

Robert A. Augustyniak, Ph.D.

Track: Assistant Professor- Research-Educator

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Division of Nephrology
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EDUCATION

- 1990 – 1994 B.S. degree, biology
Eastern Michigan University, Ypsilanti, MI
- 1994 – 1996 M.S. degree, physiology
Wayne State University School of Medicine, Detroit, MI
- 1996 – 2001 Ph.D. degree, physiology
Wayne State University School of Medicine, Detroit, MI

TRAINING

- 2001 – 2005 Post-doctoral Fellowship, Cardiovascular Physiology, Department of Medicine
The University of Texas Southwestern Medical Center, Dallas, TX

FACULTY APPOINTMENTS

- 2005 – present Assistant Professor, Depts. of Medicine and Physiology
Wayne State University School of Medicine, Detroit, MI.

PROFESSIONAL SOCIETIES

American Physiological Society
American Society of Hypertension,
American Society of Nephrology

HONORS and AWARDS

Caroline tum Suden/Francis Hellebrandt Prof. Opportunity Award, Experimental Biology 2004, April, 2004
Proctor & Gamble Award Finalist, Experimental Biology 2000, April, 2000
Graduate Student Professional Travel Award, Experimental Biology 2000, April, 2000

SERVICE

Committees

Physiology By-Law Committee; 2006; Met quarterly to develop by-laws for the Dept. of Physiology

Grant Reviewer

Internal VA Merit Award Reviewer; 2006; Served as a pre-reviewer for VA Merit Awards prior to submission.

Formal Judge

Medical Student Research Symposium Judge; 2006; Wayne State University SOM.

TEACHING

Courses at WSU School of Medicine

- 2005 **Physiology 7550, Advanced Renal Physiology (6 contact hr/yr, 3 grad students)**
2000, 2006 **Year I Pulmonary Physiology Laboratory (4 contact hr/yr, 20 medical students)**
2006 **Post-Baccalaureate Renal Physiology (15 contact hr/yr, 15 post-baccalaureate students)**
2006 **Lectures in Nephrology (1 contact hr/yr, 6 nephrology fellows)**
2006 **Physiology 7600, Advanced Cardiovascular Physiology (4 contact hr/yr, 6 graduate students)**

Departmental/Divisional Education

Hypertension Grand Rounds:

- 2001 Nitric Oxide and Human Hypertension
2002 Nitric Oxide and Sympathetic Activation

Physiology Journal Club: (1 contact hr/session; 5 faculty, 10 fellows)

- 2001-2005 **Primary presenter, 2 times/year; participant, weekly**

Renal Journal Club: (1 contact hr/session; 13 faculty, 6 fellows)

- 2005-2007 **Primary presenter, 2-3 times/year; participant, biweekly**

Physiology Seminar: (1 contact hr/session; 10 faculty, 12 graduate/postdoctoral students)

- 2005 **Renal Sympathetic Nerves and the Progression of Renal Disease**

Basic Science Research in Nephrology (1 contact hr/session; 5 faculty, 6 fellows)

- 2006 **Does Bradykinin Contribute to Hypertension and Renal Failure?**

VA Research Seminar: (1 contact hr/session; 25 faculty/graduate/postdoctoral fellows)

- 2007 Sympathetic Nerves and the Progression of Chronic Kidney Disease

- 2006 **“Grant Writers Workshop”- Given by: Grant Writers Seminars and Workshops, LLC
Selected to participate in an eight week course to improve grant writing skills.
Sponsored by the Office of the Vice- President for Research, Wayne State University
School of Medicine.**

Course Development

- 2006-07 **Renal Research Conference Coordinator**
2007 Physiology Seminar Conference Coordinator

GRANT SUPPORT

Grants Approved and Funded

- 2/15/01-8/31/02 NIH National Heart Lung and Blood Institute, PI: L. David Hillis, \$30,000
Institutional Training Grant
“Training in Cardiovascular Research”
- 9/1/02-2/29/04 *NIH National Heart Lung and Blood Institute, \$60,000*
PI: Augustyniak, R.A. (100% effort)
“Neural Mechanisms of Cyclosporine-Induced Hypertension”

BIBLIOGRAPHY

Original Manuscripts

1. Scislo, T.J., **Augustyniak, R.A.**, R.A. Barraco, D.J. Woodbury, and D.S. O'Leary. Activation of P_{2X}-purinoceptors in the nucleus tractus solitarius elicits differential inhibition of lumbar and renal sympathetic nerve activity. *J Auton Nerv Syst* 62:103-110, 1997.
2. O'Leary, D.S. and **Augustyniak, R.A.**. Muscle metaboreflex increases ventricular performance in conscious dogs. *Am J Physiol* 275:H220-H224, 1998.
3. Sheriff, D.D., **Augustyniak, R.A.**, and D.S. O'Leary. Muscle chemoreflex-induced increases in right atrial pressure. *Am J Physiol* 275:H767-H775, 1998.
4. Scislo, T.J., **Augustyniak, R.A.**, and D.S. O'Leary. Differential arterial baroreflex regulation of renal, lumbar, and adrenal sympathetic nerve activity in the rat. *Am J Physiol* 275:R995-R1002, 1998.
5. O'Leary, D.S., **Augustyniak, R.A.**, E.J. Ansorge, and H.L. Collins. Muscle metaboreflex improves O₂ delivery to ischemic active skeletal muscle. *Am J Physiol* 276:H1399-H1403, 1999.
6. LaPrad, S.L., **Augustyniak, R.A.**, R.L. Hammond, and D.S. O'Leary. Does Gender influence the strength and mechanisms of the muscle metaboreflex during dynamic exercise in dogs? *Am J Physiol* 276:R1203-R1208, 1999.
7. Hammond, R.L., **Augustyniak, R.A.**, N.F. Rossi, P.C. Churchill, K. Lapanowski, and D.S. O'Leary. Heart failure alters the strength and mechanisms of the muscle metaboreflex. *Am J Physiol* 278:H818-H828, 2000.
8. **Augustyniak, R.A.**, E.J. Ansorge, and D.S. O'Leary. Differential latencies during metaboreflex activation: cardiac output vs. peripheral vasoconstriction. *Am J Physiol* 278:H530-H537, 2000.
9. Hammond, R.L., **Augustyniak, R.A.**, N.F. Rossi, K. Lapanowski, J.C. Dunbar, and D.S. O'Leary. Alteration of humoral and peripheral vascular responses during graded exercise in heart failure. *J Appl Physiol* 90:55-61, 2001.
10. Collins, H.L., **Augustyniak, R.A.**, E.J. Ansorge, and D.S. O'Leary. Carotid baroreflex pressor responses at rest and during exercise: cardiac output vs. regional vasoconstriction. *Am J Physiol* 280:H642-H648, 2001.
11. Scislo, T.J., A.M. Kitchen, **Augustyniak, R.A.**, and D.S. O'Leary. Differential patterns of sympathetic responses to selective stimulation of NTS purinergic receptor subtypes. *Clin Exp Pharmacol Physiol* 28:120-124, 2001.
12. **Augustyniak, R.A.**, H.L. Collins, E.J. Ansorge, N.F. Rossi, and D.S. O'Leary. Severe exercise alters the strength of the muscle metaboreflex. *Am J Physiol* 280:H1645-H1652, 2001.
13. Ansorge, E.J., S.H. Shah, **R.A Augustyniak**, N.F. Rossi, H.L. Collins, and D.S. O'Leary. Muscle metaboreflex control of coronary blood flow. *Am J Physiol* 283:H526-H532, 2002.

14. **Kim, J-K, Augustyniak, R.A., J.A. Sala-Mercado, R.L. Hammond, E.J. Ansorge, N.F. Rossi, and D.S. O'Leary.** Heart failure alters the strength and mechanisms of arterial baroreflex pressor responses during dynamic exercise. *Am J Physiol* 287:H1682-H1688, 2004.
15. **O'Leary, D.S., J.A.Sala- Mercado, Augustyniak, R.A., R.L. Hammond, N.F. Rossi, and E.J. Ansorge.** Impaired muscle metaboreflex-induced increases in ventricular function in heart failure. *Am J Physiol* 287:H2612-H2618, 2004.
16. **Ansorge, E.J., Augustyniak, R.A., M.L. Perinot, R.L. Hammond, J-K Kim, J.A.Sala- Mercado, J. Rodriguez, N.F Rossi and D.S. O'Leary.** Altered muscle metaboreflex control of coronary blood flow and ventricular function in heart failure. *Am J Physiol* 288:H1381-H1388, 2005.
17. **Augustyniak, R.A., D.A. Morgan, R.G. Victor, and W. Zhang.** L-NAME and ADMA-induced sympathetic neural activation in conscious rats *Am J Physiol Regul Integr Comp Physiol* 290:726-732, 2006.
18. **Augustyniak, R.A., E.J. Ansorge, J.K. Kim, J.A. Sala-Mercado, R.L. Hammond, N.F. Rossi and D.S. O'Leary.** Cardiovascular responses to exercise and muscle metaboreflex activation during the recovery from pacing induced heart failure. *J Appl Physiol* 101:14-22, 2006.
19. **Sheriff, D.D., Augustyniak, R.A., and D.S. O'Leary.** Flow-Raising vs. Resistance-Raising Reflexes, Comment on Point-Counterpoint, Active venoconstriction is/is not important in maintaining or raising end-diastolic volume and stroke volume during exercise and orthostasis. *J Appl Physiol* 101(5):1531, 2006.

Review Articles

1. **Augustyniak, R.A., M. Tuncel, W. Zhang, R.D. Toto, and R.G. Victor.** Sympathetic overactivity as a cause of hypertension in chronic renal failure. *J Hypertens* 20(1):3-9, 2002.
2. **Tuncel, M., Augustyniak, R.A., W. Zhang, R.D. Toto, and R.G. Victor.** Sympathetic nervous system function in renal hypertension. *Curr Hypertens Rep* 4:229-236, 2002.
3. **Augustyniak, R.A., G.D. Thomas, R.G. Victor, and W. Zhang.** Nitric oxide pathway as new drug targets for refractory hypertension. *Current Pharm Design* 11:3307-3315, 2005.

Abstracts

1. **Scislo, T.J., Augustyniak, R.A., R.A. Barraco, and D.S. O'Leary.** Activation of P₂-purinoceptors in the nucleus tractus solitarius (NTS) elicits differential inhibition of lumbar (LSNA) and renal (RSNA) sympathetic nerve activity. *FASEB J* 10(3):A410, #2372, 1996.
2. **Augustyniak, R.A., T.J. Scislo, and D.S. O'Leary.** Differential arterial baroreflex regulation of lumbar (LSNA), renal (RSNA) and adrenal (ASNA) sympathetic nerve activity in the rat. *FASEB J* 11(3):A253, #1471, 1997.
3. **Sheriff, D.D., Augustyniak, R.A., and D.S. O'Leary.** Muscle metaboreflex induced increases in central venous pressure. *FASEB J* 12(5):A691, #4010, 1998.

4. O'Leary, D.S. and **Augustyniak, R.A.**, Role of heart rate vs. stroke volume in muscle metaboreflex induced increases in cardiac output. *Med Sci Sports Exerc Suppl* 30(5):S113, #643, 1998.
5. O'Leary, D.S., **Augustyniak, R.A.**, E.J. Ansorge, and H.L. Collins. Muscle metaboreflex increases O₂ delivery to ischemic active skeletal muscle. *Med Sci Sports Exerc Suppl* 31(5):S225, #1066, 1999.
6. **Augustyniak, R.A.**, E.J. Ansorge, and D.S. O'Leary. Cardiac output and peripheral vasoconstriction exhibit differential latencies during muscle metaboreflex activation. *FASEB J* 13(4):A449, #372.9, 1999.
7. Collins, H.L., **Augustyniak, R.A.**, E.J. Ansorge, and D.S. O'Leary. Mechanisms mediating carotid baroreflex pressor response at rest and during exercise- cardiac output versus regional vasoconstriction. *FASEB J* 14(4):A379, #291.1, 2000.
8. **Augustyniak, R.A.**, E.J. Ansorge, H.L. Collins, and D.S. O'Leary. Does severe exercise reduce the strength of the muscle metaboreflex? *FASEB J* 14(4):A379, #291.2, 2000.
9. Ansorge, E.J., **Augustyniak, R.A.**, and D.S. O'Leary. Does the muscle metaboreflex vasoconstrict the coronary vasculature? *FASEB J* 15(5):A1148, #895.4, 2001.
10. **Augustyniak, R.A.**, R.G. Victor, W. Zhang. Renal sympathetic nerves and the progression of renal failure: friend or foe? *Am J Hypertens*, 16(5):93A, P-150, 2003.
11. **Augustyniak, R.A.**, R.G. Victor, W. Zhang. **Sympathoexcitation during exogenous and endogenous nitric oxide- deficient hypertension: direct evidence from sympathetic recordings in conscious rats.** *FASEB J* 18(5):A1264, #837.12, 2004.
12. Li J.L., **Augustyniak, R.A.**, R.G. Victor and W. Zhang. **Chronic cyclosporine-induced hypertension is coupled to calcineurin-mediated inhibition of T cell activation in mice** *Am J Hypertens*, 17(5):81A, P-298, 2004.
13. **Augustyniak, R.A.**, E.J. Ansorge, J.K. Kim, J.A. Sala-Mercado, R.L. Hammond, N.F. Rossi and D.S. O'Leary. **Muscle Metaboreflex (MMR) Responses During Recovery From Pacing-Induced Heart Failure.** *FASEB J* 20(4):A737, #467.12, 2006.

Presentations: Refereed Nationally

1. **Augustyniak, R.A.**, E.J. Ansorge, and D.S. O'Leary. Cardiac output and peripheral vasoconstriction exhibit differential latencies during muscle metaboreflex activation. *FASEB J* 13(4):A449, #372.9, 1999.
2. **Augustyniak, R.A.**, E.J. Ansorge, H.L. Collins, and D.S. O'Leary. Does severe exercise reduce the strength of the muscle metaboreflex? *FASEB J* 14(4):A379, #291.2, 2000.
3. **Augustyniak, R.A.**, R.G. Victor, W. Zhang. Renal sympathetic nerves and the progression of renal failure: friend or foe? *Am J Hypertens*, 16(5):93A, P-150, 2003.
4. **Augustyniak, R.A.**, R.G. Victor, W. Zhang. **Sympathoexcitation during exogenous and endogenous nitric oxide- deficient hypertension: direct evidence from sympathetic recordings in conscious rats.** *FASEB J* 18(5):A1264, #837.12, 2004.

5. **Augustyniak, R.A., E.J. Ansorge, J.K. Kim, J.A. Sala-Mercado, R.L. Hammond, N.F. Rossi and D.S. O’Leary. Muscle Metaboreflex (MMR) Responses During Recovery From Pacing-Induced Heart Failure. *FASEB J* 20(4):A737, #467.12, 2006.**

Presentations (Local/Regional)

1. **Augustyniak, R.A.** and D.S. O’Leary. Mechanisms of the muscle metaboreflex pressor response exhibit differential latencies. *Michigan Hypertension Meeting*, May, 1998.
2. **Augustyniak, R.A.** and D.S. O’Leary. Muscle metaboreflex elicits differential latencies among cardiovascular variables during dynamic exercise. *WSU Graduate Student Research Day*, September, 1998
3. **Augustyniak, R.A.,** E.J. Ansorge, H.L. Collins, and D.S. O’Leary. Mechanisms mediating muscle metaboreflex induced increases in arterial pressure during mild, moderate, and severe exercise. *Michigan Hypertension Meeting*, April, 1999
4. **Augustyniak, R.A.,** E.J. Ansorge, H.L. Collins, and D.S. O’Leary. Exercise intensity alters the strength and mechanisms of the muscle metaboreflex. *WSU Graduate Student Research Day*, September, 1999.