

CURRICULUM VITAE

NAME: EMMANUEL MODESTO AWUMEY

ADDRESS

Home: 505 Ashburn Lane, Durham, NC 27703.
Phone: (919) 596-0642.
E-mail: eawumey1@nc.rr.com

Work: North Carolina Central University
Julius L. Chambers Biomedical/Biotechnology Research Institute
and Department of Biological & Biomedical Sciences
700 George Street, Durham, NC 27707.
Phone: (919) 530-7644.
Fax: (919) 530-7998.
E-mail: eawumey@ncsu.edu

EDUCATION

- 1993 Ph.D., University of Alberta, Edmonton Canada. Field of Study: Pharmacology.
Thesis: Thyroid status and the modulation of myocardial contractility by dietary fatty acids.
- 1989 M.Sc., Pharmacology, University of Alberta, Edmonton, Canada.
Thesis: Pyrimidine nucleoside transport in isolated rat hepatocytes.
- 1981 M.Sc., Biochemistry, University of Ghana, Legon, Ghana.
Thesis: The effects of *Desmodium adscendens*, an anti-asthmatic plant, on anaphylaxis.
- 1977 B.Sc. (Honours), Biochemistry (Chemistry minor), University of Ghana, Legon, Ghana.

RESEARCH INTEREST

Ca²⁺-sensing Receptor Signaling Mechanisms in Salt-sensitive Hypertension and Diabetes.

POSITIONS

- 2014 - Associate Professor (with Tenure), Julius L. Chambers Biomedical/Biotechnology Research Institute & Department of Biological and Biomedical Sciences, North Carolina Central University, Durham, NC.
- 2014 - Adjunct Associate Professor, Department of Physiology and Pharmacology, Wake Forest University School of medicine, Winston-Salem, NC.
- 2010 - 2014 Adjunct Assistant Professor, Department of Physiology and Pharmacology, Wake Forest University School of medicine, Winston-Salem, NC.
- 2009 - 2014 Affiliate Member, Hypertension and Vascular Research Center, Wake Forest University School of Medicine, Winston-Salem, NC.
- 2007 - 2014 Assistant Professor, Julius L. Chambers Biomedical/Biotechnology Research Institute & Dept. of Biology, North Carolina Central University, Durham, NC.
- 2000 - 2007 Research Scientist, Julius L. Chambers Biomedical/Biotechnology Research Institute, North Carolina Central University, Durham, NC.
- 1999 - 2000 Research Fellow, Thomas Jefferson University, Philadelphia, PA.
- 1997 - 1999 Research Associate. Medical College of Pennsylvania-Hahnemann University, Philadelphia, PA.
- 1994 - 1997 Postdoctoral Fellow, Medical University of South Carolina, Charleston, SC.
- 1989 - 1990 Biochemistry Technologist II, University of Alberta, Edmonton, Canada.
- 1982 - 1985 Senior Science Teacher, Anglican Grammar School, Ogun State, Nigeria

1977 - 1978 Senior Chemistry Teacher, Kadjebi Secondary School, Ghana.

AWARDS

2000 - 2003 Minority Research Supplement Award, National Heart Lung & Blood Institute (NHLBI).
Biomedical/Biotechnology Research Institute, North Carolina Central University,
Durham, NC.

1999 - 2000 National Research Service Award, Thomas Jefferson Univ., Philadelphia, PA.

1985 - 1989 Graduate Research Fellowship, University of Alberta, Edmonton, Canada.

1990 - 1993 Graduate Research Fellowship, University of Alberta, Edmonton, Canada.

SERVICE

2016 Reviewer, American Journal of Physiology
Reviewer, American Journal of Physiology Heart and Circulatory Physiology.

2014 Member, Search Committee for Director of the Biomedical/Biotechnology Research
Institute.

2014- Member, Hypertension and Microcirculation Study Section, NIH Center for Scientific
Review.

2011 - Review Editor, Frontiers in Physiology.
NIH/CSR Hypertension and Microcirculation (HM) Study Section.

2010 Reviewer, British Journal of Pharmacology;
Reviewer, American Journal of Physiology

2011 - 2014 Ad Hoc Member, Hypertension and Microcirculation Study Section, NIH Center for
Scientific Review

SOCIETY MEMBERSHIPS

2006 - American Physiological Society.
American Heart Association- Council for High Blood Pressure Research.

2005 - American Society for Pharmacology and Experimental Therapeutics.

TEACHING EXPERIENCE

2015- BIOL8800 (Advanced Physiology; Cardiovascular Section)

2009 - BIOL 1300 (Molecules & Cell Function), BIOL 4400 (Introduction to Research),

2007 - BIOG 5800 (Research in Biology), BIOG 5810 (Graduate Project), BIOG 5900 (Thesis).

2004 - BIOG 5820 (Research Rotations)

2001 - 2010 Instructor, BIOG 5401 (Physiology & Pharmacology; Endocrine Section).

2004 - 2005 Participated in the teaching of BIOL 4610 (Undergraduate Course).

2000 Participated in the teaching of BIOL 3100 (Undergraduate course).

1979 - 1981 Teaching Assistant in the Department of Biochemistry, University of Ghana.

STUDENT SUPERVISION

Graduate

2017 Acacia White, M.S. Biological and Biomedical Sciences Laboratory Rotation.

2016 Lynet Akajo, M.S. Biological and Biomedical Sciences Laboratory Rotation.

2015 Bobby Ragin, PhD Student Laboratory Rotation.

2011 - 2012 Lydia Ayanwale, M.S. Biology Student (Graduated in December, 2012).

2011 - 2012 Samora Rugumamu, M.S. Biology Student (Withdrew from program).

2011 Krisstonia Spruiell, M.S. Biology Laboratory Rotation.
Jasmin Davis, M.S. Biology Laboratory Rotation.
Sheena Nichols, M.S. Biology Laboratory Rotation.

2010 Linda Okeiyi, M.S. Biology Laboratory Rotation.
 Samora Rugumamu, M.S. Biology Laboratory Rotation.
 Stacy Nichols, M.S. Biology Laboratory Rotation.

2007 Shailendra Devkota, M.S. Biology Laboratory Rotation.

2006 - 2009 Christine Buchanan, M.S. Biology Student (Graduated December, 2009).

2005 Susan Hilderbrant, M.S. Biology Laboratory Rotation.

2004 Camilla Mills, M.S. Biology laboratory Rotation.

2004 - 2007 John Sesay, M.S. Biology Student (Graduated May, 2007).

Undergraduate

2015 James Yarborough, Health Education Student, North Carolina Central University.

2014 Dorothy Freeman, Biology Student, North Carolina Central University.

2013-2014 Morgan Poole; Non-STEM Student, North Carolina Central University.

2011 Deborah Aysheshim, Biology Student, North Carolina Central University; BBRI Summer Research Student.

2010 - 2013 Nicole Villanueva, Biology Student, North Carolina Central University.
 BBRI Research Student.

2007 - 2008 Marquita Drayton, Biology Student, North Carolina Central University.

2007 Brooke Hudson, Chemistry Student, North Carolina Central University;
 BBRI Summer Research Student.

2006 Amanda Amoateng, Xavier Univ, New Orleans, LA.
 BBRI Summer Research Student.

2003 - 2006 Chuks Oputa, Chemistry Student in the BBRI NASA Research Program.

2004 - 2005 Queenate Ibetu, Biology Student in the BBRI NASA Research Program.

2004 - 2005 David Adamolekun, Biology Student in the BBRI NASA Research Program.
 Present position: DO from West Virginia School of Osteopathic Medicine
 (May 2010).

2003 - 2004 Nene Ugoeke, Biology Student in the BBRI NASA Research Program.
 Present position: MD from UNC-Chapel Hill Medical School (May 2011).

2002 - 2003 Agustina Adamolekun, Undergraduate Biology Student in the Schering-Plough
 Research Program at JLC/BBRI, NC Central University, Durham, NC.
 Graduated with a Doctor of Pharmacy Degree from Florida A&M University
 (2007). Present position: Pharmacist, Wallgreens, Dallas, Texas.

2000 - 2001 Shariff Dunlap, Undergraduate MARC student Research Student in the
 Cardiovascular Disease Research Program, NC Central University, Durham, NC.
 Graduated with MS in Biomedical Science from John Hopkins University School of
 Medicine and MD from Moorehouse School of Medicine.

High School

2014 Brooke Summers, Vineet Galiba; Alternate Catalyst Award Winners for Outstanding
 Research, Summer Ventures in Science and Mathematics (SVSM).

2013 Griffin Haas, Hemal Patel; Catalyst Award Winners for Outstanding Research, SVSM.

2009 Eric Whitmire; SVSM.

2008 Hope Wolf; SVSM.
 Whitney Wilkins, BBRI Summer Research.

2006 Chris Carr, SVS.

2004 Tracy Ross, Neha Patel; SVSM.

2002 Audrey Reynolds, SVSM.

2001 Jessica Badger, Varsha Gadani, SVSM.

PUBLICATIONS

1. Addy ME, **Awumey EMK**. Effects of *Desmodium adscendens* on anaphylaxis. *J Ethnopharmacol*, **11**: 283-29, 1984. [PMID: 6482479]
2. **Awumey EMK**, Somayaji VV, Wiebe LI, Tyrrell DLJ, Paterson ARP. Synthesis, hepatocyte uptake and in vivo biodistribution of lactosyl-9- β -D-arabinofuranosyl adenine (lactosyl-araA), a proposed pro-drug for targeting the delivery of araA to liver. *Pharmaceut. Res. Comm.*, **4**: 59-67, 1993.
3. **Awumey EMK**, Pehowich DJ. N-3 and N-6 fatty acids modulate the inotropic response to calcium in hypothyroid rat papillary muscle. *J. Cardiovasc. Pharmacol.*, **25**: 473-480, 1995. [PMID: 7769815]
4. **Awumey EMK**, Paton DM, Pehowich DJ. Thyroid status and dietary fatty acids affect β -agonist stimulation of tension development in rat myocardium. *J. Auton. Pharmacol.*, **15**: 73-84, 1995. [PMID: 7615576]
5. Pehowich DJ, **Awumey EMK**. Influence of hypothyroid state on cardiac sarcolemmal incorporation of dietary n-6 and n-3 fatty acids. *Nutr. Res.*, **15**: 1211-1222, 1995.
6. **Awumey EM**, Hollis BW, Bell NH. Evidence that decreased production rate, and not increased metabolic clearance rate is probably responsible for low serum 25-hydroxyvitamin D in African-Americans. In: *Vitamin D: Chemistry, Biology and Clinical Applications of Steroid Hormones*. Norman AW, Bouillon R, Thomasset M, eds., Hawthorne, NY: Walter de Gruyter, Inc., pp. 701-708, 1997.
7. **Awumey EMK**, Mitra DA, Hollis BW, Kumar R, Bell NH. Vitamin D metabolism is altered in Asian Indians in the Southern United States. A Clinical Research Center Study. *J. Clin. Endocrinol. Metab.*, **83**: 169-173, 1998. [PMID: 9435436]
8. **Awumey EM**, Moonga BS, Sodam BR, Koval PA, Adebajo OA, Kumegawa M, Zaidi M, Epstein S. Molecular and functional evidence for calcineurin-A α and β isoforms in the osteoclast. Novel insights into cyclosporine A action on bone resorption. *Biochim. Biophys. Res. Comm.* **254**: 248-252, 1999. [PMID: 9920765]
9. Silverton SF, Adebajo OA, Moonga BS, **Awumey EM**, Malinski T, Zaidi M. Direct microsensor measurement of nitric oxide production by the osteoclast. *Biochim. Biophys. Res. Comm.* **259**: 73-77, 1999. [PMID: 10334918]
10. Huang MS, Adebajo OA, **Awumey E**, Biswas G, Koval A, Sodam BR, Sun L, Moonga BS, Epstein J, Goldstein S, Lai FA, Lipschitz D, Zaidi M. IP₃, IP₃ receptor and cellular senescence. *Am. J. Physiol Renal Physiol.* **278**: F576-F584, 2000. PMID: 10751218]
11. Sodam BR, **Awumey EM**, Sampson WH, Epstein S. The endothelin receptor antagonist, L-754,142 does not prevent cyclosporine A-induced osteopenia in rats. *Calcif Tissue Int.* **68**: 117-121, 2001. [PMID: 11310347]
12. Wang Y, **Awumey EK**, Chatterjee PK, Somasundaram C, Bian K, Rogers RV, Dunn C, Bukoski RD. Molecular cloning and characterization of a sensory nerve Ca²⁺-sensing receptor. *Am J. Physiol Cell Physiol* **285**: C64-C75, 2003. [PMID: 12637267]
13. Derfoul A, Lin FJ, **Awumey EM**, Kolodzeski T, Hall DJ, Tuan RS. Estrogenic endocrine disruptive components interfere with calcium handling and differentiation of human trophoblast cells. *J. Cell Biochem.* **89**: 755-770, 2003. [PMID: 12858341]
14. **Awumey EM**, Howlett AC, Diz DI. Is there a role for anandamide in cardiovascular regulation? Insights from studies of endocannabinoid metabolism. *Am J Physiol Heart Circ Physiol* **289**: H520-H521, 2005. [PMID: 16014613]
15. **Awumey EM**, Bukoski RD. Cellular Functions and Fluxes of Calcium. In: Weaver CM, Heany RP, eds. *Calcium in Human Health*, Totowa, NJ: Humana Press, Chp. 3, pp. 13-25, 2006.

16. **Awumey EM**, Howlett AC, Diz DI, Putney JW, Jr., Bukoski RD. Ca²⁺ mobilization through the Dorsal Root Ganglion Ca²⁺-sensing receptor stably expressed in HEK293 cells. *Am J Physiol Cell Physiol* **292**: C1895-C1905, 2007. [PMID: 17267550]
17. Heyeraas KJ, Haug SR, Bukoski RD, **Awumey EM**. Identification of the Ca²⁺-sensing Receptor in Rat Trigeminal Ganglia, Sensory Axons and Tooth Dental Pulp. *Calcified Tissue Int.* **82**: 57-65, 2008. [PMID: 18175029]
18. **Awumey EM**, Hill SK, Diz DI, Bukoski RD. Cytochrome *P450* metabolites of 2-arachi-donyl glycerol play a role in Ca²⁺-induced relaxation of isolated mesenteric arteries. *Am J Physiol Heart Circ Physiol* **294**: H2363-H2370, 2008. [PMID: 18375719]
19. Chen W, Bergsman JB, Wang X, Gilkey G, Pierpoint CR, Anderson E, **Awumey EM**, Dauban P, Dodd RH, Ruat M, Smith SM. Calcium-sensing receptor activation inhibits the non-selective cation channel in neocortical nerve terminals. *PLoS One* **5**: e8563, 2010. [PMID: 20052292]
20. Bridges LE, Williams CL, **Awumey EM**. Mesenteric artery contraction and relaxation studies using Automated Wire Myography. *J Vis Exp* **55**: e3119, 2011. [PMID: 21969063].
21. **Awumey EM**, Bridges LE, Williams CL, Diz DI. Nitric Oxide Synthase knockout modulates Ca²⁺-sensing receptor expression and signaling in mouse mesenteric arteries. *J Pharmacol Exp Ther* **346**: 38-47, 2013. [PMID: 23639802].
22. Spruiell K, Richardson RM, Cullen JM, **Awumey EM**, Gonzalez FJ, Gyamfi MA (2014). Role of pregnane X receptor in obesity and glucose homeostasis in male mice. *J Biol Chem* **289**: 3244-3261, 2014. [PMID: 24362030].
23. Spruiell K, Dominique ZJ, Cullen JM, **Awumey EM**, Gonzalez FJ, Gyamfi MA. Role of human pregnane X receptor in high fat diet-induced obesity in pre-menopausal female mice. *Biochem Pharmacol* **89**: 399-412, 2014. [PMID: 24721462].
24. Sesay JS, Gyapong RN, Najafi LT, Kabler SL, Diz DI, Howlett AC, **Awumey EM**. Gα_{i/o}-dependent Ca²⁺ mobilization and Gα_q-dependent PKCα regulation of Ca²⁺-sensing receptor-mediated responses in N18TG2 neuroblastoma cells. *Neurochem Int.* **90**: 142-151, 2015. [PMID 26190181].
25. Ayanwale LD, Williams CL, Bridges LE, **Awumey EM**. High salt up-regulates Ca²⁺-sensing receptor expression and vascular relaxation in Dahl salt-sensitive rats. **Reviewed by JPET; Under Revision.**

ABSTRACTS

1. **Awumey EMK**, Paton DM, Pehowich DJ. Influence of dietary n-3 fatty acids on myocardial contractility in euthyroid and hypothyroid rats. *J. Mol. Cell. Cardiol*, **23**: S84, 1991.
2. **Awumey EMK**, Hollis BW, Bell NH. Low serum 25-hydroxyvitamin D in Blacks results from decreased production rate and not increased metabolic clearance rate. *J. Bone Miner Res*, **11**: S165, 1996.
3. **Awumey EMK**, Moonga BS, Sodam BR, Zaidi M, Epstein S. Cyclosporine action on osteoclasts: Modulation by Lymphocytes. *Bone* **23**: F609, 1998.
4. Sodam BR, Koval AP, **Awumey EMK**, Sampson WH, Zaidi M, Epstein S. B Lymphocyte deficiency affects bone mineral metabolism in mice. *J. Bone Miner Res* **14**: S299, 1999.
5. **Awumey EM**, Chatterjee PK, Bukoski RD. Cloning and functional expression of the dorsal root ganglion Ca²⁺-sensing receptor in HEK293 cells. *FASEB J* **16**: A1157, 2002.
6. Bukoski RD, Somasundaram C, Cogdell K, Howlett A, **Awumey EK**. N18TG2 cells express a Ca²⁺-sensing receptor coupled with intracellular Ca²⁺ signalling. *Hypertension* **42**: P31, 2003.
7. **Awumey EM**, Bukoski RD. The inositol 1,4,5-trisphosphate receptor antagonist, 2-amino - ethoxydiphenyl borate blocks intracellular Ca²⁺ transients and store-operated calcium entry in HEK293 cells stably expressing the sensory nerve Ca²⁺-sensing receptor. *FASEB J* **18**: A970, 2004.
8. **Awumey EM**, Putney JW, Jr., Howlett A, Bukoski RD. Desensitization of the Sensory nerve

- Ca²⁺-Sensing receptor stably expressed in HEK293 cells is mediated by Protein Kinase C. *FASEB J* **19**: A524, 2005.
9. **Awumey EM**, Hill SK, Diz DI, Bukoski RD. 2-Arachidonylglycerol and its metabolite, glycerated epoxyeicosatrienoic acid mediate Ca²⁺-induced relaxation of isolated mesenteric arteries. *Am J Hypertens* **18**: 50A, 2005.
 10. **Awumey EM**, Hill SK, Kunos G, Diz DI, Bukoski RD. Ionized calcium, in the physiological range, induces the release and metabolism of anandamide and 2-arachidonyl glycerol in isolated mesenteric artery arcade. *Hypertension* **46**: P21, 2005.
 11. **Awumey EM**, Diz DI, Howlett AC, Putney JW, Jr. Downregulation of Protein Kinase C Inhibits Perivascular Sensory Nerve Ca²⁺-sensing Receptor Signaling. *Hypertension* **48**: E85, 2006.
 12. Heyeraas KJ, Haug SR, Awumey EM. Identification of the Ca²⁺-sensing receptor in rat trigeminal ganglia, sensory axons and tooth dental pulp. *FASEB J* **21**: A73, 2007.
 13. Sesay J, Howlett AC, Diz DI, Awumey EM. Ca²⁺-sensing receptor signaling in mouse neuroblastoma cells: A model for the perivascular sensory nerve Ca²⁺-sensing receptor. *Hypertension* **50**:e124, 2007.
 14. Buchanan C, **Awumey EM**. B35 rat neuroblastoma cells express a Ca²⁺-sensing receptor linked to Ca²⁺_i mobilization and translocation of protein kinase C isozymes. *Hypertension* **52**:e109, 2008.
 15. **Awumey EM**, Bridges LS, Diz DI. Inhibition of phospholipase A₂ and K_{Ca} channels attenuate Ca²⁺-induced relaxation of isolated, phenylephrine-contracted rat mesenteric arteries. *Hypertension* **52**:e117, 2008.
 16. Williams C, **Awumey EM**, Pointer MA. Impaired vessel relaxation response to extracellular calcium in Dahl Salt-sensitive rats. *Hypertension* **52**:e112, 2008.
 17. **Awumey EM**, Bridges LS, Diz DI. Endothelial Nitric Oxide Synthase knockout and Nitric Oxide inhibition attenuate Ca²⁺-induced relaxation of isolated pre-contracted mouse mesenteric arteries. *Hypertension* **54**: e126, 2009.
 18. **Awumey EM**, Bridges LE, Williams CL, Diz DI. Nitric Oxide Synthase knockout modulates Ca²⁺-sensing receptor expression and signaling in mesenteric arteries. *FASEB J* **26**: 671.5, 2012.
 19. Gyamfi MA, **Awumey EM**. Role of pregnane X receptor (PXR) in diet-induced obesity. *FASEB J* **26**: 1153.2, 2012.
 20. Spruiell K, Richardson RM, **Awumey EM**, Gyamfi MA. Pregnane X receptor (PXR)-humanized transgenic mice reveal gender differences in ethanol hepatotoxicity. *Alcoholism: Clinical and Experimental Research* **37**: 222A, 2013.
 21. Ayanwale LD, Williams CL, **Awumey EM**. High salt diet modulates Ca²⁺-sensing receptor and cytochrome P450 isoform expression in mesenteric arteries in Dahl Salt-sensitive rats. *Hypertension* **62**: A474, 2013.

PRESENTATIONS

Seminars

1. **Awumey EM**. Mechanism of s of Cyclosporine A-induced bone loss. Division of Orthopaedic Research, Department of Medicine, Thomas Jefferson University Medical School, Philadelphia, PA. May 10, 1999.
2. **Awumey EM**. Calcineurin Inhibition: Relevance to cardiovascular and metabolic bone diseases. Biomedical/Biotechnology Research Institute, North Carolina Central University, Durham, NC. August 20, 1999.
3. **Awumey EM**. The Sensory nerve Ca²⁺-sensing receptor: A Potential Anti-hypertensive Target? Julius L. Chambers Biomedical/Biotechnology Research Institute, North Carolina Central University, Durham, NC; September 17, 2003.
4. **Awumey EM**. Cloning and functional characterization of the sensory nerve Ca²⁺-sensing

- receptor. Julius L. Chambers Biomedical/Biotechnology Research Institute, North Carolina Central University, Durham, NC; June 21, 2006.
5. **Awumey EM.** Functional characterization of the perivascular sensory nerve Ca²⁺-sensing receptor. Julius L. Chambers Biomedical/Biotechnology Research Institute, North Carolina Central University, Durham, NC; December 19, 2006.
 6. **Awumey EM.** Functional characterization of the G protein-coupled perivascular nerve Ca²⁺-sensing receptor. Noguchi Memorial Institute for Medical Research, University of Ghana, Legon; July 24, 2007.
 7. **Awumey EM.** Mechanism of perivascular nerve Ca²⁺-sensing receptor activation and vasodilation. JLC Biomedical/Biotechnology Research Institute, North Carolina Central University, Durham, NC; February 29, 2008.
 8. **Awumey EM.** Mechanism of perivascular sensory nerve Ca²⁺-sensing receptor (CaR) signaling and vascular relaxation. BRITE, North Carolina Central University, Durham, NC. October 9, 2009.
 9. **Awumey EM.** Perivascular nerve Ca²⁺-sensing receptor: Signaling and vascular response. Hypertension & Vascular Research Center, Wake Forest University Medical School, Winston-Salem, NC; February 17, 2010.
 10. **Awumey EM.** Ca²⁺-sensing receptor expression and signaling in hypertension. Department of Pharmacology, School of Medicine, Tulane University, New Orleans, LA; October 31, 2014.
 11. **Awumey EM.** Ca²⁺-sensing receptor expression and signaling in hypertension. Hypertension and Vascular Research Center, Wake Forest University School of Medicine, Winston-Salem, NC; January 12, 2016.
 12. **Awumey EM.** Does the Ca²⁺-sensing receptor play a role in blood pressure regulation? Department of Pharmaceutical Sciences, College of Pharmacy and Health Sciences, Texas Southern University, Houston, TX; June 17, 2016.

Posters

1. Adamolekun RD, **Awumey EM**, Bukoski RD. Semi-quantitative RT-PCR analysis of the sensory nerve Ca²⁺-sensing receptor expression in HEK293 cells. Presented at the Undergraduate SOARS (Seizing Opportunities for Advancing Research Scholars) Fall Conference, North Carolina Central University, Durham, NC; November 8, 2002.
2. **Awumey EM**, Charterjee PK, Bukoski RD. Dorsal root ganglion Ca²⁺-sensing receptor expression level alters functional coupling. Presented at the 10th Annual Cardiovascular Minority Supplement Awardee Session, National Heart, Lung & Blood Institute; American Heart Association Meeting, Chicago, IL; November 16, 2002.

RESEARCH SUPPORT

Ongoing Support:

1. *Ca²⁺-Sensing Receptor Mutation and Salt-sensitive Hypertension*

Awumey, EM (PI)

1SC1 HL136278-01

5/01/2017 – 3/31/2021

Agency: NIH/NHLBI

The goal of this proposal is to determine the role of kidney and vascular Ca²⁺-sensing receptor in salt-sensitive hypertension.

Completed Support:

1. *NCCU Center for Translational Health Equality Research*

Kimbro,KS (PI)

P20 MD00175

6/01/2012 – 5/31/2017.

Agency: NIH/MD

Research Project 2 (Awumey, EM & Pointer, MA; Co-PIs)

“Role of Extracellular Calcium in Obesity, Hypertension and Diabetes”

2. *Mechanism of Desensitization of the Perivascular Nerve Ca²⁺-sensing Receptor*

Awumey, EM (PI)

1SC1 HL099139-01A1

9/01/2009 – 12/31/2015.

Agency: NIH/NHLBI

The goal of this proposal is to elucidate the role of G proteins in perivascular nerve Ca²⁺-sensing receptor signal desensitization.

3. *Research in Cardiovascular Health among African Americans*

Calhoun, FJ (PI)

Awumey, EM; Assistant Professor.

R25 HL0552729

9/01/2006 – 8/31/2011.

Agency: NIH/NHLBI

The goals of this program are to establish a multidisciplinary research program for studying cardiovascular diseases that disproportionately affect African Americans, provide state of the art basic research experiences for minority undergraduate and graduate students to bolster the scientific curriculum of the university, and to establish collaborative research projects with neighboring outlying institutions.

4. *Mechanisms Linking Ca²⁺ Homeostasis and Vascular Tone*

Calhoun, FJ (PI). Originally awarded to the late Richard D. Bukoski.

Awumey, EM; Assistant Professor (Project Director).

2R01 HL064761

8/01/2004 – 3/31/2010.

Agency: NIH/NHLBI

The goal of this project is to understand the integrated mechanisms by which changes in local interstitial Ca²⁺ modulate vascular reactivity and was used as a vehicle to move to a greater level of research independence.

5. *Research in Cardiovascular Health among African Americans*

Harewood, KR (PI).

Awumey, EM; Research Scientist.

UH1 HL059868

9/01/1999 – 8/31/2006

Agency: NIH/NHLBI

The goals of this program are to establish a multidisciplinary research program for studying cardiovascular diseases that disproportionately affect African Americans, provide state of the art basic research experiences for minority undergraduate and graduate students to bolster the scientific curriculum of the university, and to establish collaborative research projects with neighboring outlying institutions.

6. *NCCU NASA Center*

9/01/2002 – 8/31/2005

Harewood, KR (PI)

Awumey, EM; Research Scientist.

Agency: NASA-URC.

The goal of this grant is to establish a NASA research center at North Carolina Central University that includes both student training components and basic research into the general area of the effects of micro-gravity on bone loss-associated Ca²⁺ metabolism and cardiovascular function.

7. *Mechanisms Linking Ca²⁺ Homeostasis and Vascular Tone*

Bukoski, RD (PI)

Awumey, EM; Minority Scientist.

R01 HL064761

4/01/1999 – 3/31/2003

Agency: NIH/NHLBI

The goal of this project is to understand the integrated mechanisms by which changes in local interstitial Ca²⁺ modulate vascular reactivity and was used as a vehicle to move to a greater level of research independence.

Minority Supplement to Emmanuel M. Awumey

5/01/2000 – 4/30/2003

Key Words defining Scientific Expertise

G protein-coupled receptor pharmacology and signaling; intracellular fluorescence Ca²⁺ imaging; vascular Ca²⁺-sensing receptor signaling; salt-sensitive hypertension; micro-vascular myography; cloning and DNA/RNA analysis; protein analysis.