Julian E. Stelzer

Assistant Professor
Department of Physiology and Biophysics
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EDUCATION

PhD in Muscle Physiology, August 2002. Oregon State University, Corvallis, OR.

MS in Kinesiology, August 1998. University of Saskatchewan, Saskatoon, Canada.

BS in Physiology, August 1996, McGill University, Montréal, Canada.

EMPLOYMENT

09/2008-present	Assistant Professor, Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, OH.
04/2008-09/2008	Assistant Scientist, Department of Physiology, University of Wisconsin, Madison, WI.
08/2002-04/2008	Postdoctoral Scholar, Department of Physiology, University of Wisconsin, Madison, WI.

PROFESSIONAL SOCIETY MEMBERSHIPS and HONORS

2002-present	Member, Biophysical Society
2002-present	Member, American Physiological Society
2003-2004	Postdoctoral Fellow of the American Heart Association
2009-present	Mount Sinai Scholar Award – Case Western Reserve University
2010-2011	Clinical and Translational Science Collaborative (CTSC) Award - Case Western Reserve University

PATENTS and INVENTIONS

Gene therapy for treatment of hypertrophic cardiomyopathy – J.E. Stelzer – Provisionary patent license #CWR020628US

PEER REVIEWING ACTIVITIES

American Journal of Physiology
Biophysical Journal
Cardiovascular Research
European Journal of Physiology
Journal of Applied Physiology
Journal of Gerontology
Journal of Muscle Research and Cell Motility

Journal of Molecular and Cellular Cardiology
Physiological Genomics

PUBLICATIONS IN PEER REVIEWED JOURNALS

Merkulov S, Chen X, Chandler MP, **Stelzer JE**. (2012) In Vivo cMyBPC Gene Transfer Rescues Myofilament Contractile Dysfunction in cMyBPC Null Mice. *Circ Heart Fail.* In press.

Coulton AT, **Stelzer JE**. (2012). Cardiac myosin binding protein C and its phosphorylation regulate multiple steps in the cross-bridge cycle of muscle contraction. *Biochemistry* 51:3292-3301.

Desjardins DL, Chen Y, Coulton AT, Hoit BD, Yu X, **Stelzer JE**. (2012). Cardiac myosin protein C insufficiency leads to early onset of mechanical dysfunction. *Circ Cardiovasc Imaging.* 5:127-136.

Locher MR, Razumova MV, **Stelzer JE**, Norman HS, Patel JR, Moss RL (2011). Effects of low level α- myosin heavy chain expression on contractile kinetics in porcine myocardium. *Am J Physiol Heart Circ Physiol.* 300: H869-H678.

Chen Y, Somji A, Yu X, **Stelzer JE** (2010). Altered in vivo left ventricular torsion and principal strains in hypothyroid rats. *Am J Physiol Heart Circ Physiol.* 299:H1577-H1587.

Locher MR, Razumova MV, **Stelzer JE**, Norman HS, Patel JR, Moss RL (2009). Determination of rate constants for turnover of myosin isoforms in rat myocardium: implications for in vivo contractile kinetics. *Am J Physiol Heart Circ Physiol.* 297:H247-H256.

Stelzer JE, Norman HS, Chen PP, Patel JR, Moss RL. (2008). Transmural differences in myosin heavy chain isoform expression modulates the timing of myocardial force generation in porcine left ventricle. *J Physiol*. 586:5203-5214.

Tong CW, **Stelzer JE**, Greaser ML, Powers PA, Moss RL. (2008). Acceleration of crossbridge kinetics by protein kinase A (PKA) phosphorylation of cardiac myosin binding protein C (cMyBP-C) modulates heart function. *Circ Res*. 103:974-982.

Stelzer JE, Patel JR, Walker JW, Moss RL. (2007). Respective roles of cMyBP-C and cTnI in the myofibrillar force response to PKA phosphorylation. *Circ Res*. 101:503-511.

Stelzer JE, Brickson SL, Locher MR, Moss RL. (2007). Role of myosin heavy chain composition in the stretch activation response of rat myocardium. *J Physiol*. 579:161-173.

Stelzer JE, Patel JR, Moss RL. (2006). PKA-mediated acceleration of the stretch activation response in murine skinned myocardium is eliminated by ablation of cMyBP-C. *Circ Res*. 99:884-890. Includes **Editorial** by Granzier HL, Campbell KB, *New insights in the role of cardiac myosin binding protein-C as a regulator of cardiac contractility*. *Circ Res.* 99:795-797.

Stelzer JE, Patel JR, Moss RL. (2006). Acceleration of stretch activation in murine myocardium due to phosphorylation of myosin regulatory light chain. *J Gen Physiol.* 128:261-272.

Stelzer JE, Dunning SB, Moss RL. (2006). Ablation of cardiac myosin-binding protein-C accelerates stretch activation in murine skinned myocardium. *Circ Res.* 98:1212-1218. Includes **Editorial** by Epstein ND, Davis JS, *When is a fly in the ointment a solution and not a problem? Circ Res.* 98:1110-1112, and Faculty of 1000 post-peer review.

Stelzer JE, Fitzsimons DP, Moss RL. (2006). Ablation of myosin binding protein-C accelerates force development in mouse myocardium. *Biophys J* 90:4119-4127.

Stelzer JE, Larsson L, Fitzsimons DP, Moss RL. (2006). Activation dependence of stretch activation in mouse skinned myocardium: implications for ventricular function. *J Gen Physiol.* 127:95-107. Includes **Commentary** by Campbell KB, Chandra M, *Functions of stretch activation in heart muscle. J Gen Physiol.* 127:89-94.

Stelzer JE, Patel JR, Olsson MC, Fitzsimons DP, Leinwand LA, Moss RL. (2004). Expression of cardiac troponin T with COOH-terminal truncation accelerates cross-bridge interaction kinetics in mouse myocardium. *Am J Physiol Heart Circ Physiol.* 283:H1756-H1761.

Stelzer JE, Widrick JJ. (2003). Effect of hindlimb suspension on the functional properties of slow and fast soleus fibers from three strains of mice. *J Appl Physiol.* 95:2425-2433.

Shoepe TC, **Stelzer JE**, Garner DP, Widrick JJ. (2003). Functional adaptability of muscle fibers to long-term resistance exercise. *Med Sci Sport Exerc.* 35:944-951.

Widrick JJ, Maddalozzo GF, Lewis D, Valentine BA, Garner DP, **Stelzer JE**, Shoepe TC, Snow CM. (2003). Morphological and functional characteristics of skeletal muscle fibers from hormone-replaced and nonreplaced postmenopausal women. *J Geront – A Biol Sci Med Sci.* 58:3-10.

Widrick JJ, **Stelzer JE**, Shoepe TC, Garner DP. (2002). Functional properties of human muscle fibers after short-term resistance exercise training. *Am J Physiol - Reg Int Comp Physiol.* 283:R408-R416.

RESEARCH GRANTS & AWARDS

Current:

American Heart Association Scientist Development Grant National Center (PI: JE Stelzer)
Period of support: 7/1/09 – 6/30/13
Direct Costs: $70,000/year
Title: “Functional roles of cardiac myosin binding protein-C phosphorylation.”
This study investigates the effects of variable cardiac myosin binding protein-C phosphorylation on cardiac contractile function and its protective effects during pathological stress.

Pending:

NHLBI (PI: JE Stelzer). Period of support: 12/1/12 – 11/30/17.
Direct Costs: $250,000/year
Title: “Functional consequences of FHC mutations in cardiac MyBPC.”
This study investigates the functional effects of FHC mutations in cardiac myosin binding protein-C on structure function relationships of cardiac muscle on cardiac contractile function.