

TODD MILLER, PH.D., CSCS*D, TSAC-F, FNSCA

CURRENT POSITION:

Associate Professor of Exercise and Nutrition Sciences
George Washington University School of Public Health and Health Services
Department of Exercise and Nutrition Sciences

EDUCATION:

December 1995
Bachelor of Science in Exercise and Sport Science, Pennsylvania State University

December 2000
Doctor of Philosophy in Exercise Physiology, Texas A&M University
Dissertation Title: Hindlimb Unloading Alters Intramuscular Collagen Isoform in the Rat

2001-2002
Postdoctoral Training: University of Pennsylvania School of Medicine, Department of Microbiology. **Research Area:** Integrin mediated matrix to cell interactions in human carcinoma cells

TEACHING EXPERIENCE:

George Washington University

2007- Developed Master of Science concentration in Strength and Conditioning, and currently serving as program director

2016- Converted Strength & Conditioning Concentration to an online/hybrid program; currently serving as program director

Courses Developed & Taught at GWU

EXSC 109- Aerobic Exercise Training and Prescription
EXSC 110- Anaerobic Exercise Training and Prescription
EXNS 2112- Exercise Physiology 2
EXNS 2128- Scientific Principles of Strength & Conditioning
*EXSC 260- Exercise for the Older Adult and Other Special Populations
*EXNS 6202- Advanced Exercise Physiology 1
*EXNS 6203-Advanced Exercise Physiology 2
*EXNS 6810- Advanced Metabolism
*EXNS 6221- Science and Theory of Resistance Training
*EXNS 6222- Current Topics in Strength and Conditioning
*EXNS 6220- Power Training for Sports Performance
PUBH 2110- Public Health Biology

*Indicates Graduate Course

East Stroudsburg University

MSES 100- Introduction to Movement Studies and Exercise Science

MSES 301- Exercise Physiology I
MSES 122- Strength Training
MSES 120- Physical Conditioning

ESU Courses Developed

*MSES 543- Neuromuscular Adaptations to Exercise
MSES 322- Power Training for Sports Performance
*MSES 456/556- Certified Strength and Conditioning Specialist Workshop

*Indicates Graduate Course

Texas A&M University

KINE 433- Physiology of Exercise (team taught)
*KINE 638- Cardiovascular Physiology (team taught)
*KINE 637- Physiology of Exercise

*Indicates Graduate Course

EMPLOYMENT EXPERIENCE:

2009-present	Associate Professor of Exercise Science: The George Washington University
2013-2020	Director of GW Weight Management and Human Performance Lab
2005-2009	Assistant Professor of Exercise Science: The George Washington University
2005-2012	Consultant for the International Health Racquet and Sportclub Association (IHRSA)
2002 to 2004	Assistant Professor of Exercise Science: East Stroudsburg University of Pennsylvania
2001 to 2002	Postdoctoral Scientist: University of Pennsylvania School of Medicine, Department of Microbiology
1998 to 2001	Research Associate: Texas A&M Department of Health & Kinesiology
1996 to 2001	Consultant in Ergonomics and Human Performance: Pathways Industries Consulting
1996 to 1998	Strength and Conditioning Trainer: Texas A&M University Athletic Department
1994	Strength and Conditioning Intern: Penn State Football Program

GRANT FUNDING:

Year	Funding Agency	Title	Award Amount	Role & % Effort	Status
2020	GWU	Changes in Body Composition, Diet, and Exercise Behavior During Extended Social Isolation	\$25,000	PI 10%	Not Funded
2017	NSCA	Strength Training and Markers of Cardiometabolic Health in Post Menopausal Women	\$50,000	PI	Not Funded
2016	Sumner Redstone Foundation	Is Strength Training a Viable Exercise Modality for Fat Loss	\$50,000	PI 10%	Funded
2014-2015	Living Heart Foundation	Weight Loss After the League	\$54,010	Col, 4%	Funded
2011-2013	NIH/NIDDK	Using Exergaming to Encourage Physical Activity Among	\$275,000	Col, 10%	Funded

2011-2013	NIH	Preschoolers. Feasibility and effectiveness of exergaming among older people of lower socioeconomic status	\$315,000	PI 25%, PI 25%	Not Funded
2010-2012	NIH	Using exergaming to increase physical and mental health outcomes in elderly African Americans in low-income subsidized housing	\$190,316	PI 25%	Not Funded
2009-2010	RWJ	Active-Adventure: Investigating the role of a novel exergaming genre in inner city school physical education programs	\$114,000	PI 35%	Funded
2007-2010	NIH	Preventing Obesity and Its Co-Morbidities in Elderly African Americans Living in Subsidized Housing	\$958,798	Co-PI 20, 20, 15, 15	Not funded
2007	USDA	Determinants of Preventive Medicine in Elderly African Americans Living in Subsidized Housing	\$413,171	Co-I 15, 10	Not funded
2007	NSCA	Alterations in muscle strength and body composition following 10 weeks of whole-body isometric resistance training using the Exer-Station video game controller.	\$10,000	PI 5	Not Funded
2005	IHRSA	A Quantitative Analysis of Americans' Attitudes and Perceptions toward Commercial Health Club Membership.	\$43,200	PI 20	Funded
2006-2007	IHRSA	Scholarship for Health Club Research	\$6,000	N/A	Funded
2007-2008	IHRSA	Scholarship for Health Club Research	\$10,000	N/A	Funded
2008-2009	NIH / LRP	Determinants of Preventive Medicine in Elderly African Americans Living in Subsidized Housing	\$70,000	PI 50%	Not Funded

HONORS AND AWARDS:

The Texas Chapter of the American College of Sports Medicine Student Research Award. Project Title: *Age-related alterations in the extracellular matrix of rat skeletal muscle.* Feb 2000.

The American Physiological Society Carl v. Gisolfi Student Award for Research in Exercise Science. Project Title: *Simulated microgravity induces alterations in skeletal muscle collagen.* Sep. 2000.

The American Physiological Society Environmental & Exercise Physiology Section Recognition Award for Meritorious Research. Project Title: *Hindlimb unloading diminishes bone blood flow during reloading in the rat.* April 2001.

The George Washington University Medical Center School of Public Health and Health Services Excellence in Teaching Award, Graduate Exercise Science. Spring 2006

The George Washington University Medical Center School of Public Health and Health Services Excellence in Teaching Award, Undergraduate Exercise Science. Spring 2007

The George Washington University Medical Center School of Public Health and Health Services Excellence in Teaching Award, Undergraduate Exercise Science. Spring 2008

The George Washington University Medical Center School of Public Health and Health Services Excellence in Teaching Award, Graduate Exercise Science. Spring 2008

The George Washington University Medical Center School of Public Health and Health Services Excellence in Teaching Award, Undergraduate Exercise Science. Spring 2010

Selected as Adjunct Space Science Researcher; The National Center for Earth and Space Science Education, Spring 2020

PROFESSIONAL SOCIETY MEMBERSHIPS:

2016 to Present International Society of Sports Nutrition
1998 to Present American College of Sports Medicine
1996 to Present National Strength and Conditioning Association

CERTIFICATIONS:

1997 to Present: National Strength and Conditioning Association Certified Strength and Conditioning Specialist
2003 to 2015: USA Weightlifting Level 1 Coach
2012 to Present: National Strength and Conditioning Association Tactical Strength and Conditioning Facilitator

MILITARY HISTORY:

1986-1990 U.S. Coast Guard (Honorably Discharged)

PUBLICATIONS:

JOURNAL ARTICLES (PEER REVIEWED):

- 1) Ray, C.A., Vasques, M., **Miller, T.A.**, Wilkerson, M.K., and Delp, M.D. Effect of actual and simulated microgravity on cardiac mass and function in the rat. *J Appl Physiol* 91: 1207-1213, 2001.
- 2) **Miller, T.A.**, Lesniewski, L.A., Muller-Delp, J., Majors, A.K., Scalise D., and Delp, M.D. Hindlimb unloading induces a collagen isoform shift in the soleus muscle of the rat *Am J of Physiol Regulatory Integrative Comp Physiol* 281: R1710-R1717, 2001.
- 3) **Miller, T.A.**, White, E.D., Kinley, K.A., Congleton, J.J., and Clark, M.J. The Effects of training history, player position, and body composition on exercise performance in collegiate football players. *Journal of Strength and Conditioning Research* 16(1): 44-49, 2002.
- 4) Mattson, J.P., **Miller, T.A.**, Poole, D.C., and Delp M.D. Fiber composition and oxidative capacity of hamster skeletal muscle. *J Histochem. Cytochem.* 2002 50: 1685.

- 5) Lesniewski, L.A., **Miller, T.A** and Armstrong R.B. Mechanisms of force loss in diabetic mouse skeletal muscle. *Muscle & Nerve* 28: 493-500, 2003.
- 6) Watson, R. R., **Miller, T. A.**, and Davis, R. W. Immunohistochemical fiber typing of harbor seal skeletal muscle. *J Exp Biol* 206: p. 4105-4111, 2003.
- 7) **Miller, T.A.** and Boettiger, D. Control of intracellular signaling by modulation of fibronectin conformation at the cell-materials interface. *Langmuir* 19(5); 1723-1729 2003.
- 8) **Miller, T.A.**, Thierry-Aguilera, R., Congleton J.J., Amendola, A.A., Clark M.J., Crouse, S., Martin, S., and Jenkins, O. Seasonal changes in VO₂max among division 1A collegiate female soccer players. *Journal of Strength and Conditioning Research*: 21(1), 48-51, 2007.
- 9) Manoel, M.E., Harris-Love, M.O., Danoff, J.M., and **Miller, T.A.** Acute Effects of Static, Dynamic, and Proprioceptive Neuromuscular Facilitation Stretching on Muscle Power in Women. *Journal of Strength and Conditioning Research*: 22(5):1528-1534. 2008
- 10) Roberson LM, Rossi K, Ward E, Jadwin E, **Miller T.A.** and Miller, W.C. Effects of caloric restriction and overnight fasting on cycling endurance performance. *Journal of Strength and Conditioning Research*: 23(2): 560-570, 2009.
- 11) Miller, W and **Miller, T.A.** Bodyweight and perceived social pressure to exercise at a health club. *American Journal of Health Behavior*: 33(5): 494-503, 2009.
- 12) Miller, W and **Miller, T.A.** Attitudes of obese and normal weight adults regarding exercise at a health club. *Journal of Nutrition Education and Behavior*. 42 1-9, 2010.
- 13) Gallagher, D, DiPietro, L., Visek, A., Bancheri, J. and **Miller, T.A.** The Effects of Concurrent Endurance and Resistance Training on 2,000 Meter Rowing Ergometer Times in Collegiate Male Rowers. *Journal of Strength and Conditioning Research*. 24(5): 1208-1214, 2010.
- 14) Bonetti, A.J., Drury, G.D., Danoff, J.D., and **Miller, T.A.** Comparison of Acute Exercise Responses Between Conventional Video Gaming and Isometric Resistance Exergaming. *Journal of Strength and Conditioning Research*. 24(7):1799-1803, 2010.
- 15) Eisen T.C, Danoff, J.V., Leone, J.E., and **Miller, T.A.** The Effects of Multiaxial and Uniaxial Unstable Surface Balance Training in College Athletes. *Journal of Strength and Conditioning Research* 24(7):1740-1745, 2010.
- 16) Miller, W, **Miller T.A.**, Perceived Behavioral Control and Self Efficacy of Overweight and Normal Weight Adults Regarding Exercise at a Health Club. *Internet Journal of Allied Health Sciences and Practice* 9(2), 2011.
- 17) Hunstman, H., DiPietro, L. Drury, D. and **Miller, T.A.** Research Note: Development of a Rowing Specific VO₂max Field Test. *Journal of Strength and Conditioning Research*, 25(6):1774-1779, June 2011.
- 18) Inacio, M., Dipietro, L., Visek, A.J., and **Miller, T.A.**, Influence of upper body external loading on anaerobic exercise performance. *Journal of Strength and Conditioning Research*. 25(4):896-902, April 2011.
- 19) Costello, E., Leone, J.E., Ellzy, M. and **Miller, T.A.**, Older Adult Perceptions of the Physicians' Role in Promoting Physical Activity. *Disability & Rehabilitation*. Early online 1-8, 2012.

- 20) **Miller, T.A.**, Vaux-Bjerke, A., McDonnell, K., & DiPietro, L. Can E-gaming be Useful for Achieving Recommended Levels of Moderate- to Vigorous-Intensity Physical Activity in Inner-city Children? *Games for Health Journal*, April 2013, 2(2): 96-102.
- 21) **Miller, T.A.**, Mull, S., Aragon, A., Krieger, J. & Schoenfeld, B. Resistance training combined with diet decreases body fat while preserving lean mass independent of resting metabolic rate: A randomized trial. *International Journal of Sport Nutrition & Exercise Metabolism* 28(1): 46-54 2018.

NON REVIEWED ARTICLES:

- 1) **(Invited) Miller, T.A.** Preparing for cold weather exercise: *NSCA's Performance Training Journal* 3(1): 19-21, 2004.
- 2) **Miller, T.A.** Why people don't (and do) join. *Club Business International*. September, 2006
- 3) **Miller, T.A.** Under Pressure: Mapping the social motivation to exercise in a health club. *Club Business International*, June 2007.
- 4) **(Invited) Miller, T.A.** Central and peripheral adaptations to training: *NSCA's Performance Training Journal* 7(1): 19-21, 2008.
- 5) **Miller, T.A.** Reconciling the 'paradox' of obesity and club membership. *Club Business International*. October, 2008

BOOKS / BOOK SECTIONS

- 1) Miller, W.C., **Miller, T.A.**, Guillory, I.. Physical Activity in Children. In: *The Encyclopedia of Obesity*. Vol. 2: 597-599, 2008.
- 2) Miller, W.C., **Miller, T.A.**, Guillory, I.. Physical Activity Patterns in the Obese. In: *The Encyclopedia of Obesity*. Vol. 2: 599-601, 2008.
- 3) **Miller, T.A.** Ed. *NSCA Guide to Testing and Measurement*, Human Kinetics, 2012.
- 4) **Miller, T.A.** Ch. 4, Physiological Adaptations and Bioenergetics. In: *NSCA Essentials of Tactical Strength & Conditioning*, 2017.

ABSTRACTS:

- 1) **Miller, T.A.**, White, E.D., Kinley, K.A., Congleton, J.J., and Clark, M.J. Changes in performance in division I football players following long-term resistance training. *Medicine and Science in Sports and Exercise* 31(5): S296, 1999.
- 2) **Miller, T.A.**, Duan, C., Majors, A. and Delp, M. Age-related alterations in the extracellular matrix of rat skeletal muscle. *J. Aging and Phys. Activ.* 8: 289, 2000.
- 3) **Miller, T.A.**, L. Lesniewski, A. Majors, D. Scalise and Delp, M. Simulated microgravity induces alterations in skeletal muscle collagen. *The Physiologist*. 43: 366, 2000.
- 4) Ramsey, M.W., M. Delp, S. Spier, **T. Miller** and J. Muller-Delp. The effects of aging on morphology and collagen composition of rat skeletal muscle arterioles. *Medicine and Science in Sports and Exercise* 33(5): S20, 2001.
- 5) **Miller, T.A.**, M. Vasques, M. Wilkerson, C.A. Ray, and R. Grindeland. Effects of actual and simulated microgravity on cardiac mass and function in the rat. *Medicine and Science in Sports and Exercise* 33(5): S298, 2001.

- 6) Roberson LM, Rossi K, Ward E, Jadwin E, **Miller T.A.**, Miller WC. Effects of caloric restriction and overnight fasting on cycling endurance performance. *Medicine and Science in Sports and Exercise* 37 : S293, 2007

PRESENTATIONS:

- 1) Research update: The effects of creatine monohydrate supplementation on skeletal muscle. National Strength and Conditioning Association Texas state clinic, May 1999
- 2) Changes in performance in collegiate football players following long-term resistance training. American College of Sports Medicine National Convention, June 1999.
- 3) **Invited Presentation:** Simulated microgravity alters intramuscular collagen phenotype in the rat hindlimb. Cleveland Clinic Foundation, Dept. of Biomedical Engineering, Nov. 2000.
- 4) **Invited Presentation:** Cardiovascular and musculoskeletal adaptations to microgravity. National Children's Hospital, Dept. of Medical Genomics, Sept. 2005
- 5) A Quantitative Analysis of Americans' Attitudes and Perceptions toward Commercial Health Club Membership. International Health, Racquet and Sportclub Association Annual Convention, March 2006.
- 6) Dispelling the Senior Member Myth: Understanding how Aging Affects the Decision to Join. International Health, Racquet and Sportclub Association Annual Convention, March 2007.
- 7) **Invited Presentation:** Limitations to VO₂max in Elite Endurance Athletes. National Rehabilitation Hospital Grand Rounds, Washington DC, May 2007.
- 8) Predicting intention to exercise at a commercial health club: An application of the theory of planned behavior . The International Society of Behavioral Nutrition and Physical Activity annual meeting, Oslo, Norway June 2007
- 9) The Prevalence and Prevention of In-season Detraining in Collegiate Athletes. National Strength and Conditioning Association Sport Specific Conference, Anaheim, CA 2008
- 10) Senior Fitness: How the health club industry alienates its most valuable customers. International Health, Racquet and Sportclub Association Annual Convention, San Diego, CA March 2008
- 11) Effects of Body Weight on Perceived Social Pressure to Exercise in a Health Club, ISBNPA International Conference, Banff, Canada
- 12) **Invited Presentation:** The Prevention of In-season Detraining in Collegiate Athletes. National Strength and Conditioning Association National Conference, Las Vegas, NV 2008
- 13) **Invited Presentation:** Training Considerations for Swimming and Soccer. Shanghai Sports Academy, Shanghai, China 2008
- 14) **Invited Presentation:** Ergogenic Aids. Shanghai Sports Academy, Shanghai, China 2008
- 15) **Invited Presentation:** Periodization of Training. Shanghai Sports Academy, Shanghai, China 2008
- 16) **Poster Presentation:** Bonetti, A.J., Drury, G.D., Danoff, J.D., and **Miller, T.A.**

Comparison of Acute Exercise Responses Between Conventional Video Gaming and Isometric Resistance Exergaming. NSCA National Conference, Las Vegas, NV 2010

- 17) **Poster Presentation:** Eisen T.C, Danoff, J.V., Leone, J.E., and **Miller, T.A.** The Effects of Multiaxial and Uniaxial Unstable Surface Balance Training in College Athletes. NSCA National Conference, Las Vegas, NV 2010
- 18) **Invited Presentation:** Training for Anaerobic Power. Lanzhou Olympic Training Center, Lanzhou, China 2010
- 19) **Invited Presentation:** Training the Tactical Athlete. NSW Police Department, Sydney Australia 2010.
- 20) **Invited Presentation:** From Charles Atlas to the Shake Weight: How American culture influences exercise training trends. The Arnold Sports Festival, Columbus, OH 2011.
- 21) **Invited Presentation:** From Charles Atlas to the Shake Weight: How American culture influences exercise training trends. NSCA Personal Trainers Conference, Las Vegas, NV 2011.
- 22) **Invited Presentation:** Training for Anaerobic Power. Chengdu Olympic Training Center, Chengdu, China, December 2011
- 23) **Invited Presentation:** Interactive Video Gaming's Past Present and Future: How the Proliferation of Exergaming is Reshaping Physical Activity, Mid Atlantic ACSM Regional Conference, November, 2011
- 24) **Poster Presentation:** McDonnell, K.M., **Miller, T.A.**, Bjerke, A.: Using health e-games (exergames) to encourage physical activity among urban middle school youth. American Public Health Association Annual Meeting, Washington, DC, 2011.
- 25) **Invited Presentation:** From Overfed to Thourgouhbred: Training and Dietary Strategies for the In-Season Power Athlete, Arnold Sports Festival, Columbus OH, March 2012.
- 26) **Invited Presentation:** NSCA Measurement and Evaluation. Dalian Olympic Training Center, Dalian, China 2012.
- 27) **Invited Presentation** Factors that Prevent People from Exercising, Mid Atlantic Club Management Association Conference, July 2014.
- 28) **Mastering Motivation:** Understanding why your clients hired you and what you must do to keep them. NSCA Personal Trainers Conference, Washington DC, Oct. 2014.
- 29) **Leaning out: Fat Loss and Muscle Gain in a Caloric Deficit,** Academy of Nutrition and Dietetics Weight Management Dietary Practice Group, Baltimore, MD April 2016.
- 30) **Leaning out: Fat Loss and Muscle Gain in a Caloric Deficit.** NSCA Personal Trainers Conference, Jacksonville, FL October 2016.
- 31) **Preventing Metabolic Adaptation During Weight Loss.** Food and Nutrition Conference and Expo (FNCE), Washington DC, October 2018.
- 32) **Preventing Metabolic Adaptation During Weight Loss.** NSCA National Conference, Washington DC, July 2019.
- 33) **Invited Presentation:** Training Considerations for Aviators. NSCA Tactical Conference, Norfolk VA August 2021

SERVICE**GEORGE WASHINGTON UNIVERSITY**

Service	Role	Date
Search Committee: Prevention and Community Health Dept. Chair	Committee Member	2006
EXSC MS Concentration in Strength and Conditioning	Program Developer and Director	2006-present
SPHHS Strategic Planning Committee	Committee Member	2007-2009
Exercise Science Faculty Member Search Committee (2 positions)	Committee Chair	2007
Exercise Science Faculty Member Search Committee (2 positions)	Committee Chair	2008
Exercise Science Department	Director of Graduate Studies	2008-2013
GWU Curriculum Committee	Committee Member	2008-2013
GWU Admissions Committee	Committee Member	2010-2016
GWU Exercise Physiology Lab	Director	2011-2013
GWU Weight Management and Human Performance Lab	Director	2013-present
Exercise & Nutrition Sciences Faculty (2 positions) Search Committee	Committee Chair	2018
GWU SPH Rules Committee	Member	2019-present

PROFESSIONAL SERVICE

Service	Role	Date
Council for Accreditation of Strength & Conditioning Education (CASCE)	Chair	2019-present
NSCA Education Committee	Chair	July 2015-2019
NSCA Board of Directors	At Large Member Vice President	July 2010-2016 2014-2015
NSCA Foundation	VP & Treasurer Member	2012-2013 2013-2016
NSCA Tactical Strength and Conditioning Facilitator Exam Development Committee	Committee Member	2011-present
Mid Atlantic ACSM Executive Board	Committee Member	2012-2014
NSCA Conference Committee	Committee Member	2004-2007, 2009-2010
NSCA Nominating Committee	Committee Chair (2007)	2006-2009
Journal of Strength and Conditioning Research	Editorial Board	2007-present
NSCA StudentLink Program	Faculty Advisor	2005-2007
American College of Sports Medicine (Mid Atlantic Region) Student Research Awards Committee	Committee member	2005-2012
NSCA Educational Recognition Program	Director at GWU	2005-present
CSCS Exam Offering at GWU	Exam Host	2006
CSCS Exam Offering at ESU	Exam Host	2003
NSCA Research Consortium	National Conference Abstract Reviewer	2007, 2008, 2009, 2010
Journal of Sport Science and Medicine	Manuscript Reviewer	2008
International Journal of Obesity	Manuscript Reviewer	2008

COMMUNITY SERVICE

Service	Date
Presented to Washington DC Police Department on proper hydration strategies when exercising in extreme heat.	2006
Presented to Gentiva HealthCare solutions on the Muscular Physiology of Post-Injury Rehabilitation	2006

Participating as an alumni mentor in Pennsylvania State University's Kinesiology Student Alumni Mentoring Program.	2006-2012
Faculty mentor for student at "The School Without Walls", Washington, DC.	2007
Proposal reviewer for NASA Student Spaceflight Experiments Program (Section Leader 2017-present)	2010-present
Strength & Conditioning Consultant for Loudoun County High School, Leesburg, VA	2010
Hosted NSCA Tactical Strength and Conditioning Exam Prep course for Loudoun County Fire and Emergency Management	2014
GWU Body Composition and Metabolism Workshop (organized, hosted, presented)	2018