

Jeffrey Lawrence Garvin, Ph.D.

A. CONTACT INFORMATION

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B. EDUCATION

1. Undergraduate

University of Miami, Coral Gables, Florida, grad. 1979, B.S. (Biology and Chemistry); magna cum laude and with general honors

2. Graduate/Professional

Duke University, Durham, North Carolina, grad. 1984, Ph.D. (Physiology)

C. POSTGRADUATE TRAINING

National Kidney Foundation Fellow, Laboratory of Kidney and Electrolyte Metabolism, National Institutes of Health, Bethesda, Maryland, 1984-1985.

National Research Service Award, Laboratory of Kidney and Electrolyte Metabolism, National Institutes of Health, Bethesda, Maryland, 1985-1988.

D. FACULTY APPOINTMENTS

2012-present Professor, Department of Physiology and Biophysics, Case Western Reserve University

2004-2013 Professor, Department of Physiology, Wayne State University

1999-2004 Professor, Department of Medicine, Case-Western Reserve University

1995-1999 Associate Professor, Department of Medicine, Case-Western Reserve University

E. HOSPITAL APPOINTMENTS

2009-2012 Division Head, Hypertension and Vascular Research Division, Department of Internal Medicine, Henry Ford Hospital, Detroit, MI.

1991-2012 Senior Staff Investigator, Hypertension and Vascular Research Division, Department of Internal Medicine, Henry Ford Hospital, Detroit, MI.

1988-1991 Associate Staff Investigator, Hypertension and Vascular Research Division, Department of Internal Medicine, Henry Ford Hospital, Detroit, MI.

F. CURRENT PROFESSIONAL SOCIETIES

American Physiological Society

American Society of Nephrology

Council for High Blood Pressure Research, American Heart Association

G. HONORS AND AWARDS

President's Honor Roll, University of Miami

University of Miami Honor Scholarship

Phi Kappa Phi Honor Society

Cellular and Molecular Biology Training Grant (1979-1983)

Grant in Aid, North Carolina Chapter of the American Heart Association (1982, 1983)

Sigma Xi (Grant in Aid of Research)

National Kidney Foundation Fellowship (1984-1985)

National Research Service Award (1985-7 & 1987-8, separate awards)

Lucille P. Markey Fellowship, Mount Desert Island Biological Laboratory

Lewis K. Dahl Lecture, American Heart Association (2005)

Carl W. Gottschalk Award and Lecture, American Physiological Society (2011)

H. SERVICE

1. Study Sections and Review Panels

National Institutes of Health, Special Emphasis Panel VH-J Atherosclerosis and Vascular Dysfunction, March 2013
National Institute of Diabetes, Digestive and Kidney Diseases, Special Emphasis Panel for Renal Transport Program Projects, February 2013

National Institutes of Health, Molecular Biology of the Kidney and Urogenital Development Study Section, October 2011-June 2015

National Institutes of Health, Special Emphasis Panel DKUS, January 2010

National Institutes of Health, Special Emphasis Panel MABS, February 2010

National Institutes of Health, Special Emphasis Panel DKUS-B02M, December 2009

National Institutes of Health, Special Emphasis Panel VH-B Microcirculation, Hypertension and Atherosclerosis, October 2009

National Institutes of Health, Special Emphasis Panel for Challenge Grants Panel 19, June 2009

National Institutes of Health, Special Emphasis Panel for Challenge Grants Panel 20, June 2009

National Institute of Diabetes, Digestive and Kidney Diseases, Special Emphasis Panel, May 2009

National Institute of Diabetes, Digestive and Kidney Diseases, Special Emphasis Panel for Cellular Signaling and Kidney Function, June 2009

National Institute of Diabetes, Digestive and Kidney Diseases, Special Emphasis Panel for Renal Transport Program Projects, March 2008

National Institutes of Health, Hypertension and Microcirculation Study Section, January 2004-June 2007.

National Institute of Diabetes, Digestive and Kidney Diseases, Special Emphasis Panel for Chronic Kidney Diseases Ancillary Studies, March 2007

National Institute of Diabetes, Digestive and Kidney Diseases, Program Project Grants Special Emphasis Panel, Channels and Kidney Function, July 2004.

National Institute of Diabetes, Digestive and Kidney Diseases, Program Project Grants Special Emphasis Panel, 2003.

National Institutes of Health, Cardiovascular B Study Section, 2003.

National Institute of Diabetes, Digestive and Kidney Diseases, Program Project Grants Special Emphasis Panel, 1998.

American Heart Association National Center, Cardio-Renal Study Section, 1996-1999.

American Heart Association, National Center Affiliate Study Section E, 1995-1996.

National Kidney Foundation of Michigan, Grant Review Committee, 1992-1999. Chairman, 1994-1999.

American Heart Association of Michigan, Grant Review Committee, 1993-1996. Vice-Chairman, 1995.

2. Journal Editorial Activity

American Journal of Physiology: Renal Physiology, editorial board, 1996-2007.

Journal of the American Society of Nephrology, editorial board, 1996-1998.

American Journal of Physiology: Regulatory and Integrative, editorial board, 1998-present.

Hypertension, editorial board, 2002-present.

American Journal of Physiology: Renal Physiology, Associate Editor, 2007-present.

3. National and International Society Committees

American Physiological Society Renal Section Awards Committee, 1993-1996; Co-chairman, 1994; Chairman, 1995-1996.

American Physiological Society Renal Section Steering Committee, 1994-2000.

American Physiological Society Renal Section Program Committee, 1997-2000. Vice Chairman, 1997; Chairman 1998-2000.

American Physiological Society Porter Physiology Development Committee, 1997-2000.

American Heart Association Council for High Blood Pressure Research Fall Conference Programming Committee, 1997-2000.

American Physiological Society Renal Section Steering Committee 2002 – 2005

American Physiological Society Renal Section Treasurer 2002 – 2005

American Heart Association Council for High Blood Pressure Research Newsletter Editor 2004-2007.

American Heart Association Council for High Blood Pressure Research Executive Committee 2004-2007.
American Heart Association Council for High Blood Pressure Research Fall Conference Programming Committee 2007- 2010.

4. Other Professional Service

Case-Western Reserve University/Henry Ford Hospital Working Group on Graduate Education 1995-1996
HFHS Committee on Pre- and Post-doctoral Education
HFHS Research Committee 2003-2006
HFHS Research Space Committee 1999-2004
HFHS Research Capital Equipment Committee 2001-2005
HFHS Department of Internal Medicine Appointments and Promotions Committee 2001-present
HFHS Department of Internal Medicine Resident Research Committee 2000-2004
HFHS-Oakland University Ph.D. Committee 1998-2004
HFHS Salary Management Committee, Consultant on Ph.D. Issues 2000-2001
HFHS Resident Research Forum Judge 2000-2005
HFHS Resident Research Forum Committee Co-Chair 2004-2006

I. TEACHING

1. University Courses

Medical Physiology Conference, Department of Physiology, Duke Univ., 1980
Human Physiology, *Nephron Transport*, Department of Biology, Oakland Univ., fall 1997, team taught.
Human Physiology, *Nephron Transport*, Department of Biology, Oakland Univ, spring 1999, team taught.
Cellular Biochemistry, *Physiology and Biochemistry of Nitric Oxide*, Department of Biology, Oakland Univ., spring 1999, team taught.
Advanced Renal Physiology, Department of Physiology, Wayne State Univ., fall 2003, team taught.
Advanced Biochemistry, Department of Chemistry, Oakland Univ., fall 2004, team taught.
Advanced Biochemistry, Department of Chemistry, Oakland Univ., spring 2005, team taught.
Human Physiology, *Nephron Transport*, Department of Biology, Oakland Univ., spring 2005, team taught. Advanced Renal Physiology, Department of Physiology, Wayne State Univ., fall 2005, team taught.

b. Henry Ford Hospital Lectures to Fellows and Residents
HFHS Department of Internal Medicine, Division of Nephrology, *NO regulates distal nephron transport*.
HFHS Department of Internal Medicine Research Grand Rounds, *Regulation of distal nephron transport and its role in hypertension*, April 2000.
HFHS Department of Research, *Nitric oxide regulates renal Na and water excretion: Role in hypertension*, October 2001
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Effects of angiotensin on the proximal nephron*
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Na transport in tight epithelia*
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Vasopressin-stimulated water absorption*
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *How to measure ion fluxes*
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Radiation safety in the laboratory* (1996, 1998)
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *How to present a paper* (1996, 1997, 1999)
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Seven transmembrane spanning receptors and G proteins*
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Measurements of intracellular calcium*
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Gap junctions*
HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Caveolin* HFHS
Department of Internal Medicine, Division of Hypertension and Vascular Research, *Appointments in the research*

institute (December 2001)

HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Aquaporin trafficking* (December 2001)

HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *How to present a paper* (January 2002)

HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Modern Research Methods: Initial rate* (June 2003)

HFHS Department of Internal Medicine, Division of Nephrology, *Modern Research Methods* (4 lectures, Summer 2003)

HFHS Department of Internal Medicine, Division of Nephrology, *Modern Research Methods: Northern and Southern Blotting* (August 2004)

HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *How to present a paper* (July 2007)

HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, *Membrane Biology* (July-August 2007, course director)

HFHS Department of Internal Medicine, Division of Nephrology and Hypertension, *How to present a paper* (October 2009)

Case Western Reserve School of Medicine, First Year Medical Student Cardiac Physiology Intermediate Group Facilitator, February 2013

2. Ph.D. Students

Pablo A. Ortiz, University of Buenos Aires, 2002

Marcela Herrera, University of Cordoba, 2006

Guillermo B. Silva-Laciar, University of Cordoba, 2009

Vanesa D. Ramseyer, Wayne State University, current graduate student

3. Postdoctoral Fellows

Barbara A. Stoos, Ph.D.

Luis A. Juncos, M.D.

Nestor H. Garcia, M.D.

Ding Wang, M.D.

Craig F. Plato, Ph.D.

Hong Yu, M.D.

Pablo Ortiz, Ph.D.

Marisela Varela, M.D.

Ramiro Juncos, M.D.

Marcela Herrera, Ph.D.

Ruisheng Liu, M.D., Ph.D.

Pablo Cabral, M.D.

4. National and International Awards Won by Postdoctoral Fellows/Residents/Students

Barbara A. Stoos, Ph.D.

Merck New Investigator Award, Council for High Blood Pressure Research of the American Heart Association 1991

Excellence in Renal Research Award, American Physiological Society 1991

Luis A. Juncos, M.D.

Clinical Investigator Award, Council for High Blood Pressure Research of the American Heart Association 1994

Nestor H. Garcia, M.D.

Merck Latin American Investigator Award, Council for High Blood Pressure Research of the American Heart Association 1995

Hong Yu, M.D.

Excellence in Renal Research Award, American Physiological Society 1996

Craig F. Plato, Ph.D.

Merck Young Investigator Award, Council for High Blood Pressure Research of the American Heart Association 1998

Excellence in Renal Research Award, American Physiological Society 1999

Pablo Ortiz, M.S.

Excellence in Renal Research Award, American Physiological Society 2000

Caroline Tums Professional Opportunity Award, American Physiological Society 2000

Pablo Ortiz, Ph.D.

Young Investigator Award, Inter-American Society of Hypertension 2003

Research Recognition Award, American Physiological Society 2004

Marisela Varela, M.D.

First Place Henry Ford Hospital Resident Research Forum 2003

First Place Henry Ford Hospital Resident Research Forum 2004

Marcela Herrera, M.S.

Caroline Tums Professional Opportunity Award, American Physiological Society 2004

Merck Young Investigator Award, Council for High Blood Pressure Research of the American Heart Association 2004

Excellence in Renal Research Student Award, American Physiological Society 2005

Marcela Herrera, Ph.D.

New Investigator Award, Council on the Kidney in Cardiovascular Diseases of the American Heart Association, 2006.

Excellence in Renal Research Postdoctoral Award, American Physiological Society 2006

American Physiological Society/National Institute of Diabetes, Digestive and Kidney Diseases Minority Travel Award 2007

Epithelial Group Travel Award, American Physiological Society 2008

Research Recognition Award, American Physiological Society 2008

American Physiological Society/National Institute of Diabetes, Digestive and Kidney Diseases Minority Travel Award 2010

Guillermo Silva-Laciar, M.S.

Merck New Investigator Award, Council for High Blood Pressure Research 2005

Caroline Tums Professional Opportunity Award, American Physiological Society 2006

Young Investigator Award, Society for Experimental Biology and Medicine, 2008

Renal Research Recognition Award, American Physiological Society 2010

Pablo Cabral, M.D.

Caroline Tums Professional Opportunity Award, American Physiological Society 2010

Excellence in Renal Research Postdoctoral Award, American Physiological Society 2010

Vanesa Ramseyer, M.S.

Predocctoral Research Recognition Award Water and Electrolyte Section, American Physiological Society 2011

5. Course Development

Wayne State University, Department of Physiology, Departmental Graduate Committee (admissions, qualifying exams and graduate student progress review). 2006-2012

HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research Journal Club and Seminar Coordinator, 1995-2006

HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, Blood Pressure Regulation, Course Director, Spring 1997

HFHS Department of Internal Medicine Research Grand Rounds, Coordinator 2000-2004

HFHS Department of Internal Medicine, Division of Hypertension and Vascular Research, Membrane Biology Course Director, Summer 2007

J. CURRENT GRANT SUPPORT

National Institutes of Health, PO1. Project Leader, Project 1 of Program Project Grant: regulation of NOS activity in the kidney and hypertension (5 years, 4/2009-3/2014).

National Institutes of Health, RO1. Principal Investigator: Salt-sensitive hypertension: Role of renal O_2^- (4 years, 10/2011-12/2015).

National Institutes of Health, PO1. Project Leader, Project 4 of Program Project Grant: Salt-Sensitive Hypertension: Role of Thick Ascending Limb Angiotensin II (5 years, 2/2013-1/2018).

K. PUBLICATIONS

1. Original Observations in Refereed Journals

1. Garvin, J.L., M.B. Burg and M.A. Knepper. Ammonium replaces potassium in supporting sodium transport by the Na-K-ATPase of renal proximal straight tubules. *Am. J. Physiol.* 249: F785-F788, 1985.

2. Garvin, J.L., S.A. Simon, E.J. Cragoe and L.J. Mandel. Phenamil: an irreversible inhibitor of sodium channels in the toad urinary bladder. *J. Membr. Biol.* 87: 45-54, 1985.

3. Simon, S.A. and J.L. Garvin. Salt and acid studies on canine lingual epithelium. *Am. J. Physiol.* 249:

C398-C408, 1985.

4. Garvin, J.L., S.A. Simon, E.J. Cragoe and L.J. Mandel. Binding of 3H-phenamil, an irreversible amiloride analogue, to toad bladder: effects of aldosterone and vasopressin. *J. Membr. Biol.* 90: 107-113, 1986.
5. Kurtz, I., R. Star, R.S. Balaban, J.L. Garvin, and M.A. Knepper. Spontaneous luminal disequilibrium pH in S-3 proximal tubules: role in ammonia and bicarbonate transport. *J. Clin. Invest.* 78: 989-996, 1986.
6. Simon, S.A., R. Robb and J.L. Garvin. Epithelial responses of rabbit tongue and their involvement in taste transduction. *Am. J. Physiol.* 251: R598-R608, 1986.
7. Garvin, J.L., M.B. Burg and M.A. Knepper. NH_3 and NH_4^+ transport in rabbit renal proximal straight tubules. *Am. J. Physiol.* 252: F232-F239, 1987.
8. Garvin, J.L. and M.A. Knepper. Bicarbonate and ammonia transport by isolated, perfused rat proximal straight tubules. *Am. J. Physiol.* 253: F277-F281, 1987.
9. Simon, S.A., R. Robb and J.L. Garvin. Differences in epithelial responses of rabbit tongue to KCl and NaCl. *Ann. NY Acad. Sci.* 510: 619-622, 1988.
10. Garvin, J.L., M.B. Burg and M.A. Knepper. Active NH_4^+ transport by the thick ascending limb. *Am. J. Physiol.* 255: F57-F65, 1988.
11. Garvin, J.L., R. Robb and S.A. Simon. Spatial maps of salts and saccharides on dog tongue. *Am. J. Physiol.* 255: R117-R122, 1988.
12. Garvin, J.L., K.R. Spring and P.A. Santi. Mechanism of endolymph formation in the shark. *Am. J. Physiol.* 255: F711-F719, 1988.
13. Garvin, J.L. Picomole quantitation of potassium using a continuous-flow apparatus. *Kidney Int.* 36: 726-729, 1989.
14. Garvin, J.L. Inhibition of Jv by ANF in isolated, perfused rat proximal straight tubules requires angiotensin. *Am. J. Physiol.* 257: F907-F911, 1989.
15. Garvin, J.L. Angiotensin stimulates glucose and fluid absorption by rat proximal straight tubules. *J. Am. Soc. Nephrol.* 1: 272-277, 1990.
16. Garvin, J.L. Glucose absorption by isolated, perfused rat proximal straight tubules. *Am. J. Physiol.* 259: F580-F586, 1990.
17. Garvin, J.L. Angiotensin stimulates bicarbonate transport and Na^+/K^+ ATPase activity in the proximal nephron. *J. Am. Soc. Nephrol.* 1: 1146-1152, 1991.
18. Garvin, J.L., and K.G. Sanders. Endothelin inhibits fluid and bicarbonate transport in part by reducing Na^+/K^+ ATPase activity in the rat proximal straight tubule. *J. Am. Soc. Nephrol.* 2: 976-982, 1991.
19. Stoos, B.A., O.A. Carretero, R. Farhy, G. Scicli, and J.L. Garvin. Endothelium-derived relaxing factor inhibits transport and increases cGMP content in cultured mouse cortical collecting duct cells. *J. Clin. Invest.* 89: 761-765, 1992.
20. Stoos, B.A., O.A. Carretero, and J.L. Garvin. ANF and bradykinin synergistically inhibit transport in M-1 cortical collecting duct cell line. *Am. J. Physiol.* 263: F1-F6, 1992.
21. Garvin, J.L., and K.R. Spring. Regulation of apical membrane ion transport in *Necturus* gallbladder. *Am. J. Physiol.* 263: C187-C193, 1992.
22. Garvin, J.L. ANF inhibits norepinephrine-stimulated fluid absorption in rat proximal straight tubules. *Am. J. Physiol.* 263: F581-F585, 1992.
23. Garvin, J.L. A simple method to determine millimolar concentrations of sodium in nanoliter samples. *Kidney Int.* 44: 875-880, 1993.
24. Juncos, L.A., S. Ito, O.A. Carretero, and J.L. Garvin. Removal of endothelium-dependent relaxation by antibody and complement in afferent arterioles. *Hypertension* 23: I-54 - I-59, 1994.
25. Stoos, B.A., O.A. Carretero, and J.L. Garvin. Endothelial-derived nitric oxide inhibits sodium transport by affecting apical membrane channels in cultured collecting duct cells. *J. Am. Soc. Nephrol.* 4: 1855-1860, 1994.
26. Garcia, N.H., and J.L. Garvin. Endothelin's biphasic effect on fluid absorption in the proximal straight tubule and its inhibitory cascade. *J. Clin. Invest.* 93: 2572-2577, 1994.
27. Garcia, N.H., and J.L. Garvin. Angiotensin 1-7 has a biphasic effect on fluid absorption in the proximal straight tubule. *J. Am. Soc. Nephrol.* 5: 1133-1138, 1994.
28. Garcia, N.H., and J.L. Garvin. ANF and angiotensin II interact *via* kinases in the proximal straight tubule. *Am. J. Physiol.* 268: F730-F735, 1995.
29. Juncos, L.A., J. Garvin, O.A. Carretero, and S. Ito. Flow modulates myogenic responses in isolated

- microperfused rabbit afferent arterioles via endothelium-derived nitric oxide. *J. Clin. Invest.* 95: 2741-2748, 1995.
30. Stoos, B.A., N.H. Garcia, and J.L. Garvin. Nitric oxide inhibits sodium reabsorption in the isolated perfused cortical collecting duct. *J. Am. Soc. Nephrol.* 6: 89-94, 1995.
31. Garcia, N.H., S.I. Pomposiello, and J.L. Garvin. Nitric oxide inhibits ADH-stimulated osmotic water permeability in cortical collecting ducts. *Am. J. Physiol.* 270: F206-F210, 1996.
32. Juncos, L.A., Y. Ren, S. Arima, J. Garvin, O.A. Carretero, and S. Ito. Angiotensin II action in isolated microperfused rabbit afferent arterioles is modulated by flow. *Kidney Int.* 49: 374-381, 1996.
33. Garcia, N.H., B.A. Stoos, O.A. Carretero, and J.L. Garvin. Mechanism of the nitric oxide-induced blockade of collecting duct water permeability. *Hypertension* 27: 679-683, 1996.
34. Stoos, B.A., and J.L. Garvin. Vectorial efflux of cGMP and its dependence on sodium in the cortical collecting duct. *Am. J. Physiol.* 271: R1676-R1681, 1996.
35. Stoos, B.A., and J.L. Garvin. Effect of efflux of guanosine 3',5' cyclic monophosphate (cGMP) on the regulation of intracellular levels of cGMP in the inner medullary collecting duct. *Biochem. Pharmacol.* 53: 631-636, 1997.
36. Stoos, B.A., and J.L. Garvin. Actions of nitric oxide on renal epithelial transport. *Clin. Exp. Physiol. Pharmacol.* 24: 591-594, 1997.
37. Garvin, J.L., and W.H. Beierwaltes. Response of proximal tubules to angiotensin II changes during maturation. *Hypertension* 31: 415-420, 1998.
38. Yu, H., O.A. Carretero, L.A. Juncos, and J.L. Garvin. Biphasic effect of bradykinin on rabbit afferent arterioles. *Hypertension* 32: 287-292, 1998.
39. Plato, C.F., B.A. Stoos, D. Wang, and J.L. Garvin. Endogenous nitric oxide inhibits chloride transport in the thick ascending limb. *Am. J. Physiol.* 276: F159-F163, 1999.
40. Packer, R.K., and J.L. Garvin. Seasonal differences in activity of perch (*Perca flavescens*) Na⁺/K⁺-ATPase. *Comp. Biochem. Physiol.* 120: 777-783, 1998.
41. Plato, C.F., and J.L. Garvin. Nitric oxide, endothelin and nephron transport: potential interactions. *Clin. Exp. Pharmacol. Physiol.* 26: 262-268, 1999.
42. Garcia, N.H., C.F. Plato, and J.L. Garvin. Fluorescent determination of chloride in nanoliter samples. *Kidney Int.* 55: 321-325, 1999.
43. Asano, K., P. Cortes, J.L. Garvin, B.L. Riser, A. Rodríguez-Barbero, B. Szamosfalvi, and J. Yee. Characterization of the mesangial cell type 2 sulfonyleurea receptor. *Kidney Int.* 55: 2289-2298, 1999.
44. Garvin, J.L., and N.J. Hong. Nitric oxide inhibits sodium/hydrogen exchange activity in the thick ascending limb. *Am. J. Physiol.* 277: F377-F382, 1999.
45. García, N.H., C.F. Plato, B.A. Stoos, and J.L. Garvin. Nitric oxide-induced inhibition of transport by thick ascending limbs from Dahl salt-sensitive rats. *Hypertension* 34: 508-513, 1999.
46. Plato, C.F., E.G. Shesely, and J.L. Garvin. eNOS mediates L-arginine-induced inhibition of thick ascending limb chloride flux. *Hypertension* 35: 319-323, 2000.
47. Plato, C.F., D.M. Pollock, and J.L. Garvin. Endothelin inhibits thick ascending limb chloride flux via ET_B receptor-mediated NO release. *Am. J. Physiol. Renal Physiol.* 279: F326-F333, 2000.
48. Ortiz, P., and J.L. Garvin. Autocrine effects of nitric oxide on HCO₃⁻ transport by rat thick ascending limb. *Kidney Int.* 58: 2069-2074, 2000.
49. Ren, Y., J.L. Garvin, and O.A. Carretero. Role of macula densa nitric oxide and cGMP in the regulation of tubuloglomerular feedback. *Kidney Int.* 58: 2053-2060, 2000.
50. Ren, Y., J.L. Garvin, and O.A. Carretero. Efferent arteriole tubuloglomerular feedback in the renal nephron. *Kidney Int.* 59: 222-229, 2001.
51. Ortiz, P., and J.L. Garvin. NO inhibits NaCl absorption by rat thick ascending limb through activation of cGMP-stimulated phosphodiesterase. *Hypertension* 37: 467-471, 2001.
52. Boesch, D.M., and J.L. Garvin. Age-dependent activation of PKC isoforms by angiotensin II in the proximal nephron. *Am. J. Physiol. Regulatory Integrative Comp. Physiol.* 281: R861-R867, 2001.
53. Plato, C.F. and J.L. Garvin. α₂-Adrenergic-mediated tubular NO production inhibits thick ascending limb chloride absorption. *Am. J. Physiol. Renal Physiol.* 281: F679-F686, 2001.
54. Ortiz, P.A., N.J. Hong, and J.L. Garvin. NO decreases thick ascending limb chloride absorption by reducing Na⁺-K⁺-2Cl⁻ cotransporter activity. *Am. J. Physiol. Renal Physiol.* 281: F819-F825, 2001.
55. Ren, Y., J.L. Garvin, S. Ito, and O.A. Carretero. Role of neuronal nitric oxide synthase in the macula densa. *Kidney Int.* 60: 1676-1683, 2001.

56. Wang, H., J.L. Garvin, and O.A. Carretero. Angiotensin II enhances tubuloglomerular feedback via luminal AT₁ receptors on the macula densa. *Kidney Intl.*60: 1851-1857, 2001.
57. Ren, Y., H. Yu, H. Wang, O.A. Carretero, and J.L. Garvin. Nystatin and valinomycin induce tubuloglomerular feedback. *Am. J. Physiol. Renal Physiol.*281: F1101-F1108, 2001.
58. Ren, Y., O.A. Carretero, and J.L. Garvin. Mechanism by which superoxide potentiates tubuloglomerular feedback. *Hypertension* 39: 624-628, 2002.
59. Ortiz, P.A., and J.L. Garvin. Interaction of O₂⁻ and NO in the thick ascending limb. *Hypertension* 39: 591-596, 2002.
60. Wang, H., O.A. Carretero, and J.L. Garvin. Nitric oxide produced by THAL nitric oxide synthase inhibits TGF. *Hypertension* 39:662-666, 2002.
61. Ren, Y., J.L. Garvin, and O.A. Carretero. Vasodilator action of angiotensin 1-7 on isolated rabbit afferent arterioles. *Hypertension* 39: 799-802, 2002.
62. Ren, Y., O.A. Carretero, and J.L. Garvin. Role of mesangial cells and gap junctions in tubuloglomerular feedback. *Kidney Int.*, 62: 525-531, 2002.
63. Ren, Y., J. Garvin, and O.A. Carretero. Mechanism involved in bradykinin-induced efferent arteriole dilatation. *Kidney Int.*, 62: 544-549, 2002.
64. Ortiz, P.A., and J.L. Garvin. Superoxide stimulates NaCl absorption by the thick ascending limb. *Am. J. Physiol. Renal Physiol.*, 283: F957-F962, 2002.
65. Rey, F.E., X.C. Li, O.A. Carretero, J.L. Garvin, and P.J. Pagano. Perivascular superoxide anion contributes to impairment of endothelium-dependent relaxation: Role of gp91^{phox}. *Circulation*, 106: 2497-2502, 2002.
66. Ortiz, P., B.A. Stoos, N.J. Hong, D.M. Boesch, C.F. Plato, and J.L. Garvin. High-salt diet increases sensitivity to NO and eNOS expression but not NO production in THALs. *Hypertension* 41: 682-687, 2003.
67. Wang, H., O.A. Carretero, and J.L. Garvin. Inhibition of apical Na⁺/H⁺ exchangers on the macula densa cells augments tubuloglomerular feedback. *Hypertension* 41: 688-691, 2003.
68. Ortiz, P.A., N.J. Hong, C.F. Plato, M. Varela, and J.L. Garvin. An in vivo method for adenovirus-mediated transduction of thick ascending limbs. *Kidney Int.* 63: 1141-1149, 2003.
69. Ren, Y., J.L. Garvin, J.R. Falck, K.V. Renduchintala, and O.A. Carretero. Glomerular autacoids stimulated by bradykinin regulate efferent arteriole tone. *Kidney Int.* 63: 987-993, 2003.
70. Ren, Y., R. Liu, O.A. Carretero, and J.L. Garvin. Increased intracellular Ca⁺⁺ in the macula densa regulates tubuloglomerular feedback. *Kidney Int.* 64:1348-1355, 2003.
71. Ortiz, P.A., N.J. Hong, D. Wang, and J.L. Garvin. Gene transfer of eNOS to the thick ascending limb of eNOS-KO mice restores the effects of L-arginine on NaCl absorption. *Hypertension* 42:674-679, 2003.
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3. Books, Book Chapters and Editorials

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8. Pollock D, Garvin JL. editors Comprehensive Renal Physiology, in press.

L. INVITED NATIONAL and INTERNATIONAL SOCIETY LECTURES

1. Kinins and EDRF in the regulation of ionic transport in collecting duct epithelial cells. Gordon Conference on Kinins and Kallikreins, Ventura, CA, February, 1993.
2. Regulation of epithelial transport by nitric oxide. 33rd International Congress of Physiological Sciences, St. Petersburg, Russia, July 1997.
3. Assessment of renal tubular function in hypertension. American Heart Association Hypertension Summer School, Castine, ME, August 1997.
4. Potential interactions between NO and endothelin in regulating tubular transport. Experimental Biology '98, San Francisco, CA, April 1998.
5. The effects of nitric oxide on the kidney. The Shannon Legacy: Renal Research at the National Heart, Lung and Blood Institute, May 1998.
6. NO and tubular transport. FASEB Summer Conference, Saxtons River, VT, June 1998.
7. Nitric oxide's actions on renal tubules. Inter-American Society for Hypertension, Buenos Aires, Argentina, May 1999.
8. Intrarenal transport and vasoactive substances in hypertension. Inter-American Society for Hypertension, Santiago, Chile, April 2001.
9. Regulation of efferent arteriole tone by the glomerulus. FASEB Summer Research Conference, Saxtons River, VT, June 2001.
10. Regulation of nephron transport by superoxide. Experimental Biology 2003, San Diego, CA, April, 2003.
11. Cellular mechanisms mediating regulation of TGF activity. FASEB Summer Research Conference, Pine Mountain, GA, June, 2004.

12. Lewis K. Dahl Lecture: Renal nitric oxide, American Heart Association Scientific Sessions, Dallas, TX, November, 2005.
13. Transport of NO across cell membranes. Fourth International Conference Biology, Chemistry and Therapeutic Applications of Nitric Oxide, Monterey, CA, June 2006.
14. NO, superoxide and Na transport. American Society of Nephrology Annual Meeting, San Francisco, CA, October, 2007.
15. Luminal flow: a physiological regulator of NO and superoxide production in the kidney. Argentine Society of Arterial Hypertension Annual Meeting, Buenos Aires, Argentina, April 2008.
16. Superoxide and thick ascending limb NaCl transport in hypertension. Argentine Society of Arterial Hypertension Annual Meeting, Buenos Aires, Argentina, April 2008.
17. Luminal flow: a physiological regulator of NO and superoxide production in the kidney. Jackson Cardiovascular Renal Meeting, Jackson, MS, October 2008.
18. Luminal flow regulates NO and superoxide production in the thick ascending limb. American Society of Nephrology Annual Meeting, San Diego, CA, November 2009.
19. Chair, FASEB Summer Research Conference Renal Hemodynamics: Mechanisms to understand disease, Saxtons River, VT, June 2010.
20. Carl W. Gottschalk Award and Lecture, Experimental Biology '11, Washington, D.C., April 2011.
21. Flow, NO and superoxide in the thick ascending limb. Argentine Society of Arterial Hypertension Annual Meeting, Buenos Aires, Argentina, April 2012.
22. Tubular fluid flow-mediated regulation of NO and CO in the nephron. American Society of Nephrology Annual Meeting, Atlanta, GA *To be given November 2013.*