

Curriculum Vitae

August 25, 2006

Mark T Ziolo

Date of Birth: June 19, 1970
Marital Status: Married, 2 children
Citizenship: USA
Present Address: Department of Physiology & Cell Biology
The Ohio State University
304 Hamilton Hall
1645 Neil Avenue
Columbus, OH 43210-1218
Office Phone: (614) 688-7905
Fax: (614) 688-7999
E-mail: ziolo.1@osu.edu

Positions	1999-2003	Research Associate, Loyola University Chicago
	2003-2004	Research Assistant Professor, Loyola University Chicago
	2004-Present	Assistant Professor, The Ohio State University

Education: B.A. - major: Biology
Augustana College, Rock Island, Illinois - 1993

Ph.D.- Physiology and Biophysics
University of Illinois, Chicago, IL- 1999
Advisors: Gordon M Wahler & R. John Solaro

Societies: American Heart Association
American Physiological Society
Biophysical Society
International Society for Heart Research

Publications:

A. Papers

1. **Ziolo MT**, Dollinger SJ, Wahler GM. Myocytes isolated from rejecting transplanted hearts exhibit reduced basal shortening which is reversible by aminoguanidine. *J Mol Cell Cardiol* 30:1009-1017, 1998.
2. **Ziolo MT**, Wahler GM. Effects of a phospholipid metabolite on calcium currents in myocytes from diabetic versus non-diabetic rat hearts. *Mol Cell Biochem* 220(1-2): 169-175, 2001.
3. Stojanovic MO, **Ziolo MT**, Wahler GM, Wolska BM. Anti-adrenergic effects of nitric oxide donor SIN-1 in rat cardiac myocytes. *Am J Physiol Cell Physiol* 281:C342-C349, 2001.
4. Bers DM, **Ziolo MT**. When Is cAMP Not cAMP?: Effects of Compartmentalization. *Circ Res* 89(5):373-5, 2001.
5. **Ziolo MT**, Harshbarger CH, Roycroft KE, Wahler GM. Myocytes isolated from rejecting transplanted hearts exhibit a nitric oxide mediated reduction in the calcium current. *J Mol Cell Cardiol* 33(9):1691-9, 2001.
6. **Ziolo MT**, Kato H, Bers DM. Positive and negative effects of nitric oxide on Ca²⁺ sparks: influence of β -adrenergic stimulation. *Am J Physiol Heart Circ Physiol* 281:H2295-H2303, 2001.
7. **Ziolo MT**, Kato H, Bers DM. Expression of inducible NOS depresses β -adrenergic-stimulated calcium release from the sarcoplasmic reticulum in intact ventricular myocytes. *Circulation* 104(24):2961-2966, 2001.
8. Vizgirda VM, Wahler GM, Sondgeroth KL, **Ziolo MT**, Schwertz DW. Mechanism of sex differences in rat cardiac myocyte response to β -adrenergic stimulation. *Am J Physiol Heart Circ Physiol* 282:H256-263, 2002.
9. **Ziolo MT**, Lewandowski SJ, Smith JM, Romano FD, Wahler GM. Inhibition of cyclic GMP hydrolysis with zaprinast reduces basal and cAMP-elevated L-type calcium current in guinea pig ventricular myocytes. *Br J Pharmacol.* 138: 986-994, 2003.
10. **Ziolo MT**, Bers DM. The real estate of NOS signaling: location, location, location. *Circ Res.* 92: 1279-1281, 2003.

11. **Ziolo MT**, Maier LS, Piacentino III, V, Bossuyt J, Houser SR, Bers DM. Myocyte NOS2 contributes to blunted β -adrenergic response in failing human hearts by decreasing Ca^{2+} transients. *Circulation*. 109: 1886-1891, 2004.
12. **Ziolo MT**, Martin JL, Bers DM, Pogwizd SM. Adenoviral gene transfer of mutant phospholamban rescues contractile dysfunction in failing myocytes with relatively preserved SERCA function. *Circ Res*.96:815-817, 2005.
13. Babu GJ, Bhupathy P, Petrashevskaya NN, Wang H, Raman S, Wheeler D, Jagatheesan G, Wieczorek D, Schwartz A, Janssen PM, **Ziolo MT**, Periasamy M. Targeted over expression of sarcolipin in the mouse heart decreases sarcoplasmic reticulum calcium transport and cardiac contractility. *J Biol Chem*. 281: 3972–3979, 2006.
14. Maier LS*, **Ziolo MT***, Persechini A, Mestral R, Bers DM. Dynamic changes in free Ca-Calmodulin levels in adult cardiac myocytes. *J Mol Cell Cardiol*. In Press.
* Authors contributed equally
15. Wang H, Kohr MJ, Wheeler DG, **Ziolo MT**. Neuronal nitric oxide synthase enhances cardiac contractility by modulation of phospholamban phosphorylation. Submitted to *Circ Res*.
16. Kohr MJ, Wang H, Wheeler DG, **Ziolo MT**. Targeting of phospholamban by peroxynitrite decreases β -adrenergic stimulation in cardiac myocytes. Submitted to *Circ Res*.
17. DeSantiago J, Islam M, **Ziolo MT**, Bers DM, Pogwizd SM. Arrhythmogenic effects of β_2 -adrenergic stimulation in the failing heart are due to enhanced SR Ca load. Submitted. In Revision.
18. **Ziolo MT**, Piacentino V, Pyle WG, Solaro RJ, Houser SR, Bers DM. Inhibition of the cGMP-specific phosphodiesterase decreases β -adrenergic response in human cardiac myocytes: independent of $[\text{Ca}^{2+}]_i$ or troponin I phosphorylation. Submitted. In Revision.

B. Abstracts

1. **Ziolo MT**, Dollinger SJ, and Wahler GM. Aminoguanidine, an inhibitor of inducible nitric oxide synthase, enhances contractions of single myocytes isolated from rejecting rat hearts. *FASEB J*. 9:A31, 1995.
2. **Ziolo MT**, Dollinger SJ, and Wahler GM. Overstimulated NO/cGMP pathway within rejecting rat cardiac myocytes reduces contractions. *J. Molec. Cell. Cardiol*. 27(5):236, 1995.

3. **Ziolo MT**, Dollinger SJ, Smith J, Romano F, and Wahler GM. Aminoguanidine, an iNOS inhibitor, causes a frequency-dependent increase in shortening of myocytes from transplanted rat hearts during early, but not late, rejection. *FASEB J.* 10:4050, 1996.
4. **Ziolo MT**, Wahler GM. Cyclic GMP inhibition of basal calcium current in mammalian cardiac myocytes requires physiological levels of intracellular calcium. *Biophysics J.* 74:A157, 1998.
5. Smith JM, Sondgeroth KL, **Ziolo MT**, Wahler GM. Decreased inotropic response of diabetic hearts is not due to nitric oxide depression of calcium currents. *J. Molec. Cell. Cardiol.* 30(7):51; 1998.
6. Vizgirda VM, Schwertz DW, **Ziolo MT**, Sondgeroth KL, Wahler GM. Sex differences in regulation of the myocardial calcium current. *J. Mol. Cell. Cardiol.* 30 (7):81; 1998.
7. Wahler GM, **Ziolo MT**. Effects of a phospholipid metabolite on calcium currents in myocytes from diabetic versus non-diabetic rat hearts. *J. Mol. Cell. Cardiol.* 30 (7):82; 1998.
8. **Ziolo MT**, Kato H, Bers DM. Effects of exogenous nitric oxide on resting spark frequency in cardiac myocytes. *Biophysics J.* 76(1):A463, 1999.
9. **Ziolo MT**, Piacentino V III, Houser SR, Bers DM. Type V Phosphodiesterase inhibitor zaprinast alters E-C Coupling in human cardiac myocytes. *Biophysics J.* 80(1):593a, 2001.
10. Maier LS, **Ziolo MT**, Persechini A, Mestral R, Bers DM. Ca-Calmodulin sensing fluorescent protein expressed in adult cardiac myocytes by adenoviral infection. *Biophysics J.* 82(1):596a, 2002.
11. **Ziolo MT**, Maier LS, Bers DM. Dynamic changes in Ca-calmodulin levels measured in intact adult cardiac myocytes. *Biophysics J.* 84: 61a, 2003.
12. **Ziolo MT**. NOS3 Decreases β -adrenergic Responsiveness and Protects Against Arrhythmogenesis in Cardiac Myocytes. *J Mol Cell Cardiol.* 39:191 (abstract #63); 2005.

C. Competitive Abstracts

1. **Ziolo MT**, Dollinger SJ, Roycroft KE, Wahler GM. Nitric-oxide-mediated depression of calcium currents in myocytes isolated from rejecting transplanted rat hearts. *Circulation* 94(8)Suppl 1:1307, 1996.

2. Vizgirda VM, Schwertz DW, **Ziolo MT**, Wahler GM. Sex differences in beta-adrenergic stimulation of the cardiac calcium current. *Circulation* 96:1993, 1997.
3. **Ziolo MT**, Katoh H, Bers DM. Nitric oxide (NO) produced by iNOS attenuates the cAMP/PKA response in intact rat ventricular myocytes by depressing ryanodine receptors (RyR) activity. *Circulation* 100(18): 573, 1999.
4. **Ziolo MT**, Katoh H, Bers DM. Exogenous nitric oxide (NO) has a dual effect on ryanodine receptors (RyR) activity depending on the state of PKA activation in intact rat ventricular myocytes. *Circulation* 100(18): 991, 1999.
5. Maier LS, **Ziolo MT**, Persechini A, Mestral R, Bers DM. Measurement of intracellular Ca-calmodulin levels in intact adult cardiac myocytes. *Circulation* 106(19): 112, 2002.
6. DeSantiago J, Islam M, **Ziolo MT**, Bers DM, Pogwizd SM. Arrhythmogenic effects of beta-2 adrenergic stimulation in the failing heart are due to enhanced SR Ca load. *Circulation* 108(17):251, 2003.
7. Maier LS, Zhang T, Seidler T, Kohlhaas M, **Ziolo MT**, Zibrova D, Brown JH, Bers DM. Adenoviral overexpression of CaMKII_{δc} alters calcium handling in isolated rabbit cardiac myocytes. *Circulation* 108(17):247, 2003.
8. **Ziolo MT**, Martin JL, Bossuyt J, Pogwizd SM, Bers DM. Adenoviral gene transfer of a dominant-negative form of phospholamban in myocytes from a rabbit model of heart failure restores the force-frequency response via increased SR Ca content. *Circulation* 108(17):846, 2003.
9. **Ziolo MT**, Piacentino V, Pyle G, Solaro RJ, Houser SR, Bers DM. Inhibition of cGMP-specific phosphodiesterase depresses contractility I human cardiac myocytes independent of [Ca]_i or troponin I phosphorylation. *Circulation* 108(17):133, 2003.
- 10 **Ziolo MT**. Nitric Oxide Synthase 3 Protects Against β-Adrenergic Induced Arrhythmias in Isolated Cardiac Myocytes. Late Breaking Abstract. AHA Basic Science Council Meeting, 2004.
11. Kohr MJ, Wheeler DG, **Ziolo MT**. Selective targeting of phospholamban by peroxynitrite decreases β-adrenergic stimulation in cardiac myocytes. *Circulation*. 112:II-29; 2005.
12. Wang H, **Ziolo MT**. Endothelial nitric oxide synthase (NOS3) decreases β-adrenergic responsiveness and protects against arrhythmogenesis. *Circulation*. 112; 2005.

13. Wang H, Kohr MJ, Wheeler D, **Ziolo MT**. Neuronal Nitric Oxide Synthase Enhances Cardiac Contractility by Modulation of Phospholamban Phosphorylation. *Circulation*. 2006 (In press.)

Invited Lectures:

University of Illinois, Chicago, IL. Colloquium on Cellular Signaling in the Cardiovascular System. August, 1995.

Midwestern University, Downers Grove, IL. C.O.R.E.D. Research Seminar Series. January, 1996.

Midwestern University, Downers Grove, IL. Faculty Seminar Series. December, 1998.

Loyola University Medical Center, Maywood, IL. Physiology Departmental Seminar Series. January, 1999.

Temple University School of Medicine, Philadelphia, PA. Physiology Departmental Seminar Series. February, 2002

Georg-August-Universitaet, Goettingen, Germany. Cardiology Departmental Seminar Series. April, 2003.

Loyola University Medical Center, Maywood, IL. Physiology Departmental Seminar Series. July 2003.

University of Illinois, Chicago, IL. Colloquium on Cellular Signaling in the Cardiovascular System. October 2003.

Ohio State University, Columbus, OH. Physiology Departmental Seminar Series. October 2003.

University of Kansas, Kansas City, MO. Physiology Departmental Seminar Series. December, 2003.

Cincinnati Children's Hospital Medical Center. Molecular Cardiovascular Biology Division seminar. August, 2004.

Ohio State University, Columbus, OH. College of Veterinary Medicine. April, 2004.

Ohio State University, Columbus, OH. Integrated Biomedical Graduate Program Seminar Series. January, 2005.

Ohio State University, Columbus, OH. Davis Heart Lung Research Institute
Research in Progress. March, 2005.

Davis Heart & Lung Research Institute Retreat. Columbus, OH. April, 2006.

American Heart Association Scientific Sessions. Chicago, IL. November, 2006.

Grants, Fellowships and Funding (Support)

ACTIVE

R01 HL079283-01A1 (Mark T Ziolo)

07/01/2006-06/30/2011

National Institutes of Health

\$1,875,000

NOS1/NOS3 Functional Effects on Cardiac Myocyte Function

The major goal of this project is to understand how neuronal nitric oxide synthase (NOS1) and endothelial nitric oxide synthase (NOS3) regulates cardiac function.

COMPLETED

UIC Training Grant

HL T32 07692 (1994-1998)

American Heart Association (9920460Z) Ralph S Zitnik award- declined

NIH 1 F32 HL10122-01 (Mark T Ziolo)

1999-2002

National Research Service Award (NHLBI)

\$108,468 total

Nitric Oxide and Sarcoplasmic Reticulum Ca transport

The major goal of this project was to understand the effect of nitric oxide on regulation of ryanodine receptor function and SR Ca load in the presence of β -adrenergic stimulation.

American Heart Association (Mark T Ziolo)

7/1/2003-6/30/2006

Scientist Development Grant (0335385Z)

\$247,500 total

Nitric oxide synthase signaling in cardiac myocytes and its effects on Excitation-
Contraction Coupling

The major goal of this project is to understand how each specific nitric oxide synthase regulates cardiac myocyte action potential, Ca handling and contraction.

Teaching Experience

BMS 653 (M1 physiology)- Dog Lab (Oct. 12, 13, 14, 1994)

PHYB 569 - Patch-clamping Methodology (6 hrs.) (Sept. 12, 13, 1995)

PHYB 401- Nitric oxide in cardiac physiology (1 hr.) (Oct. 2, 1995)

PHYB 341- Gastrointestinal System I, II, III (5 hrs.) (Nov. 27,29, Dec. 1, 1995; Nov. 29, Dec. 2,4, 1996)

PHYB 322- Gastrointestinal System Case Facilitator (4 hrs.) (Jan. 29, Feb. 5, 1996)

PHYB 322- Cardiovascular Case Facilitator (4 hrs.) (Jan. 11, Jan 18, 1999)

PHYB 322- Cardiovascular Workshop (2 hrs.) (Feb. 2, 1999)

Function of the Human Body- SGPSS Facilitator (8 hrs), Jan-Feb 2002.

Function of the Human Body- SGPSS Facilitator (8 hrs), Jan-Feb 2003.

Med 2 Integrated Pathway- Renal Lectures (8 hrs), November, 2005.

Advanced Cardiac Physiology- (6 hrs), February, 2006.

Honors and Awards

UIC College of Medicine travel grant, 1995 & 1997

2nd place. University of Illinois Student Medical Research Forum, Chicago, IL. January, 1997.

2nd place. Midwest Student Medical Research Forum, Omaha, NE. February, 1997.

3rd place. Greater Lakes Chapter of the American Society for Pharmaceutical and Experimental Therapeutics (GLC-ASPET). Postdoctoral Fellow category. Chicago, IL. June, 1999.

American Heart Association (9920460Z) Ralph S Zitnik award

New Investigator Award. American Heart Association- Advances in the Molecular and Cellular Mechanisms of Heart Failure. August, 2002.

2006 Davis Heart & Lung Research Institute Retreat Einstein Award

Finalist Young Investigator Award. International Society for Heart Research- North American Section. June, 2006.

Activities

Volunteer, American Heart Association (Metropolitan Chicago Chapter)
"Wild about Science" program

1/12/96- Indian Knolls School (6th grade), West Chicago, IL

1/31/96- Lincoln School (4th & 6th grades), Wheaton, IL

3/01/96- Jacobs High School (sophomores), Algonquin, IL

12/9/97- Brook Park School (4th grade), Brookfield, IL

Gross Middle School (6th & 8th grades), Brookfield, IL

1/26/01- Spring Hills School (3rd grade), Roselle, IL