BIOGRAPHICAL SKETCH

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NAME: Olutoye, Oluyinka O.

eRA COMMONS USER NAME (credential, e.g., agency login): oolutoye

POSITION TITLE: Surgeon-in-Chief, Nationwide Children's Hospital, Thomas E. Boles Professor of Surgery, The Ohio State University

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Obafemi Awolowo University, Ile-Ife, Nigeria	M.B. Ch.B (MD)	10/1988	Medicine & Surgery
Lagos University Teaching Hospital, Lagos, Nigeria	Internship	10/1989	Rotating Internship
Howard University Hospital, Washington DC	Internship	06/1991	Pediatrics
Virginia Commonwealth Univ. (VCU),, Richmond, VA	Ph.D.	05/1996	Anatomy
Wound Healing Laboratory, VCU, Richmond, VA	Research Fellowship	06/1996	Wound Healing
Virginia Commonwealth University, Richmond, VA	Residency	06/1998	General Surgery
The Children's Hospital of Philadelphia, Philadelphia, PA	Research Fellowship	06/1999	Fetal and Pediatric Surgery
The Children's Hospital of Philadelphia, Philadelphia, PA	Clinical Fellowship	06/2001	Pediatric Surgery

A. Personal Statement

My role in the proposed project is that of a Co-Investigator. I am a general pediatric surgeon with over fifteen years' experience in fetal and neonatal surgery. I have experience as a Principal Investigator (K-08, R-21) and Co-Investigator on basic and clinical research funded by the NIH, private industry, foundations and intramural funds. In my previous position as co-director of the Texas Children's Fetal Center, our team developed innovative techniques to decrease morbidity and postnatal complications for a myriad of congenital anomalies. Additionally, my research team developed a considerable expertise in utilizing the ovine model to study the maternal-fetal axis in fetal surgery and outcomes for neonates treated prenatally for congenital anomalies. As a fetal surgeon, the animal model is vital to understanding the mechanics of in-utero physiology prior to implementation clinically. This proposal will seek to establish novel technologies utilizing the implantation of tissue engineered constructs to treat single ventricle cardiac anomalies as well as improve in-utero surgical techniques to minimize complications to fetus and the mother. Dr. Christopher Breuer, the principal investigator, and I are currently clinical and research collaborators in the Center for Regenerative Medicine at Nationwide Children's Hospital with a shared interest in improving outcomes and long term morbidity of fetuses with complex developmental malformations.

1. **Fetal Surgery Decreases Anesthesia-Induced Neuroapoptosis in the Mid-Gestational Fetal Ovine Brain**. Olutoye OA, Cruz SM, Akinkuotu AC, Sheikh F, Zamora IJ, Yu L, Adesina AM, Olutoye OO. Fetal Diagn Ther. 2019;46(2):111-118. doi: 10.1159/000491925. Epub 2018 Oct 12. PMID:30317244

2. **Comparison of two fetoscopic open neural tube defect (ONTD) repair techniques: Single-layer vs three-layer closure**. Belfort MA, Whitehead WE, Shamshirsaz AA, Espinoza J, Nassr AA, Lee TC, Olutoye OO, Keswani SG, Sanz Cortes M. Ultrasound Obstet Gynecol. 2019 Nov 11. doi: 10.1002/uog.21915. [Epub ahead of print] PMID: 31709658

3. **Elective delivery at 34 weeks vs routine obstetric care in fetal gastroschisis: randomized controlled trial.** Shamshirsaz AA, Lee TC, Hair AB, Erfani H, Espinoza J, Shamshirsaz AA, Fox KA, Gan-dhi M, Nassr AA, Abrams SA, Mccullough LB, Chervenak FA, Olutoye OO, Belfort MA. Ultrasound Ob-stet Gynecol. 2020 Jan;55(1):15-19. doi: 10.1002/uog.21871. Epub 2019 Dec 3. PMID:31503365

4. **Timing of Prenatal Magnetic Resonance Imaging in the Assessment of Congenital Diaphragmatic Hernia**. Style CC, Mehollin-Ray AR, Verla MA, Lau PE, Cruz SM, Espinoza J, Lee TC, Fernandes CJ, Keswani SG, Olutoye OO. Fetal Diagn Ther. 2019 Aug 15:1-9. doi: 10.1159/000501556. [Epub ahead of print] PMID:31416065

B. Positions and Honors

Positions and Employment

2001- Present	Co-Director, Texas Children's Fetal Center, Houston, TX
2001 – 2007	Assistant Professor of Surgery, Baylor College of Medicine, Houston, TX
2001 – 2008	Assistant Professor of Pediatrics, Baylor College of Medicine, Houston, TX
2007-- 2012	Associate Professor of Surgery, Baylor College of Medicine, Houston, TX
2007 – 2012	Associate Professor of Obstetrics and Gynecology, Baylor College of Medicine, Houston, TX
2008 – 2012	Associate Professor of Pediatrics, Baylor College of Medicine, Houston, TX
2012-- 2019	Professor of Surgery, Baylor College of Medicine, Houston, TX
2012-- 2019	Professor of Obstetrics and Gynecology, Baylor College of Medicine, Houston, TX
2012-- 2019	Professor of Pediatrics, Baylor College of Medicine, Houston, TX
2015 – 2017	President-elect, Faculty Senate, Baylor college of Medicine, Houston, TX.
2017 – 2019	Chair, Faculty Senate, Baylor College of Medicine
2019 – Present	Surgeon-in-Chief, Nationwide Children's Hospital
2019 – Present	Professor of Surgery, The Ohio State University

Other Experience and Professional Memberships

International Societies

1989- Present	Member, Nigerian Medical Association
2001- Present	Member, International Fetal Medicine and Surgery Society
2008 - Present	Fellow, West African College of Surgeons
2016 - 2017	Co-President, International Fetal Medicine and Surgery Society

National Societies

1998 - Present	Member, Alpha Omega Alpha Society
2001 - Present	Member, American Pediatric Surgical Association (APSA)
2002 - Present	Member, Wound Healing Society
2003 - Present	Fellow, American College of Surgeons
2003 - Present	Fellow, American Academy of Pediatrics – Section on Surgery
2003 - Present	Member, Association for Academic Surgery (AAS)
2005 – 2010	Association for Academic Surgery Institutional representative
2006 - Present	Member, Society for University Surgeons
2006 – 2008	Member, Association for Academic Surgery Committee on Issues
2007 – 2010	Member, APSA Fetal Therapy Committee
2007 – 2010	Member, Wound Healing Society Board of Directors
2010	Wound Healing Society Program co-chair
2010 – 2013	Member, APSA Informatics and Telemedicine Committee
2010 – 2011	Vice Chair, APSA Fetal Therapy Committee
2012 – 2014	Chair, APSA Fetal Therapy Committee
2015 - Present	Member, American Surgical Association

Honors

2005	Fulbright & Jaworski L.L.P. Faculty Excellence Award: Teaching and Evaluation Baylor College of Medicine, Houston, TX
2005	Inducted into the Academy of Distinguished Educators Baylor College of Medicine, Houston, TX
2006	Molecular Surgeon Research Achievement Award, Michael E. DeBakey Department of Surgery, Baylor College of Medicine, Houston, TX
2007	James IV Traveling Scholar Fellowship The James IV Association of Surgeons, Inc.
2010	International Recognition Award, Texas Children's Hospital International Services
2010	International Recognition Award, Department of Pediatrics, Baylor College of Medicine, Houston, TX.
2010	Denton A. Cooley Surgical Innovator award (inaugural award). Department of Surgery and Texas Children's Auxiliary, Texas Children's Hospital, Houston, TX
2013	Mark A. Wallace 2014 Catalyst Leader of the Year, Texas Children's Hospital
2015	Research Mentor Award, Department of Surgery, Texas Children's Hospital

C. Contributions to Science

1. Cellular and Molecular Factors That Influence Wound Healing. My interest in characterizing and improving fetal wound healing has begun since my doctorate. In one of our more recent studies, we found that fibrocytes can contribute to the pathogenesis of keloids and serum amyloid P (SAP) has potential as a therapeutic agent in the prevention of these lesions. In another study, the absence of membrane bound Intercellular adhesion molecule-1 (ICAM-1) correlated with delayed wound healing and decreased wound elasticity. We also concluded that the absence of P-selectin delays inflammatory cell recruitment and reepithelialization of fetal wounds.
    a. Fetal wound healing using a genetically modified murine model: the contribution of P-selectin. Naik-Mathuria B, Gay AN, Yu L, Hsu JE, Smith CW, Olutoye OO.J Pediatr Surg. 2008 Apr;43(4):675-82. doi: 0.1016/j.jpedsurg.2007.12.007. PMID:18405715
    b. Wound healing characteristics of ICAM-1 null mice devoid of all isoforms of ICAM-1. Gay AN, Mushin OP, Lazar DA, Naik-Mathuria BJ, Yu L, Gobin A, Smith CW, Olutoye OO. J Surg Res. 2011 Nov; 171(1):e1-7. doi: 10.1016/j.jss.2011.06.053. Epub 2011 Jul 23. PMID: 21872884
    c. Increased in vitro differentiation of fibrocytes from keloid patients is inhibited by serum amyloid P. Naylor MC, Lazar DA, Zamora IJ, Mushin OP, Yu L, Brissett AE, Olutoye OO. Wound Repair Regen. 2012 May-Jun;20(3):277-83. doi: 10.1111/j.1524-475X.2012.00782.x. PMID: 22564223
    d. In-utero radiofrequency ablation in fetal piglets: Lessons learned. Olutoye OO, Gay AN, Sheikh F, Akinkuotu AC, Sundararajan M, Lazar DA, Zamora IJ, Naik-Mathuria BJ, Cass DL, Yu L. J Pediatr Surg. 2015 Jul 26. pii: S0022-3468(15)00438-8. doi: 10.1016/j.jpedsurg.2015.07.014. PMID:26309094

2. Predicting Outcomes in Congenital Diaphragmatic Hernia (CDH). As co-director of the fetal center at Texas Children's Hospital, I have focused part of my investigative studies in identifying prenatal and postnatal factors that would improve the morbidity and mortality of neonates with CDH. We have identified prenatal factors that affect the outcome of fetuses diagnosed with CDH with a view to selecting those fetuses that may benefit from randomized controlled trials of in-utero therapy.
    a. Defining "liver-up": does the volume of liver herniation predict outcome for fetuses with isolated left-sided congenital diaphragmatic hernia? Lazar DA, Ruano R, Cass DL, Moise KJ Jr, Johnson A, Lee TC, Cassady CI, Olutoye OO. J Pediatr Surg. 2012 Jun;47(6):1058-62. doi: 10.1016/j.jpedsurg.2012.03.003. PMID: 22703769
    b. The presence of a hernia sac in congenital diaphragmatic hernia is associated with better fetal lung growth and outcomes. Zamora IJ, Cass DL, Lee TC, Welty S, Cassady CI, Mehollin-Ray AR, Fallon SC, Ruano R, Belfort MA, Olutoye OO.J Pediatr Surg. 2013 Jun;48(6):1165-71. doi: 10.1016/j.jpedsurg.2013.03.010.PMID: 23845602
    c. Revisiting outcomes of right congenital diaphragmatic hernia. Akinkuotu AC, Cruz SM, Cass DL, Cassady CI, Mehollin-Ray AR, Williams JL, Lee TC, Ruano R, Welty SE, Olutoye OO.J Surg Res. 2015 Apr 3. pii: S0022-4804(15)00355-8. doi: 10.1016/j.jss.2015.03.090. PMID: 25935466

d. Predictive Value of MRI Findings for the Identification of a Hernia Sac in Fetuses With Congenital Diaphragmatic Hernia. Zamora IJ, Mehollin-Ray AR, Sheikh F, Cassady CI, Williams JL, Lee TC, Ruano R, Cass DL, Zhang W, Olutoye OO. AJR Am J Roentgenol. 2015 Nov;205(5):1121-5. doi: 10.2214/AJR.15.14476. PMID:26496561

3. Extracorporeal Membrane Oxygenation (ECMO). Over the past decade, ECMO has been utilized to help improve the management of newborns with persistent pulmonary hypertension (PPHN). One of our focus in fetal research has been to review the long term outcomes of neonates on ECMO and identify prenatal and postnatal factors that are associated with increased mortality. We have found that some of these factors include prematurity, acidosis, profound hypoxemia and prolonged ECMO support.
    a. Outcomes of neonates requiring extracorporeal membrane oxygenation for irreversible pulmonary dysplasia: the Extracorporeal Life Support Registry experience. Lazar DA, Olutoye OO, Cass DL, Fernandes CJ, Welty SE, Johnson KE, Rycus PT, Lee TC. Pediatr Crit Care Med. 2012 Mar;13(2):188-90.PMID: 21666536
    b. The use of ECMO for persistent pulmonary hypertension of the newborn: a decade of experience. Lazar DA, Cass DL, Olutoye OO, Welty SE, Fernandes CJ, Rycus PT, Lee TC. J Surg Res. 2012 Oct;177(2):263-7. doi: 10.1016/j.jss.2012.07.058. Epub 2012 Aug 10. PMID: 22901797
    c. Initial Experience With Single-Vessel Cannulation for Venovenous Extracorporeal Membrane Oxygenation in Pediatric Respiratory Failure. Fallon SC, Shekerdemian LS, Olutoye OO, Cass DL, Zamora IJ, Nguyen T, Kim ES, Larimer EL, Lee TC. Pediatr Crit Care Med. 2013 Apr 2. PMID:23548959
    d. Outcomes comparing dual-lumen to multisite venovenous ECMO in the pediatric population: The Extracorporeal Life Support Registry experience. Zamora IJ, Shekerdemian L, Fallon SC, Olutoye OO, Cass DL, Rycus PL, Burgman C, Lee TC. J Pediatr Surg. 2014 Oct;49(10):1452-7. doi: 10.1016/j.jpedsurg.2014.05.027. Epub 2014 Sep 8.PMID:25280645

4. Improving Care Delivery and Outcomes in Neonates using Near Infrared Spectroscopy. My research team has developed considerable expertise in the use of near infrared spectroscopy (NIRS) in the study of necrotizing enterocolitis (NEC) in the preterm piglet model and in premature neonates. We also have demonstrated the utility of cerebral oximetry in patients with congenital diaphragmatic hernia (CDH) and have derived an algorithm to anticipate cardio-respiratory decompensation in neonates with CDH. Using the preterm piglet model, we have demonstrated a correlation between splanchnic NIRS, rising intestinal fatty acid binding protein (I-FABP) levels and the development of NEC.
    a. Abdominal near-infrared spectroscopy measurements are lower in preterm infants at risk for necrotizing enterocolitis .Patel AK, Lazar DA, Burrin DG, Smith EO, Magliaro TJ, Stark AR, Brandt ML, Zamora IJ, Sheikh F, Akinkuotu AC, Olutoye OO. Pediatr Crit Care Med. 2014 Oct;15(8):735-41. doi: 10.1097/PCC.0000000000000211.PMID:25068253
    b. The effect of supplemental parenteral nutrition on outcomes of necrotizing enterocolitis in premature, low birthweight neonates. Akinkuotu AC, Nuthakki S, Sheikh F, Cruz SM, Welty SE, Olutoye OO. Am J Surg. 2015 Dec; 210(6):1045-50. doi: 10.1016/j.amjsurg.2015.08.004. PMID: 26518162
    c. A novel multimodal computational system using near-infrared spectroscopy to monitor cerebral oxygenation during assisted ventilation in CDH patients. Cruz SM, Akinkuotu AC, Rusin CG, Cass DL, Lee TC, Welty SE, Olutoye OO. Pediatr Surg. 2015 Oct 23. pii: S0022-3468(15)00626-0. doi: 10.1016/j.jpedsurg.2015.10.017. PMID: 26585879

A complete list of my references can be found at: http://www.ncbi.nlm.nih.gov/pubmed/?term=olutoye+oo

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

Medtronic LP
Donation of oximeters and sensors Olutoye (PI) 3/20/2017 - 9/20/2021
Clinical Model for Early Predictors of Necrotizing Enterocolitis in Neonates
The goal of this project is to devise a means of early identification of neonates who are predisposed to necrotizing enterocolitis

Recently Completed

NIH-516BGIA27490024 Rusin (PI) 01/01/2016 – 12/31/2017
American Heart Association Inc
Real-time Prediction of Acute Arrest in Infants with Single Ventricle Physiology
The goal of this project is to develop the first clinically validated, real-time early warning system for anticipating acute arrest events in children with single ventricle physiology. The techniques and technology developed in this work are immediately translatable to other diseases and conditions for both adults and children.

NIH R01-DK094616 Burrin (PI) 09/01/13 – 06/30/2016
National Institute of Health/ NIDDK
Regulation of Hepatic Metabolic Function by Parenteral Nutrition
The goal of this study is to determine how parenteral nutrition impacts hepatic function.
Role: Co-Investigator

Texas Children's Hospital Surgery Seed Grant Olutoye (PI) 4/01/2013-03/31/2014
Near Infra-Red Spectroscopy in Necrotizing Enterocolitis
The goal of this project was to devise a means of early identification of neonates who are predisposed to NEC. We will determine the effectiveness of non-invasive measurement of near infra-red spectroscopy as well as biochemical markers to identify neonates early in the disease process.
Role: PI

P30-DK056338 Estes, M (PI) 3/1/2012 – 2/28/2013
National Institute of Health/ NIDDK
Center for GI Infection and Injury.
Sub-award: Predictors of Necrotizing Enterocolitis
The goal of this project was to determine the effectiveness of non-invasive measures and biomarkers to identify early necrotizing enterocolitis in premature piglets.
Role; Sub-awardee

Texas Children's Hospital Surgery Seed Grant Olutoye (PI) 12/01/2011-06/30/2013
Effect of Fetal Anesthesia on the Developing Ovine Brain
The major goals of this study were to examine the effects of anesthesia used in fetal surgery and fetal morbidities associated with their use.
Role: PI

5M01RR000188-47 Sub-Project ID: 6699 Olutoye (PI) 12/1/2010 – 11/30/2011
NIH/National Center for Research Resources GCRC
Near Infrared Spectroscopy for Hemodynamic Monitoring in Neonates Undergoing ECMO
The primary goal of this observational study was to assess bilateral cerebral oxygenation levels in neonates undergoing Extracorporeal membrane oxygenation (ECMO) when one cerebral hemisphere is potentially compromised by the treatment modality. Non-invasive near infrared spectroscopy is used to measure blood oxygenation levels in cerebral tissue.