipment Grant, Ariel Life Systems, Inc., \$73,015, 1991-92.

Bates, B.T. and Dufek, J.S. Qualitative analyses of checker and checkstand performance, Spectra-Physics, Inc., \$1,600, 1992.

Bates, B.T. and Dufek, J.S. Equipment Grant, Penny & Giles, Inc. and BioDynamics Foundation, \$3200, 1992.

Bates, B.T. and Dufek, J.S. Equipment Grant, Ariel Life Systems, Inc., \$75,000, 1992.

Bates, B.T. and Dufek, J.S. Equipment Grant, Tekscan, \$2000, 1992.

Bates, B.T. and Dufek, J.S. Equipment evaluation project, Precor USA and BioDynamics Foundation, \$15,000, 1992.

Bates, B.T. Laboratory Operating Funds, ASICS Tiger Corporation, \$2,000, 1992.

Bates, B.T. and Dufek, J.S. General Operating Grant for Biomechanics Laboratory. Biomechanical Systems Analysis, \$4,000, 1992.

Bates, B.T. and Dufek, J.S. Equipment Grant, Tekscan, Inc., \$17,500, 1992.

Bates, B.T. Laboratory Operating Funds, ASICS Tiger Corporation, \$1,500, 1993.

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Bates, B.T. and Dufek, J.S. General Operating Grant for Biomechanics Laboratory. Biomechanical Systems Analysis, \$3,000, 1993.

Bates, B.T. General Operating Grant for Biomechanics Laboratory. BioDynamics Foundation, \$3,000, 1994.

Bates, B.T. General Operating Grant for Biomechanics Laboratory. BioDynamics Foundation, \$1,000, 1995.

Bates, B.T. General Operating Grant for Biomechanics Laboratory. BioDynamics Foundation, \$1,000, 1996.

Bates, B.T. Equipment Grant, Teem 100 Oxygen Analyzer, BioDynamics Foundation, \$9,500, 1996.

Bates, B.T. and BioDynamics Foundation. Real value of equipment donated to the University of Oregon upon my retirement, \$57,500, 1996.

Dufek, J.S. and Bates, B.T. Footwear evaluation projects, Easy Spirit/LMPM, Inc. and Human Performance & Wellness, Inc., 1997-1998, \$25,000.

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## PUBLICATIONS

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Bates, B.T. (1973). Development of a computer program utilizing film data. JOPER, 44(2), pp. 65-66.

Bates, B.T. (1973). Film analysis with a computer assist. Track Technique, 54, pp. 1725-1726.

Bates, B.T. and Haven, B.H. (1973). An analysis of the mechanics of highly skilled female runners. Mechanics and Sport, J.L. Bluestein (Ed.). New York, AMSE, 4, pp. 237-245.

Bates, B.T. (1974). The fourth international seminar on biomechanics. JOPER, 45(2), pp. 69-70.

Bates, B.T. and Haven, B.H. (1974). Effects of fatigue on the mechanical characteristics of highly skilled female runners. Biomechanics IV, R.C. Nelson and C.A. Morehouse (Eds.). Baltimore, University Park Press, pp. 121-125.

Cooper, J.M., Bates, B.T., Bedi, J. and Scheichenzuber, H.J., Jr. (1974). Kinematic and kineticanalysis of the golf swing. Biomechanics IV, R.C. Nelson and C.A. Morehouse (Eds.). Baltimore, University Press, pp. 298-305.

Bates, B.T. (1976). The solution of projectile problems. JOPER, 47(8), pp. 64-66.

Bates, B.T. (1977). Scientific basis of human movement. JOPER, 48(10), pp. 68-74.

Bates, B.T., James, S.L. and Osternig, L.R. (1977). Fatigue effects in running. Journal of Motor Behaviour, 9(3), pp. 203-207.

Bates, B.T. and Miller, D.I. (1977). 35mm slides for biomechanical analysis. Kinesiology: A National Conference on Teaching, C.J. Dillman and R.J. Sears (Eds.). University of Illinois at Urbana-Champaign Press, pp. 213-225.

Haven, B.H., Wilkerson, J.D. and Bates, B.T. (1977). A method for minimizing perspective error. JOPER, 48(4), p. 74-75.

Osternig, L.R., Bates, B.T. and James, S.L. (1977). Isokinetic and isometric torque force relationships. Archives of Physical Medicine and Rehabilitation, 5(6), pp. 254-257.

Bates, B.T., James, S.L. and Osternig, L.R. (1978). Foot function during the support phase of running. Running, 3(4), pp. 24-30.

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## PUBLICATIONS - Page 2

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Bates, B.T., Osternig, L.R., Mason, B.R. and James, S.L. (1978). Lower extremity function during the support phase of running. Biomechanics VI-B, E. Asmussen and K. Jorgensen (Eds.). Baltimore, University Park Press, pp. 30-39.

James, S.L., Bates, B.T. and Osternig, L.R. (1978). Injuries to runners. American Journal of Sports Medicine, 6(2), pp. 40-49.

Osternig, L.R., Bates, B.T., James, S.L. and Larson, R.L. (1978). Rotary mechanics after pes anserinus transplant. American Journal of Sports Medicine, 6(4), pp. 173-179.

Osternig, L.R., Bates, B.T., James, S.L. and Larson, L.R. (1978). A method for assessment of knee joint stabilizers before and after surgery. Biomechanics VI-A, E. Asmussen and K. Jorgensen (Eds.). Baltimore, University Park Press, p. 398.

Bates, B.T., James, S.L. and Osternig, L.R. (1979). Foot orthotic devices to modify selected aspects of lower extremity mechanics. American Journal of Sports Medicine, 7(6), pp. 338-342.

Bates, B.T., James, S.L. Osternig, L.R. and Mason, B.R. (1979). Functional variability of the lower extremity during the support phase of running. Medicine and Science in Sports, 11(4), pp. 328-331.

Bates, B.T., James, S.L., Osternig, L.R. and Mason, B.R. (1979). Variations of velocity within the support phase of running. Science in Athletics, J. Terauds and G.C. Dales (Eds.). Del Mar: Academic Publishers, pp. 51-59.

Osternig, L.R., Bates, B.T., James, S.L. and Jones, C.T. (1979). Knee rotation torque patterns in healthy subjects. Science in Sports, J. Terauds and G.C. Dales (Eds.). Del Mar: Academic Publishers.

Bates, B.T. (1980). Functional evaluation of footwear. Proceedings: Big Ten C.I.C. Symposium of Biomechanics, J.M. Cooper and B. Haven (Eds.). Indiana State Board of Health, pp. 23-32.

Bates, B.T., James, S.L., Osternig, L.R. and Sawhill, J.A. (1980). Design of running shoes. Proceedings of the International Conference on Medical Devices and Sports Equipment, Century 2- Emerging Technology Conferences, T.E. Shoup and J.G. Thacker (Eds.). New York: American Society of Mechanical Engineers, pp. 75-79.

Bates, B.T., Sawhill, J.A. and Hamill, J. (1980). Dynamic running shoe evaluation. Proceedings of the Special Conference of the Canadian Society for Biomechanics, Human Locomotion I. London, Ontario, Canada: Canadian Society for Biomechanics, pp. 122-123.

Osternig, L.R., Bates, B.T. and James, S.L. (1980). Patterns of tibial rotary torque in knees of healthy subjects. Medicine and Science in Sports, 12(3), pp. 195-199.

Bates, B.T., James, S.L., Osternig, L.R. and Sawhill, J.A. (1981). Effects of running shoes on ground reaction forces. Biomechanics VII-B, A. Morecki, K. Fedelus, K. Kedziour, and A. Wit (Eds.). Baltimore, University Park Press, pp. 226-233.

McIntyre, D.R. and Bates, B.T. (1981). The use of capacitive touch sensors for temporal measurements. Research Quarterly for Exercise and Sport, 52(4), pp. 512-517.

Osternig, L.R., Bates, B.T. and James, S.L. (1981). Post-surgical mechanics of knee rotation. Biomechanics VII-B, A. Morecki, K. Fedelus, K. Kedziour and A. Wit (Eds.). Baltimore, University Park Press, pp. 601-605.

Osternig, L.R., Bates, B.T., Tseng, Y.L. and James, S.L. (1981). Relationships between tibial rotary torque and knee flexion/extension following tendon transplant surgery. Archives of Physical Medicine and Rehabilitation, 62(8), pp. 381-385.

Bates, B.T., Francis, P.R. and Kinoshita, H. (1982). Functional capabilities of runners having extreme foot types. Human Locomotion II. Proceedings of the Second Annual Conference of the Canadian Society for Biomechanics. CSB, Kingston, Ontario, Canada, pp. 98-99.

Hamill, J., Bates, B.T. and White, C.A. (1982). Evaluation of foot orthotic appliances using ground reaction force data. Human Locomotion II, Proceedings of the Second Annual Conference of the Canadian Society for Biomechanics. CSB, Kingston, Ontario, Canada, pp. 74-75.

Kinoshita, H., Bates, B.T. and Francis, P.R. (1982). Effects of two load carrying systems on selected kinematic gait parameters. Human Locomotion II, Proceedings of the Second Annual Conference of the Canadian Society for Biomechanics. CSB, Kingston, Ontario, Canada, pp. 82-83.

Knutzen, K.M., Bates, B.T. and Lander, J. (1982). Knee brace influences on the ground reaction forces during overground running. Human Locomotion II, Proceedings of the Second Annual Conference of the Canadian Society for Biomechanics. CSB, Kingston, Ontario, Canada, pp. 72-73.

Nolan, G.N. and Bates, B.T. (1982). A biomechanical analysis of the effects of two paddle types on performance in North American canoe racing. Research Quarterly for Exercise and Sport, 53(1), pp. 50-57.

Osternig, L.R., Sawhill, J.A., Bates, B.T. and Hamill, J. (1982). A method for rapid collection and processing of isokinetic data. Research Quarterly for Exercise and Sport, 53(4), pp. 252-256.

Bates, B.T., DeVita, P. and Kinoshita, H. (1983). The effect of intra-individual variability on sample size. Proceedings of the International Symposium on Biomechanical Aspects of Sport Shoes and Playing Surfaces, B.M. Nigg and B.A. Kerr (Eds.). The University of Calgary, Canada, pp. 191-198.

Bates, B.T., James, S.L. Osternig, L.R. and Sawhill, J.A. (1983). An assessment of subject variability, subject-shoe interaction, and the evaluation of running shoes using ground reaction force data. Journal of Biomechanics, 16(3), pp. 181-191.

Bates, B.T., Osternig, L.R., Sawhill, J.A. and Hamill, J. (1983). Identification of critical variables describing ground reaction forces during running. Biomechanics VIII-B, H. Matsui and K. Kobayashi (Eds.). Champaign, Illinois: Human Kinetics Publishers, pp. 635-640.

Hamill, J., Bates, B.T. and Knutzen, K.M. (1983). Ground reaction force symmetry during walking and running. Medicine and Science in Sports and Exercise, 15(2), p. 170.

Hamill, J., Bates, B.T., Knutzen, K.M. and Sawhill, J.A. (1983). Variations in ground reaction force parameters at different running speeds. Human Movement Science, 2, pp. 47-56.

Kinoshita, H. and Bates, B.T. (1983). Effects of two different load carrying systems on ground reaction forces during walking. Biomechanics VIII-A, H. Matsui and K. Kobayashi (Eds.). Champaign, Illinois: Human Kinetics Publishers, pp. 574-581.

Knutzen, K.M., Bates, B.T. and Hamill, J. (1983). Electrogoniometry of post surgical knee bracing in running. American Journal of Physical Medicine, 62(4), pp. 172-181.

Osternig, L.R., Sawhill, J.A., Bates, B.T. and Hamill, J. (1983). Function of limb speed on torque patterns of antagonist muscles. Biomechanics VIII-A, H. Matsui and K. Kobayashi (Eds.). Champaign, Illinois: Human Kinetics Publishers, pp. 251-257.

Bates, B.T., DeVita, P. and Lander, J.E. (1984). The evaluation of foot function using two measurement systems. Human Locomotion III. Proceedings of the Biennial Conference of the Canadian Society for Biomechanics, CSB, Winnipeg, Manitoba, Canada, pp. 83-84.

Bates, B.T., DeVita, P. and Lander, J.E. (1984). Reliability of ground reaction force data. Human Locomotion III. Proceedings of the Biennial Conference of the Canadian Society for Biomechanics, CSB, Winnipeg, Manitoba, Canada, pp. 77-78.

Knutzen, K.M., Bates, B.T. and Hamill, J. (1984). Knee brace influences on the tibial rotation and torque patterns of the surgical limb. The Journal of Orthopaedic and Sports Physical Therapy, 6(2), pp. 116-122.

Bates, B.T. (1985). Testing and evaluation of running shoes. Biomechanics IX-B, D.A. Winter, R.W. Norman, R.P. Wells, K.C. Hayes and A.E. Patla (Eds.). Champaign, Illinois: Human Kinetics Publishers, pp. 128-132.

Bates, B.T. and Lander, J.E. (1985). Variability assessment of a sub-maximal skill for accuracy. Biomechanics IX-B, D.A. Winter, R.W. Norman, R.P. Wells, K.C. Hayes and A.E. Patla (Eds.). Champaign, Illinois: Human Kinetics Publishers, pp. 443-447.

Hamill, J., Knutzen, K.M. and Bates, B.T. (1985). Ambulatory consistency of the visually impaired. Biomechanics IX-A, D.A. Winter, R.W. Norman, R.P. Wells, K.C. Hayes and A.E. Patla (Eds.). Champaign, Illinois: Human Kinetics Publishers, pp. 570-574.

Kinoshita, H., Bates, B.T. and DeVita, P. (1985). Inter-trial variability for selected running gait parameters. Biomechanics IX-A, D.A. Winter, R.W. Norman, R.P. Wells, K.C. Hayes and A.E. Patla (Eds.). Champaign, Illinois: Human Kinetics Publishers, pp. 499-502.

Knutzen, K.M., Hamill, J. and Bates, B.T. (1985). Ambulatory characteristics of the visual disabled. Human Movement Science, 4, pp. 55-66.

Lander, J.E., Bates, B.T., Sawhill, J.A. and Hamill, J. (1985). A comparison between free-weight and isokinetic bench pressing. Medicine and Science in Sports and Exercise, 17(3), pp. 344-353.

Bates, B.T., Hamill, J. and DeVita, P. (1986). The effects of additional load on impact force. Human Locomotion IV, Proceedings of the Biennial Conference of the Canadian Society for Biomechanics, CSB, Montreal, Quebec, Canada, pp. 215-216.

Bates, B.T. and McCaw, S.T. (1986). A comparison between forward and backward locomotion. Human Locomotion IV, Proceedings of the Biennial Conference of the Canadian Society for Biomechanics, CSB, Montreal, Quebec, Canada, pp. 307-308.

Bates, B.T., Morrison, E. and Hamill, J. (1986). Differences between forward and backward running. Proceedings: The 1984 Olympic Scientific Congress, M. Adrian and H. Deutsch (Eds.). Eugene, Oregon: University of Oregon Microform Publications, pp. 127-135.

Hamill, J., Bates, B.T., Ricard, M.D., and Miller, M.K. (1986). Evaluation of shoe-orthotic interactions using an in-shoe pressure sensor system. Human Locomotion IV, Proceedings of the Biennial Conference of the Canadian Society for Biomechanics, CSB, Montreal, Quebec, Canada, pp. 195-196.

Hamill, J., Knutzen, K.M., Bates, B.T. and Kirkpatrick, G. (1986). Evaluation of two ankle appliances using ground reaction force data. Journal of Orthopedic and Sports Physical Therapy, 7(5), pp. 244-249.

Kinoshita, H., Bates, B.T. and DeVita, P. (1986). Orthogonal ground reaction force component interactions. Proceedings: The 1984 Olympic Scientific Congress, M. Adrian and H. Deutsch (Eds.). Eugene, Oregon: University of Oregon Microform Publications, pp. 299-304.

Knutzen, K.M., Schot, P. and Bates, B.T. (1986). Knee brace influences on the support phase of running. Human Locomotion IV, Proceedings of the Biennial Conference of the Canadian Society for Biomechanics, CSB, Montreal, Quebec, Canada, pp. 179-180.

Lander, J.E., Bates, B.T. and DeVita, P. (1986). Biomechanics of the squat exercise using a modified center of mass bar. Medicine and Science in Sports and Exercise, 18(4), pp. 469-478.

Bates, B.T., Simpson, K.J. and Panzer, V.P. (1987). The evaluation of subject, shoe, and movement variability. B.Jonsson (Ed.). Biomechanics X-B, (pp. 909-912). Champaign, Illinois: Human Kinetics.

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Bates, B.T. Dynamic data evaluation. Invited Lecturer, North Texas State University, Denton, Texas, October, 1981.

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Bates, B.T. The use of computer graphics in biomechanics research. Third Annual Pacific Northwest Computer Graphics Conference, Eugene, Oregon, October, 1984.

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Knutzen, K.M. and Bates, B.T. Kinetic parameters as predictors of knee joint rotation. International Society for Biomechanics in Sport, Missoula, Montana, July, 1988.

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McCaw, S.T., Bates, B.T. and Weiss, M.R. Within subject asymmetry in ground reaction force data evaluated using discriminant analysis. Fourth Annual East Coast Clinical Gait Laboratory Conference, University Park, Pennsylvania, October, 1988.

Bates, B.T. Assessing group and individual performance responses. American College of Sports Medicine: Northwest Chapter Annual Meeting, Blaine, Washington, February, 1989.

Dufek, J.S. and Bates, B.T. Impact forces during landings. AAHPERD National Convention, Boston, Massachusetts, April, 1989.

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Dufek, J.S. and Bates, B.T. Models incorporating height, distance and landing technique to predict impact forces. International Society of Biomechanics, Los Angeles, California, June, 1989.

Hamill, J., Bates, B.T. and Knutzen, K.M. Arch index and kinematic lower extremity measures. International Society of Biomechanics, Los Angeles, California, June, 1989.

Hilby, D.L. and Bates, B.T. A biomechanical comparison between two shotputting techniques. International Society of Biomechanics, Los Angeles, California, June, 1989.

McCaw, S.T., Bates, B.T. and Singer, K.M. The concordance between mild leg length inequality and ground reaction force data asymmetry during running. International Society of Biomechanics, Los Angeles, California, June, 1989.

Schot, P.K., Dufek, J.S. and Bates, B.T. Lower extremity moments of force during three gait conditions. International Society of Biomechanics, Los Angeles, California, June, 1989.

Simpson, K.J. and Bates, B.T. The effect of running speed on lower extremity joint moments during the support phase. International Society of Biomechanics, Los Angeles, California, June, 1989.

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Dufek, J.S., Schot, P.K. and Bates, B.T. Joint mechanical powers of force during walking and running. American Society of Biomechanics, Burlington, Vermont, August, 1989.

Robertson, R.N., Devita, P. and Bates, B.T. Biomechanical control parameters in a precise horizontal standing jump: Joint kinetic-EMG relationships. American Society of Biomechanics, Burlington, Vermont, August, 1989.

Dufek, J.S., Schot, P.K. and Bates, B.T. Lower extremity moments of force during landings. American College of Sports Medicine Annual Conference, Salt Lake City, Utah, May, 1990.

McCaw, S.T. and Bates, B.T. Dynamic asymmetry in the lower extremities during running. American College of Sports Medicine Annual Conference, Salt Lake City, Utah, May, 1990.

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Dufek, J.S. and Bates, B.T. Regression models for predicting impact forces and knee joint moments and powers during landings. Human Locomotion VI, Canadian Society for Biomechanics, Quebec City, Quebec, Canada, August, 1990.

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Caster, B.L. and Bates, B.T. A ground reaction force model to assess mechanical and neuromuscular response components to added load during drop landings. AAHPERD National Convention, San Francisco, California, April, 1991.

Chen, F.C. and Bates, B.T. A comparison of massage and acupressure treatments on muscle relaxation. AAHPERD National Convention, San Francisco, California, April, 1991.

Bates, B.T. The need for an interdisciplinary curriculum. Third National Symposium on Teaching Kinesiology and Biomechanics in Sports, Ames, Iowa, July, 1991.

Caster, B.L., Derrick, T.D. and Bates, B.T. Temporal relationships between knee flexion and pronation in running: Assessment of pronation event selection. American Society of Biomechanics, Phoenix, Arizona, 1991.

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Griffin, L.A., Dufek, J.S. and Bates, B.T. Methods and instrumentation in water research. XIIIth International Congress on Biomechanics, Perth, Australia, December 1991.

Davis, H.P., James, R. and Bates, B.T. The effects of shoes on maximum pronation and knee flexion. Northwest Regional American College of Sports Medicine Annual Meeting, Seattle, Washington, February 1992.

Stergiou, N.A., Blanke, D., Thigpen, K.L. and Bates, B.T. Running shoes versus barefoot running: A videographical analysis. Northwest Regional American College of Sports Medicine Annual Meeting, Seattle, Washington, February 1992.

Ingram, S.G. and Bates, B.T. Evaluation of regression modeling to predict ground reaction forces in sprinting. American College of Sports Medicine Annual Conference, Dallas, Texas, May 1992.

Griffin, L.A., Dufek, J.S. and Bates, B.T. A biomechanical comparison of running between media. Xth International Symposium of Biomechanics in Sports, Milan, Italy, June 1992.

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Chen, F.C., Bates, B.T. and Dufek, J.S. Using the strike index in gait analysis. East Coast Gait Conference, Rochester, Minnesota, May 1993.

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Derrick, T.R. and Bates, B.T. Evaluation of temporal similarity using correlational techniques. XIVth International Society of Biomechanics Congress, Paris, France, July 1993.

Bates, B.T. Clinical quantification: Use of foot pressures to evaluate the effectiveness of orthoses. Third Annual Symposium on Pathomechanical Conditions of the Human Body. New Orleans, Louisiana, January 1994.

James, C.R., Dufek, J.S. and Bates, B.T. Fatigue accommodation during landing. Northwest Regional American College of Sports Medicine Annual Meeting, Boise, Idaho, February 1994.

Stergiou, N., Crussemeyer, J.A. and Bates, B.T. The effects of stride length on subtalar and knee joint function. Northwest Regional American College of Sports Medicine Annual Meeting, Boise, Idaho, February 1994.

Combs, C.M., Dufek, J.S., Bates, B.T. and Davis, H.P. Object manipulations in an occupational setting. American College of Sports Medicine Annual Meeting, Indianapolis, Indiana, June 1994.

Dufek, J.S., Bates, B.T., Caster, B.L., McCaw, S.T. and Schot, P.K. Human performance repeatability: A random model? Symposium Presentation at American College of Sports Medicine Annual Meeting, Indianapolis, Indiana, June 1994.

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Caster, B.L., Chen, F.C., Dufek, J.S. and Bates, B.T. Single subject design in biomechanics research: Justification of statistical assumptions. Canadian Society for Biomechanics VIIIth Biennial Conference, Calgary, Alberta, August 1994.

Crussemeyer, J.A., Stergiou, N. and Bates, B.T. Surface effects on impact force attenuation. Canadian Society for Biomechanics VIIIth Biennial Conference, Calgary, Alberta, August 1994.

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Zhang, S., Dufek, J.S. and Bates, B.T. Viability of bootstrap techniques in biomechanics research. Canadian Society for Biomechanics VIIIth Biennial Conference, Calgary, Alberta, August 1994.

James, C.R., Ouellette, M.P., Andrews, P. and Bates, B.T. Effects of gait mode on the variability of impact acceleration and knee angle. American Alliance for Health, Physical Education, Recreation and Dance National Convention, Portland, Oregon, March 1995.

Stergiou, N., Bates, B.T. and Schnieder, A. The effects of stride length on lower extremity joint moments and powers. American Alliance for Health, Physical Education, Recreation and Dance National Convention, Portland, Oregon, March 1995.

Bates, B.T. Single subject methodology: An alternative approach. American College of Sports Medicine Annual Meeting, Minneapolis, Minnesota, June 1995.

Bates, B.T. and Dufek, J.S. Lower extremity function during running and landing. International Conference for Women, Alexandria, Egypt, October 1995.

Bates, B.T., Dufek, J.S. and Zhang, S. Landing models: Evaluation of elite volleyball players. International Conference for Women, Alexandria, Egypt, October 1995.

Crussemeyer, J.A., Bates, B.T., Stergiou, N. and Domenigoni, A. The effects of midsole arch support on subtalar and knee joint function. American Alliance for Health, Physical Education, Recreation and Dance Annual Convention, Atlanta, Georgia, April 1996.

Bates, B.T. The value of the individual in the research paradigm. American College of Sports Medicine Annual Meeting, Cincinnati, Ohio, May 1996.

Bates, B.T. The injured runner: Biomechanics of running. American College of Sports Medicine Annual Meeting, Cincinnati, Ohio, May 1996.

James, C.R., Dufek, J.S. and Bates, B.T. Effects of overuse injury proneness on joint kinetic variability during landing. American College of Sports Medicine Annual Meeting, Cincinnati, Ohio, May 1996.

Zhang, S., Dufek, J.S. and Bates, B.T. Mechanical demands on the knee joint during landing activity. American College of Sports Medicine Annual Meeting, Cincinnati, Ohio, May 1996.

Bates, B.T. and James, C.R. Experimental and statistical design issues in human movement research. Eighth National Measurement and Evaluation Symposium, Corvallis, Oregon, October 1996.

Crussemeyer, J.A., James, C.R. and Bates, B.T. Effectiveness of shock absorbing treadmill designs during walking and running. Canadian Society for Biomechanics Biennial Meeting, Vancouver, British Columbia, August 1996.

Stergiou, N., Crussemeyer, J.A. and Bates, B.T. Strategy selection with speed and height perturbations. Canadian Society for Biomechanics Biennial Meeting, Vancouver, British Columbia, August 1996.

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Stergiou, N., Bates, B.T. and James, S.L. Mechanisms associated with running injuries. American College of Sports Medicine Annual Meeting, Denver, Colorado, May 1997.

Zhang, S., Bates, B.T. and Dufek, J.S. Regulation of lower extremity stiffness during landings. American College of Sports Medicine Annual Meeting, Denver, Colorado, May 1997.

James, C.R., Bates, B.T. and Dufek, J.S. Comparison of right vs. left leg GRF landing symmetry for healthy and overuse injury-prone recreational athletes. International Society of Biomechanics in Sports Annual Meeting, Denton, Texas, July 1997.

James, C.R. and Bates, B.T. Comparison of three statistical tests for evaluating single subject design. American College of Sports Medicine Annual Meeting, Orlando, Florida, June 1998.

Mercer, J.A., James, C.R., Zhang, S., Dufek, J.S. and Bates, B.T. Single subject analysis of landing strategies. American College of Sports Medicine Annual Meeting, Orlando, Florida, June 1998.

Schot, P.K., Muellar, M., Hart, B.A. Dietrich, A. and Bates, B.T., Variability scores as dependent variables: reliability. American College of Sports Medicine Annual Meeting, Orlando, Florida, June 1998.

Clark-Donovan, S.M., Crusemeyer, J.A., Dufek, J.S. and Bates, B.T. Kinetic effects of a locked ankle joint via an ankle-foot orthosis during walking. American College of Sports Medicine Annual Meeting, Seattle, WA, June 1999.

Crusemeyer, J.A., Dufek, J.S. and Bates, B.T. Determination of variability in pronation curve behavior during running. American College of Sports Medicine Annual Meeting, Seattle, WA, June 1999.

Mercer, J.A., Hreljac, A., Dufek, J.S. and Bates, B.T. Peak leg and head accelerations during running following isolated quadriceps fatigue. American College of Sports Medicine Annual Meeting, Seattle, WA, June 1999.

Wiley, R.M., Mercer, J.A., Chen, S.J. and Bates, B.T. Peak VO<sub>2</sub> and HR during treadmill running and simulated running on an elliptical trainer. American College of Sports Medicine Annual Meeting, Seattle, WA, June 1999.

Bates, B.T. and Corson, D.L, "Using Expert Witnesses to Win", Oregon State Bar Convention, Seaside, Oregon, July 1999.

Mercer, J.A., Dufek, J.S. and Bates, B.T. Shock attenuation during running before and after a graded exercise test. XVIIIth International Congress of Biomechanics, Calgary, Canada, August 1999.

James, C.R., Bates, B.T. and Dufek, J.S. Evaluation of biomechanical response strategies for absorbing landing impacts. American College of Sports Medicine Annual Meeting, Indianapolis, IN, May 2000.

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