

CURRICULUM VITA



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DEGREES IN HIGHER EDUCATION

Ph.D. Texas A&M University, 1993; Specialization in neuromuscular exercise physiology and biochemistry, sub-specialization in nutritional biochemistry; Dissertation: “Clenbuterol and Exercise: Effects of a β_2 -Adrenoceptor Agonist on Locomotor Endurance Capacity and Muscular Force Production.” Advisor: Dr. William Barnes

Post-Doctoral Training in Molecular Biology and Immunology: University of Southern Maine, 1996-1998, Mentor, Dr. Stephen Pelsue.

M.Ed. Tarleton State University, 1989; Health and Fitness; Thesis title: “A Comparison of Isotonic Free Weights and Omnikinetic Exercise Machines on Strength.” Advisor: Dr. Joe Gillespie

B.S. Tarleton State University, 1986; Health and Fitness. Advisor: Dr. Joe Gillespie

PROFESSIONAL EXPERIENCE

Present Academic Employment:

Associate Professor, Exercise/Nutritional Biochemistry and Muscle Physiology, Department of Health, Human Performance, and Recreation, Baylor University, August 2004-present.

Associate Professor, Baylor Biomedical Science Institute, September 2005-present.

Present Adjunct Appointments:

Adjunct Graduate Faculty, Department of Health and Physical Education, Tarleton State University, Stephenville, TX, 1993-present.

Courses Previously Taught: Physical Fitness Laboratory, Adapted Physical Education
Research Collaborators: Dr. Joe Priest, Dr. Steve Simpson

Previous Academic Employment:

Associate Professor, Department of Kinesiology, Texas Christian University, 2002-2004.
Graduate Faculty Appointment, College of Health and Human Sciences, Texas Christian University, 2002-2004.

Assistant Professor, Department of Kinesiology, Texas Christian University, 1999-2002.
Graduate Faculty Appointment, College of Health and Human Sciences, Texas Christian

University, 2000-2002.

Assistant Professor, Director of Human Performance Laboratory, Department of Sport Medicine, College of Nursing and Health Professions, University of Southern Maine, Portland, ME, 1995-1999.

Courses Taught: Lifetime Physical Fitness and Wellness, Kinesiology, Exercise Physiology, Exercise Testing and Prescription

Research Collaborators: Dr. John Rosene, Dr. Brian Toy

Graduate Faculty Member, College of Nursing and Health Professions, University of Southern Maine, 1997-1999.

Research Collaborators: Dr. Susan Vines, Dr. Martha Skoner, Dr. Kim Moody

Courses Taught: Pharmacology, Cardiac Rehabilitation, Exercise Testing and Prescription

Visiting Assistant Professor, Director of Human Performance Laboratory, Department of Fitness and Human Performance, University of Houston-Clear Lake, 1992-1993.

Courses Taught: Exercise Physiology, Kinesiology, First Aid, Exercise Testing and Prescription

Previous Adjunct Appointments and Research Collaborations:

Adjunct Faculty, Department of Biological Sciences, University of Southern Maine, 1998-1999.

Courses Team Taught: Anatomy and Physiology I, Anatomy and Physiology II

Research Collaborator: Dr. Patricia O'Mahoney-Damon

Adjunct Graduate Faculty, Department of Occupational Therapy, University of Southern Maine, 1997-1999.

Courses Taught: Applied Research and Statistics I, Applied Research and Statistics II, Applied Neuroanatomy and Physiology

Research Collaborator: Dr. Roxie Black-Hamlin

Adjunct Graduate Faculty, Department of Applied Medical Science: Molecular Biology and Immunology Program, University of Southern Maine, 1997-1999.

Courses Taught as Laboratory Assistant: Molecular Immunology Laboratory, Molecular Biology Laboratory

Research Collaborator: Dr. Stephen Pelsue

Research Collaborator, Department of Medical Physiology, College of Osteopathic Medicine, University of New England, Biddeford, ME, 1998-1999.

Collaborative Investigator: Dr. Deborah Podolin

Previous Non-Academic Employment:

Hood General Hospital, Center for Health and Fitness, Granbury TX, 1993-1994.

Primary Responsibility: Assistant Hospital Administrator

Secondary Responsibility: Director of Operations and Clinical Rehabilitation

Departments Supervised and Managed: Sports Medicine, Cardiac Rehabilitation, Physical and Occupational Therapy, Worksite Health Promotion

GRADUATE AND UNDERGRADUATE TEACHING

Graduate Courses Taught

Exercise Physiology	Clinical Exercise Testing and Prescription
Exercise Physiology Laboratory	Strength Training and Conditioning
Exercise Biochemistry & Endocrinology	Sports Nutrition
Neuromuscular Exercise Physiology	Cardiac Rehabilitation
Cardiopulmonary Exercise Physiology	Adapted and Therapeutic Physical Education
Laboratory Techniques in Exercise Physiology	Physical Fitness and Wellness
Laboratory Techniques in Molecular Biology	Exercise Electrocardiography
Clinical Exercise Physiology	Research Design/Methodology and Statistics
Applied Neuroanatomy	Applied Neurophysiology
Nutritional Biochemistry	Exercise and Nutritional Endocrinology
Muscle Physiology and Biochemistry	

Graduate Theses

Master's Thesis Advisor (at Texas Christian University):

Alison Harvey (2004). The effects of 17- β estradiol on serum IL-6 and IL-10 following eccentric exercise.

Babette Bouw (2004). The protective effects of 17- β estradiol against oxidative stress and apoptosis after eccentric exercise.

Lem Taylor (2003). Effects of three sequential bouts of heavy resistance exercise on HSP-72 and ubiquitin expression.

Chris Bois (2002). Effects of passive heating and exercise-induced muscle injury on HSP-72 and IL-6 expression.

Melanie Brown (2002). HSP-72 and ubiquitin expression after repeated bouts of eccentric exercise.

Matt Nelson (2000). Skeletal muscle heat shock protein-72 mRNA and protein expression after an acute bout of high-intensity weight training.

Master's Thesis Advisor (at Baylor University):

Chris Moulton (2006). Effect of creatine monohydrate supplementation of whole body creatine retention and skeletal muscle creatine uptake regulated by the mRNA and protein expression of the creatine transporter.

Tony Vicanti (2005). Effects of rodent hind-limb suspension on muscle mass and myosin heavy chain, ubiquitin protease, and calpain mRNA expression in slow and fast muscles.

Chris Mulligan (2005). Effects of acute melatonin supplementation and a single bout of resistance exercise on serum growth hormone levels and the hypothalmo-pituitary-adrenal axis.

Dan Rohle (2005). Effect of 8-weeks of resistance training and supplementation with the aromatase inhibitor 6-OXOTM (androst-4-ene-3,6,17-trione) on serum sex hormone levels in trained males.

Doctoral Dissertation Advisor (at Baylor University):

Chad Kerksick (2006). Effects of prophylactic supplementation of carnosine, glutathione, and n-acetyl-cysteine on markers of oxidative stress and skeletal muscle proteolysis and apoptosis after eccentric contraction-induced injury in untrained males

Lem Taylor (2006). Effects of a single bout of low- and high-intensity resistance exercise on myogenic regulatory factor and MAP kinase expression.

Colin Wilborn (2006). Effects of a periodized resistance training program on myosin heavy chain mRNA and MAP kinase expression.

Master's Thesis Committee Member (at Texas Christian University):

Austen Watkins (2004). The thermoprotective effects of HSP-72 in response to exercise in the heat.

Jeff Smith. (2003): Cardiovascular and metabolic effects of acute bouts of upper-body assisted leg exercise in people with spinal cord injury.

Shawn Sultemeire. (2002): Immunological effects of acute bouts of upper-body assisted leg exercise in person's with spinal cord injury.

John Newkirk. (2001): Disability and sports medicine: Perspectives of athletes and athletic trainers.

Michelle Sanders. (2001). Change in motor pattern: Control parameters for a golf swing.

Erin Brady. (2001). Kinematic analysis of the standing start in cycling.

Brian McFarlin. (2000). The effects of repeated bouts of aerobic exercise in a twenty-four hour period on changes in circulating leukocyte number and natural killer cell activity.

Greg Kristoff. (2000). The effects of different recovery modes on lactate clearance and subsequent swim performance.

Undergraduate Courses Taught

Exercise Physiology
Exercise Physiology Laboratory
Strength Training and Conditioning
Exercise Testing and Prescription
Exercise Pharmacology
Exercise and Special Populations

Kinesiology
Tests and Measurements
Principles of Physical Fitness
Lifetime Physical Fitness and Wellness
Health, Emergency Care, and First Aid
Human Anatomy & Physiology

RESEARCH AND SCHOLARSHIP

Research Interests

Effects of Exercise Training and Nutritional Intervention on the Physiological, Biochemical, and Molecular Mechanisms Regulating Skeletal Muscle Strength, Hypertrophy, and Atrophy, Particularly in Aging and other Special Populations.

Research Competencies

RNA/DNA Isolation and Purification
R-T Polymerase Chain Reaction Analysis
Northern Blot Analysis of mRNA
Enzyme-Linked Immunoabsorbent Assay
Western Blot Analysis of Protein
Immunoblotting Analysis of Protein
Gene Cloning and Sequencing
Reporter Gene Assays
High Pressure Liquid Chromatography

Gel Mobility Shift Assays
Agarose Gel Electrophoresis
Polyacrylamide Gel Electrophoresis
Protein Spectrophotometry
Muscle Histochemistry and Fiber Typing
Immunocytochemistry
Percutaneous Needle Biopsy
Hematology Procedures
cDNA Microarrays

Publications

Textbooks

Willoughby, D. S. (Lead Editor). Mechanisms of Muscle Protein Synthesis and Degradation. *Essentials of Protein and Amino Acids in Sports and Exercise*. In preparation for May 2006 publication date.

Textbook Chapters

Willoughby, D. S. Molecular Aspects of Exercise and Nutrition. *Essentials of Sports Nutrition and Exercise*, (ISSN 1-58829-611-3), In press for November 2005 publication date.

Willoughby, D. S. Creatine Monohydrate Supplementation in Strength and Power Sports. *Essentials of Creatine Supplementation in Sports and Exercise*. In preparation for May 2006 publication date.

Referred Journal Articles (In Preparation)

Willoughby, D. S., Kerksick, C., Taylor, L., Bouw, B., & Harvey, A. The protective effect of estrogen against oxidative stress, exercise-induced muscle injury, and skeletal muscle apoptosis in males and females.

Referred Journal Articles (In Press)

Willoughby D. S., Wilborn C. Eight Weeks of Aromatase Inhibition Using the Nutritional Supplement Novedex XT™: Effects on Serum Steroid Hormones, Body Composition, and Clinical Safety Markers in Young, Eugonadal Males. *International Journal of Sports Nutrition and Exercise Metabolism*.

Willoughby D. S., Stout, J., Wilborn C. Effects of heavy resistance training and timed ingestion of a protein and amino acid supplementation on muscle strength and mass and muscle anabolism. *Amino Acids*.

Referred Journal Articles (Published)

Willoughby, D. S., & Taylor, L. (2004). Effects of concentric and eccentric muscle contractions on serum myostatin and FLRG levels. *Journal of Sport Science and Medicine*. 3(4):226-233.

Willoughby, D. S., & Taylor L. (2004). The effects of sequential bouts of heavy resistance training on androgen receptor expression. *Medicine and Science in Sports and Exercise*, 36(9), 1499-1506.

Willoughby, D. S. (2004). Effects of an alleged myostatin binding supplement and heavy resistance training on serum myostatin, muscle strength and mass, and body composition.

International Journal of Sport Nutrition and Exercise Metabolism, 14(4), 461-472.

Willoughby, D. S. (2004). Effects of heavy resistance training on myostatin mRNA and protein expression. *Medicine and Science in Sports and Exercise*, 36(4), 574-582.

Willoughby, D. S., Taylor, M., & Taylor L. (2003). Glucocorticoid receptor and ubiquitin expression after repeated eccentric exercise. *Medicine and Science in Sports and Exercise*, 35(12), 2023-2031.

Willoughby, D. S., VanEnk, C., & Taylor, L. (2003). Effects of concentric and eccentric contractions on exercise-induced muscle injury, inflammation, and serum IL-6. *Journal of Exercise Physiology*, 6(4), 8-15.

Greenwood, M. Kreider, R., Greenwood, L., **Willoughby D. S.**, & Byars A. (2003). Creatine supplementation does not increase the incidence of injury or cramping in college baseball players. *Journal of Exercise Physiology*, 6(4), 16-23.

Kreider R., **Willoughby D. S.**, Greenwood M. Parise, G. Payne, E., & Tarnopolsky, M. (2003). Effects of Serum Creatine Supplementation on Muscle Creatine and Phosphagen Levels. *Journal of Exercise Physiology*, 6(4), 24-33.

Willoughby, D. S., & Rosene, J. M. (2003). Effects of oral creatine and resistance training on Myogenic regulatory factor expression. *Medicine and Science in Sports and Exercise*, 35(6), 923-929.

Willoughby, D. S., Rosene, J., & Myers, J. Ubiquitin and HSP-72 expression and apoptosis after a single session of eccentric exercise. *Journal of Exercise Physiology*, 6(2):88-95, 2003.

Willoughby, D. S., Sultemeire, S., & Brown, M. Human Muscle Disuse Atrophy After 28 Days of Immobilization in a Lower-Limb Walking Boot: A Case Study. *Journal of Exercise Physiology*, 6(2):96-104, 2003.

Willoughby, D. S., McFarlin, B., & Bois, C. (2003). Interleukin-6 expression after repeated bouts of eccentric exercise. *International Journal of Sports Medicine*, 24(1), 15-21.

Kreider, R., Burke, E., Clark, J., Earnest, C., Greenwood, M., Harris, R., Kalman, D., Kleiner, S., Serrano, E., Volek, J., Ziegenfuss, T., & **Willoughby D. S.** The neurosurgeon in sport: awareness of the risks of heatstroke and dietary supplements. *Neurosurgery*, 52(1):252-255, 2003.

Willoughby, D. S., & Nelson, M. (2002). Myosin heavy chain mRNA expression after a single session of heavy resistance exercise. *Medicine and Science in Sports and Exercise*, 34(8), 1262-1269.

Willoughby, D. S., Priest, J., & Nelson, M. (2002). Expression of the stress proteins, ubiquitin and HSP-72, and myofibrillar protein content after 12 weeks of leg cycling in persons with spinal cord injury. *Archives of Physical Medicine and Rehabilitation*, 83(5), 649-654.

Willoughby, D. S., & Rosene, J. M. (2001). Effects of oral creatine and resistance training on myosin heavy chain expression. *Medicine and Science in Sports and Exercise*, 33(10), 1674-1681.

Willoughby, D. S. (2001). Resistance training in the older adult. *American College of Sports Medicine Current Comment*, April, 1-4.

Willoughby, D. S., & Pelsue, S. (2000). Effects of high-intensity strength training on steady-state myosin heavy chain isoform mRNA expression. *Journal of Exercise Physiology*, 3(4), 13-25.

Willoughby, D. S., Priest, J., & Jennings, R. (2000). Myosin heavy chain isoform and ubiquitin protease mRNA expression after passive leg cycling in persons with spinal cord injury. *Archives of Physical Medicine and Rehabilitation*, 81, 157-163.

Willoughby, D. S., & Pelsue, S. (1998). Muscle strength and qualitative myosin heavy chain isoform mRNA expression after moderate- and high-intensity weight training in the elderly. *Journal of Aging and Physical Activity*, 6(4), 327-339.

Willoughby, D. S., & Simpson, S. (1998). Supplemental electromyostimulation and dynamic weight training: Effects on knee extensor strength and vertical jump of female collegiate athletes. *Journal of Strength & Conditioning Research*, 12(3), 131-137.

Willoughby, D. S., Roozen, M., & Barnes, R. (1997). The effects of a low- and high-intensity aerobic exercise program on the functional capacity and cardiovascular efficiency of post-CABG patients. *Journal of Aging and Physical Activity*, 5(2), 1-7.

Willoughby, D. S., Barnes, W. S., Ingalls, C. P., & Smith, S. B. (1996). The effects of the β_2 -agonist clenbuterol and exercise training on muscle protein and performance. *Journal of Strength and Conditioning Research*, 10(4), 228-233.

Willoughby, D. S., & Simpson, S. (1996). The effects of combined electromyostimulation and dynamic muscular contractions on the strength of college basketball players. *Journal of Strength and Conditioning Research*, 10(1), 34-39.

Willoughby, D. S., Green, J. S., Sebesta, T., & Crouse, S. (1994). A comparison of cardiac function in strength- and endurance-trained athletes with left ventricular hypertrophy. *Journal of Human Movement Studies*, 24, 217-235.

Willoughby, D. S. (1993). The effects of weight training programs involving periodization and partially-equated volumes on upper-and lower-body strength. *Journal of Strength and Conditioning Research*, 7(1), 2-8.

Willoughby, D. S. (1992). The effects of two selected weight training programs on upper and lower body strength of trained males. *The Applied Research in Coaching and Athletics Annual, March*, 124-146.

Willoughby, D. S. (1991). Training volume equated: A comparison of periodized and progressive resistance weight training programs. *Journal of Human Movement Studies*, 20(5), 45-58.

Willoughby, D. S., Chilek, D., Schiller, D., & Coast, J. R. (1991). The metabolic effects of three different free weight parallel squatting intensities. *Journal of Human Movement Studies*, 20(2), 15-25.

Willoughby, L. M., **Willoughby, D. S.**, & Moses, P. (1991). Mentors for beginning college student athletes at Texas A&M University: A possible model and aid for academic success. *The Academic Athletic Journal, Fall*, 1-12.

Wright, D. L., Snowden, S. L., & **Willoughby, D. S.** (1990). Summary KR: How much information is used from the summary? *Journal of Human Movement Studies*, 19(3), 119-128

Willoughby, D. S. & Gillespie, J. W. (1990). A comparison of isotonic free weights and omnikinetic exercise machines on strength. *Journal of Human Movement Studies*, 19(2), 93-100.

Non-Refereed Publications

Willoughby, D. S. Creatine's antioxidant potential. *Flex Magazine (May, 2005)*, p. 136.

Willoughby, D. S. Myostatin blocking supplements: Scientifically validated snake-oil. *Muscle (Spring 2004)*. AST Sport Science.

Willoughby, D. S. (1997). Scientific basis of β -hydroxy- β -methylbutyrate (HMB) in bodybuilding and athletics. *ScientificBodybuilding Journal*, 2(4), 15-17.

Willoughby, D. S. (1997). The anabolic role of insulin-like growth factor in promoting skeletal muscle hypertrophy. *Scientific Bodybuilding Journal*, 1(6), 11-12.

Willoughby, D. S. (1996). The effects of resistance training on myosin isoform gene expression in adult human skeletal muscle: A molecular approach. *Scientific Bodybuilding Journal*, 1(3), 9-12.

Willoughby, D. S. (1995). Delayed onset muscle soreness: A possible physiological mechanism and implications for athletes. *Natural Bodybuilding and Fitness*, August, 72.

Willoughby, D. S. (1995). Weight training in the elderly: The health-related basis for increasing muscle strength. *Mobile Health Journal*, 7(2), 20-22.

Willoughby, D. S. (1995). Summer conditioning: Strength training for football. *United States Sports Academy Sport Supplement*, 3(2), 7.

Roozen, M. M., & **Willoughby, D. S.** (1994). Incorporating the Olympic lifts into your strength and conditioning program. *Texas Coach*, November, 48-52.

Willoughby, D. S. (1994). Miracle Muscles? *Muscle and Fitness*, October.

Willoughby, D. S. (1994). Clenbuterol: Agonist or Enemy. *Muscle and Fitness*, January.

Willoughby, D. S. (1993). Anaerobic power: Incorporating principles to increase its capacity through weight training. *Texas Coach*, August.

Willoughby, D. S. (1991). Strength training involving periodization: The physiological and training-related mechanisms which make it effective. *Texas Coach*, October, 35-36.

Willoughby, D. S. (1991). Muscle fiber composition, distribution, and somatotype: Can they be used as screening tools to accurately predict an individual's athletic success? *Texas Coach*, February, 56-59.

Willoughby, D. S. (1990). The parallel squat: A kinesiological analysis, rehabilitative and training protocol, and practical implications for coaches. *Texas Coach*, October, 36-39.

Willoughby, D. S. (1990). Delayed onset muscle soreness: A possible physiological etiology and practical implications for coaches. *Texas Coach*, August, 34-36.

Willoughby, D. S. (1990). The prevention of sports injuries in high school athletes through strength training. *Texas Coach*, March, 24-25.

Professional Refereed Presentations

Willoughby D. S., Wilborn C., & Taylor L. Resistance exercise intensity does not differentially affect skeletal muscle myostatin gene expression but does increase serum myostatin propeptide

levels. Annual meeting of the International Society of Sports Nutrition, Las Vegas, NV, June 2006.

Willoughby D. S. Estradiol Attenuates Myostatin mRNA Expression After Eccentric Exercise in Females. Annual conference of the American College of Sports Medicine, Denver, CO, May 2006.

Willoughby D. S., Stout, J., Wilborn, C., Taylor, L., & Kerksick, C. Effects of heavy resistance training and proprietary whey+casein+leucine protein supplementation on muscle strength and mass and MHC isoform mRNA expression. Annual meeting of the National Strength and Conditioning Association, Las Vegas, NV, July 2005.

Willoughby D. S. Stout, J., Wilborn, C., Taylor, L., Kerksick, C. Effects of Heavy Resistance Training and Proprietary Whey+Casein+Leucine Protein Supplementation on Serum and Skeletal Muscle IGF-1 Levels and IGF-1 and MGF mRNA Expression. Annual meeting of the International Society of Sports Nutrition, New Orleans, LA, June 2005.

Willoughby D. S., Kerksick, C., Bouw, B., Harvey, A. Effects of Eccentric Muscle Contractions on Estrogen Receptor- α and Myostatin mRNA Expression in Males and Females. Annual conference of the International Society of Sports Nutrition, New Orleans, LA, June 2005.

Willoughby, D. S., Taylor, L., & Taylor, M. Effects of eccentric muscle contractions on skeletal muscle myostatin mRNA expression in humans. Annual conference of the Federation of the American Societies of Experimental Biology, San Diego, April 2005.

Willoughby, D. S., Taylor, L., & Taylor, M. Effects of eccentric muscle contractions of serum myostatin and propeptide levels in humans. Annual conference of the Federation of the American Societies of Experimental Biology, San Diego, April 2005.

Willoughby, D. S., Bouw, B., Gillam, K., and Ziegenfuss, T. Effects of a single dose of Xenadrine-NRG on heart rate and blood pressure responses in males and females. Annual meeting of the International Society of Sports Nutrition, Las Vegas, NV, June 2004.

Willoughby, D. S. Effects of heavy resistance training on myostatin mRNA and protein expression. Annual conference of the American College of Sports Medicine, Indianapolis, IN, May 2004.

Willoughby, D. S., & Rosene, J. Effects of oral creatine and resistance training on Myogenic regulatory factor expression. Annual conference of the American College of Sports Medicine, San Francisco, CA, May 2003.

Willoughby, D. S., Brown, M., and Taylor, L. Effects of Repeated Bouts of Eccentric Exercise on Muscle Injury and HSP-72 and Ubiquitin Expression. Annual conference of the Federation of the American Societies of Experimental Biology, San Diego, April 2003.

Willoughby, D. S., Taylor, L., and Greenwood, M. Effects of Training Status on HSP-72 and Ubiquitin Expression and Serum Cortisol After Three Sequential Bouts of Heavy Resistance Exercise. Annual conference of the Federation of the American Societies of Experimental Biology, San Diego, April 2003.

Kreider, R, **Willoughby, D. S.**, Greenwood, M., Payne, E., Parise, G., and Tarnopolsky, M. Creatine SerumTM Supplementation Has No Effect On Muscle ATP or Creatine Levels. Annual conference of the Federation of the American Societies of Experimental Biology, San Diego, April 2003.

Brown, M., **Willoughby, D. S.**, & Taylor, L. Effects of Repeated Bouts of Eccentric Exercise on HSP-72 and Ubiquitin Expression. Annual conference of the American College of Sports Medicine, San Francisco, CA, May 2003.

Greenwood, M., Greenwood, L., Kreider, R., & **Willoughby D. S.** The effects of a botanical COX-2 inhibitor supplement on knee range of motion following isokinetic performance. Annual conference of the National Athletic Training Association, St Louis, MO, June 2003.

Greenwood, L., Greenwood, M., Kreider, R., & **Willoughby D. S.** The effects of a botanical COX-2 inhibitor supplement on muscular soreness. Annual conference of the National Athletic Training Association, St Louis, MO, June 2003.

Willoughby, D. S., Rosene, J., & Myers, J. Ubiquitin and HSP-72 expression and caspase-3 activity after a single bout of eccentric exercise. Annual conference of the American College of Sports Medicine, St. Louis, MO, May 2002.

Willoughby, D. S., & Nelson, M. Role of the myogenic regulatory factors, Myo-D, myogenin, and Id-1 in myosin heavy chain mRNA expression after an acute bout of heavy resistance training. Annual conference of the American Society of Exercise Physiologists, Memphis, TN, September 2001.

Willoughby, D. S., Priest, J., & Nelson, M. Expression of the stress proteins, ubiquitin and HSP-72, and myofibrillar protein content after passive leg cycling in persons with spinal cord injury. Annual conference of the American College of Sports Medicine. Baltimore, MD, May 2001.

Nelson, M. J., Bois, C, Brown, M, & **Willoughby, D. S.** HSP72 expression following an acute bout of high intensity weight training. Annual conference of the American College of Sports Medicine. Baltimore, MD, May 2001.

Nelson, M. J., & **Willoughby, D. S.** HSP72 expression following an acute bout of high intensity weight training. Annual conference of the Texas Chapter of the American College of Sports Medicine. Fort Worth, TX, February 2001.

Willoughby, D. S., & Priest, J. W. Role of heat shock protein-72, ubiquitin proteolysis, and myosin heavy chain mRNA and protein expression on myofibrillar protein accretion in spinal cord injured following passive leg cycling. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance. Dallas, TX, December 2000.

Willoughby, D. S., McFarlin, B., Bois, C., & Encarnacion, M. Interleukin-6 expression after two muscle injury-inducing exercise bouts. Annual conference of the American Physiological Society's meeting for the Integrative Biology of Exercise. Portland, ME, September 2000.

Willoughby, D. S., Priest, J., & Jennings, R. Myosin heavy chain mRNA and protein expression in spinal cord injured following passive leg cycling. Annual conference of the American College of Sports Medicine, Indianapolis, IN, June 2000.

Willoughby, D. S., Priest, J., & Jennings, R. Qualitative myosin heavy chain and ubiquitin protease mRNA expression after voluntary leg cycling in spinal cord injured. Annual conference of the American College of Sports Medicine, Seattle, WA, June 1999.

Willoughby, D. S., & Pelsue, S. Myosin heavy chain mRNA expression in the elderly after weight training. Annual conference of the American College of Sports Medicine, Orlando, FL, June 1998.

Willoughby, D. S., & Simpson, S. Supplemental electromyostimulation and dynamic weight training: Effects on knee extensor strength and vertical jump of female collegiate athletes. Annual conference of the American College of Sports Medicine, Denver, CO, May 1997.

Willoughby, D. S., Roozen, M., & Barnes, R. Low- and high-intensity exercise on cardiac function and efficiency of post-CABG patients. Annual conference of the American College of Sports Medicine, Cincinnati, OH, May 1996.

Willoughby, D. S., & Simpson, S. The effects of combined electromyostimulation and dynamic muscular contractions on the strength of college athletes. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, Galveston, TX, December 1994.

Willoughby, D. S., Barnes, W. S., Ingalls, C. P., & Smith, S. Clenbuterol and exercise: Effects of a β_2 -adrenoceptor agonist on locomotor endurance capacity and muscular force production. Annual conference of the American College of Sports Medicine, Seattle, WA, June 1993.

Willoughby, D. S. Effects of weight training programs involving periodization and partially-equated on upper and lower body strength. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, Dallas, TX, February 1993.

Willoughby, D. S., Barnes, W. S. Ingalls, C. & Smith, S. Interaction between clenbuterol and exercise: Effects of a β_2 -adrenergic agonist on anaerobic endurance capacity and force output. Annual conference of Texas Chapter of the American College of Sports Medicine, Ft. Worth, TX, January 1993, **Graduate Student Research Award**.

Ingalls, C., **Willoughby, D. S.**, Barnes, W. S., Cline, C., & Chilek, D. Epinephrine and glycogenolysis in isolated skeletal muscle. Annual conference of the American College of Sports Medicine, Dallas, TX, May 1992.

Willoughby, D. S., Green, J. S., Childs, T., Sebesta, T., Henderson, D., Martindale, T., & Crouse, S. A Comparison of cardiac function between strength- and endurance-trained athletes with left ventricular hypertrophy. Annual conference of the Texas Chapter of the American College of Sports Medicine, Austin, TX, January 1992.

Ingalls, C., **Willoughby, D. S.**, Barnes, W. S., Cline, C., & Chilek, D. Epinephrine and glycogenolysis in isolated skeletal muscle. Annual conference of the Texas Chapter of the American College of Sports Medicine, Austin, TX, January 1992, **Graduate Student Research Award**.

Willoughby, D. S., & Gillespie, J. S. A comparison of isotonic free weights and omnikinetic exercise machines on strength. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, Lubbock, TX, December 1990.

Willoughby, D. S., Chilek, D., Schiller, D., Ball, G., & Coast, J. R. The metabolic effects of a low, moderate, and high intensity free weight squat performance on trained weight lifters. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, Lubbock, TX, December 1990.

Professional Invited Presentations

Willoughby, D. S. **Factors Regulating Muscle Creatine Uptake: Applications Relevant to Sport Performance**. Annual meeting of the International Society of Sports Nutrition, Las Vegas, NV, June 2006.

Willoughby, D. S. Optimal Protein and Amino Acid Intake to Promote Muscle Hypertrophy. International Society of Sports Nutrition Regional Symposium, Florida Atlantic University, Davie, FL, April 2006.

Willoughby, D. S. Optimal Protein and Amino Acid Intake to Promote Muscle Hypertrophy. Arnold Strength Summit, Columbus, OH, March 2006.

Willoughby, D. S. Supplements That Enhance Lean Body Mass. International Society of Sports Nutrition Regional Symposium, Baylor University, Waco, TX, December 2005.

Willoughby, D. S. Supplements That Enhance Lean Body Mass. International Society of Sports

Nutrition Regional Symposium, California State University at Fullerton, Fullerton, CA, November 2005.

Willoughby, D. S. How Academic Centers View Clinical Research on Dietary Supplements. International Conference on Nutraceuticals and Functional Foods (World Nutra), Anaheim, CA, October 2005.

Willoughby, D. S. Anabolic Steroids and Pro-Hormone Supplements: Illegal/Banned Performance Enhancers. An invited steroid awareness talk for the athletes, coaches, and parents of The Colony High School, The Colony, TX, August 2005.

Willoughby, D. S. Legal performance enhancers: supplements as training tools. Athletes' Performance Institute, Phoenix, AZ, December, 2004.

Willoughby, D. S. Myostatin expression in response to immobilization and load-induced contractions. Graduate seminar, Department of Health and Kinesiology, Texas A&M University, November, 2004.

Willoughby, D. S. The role of myostatin and the rationale behind myostatin-binding supplements. Annual meeting of the International Society of Sports Nutrition, Las Vegas, NV, June 2004.

Willoughby, D. S. Nutrition and sport supplements. Annual meeting of the Texas Chapter of the National Strength and Conditioning Association, Denton, TX, May 2004.

Willoughby, D. S. Sport nutrition and supplements. Sports Nutrition Symposium, Bowdoin College, Brunswick, ME. November 2003.

Willoughby, D. S. Incorporating molecular biology into the teaching and research of exercise physiology. Annual convention of the American Society of Exercise Physiologists, Sacramento, CA, April, 2003.

Willoughby, D. S. Sports nutrition and supplementation. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, Fort Worth, TX, December 2002.

Willoughby, D. S. Molecular biology and the response to exercise. Annual conference of the Southwest Chapter of the American College of Sports Medicine, Las Vegas, NV, November 2002.

Willoughby, D. S. Sport ergogenic aids. Sports Nutrition Symposium, University of Southern Maine, Portland, ME. June 2002.

Willoughby, D. S. Sport nutrition and supplements. Annual meeting of the Texas Chapter of the

National Strength and Conditioning Association. Denton, TX, April, 2002.

Willoughby, D. S. Exercise and fitness in the elderly. Elder Issues Television Show, Area Agency on Aging of Tarrant County, Fort Worth, TX, September 2001.

Willoughby, D. S. Nutrition and sport supplements. Annual meeting of the Texas Chapter of the National Strength and Conditioning Association, College Station, TX, May 2001.

Willoughby, D. S. The possible anti-proteolytic role of HSP-72 in skeletal muscle. Annual convention of the Texas Chapter of the American College of Sports Medicine. Fort Worth, TX, February 2001.

Willoughby, D. S. IL-6 expression after two muscle injury inducing exercise bouts. Presentation for the University of Texas at Arlington's Exercise Science Seminar, November 2000.

Willoughby, D. S. Applying molecular biology into the field of exercise physiology. Annual convention of the American Society of Exercise Physiologists, Albuquerque, NM, September 2000.

Willoughby, D. S. Sport supplements: Implications for athletic trainers. Annual meeting of the Southwest Chapter of the National Athletic Training Association, Arlington, TX, July 2000.

Willoughby, D. S. Sport supplements: A scientific perspective. Annual meeting of the Texas Chapter of the National Strength and Conditioning Association, College Station, TX, May 2000.

Willoughby, D. S. Physiological factors affecting muscle strength and size as a result of weight training. Annual conference of the Maine Chapter of the National Strength and Conditioning Association, Brunswick, ME, June 1999.

Willoughby, D. S. Strength training for the knee after physical therapy rehabilitation of an ACL reconstruction. Presentation for Orthopedic Associates of Portland, Portland, ME, April 1998.

Willoughby, D. S. Strength training in the elderly: Where to begin and how to progress. Presentation for the Southern Maine Area Agency on Aging, Portland, ME, November 1997.

Willoughby, D. S. The advantages of exercise in the life of diabetics. Annual conference of the Maine Chapter of the American Diabetic Association, Falmouth, ME, April 1997.

Willoughby, D. S. Effects of low- and high-intensity weight training in counteracting sarcopenia and regulating myosin heavy chain gene expression in the elderly: Implications for practitioners. Annual conference of the Maine Chapter of the National Gerontological Nurses Association, Portland ME, April 1997.

Willoughby, D. S. The importance of strength training and nutrition for improving athletic performance. Workshop for North Yarmouth Academy, Yarmouth, ME, November 1996.

Roozen, M. M., & **Willoughby, D. S.** Incorporating the Olympic lifts into your athletic conditioning curriculum. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, November 1996.

Willoughby, D. S., & Snowden, S. Preventing athletic injuries in high school athletes through strength training. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, November 1996.

Willoughby, D. S. Over-training: Can it actually cause decrements in athletic performance? Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, Dallas, TX, November 1995.

Willoughby, D. S. Incorporating resistance training into the exercise programs of the elderly and Phase 3 cardiac rehab patients. Presentation for the Medical Staff of Hood General Hospital, Granbury TX, April 1994.

Willoughby, D. S. Sports medicine considerations in conditioning the youth athlete: Implications for coaches. Presentation to a coaching clinic for Weatherford College, Weatherford TX, January 1994.

Willoughby, D. S. Optimizing athletic performance: Incorporating variation into your strength and conditioning program. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, December 1993.

Willoughby, D. S. Clenbuterol as a muscle growth promoter: Can it be considered as an ergogenic aid? Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, Dallas, TX, December 1993.

Willoughby, D. S. Anaerobic conditioning of athletes: Where does strength training fit in? Annual conference on Innovations in Sports Medicine, University of Texas Medical Branch, Galveston TX, July 1993.

Willoughby, D. S. The importance of weight training and proper nutritional habits in optimizing athletic performance. Presentation for Corpus Christi Athletic Club, Corpus Christi TX, April 1993.

Willoughby, D. S. Prepubescent strength training: Some considerations. Presentation for the medical staff of Texas Children's Hospital, Houston TX, March 1993.

Willoughby, D. S. Ensuring reliability and validity when testing your athletes. Annual

conference of the Texas Chapter of the National Strength and Conditioning Association, Texas A&M University, June 1992.

Willoughby, D. S. The use and abuse of anabolic steroids in high school and collegiate athletics. Annual conference of the Texas Association of Health, Physical Education, Recreation, and Dance, Dallas TX, December 1989.

Faculty-Sponsored Graduate Student Publications

Schoch, R., **Willoughby, D.S.**, & Greenwood, M. (2006). The regulation and expression of the creatine transporter: a brief review of creatine supplementation in humans and animals. *Journal of the International Society of Sports Nutrition*. 3(1): 60-65.

Wismann, J. & **Willoughby, D. S.** (2006). Gender differences in carbohydrate metabolism and carbohydrate loading. *Journal of the International Society of Sports Nutrition*. 3(1):28-35.

Kerksick, C., & **Willoughby, D. S.** (2005). The antioxidant role of glutathione and n-acetylcysteine supplements and exercise-induced oxidative stress. *Journal of the International Society of Sports Nutrition*. 2(2):38-44.

Wilborn, C., & **Willoughby, D. S.** (2004). The role of dietary protein intake and resistance training on myosin heavy chain expression. *Journal of the International Society of Sports Nutrition*. 1(2):27-34.

Faculty-Sponsored Graduate Student Presentations

Kerksick, C., Campbell, B., & **Willoughby, D. S.** Changes in Muscle Damage Markers, Soreness, and Strength after a 14-Day Prophylactic Period of Antioxidant Supplementation Followed by Eccentric Exercise. Annual meeting of the National Strength and Conditioning Association, Washington, DC, July 2006.

Nassar, E., Mulligan, C., Taylor, L., Kerksick, C., Galbreath, M., Greenwood, M., & **Willoughby D. S.** Effects of prophylactic N-Acetyl-5-methoxytryptamine (melatonin) supplementation and resistance exercise on serum growth hormone levels and the hypothalamus-pituitary-adrenal axis in young males and females. Annual meeting of the International Society of Sports Nutrition, Las Vegas, NV, June 2006.

Roberts, M., Kerksick, C., Taylor, L., Iosia, M., Campbell, B., Wilborn, C., Harvey, T., Wilson, R., Greenwood, M., **Willoughby, D. S.**, and Kreider R. Hormonal and intramuscular adaptations over 50 days of concomitant arachidonic acid supplementation and resistance training. Annual meeting of the International Society of Sports Nutrition, Las Vegas, NV, June 2006.

Kerksick, C., Taylor, L., Bouw, B., Harvey, A., & **Willoughby, D. S.** The Protective Effect of Estrogen Against Oxidative Stress, Eccentric Muscle Injury, and Skeletal Muscle Apoptosis in Males and Females. Annual conference of the American College of Sports Medicine, Denver, CO, May 2006.

Watkins, A., Mitchell, J., & **Willoughby, D. S.** The thermoprotective effects of HSP-72 in response to exercise in the heat. Annual conference of the American College of Sports Medicine, Denver, CO, May 2006.

Kerksick, C. & **Willoughby, D. S.** The Effects of 14-Days of Prophylactic Supplementation n-Acetyl-Cystein and EGCG on Oxidative Stress, Exercise-Induced Muscle Injury, and Skeletal Muscle Apoptosis in Males. Annual meeting of the Federation of the American Societies of Experimental Biology, San Francisco, CA, April 2006.

Taylor, L. & **Willoughby, D. S.**, Raf-1, MEK 1, and ERK 1/2 MAPK Activity After Heavy Resistance Exercise. Annual meeting of the Federation of the American Societies of Experimental Biology, San Francisco, CA, April 2006.

Wilborn C. & **Willoughby D. S.** Eight Weeks of Aromatase Inhibition Using the Nutritional Supplement Novedex XTTM: Effects on Serum Steroid Hormones, Body Composition, and Clinical Safety Markers in Young, Eugonadal Males. Annual meeting of the Federation of the American Societies of Experimental Biology, San Francisco, CA, April 2006.

Nassar, E. Mulligan, C., & **Willoughby, D. S.** Effects of a Single Does of Melatonin and Heavy Resistance Exercise on Serum Growth Hormone Levels and the Hypathalmo-Pituitary-Adrenal Axis. Annual meeting of the Federation of the American Societies of Experimental Biology, San Francisco, CA, April 2006.

Kerksick, C. & **Willoughby, D. S.** The Effects of 14-Days of Prophylactic Supplementation n-Acetyl-Cystein and EGCG on Oxidative Stress, Exercise-Induced Muscle Injury, and Skeletal Muscle Apoptosis in Males. Texas Chapter of the American College of Sports Medicine, February, 2006, Denton, TX.

Wilborn C. & **Willoughby D. S.** Eight Weeks of Aromatase Inhibition Using the Nutritional Supplement Novedex XTTM: Effects on Serum Steroid Hormones, Body Composition, and Clinical Safety Markers in Young, Eugonadal Males. Texas Chapter of the American College of Sports Medicine, February, 2006, Denton, TX.

Nassar, E. Mulligan, C., & **Willoughby, D. S.** Effects of a Single Does of Melatonin and Heavy Resistance Exercise on Serum Growth Hormone Levels and the Hypathalmo-Pituitary-Adrenal Axis. Texas Chapter of the American College of Sports Medicine, February, 2006, Denton, TX.

Harvey, T., Taylor, L., & **Willoughby, D. S.** Effects on Concentric and Eccentric Muscle Contractions of Serum IL-6 and IL-10 Levels. Texas Chapter of the American College of Sports Medicine, February, 2006, Denton, TX.

Roberts, M., Taylor, L., & **Willoughby, D. S.** Effects on Concentric and Eccentric Muscle Contractions of Serum PGF2-alpha Levels. Texas Chapter of the American College of Sports Medicine, February, 2006, Denton, TX.

Kerksick, C., Taylor, L., Bouw, B., Harvey, A., & **Willoughby, D. S.** The Protective Effect of Estrogen Against Oxidative Stress, Exercise-Induced Muscle Injury, and Skeletal Muscle Apoptosis in Males and Females. Annual meeting of the International Society of Sports Nutrition, New Orleans, LA, June 2005.

Wilborn, C., Taylor, L., Kerksick, C., Stout, J., & **Willoughby D. S.** Effects of heavy resistance training and proprietary whey+casein+leucine protein supplementation on muscle strength and mass and MHC isoform mRNA expression. Annual meeting of the International Society of Sports Nutrition, New Orleans, LA, June 2005. **student research award**

Moulton, C., Eckerson, J., Fry, A., Moore, C., Schilling, B., & **Willoughby, D. S.** The effects of two different creatine formulations on human skeletal muscle creatine transporter mRNA expression. Annual meeting of the International Society of Sports Nutrition, New Orleans, LA, June 2005.

Taylor, L., Wilborn, C., Harvey, T., Wismann, J., & **Willoughby, D. S.** The Effects of JavaFit Energy Extreme Coffee Ingestion on Resting Energy Expenditure and Hemodynamic Responses. Annual meeting of the International Society of Sports Nutrition, New Orleans, LA, June 2005.

Roberts, M., Taylor, L., Wismann, J., Wilborn, C., & **Willoughby, D. S.** The effects of JavaFit coffee ingestion on aerobic and anaerobic exercise performance. Annual meeting of the International Society of Sports Nutrition, New Orleans, LA, June 2005.

Taylor, L., & **Willoughby, D. S.** Effects of hind-limb un-weighting on myostatin mRNA expression in fast- and slow-twitch rodent muscles. Annual conference of the Federation of the American Societies of Experimental Biology, San Diego, April 2005.

Taylor, L., & **Willoughby, D. S.** Effects of hind-limb un-weighting on myostatin mRNA expression in fast- and slow-twitch rodent muscles. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, March, 2005, Dallas, TX. **student research development award**

Wilborn, C., & **Willoughby, D. S.** Effects of heavy resistance training and proprietary whey+casein protein supplementation on muscle strength and mass and MHC isoform mRNA expression. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, March, 2005, Dallas, TX.

Watkins, A., **Willoughby, D. S.**, Cheek, D., & Mitchell, J. Effects of exercise and prior heat stress on heat acclimation and HSP-72 expression. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, March, 2005, Dallas, TX. **1st place, student research award**

Harvey, A., Watkins, A., Taylor, L., and **Willoughby, D.S.** Effects of Heavy Resistance Exercise on Skeletal Muscle IL-6 Expression and Serum IL-10. Annual conference of the American College of Sports Medicine, Indianapolis, IN, May 2004.

Harvey, A., Watkins, A., Taylor, M., & **Willoughby, D. S.** Effects of sequential bouts of heavy resistance exercise on IL-6 and IL-6 receptor expression in skeletal muscle. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, February, 2004, Tyler, TX. **1st place, student research award**

Watkins, A., Harvey, A., Mitchell, J., & **Willoughby, D. S.** Effects of repeated exercise bouts in the heat on the expression of skeletal muscle HSP-72. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, February, 2004, Tyler, TX. **2nd place, student research award**

Sultemeire, S., Smith, J. Mitchell, J., & **Willoughby, D. S.** Immunological and metabolic responses of the spinal cord injured to active and passive forms of leg cycling exercise. Presented at the annual conference of the American College of Sports Medicine, May, 2003, San Francisco, CA.

Taylor, L. & **Willoughby, D. S.** Effects of training status on HSP-72 and ubiquitin expression after three sequential bouts of heavy resistance exercise. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, March, 2003, Houston, TX. **1st place, student research award**

Sultemeire, S., Smith, J. Mitchell, J., & **Willoughby, D. S.** Immunological and metabolic responses of the spinal cord injured to active and passive forms of leg cycling exercise. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, March, 2003, Houston, TX. **3rd place, student research award**

Brown, M., Taylor, L., & **Willoughby, D. S.** HSP-72 and ubiquitin expression after repeated bouts of eccentric exercise. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, February, 2002, Southwestern University. **1st place, student research award**

Sultemeire, S., **Willoughby, D. S.**, & Mitchell, J. Effect of carbohydrate status of lymphocyte HSP-72 expression. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, February, 2002, Southwestern University. **3rd place, student research award**

Manigold, B., Sultemeire, S., & **Willoughby, D. S.** Effects of skeletal muscle immobilization of HSP-72 and ubiquitin expression: A case study. Presented at the annual conference of the Texas Chapter of the American College of Sports Medicine, February, 2002, Southwestern University.

Nelson, M., Bois, C., Brown, M. & **Willoughby, D. S.** Heat shock protein-72 mRNA and protein expression after an acute bout of high-intensity weight training. Presented at the 2001 conference of the Texas Chapter of the American College of Sports Medicine, February, 2001, Texas Christian University. **3rd place, student research award**

Nelson, M., Encarnacion, M., & **Willoughby, D. S.** Effects of creatine monohydrate supplementation and high-intensity weight training on myosin heavy chain isoform mRNA and protein expression. Presented at the 2000 conference of the Texas Chapter of the American College of Sports Medicine, February 11, 2000, Texas A&M University. **3rd place, student research award**

Nelson, M. J., Bois, C, Brown, M, & **Willoughby, D. S.** HSP-72 expression following an acute bout of high intensity weight training. Annual conference of the American College of Sports Medicine. Baltimore, MD, May 2001.

Nelson, M., & **Willoughby, D. S.** HSP-72 expression following an acute bout of high intensity weight training. Annual conference of the Texas Chapter of the American College of Sports Medicine. Fort Worth, TX, February 2001.

REVIEWS

Refereed Journal Reviewer

American Journal of Physiology – Heart and Circulatory Physiology

American Journal of Physiology – Regulatory, Integrative, and Comparative Physiology

Archives of Medical Research

Archives of Physical Medicine and Rehabilitation

British Journal of Sports Medicine

International Journal of Sports Nutrition and Exercise Metabolism (**Editorial Board**)

Journal of Aging and Physical Activity

Journal of Applied Physiology

Journal of Sport Science and Medicine (**Associate Editor, Nutrition Section**)

Journal of Strength and Conditioning Research (**Editorial Board**)

Medicine and Science in Sports and Exercise

Muscle and Nerve

Public Health International Association (**Editorial Board**)

GRANTS AND CONTRACTS

External Support

Submitted

Willoughby, D. S. Acquisition of a Real-Time PCR and DNA Microarray System for Teaching and Research in Exercise Physiology. National Science Foundation. **Amount Requested: \$130,000.**

Willoughby, D. S., Mitchell, J., Johnson, M., Pope, M., Rhea, D., Shah, M., & Voss, K. Effects of eight weeks of dietary and exercise intervention on physiological, biomechanical, and psychological function, and risk of cardiovascular disease in individuals with spinal cord injury: a multidisciplinary investigation. Christopher Reeve Paralysis Foundation. **Amount Requested: \$141,000.**

Willoughby, D. S., & Priest, J. W. (2000). Muscle protein synthesis and degradation mechanisms after long-term cycling exercise in the spinal cord injured. The Aircast Foundation, Amount Requested: \$100,000.

Priest, J. W., & **Willoughby, D. S.** (1999). Myosin heavy chain and ubiquitin protease mRNA expression after passive leg cycling in SCI individuals. American Heart Association, Amount Requested: \$200,000.

Willoughby, D. S. (1999). Myosin heavy chain isoform and ubiquitin protease gene expression in the elderly after weight training. American Federation for Aging Research, Amount Requested: \$40,000.

Willoughby, D. S. (1997). Myosin heavy chain isoform mRNA expression in the elderly after weight training, National Institutes of Health: National Institute of Musculoskeletal and Skin Disease (R03), Amount Requested: \$50,000.

Willoughby, D. S. (1996). Effects of weight training on the muscle strength and myosin heavy gene expression of previously-inactive elderly men and women. Maine Space Grant Consortium, Maine Science and Technology Foundation, Amount Requested: \$22,000.

Willoughby, D. S., Gillespie, J. W., Priest, J., Simpson, S., & Giles, R. (1993). The effects of Nautilus resistance training on the muscle strength and morphology of elderly men and women. NIRSA Foundation, Nautilus equipment grant. Amount Requested: \$100,000.

Willoughby, D. S., Priest, J., & Simpson, S. (1993). Using Resistance Training to Counteract Inactivity-Induced Muscle Atrophy. National Institutes of Health/National Institute on Aging (R15), Amount Requested: \$75,000.

Willoughby, D. S., Coleman, A. E., O'Neill, D. B., & Siconolfi, S. (1992). The effects of varying weight training exercises on heart rate, blood lactate, and creatine kinase activity. AAHPERD/NASPE. March 1993, Amount Requested: \$5,000.

Pending

Willoughby, D. S., & Stout, J. Effects of Heavy Resistance Training and Muscle ArmorTM Supplementation on Muscle Strength and Mass, Body Composition, Molecular Mechanisms Regulating Skeletal Muscle Anabolism and Catabolism, and Clinical Safety Markers. Experimental and Applied Science/Ross Pharmaceutical Laboratories. Amount: \$90,000 (indirect cost to Baylor: \$22,956).

Willoughby, D. S. Effects of 9 Weeks of Leucine+Ketoisocaproate (LeukicTM) Supplementation on Body Composition, Muscle Strength and Mass, Molecular Markers of Protein Synthesis and Satellite Cell Activation, and Clinical Safety Markers. Iovate Health Sciences Research, Inc. Amount: \$100,000 (indirect cost to Baylor: \$35,000).

Received

Willoughby, D.S. (2004). Effects of Eight Weeks of NovedexTM Supplementation on Serum Hormone Profiles and Serum and Urinary Clinical Safety Markers in Resistance-Trained Males. Gaspari Nutrition. **Amount Funded: \$42,000 (indirect costs: \$4,400).**

Willoughby, D.S. (2004). Effects of Java-Fit Coffee on Hemodynamic Function and Energy Expenditure at Rest and After Aerobic and Anaerobic Exercise in Males and Females. Javalution Coffee Company. **Amount Funded: \$11,000 (indirect costs: \$1,000).**

Willoughby, D.S. (2004). Effects of Prophylactic Doses of a Melatonin Supplement on Serum Growth Hormone Levels and the Hypothalamus-Pituitary-Adrenal Axis in Young and Old Males and Females. Iovate Health Sciences Research, Inc. **Amount Funded: \$131,000 (indirect costs: \$17,296).**

Willoughby, D.S. (2004). Effects of Heavy Resistance Training and Oral 7-Keto DHEA Supplementation on Molecular and Biochemical Mechanisms Regulating Skeletal Muscle and Adipose Tissue Lipolysis in Trained Males. Biotest Laboratoreis. **Amount Funded: \$26,000 (indirect costs: \$2,700).**

Willoughby, D.S. (2004). Effects of Eight Weeks of 6-OXOTM Supplementation on Serum Hormone Profiles and Serum and Urinary Clinical Safety Markers in Resistance-Trained Males. Proviant Laboratories. **Amount Funded: \$38,000 (indirect cost to Baylor: \$4,900).**

Willoughby, D. S. (2004). Effects of a single dose of the thermogenic supplement Xenadrine-NRG on cardiovascular responses in males and females. Cytodone Technologies, Inc., **Amount Funded: \$5,000.**

Willoughby, D. S. (2003). Effects of heavy resistance training and an oral proprietary protein supplement on myosin heavy chain and myogenic regulatory factor expression. STRONG Research, Inc., **Amount Funded: \$10,000.**

Willoughby, D. S. (2003). Effects of heavy resistance training and an oral protein+creatine supplement on myosin heavy chain, myogenic regulatory factor, and IGF-1 expression. MetRx USA, **Amount Funded: \$45,000 (indirect cost: \$14,600).**

Willoughby, D. S. (2003). Effects of heavy resistance training and oral myostatin and cortisol inhibitors on serum myostatin content, muscle mass and function, and body composition, Champion Nutrition, Inc. Costa Mesa, CA, **Amount Funded: \$5,000.**

Willoughby, D. S. (2002). Effects of Oral Serum Creatine Supplementation on Muscle Total Creatine and Phosphocreatine Content. RBK Consultations. **Amount Funded: \$7,500.**

Lewis, M. (2000). Effects of glycogen levels on serum cortisol and lymphocyte heat shock protein-72 content. **D. Willoughby** and J. Mitchell as Faculty Sponsors. Gatorade Sport Science Institute. **Amount Funded: \$500.00.**

Willoughby, D. S. (1998). Effects of high-intensity weight training and creatine monohydrate supplementation on myosin heavy chain isoform and ubiquitin protease gene expression. NutraSense, Inc. **Amount Funded: \$5,000.**

Willoughby, D. S., Jacobson, C., & Kozar, M. (1993). Developing a primary care clinic for the indigent in Hood County. Texas Department of Health. **Amount Funded: \$200,000.**
Internal Support

Willoughby, D. S. (2006). Effects of single bouts of low- and high-intensity resistance exercise on activity of MAP kinase signaling and myosin heavy chain mRNA expression. URC Research Award, Baylor University. **Amount Funded: \$3,000.**

Willoughby, D. S. (2005). Effects of prophylactic supplementation of carnosine, glutathione, and N-acetyl-cysteine on markers of oxidative stress and skeletal muscle proteolysis and apoptosis after eccentric contraction-induced injury in untrained males. URC Research Award, Baylor University. **Amount Funded: \$3,000.**

Willoughby, D. S. (2003). The protective effects of estrogen against oxidative stress and exercise-induced muscle injury in females. TCU Research and Creative Activities Fund. **Amount Funded: \$2,500.**

Willoughby, D. S. (2002). Quantitating biochemical molecules using absorbance spectroscopy. TCU Instructional Development Fund. **Amount Funded: \$3,000.**

Willoughby, D. S. (2001). Effects of exercise-induced muscle injury on muscle proteolysis: role

of HSP-72 and ubiquitin expression. TCU Research and Creative Activities Fund.
Amount Funded: \$3,500.

Willoughby, D. S. (2001). Quantitating biochemical molecules using fluorescence spectroscopy. TCU Instructional Development Fund. **Amount Funded: \$3,000.**

Willoughby, D. S. (2000). Role of DNA binding proteins and heat shock protein-72 in maintaining muscle mass in the spinal cord injured after passive leg exercise. TCU Research and Creative Activities Fund. **Amount Funded: \$3,450.**

Willoughby, D. S. (2000). Body composition assessment through hydrostatic weighing. TCU Instructional Development Grant Fund. **Amount Funded: \$2,400.**

Willoughby, D. S. (1999). Effects of exercise-induced muscle injury on muscle proteolysis and interleukin-6 gene expression. TCU Research and Creative Activities Fund.
Amount Funded: \$2,500.

Willoughby, D. S. (1997). Myosin heavy chain isoform mRNA expression in the elderly after weight training, Faculty Senate Research Fund of the University of Southern Maine.
Amount Funded: \$3,000.

Willoughby, D. S. (1996). Effects of weight training on the muscle strength and myofibrillar protein content of previously-inactive elderly men and women. Faculty Senate Research Fund of the University of Southern Maine. **Amount Funded: \$3,000.**

Willoughby, D. S. (1996). Effects of weight training on the muscle strength and myofibrillar protein content of previously-inactive elderly men and women. Payson Fund, College of Nursing, University of Southern Maine. **Amount Funded: \$2,500.**

CREATIVE CONTRIBUTIONS

Contributing Writer

Flex Magazine
ProSource
Max Muscle
AST Sport Science

Professional Certifications

Certified Exercise Physiologist, ASEP, Certificate: #11
Certified Nutrition Consultant, AFPA, Certificate: #40087
Certified Strength and Conditioning Specialist, (NSCA), Certificate: #901308

Certified Sports Nutritionist, ISSN

Professional Organizational Duties

Scientific Advisory Board, Max Muscle, Inc. 2005-present.
Scientific Advisory Board, Javalution Coffee Company, 2005-present
President, International Society of Sports Nutrition, 2005
Board of Directors, International Society of Sports Nutrition, 2003
Scientific Advisory Board, Pinnacle Institute of Health and Human Performance, 2003
Vice President, College Division, TAHPERD, 2002-2003
Faculty Advisor and Organizer: Sports Medicine Student Association, University of Southern Maine, 1997-present
President for Men's and Boy's Sport Division: TAHPERD, 1995
President-Elect for Men's and Boy's Sport Division: TAHPERD, 1994
Secretary for Men's and Boy's Sport Division: TAHPERD, 1993
Faculty Advisor and Organizer: Fitness and Human Performance Student Association, University of Houston-Clear Lake, 1992-1993

SERVICE

Professional National Affiliations

American College of Sports Medicine (ACSM)
American Fitness Professionals and Associates (AFPA)
American Physiological Society (APS)
Federation of the American Societies of Experimental Biology (FASEB)
International Society of Sports Nutrition (ISSN); **President**
National Strength and Conditioning Association (NSCA)

Professional State Affiliations

Texas Chapter of the American College of Sports Medicine (TACSM)

UNIVERSITY SERVICE

Texas Christian University-University Service

Judge, Boller Award for Senior Research Presentation, TCU Honors Program, 2003, 2001
TCU Campus Mentor, 2002-present
Chair, Human Safeguards in Research Committee, 2002-present
Human Safeguards in Research Committee, 2001-present
Student Organizations Committee, 2000-present
Strength and Conditioning Coach/Sport Physiology Consultant, Department of Athletics, 1999-present

University Wellness Committee, 1999-present
Commission for the Future of TCU Task Force, College of Health and Human Sciences
Committee, 1999-2000
Judge, Outstanding Service Awards, Order of Omega, TCU, 1999

University of Southern Maine-University Service

Institutional Review Board for the Use of Human Subjects in Research, 1998-1999
Faculty Senate Research Committee, 1996-1998

Baylor University Departmental Service

Academic Advisor, Master's Degree Program in Exercise Physiology, 2004-present.
Faculty Search Committee, Exercise Physiology Faculty Position, 2004

Texas Christian University Departmental Service

Faculty Search Committee, Athletic Training Program Director Position, 2002
Faculty Search Committee, Sport Psychology Position, 2001
Faculty Search Committee, Health Education Position, 2001
Faculty Search Committee, Health Education Position, 2000
Human Subjects Review Committee, 1999-present

University of Southern Maine Departmental Service

Faculty Search Committee, Exercise Physiology/Athletic Training, 1998
Faculty Search Committee, Athletic Training Position, 1998
Faculty Search Committee, Department Chair of Sports Medicine, 1997

University of Southern Maine College of Nursing and Health Professions Service

Co-Chair, Peer Review Committee, College of Nursing, 1999
Peer Review Committee, College of Nursing, 1998

Community Service

Exercise Science Advisory Board, Tarrant County College, Fort Worth, TX, 2002-present
Board of Directors, Benbrook Community Center YMCA, Benbrook, TX, 2002-present
Parks and Recreation Board, City of Benbrook, TX, 2002-present
Sports Nutrition Seminar Series, Benbrook Community Center YMCA, 2002-present
Fitness Consultant, Benbrook Community Center YMCA, 2002-present

CONSULTING

Nutrition and Physiology Consultant, Supplement Coach, 2005-present

Nutrition and Physiology Consultant, Max Muscle, 2005-present

Nutrition and Physiology Consultant, AST Sport Science, 2003-present

Strength and Conditioning Consultant, Texas Christian University, Department of Athletics, Fort Worth, TX, 1999-2004

Cardiac and Pulmonary Rehabilitation Consultant, Lake Granbury Medical Center's Center for Health and Fitness, Granbury, TX, 1993-2003

Strength and Conditioning Consultant, Fort Worth Brahmas CHL Professional Ice Hockey Team, Fort Worth, TX, 2000-2002

Sport Physiology and Rehabilitation Consultant, The Sports Medicine Center, Orthopedic Associates of Portland, Portland ME, 1997-1999

Strength and Conditioning Consultant, Portland Pirates AHL Professional Ice Hockey Team (NHL-Washington Capitals Hockey Team Affiliate), Portland, ME, 1997-1999

Strength and Conditioning Consultant, Portland Sea Dogs AA Professional Baseball Team (MLB-Florida Marlins Baseball Team Affiliate), Portland, ME, 1996-1999

Employee and Worksite Wellness Consultant, U.S. Naval Air Station, Brunswick ME, 1996-1999

Cardiac and Pulmonary Rehabilitation Consultant, Lifeline Center for Health and Wellness, University of Southern Maine, 1996-1999

Cardiac Rehabilitation Consultant, Cardiac Rehabilitation Program, Down East Community Hospital, Machias ME, 1996-1999

ACADEMIC AND PROFESSIONAL HONORS AND AWARDS

Fellow, International Society of Sports Nutrition, 2003

Wassenich Award Nominee: Outstanding Teaching and Mentoring in the TCU Community, 2003

Research Award, College of Health and Human Sciences, Texas Christian University, 2002.
Preferred Professor, Mortarboard National Honor Society of TCU, 2002, 2000.

Fellow, American Society of Exercise Physiologists, 2001.

Fellow, American College of Sports Medicine, 1998.

Research Award, College of Nursing and Health Professions, University of Southern Maine, 1998, 1996.

Graduate Student Research Award, Texas Chapter of the American College of Sports Medicine,

1992, 1993.

PROFESSIONAL REFERENCES

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