BADMUS, OLUFUNTO OLAYINKA

Date of Birth: 12 October, 1985

Gender: Female

Nationality: Nigerian

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PERSONAL STATEMENT

My long-term research goal is focused on gaining the understanding of major pathways involved in the association of metabolic diseases and cardiac dysfunction. During my PhD training, I worked on the effects of steroid hormones (glucocorticoid, estrogen-progesterone) on cardio-metabolic diseases in maternal. Presently, my immediate target is to acquire additional research and practical training in the areas of metabolism and cardiovascular physiology, and also gain technical and mentoring skills that will prepare me towards building my future career as a tenure track faculty. To achieve my goals, I am pursuing my postdoctoral training in the laboratory of Dr. David E. Stec in the Department of Physiology and Biophysics at the University of Mississippi Medical Center. I am interested in the role of bilirubin and biliverdin reductase in hepatic steatosis. I am also interested on how non-alcoholic fatty liver disease promotes cardiovascular disease. The Stec lab has unique models of NAFLD which I can use to investigate the mechanisms by which cardiovascular disease develops. My project will be effectively carried out by combining my past research skills with my current training in surgery, molecular biology, and cardiovascular measurements such as echocardiographic evaluation of the heart structure and function and monitoring of blood pressure using telemetry.

EDUCATION

University of Ilorin, Ilorin 2015-2019
Ph.D. Physiology
Dissertation: Effect of maternal oral contraceptive treatment on cardiometabolic alterations induced by gestational dexamethasone exposure in rats

University of Ilorin, Ilorin 2012-2014
M.Sc. Physiology
Dissertation: Effect of high salt on C- reactive protein, glucose tolerance and growth pattern in oral contraceptive treated female rats

Ladoke Akintola University of Technology, Ogbomoso, Nigeria 2003-2008
B.Tech. Physiology
Dissertation: Effect of graded doses of Adrenaline on Histamine stimulated Acid secretion of Hypothyroid and Hyperthyroid African Toads (bufo regularis).

POSITIONS AND EMPLOYMENT

1. **Postdoctoral fellow**, Department of Physiology and Biophysics, University of Mississippi Medical Center, Jackson, MS. 2021-date
2. **Lecturer II**, Kwara State University, Malete, Nigeria 2019-2021
3. **Assistant Lecturer**, Kwara State University, Malete, Nigeria 2016-2019
4. **Classroom tutor**, Chapel Secondary School, Ilorin, Nigeria 2009-2016

TEACHING EXPERIENCE

1. Delivered cardiovascular and renal physiology lectures, Kwara State University, Malete, Nigeria 2016-2021
2. Tutored basic science and health education, Chapel Secondary School, Ilorin, Nigeria 2009-2016

ADMINISTRATIVE EXPERIENCE

Kwara State University, Malete, Nigeria
(Department of Physiology and Public Health)

1. **Coordinator**- Anatomy and Physiology Units 2018-2020
2. **Departmental Examination Officer**- Supervision and conduct of examinations for the department and handling of results 2019-2021

3. **Student's Level Adviser** 2016-2020

4. **Project Manager** (HOPE Cardiometabolic Research Team)-coordinated projects and organized academic seminars 2016-2019

GRANTS AND AWARDS

1. Keystone Symposia 2021
   Scholarship to attend virtual live Keystone Symposia eSymposia meeting, "The Microbiome: From Mother to Child," from January 18-20, 2021

2. Physiological society (Physoc), United Kingdom 2019
   Travel Grant Award to attend International Diabetes Federation Congress

3. International Society of Hypertension (ISH) 2018
   Travel Grant Award for the 27th Scientific Meeting at Beijing, China

4. Association of African Universities (AAU) 2017
   Small Grants for Theses and Dissertations: 2017/2018 Academic year

5. International Congress of the African Association of Physiological Sciences (AAPS) and Physiological Society of Nigeria (PSN) 2016
   Best Oral Presentation Award

6. American Physiological Society (APS) 2016
   Accommodation Grant Award for Physiological Society of Nigeria Conference

MEMBERSHIP OF LEARNED SOCIETIES AND PROFESSIONAL BODIES

1. American Physiological Society (APS) 2021- date
2. New York Academy of Sciences (NYAS) 2019 - date
3. Physiological Society of United Kingdom (Physoc) 2018 - date
4. Physiological Society of Nigeria (PSN) 2016 - date
5. Teacher's Registration Council of Nigeria (TRCN) 2013 - date

COMMUNITY SERVICES

1. Volunteer of Phun Week event at the Mississippi Children's museum 2021

2. National Youth Service Corps (a year dedicated service to Nigeria through teaching) 2009-2010

SCHOLARLY PUBLICATIONS

Journal articles

1. **Badmus O.O.,** Hillhouse S.A., Anderson C. D. and Hinds T.D, Jr., Stec D.E. (2022). Molecular Mechanisms and Emerging Therapies for Nonalcoholic Fatty Liver Disease. *Clinical Science, (under review).*

2. Stec D.E., Tiribelli C., **Badmus O.O.** and Hinds T.D, Jr. (2022). Novel Function for Bilirubin as a Metabolic Signaling Molecule: Implications for Kidney 2 Diseases. *Kidney360 (under review).*

3. **Badmus O.O.,** Areola E.D., Benjamin E., Obekpa M.A., Adegoke T.E., Elijah O.E., Imam A., Olajide O.J. and Olatunji L.A. (2021). Suppression of Adenosine Deaminase and Xanthine Oxidase activities by mineralocorticoid and glucocorticoid receptors blockades restore renal anti-oxidative barrier in oral contraceptive-treated dam. *Renin-Angiotensin-Aldosterone System,* 5:1-13.

4. Olatunji L.A., Areola, E.D., Usman T.O., **Badmus O.O.** and Olaniyi K.S. (2021). Treatment with acetate during late pregnancy protects dams against testosterone- induced renal dysfunction. *Heliyon,* 7,1, e5920.

5. Olatunji L.A., Areola E.D., **Badmus O.O.,** Usman T.O. and Olaniyi K.S. (2020). Acetate causes renoprotection like androgen and mineralocorticoid receptors blockade in testosterone-exposed pregnant rats. *Molecular and Cellular Biochemistry*, doi: 10.1007/s11010-020-04031-y.

6. Michael, O.S., Dibia, C.L., Soetan, O.A., Adeyanju, O.A., Oyewole, A.L., **Badmus, O.O.**, Adetunji, C.O., and Soladoye A.O. (2020). Sodium acetate prevents nicotine-induced cardiorenal dysmetabolism through uric acid/creatine kinase-dependent pathway. *Life Sciences,* 2020, 118127.

7. **Badmus, O.O.**, Sabinari, I.W., and Olatunji, L.A. (2020). Dexamethasone increases renal

free fatty acids and xanthine oxidase activity in female rats: could there be any gestational impact? *Drug and Chemical Toxicology*, 29, 1-12.

8. **Badmus, O.O.**, Njan, A.A., Ologe, M.O., and Olatunji, L.A. (2020). Insulin resistance and depressed cardiac G6PD activity induced by glucocorticoid exposure during pregnancy are attenuated by maternal estrogen-progestin therapy. *Environmental toxicology and pharmacology*, 79, 103423.

9. **Badmus, O.O.**, and Olatunji L.A. (2020). Dexamethasone causes defective glucose-6-phosphate dehydrogenase-dependent antioxidant barrier through endoglin in pregnant and non-pregnant rats. *Canadian Journal of Physiology and Pharmacology*, 80(10), 667-677.

10. **Badmus, O.O.,** and Olatunji, L.A. (2019). Increased hepatic lipid accumulation caused by postpartum oral estrogen-progestin is attenuated by glucocorticoid or mineralocorticoid receptor blockade through suppressed uric acid and enhanced G6PD activity. *Naunyn-Schmiedeberg's* Archives *of Pharmacology*, 392(8), 913-924.

11. Usman, T., **Badmus, O.O.,** Kim, I., and Olatunji, L.A. (2019). Mineralocorticoid receptor blockade attenuates disrupted glutathione-dependent antioxidant defense and elevated endoglin in the hearts of pregnant rats exposed to testosterone. *Naunyn-Schmiedeberg's Archives of Pharmacology*, 392(7), 773-784.

Badmus O.O., Michael O.S., Rabiu S., and Olatunji L.A. (2019). Glucocorticoid exposure causes disrupted glucoregulation, cardiac inflammation and elevated dipeptidyl peptidase-4 activity independent of glycogen synthase kinase-3 in female rats. *Archives of Physiology and Biochemistry*, 125(5), 414–422.

12. **Badmus, O.O.,** and Olatunji, L.A. (2018). Gestational glucocorticoid exposure disrupts glucose homeostasis that is accompanied by increased endoglin and DPP-4 activity instead of GSK-3 in rats. *Environmental Toxicology and Pharmacology*, 60, 66-75.

13. Usman, T.O., Areola, E.D., **Badmus, O.O.,** Kim I., and Olatunji L.A. (2018). Sodium acetate and androgen receptor blockade improve gestational androgen excess- induced deteriorated glucose homeostasis and antioxidant defenses in rats: roles of adenosine deaminase and xanthine oxidase activities. *Journal of Nutritional Biochemistry*, 62, 65-75.

14. Olatunji, L.A., Areola, E.D., and **Badmus, O.O.** (2018). Endoglin inhibition by sodium acetate and flutamide ameliorates cardiac defective G6PD-dependent antioxidant defense in gestational testosterone-exposed rats. *Biomedicine and Pharmacotherapy*, 107, 1641-1647.

15. Omolekulo, T.O., Areola, E.D., **Badmus, O.O.,** Michael, O.S., Kim, I., and Olatunji L.A. (2018). Inhibition of adenosine deaminase and xanthine oxidase activities by valproic acid abates glucose dysregulation and liver triglyceride accumulation independent of corticosteroids in estrogen/progestin-treated female rats. *Canadian Journal of Physiology and Pharmacology*, 96(11), 1092–1103.

16. Salawu E.O., Alhassan A.W., Mabayoje V.O., Adeeyo O.A., Saka W.A., and **Ishola O.O.** (2010). Stress reversibly affects immunity in rats. *Continental Journal of Biomedical Sciences,* 4, 16 – 20.

17. Salawu E.O., Adeleke A.A., Oyewo O.O., Ashamu E.A., **Ishola O.O**., Afolabi A.O., and Adesanya T.A. (2009). Prevention of renal toxicity from lead exposure administration of Lycopersicon esculentum. *Journal of Toxicology and Environmental Health Sciences,* 1(2), 022-027.

18. Ajibade J.A., Adeeyo O.A., Ofusori D.A., Adenowo T.K., **Ishola O.O.**, Ashamu E.A., and Nwangwu S.C. (2009). Microstructural Observations on Nissl Substances in the Cerebellar Cortex of Adult Wistar Rats following Quinine Administration. *Tropical Journal of pharmaceutical research,* 8(2), 105 – 109.

19. Odukoya S.A., Adeeyo O.A. Ofusori D.A., Caxton Martins A.E., Ayoka O.A., Oyewo O.O., Babatunde L.S., Yusuf U.A., Adegoke A.A., and **Ishola O.O.** (2008). Histological investigation of the Pregnant and Non pregnant Uterine Limbs of the Frugivorous Bat (Eidolon helvum). *International Journal of Integrative Biology,* 3(3), 169.

Published book chapter

1. Adetunji C.O., Michael O.S., Anani O.A., **Badmus O.O.,** Olaniyi K.S., Adeyanju O.A., Adetunji J.B. and Sarin N.B. (2020). Multiomics approach for mycotoxins toxicology. *Food Toxicology and Forensics, published by Elsevier*. Chapter 3, page 69-86.

Published abstracts

1. Olatunji L.A., Areola, E.D., **Badmus, O.O.,** Usman, T.O. and Kim I. (2018). Inhibition of adenosine deaminase and xanthine oxidase activities by sodium acetate ameliorates glucose dysregulation and defective antioxidant defenses induced by gestational. *Proceedings for Annual Meeting of The Japanese Pharmacological Society WCP2018 (The 18th World Congress of Basic and Clinical Pharmacology). PO3-6-4.*

2. **Badmus, O.O.,** and Olatunji L.A. (2018). Estrogen-progestin oral contraceptive worsens

maternal glucose dysregulation and hepatic triglyceride accumulation induced by late-gestational glucocorticoid exposure in rats. *Journal of Hypertension*. 36, e43.

3. Areola, E., **Badmus, O.O.,** Usman, T., and Olatunji, L.A. (2018). Sodium acetate and androgen receptor blockade improve gestational androgen excess-induced deteriorated glucose homeostasis and antioxidant defenses in rats: roles of adenosine deaminase and xanthine oxidase activities. *Journal of Hypertension*. 36, e33.

CONFERENCES ATTENDED WITH PAPER READ

1. **Badmus, O.O.,** and Olatunji, L.A. (2021). Sodium acetate preprograms protection of the liver against hyperinsulinemia and elevated uric acid after maternal testosterone exposure in rats. Keystone Symposia's eSymposia on The Microbiome: From Mother to Child - held January 18-20, 2021.

2. **Badmus, O.O.,** and Olatunji, L.A. (2018). Estrogen-progestin oral contraceptive worsens maternal glucose dysregulation and hepatic triglyceride accumulation induced by late-gestational glucocorticoid exposure in rats. 27th Scientific Meeting of the International Society of Hypertension, Beijing, China, September, 2018.

3. Areola, E.D., **Badmus**, O.O., Usman, T., and Olatunji, L.A. (2018). Sodium acetate and androgen receptor blockade improve gestational androgen excess-induced deteriorated glucose homeostasis and antioxidant defenses in rats: roles of adenosine deaminase and xanthine oxidase activities**.** 27th Scientific Meeting of the International Society of Hypertension, Beijing, China, September, 2018.

4. **Badmus, O.O.,** and Olatunji, L.A. (2017). Gestational glucocorticoid exposure causes glucose dysregulation and increases dipeptidyl peptidase- 4 activity in rats. International diabetes Federation Congress, Abu Dhabi, UAE, December, 2017.

5. Usman, T., **Badmus, O.O.,** Michael, O.S., and Olatunji, L.A. (2017). Elevated gestational testosterone causes insulin resistance and increases dipeptidyl peptidase–4 activity in rats. International diabetes Federation Congress, Abu Dhabi, UAE, December, 2017.

6. Michael, O.S., Areola, E.D., **Badmus, O.O.**, Usman, T.O., and Olatunji, L.A. (2017). Short-chain fatty acid prevents glucose deregulation and improves fetal outcome during late gestational androgen excess. International diabetes Federation Congress, Abu Dhabi, UAE, December, 2017.

7. **Badmus, O.O.,** and Olatunji, L.A. (2017). Glucocorticoid exposure disrupts glucose

homeostasis and causes cardiac inflammation independent of DPP-4 and GSK-3 in female rats. 37th Annual Scientific Conference of Physiological Society of Nigeria, Kaduna State University, Kaduna, Nigeria, September, 2017.

8. **Badmus, O.O.,** and Olatunji, L. A. (2016). Insulin resistance induced by glucocorticoid treatment is accompanied by increased dipeptidyl peptidase-4 activity in pregnant rats. 7th International Congress of the African Association of Physiological Sciences and the Physiological Society of Nigeria, Lagos, Nigeria, September, 2016.

9. Rabiu, S., **Badmus, O.O.,** and Olatunji, L.A. (2016). Maternal glucocorticoid treatment increases insulin resistance, vascular pro-inflammation and blood viscosity but reduces body weight gain and glycogen synthase kinase-3 in rats. Nigeria Hypertension Society Conference, Ilorin, Nigeria, May, 2016.

TRAINING PROGRAMMES ATTENDED

1. Online course on **'Research Writing in the Sciences'** (offered by INASP in UK and sponsored by AuthorAid, between 6th July to 17th August, 2020).

2. Capacity building workshop on **Courseware Development and Virtualization** (Centre for Distance and E-learning Education, Kwara State University, Malete, June, 2020).

3. Workshop on **Quality Research Outputs for Academic Staff** (Center for Sponsored Project, Kwara State University, Malete, 20th March, 2019).

4. Workshop on **Academic Retreat on Functional Higher Education** (Counselling and Career Services Centre, Kwara State University, Malete, 13th-14th March 2019).

5. **Community Outreach Workshop** (Centre for Community Development, Kwara State University, Malete, 14th November, 2018).

6. **Advanced Digital Awareness Programme for Tertiary Institutions (ADAPTI)** (Centre for Information and Technology, Kwara State University in collaboration with Digital Bridge Institute (DBI) Abuja, 13th – 17th August, 2018).

7. Workshop on **Cardiometabolic Syndrome** (African Association of Physiological Sciences, Lagos, 2016 in collaboration with International Union of Physiological Sciences).

8. **Teaching and Research funding opportunities for Africans** (African Association of Physiological Sciences, Lagos, September 6th, 2016).