



Assistant Professor of Medicine University of Louisville, Division of Nephrology Louisville, Kentucky	1996-2001
Associate Professor of Medicine Medical University of South Carolina, Division of Nephrology Charleston, South Carolina	2001-present
Section Chief-Nephrology, Director of Dialysis Ralph H. Johnson VA Medical Center Charleston, South Carolina	2002-present

**Administrative Responsibilities**

Director, Nephrology Training Program, University of Louisville	2000-2001
Director Nephrology Section, Ralph H Johnson VA Med Center	2002-present
Director of Dialysis, Ralph H Johnson VA Med Center	2002-present
Secretary-Treasurer, Southern Section AFMR	2004-2007
Chair, Southern Section AFMR	2008-2009
Co-Chair VA Research and Development Committee	2008-2011
MUSC MSTP steering committee	2006-present

**Medical Licensure**

South Carolina	License Number 22786
Kentucky	Inactive
North Carolina	Inactive

**Board Certification**

American Board of Internal Medicine	1993-2003
Nephrology	1998-2018

**Awards and Honors**

Eagle Scout	1977
National Merit Scholar	1978
Alpha Omega Alpha, Medical Honor Society	1994
Henry Christian Award for Excellence in Research (AFMR)	1995
Trainee Investigator Award, Clinical Research Meeting	1995
Junior Physician-Investigator Award for Excellence in Research (AFMR)	2000
Carl W. Gottschalk Research Scholar of the American Society of Nephrology	2000

**Current Grant Support**

<b>N01-HV-28181 NIH/NHLBI</b> (PI D. Knapp) "Cardiovascular Proteomics Center" Role: Project leader for 2D gel technology development, Director of 2D gel core.	9/30/2002-9/29/2009	20% Effort
<b>VA Merit Grant Veterans Administration</b> (PI J. Arthur) "Prognostic Biomarkers in Diabetes" Role: Principal Investigator	4/1/08-3/31/12	25% VA Effort
<b>R01DK080234 NIH/NIDDK</b> (PI J Arthur) "Prognostic markers in postoperative acute kidney injury" Role: Principal Investigator	6/1/08-5/31/12	25% Effort
<b>R01AR043727 NIH/NIAMS</b> (PI M. Petri) Hopkins Lupus Cohort Role: Principal Investigator of subcontract for proteomic analysis	05/01/2008 03/31/13	3% Effort

**VA Career Development Award** (PI Janech) 10% VA Effort  
"Non-invasive Glomerular Disease Biomarkers." 6/1/08-5/30/11  
Role: Mentor

**Kureha**, (PI R. Sturdivant)  
"A randomized, double-blind, placebo controlled study of AST-120 (Kremezin) for prevention of progression in moderate to severe chronic kidney disease." 12/1/07-12/30/2010  
Role: Co-investigator

**Novartis**, (PI JC. Velez)  
"ALTITUDE: Aliskiren trial in type 2 diabetes using cardio-renal disease endpoints."  
Role: Co-Investigator 1/1/2009-12/1/2010

### Pending Grant Support

**CTSA Award NCR** (PI K Brady) 10% Effort  
South Carolina Clinical & Translational Research Institute  
Role: Director of the Center for Biomarker Discovery 7/1/2009-6/30/2014

### Previous Grant Support

**R01 AR045476 NIH/NIAMS** (PI G. Gilkeson)  
"Nitric oxide in systemic lupus erythematosus". 03/01/2003-11/29/2008  
Role: Collaborator

**Astellas Pharma US, Inc.** (PI Arthur)  
"A phase IIIb, randomized, double-blind, parallel group, multi-center study to assess the efficacy and safety of multiple 30 minute infusions of conivaptan in subjects with euvolemic or hypervolemic hyponatremia."  
Role: Principal Investigator. 7/07-12/08

**Dialysis Clinics, Inc** (PI Arthur)  
"Establishment of a high throughput proteomics facility." 12/1/01-11/30/05  
Role in Project: Principal Investigator

**R01 DK54924 NIH/NIDDK** (PI Arthur)  
"Regulation of renal calcium transport by calcium." 1/15/99-12/30/03  
Role in Project: Principal Investigator

**American Society of Nephrology** "Identification of novel proteins that regulate magnesium reabsorption in rat renal cortex: a proteomic approach," 7/1/00-6/30/02  
Role in Project: Principal Investigator

**Jewish Hospital Foundation**,  
"Development of a Bioartificial Renal Assist Device," 1/1/99-12/31/00,  
Role in Project: Principal Investigator

**American Heart Association Scientist Development Grant.** "Characterization of calcium-sensing receptor function in renal distal tubule." 1/1/98-12/31/01  
Role in Project: Principal Investigator

**National Kidney Foundation Young Investigator Grant**  
"Characterization of MAP kinase activation by the calcium-sensing receptor." 7/1/97-6/30/99  
Role in Project: Principal Investigator

**Astellas Pharma US, Inc.** (PI Arthur)  
"A phase 4, randomized, parallel group, multi-center study to assess the safety and efficacy of multiple dosing regimens of iv conivaptan in subjects with euvolemic hyponatremia." 2/07-8/08  
Role: Principal Investigator.

**P20 RR 17696 NIH/NCRR** (PI S. London)  
South Carolina COBRE for Oral Health  
Role: Mentor

09/30/2002 – 07/31/2008

### **Patents**

Provisional Patent Application "Markers for acute renal failure". Filed February 17, 2005.  
Provisional Patent Application, "Urine biomarkers in lupus nephritis". Filed September 21, 2005.  
Provisional Patent Application, "Urine biomarkers for glomerular disease" Filed March 9, 2006.  
Provisional Patent Application, "Urine biomarkers for vascular disease." Filed February 9, 2006.  
Provisional Patent Application, "A novel approach to the depletion of abundant proteins from tissue, plasma and urine" Filed July 17, 2006

### **Publications**

1. Bonham, A.C., D.D. Gutterman, **J.M. Arthur**, G.F. Gebhart, M.L. Marcus and M.J. Brody. Electrical stimulation in perifornical lateral hypothalamus decreases coronary blood flow in cats. *Am. J. Physiol.* 252: H474-H484, 1987.
2. Bonham, A.C., D.D. Gutterman, **J.M. Arthur**, M.L. Marcus, G.F. Gebhart and M.J. Brody. Neurogenic regulation of coronary blood flow: Evidence for a central nervous system pathway. *Circ. Res.* 61 (suppl II): II-42-II-46, 1988.
3. Gutterman, D.D., A.C. Bonham, **J.M. Arthur**, G.F. Gebhart, M.L. Marcus and M.J. Brody. Characterization of coronary vasoconstrictor site in medullary reticular formation. *Am. J. Physiol.* 256: H1218-H1227, 1989.
4. **Arthur, J.M.**, A.C. Bonham, D.D. Gutterman, G.F. Gebhart, M.L. Marcus and M.J. Brody. Coronary vasoconstriction during stimulation in the hypothalamic defense region. *Am. J. Physiol.* 260:R335-R345, 1991.
5. Gutterman, D.D., **J.M. Arthur**, P.D. Pardubsky, G.F. Gebhart, M.L. Marcus and M.J. Brody. Role of medullary lateral reticular formation in baroreflex coronary vasoconstriction. *Brain Res.* 557:202-209, 1991.
6. Lee, J.G., M.E. McLeod, W.C. Meyers, **J.M. Arthur** and G.R. Corey. Successful laparoscopic management of perforated gallbladder associated with Salmonella javiana infection. *N.C. Med. J.* 53:594-595, 1992.
7. **Arthur, J.M.**, S.J. Casañas and J.R. Raymond. Partial agonist properties of rauwolscine and yohimbine for the inhibition of adenylyl cyclase by recombinant 5-HT<sub>1A</sub> receptors. *Biochem. Pharmacol.* 45:2337-2341, 1993.
8. Lieberman, E.B., **J. Arthur**, C. Steenbergen and T.M. Bashore. Antemortem diagnosis of an endomyocardial breast cancer metastasis by transvenous endomyocardial biopsy. *Chest* 103:1280-1281, 1993.
9. Yohay, D.A., J. Zhang, K.M. Thrailkill, **J.M. Arthur** and L.D. Quarles. Role of serum in the developmental expression of alkaline phosphatase in MC3T3-E1 osteoblasts. *J. Cell. Physiol.*, 158:467-475, 1994.
10. Mulheron, J.G., S.J. Casanas, **J.M. Arthur**, M.N. Garnovskaya, T.W. Gettys and J.R. Raymond. Human 5-HT<sub>1A</sub> receptors activate endogenous G<sub>o</sub>-like G proteins when heterologously expressed in insect cells. *J. Biol. Chem.* 269:12954-12962, 1994.

11. Raymond, J.R\*, **J.M. Arthur\***, C.L. Olsen, T.W. Gettys and R.M. Mortensen.  $\beta_{2A}$  Adrenergic receptors inhibit cAMP accumulation in embryonic stem cells which lack  $G_{i\alpha 2}$ . *J. Biol. Chem.* 269:13073-13075, 1994.  
\*These authors contributed equally.
12. Quarles, L.D., J.P. Middleton, J. Zhang, **J.M. Arthur** and J.R. Raymond. Aluminum-induced DNA synthesis in MC3T3-E1 osteoblasts: mediation by G-protein and protein kinase C dependent pathways. *J. Cell. Biochem.* 56:106-117, 1994.
13. Raymond, J.R., **J.M. Arthur** and R. Mannon. Practical management of hypertensive urgencies and emergencies. *N.C. Med. J.* 55:295-303, 1994.
14. Raymond, J.R., **J.M. Arthur** and E. Kovalik. Strategies for preventing diabetic nephropathy. *N. Carolina Med. J.* 55:362-369, 1994
15. Garnovskaya, M.N., C.G. Nebigil., **J.M. Arthur**, R.F. Spurney and J.R. Raymond. 5-HT<sub>2A</sub> receptors expressed in rat mesangial cells inhibit cAMP accumulation. *Mol. Pharmacol.* 48:230-237, 1995.
16. **Arthur, J.M.**, G.P. Collinsworth, L.D. Quarles, T.W. Gettys and J.R. Raymond. Specific coupling of a cation-sensing receptor to G protein  $\alpha$ -subunits in MDCK cells. *Am. J. Physiol.* 273:F129-F135, 1997.
17. Rane, M.J., S.L. Carrithers, **J.M. Arthur**, J.B. Klein and K.R. McLeish. Formyl peptide receptors are coupled to multiple mitogen-activated protein kinase cascades by distinct signal transduction pathways. Role in activation of NADPH oxidase. *J. Immunol.* 159:5070-5078, 1997.
18. Rane, M.J, **J.M. Arthur**, E.R. Prossnitz and K.R. McLeish Activation of mitogen-activated protein kinases by formyl peptide receptors is regulated by the cytoplasmic tail. *J. Biol. Chem.* 273:20916-20923, 1998.
19. **Arthur, J.M.**, G.P. Collinsworth, T.W. Gettys and J.R. Raymond. Agonist-induced translocation of  $G_{q/11\alpha}$  immunoreactivity directly from plasma membrane in MDCK cells. *Am. J. Physiol.* 276:F528-F534, 1999
20. Wenzel-Seifert, K., **Arthur, J.M.**, Liu, H. and R. Seifert. Quantitative analysis of formyl peptide receptor coupling to  $G_{i\alpha 1}$ ,  $G_{i\alpha 2}$ , and  $G_{i\alpha 3}$ . *J. Biol. Chem.* 274:33259-33266, 1999.
21. Rane, M.J, E.R. Prossnitz, **J.M. Arthur**, R. A. Ward and K.R. McLeish. Deficient homologous desensitization of formyl peptide receptors stably expressed in undifferentiated HL-60 cells. *Biochem Pharmacol.* 60:179-187, 2000.
22. **Arthur, J.M.** and S. Shamim. Interactions of cyclosporine and FK506 with diuretics in transplant patients. *Kidney Int.* 58:325-330, 2000.
23. **Arthur, J.M.**, M.S. Lawrence, C.R. Payne, M.J. Rane and K.R. McLeish. The calcium-sensing receptor stimulates JNK in MDCK cells. *Biochem. Biophys. Res. Com.* 275: 538-541, 2000.
24. **Arthur, J.M.** The MDCK cell line is made up of populations of cells with diverse resistive and transport properties. *Tissue & Cell* 32:446-450, 2000.
25. Blankenship, K.A., J.J. Williams, M.S. Lawrence, K.R. McLeish, W.L. Dean and **J.M Arthur**. The calcium-sensing receptor inhibits calcium absorption in MDCK cells by inhibition of PMCA. *Am. J. Physiol.*280:F815-F822, 2001.

26. **Arthur, J.M.**, V. Thongboonkerd, J.A. Scherzer, J. Cai, W.M. Pierce and J.B. Klein. Differential expression of proteins in renal cortex and medulla: A proteomic approach. *Kidney Int.* 62:1314-21, 2002
27. Thongboonkerd, V., K.R. McLeish, **J.M. Arthur**, and J.B. Klein Proteomic analysis of normal human urinary proteins isolated by acetone precipitation or ultracentrifugation. *Kidney Int.* 62:1461-9, 2002
28. Thongboonkerd, V., E Gozal, L. Sachleben, Jr., **J.M. Arthur**, W.M. Pierce, J. Cai, J. Chao, D. Gozal, and J.B. Klein Proteomic analysis reveals differential regulation of renal kallikrein system during episodic and sustained hypoxia.. *J. Biol. Chem.* 277:34708-34716, 2002
29. Seifert, R., Wenzel-Seifert, K., Jose, P.O., **Arthur, J.M.** and B.K. Kobilka. Efficient adenylyl cyclase activation by a beta2-adrenoceptor-G(i)alpha2 fusion protein. *Biochem. Biophys. Res. Com* 298:824-828 2002.
30. **Arthur, J.M.** Proteomics. *Current Opinions in Nephrology and Hypertension.* 12:423-430, 2003.
31. Thongboonkerd, V, J.B. Klein., Pierce, W.M, Jevans, A.W. and **J.M. Arthur** Sodium Loading Changes Urinary Protein Excretion: A Proteomic Analysis, *Am. J. Physiol.*, 284: F1155-F1163, 2003
32. Thongboonkerd, V., J.B. Klein and **J.M. Arthur**. Proteomic Identification of a large complement of rat urinary proteins. *Nephron Exp. Nephrol.* 95:e69-e78, 2003.
33. Sturdivant, R.L. and **J.M. Arthur**,. Eosinophilic Peritonitis and Atopy: A Case Report and Review of the Literature. *Dialysis & Transplantation.* 33: 97-99, 2004.
34. Stanislaus, R. Jiang. L.H., Swartz, M., **Arthur, J.M.** and J. Almeida. An XML standard for the dissemination of annotated 2D gel electrophoresis data complemented with mass spectrometry. *BMC Bioinformatics* 5:9, 2004
35. D.M. Lefler, D.G. Pafford, N. Black, J.R. Raymond and **J.M. Arthur** Identification of proteins in slow continuous ultrafiltrate by reverse phase chromatography and proteomics. *J. Proteome Res.* 3:1254, 2004.
36. J.S Almeida, R. Stanislaus, E. Krug, **J.M. Arthur**. Normalization and analysis of residual variation in 2D Gel Electrophoresis for quantitative differential proteomics. *Proteomics*, 5:1242-1249, 2005.
37. Stanislaus R, C Chen, J Franklin, **J M. Arthur**, JS Almeida. AGML central: web based gel proteomic infrastructure. *Bioinformatics*, 21:1754-1757, 2005.
38. Oates, J.C., S. Varghese, A.M. Bland, T.P. Taylor, S.E. Self, R. Stanislaus, J.S. Almeida and **J.M. Arthur**. Prediction of urinary protein markers in lupus nephritis. *Kidney Int.* 68:2588-2592, 2005.
39. Bland, A.M., L.R. D'Eugenio, M.A. Dugan, M.G. Janech, J.S. Almeida, M. Zile, and **J.M. Arthur**. Comparison of Variability Associated with Sample Preparation in Two-Dimensional Gel Electrophoresis of Cardiac Tissue. *J. Biomol. Tech.* 17:195-199, 2006.
40. Almeida, J.S., J.C. Oates, and **J.M. Arthur**. How to Evaluate the Quality of Predictive Models for Classification. *Kidney Int.* 70:232, 2006.
41. Janech, M.G., Raymond, J.R., and **J.M. Arthur**. Proteomics in renal research. *Am. J. Physiol. Renal Physiol.* 292:F501-F512, 2007.

42. Varghese, S.A., T.B. Powell, M.N. Budisavljevic, J.C. Oates, J.R. Raymond, J.S. Almeida and **J.M. Arthur**. Urine biomarkers predict the cause of glomerular diseases. *J. Am. Soc. Neph.* 18:913-922, 2007.
43. Velez, JCQ, AM Bland, **JM Arthur**, JR Raymond and MG. Janech. Characterization of renin-angiotensin system enzyme activities in cultured mouse podocytes. *Am. J. Physiol. Renal Physiol.* 293:F398-407, 2007.
44. Stanislaus, R., **J.M. Arthur**, B. Rajagopalan, R. Moerschell, B. McGlothlen and J.S. Almeida. An open-source representation for 2-DE-centric proteomics and support infrastructure for data storage and analysis. *BMC Bioinformatics*, 9:4, 2008
45. **Arthur, J.M.**, M.G. Janech, S.A. Varghese and T.B Powell. Diagnostic and prognostic biomarkers in acute renal failure. *Contrib. Nephrol.* 160:53-64, 2008.
46. Van Nostrand, J., **J.M. Arthur**, L.E. Kilpatrick, B. Neely, P.M. Bertsch and P.J. Morris. Changes in protein expression in *Burkholderia vietnamiensis* PR1<sub>301</sub> at pH 5 and 7 with and without nickel. *Microbiology* 154, 3813–3824, 2008.
47. Nazeer, K., M.G. Janech, J. Lin, K.J Ryan, **J.M. Arthur**, and M.N. Budisavljevic. Changes in protein profiles during course of experimental glomerulonephritis *Am J Physiol Renal Physiol* 296:F186, 2009
48. Velez, JC, KJ Ryan, CE Harbeson, AM Bland, MN Budisavljevic, **JM Arthur**, WR Fitzgibbon, JR Raymond and MJ Janech. Angiotensin-I is largely converted to angiotensin-(1-7) and angiotensin (2-10) by isolated rat glomeruli. *Hypertension*. In Press. 2009

#### **Book Chapters**

49. Gutterman, D.D., Bonham, A.C., **Arthur, J.M.**, Gebhart, G.F., Marcus, M.L. and Brody, M.J. Central neural regulation of coronary blood flow. In: Brain Peptides and Catecholamines in Cardiovascular Regulation, pp. 125-135, Raven Press, N.Y., 1987.
50. Gutterman, D.D., Bonham, A.C., Stuhlmuller, J.E., **Arthur, J.M.**, Gebhart, G.F., Marcus, M.L. and Brody, M.J. Central Neural Aspects of Coronary Flow Regulation. In: Analysis and Simulation of Cardiac System - Ischemia, S. Sideman and R. Beyar (Eds.), Chapter 19, pp. 249-264, CRC Press, Boca Raton, FL., 1989.
51. Raymond, J.R., Turner, J., Ayiku, H., Lefler, D., Gelasco, A., **Arthur, J.M.** Use of mass spectrometry to identify receptor-interacting proteins. In: G Protein-coupled Receptor Interacting Proteins. (George, S., O'Dowd, B, and Sibley, D., Eds.). Wiley Press, Indianapolis. 2005.
52. Raymond, J.R., Turner, J., Gelasco, A, Ayiku, H., Coaxum, S., **Arthur, J.M** and Garnovskaya, M.N. 5-HT Receptor Signal Transduction Pathways. In:The Serotonin Receptors: From Molecular Pharmacology to Human Therapeutics. Ed B.L. Roth, pp. 143-206. The Humana Press, Inc., Totowa, NJ, 2006.
53. **Arthur, J.M.** and Powell T.B. Urinary Biomarkers in Diabetes and Other Glomerular Diseases. In: Clinical Proteomics: From Diagnosis to Therapy. Ed J. Van Eyk and M. Dunn, pp. 297-322. Wiley-VCH, Weinheim, 2008.
54. **Arthur, J.M.**, M.N. Budisavljevic, S.A. Varghese and T.B. Powell. Proteomics and Acute Renal Failure. In: Critical Care Nephrology. Ed C. Ronco, R. Bellomo, and J. Kellum. In Press 2009.