

**CURRICULUM VITAE**

**James D. Fluckey, Ph.D.**

**Muscle Biology Laboratory  
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May 1976 - Graduated from Clovis High School, Clovis, NM.

**Professional Experience:**

- 2015 – 2018     **Chair of Graduate Faculty** in the Department of Health and Kinesiology, Texas A&M University
- 2014 – Present   **Professor** in the Department of Health and Kinesiology, Muscle Biology Laboratory, Texas A&M University
- 2009- 2014     **Associate Professor** in the Department of Health and Kinesiology, Muscle Biology Laboratory, Texas A&M University
- 2005 – 2009     **Assistant Professor** in the Department of Health and Kinesiology and Muscle Biology Laboratory, Texas A&M University
- 2005             Awarded Promotion and Tenure at the University of Arkansas for Medical Sciences (was to be effective July 1, 2005).
- 1999 –2002     **Director of the Metabolic Analyses Core** in the *General Clinical Research Center* of the University of Arkansas for Medical Sciences
- 1998 –2005     **Assistant Professor** in the Department of Geriatrics at the University of Arkansas for Medical Sciences, Nutrition, Metabolism and Exercise Laboratory – William J. Evans, Ph.D., Director
- 1997             Part-time Instructor in the Department of Biology at Pitt Community College, Greenville, NC
- 1997             **Research Associate** in the Department of Biochemistry at East Carolina University School of Medicine, Greenville, NC – G. Lynis Dohm, Ph.D., Mentor
- 1996             **Associate Professor** in the Department of Medical Physiology at the University of Copenhagen (academic rank was given to accommodate funded salary support through a Danvis Research Grant)
- 1995-1996     **Assistant Professor** in the Department of Medical Physiology at the University of Copenhagen (academic rank was given to accommodate funded salary support through a Danvis Research Grant)
- 1995-1996     **J. William Fulbright Scholar** in the Department of Medical Physiology at the University of Copenhagen and Copenhagen Muscle Research Centre, Copenhagen, Denmark – Henrik Galbo, Professor, Mentor
- 1992-1995     **NIA-Predoctoral Fellow** at the Noll Physiological Research Center at The Pennsylvania State University, University Park, PA – Peter A. Farrell, Ph.D., Mentor/Advisor
- 1990-1992     **Graduate Research Assistant** in the Human Performance Laboratory of Ball State University, Muncie, IN – Bruce Craig, Ph.D., Advisor

- 1987-1990      **Part-time Instructor** at Eastern New Mexico University - Clovis Campus (now called the Clovis Community College).
- 1973-1986      **Home builder** for Custom Woodworks, Inc., 1600 E. 2nd St., Clovis, NM 88101.

**Honors and Awards:**

Voted Regional Representative for the Texas Chapter of the American College of Sports Medicine (2018 – present)

Named the CEHD - 2015 Extraordinary Service Award Recipient

Elected as President of the Texas Chapter of the American College of Sports Medicine (2015-2017).

Elected to the Board of Directors (Research) for the Texas Chapter of the American College of Sports Medicine (2011-2014).

*Exercise and Sports Science Reviews*, Assistant Editor – 2009 to 2012.

Invited Interview (television) with MBC - Korea (Munhwa Broadcasting Corporation) – *Anabolic Steroid Abuse among Teenagers* – October 15, 2007.

*American Journal of Physiology: Endocrinology and Metabolism*, Editorial Board Member – 2007 to present.

Listed as a STAR reviewer for *Physiological Genomics* and the American Physiological Society, Washington D.C. – EB April 28, 2007.

Recipient of NIH Loan Repayment Program Award, 2004- 2005.

Featured in *Geriatrics' Spotlight* article at UAMS, 2003.

Recipient of NIH Loan Repayment Program Award, 2002-2004.

Chair of the *Carbohydrate and Fat Metabolism and Aging* session at the 11<sup>th</sup> International Conference on the Biochemistry of Exercise (2000).

Co-Organizer of the 11<sup>th</sup> International Conference on the Biochemistry of Exercise: Little Rock, AR, June 4-7, 2000.

Selected as an International Who's Who of Professionals (1997).

Recipient of a Research Grant from the Copenhagen Muscle Research Centre to explore the actions of *insulin on glucose and muscle protein metabolism following resistance exercise* (1996).

Recipient of a Research Grant from the Danish Research Academy (*DANVIS* Grant) for 1996. As a result of this grant, I was made a research faculty member in the Department of Medical Physiology of Copenhagen University.

Recipient of a Congressional *J. William Fulbright Fellowship* to conduct research at the PANUM Institute and Copenhagen Muscle Research Center, University of Copenhagen, Denmark (1995-1996).

Honorable Mention in the Graduate Research Exhibition at The Pennsylvania State University (1995).

Recipient of NIA Predoctoral Grant to complete doctoral research entitled *Insulin Modulation of Muscle Protein Synthesis after Resistance Exercise* (1994-1995).

Selected as a Gerontology Predoctoral Fellow in Physiology at The Pennsylvania State University from 1992 to 1995 (National Research Award from the National Institute of Aging).

Selected to *Outstanding College Students of America* for the 1989 - 1990 academic year.

Selected as the *Outstanding Men's Undergraduate in Health and Physical Education* at ENMU for 1990.

Selected as *NASPE Outstanding Physical Education Major* from the state of New Mexico in 1990.

Selected as the *Outstanding Men's Undergraduate in Health and Physical Education* at ENMU for 1989.

**Peer Reviewer (grants):**

*Study Section – CDMRP*

*Ad hoc* grant reviewer for Pilot Program Projects for the University of Michigan (2018)

*Ad hoc* grant reviewer for a Claude Pepper Center Pilot Grant, UTMB (2017)

*Ad hoc* grant reviewer for a Claude Pepper Center Pilot Grant, University of Michigan (2008)

*Ad hoc* grant reviewer for the Chief Scientist Office, Scottish Executive Government (2006)

*External 'mock'* grant reviewer for a Pepper Center, University of Texas, Medical Branch (Reviewed 2 separate grants at the request of UTMB, 2004)

*Ad hoc* grant reviewer for the Veterans Administration (VA Merit Grant; 2003)

*Ad hoc* grant reviewer for the Nova Scotia Research Foundation (2001)

*Ad hoc* grant reviewer for the National Science Foundation (2000)

**Peer Reviewer (manuscripts):**

Manuscript reviewer for:

*Nature Partner Journal – Microgravity*

*Journal of Cellular Physiology*

*American Journals of Physiology*

*Journal of Applied Physiology*

*Journal of Nutrition*

*Journal of Physiology*

*Medicine and Science in Sports and Exercise*

*International Journal of Sports Medicine*

*Canadian Journal of Applied Physiology*

*Physiological Genomics*

*Muscle and Nerve*

*(Maroon indicates new Journals since arriving to TAMU; Other Journals listed still frequently use my review services.)*

**Peer Reviewer (text book):**

Reviewer for Lippincott Publishing Company: Exercise Physiology Text Book (Authors Kraemer and Fleck)

**Past and Current Committees (UAMS/VA and Texas A&M University):**

- 2018 - 2019 Biomechanics Faculty Search Committee, Chair
- 2014 - 2016 Texas A&M University Research Compliance Committee
- 2012- Huffines Institute of Sports Science Board of Directors, Chair
- 2011 Human Subjects Protection Program Workshop Committee
- 2010 - 2016 Texas A&M University Institutional Review Board, Chairman
- 2008 Space Life Sciences Undergraduate Scholarship Committee
- 2008 Faculty Search Committee, Department of Health and Kinesiology, Texas A&M University – Huffines Director/Senior Scientist
- 2008 - Member of the Institutional Animal Care and Use Committee
- 2007 – Member of the Texas A&M University Institutional Review Board
- 2005-2006 Faculty Search Committee, Department of Health and Kinesiology, Texas A&M University
- 2003-2005 Member of the Institutional Animal Care and Use Committee (IACUC) at UAMS
- 2002 Faculty Search Committee, Department of Geriatrics, UAMS
- 2002- 2005 Member of the Research Safety Subcommittee in the Arkansas Veterans Administration Health Care System
- 2000-2005 Member of the GCRC Advisory Committee (GAC) at UAMS

### **Professional Societies:**

American Physiological Society

American College of Sports Medicine

Texas Chapter – American College of Sports Medicine

### **Bibliography (Presented in Reverse Chronology):**

*A note on authorship in this field.* Although all authors listed on a manuscript or presentation are of great importance in this field, the first author assumes a great deal of ownership/responsibility of the work, and was instrumental in day to day management of the study and primary data collection/assessment/interpretation. Typically, the second author also played a prominent role on the project, but to a lesser degree unless otherwise indicated. In this field, particular emphasis with regard to published works is also placed on the senior (last) author in the list, as this is typically indicative of who's lab the work transpired. In most cases, when students are involved with publications and presentations, the senior author is the student's mentor, and is often given equal credit by his/her peers in the field. It is not uncommon for scientists in the field to associate published works on the basis of the senior author, particularly if the work was done in a prominent lab. Thus, it is a natural transition in this field to move from being the first author to senior author as the scientist becomes more prominent in his/her area of expertise.

Lee TV, Lee CW, Chen VCW, Bui S, **Fluckey JD**, Riechman SE. The effects of hindlimb unloading versus dietary cholesterol and resistance training on rat skeletal muscle responses. *Lipids Health Dis.* 2019 Jan 5;18(1):3. doi: 10.1186/s12944-018-0944-9. PMID: 30611265

Shimkus KL, Shirazi-Fard Y, Wiggs MP, Ullah ST, Pohlenz C, Gatlin DM 3rd, Carroll CC, Hogan HA, **Fluckey JD**. RESPONSES OF SKELETAL MUSCLE SIZE AND ANABOLISM ARE REPRODUCIBLE WITH MULTIPLE PERIODS OF UNLOADING/RELOADING. *J Appl Physiol* (1985). 2018 Aug 9. doi: 10.1152/jappphysiol.00736.2017. [Epub ahead of print] PMID: 30091665

Kuczmariski JM, Hord JM, Lee Y, Guzzoni V, Rodriguez D, Lawler MS, Garcia-Villatoro EL, Holly D, Ryan P, Falcon K, Garcia M, Janini Gomes M, **Fluckey JD**, Lawler JM Effect of EUK-134 on Akt-mTOR signaling in the rat soleus during 7 days of mechanical unloading. *Exp Physiol.* 2018 Jan 8. doi: 10.1113/EP086649. [Epub ahead of print] PMID: 29315934

Katsma MS, Patel SH, Eldon E, Corbell KA, Shimkus KL, **Fluckey JD**, Carroll CC. The influence of chronic IL-6 exposure, in vivo, on rat Achilles tendon extracellular matrix. *Cytokine.* 2017 May;93:10-14. doi: 10.1016/j.cyto.2017.04.011. Epub 2017 Apr 13. PMID: 28412025

- Lee Y, **Fluckey JD**, Chakraborty S, Muthuchamy M. Hyperglycemia- and hyperinsulinemia-induced insulin resistance causes alterations in cellular bioenergetics and activation of inflammatory signaling in lymphatic muscle. *FASEB J*. 2017 Jul;31(7):2744-2759. doi: 10.1096/fj.201600887R. Epub 2017 Mar 15. PMID: 28298335
- Brown JL, Rosa-Caldwell ME, Lee DE, Brown LA, Perry RA, Shimkus KL, Blackwell TA, **Fluckey JD**, Carson JA, Dridi S, Washington TA, Greene NP. PGC-1[224][224]3B14 gene expression is suppressed by the IL-6-MEK-ERK 1/2 MAPK signalling axis and altered by resistance exercise, obesity and muscle injury. *Acta Physiol (Oxf)*. 2016 Nov 3. doi: 10.1111/apha.12826. [Epub ahead of print] PMID: 27809412
- Cover Image, Volume 117, Number 8, August 2016. Lee DE, Brown JL, Rosa ME, Brown LA, Perry RA Jr, Wiggs MP, Nilsson MI, Crouse SF, **Fluckey JD**, Washington TA, Greene NP. *J Cell Biochem*. 2016 Aug;117(8):i. doi: 10.1002/jcb.25630. PMID: 27301891
- Macias BR, Lima F, Swift JM, Shirazi-Fard Y, Greene ES, Allen MR, **Fluckey J**, Hogan HA, Braby L, Wang S, Bloomfield SA. Simulating the Lunar Environment: Partial Weightbearing and High-LET Radiation-Induce Bone Loss and Increase Sclerostin-Positive Osteocytes. *Radiat Res*. 2016 Sep;186(3):254-63. doi: 10.1667/RR13579.1. Epub 2016 Aug 18. PMID: 27538114
- Lee DE, Brown JL, Rosa ME, Brown LA, Perry RA Jr, Wiggs MP, Nilsson MI, Crouse SF, **Fluckey JD**, Washington TA, Greene NP. Cover Image, Volume 117, Number 8, August 2016. *J Cell Biochem*. 2016 Aug;117(8):i. doi: 10.1002/jcb.25630. PMID: 27301891
- Simmons E, **Fluckey JD**, Riechman SE. Cumulative Muscle Protein Synthesis and Protein Intake Requirements. *Annu Rev Nutr*. 2016 Jul 17;36:17-43. doi: 10.1146/annurev-nutr-071813-105549. Epub 2016 May 18. PMID: 27215586
- Galvan E, Walker DK, Simbo SY, Dalton R, Levers K, O'Connor A, Goodenough C, Barringer ND, Greenwood M, Rasmussen C, Smith SB, Riechman SE, **Fluckey JD**, Murano PS, Earnest CP, Kreider RB. Acute and chronic safety and efficacy of dose dependent creatine nitrate supplementation and exercise performance. *J Int Soc Sports Nutr*. 2016 Mar 31;13:12. doi: 10.1186/s12970-016-0124-0. eCollection 2016. PMID: 27034623 Free PMC Article
- Lee DE, Brown JL, Rosa ME, Brown LA, Perry RA Jr, Wiggs MP, Nilsson MI, Crouse SF, **Fluckey JD**, Washington TA, Greene NP. microRNA-16 Is Downregulated During Insulin Resistance and Controls Skeletal Muscle Protein Accretion. *J Cell Biochem*. 2016 Aug;117(8):1775-87. doi: 10.1002/jcb.25476. Epub 2016 Jan 15. PMID: 26683117
- Hudson MB, Smuder AJ, Nelson WB, Wiggs MP, Shimkus KL, **Fluckey JD**, Szeto HH, Powers SK. Partial Support Ventilation and Mitochondrial-Targeted Antioxidants Protect against Ventilator-Induced Decreases in Diaphragm Muscle Protein Synthesis. *PLoS One*. 2015 Sep 11;10(9):e0137693. doi:



10.1371/journal.pone.0137693. eCollection 2015. PMID: 26361212 Free PMC Article

**Fluckey JD.**, BS Lambert, NP Greene, KL Shimkus, JM Cardin, SE Riechman and SF Crouse. Reply to letter to the editor: to D2O or not to D2O? What are the reasons we D2O it at all? *Am. J. Physiol. Endocrinol Metab.*; 308 (10): E928-E931, 2015.

Hudson, MB, AJ Smuder, WB Nelson, MP Wiggs, KL Shimkus, **JD Fluckey**, HH Szeto, SK Powers. Partial Support Ventilation and Mitochondrial-Targeted Antioxidants Protect against Ventilator-Induced Decreases in Diaphragm Muscle Protein Synthesis. *PloS one* 10(9): e0137693, 2015. DOI:10.1371/journal.pone.0137693

Lambert BS, Shimkus KL, **Fluckey JD**, Riechman SE, Greene NP, Cardin JM, Crouse SF. Anabolic responses to acute and chronic resistance exercise are enhanced when combined with aquatic treadmill exercise. *Am J Physiol Endocrinol Metab.* 308 (3); E192-E200, 2015. PMID: 25425002

Kresta JY, Oliver JM, Jagim AR, **Fluckey J**, Riechman S, Kelly K, Meininger C, Mertens-Talcott SU, Rasmussen C, Kreider RB. Effects of 28 days of beta-alanine and creatine supplementation on muscle carnosine, body composition and exercise performance in recreationally active females. *J Int Soc Sports Nutr.* 2014 Nov 30;11(1):55. doi: 10.1186/s12970-014-0055-6. eCollection 2014. PMID: 25505854 [PubMed]

Greene NP, Nilsson MI, Washington TA, Lee DE, Brown LA, Papineau AM, Shimkus KL, Greene ES, Crouse SF, **Fluckey JD**. Impaired exercise-induced mitochondrial biogenesis in the obese Zucker rat, despite PGC-1 $\alpha$  induction, is due to compromised mitochondrial translation elongation. *Am J Physiol Endocrinol Metab.* Mar 1;306(5):E503-11, 2014 PMID: 24398401

Boudreaux RD, JM Swift, HG Gasier, MP Wiggs, HA Hogan, **JD Fluckey** and SA Bloomfield. Increased resistance during rodent jump exercise does not enhance the cortical bone formation response. *Med Sci Sports Exerc.* 46(5):982-9, 2014. PMID: 24743108

Oliver JM, Jagim AR, Pischel I, Jäger R, Purpura M, Sanchez A, **Fluckey J**, Riechman S, Greenwood M, Kelly K, Meininger C, Rasmussen C, Kreider RB. Effects of short-term ingestion of Russian Tarragon prior to creatine monohydrate supplementation on whole body and muscle creatine retention and anaerobic sprint capacity: a preliminary investigation. *J Int Soc Sports Nutr.* Feb 26;11(1):6, 2014. PMID: 24568653

Lambert B, NP Greene, A Carradine, D Joubert, **JD Fluckey**, S Riechman, S Crouse. Aquatic Treadmill Training Reduces Blood Pressure Reactivity to Physical Stress. *Med Sci Sports Exerc.* Apr; 46 (4):809-16, 2014. PMID: 24056269

Nilsson MI, Dobson JP, Greene NP, Wiggs MP, Shimkus KL, Wudeck EV, Davis AR, Laureano ML, Fluckey JD. Abnormal protein turnover and anabolic resistance to exercise in sarcopenic obesity. *FASEB J.* 2013 Oct; 27(10):3905-16. doi: 10.1096/fj.12-224006. Epub 2013 Jun 26. PMID: 23804240

- Oliver JM, Jagim AR, Sanchez AC, Mardock MA, Kelly KA, Meredith HJ, Smith GL, Greenwood M, Parker JL, Riechman SE, **Fluckey JD**, Crouse SF, Kreider RB. Greater gains in strength and power with intra-set rest intervals in hypertrophic training. *J Strength Cond Res.* 2013 Jun 3. [Epub ahead of print] PMID: 23736782
- Jagim AR, Oliver JM, Sanchez A, Galvan E, **Fluckey J**, Riechman S, Greenwood M, Kelly K, Meininger C, Rasmussen C, Kreider RB. A buffered form of creatine does not promote greater changes in muscle creatine content, body composition, or training adaptations than creatine monohydrate. *J Int Soc Sports Nutr.* Sep 13;9(1):43, 2012. PMID:22971354
- Gasier HG, **Fluckey JD**, Preivs SF, Wiggs MP, Riechman SE. Acute resistance exercise augments integrative myofibrillar protein synthesis. *Metabolism.* 2012 Feb;61(2):153-6. doi: 10.1016/j.metabol.2011.07.001. Epub 2011 Aug 23. PMID:21864869
- Gasier HG, SE Riechman, MP Wiggs, A Buentello, SF Previs and **JD Fluckey**. Cumulative responses of muscle protein synthesis are augmented with chronic resistance exercise training. *Acta Physiologica*, 201: 381-389, 2011. PMID:20804462
- Swift JM, Gasier HG, Swift SN, Wiggs MP, Hogan HA, **Fluckey JD**, Bloomfield SA. Increased training loads do not magnify cancellous bone gains with rodent jump resistance exercise. *J Appl Physiol.* Dec;109(6):1600-7, 2010. Epub 2010 Oct 7. PMID:20930128
- Nilsson MI, Greene NP, Dobson JP, Wiggs MP, Gasier HG, Macias BR, Shimkus KL and **Fluckey JD**. Insulin resistance syndrome blunts the mitochondrial anabolic response following resistance exercise. *Am J Physiol Endocrinol Metab* 299: E466-E474, 2010. PMID: 20606077
- Gasier HG, **Fluckey JD** and Previs SF. The application of 2H<sub>2</sub>O to measure skeletal muscle protein synthesis. *Nutr Metab (Lond)* 7: 31, 2010. PMID: 20409307
- Gasier HG, Previs SF, Pohlenz C, **Fluckey JD**, Gatlin DM 3rd, Buentello JA. A novel approach for assessing protein synthesis in channel catfish, *Ictalurus punctatus*. *Comp Biochem Physiol B Biochem Mol Biol.* 2009 Oct;154(2):235-8. Epub 2009 Jun 27. PMID: 19563906
- Gasier HG, Riechman SE, Wiggs MP, Previs SF, **Fluckey JD**. A comparison of 2H<sub>2</sub>O and phenylalanine flooding dose to investigate muscle protein synthesis with acute exercise in rats. *Am J Physiol Endocrinol Metab.* 2009 Jul;297(1):E252-9. Epub 2009 Apr 14. PMID: 19366878
- Norrbrand L, **JD Fluckey**, M Pozzo, PA Tesch. Eccentric overload appears necessary to optimize skeletal muscle adaptations to chronic resistance exercise. *Eur J Appl Physiol* 102(3):271-81, 2008.

- Dupont-Versteegden EE, BA Strotman, CM Gurley, D Gaddy, M Knox, **JD Fluckey**, and Peterson CA. Nuclear translocation of EndoG at the initiation of disuse muscle atrophy and apoptosis is specific to myonuclei. *Am J Physiol Regul Integr Comp Physiol.* 291(6):R1730-40, 2006.
- Dupont-Versteegden EE, **JD Fluckey**, M Knox, D Gaddy, and CA Peterson. The effect of flywheel-based resistance exercise on processes contributing to muscle atrophy during unloading in adult rats. *J. Appl. Physiol.* 101:202-12, 2006.
- Fluckey JD**, M Knox, LM Smith, EE Dupont-Versteegden, D Gaddy, PA Tesch, and CA Peterson. The insulin-facilitated increase of muscle protein synthesis after resistance exercise involves a MAP-kinase pathway. *Am. J. Physiol - Endocrinol. & Metab.* 290:E1205-11, 2006.
- Hays NP, RD Starling, DH Sullivan, **JD Fluckey**, RH Coker, and WJ Evans. Comparison of insulin sensitivity assessment indices with euglycemic-hyperinsulinemic clamp data following a dietary and exercise intervention in older adults. *Metab.: Clin. and Exp.* 55: 525-532, 2006.
- Hays NP, RD Starling, DH Sullivan, **JD Fluckey**, RH Coker, RH Williams, JA Carrithers and WJ Evans. Effects of an ad libitum high carbohydrate diet and aerobic exercise training on insulin action and muscle metabolism in older men and women. *J. Gerontol.: Biol. Sci. and Med. Sci.:* 61A(3):299-304, 2006.
- Carroll CC, **JD Fluckey**, RH Williams, DH Sullivan and TA Trappe. Human soleus and vastus lateralis muscle protein metabolism with an amino acid infusion. *Am. J. Physiol - Endocrinol. & Metab.* 288: E479-E485, 2005.
- Fluckey JD**, EE Dupont-Versteegden, M Knox, D Gaddy, PA Tesch and CA Peterson. Insulin facilitation of muscle protein synthesis following resistance exercise in hindlimb suspended rats is independent of a rapamycin-sensitive pathway. *Am. J. Physiol.* 287: E1070-E1075, 2004.
- Campbell WW, MD Haub, **JD Fluckey**, RE Ostlund, Jr., H Morse-Carrithers, MW Hulver, JP Thyfault, and ZK Birge. Pinitol supplementation and insulin-mediated glucose metabolism in older humans. *J. Nutr.* 134: 2998-3003, 2004.
- Fluckey JD**, RN Cortright, E Tapscott, T Koves, L Smith, S Pohnert and GL Dohm. Active involvement of PKC for insulin-mediated rates of muscle protein synthesis. *Am. J. Physiol.* 286: E753-E758, 2004.
- Hays N P, RD Starling, X Liu, DH Sullivan, TA Trappe, **JD Fluckey**, and WJ Evans. Effects of an ad libitum, low-fat, high-carbohydrate diet on body weight, body composition, and fat distribution in older men and women: a randomized control trial. *Arch. Intern. Med.* 164: 210-217, 2004.
- Knox M, **JD Fluckey**, CA Peterson, P Bennett, CA Peterson and EE Dupont-Versteegden. Hind limb unloading in adult rats using an alternative tail harness design. *Aviat. Space Environ. Med.* 75: 692-696, 2004.

- Trappe S, P Gallagher, M Harber, J Carrithers, **J Fluckey** and T Trappe. Single muscle fiber contractile properties in young and old men and women. *J Physiol*, 552.1: 47-58, 2003.
- Wells AM, MD Haub, **JD Fluckey**, DK Williams, R Chernoff and WW Campbell. Comparisons of vegetarian and beef-containing diets on hematological indexes and iron stores during a period of resistive training in older men. *J. Am. Diet. Assoc.* 103:594-601, 2003.
- Fluckey JD**, E Dupont-Versteegden, DC Montague, M Knox, CA Peterson and D Gaddy Kurten. A rat resistance exercise regimen attenuates losses of musculoskeletal mass during hindlimb suspension. *Acta Physiol. Scand.* 174: 293-300, 2002.
- Fluckey JD**, S Asp, LH Enevoldsen, and H Galbo. Alterations of insulin-mediated muscle protein synthesis in rats after high intensity eccentric exercise. *Acta Physiol. Scand.* 173: 379-384, 2001.
- Trappe TA, **JD Fluckey**, F White, CP Lambert and WJ Evans. Skeletal muscle  $\text{PGF}_{2\alpha}$  and  $\text{PGE}_2$  in response to eccentric exercise: Influence of ibuprofen and acetaminophen. *J. Clin. Endo. Metab.*, 86(10): 5067-5070, 2001.
- Enevoldsen LH, B Stallknecht, **JD Fluckey** and H Galbo. The effect of exercise training on *in vivo* epinephrine-stimulated lipolysis in intraabdominal adipose tissue in rats. *Am. J. Physiol.*, 279: E585-E592, 2000.
- Enevoldsen LH, B Stallknecht, **JD Fluckey** and H Galbo. The effect of exercise training on *in situ* insulin-stimulated glucose uptake in intraabdominal adipose tissue in rats. *Am. J. Physiol.*, 278:E25-E34, 2000.
- Fluckey JD**, SC Pohnert, SG Boyd, RN Cortright, TA Trappe and GL Dohm. Insulin stimulation of muscle protein synthesis in obese Zucker rats is not via a rapamycin-sensitive pathway. *Am. J. Physiol.* 279: E182-E187, 2000.
- Hernandez JM, T Moccia, **JD Fluckey**, J S Ulbrecht and PA Farrell. Fluid snacks to help persons with insulin-dependent diabetes mellitus avoid late onset post-exercise hypoglycemia. *Med. Sci. Sports Exerc.* 32: 904-910, 2000.
- Fluckey JD**, T Ploug and H Galbo. Attenuated insulin action on glucose uptake and transport following resistance exercise in rats. *Acta Physiol. Scand.* 167: 77-82, 1999.
- Fluckey JD**, T Ploug and H Galbo. Mechanisms associated with hypoxia- and contraction-mediated glucose transport are fiber-type dependent. *Acta Physiol. Scand.* 167: 83-87, 1999.
- Cortright RN, D Zheng, JP Jones, **JD Fluckey**, BB Lowell and GL Dohm. The effect of denervation and exercise on UCP-3 gene expression in skeletal muscle. *Am. J. Physiol.* 276: E217-E221, 1999.
- Farrell PA, MJ Fedele, J Hernandez, **JD Fluckey**, JL Miller III, TC Vary, SR Kimball and LS Jefferson. Hypertrophy of skeletal muscle in diabetic rats in response to chronic resistance exercise. *J. Appl. Physiol.* 87: 1075-1082, 1999.

- Stallknecht B, M Donsmark, LH Enevoldsen, **JD Fluckey** and H Galbo. Estimation of rat muscle blood flow by microdialysis perfused with ethanol,  $^{14}\text{C}$ -ethanol and  $^3\text{H}_2\text{O}$ . *J. Appl. Physiol.* 86: 1054-1061, 1999.
- Westerlind KC, **JD Fluckey**, SE Gordon, WJ Kraemer, PA Farrell and RT Turner. Effect of resistance exercise training on cortical and cancellous bone in mature male rats. *J. Appl. Physiol.* 84(2): 459-464, 1998.
- Brambrink JK, **JD Fluckey**, MS Hickey and BW Craig. Influence of mass and work on post-exercise glucose and insulin responses in young untrained subjects. *Acta Physiol. Scand.*, 161(3): 371-377, 1997.
- Fluckey JD**, TC Vary, LS Jefferson, WJ Evans and PA Farrell. Insulin stimulation of protein synthesis in rat skeletal muscle following resistance exercise is maintained with advancing age. *J. Gerontol.: Biol. Sc.*, 51A, B323-B330, 1996.
- Fluckey JD**, TC Vary, LS Jefferson and PA Farrell. Augmented insulin action on rates of protein synthesis following resistance exercise in rats. *Am. J. Physiol.* 270: E313-E319, 1996.
- Fluckey JD**, WJ Kraemer and PA Farrell. Pancreatic islet insulin secretion is increased following resistance exercise in rats. *J. Appl. Physiol.* 79:1100-1105, 1995.
- Fluckey JD**, MS Hickey, JK Brambrink, KK Hart, K Alexander and BW Craig. Effects of resistance exercise on glucose tolerance in normal and glucose intolerant individuals. *J. Appl. Physiol.* 77: 87-1092, 1994.

### **Presentations at Regional, National or International Meetings**

- Fluckey JD.** Anabolism and DEPTOR: Meet mTOR's Ball and Chain. Fluckey, Invited talk. American College of Sports Medicine National Conference, Minneapolis, MN Invited Lecturer, June 2018.
- Fluckey JD.** Anabolic Control of Skeletal Muscle: Responses to Loading and Unloading. Tejas International Symposium in Exercise and Health Science Research (Waco, TX) - Invited Keynote Lecturer, October 13, 2016.
- Fluckey JD.** Loaded, Overloaded, and Unloaded: Insights into the Control of Muscle Protein Anabolism. Invited Presentation, Texas Chapter of the American College of Sports Medicine, Austin, TX, 2013.
- Fluckey JD.** Effect of Exercise and Nutritional Perturbations on Cumulative Muscle Protein Synthesis. Invited Presentation at Experimental Biology, San Diego California, 2012.
- Fluckey JD.** Anabolic Resistance. Invited Presentation and Session Chair at Experimental Biology, San Diego California, 2012.
- Fluckey JD.** High Intensity Exercise Training: New Insight to the Control of Muscle Mass and Disease Prevention. Invited Presentation, Texas Chapter of the American College of Sports Medicine, Tyler, TX, 2009.

- Fluckey JD**, L Norrbrand, M Pozzo, L Smith and PA Tesch. Insulin is not necessary for post exercise elevations of muscle protein synthesis after 5 weeks of resistance exercise training. Presented at *FASEB Conference*, San Francisco, CA, 2006.
- Fluckey JD**, EE Dupont-Versteegden, L Smith, M Knox, P Bennett, D Gaddy and CA Peterson. The capacity of insulin to attenuate rates of protein degradation in soleus muscle is maintained in hindlimb suspended rats. Presented at *FASEB Conference*, San Francisco, CA, 2005.
- Fluckey JD**, M Knox, L Smith, EE Dupont-Versteegden, D Gaddy, PA Tesch, FACSM, CA Peterson. The Insulin-facilitated increase of muscle protein synthesis after resistance exercise involves a MAP-kinase pathway. Presented at *ACSM National Conference*, Indianapolis, IN, 2004.
- Fluckey JD**, EB Tapscott, RN Cortright, T Koves, S Pohnert and GL Dohm. Active involvement of PKC for insulin-mediated rates of rat muscle protein synthesis. Presented at *FASEB Conference*, San Diego, CA, 2003.
- Fluckey JD**, CA Peterson, D Gaddy-Kurten, M Knox, L Smith-Briscoe and E Dupont-Versteegden. Amino acids derived from proteolysis are preferred for muscle protein synthesis following hindlimb suspension. Presented at the *FASEB Conference*, New Orleans, LA, 2002.
- Fluckey JD**, S Asp, L Enevoldsen, E Richter and H Galbo. Alterations of insulin-mediated muscle protein synthesis in rats after high intensity eccentric exercise. Presented at the *International Biochemistry of Exercise Meetings*, Little Rock, AR, 2000.
- Fluckey JD**, SC Pohnert, SG Boyd, RN Cortright, TA Trappe and GL Dohm. Insulin stimulation of muscle protein synthesis in obese Zucker rats is not via a rapamycin-sensitive pathway. Presented at *FASEB Conference*, Washington D.C., 1999.
- Fluckey JD**, S Pohnert, G Boyd, R Cortright and GL Dohm. Obese Zucker rats exhibit insulin sensitivity with respect to rates of protein synthesis. Presented at *FASEB Conference*, San Francisco, CA, 1998.
- Fluckey JD**, T Ploug and H Galbo. Attenuated insulin action on glucose uptake and transport following resistance exercise in rats. Presented at the *InterSociety Conference: Integrative Biology of Exercise*, Vancouver, BC, Canada, 1996.
- Fluckey JD**, T Ploug and H Galbo. Mechanisms associated with hypoxia- and contraction-mediated glucose transport are fiber-type dependent. Presented at the *International Symposium on Exercise in Prevention, Diagnosis and Therapy of Metabolic Disorders*, September, Warsaw, Poland, 1996.
- Fluckey JD**, TC Vary, LS Jefferson, WJ Evans and PA Farrell. Insulin stimulation of protein synthesis in rat skeletal muscle following resistance exercise is maintained with advancing age. Presented at the *Gerontological Society's National Conference*, New Orleans, LA, 1995.
- Fluckey JD**, TF Moccia, SE Gordon, WJ Kraemer and PA Farrell. Arginine-stimulated insulin secretion is increased following resistance exercise. Presented at the

*American College of Sports Medicine National Convention, Indianapolis, IN, 1994.*

**Fluckey JD**, MS Hickey, JK Brambrink, KK Hart, K Alexander and BW Craig. Effects of resistance exercise on glucose tolerance in normal and glucose intolerant individuals. Presented at the *American Physiological Society - Integrative Biology Conference*, Colorado Springs, CO, 1992.

### **Co-Authored Abstracts Presented at Regional, National or International Meetings**

**Cardin J, Deaver JW, O'Reilly C, Fluckey JD.** Comparison of cell harvesting protocols and bestatin application in murine muscle tissue. *Integrative Physiology of Exercise National Conference*. San Diego, CA (Sept. 2018).

**Chen C, Lee C-W, Fluckey JD, Riechman S.** Blood lipid is associated with skeletal muscle PPAR $\gamma$  protein content after a 10-week resistance training. *American College of Sports Medicine National Conference*, Minneapolis, MN (June 2018).

**Deaver JW, O'Reilly C, Fluckey JD.** The anabolic response of C2C12 skeletal muscle myotubes to diacylglycerol analog OAG. *Integrative Physiology of Exercise National Conference*. San Diego, CA (Sept. 2018).

**Lee C-W, Galvan E, Lee T, Chen V, Bui S, Crouse S, Fluckey JD, Smith S and Riechman S.** The effects of choline intake and resistance exercise training on strength gains in older adults. *American College of Sports Medicine National Conference*, Minneapolis, MN (June 2018).

**O'Reilly C, Bird M, Deaver JW, Fluckey JD.** Influence of creatine on AMPK and protein synthesis after simulation of exercise in C2C12 myotubes. *Integrative Physiology of Exercise National Conference*. San Diego, CA (Sept. 2018).

**Simmons E, Georgiades N, Goodenough C, Naruse M, Fluckey JD, Crouse S, Smith S and Riechman S.** Muscle anabolism is not improved by high daily protein or post exercise timing in fit young males performing simulated elite athlete training. *Integrative Physiology of Exercise National Conference*. San Diego, CA (Sept. 2018).

**Cardin, Jessica M; Deaver, J William; O'Reilly, Colleen L; Crouse, Stephen F; Fluckey, James D.** Characterization of Protein Metabolism in Undifferentiated and Differentiated Murine Muscle Tissue: MSSE 49 (S5), 769 (Denver, CO, June 2017).

**Chelsea G Goodenough, J William Deaver, Colleen O'Reilly, Amanda R Davis, Steven E Riechman and James D Fluckey.** THE ROLE OF MTOR IN BREAST CANCER SIGNALING. *Myology Institute International Conference*, Gainesville, FL, March 2017.

**J. Will Deaver and JD Fluckey.** Changes in MCF7 Breast Cancer Anabolic Signaling with Exercise Conditioned Perfusate. *Tejas Symposium in Exercise and Health Science Research* (Waco, TX) - Invited Student Presenter, October 12, 2016

**Colleen L O'Reilly, J William Deaver, James D Fluckey.** Pharmacological inhibition of mTOR and ERK [189][189] results in altered anabolic signaling of differentiated C2C12

- myoblasts similar to that of in vivo Rat studies. Myology Institute International Conference, Gainesville, FL, March 2017.
- Deaver, J William; Oreilly, Colleen L;** Crouse, Stephen F; **Fluckey, James D.** Blockade Of Mtor And Erk1/2 Resulted In Attenuated Protein Synthesis Rates In Differentiated C2c12 Myoblasts.: MSSE 49 (5S), 500 (Denver, CO, June 2017).
- J William Deaver,** Amanda R Davis, **Chelsea G Goodenough, Colleen L O'Reilly,** Steven E Riechman, **James D Fluckey.** MCF7 Breast Cancer Cells Treated with Exercised Condition Perfusate Media Attenuates Anabolic Signaling and Cell Proliferation through mTOR signal transduction. Myology Institute International Conference, Gainesville, FL, March 2017.
- Lee, Chang Woock; Galvan, Elfego; Lee, Teak V; Chen, Vincent Cw; Bui, Steve; Crouse, Stephen F; **Fluckey, James D;** Smith, Stephen B; Riechman, Steven E. Lower Choline Intake is Associated with Diminished Strength and Lean Mass Gains in Older Adults: MSSE 49 (5S): 321, 2017 (Denver, CO, June 2017).
- Oreilly, Colleen L; Deaver, J William;** Wiggs, Michael P; Lima, Florence; Swift, Joshua M; Greene, Elizabeth S; Bloomfield, Susan A; **Fluckey, James D.** Partial or Complete Unloading of Skeletal Muscle Leads to Specific Alterations of Anabolic Signal Transduction: MSSE 49 (5S), 769, (Denver, CO, June 2017).
- Cardin, Jessica M; Deaver, John W; O'Reilly, Colleen L;** Crouse, Stephen F; **Fluckey, James D.** Characterization of Protein Metabolism in Undifferentiated and Differentiated Murine Muscle Tissue. Int. J Exerc. 2(9): 60, 2017. Presented in Waco, Tx, March 2017.
- Deaver, John W; O'Reilly, Colleen L;** Crouse, Stephen F; **Fluckey, James D.** Pharmacological Inhibition of mTOR and ERK1/2 Resulted in Attenuated Protein Synthesis Rates in Differentiated C2C12 Myoblasts in a Similar Fashion to in vivo Rodent Studies. Int. J Exerc. 2(9): 58, 2017. Presented in Waco, TX, March 2017
- O'Reilly, Colleen L; Deaver, J William;** Wiggs, Michael P; Lima, Florence; Swift, Joshua M; Greene, Elizabeth S; Bloomfield, Susan A; **Fluckey, James D.** Partial or Complete Unloading of Skeletal Muscle Leads to Specific Alterations of Anabolic Signal Transduction. Int. J. Exerc. 2(9): 62, 2017. Presented in Waco, TX, March 2017
- Lee, David E.; **Fluckey, James D.;** Nilsson, Mats I.; et al. Mitochondrial Translation Elongation Limits Mitochondrial Biogenesis In The Obese Response To Resistance Exercise Conference: 61st Annual Meeting of the American-College-of-Sports-Medicine Location: Atlanta, GA Date: APR 01-04, 2014 MEDICINE AND SCIENCE IN SPORTS AND EXERCISE Volume: 46 Issue: 5 Supplement: 1 Pages: 298-298 Meeting Abstract: 1191 Published: MAY 2014
- Greene, Nicholas P.; Lee, David E.; Nilsson, Mats I.; et al.; **Fluckey, James D.** Gene Expression Of Novel Regulators Of Skeletal Muscle Hypertrophy In Obesity: PGC-1 up arrow 4 And Deptor Conference: 61st Annual Meeting of the American-College-of-Sports-Medicine Location: Atlanta, GA Date: APR 01-04, 2014 Sponsor(s): MEDICINE AND SCIENCE IN SPORTS AND EXERCISE Volume: 46 Issue: 5 Supplement: 1 Pages: 307-307 Meeting Abstract: 1223 Published: MAY 2014



- Lambert, Brad; Shimkus, Kevin; **Fluckey, James**; et al. Anabolic Responses To Acute And Chronic Resistance Exercise Are Enhanced When Combined With Aquatic Treadmill Exercise Conference: 61st Annual Meeting of the American-College-of-Sports-Medicine Location: Atlanta, GA Date: APR 01-04, 2014 MEDICINE AND SCIENCE IN SPORTS AND EXERCISE Volume: 46 Issue: 5 Supplement: 1 Pages: 347-348 Meeting Abstract: 1332 Published: MAY 2014
- Wiggs, Michael P.; Smuder, Ashley J.; Sollanek, Kurt J.; **Fluckey, James D.**; et al. Inhibition of FoxO Signaling Prevents Mechanical Ventilation-Induced Reduction in Protein Synthesis. Conference: 61st Annual Meeting of the American-College-of-Sports-Medicine Location: Atlanta, GA Date: APR 01-04, 2014 MEDICINE AND SCIENCE IN SPORTS AND EXERCISE Volume: 46 Issue: 5 Supplement: 1 Pages: 350-351 Meeting Abstract: 1339 Published: MAY 2014
- Shimkus KL, Wudeck EV**, Shirazi-Fard Y, Nilsson MI, Greene NP, Hogan HA, and **Fluckey JD** (2013) DEPTOR Expression Correlates with Muscle Protein Synthesis. Presented at Texas ACSM (2nd place [48]13 Doctoral Category Poster Session) (March 2013; Austin, TX)
- Crouse, Stephen F.; Greene, Nicolas P.; Lambert, Brad S., Carradine, AT; Joubert, D.; Riechman, S; **Fluckey, JD**. Aquatic training reduces exercise blood pressure and increases muscle eNOS Conference: Joint Annual Meeting of the ASPET/BPS at Experimental Biology (EB) Location: Boston, MA Date: APR 20-24, 2013. Sponsor(s): ASPET; British Pharmacol Soc (BPS) Source: FASEB JOURNAL Volume: 27 Meeting Abstract: 1132.22 Published: APR 2013
- Chen VCW, Lee CW, Lee TV, Bui S, **Fluckey JD**, Riechman SE.Changes in Body Composition with Six Weeks of Resistance Training. Conference: Joint Annual Meeting of the ASPET/BPS at Experimental Biology (EB) Location: Boston, MA Date: APR 20-24, 2013 Sponsor(s): ASPET; British Pharmacol Soc (BPS) Source: FASEB JOURNAL Volume: 27 Meeting Abstract: 1b759 Published: APR 2013
- Lawler JM, Lee Y, Hord JM, Botchlett RE, **Fluckey JD**. Effect of EUK-134 on Insulin Signaling and Morphology Alterations by 7 Days of Hindlimb Unloading in the Rat Soleus. Conference: Joint Annual Meeting of the ASPET/BPS at Experimental Biology (EB) Location: Boston, MA Date: APR 20-24, 2013 Sponsor(s): ASPET; British Pharmacol Soc (BPS) Source: FASEB JOURNAL Volume: 27 Meeting Abstract: 1b820 Published: APR 2013
- M Byrd, S Simbo, YP Jung, B Sanchez, M Cho, CW Lee, B Lockard, C Baetge, K Levers, E Galvan, A Jagim, JM Oliver, R Dalton, B Bessire, K Horrell, T Leopold, M Koozehchian, D Khanna, **K Shimkus, W Gapinsky, M Perez, J Hart, S Riechman, J Fluckey, M Greenwood, C Rasmussen, R Kreider**. Effects of immediate and delayed nutrient timing following resistance exercise on changes in mixed muscle fractional synthesis rate (FSR) in post-menopausal women participating in a weight loss program. ISSN (Colorado Springs, 2013)

M Byrd, YP Jung, B Lockard, C Baetge, K Levers, E Galvan, A Jagim, S Simbo, JM Oliver, M Koozehchian, D Khanna, R Dalton, B Sanchez, K Horrell, T Leopold, M Cho, **J Fluckey**, S Riechman, M Greenwood, J Hart, **K Shimkus**, **W Gapinski**, **M Perez**, B Bessire, C Rasmussen, R Kreider. Effects of immediate or delayed nutrient timing following resistance-exercise on changes in body composition in post-menopausal women participating in a weight loss program. FASEB (Boston, 2013)

**Shimkus KL, Wudeck EV**, Shirazi-Fard Y, Hogan HA, and **Fluckey JD** (2013) DEPTOR Expression is Altered by Mechanical Loading in Skeletal Muscle. Presented at NASA[48]19s Human Research Program Investigator[48]19s Workshop. (February 2013; Galveston, TX)

**Shimkus KL, Wudeck EV**, Shirazi-Fard Y, Nilsson MI, Greene NP, Hogan HA, and **Fluckey JD** (2013). DEPTOR Expression Correlates with Muscle Protein Synthesis. Presented at International Space Medicine Summit (May 2013; Houston, TX)

Bui S, **Shimkus KL**, Lee CW, Lee TV, Chen VCW, **Fluckey JD**, Riechman SE. The Effect of Caffeine on Protein Synthesis Rates in Rat Gastrocnemius Muscle Tissue Source: FASEB JOURNAL Volume: 27 Meeting Abstract: 1b807 Published: APR 2013

Wiggs MP, Smuder AJ, Sollanek KJ, **Shimkus KL** **Fluckey JD**, and Powers SK (2014) Inhibition of FoxO signaling prevents mechanical ventilation-induced reduction in protein synthesis. Presented at National ACSM (Spring 2014)

**Shimkus KL, Wudeck E**, Shirazi-Fard Y, Hogan HA, **Fluckey J**. Deptor Expression is Altered by Mechanical Loading in Skeletal Muscle or Rats. American Physiological Society 2012 Integrated Biology of Exercise Conference, October 2012, Westminster, CO.

**Shimkus KL, Wiggs M**, Macias BR, Lima F, Boudreaux RD, Shirazi-Fard Y, Greene E, Braby L, Hogan HA, Bloomfield SA, **Fluckey J**. Space Radiation Environment Increases Muscle Mass in Simulated Lunar Gravity. American Physiological Society 2012 Integrated Biology of Exercise Conference, October 2012, Westminster, CO.

Shirazi-Fard Y, **Shimkus KL**, **Perticone JI**, Morgan DS, Davis JM, **Fluckey JD**, Bloomfield SA, Hogan HA. "Discordant Bone and Muscle Adaptation to Multiple Microgravity Exposure with Interposed Resistance Exercise." J Bone Miner Res 27 (Suppl 1), October 2012, Presentation MO0182. 34th Annual Meeting of American Society of Bone and Mineral Research, October 12-15th, 2012, Minneapolis, MN.

**Shimkus KL**, Shirazi-Fard Y, Hogan HA, **Fluckey JD**. Impact of chronic voluntary resistance training during recovery following hindlimb unloading on rat hindlimb muscle. Experimental Biology 2012, Presentation number 1076.4, April 21-25, 2012, San Diego, CA.

**Perticone JI, Shimkus KL**, Shirazi-Fard Y, Hogan HA, **Fluckey JD**. Effects of Voluntary Resistance Exercise Training during Recovery from Hindlimb Unloading on Rat Gastrocnemius Muscle. 2012 Texas American College of Sport Medicine Annual Meeting, Abstract 1364, March 1-2, 2012, Austin, TX. (3rd place, Undergraduate Posters)

- Macias BR, Lima F, Shirazi-Fard Y, Cunningham DA, Yuen E, Camp K, **Wiggs MP, Fluckey JD**, Greene ES, Allen MR, Braby LA, Hogan HA, and Bloomfield SA. Partial Weightbearing For 21-Days And Low Dose High Energy Radiation Results In Cancellous and Cortical Bone Loss. *J Bone Miner Res* 26 (Suppl 1), September 2011, Poster MO0149. 33rd Annual Meeting of American Society of Bone and Mineral Research, September 16-20th, 2011, San Diego, CA.
- Macias BR, Lima F, Shirazi-Fard Y, **Wiggs MP, Fluckey JD**, Greene ES, Allen MR, Braby LA, Bloomfield SA. Low Dose X-Ray but not Silicon Radiation Exposure can Exacerbate Cancellous Bone Loss During Partial Weightbearing. 3rd Joing Meeting of the European Calcified Tissue Society & the International Bone and Mineral Society, May 7-11th, 2011, Athens, Greece.
- Macias BR, Lima F, Shirazi-Fard Y, **Wiggs MP, Fluckey JD**, Greene ES, Allen MR, Braby LA, Bloomfield SA. Partial Weightbearing for 21-Days and <sup>28</sup>Si Radiation Administered Alone or Combined Results in Cancellous Bone Loss. 18th international Astronautic Humans in Space Symposium, April 11-15th, 2011, Houston, Texas.
- Shimkus KL, Wiggs MP, Jaroszewski EE**, Shirazi-Fard Y, Hogan HA, **Fluckey JD**. Effects of Multiple Bouts of Long-duration Hindlimb Unloading and Recovery on Rat Hindlimb Muscles. 18th international Astronautic Humans in Space Symposium, April 11-15th, 2011, Houston, Texas. (1st Place Graduate Student Poster Competition)
- Jaroszewski EE, KL Shimkus, MP Wiggs**, Y Shirazi-Fard, HA Hogan, **JD Fluckey**. Effects of Multiple Bouts of Long-duration Hindlimb Unloading and Recovery on Rat Plantaris Muscle. Presented at the Texas Chapter of the American College of Sports Medicine Regional Conference, in Austin, TX, 2011, and again during Student Research Week at Texas A&M University. Emily won overall the Undergraduate Presentation Championship at TACSM, and 1<sup>st</sup> place in both her Division and Category at SRW.
- Shimkus KL, MP Wiggs**, Y Shirazi-Fard, HA Hogan, **JD Fluckey**. Effects of Multiple Bouts of Long-duration Hindlimb Unloading and Recovery on Rat Hindlimb Muscles. This work was presented at the Integrative Physiology of Exercise meetings in Miami, Florida, 2010. Mr. Shimkus also presented this work at the Humans In Space International Symposium at the Johnson Space Center, Houston, TX, and earned the Most Outstanding Presentation award for the conference, 2011.
- Wiggs MP**, JM Swift, F Lima, ES Greene, SA Bloomfield and **JD Fluckey**. The effect of simulated 1/6th and 1/3rd gravity on gastrocnemius muscle mass and fractional protein synthesis rates in mice. Presented in Anaheim, California (April 10, 2010). Mr. Wiggs received an APS travel award for this.
- Nilsson MI, Greene NP, Dobson JP, Wiggs MP, Gasier HG, Macias BR, Shimkus KL and Fluckey JD**. Insulin resistance syndrome blunts the mitochondrial anabolic response following resistance exercise. Presented at Experimental Biology in Anaheim, California (April 10, 2010). This presentation has now been published in manuscript form (*AJP:E&M*).
- Dobson JP, Nilsson MI, Gasier HG, Fluckey JD**. Elevations in myofibrillar protein fractional synthesis rates following 5-weeks of dynamic resistance exercise. Presented at the Integrative Physiology of Exercise meetings in Miami, Florida. 2010.

- Davis AR, L Schilling, E Wellberg, B Macias, W Porter, S Riechman, JD Fluckey.** Chemotherapeutic properties of myokines released from 'e-stim' skeletal muscle. Presented at the International Biochemistry of Exercise meeting, Guelph, Ontario, Canada, June 2009.
- Dobson JP, MI Nilsson, NP Greene, MP Wiggs, GS Latham, S Walters, and JD Fluckey.** Reduced muscle mass in hindlimb muscles of obese Zucker rats is not due to suppressed protein synthesis. Presented at the International Biochemistry of Exercise meeting, Guelph, Ontario, Canada, June 2009.
- Greene NP, **MI Nilsson, RO Hodlik, JD Fluckey, SF Crouse.** Influence of resistance exercise on AMPK AND PGC-1 $\alpha$  in the obese Zucker rat. Presented at the International Biochemistry of Exercise meeting, Guelph, Ontario, Canada, June 2009.
- Nilsson MI, NP Green, JP Dobson, BR Macias, MP Wiggs, HG Gasier, and JD Fluckey.** Resistance exercise does not augment cumulative muscle protein synthesis in the obese Zucker rat. Presented at the International Biochemistry of Exercise meeting, Guelph, Ontario, Canada, June 2009.
- Riechman SE, **A Davis, TV Lee, V Chen, CW Lee and JD Fluckey.** Skeletal muscle endocrine factors. Presented at the International Biochemistry of Exercise meeting, Guelph, Ontario, Canada, June 2009.
- Shimkus K L, MP Wiggs, MI Nilsson, JD Fluckey.** Effects of acute resistance exercise on signaling markers of protein synthesis in a simulated microgravity environment. Presented at the International Biochemistry of Exercise meeting, Guelph, Ontario, Canada, June 2009.
- Wiggs MP, MI Nilsson, GS Latham, S Walters, K Flores, K Allender, JD Fluckey.** Expression of Atrogin-1 is not increased in soleus or plantaris after 5 days of hindlimb unloading in rats. Presented at the International Biochemistry of Exercise meeting, Guelph, Ontario, Canada, June 2009.
- Gasier HG, SF Previs, TV Lee, V Chen, MP Wiggs, SE Riechman, JD Fluckey.** A comparison of  $^2\text{H}_2\text{O}$  and phenylalanine flooding dose methodologies to investigate muscle protein synthesis rates in rats. *Presented at the Integrative Biology of Exercise Meeting*, Hilton Head, SC, Sept. 2008.
- Wiggs MP, HG Gasier, SF Previs, JD Fluckey.** Assessment of cumulative FSR over a 24 h period with hindlimb unloading and intermittent reloading in rats. *Presented at the Integrative Biology of Exercise Meeting*, Hilton Head, SC, Sept. 2008.
- Gasier HG, MP Wiggs, JM Swift, D Oliphant, SA Riechman and JD Fluckey.** Plateau effects of resistance exercise result from over-expression of eIF4E-BP1. Presented at *Experimental Biology 2007*, Washington DC, May 2007.
- Wiggs MP, KP Jones, W Rayburn, T Davis, GL Dohm, and JD Fluckey.** Insulin signaling in sedentary human skeletal muscle via PI3K is necessary for protein synthesis. To be presented at *Experimental Biology 2007*, Washington DC, May 2007; *Manuscript in preparation*.

- Swift JM, F vonWalden, T Elman, **JD Fluckey** and SA Bloomfield. Assessing the Efficacy of Multiple Dosing Regimens of a  $\beta$ -Agonist Agent for Bone and Muscle Loss During 28d Hindlimb Unloading. *Texas ASCM*, September, 2005.
- Mr. vonWalden and Mr. Elman were students at the Karolinska Institute under the direction of Per Tesch. Dr. Fluckey hosted these students in the MBL for specialized training to complete their theses in Stockholm.*
- Dupont-Versteegden EE, CA Peterson, BA Strotman, M Knox, P Bennett, D Gaddy, and **JD Fluckey**. Resistance exercise during hind limb suspension decreases protein degradation, but not apoptosis. *Integrative Biology of Exercise Conference*, Austin, TX, October 2004.
- Knox M, EE Dupont-Versteegden, D Gaddy, CA Peterson and **JD Fluckey**. A novel approach to hind limb suspension in mature rats. Presented at *FASEB Conference*, San Diego, CA, 2003.
- Perrien DS, NS Akel, DC Montague, M Knox, **JD Fluckey**, EE Dupont-Versteegden, CA Peterson, L Suva, and D Gaddy. Distinct regulation of bone and muscle maintenance during hindlimb suspension by a concentric resistance exercise regimen. Presented at the *Bone and Tooth Symposium*, Oxford, England, 2003.
- Campbell WW, **JD Fluckey**, MH Morse, MD Haub. Effects of oral pinitol supplementation on oral and intravenous glucose tolerance in older people. Presented at *FASEB conference*, New Orleans, LA, 2002.
- Trappe TA, J Carrithers, SW Trappe and **JD Fluckey**. Skeletal muscle myosin and actin content with aging. Presented at *FASEB Conference*, New Orleans, LA, 2002.
- Trappe TA, **JD Fluckey**, F White, CP Lambert and WJ Evans. Skeletal muscle PGF<sub>2</sub>a and PGE<sub>2</sub> in response to resistance exercise: Influence of ibuprofen and acetaminophen. Presented at the *International Biochemistry of Exercise Meetings*, Little Rock, AR, 2000.
- Murphy RLJ, CA Peterson, EE Dupont-Versteegden, **JD Fluckey**, RD Skinner and JD Houlié. Changes in skeletal muscle of spinal cord injured rats following ‘passive’ exercise. Presented at *Neuroscience National Conference*, November, 1998.
- Cortright RN, D Zheng, JP Jones, **JD Fluckey**, BP Lowell and GL Dohm. The effect of denervation and exercise on UCP-3 gene expression in skeletal muscle. Presented at the Diabetes National Conference, Chicago, 1998.
- Pohnert S, **JD Fluckey**, G Boyd, M Lang and GL Dohm. Effects of thyroid hormone on rates of protein synthesis in skeletal muscle. Presented at *FASEB Conference*, San Fransisco, CA, 1998.
- Donsmark M, B Stallknecht, LH Enevoldsen, **JD Fluckey** and H Galbo. Skeletal muscle blood flow estimated by microdialysis probes perfused with ethanol, <sup>14</sup>C-ethanol or <sup>3</sup>H<sub>2</sub>O. Presented at the *International Conference on the Biochemistry of Exercise*, Sydney, Australia, 1997.
- Enevoldsen LH, B Stallknecht, **JD Fluckey** and H Galbo. The influence of exercise on in vivo insulin-stimulated glucose uptake in intraabdominal adipose tissue in rats. Presented at the *International Conference on the Biochemistry of Exercise*, Sydney, Australia, 1997.

### **Invited Talks/Other Presentations:**

- Invited Speaker - Anabolism and DEPTOR: Meet mTOR's Ball and Chain. American College of Sports Medicine National Conference, Minneapolis, MN (June 2018).
- Invited Speaker - Anabolic Control of Skeletal Muscle: Responses to Loading and Unloading. Guest of the Biology and Health and Human Performance Departments of Eastern New Mexico University.
- Invited Speaker - Anabolic Control of Skeletal Muscle with Loading and Unloading. Guest of the Department of Kinesiology of the University of Texas at Tyler.
- Invited Speaker - Two worlds colliding: The impact of protein anabolism on glucose regulation with sarcopenic obesity. Presented at the Texas A&M University Obesity, Nutrition Research Symposium (April 2018).
- Invited Speaker - Chemotherapeutic Potential of Contracting Skeletal Muscle. Presented at the Texas A&M Cancer Prevention Symposium, May 3, 2017.
- Invited Speaker - Anabolic Control of Skeletal Muscle: Responses to Loading and Unloading. Tejas International Symposium in Exercise and Health Science Research (Waco, TX) - Invited Keynote Lecturer, October 13, 2016.
- Invited Speaker – University of North Texas, Department of Biology: Metabolic Syndrome and Anabolic Resistance to Exercise (Sept 2015).
- Invited Speaker – The Pennsylvania State University, Depts of Kinesiology and Integrative Physiology: Anabolic Resistance to Exercise with Disease (Sept 2014).
- Invited Speaker, Texas Chapter – American College of Sports Medicine: Metabolic Syndrome and Anabolic Resistance to Exercise (Feb 2013).
- Co-Organizer of Mini-Symposium on *Studies of Microgravity: The Need for Biomedical Research*. The symposium was sponsored by the Department of Health and Kinesiology and the Sydney and JL Huffines Institute for Sports Medicine and Human Performance - 2006. The speakers included Dr. Per Tesch, Karolinska Institute, Dr. Bloomfield, Bone Biology Lab, TAMU, Dr. Fluckey, Muscle Biology Lab, TAMU and Richard Linnehan, NASA.
- Invited Speaker, California State University – Department of Kinesiology - Chico – April 6, 2006
- Invited Speaker, University of Texas - Department of Kinesiology – November 17, 2006
- Invited Speaker, University of Kentucky – College of Medicine - November 28, 2007
- Invited Speaker, Texas A&M University – College of Education and Human Development Advisory Council – October 10, 2008
- Invited Speaker, Texas Chapter – American College of Sports Medicine: *High intensity exercise training; new insight related to the control of muscle mass and disease prevention*. Tyler, TX, February 27, 2009.

Regulation of muscle protein synthesis with sarcopenic obesity. Departments of Physiology and Kinesiology, The Pennsylvania State University; October 17, 2014.

Dr. Fluckey has also presented his work to groups at Texas A&M University and Scott & White Hospital. While at UAMS, Dr. Fluckey presented to a number of groups including the Departments of Geriatrics, Physiology and Biophysics, and Nutrition. He has presented this work in the North Little Rock VA, the Little Rock VA, Arkansas Childrens Hospital and UAMS. In association with his K01 award, Dr. Fluckey has also presented his work to the Departments of Physiology, Biochemistry and Exercise Science at East Carolina University, and to the Department of Physiology and Pharmacology at the Karolinska Institute in Stockholm, Sweden. Dr. Fluckey also presented at the Dean's Faculty Research Retreat at UAMS in the Spring of 2003.

**MBL Student awards (in addition to those listed in the presentations section)**

2018 – ACSM National Runners-up (2<sup>nd</sup> place) – Texas A&M University Kinesiology Student Bowl Team

2018 – TACSM Regional Champions - Texas A&M University Kinesiology Student Bowl Team

2014 – ACSM National Champions - Texas A&M University Kinesiology Student Bowl Team

2014 – TACSM Regional Champions - Texas A&M University Kinesiology Student Bowl Team

2014 – Will Deaver - Texas ACSM Student Development Research Award

2014 – Yang Lee – ACSM Student Development Research Award

2012 Elyse Wudeck – NSBRI Scholarship, Undergraduate

2011 Kevin Shimkus – Texas ACSM Student Development Research Award.

2011 Kevin Shimkus – Humans in Space International Conference, NSBRI, Johnson Space Center, 1<sup>st</sup> place in the graduate research exhibition.

2011 Emily Jaroszewski – Texas ACSM Conference, 1<sup>st</sup> place in the Undergraduate Research Presentations

2011 Emily Jaroszewski – Texas A&M University Student Research Week, 1<sup>st</sup> place in undergraduate student group and 1<sup>st</sup> place in the overall taxonomy of *Human Anatomy, Physiology and Kinesiology*.

2011 Elyse Wudeck – Recipient of an undergraduate student research scholarship to conduct her thesis in the Muscle Biology Lab.

2010 Michael Wiggs – Texas A&M University Student Research Week, 1st place in the graduate student group and 1st place in the overall taxonomy of Human Anatomy, Physiology and Kinesiology.

2009 Michael Wiggs – Texas A&M University Student Research Week, 1st place in the graduate student grouping.

## **Teaching**

- 2015-16 KINE 386 – Sport Physiology
- 2014 KINE 482 – Writing Seminar
- 2012 KINE 682 – Physiology of a Superhero
- 2011 KINE/NUEN/NUTR 682 – Space Life Sciences Seminar Series
- 2010 Summer KINE 682 – Methods used for the study of muscle protein synthesis
- 2008 Summer KINE 682 – Skeletal Muscle Glucose Metabolism: Effect of Exercise and Disease
- 2007- 2014 Invited lecture for the Space Life Sciences Course
- 2007- current Spring KINE 637 – Graduate Exercise Physiology
- 2007 Spring KINE 681 – Seminar Organizer
- 2006 Fall KINE 682 – Seminar in Molecular Adaptations in Skeletal Muscle with Exercise Training
- 2006-current Fall KINE 433 – Exercise Physiology
- 2006 Spring: KINE 682 – Seminar in Muscle Adaptations to Microgravity
- 2006 Spring: KINE 637 - Invited Lecturer for Muscle Adaptations (2 sessions) in Graduate Exercise Physiology
- 2004 Independent Study (Spring/Fall)
- 2003 Independent Study (Fall)
- 2002 Graduate Student Journal Club – Department of Physiology and Biophysics, UAMS. Acute and chronic adaptations to exercise (Spring).
- 2002 Graduate Student Journal Club – Department of Physiology and Biophysics, UAMS. Musculoskeletal adaptations to microgravity (Fall).
- 2000 Medical Physiology Breakout Session – Department of Physiology and Biophysics (Spring). Exercise Physiology Component.
- 1999 Medical Physiology Breakout Session – Department of Physiology and Biophysics (Spring). Exercise Physiology Component.
- 1997 Summer Program for Future Doctors – Department of Biochemistry, East Carolina University. Instructor: Biochemistry
- 1997 Advanced Exercise Physiology – Department of Exercise Science, East Carolina University. Instructor.
- 1996 Department of Biology, Pitt Community College, Greenville, NC – Instructor: Anatomy and Physiology
- 1987-1990 Department of Physical Education, Clovis Community College – Part-time Instructor: Principles of Weight Lifting



### **Comprehensive Examination Committees:**

Dr. Fluckey has served on over 40 Doctoral or Masters students' committees in the 9 years since arriving at Texas A&M University.

### **Current and Past Graduate Students in the MBL:**

Will Deaver, MS (PhD Student; Graduation: Pending)

Jessica Cardin, MS (PhD Student; Graduation: Pending)

Colleen O'Reilly, MS (PhD Student; Graduation: Pending)

Chelsea Goodenough, BS (PhD Student; Graduation: Pending)

Amanda Davis, BS (PhD Student; Recipient of National Space Biomedical Research Institute Fellowship in 2007; Graduated 2017)

Kevin Shimkus, BS (PhD Student; Recipient of National Space Biomedical Research Institute Fellowship in 2009; Graduated 2016)

Jacqueline Perticone, BS (MS Thesis Student; Graduated 2014)

Justin Dobson, MS (PhD Student; Graduated 2014)

Himanshu Kaushik (MS, Graduated 2012)

Jehong Choo (MS, Graduated 2012)

Michael Wiggs, BS (PhD Student; Doctoral Candidate; Graduated 2011)

Heath Gasier, MS, RD (PhD Student; Graduated 2009)

Mats Nilsson (TAMU; Doctoral Candidate; Graduated 2009)

### **Research**

Dr. Fluckey has an active research program, having the privilege of currently working well-known international researchers such as G. Lynis Dohm (East Carolina University), Per A. Tesch (Karolinska Institute), Susan Bloomfield (Texas A&M University), Charlotte Peterson (University of Kentucky), Bob Wolfe (University of Texas-Medical Branch), Todd Trappe (Ball State University) and William J. Evans (University of Arkansas for Medical Sciences). Below is a brief description of grants that involve Dr. Fluckey.

In addition to collaborative work with Dr. Bloomfield, Dr. Fluckey is collaborating with Drs. Riechman, E. Christou, and Crouse within the Department of Health and Kinesiology. These projects are focused on human skeletal muscle performance from whole body to subcellular perspectives. Further, these studies involve stable isotopic enrichments and percutaneous muscle biopsies for the assessment of skeletal muscle protein synthesis, and how synthesis is altered by exercise and simulated microgravity.

To our knowledge, these studies are the first to obtain human muscle biopsies at Texas A&M University.

**Funded Research Projects Ongoing or Completed During the Last 3 Years:**

*Redox Regulation Of Nnos Translocation & Muscle Atrophy During Mechanical Unloading*

Principle Investigator: Lawler, PI; Fluckey, CoPI

Agency: NASA \$

Type: Investigator Initiated Period: 08/01/19-

The main goal of this project is to explore the mechanisms of nNOS on atrophy with skeletal muscle unloading. Selected for Funding.

*Anti-Osteoporosis Treatment Utilizing Sclerostin Antibody and the Potential Detriment to Skeletal Muscle Health*

Principle Investigator: Fluckey

Agency: CEHD \$29,058

Type: Transforming Lives Grant Period: 01/01/15-12/31/15

The major goal of this project is to use assess non-mechanical interactions between bone and muscle with regard to skeletal muscle growth following pharmaceitic intervention to maintain bone.

*Pre-Treatment Approaches for Improving the Response of Bone to Disuse and Recovery*

Principle Investigator: Hogan, PI / Co-PI: JD Fluckey

Agency: NASA \$747,335

Type: Investigator Initiated Period: 01/01/14-12/31/17

The major goal of this project is to use pharmacology or exercise to maintain bone mass.

**Previous Awarded Grants:**

*Redox Regulation of nNOS Translocation and Muscle Atrophy During Mechanical Unloading*

Principle Investigator: J Lawler / Co-PI: JD Fluckey

Agency: NIH \$400,000

Type: R21 Period: 9/01/12-8/31/15

The major goal of this grant is to assess the role of nitric oxide on muscle atrophy during chronic disuse.

*Determining the Significance of the Rapamycin- and MAPK-sensitive Pathways in Muscle Protein Synthesis of Developing Myotubes in C2C12, Primary Mouse, and Human Cultures.*

Principle Investigator: Kevin Shimkus

Mentor of Project: JD Fluckey

Agency: Texas ACSM

Type: Student Development Research Award

This is a proof of concept award that focuses on phenotypic expression of developing myotubes from mouse and human primary cell lines and signaling strategies for the manufacture of nascent proteins.

*DEPTOR regulation of insulin sensitivity with sarcopenic obesity.*

Principle Investigator: J. Will Deaver      Mentor of Project: JD Fluckey

Agency: Texas ACSM

Type: Student Development Research Award

The purpose of this experiment is to determine if the diminished DEPTOR content in diabetic, sarcopenic skeletal muscle is affecting insulin-stimulated glucose uptake.

*Maintaining Musculoskeletal Health in the Lunar Environment*

Principle Investigator: S Bloomfield (Co-Investigator: JD Fluckey)

Agency: National Space Biomedical Research Institute      \$1,370,018

Type: R01      Period: 06/01/08-05/31/12

The major goals of this research are to explore the effect of simulated exposure to lunar space radiation on the musculoskeletal system in mice.\*

\* - Dr. Fluckey will examine properties of skeletal muscle physiology in simulated lunar hypogravity, as well as how it is affected by exposure to radiation and exercise countermeasures.

*Muscle and Bone Maintenance in Hindlimb Suspended Rats*

Principal Investigator: CA Peterson / Co-investigator: JD Fluckey

Agency: National Institutes of Health      \$1,714,385 – **Subcontracted to TAMU**

Type: R01 AR47577      Period: 04/01/02-03/31/08

The major goal of this research is to perform comprehensive analysis of a novel form of resistance exercise training as a countermeasure to offset the loss of musculoskeletal structure and function after exposure to a simulated microgravity environment.\*

\* - Dr. Fluckey's role on this grant relates to the development of the flywheel resistance exercise paradigm and assessment of rates of muscle protein synthesis and degradation with hindlimb suspension and/or resistance exercise. Since the inception of this grant, three papers have been published resulting from this work (2 first author papers and 1 second author paper), plus there have been 3 presentations at National or International Meetings.

*The effects of dietary cholesterol on skeletal muscle hypertrophy and protein synthesis*

Principle Investigator: Heath Gasier      Mentor of Project: JD Fluckey

Agency: Huffines Institute/Texas A&M University

Type: Student Award/Internal

*The major goal of this project is to determine the effect of dietary cholesterol in skeletal muscle mass and protein synthesis, with and without resistance exercise in 6 month old, male rats.*

*Muscle as an Endocrine Tissue*

Principle Investigator: JD Fluckey

Agency: The Huffines Institute      \$ 5,000

Type: Pilot Grant

Period: 01/01/08-12/31/08

Period: 01-01-08

*The major goals of this research are to explore/characterize factors secreted by skeletal muscle which we have shown to have an impact on glucose metabolism during exercise. Increasing the efficiency of exercise countermeasures for bone loss*

Principle Investigator: S Bloomfield / Consultant: JD Fluckey

Agency: National Space Biomedical Research Institute \$1,788,905

Type: R01 Period: 02/01/04-01/31/08

The major goals of this research are to use pharmacology with existing countermeasures in an effort to maximize maintenance of bone in microgravity environments.\*

\* - Dr. Fluckey's expertise with the methodology of Flywheel resistance exercise to offset losses of muscle mass incurred during microgravity environments has forged new collaborations with individuals seeking to use this methodology for their own work.

*Alcohol: Direct and indirect effects on drug metabolism*

Principle Investigator: TM Badger / Co-investigator: JD Fluckey

Agency: National Institutes of Health \$1,250,000

Type: R01 (renewal) Period: 10/01/04-09/30/09

This competitive renewal (project years 14-18) will to determine if altered hormone signaling or transcription factor expression during alcohol abuse affects the expression of Class I alcohol dehydrogenase.\*

\* - Dr. Fluckey's role on this project is to conduct experiments related to insulin signaling and action on glucoregulatory function in rodents, with and without alcohol abuse. Dr. Fluckey's training in the area of metabolism, along with the methodological approaches will be a valuable asset to this project.

*Bedrest and Aging*

Principle Investigator: WJ Evans / Co-investigator: JD Fluckey

Agency: National Institute of Aging \$7,102,359 (overall)

Type: Program Project (P01) Period: 04/01/04-03/31/09

*The individual Projects are listed below.*

*Project 2: Exercise and Muscle*

Principle Investigator: TA Trappe / Co-investigator: JD Fluckey

Agency: National Institute of Aging \$999,184

Type: Part of Program Project (P01) Period: 04/01/04-03/31/09

The major goals of this study are to examine the effect of exercise on skeletal muscle function after 10 days of bed rest in humans.

*Project 3: Insulin Resistance and Protein Metabolism*

Principle Investigator: WJ Evans / Co-investigator: JD Fluckey

Agency: National Institute of Aging \$987,090

Type: Part of Program Project (P01) Period: 04/01/04-03/31/09

The major goals of this study are to examine the effect of bed rest on insulin resistance and muscle protein metabolism in humans.

*Project 4: Tissue Lipids and Insulin Resistance*

Principle Investigator: RR Wolfe / Co-investigator: JD Fluckey

Agency: National Institute of Aging \$1,189,729  
Type: Part of Program Project (P01) Period: 04/01/04-03/31/09  
The major goals of this study are to examine the effect of bed rest on intramuscular lipid accumulation and oxidation, potentially leading to insulin resistance in humans.

**Core C: Insulin Signaling Core Laboratory**

Principle Investigator: JD Fluckey  
Agency: National Institute of Aging \$38,622  
Type: Part of Program Project (P01) Period: 06/01/08-05/31/09  
This core facility will conduct assays related to skeletal muscle insulin signaling in support of the overall program project.

\* - Dr. Fluckey's role on this Program Project is related to the area of insulin signaling and subsequent actions. Specifically, Dr. Fluckey will explore the effect of bed rest and/or intervention on specific areas of insulin signaling involved with potential protein kinase C modulation. This contribution to the program project is at the focal point of Dr. Fluckey's individual research. Dr. Fluckey is also the Core leader on this project to conduct various assays on the insulin signal transduction pathway.

*Aging and Mechanisms of Human Protein Synthesis*

Principle Investigator: JD Fluckey  
Agency: National Institute of Aging \$562,109 – Transferred to TAMU  
Type: K01 AG01025-01A1 Period: 12/01/01-11/30/07  
The major goal of this research is to examine the signal transduction mechanisms of human muscle protein synthesis with advancing age.\*

\* - This work developed an in vitro methodology to assess rates of human muscle protein synthesis with a robust activation/inhibition scheme using rectus abdominus muscle obtained during surgery.

**Other grants submitted as PI:**

Effects of Dietary Protein and Cholesterol and Flywheel Training on Muscle Strength, Neural Activation, Mass and Anabolic Potential during Simulated Microgravity

Principle Investigator: JD Fluckey (Submitted 2007)  
Agency: National Space Biomedical Research Institute \$1,200,000  
Type: R01 Period: TBD  
The major goals of this research are to determine the efficacy of specialized diet and training on human performance and musculoskeletal mass with simulated space flight.

*Muscle proteolysis, resistance exercise and aging*

Principle Investigator: JD Fluckey  
Agency: National Institutes of Health \$404,815  
Type: R01 Submitted: (9/29/98)  
The goal of the study was to determine whether the effect of aging and resistance exercise on muscle protein degradation.\*

\* - Dr. Fluckey altered this grant application after its second submission by moving toward human subjects. This grant is now his funded K01.

*Insulin, protein synthesis & resistance exercise*

Principle Investigator: JD Fluckey  
Agency: National Institutes of Health  
Type: R01

\$415,419  
Submitted: (2/25/99)

The goal of the study was to systematically examine the influence of resistance exercise on insulin-mediated muscle protein synthesis.\*

\* - Dr. Fluckey's submission of this grant application was likely premature, since strong preliminary data were not available at that time. However, over the last couple of years, Dr. Fluckey has accumulated the necessary preliminary data to once again pursue this R01 application.

Project 5 of Program Project Application (Evans; PI): *Immobilization and Insulin Resistance*

Principle Investigator: JD Fluckey  
Agency: National Institute of Aging  
Type: Part of Program Project (P01)

\$382,770  
Period: 04/01/04-03/31/09

The major goals of this study are to examine the effect of bed rest/immobilization on insulin signaling for muscle protein synthesis and glucose tolerance.\*

\* - Dr. Fluckey's application of the newly funded program project was not considered for funding on the basis of 'fit'. This was the only animal application in the program project. However, preliminary work and methodological approaches resulting from this application will result in a future R01 submission on this topic.

**Dissertation/Thesis:**

*Insulin modulation of muscle protein synthesis after resistance exercise.* (Dissertation completed at The Pennsylvania State University, 1995.)

*The effect of progressive resistance exercise on glucose tolerance in individuals with NIDDM.* (Thesis completed at Ball State University, 1992.)

**References (listed alphabetically):**

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