

## Julian E. Stelzer

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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.

### PATENTS and INVENTIONS

Gene therapy for treatment of hypertrophic and dilated cardiomyopathy – J.E. Stelzer  
U.S. Utility Application Number: 13/624,421  
CWRU Reference Number: CWRU 2011-2049

### PUBLICATIONS IN PEER REVIEWED JOURNALS

(\* indicates corresponding author)

Jeyaraj D, Wan X, Ficker E, **Stelzer JE**, Deschenes I, Liu H, Wilson L, Decker K, Said T, Jain M, Rudy Y, Rosenbaum DS. (2013). Ionic bases for electrical remodeling of the canine cardiac ventricle. In Press: *Am J Physiol Heart Circ Physiol*. 305:H410-H419.

Cheng Y, Wan X, McElfresh TA, Chen X, Gresham KS, Rosenbaum DS, Chandler MP, **Stelzer JE\***. (2013). Impaired Contractile Function Due to Decreased Cardiac Myosin Binding Protein C Content in the Sarcomere. *Am J Physiol Heart Circ Physiol*. 305:H52-H65.

Montano MM, Desjardins C, Doughman YQ, Hsieh YH, Hu Y, Bensinger H, Wang C, **Stelzer JE**, Dick T, Hoit B, Chandler MP, Yu X Watanabe M. (2013). Inducible reexpression of HEXIM1 activates a physiological rather than a pathological response in the adult heart. *Cardiovasc Res*. 99:74-82.

- Azam S, Desjardins CL, Schluchter M, Liner A, **Stelzer JE**, Yu X, Hoit BD. (2012). Comparison of Velocity Vector Imaging Echocardiography with Magnetic Resonance Imaging in Mouse Models of Cardiomyopathy. *Circ Cardiovasc Imaging*. 5:776-781.
- 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*. 5:635-644.
- 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  $\alpha$ -myosin heavy chain expression on contractile kinetics in porcine myocardium. *Am J Physiol Heart Circ Physiol*. 300: H869-H878.
- 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 acknowledgment.

**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.

NHLBI (PI: JE Stelzer).

Period of support: 2/1/13 – 1/31/18.

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.