

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.

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NAME Uchechukwu K. A. Sampson	POSITION TITLE Assistant Professor of Medicine/Cardiovascular
eRA COMMONS USER NAME sampsou	

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, and include*

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Ibadan, Nigeria	MBBS	1994	Medicine & Surgery
Rutgers University, New Jersey	MBA	1998	Health Care Org/Admin
UMDNJ/Robert Wood Johnson Medical School, NJ	MPH	1998	Public Health
University of Oxford, United Kingdom	MSc.	2004	Evidence-based Healthcare

A. Personal Statement: I am a physician-scientist whose background and interests center on cardiovascular (CV) diseases, prevention, CV epidemiology, health disparities, and CV imaging with a focus on peripheral arterial disease, abdominal aortic aneurysms, atherosclerosis and lipid disorders. My overarching research goal is to advance our understanding of pathobiology, risk prediction, prevention, and treatment within this arena via a translational and clinical/epidemiology research engine. My work-in-progress, began with the receipt of the Future Leaders in CV Medical Research Award from Schering-Plough for a pilot study to investigate the relationship between inflammation and risk prediction in patients with abdominal aortic aneurysms. This study utilizes flourodeoxyglucose (FDG) positron emission tomography (PET) imaging to evaluate the relationship between arterial wall inflammation and risk of adverse outcome in patients with abdominal aortic aneurysm. This theme has now been extended to include in vivo structural and molecular imaging of abdominal aortic aneurysms in hyperlipidemic mice using noninvasive imaging methods such as ultrasound and magnetic resonance imaging. Awards from the American College of Cardiology, Robert Wood Johnson foundation, and the Vanderbilt Clinical and Translational Scholars program support my bench laboratory and clinical research. Simultaneously, my laboratory is investigating the potential role of oxidative stress in aneurysm development using benzo[a]pyrene, a polycyclic aromatic hydrocarbon ubiquitous in the environment, and transgenic mice that overexpress antioxidant enzymes. The latter is a pilot under the Meharry-Vanderbilt NIEHS-NIH Advanced Research Cooperation in Environmental Health (ARCH). Finally, I serve on the WHO Global Burden of Disease working group on Peripheral Arterial Disease and Abdominal Aortic Aneurysms, as the Chief Editor of eMedicine’s section on peripheral vascular disease, as an Assistant Professor of Medicine at Vanderbilt University Medical Center and Meharry Medical College, and as an attending cardiovascular medicine specialist at Metropolitan Nashville General Hospital at Meharry Medical College. These capacities provide ample opportunity to advise and engage clinical fellows that express their interest in cardiovascular research

B. Position and Honors:

Positions and Employment

1998-2001	Medical Residency, Internal Medicine, The Brooklyn Hospital Center, Cornell University
2001-2002	Bowen Brooks Research Fellowship, Centre for Evidence-Based Medicine, The John Radcliffe Hospital, University of Oxford, United Kingdom
2002-2004	Clinical and Research Fellow, Noninvasive Cardiology, Brigham and Women’s Hospital, Harvard Medical School, Boston Massachusetts
2002-2004	Research Fellow in Medicine, Harvard Medical School, Boston Massachusetts
2004-2005	Clinical Fellow in Radiology (Nuclear Cardiology, PET-CT, and CT-Angiography), Brigham and Women’s Hospital, Harvard Medical School, Boston Massachusetts
2004-2005	Research Fellow in Radiology, Harvard Medical School, Boston Massachusetts

- 07/2005- Clinical/Research Fellow in Cardiovascular Medicine, Vanderbilt University Medical Center, Nashville, TN
- 07/2007- Clinical Instructor in Medicine, Vanderbilt University Medical Center, Nashville, TN
- 07/2008- Assistant Professor, Cardiovascular Biology, Meharry Medical College, Nashville, TN
- 07/2008- Assistant Professor of Medicine, Meharry Medical College, Nashville, TN
- 07/2008- Assistant Professor of Medicine, Vanderbilt University Medical Center, Nashville, TN
- 2008- 2009 Director, Nuclear Cardiology/Cardiovascular Imaging, Metropolitan Nashville General Hospital, Meharry Medical College, Nashville, TN.

Other Experience and Professional Memberships

- 1988-1989 President, Debate and Quiz Society, Independence Hall, University of Ibadan, Nigeria
- 2002-2003 Member, Clinical Endpoints Committee, Candesartan in Heart Failure Trial (CHARM)
- 2002-2003 Member, Clinical Endpoints Committee, Valsartan in Myocardial Infarction Trial (VALIANT)
- 2004- Member, Association of Black Cardiologists
- 2004- Member, American Heart Association
- 2005- Member, American College of Cardiology
- 2009- Member, WHO Global Burden of Diseases Working Group on Peripheral Arterial Disease and Abdominal Aortic Aneurysm

Honors

- 1988 Certificate of Merit for Distinguished Service –Independence Hall, University of Ibadan
- 1989 Member, Order of the Independence Hall, University of Ibadan, Nigeria
- 2001 Bowen Brooks Fellowship Award from The New York Academy of Medicine, for advanced studies at the University of Oxford, United Kingdom
- 2002-2004 NIH/ Ruth L. Kirschstein National Research Service Award
- 2006 Finalist, Siemens Outstanding Academic Research Award Competition
- 2007 Future Leaders for CV Medical Research Award
- 2008 ACCF/GE Healthcare Career Development Award in Cardiovascular Imaging Technologies and Targeted Imaging Agents
- 2008 Vanderbilt Clinical and Translational Research Scholars (VCTRS) Award
- 2008 Amos Medical Faculty Development Award of the Robert Wood Johnson Foundation

C. Selected peer-reviewed publications (in chronological order).

Dawes, M., & **Sampson, U.** (2003). Knowledge management in clinical practice: a systematic review of information seeking behavior in physicians. *Int J Med Inform*, 71(1), 9-15.

Dorbala, S., Limaye, A., **Sampson, U. K.**, Crugnale, S., Yang, D., Fitzgerald, J., et al. (2005). Normal and abnormal responses of Left ventricular ejection fraction during vasodilator stress Rubidium 82 Positron Emission Tomography (PET-CT) [abstract]. *J Nucl Med*, 46, 268P.

Dorbala, S., **Sampson, U.**, Limaye, A., Crugnale, S., Yang, D., Kwong, R., et al. (2005). Diagnostic value of changes in left ventricular ejection fraction during peak vasodilator stress gated cardiac PET/CT: correlation with the extent of angiographic coronary artery disease [abstract]. *Circulation*, 112, II-365.

Di Carli, M. F., Dorbala, S., Limaye, A., **Sampson, U.**, Kwong, R., Schenker, M., et al. (2006). Clinical value of hybrid PET/CT cardiac imaging: Complementary roles of multi-detector CT coronary angiography and stress PET perfusion imaging [abstract]. *J Am Coll Cardiol*, 47(4), 115A.

Sampson UK, Dorbala S, Limaye A, Kwong R, Di Carli MF. Diagnostic accuracy of rubidium-82 myocardial perfusion imaging with hybrid positron emission tomography/computed tomography in the detection of coronary artery disease. *J Am Coll Cardiol* 2007;49(10):1052-8.

Sampson UK, Pfeffer MA, McMurray JJ, Lokhnygina Y, White HD, Solomon SD. Predictors of stroke in high-risk patients after acute myocardial infarction: insights from the VALIANT trial. *Eur Heart J* 2007;28(6):685-91.

Dorbala S, Vangala D, **Sampson U**, Limaye A, Kwong R, Di Carli MF. Value of Vasodilator Left Ventricular Ejection Fraction Reserve in Evaluating the Magnitude of Myocardium at Risk and the Extent of Angiographic Coronary Artery Disease: A 82Rb PET/CT Study. *J Nucl Med* 2007;48(3):349-358.

Uchechukwu K. Sampson. Cardiac Computed Tomography and Coronary Artery Disease: A comparison with competing modalities in the context of a systematic review. *Applied Radiology Volume: 36 Number: 1 January 2007*

Malkerneker D, Brenner R, Martin WH, **Sampson UK**, Feurer ID, Kronenberg MW, et al. CT-based attenuation correction versus prone imaging to decrease equivocal interpretations of rest/stress Tc-99m tetrofosmin SPECT MPI. *J Nucl Cardiol* 2007;14(3):314-23.

D. Research Support.

Governmental, Active:

Granting agency: NIH internal K Award/Vanderbilt Clinical and Translational Research Scholars Program

Role: Principal Investigator

Duration: 07/01/08 to 06/31/2011

Title: Role of inflammation in the pathobiology of abdominal aortic aneurysms

Purpose: This study will explore *in vivo* imaging of inflammation in the pathobiology of abdominal aortic aneurysms in mice and humans

Granting agency: NIEHS-NIH: Meharry-Vanderbilt Advanced Research Cooperation in Environmental Health

Role: Principal Investigator of Pilot Project

Duration: 07/01/09 to 06/30/2011

Title: Role of oxidative stress in the pathobiology of abdominal aortic aneurysms.

Purpose: This study evaluates whether Benzo[a]pyrene, an oxidative stress agent ubiquitous in the environment, potentiates aneurysm formation in a mice model of the disease developed using ApoE knockout mice exposed to angiotensin II, the latter a proaneurysmal stimulus.

Non-governmental, Active:

Granting agency: American College of Cardiology Foundation/GE Healthcare (PI: Uchechukwu Sampson)

Role: Principal Investigator

Duration: 07/01/08 to 06/31/2010

Title: Structural and molecular Imaging of abdominal aortic aneurysms in hyperlipidemic mice

Purpose: This study will validate noninvasive imaging methods for *in vivo* assessment of aneurysmal wall inflammation and apoptosis in hyperlipidemic mice; and test the hypothesis that aneurysms can quantitatively regress following withdrawal of proaneurysmal stimulus.

Granting agency: Robert Wood Johnson Foundation (PI: Uchechukwu Sampson)

Role: Principal Investigator

Duration: Pending (07/01/09 to 06/31/2013)

Title: Role of inflammation in the pathobiology of abdominal aortic aneurysms

Purpose: This study will explore *in vivo* imaging of inflammation in the pathobiology of abdominal aortic aneurysms in mice and humans

Granting agency: Meharry-Vanderbilt Alliance Foundation (Co-PI: Uchechukwu Sampson)

Role: Co Principal Investigator

Duration: 11/2008 to 06/2009

Title: A Revolution Healthcare Project: Eliminating disparities in cardiovascular disease

Program Director/Principal Investigator (Last, First, Middle): Sampson, Uchechukwu, Kachi, A

Purpose: A Planning grant to create a set of interwoven innovative projects focused on preventing and optimizing treatment of cardiovascular disease in general, and heart failure specifically in Middle Tennessee.

Granting agency: Schering-Plough (PI: Uchechukwu Sampson)

Role: Principal Investigator

Duration: 07/01/07 to present

Title: Inflammation and Risk Prediction in Patients with Abdominal Aortic Aneurysm

Purpose: This study utilizes ¹⁸ flourodeoxyglucose (FDG) positron emission tomography (PET) imaging co-registered with structural computerized tomography (CT) images to evaluate the relationship between arterial wall inflammation and risk of adverse outcome in patients with abdominal aortic aneurysm.