CURRICULUM VITA

A. Patrick Osei-Owusu, Ph.D.

B. Home address

707 Devon Ln
Wallingford, PA 19086
Phone: (484) 479-3172
Email: poseiowusu@gmail.com

Work address

Drexel University College of Medicine
Department of Pharmacology and Physiology
245 N. 15th Street MS#488
Philadelphia, PA 19102
Phone : (215) 762-4145
Fax : (215) 762-2299
Email : po66@drexel.edu

C. Education

Ph.D., Pharmacology, May 2006
Loyola University Chicago, Stritch School of Medicine, Chicago, IL
Thesis Title: Mechanisms of 5-HT1A Agonist-Mediated Reversal of Hypovolemic Shock

B.Sc. (Hons), Chemistry and Biochemistry, June 2000
University of Toronto, Toronto, Ontario, Canada
Thesis Title: Palladium/Nickel Catalyzed C-C Coupling via Aryl Thiocyanate and Arylzinc Reagents

D. Postgraduate Training

Graduate Research Assistant, August 2000 – May 2006
Thesis Advisor: Professor Karie E. Scrogin
Department of Molecular Pharmacology and Experimental Therapeutics,
Loyola University Chicago, Stritch School of Medicine, Chicago, IL
Research area: Neural control of autonomic regulation

Identified neural mechanisms mediating the onset of the decompensatory phase of hypotensive hemorrhage in a conscious rat model of severe hemorrhage.

Demonstrated the therapeutic potential of certain serotonin receptor agonists as adjuvant to fluid resuscitation to help restore blood pressure, cardiac output, ameliorate organ injury, and restore vital organ perfusion in established hypovolemic shock.

Postdoctoral Research Associate, June 2006 – July 2013
Mentor: Professor Kendall J. Blumer
Department of Cell Biology and Physiology
Washington University School of Medicine in Saint Louis, MO.
Research area: G-protein signaling regulation in the cardiovascular system

Identified the cellular mechanism that regulates RGS2 (regulator of G-protein signaling 2) protein expression level in vascular smooth muscle cells, and the mechanism whereby RGS2 is able to translocate to the plasma membrane to regulate G-protein signaling involved in vasoconstrictor response.

Defined Cardiac-specific role of RGS2 in maladaptive cardiac hypertrophy response to excess circulating angiotensin II and catecholamines.

Discovered a novel role for RGS2 in the vascular endothelium and how it functions in this vascular compartment to regulate vessel tone and blood pressure.

E. Employment History and Faculty Appointments

Undergraduate Research Assistant, 1998 – 2000
Supervisor: Professor Ian W.J. Still
Department of Chemistry, University of Toronto at Mississauga
Project Title: Palladium/Nickel Catalyzed C-C Coupling via Aryl Thiocyanate and Arylzinc Reagents.

Tutor, organic chemistry, 1998 - 2000
University of Toronto at Mississauga, Mississauga, ON, Canada
Academic Skills Center

Teaching Assistant, organic chemistry, 1999 - 2000
University of Toronto at Mississauga, Mississauga, ON, Canada
Chemistry Department

Tutor, medical pharmacology, 2003 – 2005
Loyola University Chicago, School of Medicine, Maywood, IL
Pharmacology Department

Lecturer, undergraduate pharmacology, 2003 - 2005
Loyola University Chicago, School of Medicine, Maywood, IL
Biology Department

Guest Lecturer, graduate signal transduction course, 2007 - 2009
Saint Louis University, Saint Louis, MO
Biology Department

Assistant Professor, 2013 - 2018
Drexel University College of Medicine, Philadelphia, PA
Department of Pharmacology and Physiology

Associate Professor, 2018 - current
Drexel University College of Medicine, Philadelphia, PA
Department of Pharmacology and Physiology

F. Board Certification

None

G. Military Service

None

H. Honors, Awards, and Special Recognitions

Volunteer of the Year Award, University of Toronto, Summer Undergraduate Research in Organic Chemistry
Graduate Student Best Poster Award, 2nd place, American Society for Pharmacology and Experimental Therapeutics- Great Lakes Chapter Annual Meeting

American Heart Association Predoctoral Fellowship Award, Heartland Affiliate
Annual Graduate Student Best Peer-reviewed Article Award, Department of Pharmacology, Loyola University Chicago
American Heart Association Postdoctoral Fellowship Award, Midwest Affiliate
Postdoctoral Travel Award, The Microcirculatory Society
Postdoctoral Travel Award, American Society for Biochemistry and Molecular Biology
Reviewer for *AJP – Heart and Circulatory Research, JoVE, PLoS ONE, Life Sciences, Science Signaling, Journal of Cellular Physiology, Pharmacological Research, DNA & Cell Biology, ACS – Neurochemistry, Cellular Signaling, JBC*
Editorial Board Member, *Pharmacological Research*, Elsevier
AHA – Council on Hypertension Fall Specialty Conference Programming Committee Member
AHA – Council on Hypertension Scientific & Clinical Education Lifelong Learning Committee (SCILL) Member
Margaret Q. Landenberger Research Foundation Grant
AHA Kidney Council Young Investigator Travel Award
Commonwealth Universal Research Enhancement Formula Grant
American Heart Association Scientist Development Grant, Association Wide
Drexel University Clinical and Translational Research Institute grant
American Heart Association Excellence in Research Award
Invited Lecturer, American Society of Nephrology 2016 Kidney Week
Fellow of the American Heart Association (FAHA)
Member of AHA Research Leaders Academy (by invitation only)
Reviewer for Drexel CURE grant applications
Young Investigator Award, Drexel University College of Medicine
NIH Special Emphasis [ZRG1- CVRS-S (80)], Panel Member
NIH CCHF Study Section, Panel Member

I. Memberships and Offices in Professional Societies

American Heart Association (AHA)
American Physiological Society (APS)
American Society for Pharmacology and Experimental Therapeutics (ASPET)
American Society of Nephrology (ASN)

J. Professional Committees and Administrative Service

1. Institutional:

Reviewer for Drexel CTRI grant applications, 2015
Drexel University Program Alignment Review Committee Member, MLAS Program, 2016
Biomedical Science Graduate Council member, 2016 – current
Drexel Discovery Day Platform Presentation Selection Committee, 2016 - current
Co-Chair, Diversity and Inclusion Committee, Drexel University College of Medicine, Center City campus, 2016 – 2017
College of Medicine Faculty Steering Committee member, 2017 – current
Faculty Affairs and Faculty Development Committee member, 2017 – current
College of Medicine MD/PhD Admissions Committee member, 2017 – current
Department Steering Committee member, 2017 – current
Department Graduate Program Admissions Committee member, 2015 – current
Graduate Thesis Committee membership for 7 students, including 4 doctoral and 3 masters students
Reviewer for Drexel CURE grant applications, 2018
Student Diversity Advisor for the Division of Biomedical Sciences Graduate Programs, 2018 – current
Drexel University College of Medicine CME Committee Member, 2018 – current
Member, Search Committee for Dean of Drexel University College of Medicine, 2018

2. Extramural:

AHA – Council on Hypertension Fall Specialty Conference Programming Committee Member, 2015 – present
AHA – Council on Hypertension Scientific & Clinical Education Lifelong Learning Committee (SCILL) member, 2015 – present
Editorial Board Member, Pharmacological Research, Elsevier, 2015 - current
Invited Lecturer, American Society of Nephrology 2016 Kidney Week, Chicago, IL, November, 2016
NIH Special Emphasis [ZRG1- CVRS-S (80)], Panel Member, July 2018
NIH CCHF Study Section, Panel Member, October 2018 - present
Reviewer for

American Journal of Physiology, Heart and Circulatory Physiology,
PLoS ONE,
Life Sciences,
Clinical Sciences,
Cellular Signaling,
Science Signaling,
ACS – Neurochemistry,
JOVE,
Journal of Cellular Physiology
DNA and Cell Biology

Conference Programming Committee Member, AHA – Council on Hypertension
AHA Innovative Project Award Basic Sciences Review Panel Member

K. Community Service

Soccer Coach, University of Toronto at Mississauga intramural women's team, 1998 – 1999
Department of Pharmacology Representative on Graduate Student Council, Loyola University Chicago, 2001 – 2002
Co-president, Graduate Student Council, Loyola University Chicago, 2003 – 2004
Member of Pharmacology Department Website Design Committee, Loyola University Chicago Medical Center, 2003 – 2004
Student Representative to Faculty, Pharmacology Department, Loyola University Chicago, 2004 – 2005

L. Educational Activities

1. Course/Clerkships/Programs

Taught/Teach

G Protein Signaling, First Year Graduate CORE II, Drexel University BiomedSCI, 2015 – current
Methods in Biomedical Research PHRM 519S, Graduate Pharmacology and Physiology, Drexel University College of Medicine, 2015 – current
Cardiovascular Physiology, Graduate Physiology 503, Drexel University College of Medicine, 2014 – current
Cardiovascular Pharmacology, Graduate Pharmacology 512, Drexel University College of Medicine, 2014 – current
Advanced Topics in Physiology, Department of Pharmacology and Physiology, Drexel University College of Medicine, 2014 - current
Medical Physiology, Drexel University College of Medicine, 2014 - current
Advanced Topics in Pharmacology, Department of Pharmacology and Physiology, Drexel University College of Medicine, 2013 - current

Renal Physiology, Graduate Physiology 503, Drexel University College of Medicine, 2013 - current
Graduate Signal Transduction, Department of Biology, Saint Louis University, Saint Louis, MO, 2007 – 2009
Tutor, Medical Pharmacology, Loyola University Chicago Stritch School of Medicine, 2003 – 2005
Undergraduate Cardiovascular Pharmacology, Loyola University Chicago, 2003 – 2005
Teaching Assistant, Organic Chemistry, University of Toronto, 1999 – 2000
Tutor, Organic Chemistry, Academic Skills Center, University of Toronto, 1998 – 2000

2. Advising/Mentorship/Tutoring

Graduate Research Thesis Committees

Hillevi K. Ets, Doctoral Candidate, Pharmacology and Physiology, Drexel University, 2014 – 2016
Proposal Title: Force Maintenance in Vascular Smooth Muscle Stimulated by L-Type Ca^{2+} Channel Activity Requires Cytoskeletal Reorganization and Thick Filament Activation, Mediated by Rho Kinase and PKC

Cassandre Cavanaugh, Masters student, Drug Discovery Program, Drexel University, 2014 – 2015
Proposal Title: Inhibiting Glucose Uptake in Isolated Rat Small Intestines

Julianne Nelson, Doctoral Candidate, Dornsife School of Public Health, Drexel University, 2015 – 2018
Proposal Title: Impact of Resistant Hypertension on Survival and Potential Biologic and Pharmaceutical Interactions

Tyler F. Bernardyn, Candidate for Maters in Drug Development and Discovery, Pharmacology and Physiology, Drexel University, 2017 – 2018
Thesis Title: Dual Loss of RGS2 And RGS5 Decreases Cardiomyocyte Contractility and Causes Arrhythmia in Adult Mice.

Alethia J. Edwards, Candidate for Masters in Cellular and Molecular Biology, Thomas Jefferson University School of Medicine, 2017 – 2018
Thesis Title: Cellular Mechanisms Mediating the Inhibitory effects of Cyclic Depsipeptides

Matthew Stout, Doctoral Candidate, Pharmacology and Physiology, Drexel University, 2017 (Committee Chair)
Proposal Title: Elucidating Signaling Crosstalk in Pancreatic Ductal Adenomacarcinoma (PDAC) Tumor Microenvironment

Doctoral Candidate Qualifying Examination Committees

Dongyu Wei (Doria), Doctoral Candidate, Pharmacology and Physiology, Drexel University, 2015 (Committee Chair)
Proposal Title: The Role of Caldesmon in Force Maintenance in Vascular Smooth Muscle

Matthew Stout, Doctoral Candidate, Pharmacology and Physiology, Drexel University, 2017 (Committee Chair)
Proposal Title: Elucidating Signaling Crosstalk in Pancreatic Ductal Adenomacarcinoma (PDAC) Tumor Microenvironment

Jennifer N. Koch, Doctoral Candidate, Biochemistry,

Drexel University, 2018
Proposal Title: The Role of RGS Proteins in Pregnancy Complications

Emily Nickoloff, Doctoral Candidate, Pharmacology and Physiology, Drexel University, 2018 (Committee Chair)
Proposal Title: Mechanisms of Dopamine-Facilitated Viral Entry into Macrophages

Anthony Dinatale, Doctoral Candidate, Pharmacology and Physiology, Drexel University, 2018 (Committee Chair)
Proposal Title: Elucidation of the Mechanisms Mediating IL-1Beta Dependent Progression of Prostrate Cancer Metastasis

M. Clinical Activities

None

N. Research Support

1. Current

a. Private Funding:

American Heart Association Scientist Development Grant July 2016 – June 2020
Role – Principal Investigator
Project Title: Myogenic Tone Regulation by RGS2
16SDG27260276, Association Wide

b. Governmental Funding:

NIH

NHLBI: 1R01 HL139754-02, 2018 – 2021
Role – Principal Investigator
Project Title: *In Vivo* Mechanisms of Integrated G protein Signaling Regulation by RGS Proteins

NINDS: R01NS106908, 2018 – 2023
Role – Co-Investigator (MPIs: Tom, Veronica & Bethea, John)
Project Title: Soluble TNFα in the development of autonomic dysreflexia after spinal cord injury

2. Completed

Margaret Q. Landenberger Research Foundation Grant 2015 – 2017
Role – Principal Investigator
Project Title: The Role of Hypertension and Elastin Insufficiency in Chronic Kidney Disease

Clinical and Translational Research Institute (CTRI) Pilot Grant 2016 – 2017
Role – Principal Investigator
Project Title: Pregnancy-Related Disorders: Role of Rgs2 in Vascular Intrinsic Mechanisms Regulating Maternal-Fetal Blood Flow During Pregnancy

Craig H. Neilsen Foundation Spinal Cord Injury Research on the Translational Spectrum (SCIRTS) 2016 – 2018
Role – Co-Investigator
Project Title: Inhibiting TNFα to Diminish Autonomic Dysreflexia After Spinal Cord Injury

Pennsylvania Department of Health Commonwealth Universal Research Enhancement (CURE) Formula Grant 2016 – 2017
Role – Principal Investigator
Project Title: Functional Profiling of Novel Tools for Dissecting Pathophysiological Mechanisms of Cardiovascular Disorders

American Heart Association Postdoctoral Fellowship 2009 – 2011
Role – Principal Investigator
Project Title: RGS2 as a Coordinator of Signaling Networks Regulating Endothelium-dependent Vasodilation of Resistance Vessels
09POST2260099, Midwest Affiliate

3. Pending

NHLBI: 1R01 HL150117-01, 2019 – 2024
Role – Principal Investigator
Project Title: Pathological Mechanisms of Hypertension and CKD Resulting from *Eln* Insufficiency

O. Graduate Students, Postdoctoral Fellows and Postgraduate Medical Trainees

Ph.D. thesis advisees

Jennifer Koch, 2017.2 – current
Graduate Program – Biochemistry
Drexel University College of Medicine, Biomedical Science
Project Title: TBD

Alethia Edward, 2019.3 – current
Graduate Program – Pharmacology and Physiology
Drexel University College of Medicine, Division of Biomedical Sciences
Project Title: Molecular Mechanisms Dual Inhibitors of Gq/11 and LTCC proteins

Shelby A. Dahlen, 2019.3 – current
Graduate Program – Pharmacology and Physiology
Drexel University College of Medicine, Division of Biomedical Sciences
Project Title: Cellular Mechanisms of Cardiomyopathy Resulting from the Dual Loss of RGS2 and RGS5 in Adult Mice

Visiting Scientists

Janaina S. Reis, M.A., 2014.2 – 2014.11
Visiting doctoral student from Graduate School of Veterinary Medicine
Pelotas Federal University- Pelotas, RS, Brazil
Project Title: RGS Control of Renal Hemodynamics

Li Jie, M.S., 2014.10 – 2015.10
Visiting doctoral student from Nanjing University of Chinese Medicine
Project Title: Role of G protein Dysregulation in the Pathogenesis of Pregnancy Complications

M.S. thesis advisees

Tyler F. Bernardyn, 2017.1 – 2018.6
Graduate Program – Drug Discovery and Development

Drexel University College of Medicine, Biomedical Science
Project Title: Dual Loss of RGS2 and RGS5 Decreases Cardiomyocyte Contractility and Causes Arrhythmia in Adult Mice

Alethia Edward, 2017.1 – 2018.5
Graduate Program – Cellular and Molecular Biology
Thomas Jefferson University School of Medicine
Project Title: Cellular Mechanisms Mediating the Inhibitory effects of Cyclic Depsipeptides

Postdoctoral Fellows

Fatema T. Zohra, Ph.D., 2014.3 – 2014.6
Project Title: Extracellular Matrix-dependent Activation of Smooth Muscle Proliferation Mechanisms in Supravalvular Aortic Stenosis

Ipsita Mohanty, Ph.D., 2018.3 – current
Project Title: Angiotensin-mediated Hypertension and Renal Fibrosis in Elastin Deficiency

Research Associates

Jingsheng Xia, M.D., 2018.6 – current
Project Title: Regulation of Intracellular Calcium Handling by RGS Proteins in Cardiac and Vascular Myocytes

Postgraduate Medical Trainees

Nima M. Shah, M.D, 2016.7 – 2017.6
Clinical Fellow, Department of Obstetrics and Gynecology
Drexel University College of Medicine
Project Title: The Role of TLR4 Expression in Patients with Interstitial Cystitis/Bladder Pain Syndrome

Matthew M. Meleka, D.O., 2015.7 – 2017.3
Medical Resident, Internal Medicine, Department of Medicine
Drexel University College of Medicine
Project Title: Functional Profiling of Novel G Protein Inhibitors

Shontreal Cooper, M.D, 2015.1 – 2017.4
Medical Resident, Department of Obstetrics and Gynecology
Drexel University College of Medicine
Project Title: RGS2 Polymorphisms and Preeclampsia

Medical School Trainees

Akua Boadu, B.S, 2018.5 – 2018.8
First Year Medical Student, Drexel University College of Medicine
Project Title: Assessing the Role of RGS Proteins in the Relationship Between Cardiac Arrhythmia and Heart Rate Variability

P. Bibliography

Published Peer-Reviewed Articles

Osei-Owusu, P. and Scrogin, K.E. Buspirone Raises Blood Pressure through Activation of Sympathetic Nervous System and by Direct Activation of a1-Adrenergic Receptors after Severe Hemorrhage. *Journal of Pharmacology and Experimental Therapeutics 309(3):1132-40, 2004*

Osei-Owusu, P., Hellmann, A.E., Crane, A.J. and Scrogin, K.E. 5-HT1A Receptors in the Paraventricular Nucleus of the Hypothalamus Meidate Oxytocin and Adrenocorticotropin Hormone Release as well as Some Behavioral Components of the Serotonin Syndrome. *Journal of Pharmacology and Experimental Therapeutics 313(3):1324-30, 2005*

Osei-Owusu, P. and Scrogin, K.E. Role of the Arterial Baroreflex in 5-HT1A receptor agonist-mediated sympathoexcitation following Hypotensive hemorrhage. *American Journal of Physiology. Regulatory, integrative and comparative physiology 290(5): R1337-44, 2006*

Tiniakov R, **Osei-Owusu, P.**, and Scrogin, K.E. The 5-HT1A Receptor Agonist, (+)-8-hydroxy-2-(di-n-propylamino)-tetralin, Increases Cardiac Output and Renal Perfusion in Rats Subjected to Hypovolemic Shock. *Journal of Pharmacology and Experimental Therapeutics 320(2):811-18, 2007*

Osei-Owusu, P., Sun X, Drenan, R.M., Steinberg, T.H., Blumer, K.J. Regulation of RGS2 and Second Messenger Signaling in Vascular Smooth Muscle Cells by cGMP-dependent Protein Kinase. *Journal of Biological Chemistry. 282(43):31656-65, 2007*

Osei-Owusu, P., Sabharwal R, Kaltenbronn K.M., Rhee M.H., Chapleau M.W., Dietrich H.H., Blumer K.J. Regulator of G protein signaling 2 Deficiency Causes Endothelial Dysfunction and Impaired Endothelium-derived Hyperpolarizing Factor-mediated Relaxation by Dysregulating Gi/o Signaling. *Journal of Biological Chemistry. 287(15): 12541-49, 2012*

Li, A, Knutsen, R.H., Zhang, H., **Osei-Owusu, P.,** Moreno-Dominguez, A., Harter, T.M., Uchida, K., Remedi, M.S., Dietrich, H.H., Bernal-Mizrachi, C., Blumer, K.J., Mecham, R.P., Koster, J.C., and Nichols, C.G. Hypotension due to Kir6.1 gain-of-function in vascular smooth muscle. *Journal of the American Heart Association*. Aug 23;2(4):e000365, 2013

Osei-Owusu, P., Knutsen, R.H., Kozel, B.A., Dietrich, H.H., Blumer, K.J., Mecham, R.P. Altered Reactivity of Resistance Vasculature Contributes to Hypertension in Elastin Insufficiency. *American Journal of Physiology – Heart and Circulatory Physiology. [Epub ahead of print] January 10, 2014.*

Oladipupo, S.S., Smith, C., Santeford, A., Park, C., Sene, A., Wiley, L.A., **Osei-Owusu, P.,** Hsu, J., Zapata, N., Liu, F., Lavine, K.J., Blumer, K.J., Choi, K., Apte, R., Ornitz, D. Endothelial cell FGF signaling is required for injury response but not for vascular development or homeostasis. *Proc Natl Acad Sci U S A*. 2014 Aug 19. pii: 201324235. [Epub ahead of print]

Osei-Owusu, P., Owens, E.A., Jie, L., Reis, J.S., Forrester, J.S., Kawai, T., Eguchi, S., Singh, H., Blumer, K.J. (2015) Regulation of Renal Hemodynamics and Function by RGS2. *PLoS One*. Jul 2015 20;10(7):e0132594. doi: 10.1371/journal.pone.0132594. eCollection 2015.

Osei-Owusu, P., Blumer, K.J. Regulator of G Protein Signaling 2: A Versatile Regulator of Vascular Function. *Progress in Molecular Biology and Translational Science*. Jul 2015, 133:77-92. doi: 10.1016/bs.pmbts.2015.02.001.

Beeman, S.C., **Osei-Owusu, P.,** Duan, C., Engelbach, J., Bretthorst, G.L., Ackerman, J.J., Blumer, K.J., Garbow, J.R. Renal DCE-MRI Model Selection Using Bayesian Probability Theory. *Tomography* Sept 2015, 1(1): 61 – 68.

Jie, L., Owens, E.A., Plante, L.A., Fang, Z., Rensing, D.T., Moeller, K.D., **Osei-Owusu, P.** RGS2 Squelches Vascular Gi/o and Gq/11 To Modulate Myogenic Tone and Promote Uterine Blood Flow. *Physiological Reports*. 4 (1), 2016, e12692, doi: 10.14814/phy2.12692

Owens, E.A., Jie, L., Reyes, B.S., Van Bockstaele, E., **Osei-Owusu, P.** Renal Mechanisms of Hypertension Arising from Elastin Insufficiency. *Kidney International*. 2017 Nov;92(5):1100-1118. doi: 10.1016/j.kint.2017.04.044. Epub 2017 Jul 26.

Kanai, S. M., Edwards A. J., Rurik J.G., **Osei-Owusu, P.,** Blumer, K. J. Proteolytic Degradation of Regulator of G Protein Signaling 2 Facilitates Temporal Regulation of Gq/11 Signaling and Vascular Contraction. *Journal of Biological Chemistry*. 2017 Nov 24;292(47):19266-19278. doi: 10.1074/jbc.M117.797134. Epub 2017 Oct 3.

Mironets, E., **Osei-Owusu, P.,** Bracchi-Ricard, V., Fischer, R., Owens, E.A., Ricard, J., Wu, D., Saltos, T., Collyer, E., Hou, S., Bethea, J., Tom, V. Soluble TNFα Signaling Within the Spinal Cord Contributes to the Development of Autonomic Dysreflexia and Ensuing Vascular and Immune Dysfunction after Spinal Cord Injury. *Journal of Neuroscience*. 2018 Apr 2. pii: 2376-17. doi: 10.1523/JNEUROSCI.2376-17.2018. [Epub ahead of print]

Melaka, M.M, Edwards, A.J., Xia, J., Dahlen, S.A., Mohanty, I., Aggarwal, S., Medcalf, M., Moeller, D.M., Mortensen, O.V., **Osei-Owusu, P.** Anti-Hypertensive Mechanisms of Cyclic Depsipeptide Inhibitor Ligands for $G_{q/11}$ Class G Proteins. *Pharmacological Research* 2019 Mar; 141:264-275. doi: 10.1016/j.phrs.2019.01.012. Epub 2019 Jan 10.

Koch, J.N., Dahlen, S.A., Owens, E.A., **Osei-Owusu, P.** Facilitation of Uterine Artery Adaptation by Regulator of G protein Signaling 2 During Pregnancy in Mice. In press, *Journal of the American Heart Association*

Bernadyn, T.F., Dahlen, S.A., Meleka, M.M, Owens, E.A., **Osei-Owusu, P.** Dual Loss of *Rgs2* and *Rgs5* Decreases Cardiomyocyte Contractility and Causes Ventricular Arrhythmia in Adult Mice. *Manuscript in preparation; Abstract accepted for AHA – Hypertension 2018 Meeting*

Dahlen, S.A., Mohanty, I., Djameh, U., Edwards, A.J., Koch, J.N., **Osei-Owusu, P.** Dual Loss of *Rgs2* and *Rgs5* Exacerbates the Progression of Cardiac Hypertrophy in Mice Chronically Treated with Isoproterenol. *Manuscript in preparation; Abstract accepted for AHA – Hypertension 2018 Meeting*

Abstracts (Peer-reviewed)

Scrogin, K. E., and **Osei-Owusu, P.** 5-HT1A Receptor Agonist-Induced Restoration of Blood Pressure following Severe Hemorrhage is Mediated by the Autonomic Nervous System in Conscious Rat. International Society for Autonomic Neuroscience meeting abstracts. AUTONOMIC NEUROSCIENCE: BASIC & CLINICAL, 106(1): 32 – 33, 2003

Osei-Owusu P, Hanley NS, Van de Kar L, et al. 5-HT1A Receptors in the Paraventricular Nucleus of the Hypothalamus (PVN) Mediate Endocrine and Behavioral, but not Cardiovascular Responses to 8-OH-DPAT FASEB JOURNAL 17 (4): A445-A445 Part 1 Suppl. S MAR 14, 2003.

Osei-Owusu P, Scrogin KE 8-OH-DPAT Reverses Hypotension after Prolonged Hypovolemia FASEB JOURNAL 17 (4): A653-A653 Part 1 Suppl. S MAR 14, 2003.

Osei-Owusu P, Scrogin KE 5-HT1A Receptor Activation Attenuates Reperfusion Injury after Prolonged Hypovolemia FASEB JOURNAL 18 (5): A1244-A1244 Suppl. S MAR 24, 2004

Osei-Owusu P, Scrogin KE Buspirone Activates Alpha 1-Adrenergic Receptors Directly and Indirectly via Sympathetic Activation to Raise Blood Pressure following Severe Hemorrhage FASEB JOURNAL 18 (4): A592-A593 Suppl. S MAR 23, 2004

Henze M, **Osei-Owusu, P.**, Scrogin, K The baroreflex mediates the dis-inhibition of sympathetic drive in response to prolonged hemorrhage FASEB JOURNAL 19 (4): A614-A615 Part 1 Suppl. S MAR 4, 2005

Osei-Owusu, P., Scrogin, KE The 5-HT1A-receptor agonist, 8 OH-DPAT, increases venous tone in conscious rats subjected to severe hypotensive hemorrhage FASEB JOURNAL 19 (4): A615-A615 Part 1 Suppl. S MAR 4, 2005

Tiniakov, R, **Osei-Owusu, P.**, Scrogin, K The 5-HT1A-receptor agonist, 8-OH-DPAT, increases cardiac output and renal blood flow in conscious rats during hypovolemic shock FASEB JOURNAL 20 (5): A1385-A1385 Part 2 MAR 7, 2006

Sun XGA, **Osei-Owusu P**, Steinberg, T.H., Blumer, K.J. cGMP-dependent Protein Kinase Promotes Smooth Muscle Relaxation by Phosphorylating and Stabilizing RGS2 HYPERTENSION 48 (4). E82-E82 OCT 2006

Osei-Owusu, P; Flagg, TP; Blumer, K.J. RGS2 Regulates Angiotensin II-Induced Cardiac Hypertrophy Independent of Its Effects on Blood Pressure HYPERTENSION 54 (4). E53-E53 OCT 2009

Osei-Owusu, P., Dietrich, H.H. and Blumer, K.J. Endothelial RGS2 Promotes EDHF-dependent Vasodilation of Mesenteric Arteries. MICROCIRCULATION 16 (8) 749-780 2010.

Osei-Owusu, P., Dietrich, H.H. and Blumer, K.J. Hypertension Mechanisms: RGS2 Coordinates Gq/11 and Gi Signaling in Endothelium and Smooth Muscle of the Resistance Vasculature. FASEB JOURNAL 24: 701.8 APR 7, 2010.

Osei-Owusu, P. Integrative Physiology Approach to Delineating Hypertension Mechanisms in Williams-Beuren Syndrome. *Children's Hospital of Philadelphia, Drexel University, and Hebrew University Symposium* on "Developing New Treatments for Children's Diseases", 2014

Furia, C.M., Urbano, R.L., **Osei-Owusu, P.,** Clyne, A.M. *In vitro* and *ex vivo* substrate stiffness effects on endothelial permeability in response to TNF-α. *Annual Biomedical Engineering Society Meeting,* 2014

Beeman, S.C., **Osei-Owusu, P.,** Blumer, K.J., Ackerman, J.J., Garbow, J.R. Towards the Optimization of MRI-based Renal Blood Flow Measurements: a Bayesian Comparison of Pharmacokinetic and Empirical DVE-MRI Models. *Annual World Molecular Imaging Congress,* Seoul, South Korea, 2014

Osei-Owusu, P., Blumer, K.J. RGS2 Deficiency Impairs Renal Hemodynamics and Function. *Annual AHA High Blood Pressure Research Conference*, San Francisco, CA, 2014

Jie, L., Owens, E.A., **Osei-Owusu, P.** Decreased Uterine Artery Blood Flow and Enhanced Myogenic Tone in RGS2-deficient mice. *APS Gender Physiology Conference, Annapolis, MD, 2015*

Elizabeth A. Owens, Li Jie, Beverly Reyes, Elisabeth Van Bockstaele, **Osei-Owusu, P.** Hypertension Mechanisms: Elastin Haploinsufficiency Alters Renal Structure and Function. *Experimental Biology Meeting,* San Diego, CA, 2016

Elizabeth A. Owens, Li Jie, Beverly Reyes, Elisabeth Van Bockstaele, **Osei-Owusu, P.** Functional Remodeling of the Renal Vasculature Precedes the Establishment of Salt-Sensitive Hypertension in Eln-deficient Mice. *AHA Council on Hypertension Meeting,* Orlando, FL, 2016

Matthew M. Melaka, Matthew Medcalf, Kevin D. Moeller, **Osei-Owusu, P.** Functional Mechanisms of Novel G Protein Inhibitor Ligands As Vasodilators. *Experimental Biology Meeting,* Chicago, IL, 2017

Matthew M. Melaka, Shelby Dahlen, Alethia J. Edwards, Matthew Medcalf, Kevin D. Moeller, **Osei-Owusu, P.** Anti-Hypertensive Mechanisms of Novel Gq/11 Inhibitor Ligands. *AHA Council on Hypertension Meeting,* San Francisco, CA, 2017

Shelby Dahlen, Ipsita Mohanty, Ursual Djameh, Alethia J. Edwards, Jennifer Koch, **Patrick Osei-Owusu.** Dual Loss of *Rgs2* and *Rgs5* Exacerbates the Progression of Cardiac Hypertrophy in Mice Chronically Treated with Isoproterenol. *AHA Council on Hypertension Meeting,* Chicago, IL, 2018

Tyler Bernadyn, Shelby Dahlen, Matthew Meleka, Elizabeth Owens, **Patrick Osei-Owusu.** Dual Loss of *Rgs2* and *Rgs5* Decreases Cardiomyocyte Contractility and Causes Ventricular Arrhythmia in Adult Mice. *AHA Council on Hypertension Meeting,* Chicago, IL, 2018

Q. Presentations

Local

Invited Speaker, Children's Hospital Of Philadelphia (CHOP)-Drexel University-Hebrew University Collaborative Symposium, CHOP Research Institute, Philadelphia, PA, January 2014. Title: Integrative Physiology Approach to Delineating Hypertension Mechanisms in Williams-Beuren Syndrome

Invited Seminar Speaker, Cardiovascular Research Institute, Temple University School of Medicine, Philadelphia, PA, April 2014. Title: Cardiovascular Disease Mechanisms Involving Loss of G Protein Regulation by RGS Proteins.

Invited Grand Rounds Presentation, Drexel University College of Medicine, Department of Medicine, Cardiology Division, Philadelphia, PA, May 2014. Title: Maladaptive Cardiac Remodeling: RGS2 Confers Protection Against Hormone-Induced Cardiac Hypertrophy Independent of its Blood Pressure Effects.

Invited Grand Rounds Speaker, Drexel University College of Medicine, Department of Medicine, Division of Nephrology and Hypertension, Philadelphia, PA, March 2015. Title: G protein Signaling Dysregulation and the Mechanisms of Hypertension.

Invited Grand Rounds Speaker, Drexel University College of Medicine, Department of Medicine, Division of Nephrology and Hypertension, Philadelphia, PA, January 2019. Title: Chronic Kidney Disease Pathogenesis: What Does The Extracellular Matrix Protein, Elastin, Got To Do With It?

Invited Grand Rounds Speaker, Drexel University College of Medicine, Department of Infectious Diseases, Division of Infectious Diseases and HIV Medicine, Philadelphia, PA, February 2019. Title: G protein Signaling Dysregulation and Chronic Disease pathogenesis

National

Invited Seminar Speaker, Washington University School of Medicine, Department of Medicine, Renal Division, St. Louis, MO, May 2013. Title: The Role of G protein Signaling Regulation in Renal Function.

Invited Seminar Speaker, Georgetown University School of Medicine, Department of Medicine, Nephrology and Hypertension Division, Washington, D.C. January, 2015. Title: Role of RGS Proteins in Renal Mechanisms of Blood Pressure Control.

Invited Seminar Speaker, Michigan State University, Department of Pharmacology & Toxicology, Lansing, MI. November, 2015. Title: Defining G protein Signaling Mechanisms Involved in Myogenic Tone Regulation in the Uterine Vascular Bed.

Invited Seminar Speaker, Loyola University Chicago, Department of Molecular Pharmacology & Therapeutics, Maywood, IL. April, 2018. Title: Mechanisms of Fine-tuning G protein Signaling in the CV System: The Upside of Redundancy.

International

Selected for a minisymposium, Canadian Society for Chemistry, Chemistry Research Conference, Brock University, St. Catherines, Ontario, Canada, 2000. Title: Palladium/Nickel Catalyzed C-C Coupling via Aryl Thiocyanate and Aryl Zinc Reagents.

Selected for a Short Talk, Featured Topic, 2003 Annual Meeting of American Society for Pharmacology and Experimental Therapeutics (ASPET), San Diego, CA. Title: 5-HT1A Receptors in the Paraventricular Nucleus of the Hypothalamus (PVN) Mediate Endocrine and Behavioral, but not Cardiovascular Responses to 8-OH-DPAT.

Selected for Oral Presentation, 2010 ASBMB Thematic Symposium on Molecular Mechanisms of Hypertension at the 2010 meeting of the Federation of American Societies for Experimental Biology (FASEB), Anaheim, CA, April 2010. Title: Hypertension mechanisms: RGS2 Coordinates $G_{q/11}$ and G_i Signaling in Endothelium and Smooth Muscle of the Resistance Vasculature.

Selected for Oral Presentation, 64th High Blood Pressure Research Conference of the American Heart Association (CHBPR-AHA), Washington, D.C., October 2010. Title: Endothelial RGS2 Squelches G_i Signaling to Promote EDHF-Dependent Vasodilatation.

Selected for Oral Presentation, 2016 Council on Hypertension Scientific Session of the American Heart Association (COH-AHA), Orlando, FL, September 2016. Title: Functional Remodeling of the Renal Vasculature Precedes the Establishment of Salt-Sensitive Hypertension in Eln-deficient Mice.

Invited Faculty Lecturer, American Society of Nephrology 2016 Kidney Week, Scientific Session on G proteins, Ligands, and Biased Agonist, Oh My! Unconventional Mechanisms of Signal Processing, Chicago, IL, November 2016. Title: Regulators of G-Protein Signaling (RGS) and Renal Hemodynamics, Blood Pressure, and Renal Fibrosis.

Selected for Oral Presentation, 2018 Council on Hypertension Scientific Sessions of the American Heart Association (COH-AHA), Chicago, IL, September 2018. Title: Dual Loss of

Rgs2 and *Rgs5* Exacerbates the Progression of Cardiac Hypertrophy in Mice Chronically Treated with Isoproterenol.