

NAME		POSITION TITLE	
Boegehold, Matthew Alan		Professor of Physiology	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Michigan, Ann Arbor, MI	B.S.	1980	Biology
University of Arizona College of Medicine, Tucson, AZ	Ph.D.	1986	Physiology
Indiana University School of Medicine, Indianapolis, IN	Postdoctoral	1986-1988	Physiology

A. Positions and Honors

Positions and Employment

1986-88	Research Associate, Department of Physiology and Biophysics, Indiana University School of Medicine
1988-90	Research Assistant Professor, Depts. of Medicine and Physiology, West Virginia University School of Medicine
1990-94	Assistant Professor of Physiology, West Virginia University School of Medicine
1994-2000	Associate Professor of Physiology, West Virginia University School of Medicine
2000-	Professor of Physiology, West Virginia University School of Medicine
2001-	Associate Chair (Research), Department of Physiology, West Virginia University School of Medicine

Other Experience and Professional Memberships

1989-	Microcirculatory Society
1990-	American Physiological Society (Fellow, APS Cardiovascular Section, 2001)
1991	European Society for Microcirculation
1991	American Heart Association, Council for High Blood Pressure Research (Fellow)
1993-1996	Research Policy and Allocations Committee, American Heart Association, West Virginia Affiliate
1995-1997	Affiliate Study Group D (Brain and Cardiovascular Regulation), American Heart Association, National Center
1995-1998	Awards Committee, Microcirculatory Society (Chairman, 1997-1998)
1997	Program Project review panel, National Institutes of Health, National Heart, Lung and Blood Institute
2000-	Finance Committee, Microcirculatory Society
2000-	Research Committee, American Heart Association, Ohio Valley Affiliate
2001-	Executive Council, Microcirculatory Society
2002-	Editorial Board, "Microcirculation"

Honors

1980-1985	NIH predoctoral traineeship
1986	NIH postdoctoral fellowship in vascular biology
1986-1987	Am. Heart Assn. (Indiana Affiliate) postdoctoral fellowship
1987-1988	Am. Heart Assn. (Indiana Affiliate) postdoctoral fellowship
1991	Elected Fellow, American Heart Association Council for High Blood Pressure Research
1992	Young Investigator Award, 2 nd Int.Symposium on Endothelium-Derived Vasoactive Factors, Basel, Switz
1993	Travel Award, XXXII IUPS Congress, Glasgow, Scotland
1994	Outstanding Young Investigator Award, Microcirculatory Society
1997	Travel Award, XXXIII IUPS Congress, St. Petersburg, Russia
2000	Dean's Award for Excellence in Research, West Virginia University
2001	Elected Fellow, Cardiovascular Section, American Physiological Society

Selected peer-reviewed publications (in chronological order, from a total of 41)

- Boegehold MA, Kotchen TA. The relative contributions of dietary Na⁺ and Cl⁻ to salt-sensitive hypertension. *Hypertension* 14: 579-583, 1989.
- Boegehold MA, Kotchen TA. Effect of dietary salt on the skeletal muscle microvasculature in Dahl rats. *Hypertension* 15:420-426, 1990.
- Boegehold MA, Kotchen TA. Arteriolar network morphology in gracilis muscle of rats with salt-induced hypertension. *Microvasc Res* 40: 169-178, 1990.
- Boegehold MA, Kotchen TA. Importance of dietary chloride for salt-sensitivity of blood pressure. *Hypertension* 17 (Suppl.1):I-158 - I-161, 1991.
- Boegehold MA. Effect of salt-induced hypertension on microvascular pressures in skeletal muscle of Dahl rats. *Am J Physiol* 260: H1819-H1825, 1991.
- Boegehold MA, Johnson MD, Overbeck HW. Pressure-independent arteriolar rarefaction in hypertension. *Am J Physiol* 261: H83-H87, 1991.
- Boegehold MA, Huffman LJ, Hedge GA. Peripheral vascular resistance and regional blood flows in the hypertensive Dahl rat. *Am J Physiol* 261: R934-R938, 1991.
- Boegehold MA. Reduced influence of nitric oxide on arteriolar tone in hypertensive Dahl rats. *Hypertension* 19:290-295, 1992.
- Boegehold MA. Enhanced arteriolar vasomotion in rats with chronic salt-induced hypertension. *Microvasc Res* 45:83-94, 1993.
- Boegehold MA. Microvascular changes associated with high salt intake and hypertension in Dahl rats. *Int J Microcirc Clin Exp* 12: 143-156, 1993.
- Boegehold MA. Effect of dietary salt on arteriolar nitric oxide in striated muscle of normotensive rats. *Am. J. Physiol.* 264: H1810-H1816, 1993.
- Dubey RK, Zhang HY, Reddy SR, Boegehold MA, Kotchen TA. Pioglitazone attenuates hypertension and inhibits growth of renal arteriolar smooth muscle in the rat. *Am J Physiol* 265: R726-R732, 1993.
- Rafi JA, Boegehold MA. Microvascular responses to oxygen and muscle contraction in hypertensive Dahl rats. *Int J Microcirc Clin Exp* 13: 83-97, 1993.
- Boegehold MA. Flow-dependent arteriolar dilation in normotensive rats fed low- or high-salt diets. *Am J Physiol* 269: H1407-H1414, 1995.
- Dubey RK, Boegehold MA, Gillespie DG, Rosselli M. Increased nitric oxide activity in early renovascular hypertension. *Am J Physiol* 270: R118-R124, 1996.
- Boegehold MA. Shear-dependent release of venular nitric oxide: effect on arteriolar tone in rat striated muscle. *Am J Physiol* 271: H387-H395, 1996.
- Nase GP, Boegehold MA. Nitric oxide modulates arteriolar responses to increased sympathetic nerve activity. *Am J Physiol* 271: H860-H869, 1996.
- Linderman JR, Boegehold MA. Arteriolar network growth in rat striated muscle during juvenile maturation. *Int J Microcirc Clin Exp* 16: 232-239, 1996.
- Nase GP, Boegehold MA. Modulation of sympathetic constriction by the arteriolar endothelium does not involve the cyclooxygenase pathway. *Int J Microcirc Clin Exp* 17: 41-47, 1997.
- Nase GP, Boegehold MA. Endothelium-derived nitric oxide limits sympathetic neurogenic constriction in the intestinal microcirculation. *Am J Physiol* 273: H426-H433, 1997.
- Nase GP, Boegehold MA. Postjunctional α_2 -adrenoceptors are not present in proximal arterioles of rat intestine. *Am J Physiol* 274: H202-H208, 1998.
- Linderman JR, Boegehold MA. Modulation of arteriolar sympathetic constriction by local nitric oxide: onset during rapid juvenile growth. *Microvasc Res* 56: 192-202, 1998.
- Nurkiewicz TR, Boegehold MA. High dietary salt alters arteriolar myogenic responsiveness in normotensive and hypertensive rats. *Am J Physiol* 275: H2095-H2104, 1998.
- Boegehold MA. Heterogeneity of endothelial function within the circulation. *Curr Op Nephrol Hyperten* 7: 71-78, 1998.
- Linderman JR, Boegehold MA. Growth-related changes in the influence of nitric oxide on arteriolar tone. *Am J Physiol* 277: H1570-H1578, 1999.
- Nurkiewicz TR, Boegehold MA. Limitation of arteriolar myogenic activity by local nitric oxide: segment-specific effect of dietary salt. *Am J Physiol* 277: H1946-H1955, 1999.
- Lenda DM, Sauls BA, Boegehold MA. Reactive oxygen species may contribute to reduced endothelium-dependent dilation in rats fed high salt. *Am J Physiol* 279: H7-H14, 2000.
- Nurkiewicz TR, Boegehold MA. Reinforcement of arteriolar myogenic activity by endogenous angiotensin II: susceptibility to dietary salt. *Am J Physiol* 279: H269-H278, 2000.
- Sauls BA, Boegehold MA. Arteriolar wall PO₂ and nitric oxide release during sympathetic vasoconstriction in the rat intestine. *Am J Physiol* 279: H484-H491, 2000.
- Sauls BA, Boegehold MA. Reduced PO₂ and adenosine formation preserve arteriolar nitric oxide synthesis during sympathetic constriction in the rat intestine. *J Vasc Res* 38:104-112, 2001.
- Sauls BA, Boegehold MA. Adenosine linking reduced O₂ to arteriolar NO release in intestine is not formed from extracellular ATP. *Am J Physiol* 281: H1193-H1200, 2001.
- Wagner L, Hoey JG, Erdely A, Boegehold MA, Baylis C. The nitric oxide pathway is amplified in venular vs. arteriolar cultured rat mesenteric endothelial cells. *Microvasc Res* 62: 401-409, 2001.
- Lenda, DM, Boegehold MA. Effect of a high salt diet on oxidant enzyme activity in skeletal muscle microcirculation. *Am J Physiol* 282: H395-H402, 2002.
- Lenda DM, Boegehold MA. Effect of a high salt diet on microvascular antioxidant enzymes. *J Vasc Res*, 2002 (In Press).

Ongoing Research Support

"Dietary Salt and the Microvascular Endothelium"

Type: R01

Agency: NIH/NHLBI

The first major goal of this project in its current funding period is to clarify the mechanism(s) by which high dietary salt intake can lead to increased oxidative stress in the microcirculation of some organs, and thus eliminate the local influence of nitric oxide (NO). The possible causes of this increase in microvascular oxidative stress that are being studied include (1) increased expression and/or activity of oxidant-generating enzymes, and (2) decreased expression and/or activity of oxidant scavenging enzymes. The second major goal of this project is to explore the impact of these changes on the regulation of arteriolar tone and blood flow.

"Functional Changes in the Microvascular Endothelium during Juvenile Growth"

Type: Grant-in-Aid

Agency: American Heart Association, National Center

The first goal of this project is to better understand the development of shear stress sensitivity by the microvascular endothelium during rapid juvenile growth by determining if endothelial shear stress responsiveness is absent in young animals because Ca^{+2} -independent signaling pathways for NO release are not fully developed. The second goal of this project is to determine the functional consequences of a lack of shear stress responsiveness in pre- and post-capillary microvessels of young animals.

"Nitric Oxide and Chronic Renal Disease" (PI: Christine Baylis, PhD)

Type: R01

Agency: NIH

The overall goal of this project is to establish the relative contributions of different aspects of nitric oxide production and activity to the evolution of renal failure. This project involves comprehensive studies in a rat model of chronic renal disease and in patients with chronic renal disease.

"Endothelial Transduction of Shear Stress" (PI: Timothy Nurkiewicz, Ph.D.)

Type: F-32 (NIH-HL67562)

Agency: NIH/NHLBI

The overall goal of this project is to investigate various aspects of the shear stress signaling pathways that regulate endothelial cell nitric oxide production in mouse coronary arterioles.