

**BIOGRAPHICAL SKETCH**

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NAME Espen Eric Spangenburg		POSITION TITLE Assistant Professor	
eRA COMMONS USER NAME EESPANGENBURG			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Virginia Polytechnic Institute and State University	B. S.	1991-1995	Exercise Physiology
Virginia Polytechnic Institute and State University	M. S.	1995-1997	Muscle Physiology
Virginia Polytechnic Institute and State University	Ph. D.	1997-2000	Muscle Physiology
University of Missouri-Columbia	Post-doc	2000-2003	Muscle Biology

**A. Positions and Honors****Positions**

- 2000-2003 **Postdoctoral Fellow**, Dept. of Biomedical Sciences. University of Missouri, Columbia, MO
- 2003-2006 **Assistant Professor**, Dual appointments in the Neurobiology, Physiology and Behavior and Department of Physiology and Membrane Biology, University of California-Davis, Davis, CA
- 2006-present **Assistant Professor** Dept. Kinesiology. University of Maryland, College Park, MD

**Honors and Service**

- 2007 New Investigator Award-American Physiological Society-EEP Section
- NIH (NIAMS) RO3 Special Emphasis Study Section, Member 2005-present
- NASA Muscle Biology Study Section, Ad Hoc Member, Fall 2004
- Medical Research Council (England), Mail-In Reviewer, Fall 2004
- UCD Academic Research Travel Award. 2004, 2006
- National Institute of Health National Research Service Award 2002-2003
- Chaired Symposium for National 2004 ACSM meeting in Indianapolis "The Regulation of Satellite Cell Proliferation in Skeletal Muscle Growth"
- Chair of Symposium for National 2006 ACSM meeting in Denver "Role of Estrogens in Skeletal Muscle Function and Adaptation"
- Invited member of the steering committee for the Molecular and Regulatory Mechanisms Special Interest group in ACSM
- Reviewer: *Am J Physiol (Endo and Metab)*, *Am J Physiol (Reg. Comp. Physiol)*, *Am J Physiol (Heart Circ Physiol)*, *Journal of Applied Physiology*, *Experimental Physiology*, *J Cellular Biochemistry*, *Frontiers in Bioscience*, *FEBS Letters*, *Journal of Physiology*, *Journal of Cell Physiology*, *Journal of Gerontology: Biological Sciences*, *Free Radical Biology and Medicine*, *Cell and Tissue Research*, and *Medicine Science in Sport and Exercise*.
- American Physiological Society: Regular Member
- American College of Sports Medicine, National Chapter: Regular Member
- American Diabetes Association: Regular Member
- Endocrine Society Member: Active Member

**B. Peer Reviewed Publications**

1. Spangenburg, E. E., H. Metz, and J.H. Williams. Effects of membrane-permeant Ca<sup>2+</sup>-chelators on skeletal muscle force and fatigue. *Res. Comm. Pharm. And Toxicology*. (1998), 3(3-4): 123-129.

2. Williams, J. H., C. W. Ward, E. E. Spangenburg, and R. Nelson. Functional aspects of skeletal muscle contractile apparatus and sarcoplasmic reticulum following fatiguing activity. *J. Appl. Physiol.* (1998), 85(2): 619-626.
3. Williams, J. H., C. W. Ward, E. E. Spangenburg, R. Nelson, S. Stavrianeas, and G. A. Klug. Glucose 6-phosphate alters skeletal muscle contractile apparatus and sarcoplasmic reticulum function. *Exp. Physiol.* (1998), 83: 98-109.
4. Ward, C. W., E. E. Spangenburg, L. M. Diss and J. H. Williams. Effects of varied fatigue protocols on sarcoplasmic reticulum calcium uptake and release. *Am. J. Physiol.* (1998), 275(44): R99-R104.
5. Spangenburg, E. E., C.W. Ward, and J.H. Williams. Effects of lactate on force production by mouse EDL muscle: implications for the development of fatigue. *Can. J. Physiol. Pharmacol.* (1998), 76(6): 642-648.
6. Aschenbach, W. G., J. H. Williams, J. Ocel, L. Craft, C. W. Ward, and E. E. Spangenburg. Effects of oral sodium loading on high intensity arm ergometry in college wrestlers. *Med. Sci. Sports. Exer.* (2000), 32(3): 669-675.
7. Spangenburg, E. E., J. H. Williams, R. R. Roy and R. J. Talmadge. Skeletal muscle calcineurin: Influence of atrophy and phenotype adaptation. *Am J Physiol (Reg. Comp. Physiol)* (2001), 280: R1256-R1260.
8. Chakravarthy, M. C., E. E. Spangenburg, and F. W. Booth. Culture in low levels of oxygen enhances *in vitro* proliferation potential of satellite cells from old skeletal muscle. *Cell Mol Life Sciences.* (2001), 58: 1150-1158.
9. S. J. Lees, P. D. Franks, E. E. Spangenburg, and J. H. Williams. Glycogen and glycogen phosphorylase associated with skeletal muscle sarcoplasmic reticulum: effects of fatiguing activity. *J. Appl. Physiol.* (2001), 91: 1638-1644.
10. Spangenburg, E. E., S. Lees, J. Otis, R. J. Talmadge, T. I. Musch, and J. H. Williams. Effects of moderate congestive heart failure and skeletal muscle functional overload on the rat plantaris. *J. Appl. Physiol.* (2002) 92: 18-24.
11. Spangenburg, E. E., J. H. Williams, R. J. Talmadge, T. I. Musch, P. C. Pfeifer and R. M. McAllister. Changes in skeletal muscle MHC expression from rats with varying degrees of heart failure. *Eur. J. Appl. Physiol.* (2002) 87: 182-186.
12. Spangenburg, E. E. and F. W. Booth. Multiple signaling pathways regulate Leukemia Inhibitory Factor induced skeletal muscle satellite cell proliferation. *Am J Physiol. (Cell Physiol)* (2002) 283: C204-C211.
13. Vyas, D., E. E. Spangenburg, T. W. Abraha, T. E. Childs, and F. W. Booth. Active GSK-3B attenuates skeletal muscle myotube hypertrophy. *Am. J. Physiol. (Cell Physiol)* (2002) 283: C545-C551.
14. Spangenburg, E. E., T. Abraha, T. E. Childs, J. Pattison, and F. W. Booth. Skeletal muscle IGF-binding mRNA and protein 3, 4 and 5 expression are age, muscle, and load dependent. *Am. J. Physiol (Endocrinology and Metabolism)* (2003) 284(2):E340-50.
15. Stavrianeas, S., E. E. Spangenburg, T. W. Batts, J. H. Williams, and G. A. Klug. Prolonged exercise potentates sarcoplasmic reticulum  $Ca^{2+}$  uptake in rat diaphragm. *Eur. J. Appl. Physiol.* (2003) 89: 63-68.
16. Machida, S., E. E. Spangenburg, F.W. Booth. Forkhead transcription factor FoxO1 transduces insulin-like growth factor's signal to p27<sup>Kip1</sup> in primary skeletal satellite cells. *J Cell Physiol.* (2003) 196:532-531.
17. Childs, T. E., E. E. Spangenburg, D. Vyas, and F. W. Booth. Temporal alterations in protein signaling cascades during recovery from muscle atrophy. *Am. J. Physiol. (Cell Physiol)* (2003) 285: C391-C398.

18. Pattison, J. S., L. C. Folk, R. W. Madsen, T. E. Childs, E. E. Spangenburg, and F. W. Booth. Expression profiling identifies dysregulation of myosin heavy chains IIb & IIx during mechanical unloading in soleus muscles of old rats. *Journal of Physiology*. (2003) 553 (2): 357-369.
19. Morris, T. R., E. E. Spangenburg, and F. W. Booth. Activation of multiple intracellular signaling pathways during muscle atrophy and muscle re-growth in aged animals. *J Appl Physiol*. (2004) 96(1): 398-404.
20. Spangenburg, E. E., D. K. Bowles, and F. W. Booth. IGF-I-induced transcriptional activity of the skeletal  $\alpha$ -actin gene is regulated by signaling mechanisms linked to voltage-gated calcium channels during myoblast differentiation. *Endocrinology*. (2004) 145(4): 2054-2063.
21. Machida, S., E. E. Spangenburg, and F.W. Booth. Passaging of primary rat muscle progenitor cells in culture alters their cellular phenotype and differentiation potential. *Cell Proliferation*. (2004) 37(4): 267-77.
22. Spangenburg, E. E. Suppressor of cytokine signaling-3 induces myoblast differentiation. *J Biol Chem*. (2005) 280 (11): 10749-10758.
23. Sitnick, M., A. Foley, M. B. Brown, and E. E. Spangenburg. Ovariectomy prevents the recovery of atrophied gastrocnemius skeletal muscle mass. *J Appl Physiol*. (2006) 100(1):286-93. Received Editorial Focus (2006;100 375-376).
24. Spangenburg, E. E. and T. A. McBride. Inhibition of stretch-activated channels during eccentric muscle contraction attenuates p70<sup>S6k</sup> activation. *J Appl Physiol*. (2006) 100(1):129-35.
25. Spangenburg, E. E., D. A. Brown, M. S. Johnson, R. L. Moore. Exercise increases SOCS-3 expression in rat skeletal muscle: potential relationship to IL-6 expression. *J Physiol*. (2006) 572:839-48.
26. Spangenburg, E. E. and F. W. Booth. Leukemia inhibitory factor restores the hypertrophic response to increased loading in the LIF(-/-) mouse. *Cytokine*. (2006) 34(3-4):125-30.
27. Burry, M., D. A. Hawkins, E. E. Spangenburg. Lengthening Contractions Differentially Affect p70<sup>S6k</sup> Phosphorylation Compared to Isometric Contractions in Rat Skeletal Muscle. *Eur. J. Appl. Physiol*. (2007) 100(4):409-15.

## Review Articles

1. Spangenburg, E. E. and F. W. Booth. Invited Editorial. Myogenic satellite cells: physiology to molecular biology. *J Appl Physiol*. (2001), 91: 533.
2. Chakravarthy, M. V., F. W. Booth, and E. E. Spangenburg. The molecular responses of skeletal muscle satellite cells to continuous expression of IGF-I: implications for the rescue of induced muscular atrophy in aged rats. *Int. J. Sports Nut. and Exer. Metab*. (2001), 11: S42-S46.
3. Booth, F. W., M. V. Chakravarthy, S. E. Gordon, and E. E. Spangenburg. Waging war on physical inactivity: Using modern ammunition against an ancient enemy. Invited review. *J Appl. Physiol*. (2002) 93: 3-30.
4. Booth, F. W., M. V. Chakravarthy, and E. E. Spangenburg. Exercise and gene expression: Physiological regulation of the human genome through physical activity. Invited review. *J Physiol.(London)*. (2002) 543(2): 399-411.
5. Spangenburg, E. E., M. V. Chakravarthy, and F. W. Booth. p27<sup>kip1</sup>- a Potential Regulator of Skeletal Muscle Satellite Cell Proliferation. *Clinical Orthopedics*. (2002) 403S: S221-S227.

6. E. E. Spangenburg. Perspective. IGF-I and aging skeletal muscle: a 'missing' hypertrophy agent. *J Physiol.* (2003) 547:2.
7. E. E. Spangenburg, and F. W. Booth. Molecular regulation of skeletal muscle fiber type expression. Invited Review. *Acta. Physiol. Scand.* (2003) 178: 413-424.
8. Rennie, M. J., E. E. Spangenburg, and F. W. Booth. Control of human skeletal muscle mass. Invited Review. *Ann. Rev. Physiol.* (2004) 66: 799-828.
9. Spangenburg, E. E. SOCS, skeletal muscle, and chronic health conditions: the potential interactions. Invited Review. *Exer Sci Sport Rev.* In press.