

**CURRICULUM VITAE****Lisa Stehno-Bittel**

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 Department of Physical Therapy and Rehabilitation Science  
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**Education**

|  |           |                  |          |      |
|--|-----------|------------------|----------|------|
| Mayo School of Medicine, Rochester, MN | 1992-1995 | Pharmacology     | Post-doc | 1995 |
| University of Missouri, Columbia, MO   | 1988-1992 | Physiology       | PhD      | 1992 |
| University of Kansas, Lawrence, KS     | 1978-1983 | Physical Therapy | BS       | 1983 |

**Licensure Information/Registration Number**

Physical Therapy, State of Missouri, PT 01322, inactive

**Employment and Positions Held**

|                                   |   |              |
|-----------------------------------|---|--------------|
| Professor, adjunct                | Univ. Kansas Med Center, Kansas City, KS                      | 2007-present |
|                                   | Anatomy and Cell Biology                                      |              |
| Professor, tenured                | Univ. Kansas Med Center, Kansas City, KS                      | 2006-present |
|                                   | Dept. of Physical Therapy and Rehab Sci                       |              |
| Associate Professor, adjunct      | Univ. Kansas Med Center, Kansas City, KS                      | 2001-2006    |
|                                   | Anatomy and Cell Biology                                      |              |
| Associate Professor, tenured      | Univ. Kansas Med Center, Kansas City, KS                      | 2000-2006    |
|                                   | Dept. of Physical Therapy and Rehab Sci                       |              |
| Assistant Professor, adjunct      | Univ. Kansas Med Center, Kansas City, KS                      | 1996-2000    |
|                                   | Dept. of Anatomy and Cell Biology                             |              |
| Assistant Professor, tenure track | Univ. Kansas Med Center, Kansas City, KS                      | 1995-2000    |
|                                   | Dept. of Physical Therapy and Rehab Sci                       |              |
| Instructor                        | Mayo School of Medicine                                       | 1993-1995    |
|                                   | Dept. of Pharmacology   |              |
| Post-Doctoral Fellow              | Mayo School of Medicine                                       | 1992-1993    |
|                                   | Dept of Pharmacology  |              |
| Research Assistant                | Univ. of Missouri, Columbia, MO                               | 1989-1992    |
| Physical Therapist                | Independent consultant, Early Intervention<br>and Home Health | 1988-1992    |
| Graduate Teaching Assistant       | Univ. of Missouri, Columbia, MO                               | 1988-1989    |
| Staff Physical Therapist          | Univ. of Missouri, Columbia, MO                               | 1987-1988    |
| Staff Physical Therapist          | Lawrence School District, Lawrence, KS                        | 1985-1987    |
| Staff Physical Therapist          | Visiting Nurses Assoc., Lawrence, KS                          | 1983-1987    |

**Peer Reviewed Publications**

Yao, H., Peng, F., Dhillon, N., Callen, S., Bokhari, S., **Stehno-Bittel, L.**, S. Ahmad, O., Wang, J., Buch, S. (2009) Involvement of TRPC channels in CCL2-mediated neuroprotection against Tat toxicity. *J Neuroscience*. (in press).

- Williams, S.J., Huang, H., Kover, K., Moore, W., Berkland, C., Singh, M., **Stehno-Bittel, L.** (2009) Reduction of Diffusion Barriers in Isolated Islets Improves Survival, But Not Insulin Secretion, *Cell Transplantation*, (in revision).
- Ahmed, SO., Park, J-H., **Stehno-Bittel, L.**, Lau, Y-S. (2008) Effects of endurance exercise on ventral tegmental area neurons in the chronic 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine and probenecid-treated mice, *Neuroscience Letters*, (in press).
- Stehno-Bittel, L.** (2008) The intricacies of fat. *Physical Therapy*, 88(11), 1265-78.
- Al-Jarrah, M., Pothakos, K., Novikova, L., Smirnova, I.V., Kurz, M.J., **Stehno-Bittel, L.**, Lau, Y-S. (2007) Endurance exercise promotes cardiorespiratory rehabilitation without neuronrestoration in the chronic mouse model of Parkinsonism with severe neurondegeneration. *Neuroscience*, 149(1), 28-37.
- Smirnova IV, Kibiryeva N, Vidoni E, Buñag RD, **Stehno-Bittel L.** (2006) Abnormal EKG stress test in rats with type 1 diabetes is deterred with low-Intensity exercise program. *Acta Diabetologica*, 43(3), 66-74.
- MacGregor, R., Williams, S.J., Tong, P.Y., Kover, K., Moore, W.V., **Stehno-Bittel, L.** (2006) Small rat islets are superior to large islets in function and transplantation outcomes, *American Journal Physiology Endocrinology Metabolism*. 290(5), E771-779.
- Sui, Y., **Stehno-Bittel, L.**, Li, S., Loganathan, R., Dhillon, NK., Pinson, D., Nath, A., Kolson, D., Narayan, O., Buch, S. (2006) CXCL10-induced cell death in neurons: role of calcium dysregulation, *European Journal Neuroscience*, 23(4), 957-964.
- Loganathan, R., Searls, Y. M., Smirnova, I.V. **Stehno-Bittel, L.** (2006) Exercise induced benefits in individuals with Type 1 diabetes, *Physical Therapy Reviews*, 11, 77-89.
- Unruh, J.R., Price, E.S., Molla, R.G., **Stehno-Bittel, L.**, Johnson, C.K., Hui, R. (2006) Two-Photon Microscopy with Wavelength Switchable Fiber Laser Excitation, *Optics Express*, 14, 9825-9831.
- Burns, D., **Stehno-Bittel, L.**, Kawase, T., (2004) Calcitonin gene-related peptide elevates calcium and polarizes membrane potential in MG63 cells by both cAMP-independent and -dependent mechanisms. *American Journal Physiology: Cell Physiology*. 287(2), C457-67.
- Fedoryak, O.D., Searls, Y., Smirnova, I.V., Burns, D., **Stehno-Bittel, L.**, (2004) Spontaneous nuclear  $Ca^{2+}$  oscillations in subcellular compartments of vascular smooth muscle cells rely on different  $Ca^{2+}$  pools, *Cell Research* 14(5), 379-88.
- Searls, Y., Smirnova, I.V., Fegley, B.R., **Stehno-Bittel, L.** (2004) Exercise attenuates diabetes-induced ultrastructural changes in rat cardiac tissue, *Medicine Science Sports Exercise*, 36(11), 1863-70.
- Chi, L., **Stehno-Bittel, L.**, Smirnova, I.V., Stechschulte, D., Dileepan, K.N. (2003) The effects of mast cell granules on calcium mobilization, MAP kinase activation and NF- $\kappa$ B translocation in endothelial cells. *Mediators of Inflammation*, 12, 79-87.
- Timberlake, G.T., Reddy, G.K., **Stehno-Bittel, L.**, Weber, J.F., Amslinger, S., Givens, R.S. (2002) Photoactivated coumaryl-diazopyruvate fluorescent label for amine functional groups of tissues containing type-1 collagen. *Photochemical and Photobiological Sciences* 76, 473-479.

- Reddy, G.K., **Stehno-Bittel, L.**, Enwemeka, C.S. (2002) Glycation-induced matrix stability in the rabbit achilles tendon. *Archives Biochemistry Biophysics*. 15, 399(2), 174-80.
- Chi, L., Li, Y., **Stehno-Bittel, L.**, Gao, J., Morrison, D.C., Stechschulte, D.J., Kileepan, K.N.(2001) Interleukin-6 production by endothelial cells via stimulation of protease-activated receptors is amplified by endotoxin and tumor necrosis factor- *Journal of Interferon & Cytokine Research* 21, 231-240.
- Reddy, G.K., **Stehno-Bittel, L.**, Enwemeka, C.S. (2001) Laser therapy accelerates wound healing. *Wound Repair and Regeneration*. 9, 248-256.
- Reddy, G.K., **Stehno-Bittel, L.**, Hamade, S., Enwemeka, C.S. (2001) Biomechanical integrity of bone in experimental diabetes. *Diabetes Research. and Clinical Practice* 54, 1-8.
- Reddy, G.K., Enwemeka, C.S., **Stehno-Bittel, L.** (1999) Comparison of biomechanical and biochemical properties of the Achilles tendon, *Lasers Surgery Medicine*. 22, 281-287.
- Reddy, G.K., **Stehno-Bittel, L.**, Enwemeka, C.S. (1999) Matrix remodeling in regenerating Achilles tendon, *Wound Repair and Regeneration*.7, 518-527.
- Stehno-Bittel, L.**, Reddy, G.K., Gum, S. (1998) Enwemeka, C.S.(1998) Biochemistry and Biomechanics of healing tendon: Part 1. The effects of rigid plaster casts and functional polyurethane casts. *Medicine Science Sports Exercise* 30, 788-793, 1998.
- Reddy, G.K., Gum, S., **Stehno-Bittel, L.**, Enwemeka, C.S.(1998) Biochemistry and Biomechanics of healing tendon: Part 2. Effects of combined laser therapy and electrical stimulation, *Medicine Science Sports Exercise* 30, 794-800.
- Reddy, G.K., **Stehno-Bittel, L.**, Enwemeka, C.S. (1998) Laser photostimulation of collagen production in healing rabbit Achilles tendon. *Lasers. Surgery Medicine*, 22, 281-287.
- Lee, M.A., Dunn, R., Clapham, D., **Stehno-Bittel, L.** (1998) Calcium control of nuclear pore permeability. *Cell Calcium* 23, 91-101.
- Perez-Terzic, C., **Stehno-Bittel, L.**, Clapham, D. (1997) Fluorescent dye behavior in the nuclear environment. *Cell Calcium* 21, 275-282.
- Gum, G., Reddy, G.K., **Stehno-Bittel, L.**, Enwemeka, C.S. (1997) Combined ultrasound, electrical stimulation, and laser promote collagen synthesis with moderate changes in tendon biomechanics. *Am. Journal Physical Medicine Rehabilitation* 76, 288-296.
- Stehno-Bittel, L.**, Terez-Terzic, C., Luckhoff, A., Clapham, D. (1996) Nuclear ion channels and regulation of the nuclear pore. *Society General Physiology* 51, 195-207.
- Perez-Terzic, C., Pyle, J., **Stehno-Bittel, L.**, Jaconi, M., Clapham, D. (1996) Conformational states of the nuclear pore complex induced by depletion of nuclear  $Ca^{2+}$  stores, *Science* 273, 1875-1877.
- Stehno-Bittel, L.**, Luckhoff, A., Clapham, D. (1995) Calcium release from the nucleus by  $InsP_3$  receptor channels, *Neuron* 14, 1-5.
- Stehno-Bittel, L.** (1995) Calcium signaling in normal and abnormal brain function. *Neurology Report*, 19, 12-17.

**Stehno-Bittel, L.**, Krapivinsky, G., Krapivinsky, L., Perez, C., Clapham, D. (1995) The G protein subunit transduces the muscarinic receptor signal for  $Ca^{2+}$  release in *Xenopus* oocytes, *Journal Biological Chemistry*, 270, 30068-30074.

**Stehno-Bittel, L.**, Perez-Terzig, C., Clapham, D. (1995) Diffusion across the nuclear envelope inhibited by depletion of the nuclear  $Ca^{2+}$  store, *Science* 270, 1835-1838.

**Stehno-Bittel, L.**, Amundson, J., Clapham, D. (1994) G protein mediated pathways assayed by electrophysiology and confocal microscope. *Method Enzymology*, 238, 321-335.

**Stehno-Bittel, L.**, Sturek, M. (1992) Spontaneous sarcoplasmic reticulum  $Ca^{2+}$  release and extrusion from bovine, not porcine, coronary artery smooth muscle. *Journal Physiology* 451, 49-78.

**Stehno-Bittel, L.**, Laughlin, M., Sturek, M. (1991) Exercise training depletes sarcoplasmic reticulum  $Ca^{2+}$  in coronary smooth muscle. *Journal Applied Physiology* 71(5), 1764-1773.

**Stehno-Bittel, L.**, Laughlin, M., Sturek, M. (1990) Exercise training alters  $Ca^{2+}$  release from coronary smooth muscle sarcoplasmic reticulum. *American Journal Physiology*, 259, H643-647.

### **Non-Peer Reviewed Publications (invited author)**

#### **Book Chapters**

**Stehno-Bittel L.**, Al-Jarrah M, Williams SJ, Diabetes and skeletal muscle, PM Tiidus, edit *Skeletal Muscle Damage and Repair: Mechanisms and Intervention*, 1<sup>st</sup> ed, Champaign, IL: Human Kinetics Inc; 2008, pg. 135-146.

**Stehno-Bittel, L.** Smirnova, I., Chapter 10, The Endocrine and Metabolic Systems, In: *Pathology*, Edit. Carolyn Goodman, 3rd edition Elsevier Science, 2007.

**Stehno-Bittel, L.** Physical and electrical properties of cells in the nervous system, Lundy-Ekman, L. edit., In: *Neuroscience: Fundamentals for Rehabilitation*, 3<sup>rd</sup> edition, W. B. Saunders, 2005.

**Stehno-Bittel, L.** Synapses and synaptic transmission, Lundy-Ekman, L. edit. In: *Neuroscience: Fundamentals for Rehabilitation*. 3<sup>rd</sup> edition, W. B. Saunders, 2005.

Wickman, K., Hedin, K., Perez, C., Krapivinsky, G., **Stehno-Bittel, L.**, Belimirovic, B., Clapham, D. The switch assembly paradigms of transmembrane signaling. In: *Handbook of Physiology*. Edit. Hoffman, J. and Jamieson, J. Oxford University Press, 1995.

Sturek, M., Smith, P., **Stehno-Bittel, L.** *In vitro* models of vascular endothelial cell  $Ca^{2+}$  regulation. Ion Channels of Vascular Smooth Muscle Cells and Endothelial Cells. Edit. Sperelakis and Kuriyama, Elsevier Pub. pp. 349-364, 1991.

Sturek, M., **Stehno-Bittel, L.**, Obye, P. Methods for simultaneous voltage-clamp, microfluorometry, and video of cells. Ion Channels of Vascular Smooth Muscle Cells and Endothelial Cells. Edit. Sperelakis and Kuriyama, Elsevier Pub. pp. 269-294, 1991.

Sturek, M., **Stehno-Bittel, L.** Obye, P. Modulation of ion channels by calcium release in coronary artery smooth muscle. Ion Channels of Vascular Smooth Muscle Cells and Endothelial Cells. Edit. Sperelakis and Kuriyama, Elsevier Pub. pp. 65-80, 1991.

### **Monograph**

**Stehno-Bittel, L.** (2009) *The Role of Obesity in Diabetes*, Orthopedic Section of the American Physical Therapy Association, Independent Study Course Series.

### **Invited Reviews (non-peer reviewed)**

**Stehno-Bittel, L.**, Perez-Terzic, C., Luckhoff, A., Clapham, D. (1996) Nuclear ion channels and regulation of the nuclear pore. *Society General Physiology Ser.* 51, 195-207.

### **Peer Reviewed Scientific and Professional Presentations (Abstracts not published)**

Brach, J.S., Cade, T., Cohn, R., Mueller, M.J., Sinacore, D., **Stehno-Bittel, L.**, People With Diabetes: A Population Desperate for Movement, Combined Sessions Meeting of the American Physical Therapy Association Annual Meeting, Las Vegas, NV. Feb. 2009.

**Stehno-Bittel, L.**, Loganathan, R., Patel, P., Smirnova, I.V. Effects of moderate aerobic exercise on left ventricular hemodynamics in obese diabetic rats, 9<sup>th</sup> Annual Obesity Conference, Kansas City, MO, September, 2007.

Kluding, P., Searls, Y., Smirnova, I.V., **Stehno-Bittel, L.**, Metabolic Syndrome: evidence, education and effective intervention strategies, Multisection presentation at Combined Sections Meeting (CSM) of the American Physical Therapy Association (APTA), San Diego, CA, February 2006.

Al-Jarrah, M., Novikova, L., Smirnova, I.V., Lau Y-S, **Stehno-Bittel, L.**, Treadmill exercise training induces angiogenesis and neuronal indicators in the chronic progressive mouse model of Parkinson's disease, Combined Sessions Meeting of the American Physical Therapy Association Annual Meeting, San Diego, CA, February, 2006.

**Stehno-Bittel, L.**, Diabetes-induced vascular disease – an update. Scientific Forum XV- International Congress of Cardiovascular Sciences, Rio de Janeiro, Brazil – invited speaker, 2006.

**Stehno-Bittel, L.**, Smirnova, I.V. (2006) Invited speakers. Recruitment and retention of international PhD students, Annual North American Consortium of Nursing and Allied Health [NACNAH] Conference: Strategic Summit on Academic Internationalization for the Health Professions, Kansas City, KS.

**Stehno-Bittel, L.**, Why are large vessels affected differently by diabetes? Scientific Forum XV- International Congress of Cardiovascular Sciences, December 8-10, 2005, Rio de Janeiro, Brazil – invited speaker, 2006

Fischer KJ, Novak EA, Smirnova, I.V., Reddy GK, **Stehno-Bittel, L.**, The effect of diabetes and exercise on knee joint stiffness in the rat, 50th Annual Meeting of the Orthopedic Research Society, San Francisco, CA, March 7-10, 2004.

Smirnova, I.V., Foecking J, Searls, Y., Novikova, L., **Stehno-Bittel, L.**, Proteomic approach to study the beneficial effects of exercise on diabetic heart, Combined Sessions Meeting of the American Physical Therapy Association Annual Meeting, Nashville, TN, February 4-8, 2004

Smirnova, I.V., Kibiriyeva, N., Searls, Y., Wolfe, M., **Stehno-Bittel, L.**, Reversal of diabetes-induced myocardial fibrosis by exercise training, Combined Sections Meeting (CSM) of APTA, 2003.

Enwemeka, E.S., Reddy, G.K., **Stehno-Bittel, L.**, Laser photostimulation of collagenous tissues: Repair processes in patients and experimental animal models. North American Association of Laser Therapy, 2002.

G.K. Reddy, **Stehno-Bittel, L.**, Enwemeka, C.S., Evaluation of the efficacy of He-Ne and Ga-As laser photostimulation on the induction of wound closure, World Association of Laser Therapy, 2002.

Reddy, G.K., Gum, S., **Stehno-Bittel, L.**, Enwemeka, C.S., Combined effects of laser photostimulation and early mechanical stress on regenerating functionally loaded Achilles tendon. World Association Laser Therapy, 58, 2000.

Reddy, G.K., Childs, E., Ogles, A., Enwemeka, C.S., **Stehno-Bittel, L.**, The effects of laser stimulation on wound healing in diabetic rats. World Association Laser Therapy, 1998.

Gaydess, E., Salazar, A., Reddy, G.K., Marsh, J., Kernling, L., Goerke, S., Smalley, J., Suzuki, S., Enwemeka, C.S., **Stehno-Bittel, L.**, Effects of laser stimulation on cell and bacterial growth in a cell culture wound model, World Association Laser Therapy, 1998.

Sturek, M., **Stehno-Bittel, L.**, Hu, Q., Underwood, F.B., Relationships among ion channels, intracellular free calcium and contraction in vascular smooth muscle. Proc. World Congress for Microcirc., 1991.

### **Peer Reviewed Scientific and Professional Presentations (Abstracts published)**

Ahmad, S.O., Park, J-H., Novikova, L., Al-Jarrah, M., **Stehno-Bittel, L.**, Lau, Y-S. (2006) Effects of endurance exercise on physical habilitation and substantia nigra neurons in the chronic mouse MPTP/Probenecid model for Parkinson's disease. *J. Neurosci.*

**Stehno-Bittel, L.**, Williams, J., MacGregor, R., Ying-Tong, P., Kover, K., Moore, W. (2005) Functional comparison between small and large pancreatic islets, Abstract *Diabetes* 54 (suppl 1), A587.

Smirnova, I.V., Loganathan, R., **Stehno-Bittel, L.**, Bilgen, M. (2004) Detection of abnormalities in the diabetic heart using MRI, Abstract *Journal Molecular Cellular Cardiology* 37, 254.

Fischer, K.J., Novak, E.A., Smirnova, I.V., Reddy, G.K., **Stehno-Bittel, L.** (2004) The effect of diabetes and exercise on stress relaxation of the knee joint in the rat, Abstract *Bone & Joint* 29, 1259.

Foeking, J., Novikova, L., **Stehno-Bittel, L.**, Smirnova, I.V. (2003) Exercise training modulates TGFb1 signaling in diabetic myocardium, Abstract *Diabetes*, 52(suppl 1):A233.

Searls, Y., Loganathn, R., Smirnova, I. **Stehno-Bittel, L.** (2003) Ca<sup>2+</sup> regulating proteins in vascular smooth muscle cells altered by diabetes, Abstract *Diabetes*, 52(suppl 1), A179.

Foeking, J., Novikova, L., **Stehno-Bittel, L.**, Smirnova, I.V. (2003) Exercise training modulates TGFb1 signaling in diabetic myocardium, *American Heart Association: Scientific Conference on Molecular Mechanisms Proceedings*, 12.

Fischer, K.J., Novak, E.A., Smirnova, I.V., Reddy, G.K., **Stehno-Bittel, L.** (2003) The effect of diabetes and exercise on knee joint in the stiffness and MCL structural properties in the rat, *Bioengineering Conference Proceedings*.

Smirnova, I.V., Foeking, J., Novikova, L., **Stehno-Bittel, L.** (2003) Proteomic approach to study the

beneficial effects of exercise on diabetic heart, *Proteomic Solutions in Cellular and Developmental Biology and Medicine*, 3.

Smirnova, I.V., Novikova, L., **Stehno-Bittel, L.** (2002) Diabetes induces upregulation of alpha-smooth muscle actin expression in myocardial tissue. *American Heart Association: Scientific Conference on Molecular Mechanisms Proceedings*, 25.

Chi, L., **Stehno-Bittel, L.**, Morrison, D.C., Stechschulte, D.J., Dileepan, K.N. (2001) Involvement of Ca<sup>2+</sup> mobilization, JNK activation and NF-kappaB translocation in the synergistic activation of endothelial cells by mast cell granules and endotoxin, *FASEB J.*

Fedoryak, O.D., Smirnova, I.V., **Stehno-Bittel, L.** (2000) Spontaneous nuclear Ca<sup>2+</sup> transients in A7r5 vascular smooth muscle cells. *Mol. Biol. Cell.* 11 (Suppl. 1).

Chi, L., Li, Y., **Stehno-Bittel, L.**, Morrison, D.C., Stechschulte, D.J., Dileepan, K.N. (2000) Synergistic activation of endothelial cells by protease activated receptor agonists and endotoxin involves activation of JUN N-terminal kinase and NF-kappaB, *Mediators Inflamm.*

Chi, L., Li, Y., Stehno-Bittel, L., Morrison, D.C., Stechschulte, D.J., Dileepan, K.N. (2000) Synergistic activation of endothelial cells by protease activated receptor agonists and endotoxin involves activation of jun N-terminal kinase and NF- B. *Proceedings of Soc. Leukocyte Biol.*

Reddy, G.K., **Stehno-Bittel, L.**, Enwemeka, C.S. (1999) Influence of streptozotocin induced diabetes on cardiac tissue collagen in rat. *FASEB.*

Reddy, G.K., Enwemeka, C.S., **Stehno-Bittel, L.** (1998) Correlations between tendon biochemistry and biomechanics. *Biophys. J.*

**Stehno-Bittel, L.**, Luckhoff, A., Perez, C., Clapham, D.E. (1995) Receptor-operated calcium channels on the nucleus. *Gen. Physiol.*

**Stehno-Bittel, L.**, Clapham, D.E. (1994) Confocal characterization of calcium uptake in single isolated *Xenopus* oocyte nuclei, *Biophys. J.*

**Stehno-Bittel, L.**, Perez, C., Clapham D.E. (1993) Measuring calcium gradients across the nuclear envelope, *Biophys. J.*

**Stehno-Bittel, L.**, Perez, C., Clapham, D.E. (1992) Fluorescence and calcium gradients across the nuclear envelope. *FASEB J.*

**Stehno-Bittel, L.**, Krapivinsky, G., Krapivinsky, L., Clapham, D.E. (1992) Identification of G proteins interacting with M3 muscarinic receptors, *Cell Biol.*

Sturek, M., **Stehno-Bittel, L.**, Obye, P.K. (1991) Modulation of ion channels by Ca release in coronary artery smooth muscle. *J. Mol. Cell Cardiol.*

**Stehno-Bittel, L.**, Sturek, M. (1991) Sarcoplasmic reticulum of coronary artery smooth muscle spontaneously releases calcium to be entruded by the cell. *Biophys. J.*

Sturek, M., Smith, P., **Stehno-Bittel, L.** (1990) Models of vascular endothelial cell calcium regulation. *Circ. Shock.*

**Stehno-Bittel, L.,** Sturek, M., Laughlin, M.H. (1990) Exercise training enhances the ability of coronary smooth muscle sarcoplasmic reticulum to extrude calcium at rest. *Med. Sci. Sports Exercise*.

**Stehno-Bittel, L.,** Sturek, M. (1990) Calcium-filled sarcoplasmic reticulum in coronary artery smooth muscle cells may slowly release calcium to the extracellular space, *FASEB J*.

**Stehno-Bittel, L.,** Sturek, M. (1990) Dihydropyridine-sensitive and Na-sensitive Ca influx pathways in coronary artery endothelial cells. *Circ. Res*.

### **Non-Peer Reviewed Scientific and Professional Presentations (Abstracts not published)**

**Stehno-Bittel, L.,** Sinacore, D.R., Marcus, R.L., Mueller, M.J. (2008) Fat, Muscle, and the Benefits of Exercise for People With Diabetes, American Physical Therapy Association, Podcast, <http://www.ptjournal.org/misc/podcasts.dtl>

Kuphal, K., Farmer, K., Brown, J., **Stehno-Bittel, L.,** Smith, P. (2007), Exercise reduces mechanical allodynia and hyperalgesia in the setting of neuropathic pain. BIRCWH/SCOR Annual meeting, Kansas City, KS.

Al-Jarrah, M., Novikova, L., Smirnova, I.V., Lau, Y-S., **Stehno-Bittel, L.,** (2006) Exercise training improves endurance and cardiorespiratory function in the chronic mouse model of Parkinson's disease (presented at the 5th Annual Kansas City Life Sciences Research Day, Kansas City Convention Center, Kansas City, MO

Loganathan, R., **Stehno-Bittel, L,** (2005) Hypothalamic sleep generator neurons sense glucose, Student Research Forum, KUMC, Kansas City, KS.

Smirnova, I.V., Loganathan, R., **Stehno-Bittel, L.,** Bilgen, M. (2005) Detection of abnormalities in the diabetic heart using MRI, KU Symposium on Biophysical Sciences, KU, Lawrence, KS.

Fischer KJ, Novak EA, Smirnova, I.V., Reddy GK, **Stehno-Bittel, L.,** (2004) The effect of diabetes and exercise on knee joint stiffness in the rat, 50th Annual Meeting of the Orthopedic Research Society, San Francisco, CA.

Smirnova, I.V., Loganathan, R., **Stehno-Bittel, L.,** Bilgen, M. (2004) Detection of abnormalities in the diabetic heart using MRI, XVIII World Congress of the International Society for Heart Research, Brisbane, Australia.

Fischer KJ, Novak EA, Smirnova, I.V., Reddy GK, **Stehno-Bittel, L.,** (2003) The effect of diabetes and exercise on knee joint stiffness in the rat, Summer Bioengineering Conference, Key Biscayne, FL.

Foecking J, Novikova, L., **Stehno-Bittel, L.,** Smirnova, I.V. (2003) Exercise training modulates TGF  $\beta$  1 signaling in the diabetic heart, American Heart Association Scientific Conference on Molecular Mechanisms of Growth, Death and Regeneration in the Myocardium: Basic Biology and Insights into Ischemic Heart Disease and Heart Failure, Snowbird Conference Center, Salt Lake City, UT.

Smirnova, I.V., Foecking J, Searls, Y., Novikova, L., **Stehno-Bittel, L.** (2003) Proteomic approach to study the beneficial effects of exercise on diabetic heart, National Institute of Health Meeting on Proteomics in Diabetes, Natcher Conference Center, NIH, Bethesda, MD.

Smirnova, I.V., Foecking J, Searls, Y., Novikova, L., **Stehno-Bittel, L.** (2003) Proteomic approach to study the beneficial effects of exercise on diabetic heart, American Society for Biochemistry and Molecular Biology Meeting on Proteomic Solutions in Cellular and Developmental Biology and Medicine, Stowers Institute for Medical Research, Kansas City, MO.

Searls, Y., Loganathan, R., Smirnova, I.V., **Stehno-Bittel, L.** (2003) Ca<sup>2+</sup> regulating proteins in vascular smooth muscle cells altered by diabetes, 2<sup>nd</sup> Annual Kansas City Life Sciences Research Day, University of Missouri, Kansas City, MO.

Burns, D.M, Smirnova, I.V., Searls, Y., **Stehno-Bittel, L.**, Kawase T (2003) Calcitonin gene-related peptide simultaneously increases intracellular calcium ion, and polarizes Em in osteogenic human MG63 cells, 2<sup>nd</sup> Annual Kansas City Life Sciences Research Day, University of Missouri, Kansas City, MO.

Smirnova, I.V., Novikova, L., **Stehno-Bittel, L.**, (2002) Diabetes induces upregulation of alpha-smooth muscle actin expression in myocardial tissue, KUMC Faculty Research Day, Kansas City, KS.

Smirnova, I.V., Kibiriyeva, N., Searles Y, Wolfe M, **Stehno-Bittel, L.** (2001) Reversal of diabetes-induced myocardial fibrosis by exercise training, Kansas City Life Sciences Research Day, University of Missouri, Kansas City, MO.

Smirnova, I.V., Searls, Y., **Stehno-Bittel, L.**, Burns, D. (2001) Mobilization of calcium ion and membrane hyperpolarization induced by calcitonin gene-related peptide in human MG-63 osteosarcoma cells, Kansas City Life Sciences Research Day, University of Missouri, Kansas City, MO.

Reddy, G.K., **Stehno-Bittel, L.**, Enwemeka, C. (2001) Pathophysiology of bone fragility in experimental diabetes, Faculty Research Day, KUMC, Kansas City, KS.

Searls, Y., Burns, D., **Stehno-Bittel, L.** (2001) The effects of glucose on vascular smooth muscle cells calcium signaling, Faculty Research Day, KUMC, Kansas City, KS.

Reddy, G.K., **Stehno-Bittel, L.**, Enwemeka, C.S. (2000) Laser photostimulation promotes skin wound healing in an experimental rat model of diabetes, World Assoc Laser Therapy Meeting, Kansas City, MO..

### **Funded/In Review Grant Activity:**

#### **Grant In Review**

|   |  |
|---|--|
| <b>Stehno-Bittel, L.</b> (PI), Co-I: Smirnova, I.V., Kover, K.<br>"Diabetes Preferentially Affects Subpopulations of Islets"<br>NIH, NIDDK (R01), 2009-2014 | \$1,412,271 direct cost<br>\$1,889,108 total costs |
|---|--|

|  |   |
|--|---|
| Smirnova, I.V. (PI), Co-I: <b>Stehno-Bittel, L.</b><br>Proteomic Approach to Studying Islet Subpopulations"<br>Basic Science Award, American Diabetes Association, 2009-2012 | \$300,000 direct cost<br>\$345,000 total cost |
|--|---|

#### **Current Grant Funding**

|   |                         |
|---|-------------------------|
| Nudo, R (PI), Co-I: Stehno-Bittel, L.<br>"Kansas University Training Program in Neurological and Rehabilitation Sciences"<br>NIH, T32, 2009-2014<br>This training grant will fund 4 stipends a year for the DPT students doing summer research. | \$1,203,745 direct cost |
|---|-------------------------|

|  |                              |
|--|------------------------------|
| Buch, S. (PI), Co-I: <b>Stehno-Bittel, L.</b><br>“HIV Encephalitis and Cocaine Abuse: Mechanism of Synergy and Therapy”<br>NIH (R01), 2006-2011.             | \$1,150,000 total costs      |
| Hui, R. (PI), Co-I: <b>Stehno-Bittel, L.,</b><br>“A Tunable, Portable Two-Photon Laser Confocal Microscope”<br>NIH/NRRC (R21), 2007-2010                     | \$375,000 total costs        |
| <b>Stehno-Bittel, L.</b> (PI)<br>“The effects of Elastase Treatment on Vessel Biochemistry”<br>Research Contract, Proteon Therapeutics, 2004-2010            | \$275,000 total costs        |
| <b>Completed Grant Funding</b>   |                              |
| Berkland, C. (PI), Co-I: <b>Stehno-Bittel, L.</b><br>“Templated Islets for Enhancing Insulin Production”<br>Juvenile Diabetes Research Foundation, 2006-2007 | \$104,039 total costs        |
| <b>Stehno-Bittel, L.</b> (PI)<br>“Alternative Approaches to Islet Transplants”<br>Rosebud Diabetes Research Foundation, 2005-2007                            | \$150,000 total direct costs |
| <b>Stehno-Bittel, L.</b> (Sponsor/PI)<br>“Diabetes SMC Changes Reversed by Islet Transplants”<br>NIH/NHLBI (F31), 2004-2008                                  | \$124,000 total direct costs |
| Lau, Y-S (PI), Co-I: <b>Stehno-Bittel, L.</b><br>“Impact of exercise on Parkinson’s disease therapy”<br>NIH/NIMH, (R01) 2003-2007                            | \$1,472,000 total costs      |
| Buch, S. (PI), Co-I: <b>Stehno-Bittel, L.</b><br>“Mechanism and Therapy of SHIV Encephalitis in Macaques”,<br>NIH/NIMH, (R21), 2003-2007                     | \$404,250 total costs        |
| <b>Stehno-Bittel, L.</b> (PI)<br>“Functional and Biomechanical Testing of Permanent Vasodilators”<br>NIH/NIDDK (R41) 2004– 2005                              | \$100,000 total costs        |
| Moore, W. (PI), Co-I: <b>Stehno-Bittel, L.</b><br>“Islet transplantation for type 1 diabetes”<br>Hall Foundation, 2003-2005                                  | \$470,000 total direct costs |
| <b>Stehno-Bittel, L.</b> (PI)<br>“Training for Scientists from the Former Soviet Union”<br>US Dept. of Commerce, 2001-2002                                   | \$23,000 total direct costs  |
| Tobah, Z. (PI), Co-I: <b>Stehno-Bittel, L.</b><br>“Electrophysiology of Hearing Loss”<br>Hall Foundation, 2001-2003  | \$100,000 total direct costs |
| Hall, T (PI), Co-I: <b>Stehno-Bittel, L.</b><br>“Real-time palpation imaging for improved detection and discrimination of breast abnormalities”              | \$440,718 total direct costs |

US Department of Defense, 2000-2003

**Stehno-Bittel, L. (PI)** \$46,615 total direct costs  
 “Compound testing of wound healing inhibition in diabetic rats”  
 Research Contract from Abbott Laboratories, 2001-2002

**Stehno-Bittel, L. (PI)** \$447,000 total direct costs  
 “Two-photon scanning confocal microscope”  
 NIH, NCRR, 2000-2001

**Stehno-Bittel, L (PI), Co-I: Dunn, R.** \$1,365,295 total direct costs  
 “Calcium Regulates Nuclear Pore Structure/Function”  
 NIH, GMS (R01), 1999-2004

**Brown, M. (PI), Co-I: Stehno-Bittel, L.** \$1,103,110 total direct costs  
 “Prehabilitation versus Rehabilitation for Reducing the Effect of Bedrest”  
 NIH (R01), 1998-2002

**Timberlake, G. (PI), Co-I: Stehno-Bittel, L.** \$55,000 total direct costs  
 “Phototriggerable collagen-crosslinking compounds for wound closure”  
 Kansas Lions Sight Foundation, 1998-1999

**Stehno-Bittel, L. (PI)** \$2,000 total direct costs  
 “The correlation between collagen biochemistry and biomechanical parameters in tendon”  
 KUMC, SAH Research Grant, 1996-1997

**Stehno-Bittel, L. (PI)** \$120,000 total direct costs  
 “Inositol trisphosphate induced calcium waves and coronary artery smooth muscle cells proliferation”  
 American Heart Association, 1996-1999

**Stehno-Bittel, L. (PI)** \$38,600 total direct costs  
 “Shared Instrument grant: Electrophysiology and Imaging Facility”  
 KUMC Research Institute, 1995-1996

**Stehno-Bittel, L. (PI)** \$47,5000 total direct costs  
 “Identifying the muscarinic receptor/G protein interactions”  
 NIH, NRSA, 1993-1995

**Stehno-Bittel, L (PI)** \$5,000 total direct costs  
 “The effects of exercise on the coronary arteries”  
 APTA, Research Foundation, 1982-1983

**Other Scholarly Products**

**U.S. Patent Pending**

C. Berkland, **L. Stehno-Bittel**, T. Siahann (Inventors)  
 “Templated small islets and beta cells for diabetes treatment”, 2006

## **Continuing Education Workshops Conducted/Organized**

The Intricacies of fat", , 2009.

"Metabolic Syndrome and type 2 diabetes mellitus", Kluding, P., Searls, Y., Smirnova, I.V., **Stehno-Bittel, L.** Kansas Physical Therapy Association, Fall Conference, Topeka, KS, October 2006.

"Metabolic syndrome: evidence, education and effective intervention strategies", Kluding, P., Searls, Y., Smirnova, I.V., **Stehno-Bittel, L.** Combined Sections Meeting of the APTA, San Diego, CA, 2006.

"Childhood Obesity, Diabetes, and Exercise", **Stehno-Bittel, L.**, KU Mini Medical School, Kansas City, KS, 2006.

"Update on a cure to diabetes, including islet cell transplants", **Stehno-Bittel, L.** Diabetes Freedom Foundation, SMART Diabetes Conference, Overland Park, KS, 2006.

"Stroke rehabilitation when diabetes is present" **Stehno-Bittel, L.** 38th Annual Underwriters National Conference, (pre-conference educational workshop) Kansas City, MO, 2005.

"Islet transplantation as a means to cure type 1 diabetes" Kansas Medical Education Foundation, Topeka, KS, 2004.

"Emerging trends in diabetic care", Smirnova, I.V., **Stehno-Bittel, L.** University of Kansas Medical Center, October 2002.

"Cognitive deficits after stroke: Impact on rehabilitation" Duncan, P., Pohl, P., **Stehno-Bittel, L.**, McDowd, J. Physical Therapy 99: Meeting and Exposition of the American Physical Therapy Association, half day workshop, Washington DC. 1999.

"Microwave and Shortwave Diathermy", **Stehno-Bittel, L.**, Continuing education course for rehabilitation medicine residents, Kansas City, KS 2005.

"Home exercises I will do", **Stehno-Bittel, L.** American Stroke Foundation Programs, Kansas City, KS 2005.

"Update on Diabetes", **Stehno-Bittel, L.** Department of Physical Therapy and Rehabilitation Science Continuing Education, , Kansas City, KS, 2002.

"A Review of Pharmacology for the Allied Health Care Professionals", **Stehno-Bittel, L.** Area Health Education Center, Hoxie, KS, 2000.

"Update in wound care" **Stehno-Bittel, L.**, Sabus, C., Department of Physical Therapy and Rehabilitation Science Continuing Education, Kansas City, KS, 1999.

"Pharmacology for the Physical Therapist", **Stehno-Bittel, L.**, Northwest Kansas Area Health Education Center, Belleville, KS 1998.

"Interdisciplinary Health Care in the Rural Community", **Stehno-Bittel, L.**, Kansas Area Health Education Center, Atwood, KS, 1997.

"Screens for a Healthy Life", **Stehno-Bittel, L.**, Kansas Adult Health Assessment/Education Project, Nicodemis, KS, 1997.

“Genetic Therapy: Its Effects on the Practice of Physical Therapy and Society”, **Stehno-Bittel, L.**, Department of Physical Therapy and Rehabilitation Science Continuing Education, Kansas City, KS, 1995.

### **Membership in Scientific/Professional Organizations**

1. Member, American Physical Therapy Association, 1983 - present
2. Member, Education Section of the American Physical Therapy Association, 1999 - present
3. Member, American Diabetes Association, 1997- present
4. Member, American Stroke Foundation, 2000-present

### **Positions Held**

#### **American Physical Therapy Association/Kansas Physical Therapy Association**

Manuscript Reviewer, *Physical Therapy*, 2003-present.

Manuscript Reviewer, Journal of Orthopedic and Sports Physical Therapy (journal of the Orthopedic Section of the APTA), 2004-present.

Manuscript Reviewer, Journal of Physical Therapy Education, (journal of the Education Section of the APTA), 2004-present.

Nominating Committee Member for the Academic Administrator’s Special Interest Group within the American Physical Therapy Association, 2005- 2007.

Participant, Clinical Research Agenda National Workgroup, American Physical Therapy Association, 1999.

Research Committee Chair, Kansas Physical Therapy Association, 1999-2000.

Author of article in Kansas Physical Therapy Association publication, Trigger Points, “Study Determines Use of Guide by Clinicians”, 1998.

### **Diabetes Associations**

Diabetes Advisory Council, mandated by the Kansas State Department of Health and Environment to develop the state plan for diabetes, 2006- present.

National Advisory Committee, Diabetes Freedom Foundation, 2005-present.

Co-Founder, Diabetes Research Interest Group of Kansas City, 2002 – present.

Scientific Director, Great Plains Diabetes Institute, 2006-present.

### **Other**

North American Editor, *Physical Therapy Reviews*,  
Programming Committee Chair, American Stroke Foundation, 2005-present

Board Member, American Stroke Foundation, 2003 - present

Advisory Board Member, Kansas City Kansas Community College Physical Therapy Assistant Program, 2000-2001.

Mentor, Science Pioneers of Kansas City, 1999-2001.

Board Member, Kansas Partners in Progress, non-profit arm of the Kansas Physical Therapy Association to fund local research, 1999

Manuscript Reviewer for the following scientific journals:

American Journal of Physiology, 1995 – present  
Photochemical and Photobiological Sciences, 2004 – present  
Journal of Stroke and Cerebrovascular Diseases, 2001 - present  
Circulation Research, 2002 - present  
Laser Therapy, 1999 – present  
Biophysical Journal, 1995 – 2003  
Journal of Biological Chemistry, 1995 - 1999  
Journal of Neuroscience, 1993

Grant reviewer for the following organizations:

NIH Study Section, Clinical and Integrative Cardiovascular Science, 2008-present  
Barth Syndrome Foundation, 2008-present  
NIH Study Section, ZRG1 CDF-4, Shared Instrumentation Grants, 2000-2006  
KUMC Biomedical Research Training Program, 2003-present  
University of Missouri Research Board, 2003-present  
Ad hoc grant reviewer, NSF-NATO grants, 2002  
Wellcome Trust, Collaborative Research Initiative Grant, 1995-1999  
Ad hoc grant reviewer, National Research Council, 1997

**Services to the University/College/School on Committees/Councils/ Commissions  
University of Kansas (all campuses)**

2015 Taskforce to set university goals, 2008-present  
    o Chair of the “Raising the Research Bar” subcommittee, 2008-present  
Graduate School Fellowships, Scholarships, and Student Affairs Committee, Chair, University of Graduate School, 2006 – present  
Dissertation Research Scholarship Committee, University of Kansas, Lawrence, 2005-present  
GTA for Diversity and Melik Fellowship Committee, Kansas Lawrence, 2006-present  
Residency Appeals Committee, University of Kansas Lawrence, 2004-2006  
Bioengineering Search Committee, Dept. of Mechanical Engineering, University of Kansas Lawrence, 2004-2005

**University of Kansas Medical Center**

KUMC Faculty Concerns Committee, Member, University of Kansas Medical Center, 2006-2008  
Space Committee, University of Kansas Medical Center, 2002-2007  
Search Committee member, Director of Research in the Center on Aging, University of Kansas Medical Center 2001-2003.  
Chair, Institutional Animal Care and Use Committee, University of Kansas Medical Center, 1996-2001. I oversaw the protocol committee during the re-accreditation of the facility by two different governmental agencies.  
Review Committee, Director of the Laboratory Animal Resources Facility, University of Kansas Medical Center, 2000.  
Comprehensive Compliance Program, University of Kansas Medical Center, 2000-2001.  
Graduate Council, University of Kansas Medical Center, 1996-1998, 2000-2003.  
Graduate Travel Committee, University of Kansas Medical Center, 1997-1999.

Ad Hoc Committee on Animal Space Issues, University of Kansas Medical Center, 1998

### **School of Allied Health**

School of Allied Health Resources and Facilities Planning, University of Kansas Medical Center, 2004-2006

Administrator's Council, 2005-present

School of Allied Health Student Affairs Committee, University of Kansas Medical Center, 1996-1999.

School of Allied Health Action Group, University of Kansas Medical Center, 1996.

### **Departmental Committees and Administrative Responsibilities**

Admissions Committee, Department of Physical Therapy and Rehabilitation Sciences, 1998-1999.

Post-professional Education Committee, Chair, Department of Physical Therapy and Rehabilitation Science, 1998-1999

Journal Club Director, Department of Physical Therapy and Rehabilitation Science, 1997-1998.

Curriculum Committee, Department of Physical Therapy and Rehabilitation Science, 1996-1997.

Research Committee, Chair, Department of Physical Therapy and Rehabilitation Science, 1996-1997.

### **Honors and Awards**

- 2008 Exemplary Course Award, ANGEL Web Course Conference, PT 855: Pharmacology for Physical Therapists, **Lisa Stehno-Bittel**, David Antonacci, Stephanie Gerald
- 2000 Outstanding Teaching Award, Department of Physical Therapy and Rehabilitation Science, KUMC
- 1999 Outstanding Faculty Research Award, University of Kansas Medical Center, Kansas City, KS
- 1998 Outstanding Teacher Award, Physical Therapy Education Department, University of Kansas Medical Center, Kansas City, KS.
- 1993 Travel Award, International Union of Pure and Applied Biophysics, Budapest, Hungary.
- 1991 Young Investigator Award, (Federation of American Societies for Experimental Biology (FASEB))

### **Continuing Education Attended (past 5 years only)**

**The sessions attended during the 2008 CSM meeting are listed separately. Individual sessions for previous year CSM meetings are not listed, available on-site.**

"Interactions between exercise and drug therapy", Gladson, B.H., Myslinski, M.J., APTA, Combined Section meeting, Nashville, 2008

"Evidence-based practice when there is a paucity of evidence", Baldwin, A.M., Gorman, S.L., Gerhard-Schmidt, S., APTA, Combined Section meeting, Nashville, 2008

"Heart failure in women: clinical implications for physical therapists, Dreyer, H.E., APTA, Combined Section meeting, Nashville, 2008

"The Pauline Cerasoli Lecture: Physical Therapy: A profession of purpose, promise, potential and power. Johnson, G.R., APTA Combined Section Meeting, Nashville, 2008.

"Breast cancer and exercise in African American Women", Drouin, J., APTA Combined Section Meeting, Nashville, 2008

Combined Section Meeting of the American Physical Therapy Association, Boston, MA, 2007.

Leadership Conference, Association of Schools of Allied Health Professions (ASAHP), 2006

Kansas Physical Therapy Association Annual Spring Conference, Wichita, KS 2007

Kansas City Area Life Sciences Institute Research Day, Kansas City, MO, 2006

Kansas Physical Therapy Association Annual Spring Conference, Wichita, KS 2006

Combined Sections Scientific Meeting of the American Physical Therapy Association, San Diego, CA, 2006

Educational Leadership Spanning Classroom and Clinic: Solving Problems, Creating Solution, Pasadena, CA, 2005

Combined Sections Scientific Meeting of the American Physical Therapy Association, New Orleans, LA, 2005

Kansas Physical Therapy Association Spring Conference, Wichita, KS, 2005

65th American Diabetes Association Scientific Session, San Diego, CA, 2005

Academic Administrators SIG Forum, Pasadena, CA, 2005

Scientific Forum XIV, Combined Meeting of International Association of Cardiologists (South American Society), Brazilian Society of Cardiology, Brazilian Society of Cardiovascular Surgery, Latin American Chapter of the International Society of Heart Research., Rio de Janeiro, Brazil. 2005

Combined Sections Scientific Meeting of the American Physical Therapy Association, Nashville, TN 2004

Academic Administrators Special Interest Forum, St. Louis, MO 2004

Proteomics and Diabetes, NIH-Sponsored Research Workshop, Washington DC, 2003

63rd American Diabetes Scientific Session, New Orleans, LA, 2003

Annual Conference and Exposition of the American Physical Therapy Association, Washington, DC, 2003

American Physical Therapy Annual Conference and Exposition, Cincinnati, Ohio, 2002

**Current Teaching Responsibilities in the DPT entry-level program**

|             |          |   |                |
|-------------|----------|---|----------------|
| Semester 2: | PTRS 880 | Differential Diagnosis of the General Medical Condition | Co-Coordinator |
| Semester 2: | PTRS 712 | Pathophysiology & the PT diagnosis                      | Lecturer       |
| Semester 3: | PTRS 705 | PT Interventions II                                     | Lecturer       |
| Semester 4: | PTRS 855 | Pharmacology  | Coordinator    |