

VITA

JOHN P. MILLER

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EDUCATION

Doctor of Philosophy (1992)

Major Area: Exercise Physiology, Department of Kinesiology

Minor Area: Biomechanics

University of Maryland, College Park, Maryland 20742

Master of Science (1983)

Major Area: Exercise Physiology, Department of Health Science

Minor Areas: Biomechanics/Sports Medicine

Long Island University, Brooklyn, New York 10021

Bachelor of Science (1981)

Major Areas: Athletic Training and Secondary Education

Department of Physical Education

Brooklyn College, Brooklyn, New York 10027

MEMBERSHIPS AND CERTIFICATIONS

National Athletic Trainers Association: Certification

Eastern Athletic Trainers Association

NH Athletic Training Licensure

UNIVERSITY TEACHING EXPERIENCE

Associate Professor (1997-present)

Department of Kinesiology, University of New Hampshire,
Durham, New Hampshire

Duties: Instruct and advise students and conduct research in the CAAHEP accredited Athletic Training program in the Department of Kinesiology. Other duties include serving on university, college and department committees at the University of New Hampshire.

Course Topics: Basic Athletic Training, Organizational Aspects of Athletic Training, Clinical Kinesiology, Applied Biomechanics, Musculoskeletal Assessment, Pharmacological Aspects of Sport and Exercise and Physical Conditioning for Athletes.

Assistant Professor (1992-1997)

Department of Kinesiology, University of New Hampshire,
Durham, New Hampshire

Duties: Instruct and advise students and conduct research in the CAAHEP accredited Athletic Training program in the Department of Kinesiology. Other duties include serving on university, college and department committees at the University of New Hampshire.

Course Topics: Basic Athletic Training, Organizational Aspects of Athletic Training, Clinical Kinesiology, Applied Biomechanics, Musculoskeletal Assessment, Pharmacological Aspects of Sport and Exercise and Physical Conditioning for Athletes.

Instructor (1990-92)

Department of Kinesiology, University of Maryland, College Park, Maryland

Duties: Teach and conduct research in the Department of Kinesiology, perform Graduate Assistant in-services and serve on departmental committees. Other duties included advising undergraduate students in course selection, choice of majors and university policy as an academic advisor in the Division of Letters and Sciences.

Course Topics: Exercise and Nutrition in Weight Control and Health, the Role of Exercise in Cardiovascular Health, Development of Strength and Endurance for Athletics, and Principles of Weight Training.

Lecturer (1990-92)

Department of Health and Physical Education, Marymount University,
Arlington, Virginia

Duties: Teach courses in athletic training program, advise students in career choices in the athletic training profession, and assist students in fulfilling N.A.T.A. requirements for certification.

Course Topics Covered: Musculoskeletal Anatomy, Kinesiology, Biomechanics, basic and Advanced Athletic Training.

SCHOLARSHIP

Publications

Ronald Croce, PhD ¹, John Miller, PhD ¹, and Wayne Smith, PhD
Interrelationship between Quadriceps Activation and Inhibition as a Functions
of Knee Joint Angle and muscle Length: A torque and Electromyography
Mechanomyographic Investigation
Accepted for Publication
Clinical Kinesiology 72(2) Summer 2018

R Croce, A Craft, J Miller, K Chamberlin... -

Quadriceps mechano- and electromyographic time-frequency responses during muscular contractions to volitional exhaustion. *Muscle & Nerve* 2016

Ronald Croce, John Miller, Kent Chamberlin, David Filipovic, and Wayne Smith
Wavelet analysis of quadriceps power spectra and amplitude under varying levels of contraction intensity and velocity *Muscle and Nerve* Volume 50, Issue 5, pages 844–853, November 2014

R.V. Croce", J.P. Miller, W.J. Smith and M. Horvatc

Surface electromyographic alterations of the knee extensor musculature based on contraction intensity and velocity

Isokinetics and Exercise Science 20 (2012) 155-165

John Miller, Ronald Croce, Wayne Smith, Michael Horvat: Contraction intensity and velocity on vastus lateralis semg power spectrum and amplitude' *Perceptual and Motor Skills*, 2012, 114, 3, MO.

Miller, JP, Croce, RV, Smith, WJ Impact of Contraction Intensity and Velocity on Vastus Lateralis SEMG Power Spectrum and Amplitude

Vol.12, No. 2, 2012 •The Journal of Applied Research

Croce, RV, Miller, JP., & Horvat, M. (2008). Alterations in torque and hamstrings agonist and antagonist activity over repeated maximum effort, reciprocal isokinetic flexion-extension movements. *Isokinetic and Exercise Science*, 16, 139-149. 2008

JP Miller, RV Croce Analyses of Isokinetic and Closed Chain Movements for Hamstring Reciprocal Co-activation
J Sport Rehabil. 2007 Nov;16(4):319-25.

R.V. Croce, J. P. Miller. Coactivation patterns of the medial and lateral hamstrings based on joint movement and velocity during isokinetic movements
Electromyography and Clinical Neurophysiology. Volume 46. 2006

R.V. Croce, J. P. Miller. Angle and velocity specific alterations in torque and semg activity of the quadriceps and hamstrings during isokinetic extension flexion movements . A
Electromyography and Clinical Neurophysiology. Volume 46. 2006

J. P. Miller, R. V. Croce, Effect of Movement Velocity and Movement Pattern on the Root Mean Square and the Median Frequency of the Electromyographic Activity of the Quadriceps During Isokinetic Testing
Isokinetics and Exercise Science : 10 193-198, 2003

R.V. Croce, J. P. Miller. The Effect of Movement Velocity and Movement Pattern on the Reciprocal Coactivation of the Hamstrings.
Electromyography and Clinical Neurophysiology 43, 2003

J. P. Miller, R. V. Croce, R. Hutchins Effect of Movement Velocity and Fatigue on the Reciprocal Coactivation Patterns of the Lateral and Medial Quadriceps and Hamstrings
Journal of Electromyography and Kinesiology 10(4): 233-239, 2001

R.V. Croce, J.P. Miller, P. St. Pierre
Effect of Ankle Fixation on EMG Activity and Peak Torque of the Knee Extensors and Flexors during Isokinetic Testing.
Electromyography and Clinical Neurophysiology 40: 365-373, 2000

J.P. Miller, R. Croce, R. Confessore, J. Vailas, and K. Catlaw. Dynamic Analysis of Custom Fitted Functional Knee Braces: EMG and Brace Migration During Physical Activity.

Journal of Sport Rehabilitation. 8 (2): 109-123, 1999

R. Hutchins, J. P. Miller, R. V. Croce

Effect of Movement Velocity on the Median Frequency of the Electromyographic Activity of the Quadriceps and Hamstrings During Isokinetic Testing.

Isokinetics and Exercise Science 7: 1-4, 1999.

R.V. Croce, J.P. Miller, R. Confessore, J. Vailas.

Reciprocal Coactivation Patterns of the Lateral and Medial Quadriceps and Hamstrings During Low and Moderate Speed Isokinetic Movements.

Journal of Sport Rehabilitation, 7: 182-196, 1998.

M.A. Rubin, J.P. Miller, A. S. Ryan, M. S. . Trueth, K. Y. Patterson, R. E. Pratley, B. F. Hurley, C. Veillon, P. B. Moser-Veillon, R. Anderson. Acute and Chronic Resistive Exercise Increase Minimal Chromium Absorption in Older Men as Measured with an Enriched Stable Chromium Isotope.

Journal of Nutrition, 128: 73-78, 1998.

J.P. Miller, K. Catlaw, R. Confessore. Effect of Ankle Position on EMG Activity and Peak Torque of the Knee Extensors and Flexors During Isokinetic Testing. Journal of Sports Rehabilitation 6(4): 335-344, 1997.

J.P. Miller, D. Sedory, R. Croce. Leg Rotation and Vastus Medialis Oblique/ Vastus Lateralis Electromyogram Activity Ratio During Closed Chain Kinetic Exercises Prescribed for Patellofemoral Pain. Journal of Athletic Training 32(3): 216-220, 1997.

J.P. Miller, D. Sedory, and R.V. Croce. Vastus Medialis Oblique and Vastus Lateralis Muscle Activity in Patients With and Without Patellofemoral Pain Syndrome. *Journal of Sport Rehabilitation* 6(1): 1-9, 1997.

J.P. Miller, K Catlaw, and C. Angelopoulos. Effect of Ankle Position on Knee Flexor and Extensor Torque. *Isokinetic and Exercise Science* 6(2): 153-155, 1996.

R. Croce, K. Pitetti, J. Miller, and M. Horvat. Comparison of Absolute and Relative Peak Torque and Hamstrings/Quadriceps Peak Torque Ratios in Young Men and Boys. *Clinical Kinesiology* 50(3): 52-57, 1996.

R. Croce, R. Pitetti, M. Horvat, and J. Miller. Peak Torque, Average Power, and Hamstrings/Quadriceps Ratios in Non-Disabled Adults and Adults with Mental Retardation. *Archives of Physical Medicine and Rehabilitation* 77: 369 - 372, 1996.

K. Hill, R. Croce, J. Miller, and F. Cleland. Muscle Torque Relationships Between Hand Held Dynamometry and Isokinetic Measurements in Children Ages 9-11. *Journal of Strength and Conditioning* 10(2): 77-82, 1995.

S. Ryan, M. M. Trueth, M. Rubin, J. Miller, B. Nicklas, R. Pratley, C. Libanati, C. Gundberg, and B. Hurley. Effects of Strength Training on Bone Mineral Density: Hormonal and Bone Turnover Relationships. *Journal of Applied Physiology* 77(4): 1678-1684, 1994.

J. Miller, R. Pratley, A. Goldberg, P. Gordon, M. Rubin, M. Treuth, A. Ryan, and B. Hurley. Strength Training Increases Insulin Action in Healthy 50-65 Year Old Men. *Journal of Applied Physiology* 77(3): 1122-1127, 1994.

M. Trueth, A. Ryan, R. Pratley, M. Rubin, J. Miller, B. Nicklas, J. Sorkin, S. Harman, A. Goldberg, and B. Hurley. Effects of Strength Training on Total and Regional Body Composition in Older Men. *Journal of Applied Physiology* 77(2): 614-620, 1994.

R. Pratley, B. Nicklas, M. Rubin, J. Miller, A. Smith, M. Smith, B. Hurley, and A. Goldberg. Strength Training Increases Resting Metabolic Rate and Norepinephrine Levels in Healthy 50-65 Year Old Men. *Journal of Applied Physiology* 76(1): 133-137, 1994.

Refereed Scientific Presentations

Interrelationship between Quadriceps' Activation and Inhibition as a Function of Knee-Joint Angle and Muscle Length: A Torque and Electro and Mechanomyographic Investigation...R
Croce, T Quinn, J Miller - World Academy of Science, Engineering and Technology Volume:11, No. 5, 2017

Analyses of isokinetic and Closed Chain Movements for hamstring Reciprocal Coactivation Eastern Athletic Trainers Association Annual Symposium, Boston, MA January 2009.

Analyses of the Effect of bicycle Seat height on the EMG activity of the Quadriceps and Hamstrings Eastern Athletic Trainers Association Annual Symposium Gettysburg, PA January 2008.

Angle and Velocity Specific Alterations in Torque and SEMG Activity, ISOK, Turin Italy, 2006

The Effect of Movement Velocity and Movement Pattern On The Reciprocal Coactivation of The Hamstrings During Isokinetic Testing Eastern Athletic Trainers Association Annual Symposium, Boston, MA January 2003.

Reciprocal Coactivation Patterns of the Lateral and Medial Quadriceps and Hamstrings during Low, Moderate and High Speed Isokinetic Movement. Eastern Athletic Trainers Association Annual Symposium, Philadelphia, PA January 2000.

Effect of Movement Velocity on the Median Frequency of the EMG Activity of the Quadriceps and Hamstrings During Isokinetic Testing. Eastern Athletic Trainers Association Annual Symposium, Philadelphia, PA January 1999.

Effect of Physical Activity on Brace Migration and Muscle Activity: Cinematographic and EMG Analysis. National Athletic Trainers Association Annual Meeting, Baltimore, MD 1998.

Backward versus Forward Walking: Clinical Applications in the Treatment of Lumbar Disc Patients
American Physical Therapy Association, Boston, MA 1998

Effect of Ankle Position on the Peak Torque and Electromyographic Activity of the Hamstrings. American College of Sports Medicine National Conference, Denver, CO 1997.

Effect of Ankle Position on Quadriceps and Hamstring Peak Torque and Hamstrings/Quadriceps Peak Torque Ratio. Eastern Athletic Trainers Association Annual Conference, Boston, MA 1997.

Comparison of Vastus Medialis Oblique and Vastus Lateralis EMG Activity in Individuals With and Without Patellofemoral Pain Syndrome. National Athletic Trainers Association Annual Meeting, Kansas City KS 1996.

EMG analysis of Closed Chain Kinetic Exercises For Vastus Medialis Oblique Recruitment: Effect of Hip and Knee Position. American College of Sports Medicine National Conference, Minneapolis, MN 1995.

Isokinetic Characteristics of Knee Flexors and Extensors in Non-Disabled Adults With Mental Retardation. American College of Sports Medicine National Conference, Minneapolis, MN 1995.

EMG Analysis of Closed Chain Kinetic Exercises Prescribed for Patellofemoral Pain Syndrome. Eastern Athletic Trainers Association Annual Symposium, Philadelphia, PA, 1995.

Strength Training Increases Nonoxidative Glucose Uptake in Older Men. American College of Sports Medicine National Conference, Seattle, WA 1993.

Effects of Strength Training on Bone Mineral Density: Hormonal and Bone Turnover Relationships. American College of Sports Medicine National Conference, Seattle, WA 1993.

Effects of Strength Training on Muscle Hypertrophy and Muscle Cell Disruption in Older Men. American College of Sports Medicine National Conference, Seattle, WA 1993.

Effects of Strength Training On Body Composition in Older Men. American College of Sports Medicine National Conference, Seattle, WA 1993.

Acute and Chronic Anabolic Response to Resistive Exercise in Older Men. American College of Sports Medicine National Conference, Seattle, WA 1993.

Resistive Training Lowers Insulin Levels and Increases Insulin Sensitivity in Older Men. Gerontological Society of America 45th Annual Scientific Meeting Washington DC, 1992.

Invited Presentation

Isokinetic and EMG Evaluation of Functional Knee Activities in ACL-Reconstructed Males. New Hampshire Musculoskeletal Institute Clinical Symposium, Manchester, NH. 1999.

Co-contraction Patterns of the Medial and Lateral Hamstrings During Low, Moderate and High Speed Isokinetic Movements. New Hampshire Musculoskeletal Institute Clinical Symposium, Manchester, NH. 1998.

Minimum Strength Criteria as a Predictor of Predisposition to Upper Quadrant Cumulative Trauma Disorder. International Electrical Engineers 23rd Annual Northeast Bioengineering Conference, Durham, and NH 1997.

Effect of Physical Activity on Brace Migration and Quadriceps and hamstring Activity: Cinematographic and EMG Analysis. New Hampshire Musculoskeletal Institute Clinical Symposium, Manchester, NH, 1997.

GRANTS OR FELLOWSHIPS AWARDED OR APPLIED

Lahey Hitchcock Clinic, Southern Region, Department of Orthopedic Surgery.
Funds to Enhance Kinesiology-Biomechanics Capabilities: BIOPAC EMG System
(\$13,197).

Funded, 1997.

UROP-Summer Undergraduate Research Funding Award. EMG and
Isokinetic Profiles of Healthy Knee (\$2,100.00).

Funded, 1997.

UNH Research Fellowship Support for Brace Migration Study (\$3,500.00).

Funded, Summer, 1996.

Lahey Hitchcock Clinic, Southern Region, Department of Orthopedic
Surgery. Funds to Enhance Kinesiology-Biomechanics Capabilities: MacReflex
High-Speed Cinematography System (\$12,000.00).

Funded, 1996.

National Athletic Trainers Association, Research and Education Fund.

Funds for Brace Migration Study (\$6,100.00).

Funded, 1995.

Omni Scientific, Inc. Funds for Brace Migration Study (\$5,000.00).

Funded, 1995.

Donjoy Corp, Inc. Funds for Brace Migration Study (\$5,000.00).

Funded, 1995.

UNH Discretionary Research Support. Funds for Enhancement of Isokinetic
Analysis - Biomechanics Teaching and Research Capabilities (\$6,100.00)

Funded, 1995.

UNH Undesignated Gift Support. Funds for a Computer to Enhance the Teaching and Research Capabilities in the Biomechanics Laboratory (\$3,400.00).

Funded, 1994.

UNH Summer Innovative Course Proposal. Quantitative Analysis of Human Movement for the Clinician (\$1,700.00).

Funded, 1994.

National Science Foundation. Education Technology Support Grant (\$50,000.00).

Not Funded, 1994.

Eastern Athletic Trainers Association. Funds for Patellofemoral Pain Study (\$1,500.00).

Funded, 1993.

PRIZES AND OTHER HONORS

UNH Research Fellowship Support for Brace Migration Study (1996).

Clinical Medicine Person-in-Training. Awarded by the Gerontological Society of America (\$500.00), 1992.

SERVICE ACTIVITIES

Institutional Service

HHS APC Committee 2002-2006

UNH Judicial Board: 1999-2000

UNH Student Affairs Committee: Chair: 1998 - 1999

UNH Faculty Senate: 1995 – 1999, 2007-2018 – present

UNH Student Affairs Committee 2018 present

UNH Parking Appeals Board: 1998 - 1999

UNH Community Scholarship Committee: 1997 – 1999

UNH ROTC Board of Governors: 1997 - 1998

UNH Faculty Senate Agenda Committee: 1995 - 1998

UNH Academic Senate – 1995: 1996

UNH Academic Senate Executive Council: 1995 - 1996

UNH - Systems Committee: 1997

UNH/SHHS Collaborative Research Seminar Committee: 1997

UNH Innovative Course Proposal Committee: 1995 - 1996

Past Service to Professional Organizations

National Athletic Trainers Association

- Presenter at National Conferences
- Board of Certification Examiner
- NATA-REF Abstract and Grant Reviewer

Journal of Athletic Training

- Guest Reviewer

Journal of Sports Biomechanics (no longer)

- Manuscript Reviewer

