

CURRICULUM VITAE
SIMON SCHENK, PH.D.

PRESENT POSITION:

Assistant Professor (In Residence) of Orthopaedic Surgery 2009 - Present
Department of Orthopaedic Surgery
School of Medicine
University of California, San Diego

Physical Address:	UCSD Research Center 3525 John Hopkins Court, 1 st floor Rm 135 La Jolla CA92121	Mailing Address:	University of California, San Diego 9500 Gilman Drive MC 0863 La Jolla CA9093-0863
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EDUCATION:

B. APPLIED SCIENCE	University of Queensland (Australia); Human Movement Studies	1999
MASTER OF ARTS	University of Texas at Austin; Exercise Physiology	2002
PH.D.	University of Michigan; Kinesiology	2006

POST DOCTORAL TRAINING:

ENDOCRINOLOGY & METABOLISM. University of California, San Diego. 2006 - 2009

HONORS, AWARDS & FELLOWSHIPS:

- American Diabetes Association Mentor-Based Post-Doctoral Fellowship (2006-2009)
- One-Term Dissertation Fellowship, Rackham Graduate School, University of Michigan (2006)
- Charles M. Tipton National Student Research Award, American College of Sports Medicine (2006)
- Nutrition Interest Group Student Research Award, American College of Sports Medicine (2006)
- Excellence in Research Student Award, Blue Cross Blue Shield of Michigan Foundation (2005)
- Pre-Doctoral Fellowship, Rackham Graduate School, University of Michigan (2004-2005)
- Paul A. Hunsicker Memorial Award, Division of Kinesiology, University of Michigan (2004)
- Blue Cross Blue Shield of Michigan Foundation Student Award (2003)
- Gatorade Sports Science Institute Student Award (2001)

PROFESSIONAL MEMBERSHIP:

- American College of Sports Medicine
- American Diabetes Association
- American Physiological Society
- European Association for the Study of Diabetes

TEACHING EXPERIENCE:

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|---|-----------|
| • Graduate Student Instructor/Lecturer. University of Michigan. <i>Division of Kinesiology.</i> | 2002-2004 |
| • Teaching Assistant. University of Texas at Austin. <i>School of Biological Sciences.</i> | 2000-2002 |

INVITED REVIEWER FOR PROFESSIONAL JOURNALS:

- American Journal of Physiology, Endocrinology and Metabolism
- American Journal of Physiology, Regulatory, Integrative and Comparative Physiology
- Applied Physiology, Nutrition and Metabolism (formerly, Canadian Journal of Physiology)
- Clinical and Experimental Pharmacology and Physiology
- Diabetologia
- Diabetes
- Endocrinology

- European Journal of Endocrinology
- International Journal of Sports Nutrition and Exercise Metabolism
- Journal of Applied Physiology
- Mechanisms of Ageing and Development
- Medicine and Science in Sports and Exercise
- Molecular and Cellular Endocrinology
- The Journal of Clinical Endocrinology and Metabolism
- The Journal of Physiology, London

GRANTS

RFA-OD-09-005, P30 (Lieber, Richard) 09/30/09 – 09/29/11 NIH/NIAMS

Title: Muscle Triglyceride Metabolism Core Center

Major Goals: Establish the Muscle Triglyceride Core Center at the University of California, San Diego.

Role: Co-investigator

Status: Awarded

Total Direct Costs: \$817,352

National Skeletal Muscle Rehabilitation Center, University of California, San Diego

Title: Sirtuin 1 (SIRT1): Role in skeletal muscle function, strength and endurance

Major Goals: Investigate the importance of SIRT1 deacetylase activity on skeletal muscle function, strength and endurance in mice.

Role: Lead investigator (Primary awardee: Jerrold M. Olefsky, M.D.)

Funding Period: 12/01/08 - 12/31/09

Total Direct Costs: \$20,000

PUBLICATIONS (*, denotes equal contribution by authors):

1. Newsom SA, **Schenk S**, Thomas KM, Harber MP, Knuth ND, Goldenberg N, Horowitz JF. (2009). Energy deficit after exercise augments lipid mobilization but does not contribute to the exercise-induced increase in insulin sensitivity. *J Appl Physiol*. Dec 31. [Epub ahead of print]. PMID: 20044472.
2. Yoshizaki T*, **Schenk S***, Imamura T*, Babendure JL, Sonoda N, Bae EJ, Oh D, Lu M, Milne JC, Westphal C, Bandyopadhyay G, Olefsky JM. (2009). SIRT1 Inhibits Inflammatory Pathways in Macrophages and Modulates Insulin Sensitivity. *Am J Physiol*. Dec 8. [Epub ahead of print]. PMID: 19996381.
3. Saberi M*, Woods NB*, de Luca C, **Schenk S**, Lu JC, Bandyopadhyay G, Verma IM, Olefsky JM. (2009). Hematopoietic cell specific deletion of Toll-like receptor 4 ameliorates hepatic and adipose tissue insulin resistance in high fat fed mice. *Cell Metab*. 10:419-29. PMID: 19883619.
4. **Schenk S**, Harber MP, Burant CF, Shrivastava CR, Horowitz JF. (2009). Improved insulin sensitivity after weight loss and exercise training is mediated by a reduction in plasma fatty acid mobilization, not enhanced oxidative capacity. *J Physiol*. 587:4949-61. PMID: 19723783.
5. Gayen J, Saberi M, **Schenk S**, Bandyopadhyay G, Cheung WW, O'Connor DT, Mahata SK. (2009). Novel mechanisms in hepatic insulin sensitivity in chromogranin A null mice. *J Biol Chem*. 284:28498-509. PMID: 19706599.
6. Saberi M*, Bjelica D*, **Schenk S**, Imamura T, Bandyopadhyay G, Li PP, Vargeese C, Wang W, Bowman K, Zhang Y, Polisky B, Olefsky JM. (2009). Novel liver-specific TORC2 siRNA corrects hyperglycemia in rodent models of type 2 diabetes. *Am J Physiol*. 297:E1137–E1146. PMID: 19706791.
7. Vu CB, Bemis JE, Disch JS, Ng PY, Nunes JJ, Milne JC, Carney DP, Lynch AV, Smith JJ, Lavu S, Lambert PD, Gagne DJ, Jirousek MR, **Schenk S**, Olefsky JM, Perni RB. (2009). Discovery of Imidazo[1,2-b]thiazole Derivatives as Novel SIRT1 Activators. *J Med Chem*. 52:1275–1283. PMID: 19199480.
8. Yoshizaki T, Milne JC, Imamura T, **Schenk S**, Sonoda N, Babendure JL, Lu J, Smith JJ, Jirousek MR, Olefsky JM. (2009). SIRT1 exerts anti-inflammatory effects and improves insulin sensitivity in adipocytes. *Mol Cell Biol*. 29:1363-1374. PMID: 19103747.

9. Liu Y*, Dentin R*, Chen D*, Hendrick S, Ravnskjaer K, **Schenk S**, Milne JN, Meyers DJ, Cole P, Yates III J, Olefsky JM, Guarente L, Montminy M. (2008). A fasting inducible switch modulates gluconeogenesis via activator/coactivator exchange. *Nature*. 456:269-73. PMID: 18849969.
10. **Schenk S**, Saberi M, Olefsky JM. (2008). Insulin sensitivity: modulation by nutrients and inflammation. Personal Perspective. *J Clin Invest*. 118:2992-3002. PMID: 18769626.
11. Milne, JC*, Lambert, PD*, **Schenk S***, Carney DP, Smith JJ, Gagne DJ, Jin L, Boss O, Perni RB, Vu CB, Bemis JE, Xie R, Disch JS, Ng PY, Nunes JJ, Lynch AV, Yang H, Galonek H, Israelian K, Choy W, Iffland A, Lavu S, Medvedik O, Sinclair D, Olefsky JM, Jirousek MR, Elliott PJ, Westphal CH. (2007). Small molecule activators of SIRT1 as therapeutics for the treatment of type 2 diabetes. *Nature*. 450:712-716. PMID: 18046409.
12. **Schenk S**, Horowitz JF. (2007). Acute exercise increases triglyceride synthesis in skeletal muscle and prevents fatty acid-induced insulin resistance. *J Clin Invest*. 117:1690-1698. PMID: 17510709.
13. **Schenk S**, Horowitz JF. (2006). Co-immunoprecipitation of FAT/CD36 and CPT-I in skeletal muscle increases proportionally with fat oxidation after endurance exercise training. *Am J Physiol*. 291:E254-260. PMID: 16670153.
14. Harber MP, **Schenk S**, Barkan AL, Horowitz JF. (2005). Effects of dietary carbohydrate restriction with high protein intake on protein metabolism and the somatotrophic axis. *J Clin Endocrinol Metab*. 90:5175-5181. PMID: 15972575.
15. Harber MP, **Schenk S**, Barkan AL, Horowitz JF. (2005). Alterations in carbohydrate metabolism in response to short-term dietary carbohydrate restriction. *Am J Physiol*. 289:E306-E312. PMID: 15797987.
16. **Schenk S**, Cook JN, Kaufman AE, Horowitz JF. (2004). Post-exercise insulin sensitivity is not reduced after an overnight lipid infusion. *Am. J Physiol*. 288:E519-25. PMID: 15522993.
17. Zderic TW, **Schenk S**, Davidson CJ, Byerley LO, Walker SL, Byerley LO, Coyle EF. (2004). Manipulation of dietary carbohydrate and muscle glycogen affects glucose uptake during exercise when fat oxidation is impaired by beta-adrenergic blockade. *Am J Physiol*. 287:E1195-201. PMID: 15315908.
18. Zderic TW, Davidson CJ, **Schenk S**, Byerley LO, Coyle EF. (2004). High-fat diet elevates resting intramuscular triglyceride concentration and whole-body lipolysis during exercise. *Am J Physiol*. 286:E217-25. PMID: 14559721.
19. **Schenk S**, Davidson CJ, Zderic TW, Byerley LO, Coyle EF. (2003). Different glycemic indexes of breakfast cereals are not due to glucose entry into blood but to glucose removal by tissue. *Am J Clin Nutr*. 78:742-748. PMID: 14522732.

Published abstracts/presentations

1. **Schenk S**, McCurdy CE, Chen MZ, Bandyopadhyay G, Talukdar S, Chen A, Olefsky JM. (2009). SIRT1 deacetylase activity is essential for calorie restriction-induced enhancement of skeletal muscle insulin sensitivity. Frontiers of Clinical Investigation From Bench to Bedside Symposium, La Jolla CA.
2. **Schenk S**, McCurdy CE, Chen MZ, Bandyopadhyay G, Talukdar S, Chen A, Olefsky JM. (2009). SIRT1 deacetylase activity is essential for calorie restriction-induced enhancement of skeletal muscle insulin sensitivity. European Association for the Study of Diabetes Meeting, Vienna, Austria.
3. **Schenk S**, Amidi A, IM Olfert, S Petrosyan, AN Murphy, JM Olefsky. (2009). Knockout of SIRT1 deacetylase activity in skeletal muscle does not impair exercise endurance, muscle respiration or whole-body insulin action. Keystone Symposia. Banff, Canada.
4. Liu Y, Dentin R, Chen D, Hendrick S, Ravnskjaer K, **Schenk S**, Milne JN, Meyers DJ, Cole P, Yates III J, Olefsky JM, Guarente L, Montminy M. (2009). Regulation of hepatic gluconeogenesis by the CREB coactivator TORC2 and the forkhead transcription factor FOXO1. Keystone Symposia. Banff, Canada.
5. Newsom SA, Thomas KM, **Schenk S**, Harber MP, Knuth ND, Goldenberg N, JF Horowitz. (2008). Reducing dietary fat from meals after exercise enhances muscle glycogen resynthesis in unfit adults. Integrative Biology of Exercise, Hilton Head NC.
6. Cornford A, Li M, **Schenk S**, Harber MH, Horowitz JF. (2008). Alterations in lipid metabolism after one day of overeating are reversed by a single session of exercise. Integrative Biology of Exercise, Hilton Head NC.
7. Newsom SA, **Schenk S**, Horowitz JF. (2008). Fat oxidation tracks with fatty acid availability at low but not high plasma fatty acid concentrations. Experimental Biology, San Diego CA.

8. Saberi M, Bjelica D, Imamura T, Bandyopadhyay G, **Schenk S**, Li PP, Vargeese C, Wang W, Bowman K, Zhang Y, Polisky B, Olefsky JM. (2008). Prevention of hyperglycemia by TORC2 knockdown. Keystone Symposia. Breckenridge CO.
9. **Schenk S**, Milne JC, Lambert PD, Perni RJ, Olefsky JM. (2007). Activation of SIRT1 improves insulin sensitivity in the obese, Zucker fatty rat. Australian Diabetes Society Annual Meeting. Christchurch, New Zealand.
10. Cornford AS, Horowitz JF, **Schenk S**, Burant CF, Subauste AR. (2007). Agpat1 decreases insulin signaling by activating the mTOR pathway. *Diabetes*, Chicago IL. #1357-P.
11. de Luca C, Saberi M, **Schenk S**, Lu JC, Castorena C, Greenberg AW, Olefsky JM. (2007). Myeloid-derived toll-like receptor 4 (TLR4) is required for high-fat diet-induced hepatic insulin resistance. Keystone Symposia, Steamboat Springs CO.
12. **Schenk S**, Goldenberg N, Horowitz JF. (2006). A single session of endurance exercise protects against fatty acid-induced insulin resistance. *Med Sci Sports Exerc.* 38:S15.
13. **Schenk S**, Harber MP, Burant CF, Shrivastava CR, Horowitz JF. (2006). Increased Skeletal Muscle Oxidative Capacity After Endurance Exercise Training Does Not Protect Against Fatty Acid-Induced Insulin Resistance. *Diabetes.* 55 (supplement 1):A296.
14. Horowitz JF, Harber MP, Burant CF, Shrivastava CR, **Schenk S**. (2006). Improved Insulin Sensitivity After Weight-Loss is Mediated by a Reduction in Plasma Fatty Acid Availability and Uptake. *Diabetes.* 55 (supplement 1):A293.
15. **Schenk S**, McCurdy CE, Harber MP, Horowitz JF. (2005). FAT/CD36 Immunoprecipitates with Carnitine Palmitoyl Transferase-I in Human Skeletal Muscle and this Physical Association Increases with Endurance Exercise Training. American Diabetes Association, 65th Scientific Sessions. LB#28.
16. Harber MP, **Schenk S**, Barkan AL, Horowitz JF. (2004). Short-term carbohydrate restriction increases both proteolysis and protein synthesis. Integrative Biology of Exercise, Austin TX. *The Physiologist.* 47:332.
17. **Schenk S**, Kaufman AE, Cook JN, Horowitz JF. (2004). Post-exercise insulin sensitivity is not impaired after an overnight lipid infusion. *Med Sci Sports Exerc.* 36.
18. Remias DB, Knuth ND, **Schenk S**, Horowitz JF. (2004). Adding carbohydrate to a fat meal alters post-prandial lipemia without changing plasma triglyceride concentration. *Med. Sci. Sports Ex.* 36.
19. Huang YC, **Schenk S**, Dennis RG, Baar K. (2004). Electrical stimulation alters the contractile and mitochondrial phenotype of 3-dimensional engineered muscle. *FASEB J*, 18:A1292..
20. **Schenk S**, Davidson CJ, Zderic TW, Byerley LO, Coyle EF. (2003). Different glycemic responses of cereals due to glucose disappearance, not glucose appearance in blood. *Med Si. Sports Exerc* 35:S211.
21. Zderic TW, **Schenk S**, Davidson CJ, Byerley LO, Walker SL, Byerley LO, Coyle EF. (2003). Intramuscular triglyceride and fat oxidation during exercise are not affected by fat intake when carbohydrate intake is high. *FASEB J*, 17:A374.
22. Davidson CJ, Zderic TW, **Schenk S**, Walker SL, Coyle EF. (2003). The effect of various breakfast cereals on maximal neuromuscular cycling power. *Med Sci Sports Exerc.* 35:S298.
23. Zderic TW, **Schenk S**, Davidson CJ, Walker SL, Byerley LO, Coyle EF. (2002). Low plasma FFA during exercise in humans increases plasma glucose turnover only when endogenous carbohydrate is high. Experimental Biology, New Orleans.

INVITED LECTURES & SYMPOSIUM TALKS:

1. Physical activity and musculoskeletal health: Bridging the gap between metabolism and Orthopaedics. Grand Rounds, Department of Orthopaedic Surgery, University of California, San Diego, August, 2009.
2. Do calories count? The impact of changes in energy balance on fat mobilization and oxidation. American College of Sports Medicine National Conference, Seattle, May, 2009.
3. Blowing the whistle of skeletal muscle fat metabolism and insulin resistance: Is fat really that bad? University of California, San Diego, Departments of Orthopaedic Surgery and Bioengineering, May, 2009.
4. Aging, inflammation and metabolic disease: How nutrition and physical activity can help. NUTRACON Conference, Anaheim Convention Center, Anaheim CA, March, 2009.
5. AsSIRTing itself in skeletal muscle: role of SIRT1 in regulating calorie restriction-induced improvements in skeletal muscle insulin action. The Methodist Hospital Research Institute, Houston TX, February, 2009.

6. Mechanisms that modulate exercise- and calorie restriction-induced improvements in skeletal muscle insulin sensitivity. University of Texas at Austin, Department of Kinesiology and Health Education, Austin TX, February, 2009.
7. SIRT1 and regulation of mitochondrial biogenesis in skeletal muscle. University of California-San Diego, Division of Physiology, January, 2009.
8. Sirtuin 1 (SIRT1): regulator of insulin action and mitochondrial biogenesis? University of Southern California, Department of Kinesiology, January, 2009.
9. Targeting SIRT1 in the treatment of insulin resistance. St. Vincent's Institute, Melbourne, Australia, September, 2007.
10. SIRT1: a potential target for the treatment of insulin resistance. Baker Heart Institute, Melbourne, Australia, September, 2007.
11. Novel small molecular activator of SIRT1 improves insulin sensitivity in the obese, Zucker rat. Sirtris Pharmaceuticals, August 2007.
12. The (mis)concept of the glycemic index: what does glycemic index really mean? NUTRACON Conference, Anaheim Convention Center, 2005.
13. Lipid-induced insulin resistance: can exercise defeat fat? University of Missouri-Columbia, School of Veterinary Science and Biomedical Medicine Lecture Series, 2004.