

MATTHEW LEE BUSH, MD, PHD, FACS

GENERAL INFORMATION

Office address: Department of Otolaryngology – Head and Neck Surgery
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Video bio: <https://www.youtube.com/watch?v=sc8k3e12O7s&feature=youtu.be>

EDUCATION

01/2018 – Present **University of Kentucky Graduate School**
Lexington, KY
MBA, Healthcare Professional Track

08/2012 – 05/2017 **University of Kentucky Graduate School**
Lexington, KY
Ph.D., Clinical and Translational Science

08/1999 – 05/2003 **Marshall University School of Medicine**
Huntington, WV
M.D., 2003

08/1995 – 05/1999 **Bob Jones University**
Greenville, SC
B.S., Premedicine, *Magna Cum Laude*

05/1995 **Cross Lanes Christian High School**
Cross Lanes, WV, *Valedictorian*

POST-GRADUATE TRAINING

07/2009 – 06/2011 **The Ohio State University Medical Center**
Columbus, OH
Fellowship – Neurotology and Cranial Base Surgery

07/2008 – 06/2009 **The Ohio State University Medical Center and
Nationwide Children's Hospital Research Institute**
Columbus, OH
Research Fellowship (D. Bradley Welling, M.D., Ph.D. – Mentor)

07/2004 – 06/2008 **University of Kentucky Chandler Medical Center**
Lexington, KY
Residency – Otolaryngology – Head and Neck Surgery

07/2003 – 06/2004 **University of Kentucky Chandler Medical Center**
Lexington, KY
Internship – General Surgery

ACADEMIC AND PROFESSIONAL POSITIONS

2019 – Present	University of Kentucky College of Medicine Endowed Chair in Rural Health Policy
2018 – Present	Member , Deaf and Hard of Hearing Workgroup, Kentucky Department of Education
2017 – Present	Vice Chair for Research Department of Otolaryngology-Head and Neck Surgery University of Kentucky, Lexington, KY
2016 – Present	Honorary Lecturer Department of Surgery (Otorhinolaryngology) University of Nairobi, Nairobi, Kenya
2016 – Present	Associate Professor with Tenure Department of Otolaryngology-Head and Neck Surgery University of Kentucky, Lexington, KY
2016 – Present	Board member , Kentucky Board of Speech Language Pathology and Audiology, Frankfort, KY
2015 – Present	Kentucky Early Hearing Detection and Intervention Program Advisory Board Kentucky Cabinet for Health and Family Services Commission for Children with Special Healthcare Needs
2014 – Present	Medical Advisory Committee Kentucky Cabinet for Health and Family Services Commission for Children with Special Healthcare Needs
2011 – 2016	Assistant Professor Department of Otolaryngology-Head and Neck Surgery University of Kentucky, Lexington, KY
2011- Present	Division Chief Otolaryngology – Head and Neck Surgery Veterans Affairs Medical Center, Lexington, KY
2011 – 2015	Medical Director Otology, Neurotology, and Cranial Base Surgery The Heuser Hearing Institute, Louisville, KY
2012 – 2013	President , Kentucky Society of Otolaryngology
2011 – 2012	President elect – Kentucky Society of Otolaryngology
2000 – 2001	Gross Anatomy Lab Assistant Mentor: Sasha Zill, Ph.D. Marshall University School of Medicine

MEDICAL CREDENTIALS AND CERTIFICATION

Hospital Privileges: The University of Kentucky Chandler Medical Center and Children's Hospital
800 Rose Street
Lexington, KY 40536

Veteran's Affairs Medical Center
1101 Veterans Drive,
Lexington, KY 40502

University of Kentucky Good Samaritan Hospital
310 S. Limestone
Lexington, KY 40508

Specialty Training: **Leadership Development for Physicians in Academic Health Centers**

Harvard University, T.H. Chan School of Public Health
October 8 – October 20, 2017

University of Kentucky Talent Management Leadership Program

University of Kentucky
February 2017 – January 2018

University of Kentucky Executive Healthcare Leadership Program

University of Kentucky Gatton College of Business and Economics
December 2015 – May 2016

Principles and Practice of Gamma Knife Radiosurgery: Special Emphasis on Perfexion Training, Center of Image-Guided Neurosurgery, University of Pittsburgh, September 27 – October 1, 2010.

Gamma Knife Radiosurgery Training. Mentor – John McGregor, M.D., Department of Neurosurgery, The Ohio State University Medical Center, Columbus, OH. 2010-2011.

Mentee, Lessons for Success

American Speech-Language-Hearing Association
Gaithersburg, MD, April 28-30, 2014.

Fellow, Summer Institute on Randomized Behavioral Clinical Trials

National Institutes of Health/National Heart, Lung, and Blood Institute
Airlie Conference Center, Warrenton, VA. July 20 – August 1, 2014

Fellow, Training Institute for Dissemination and Implementation Research in Health

National Institutes of Health
Westin Pasadena, Pasadena, CA. July 27 – 31, 2015

Certification: NBME: USMLE Step 1 (2001), 2 (2002), and 3 (2004).
American Board of Otolaryngology:
Otolaryngology (2009)
Neurotology (2012)

LICENSE

Ohio – Current
Kentucky – Current

ASSOCIATIONS

American College of Surgeons, *Fellow*
North American Skull Base Society, Member
Society of University Otolaryngologists
The Triological Society, *Fellow*
American Neurotology Society, *Fellow*
American Academy of Otolaryngology–Head and Neck Surgery,
Member
Kentucky Society of Otolaryngology

HONORS & AWARDS

2018	American Neurotology Society Cochrane Scholar
2017	American Academy of Otolaryngology – Head and Neck Surgery Cochrane Scholar, <i>Assessment and Treatment of Behavioral Disorders in Children with Hearing Loss: A Systematic Review</i>
2017	Triological Society <i>With Distinction</i> Thesis Award for Clinical Research <i>Promotion of Early Pediatric Hearing Detection Through Patient Navigation</i>
2017	Top Doctor Castle Connolly Medical LTD
2017	Phi Kappa Phi Dissertation Fellowship Award <i>Promotion of Early Pediatric Hearing Detection Through Patient Navigation</i>
2014	Phi Kappa Phi University of Kentucky Chapter
2014	Songs for Sound Success Award
2014	Triological Society Career Development Award
2013	Scholars Abstract Award, Translational Science 2013

Diagnostic Disparities of Pediatric Congenital Hearing Loss in Appalachia

- 2013 **Outstanding Poster Award (Cross-cultural Focus), Early Hearing Detection and Intervention Annual Meeting**
Bridging the Gap: Assessment of Hearing Healthcare Barriers in Appalachia
- 2012 **University of Kentucky KL2/Physician Scientist Career Development Award**
Bridging the Gaps: Assessment of Pediatric Hearing Loss in Appalachia
- 2011 **American Neurotology Society Fellow Research Award**
Treatment of Vestibular Schwannoma Cells with ErbB Inhibitors
- 2009 **American Hearing Research Foundation Research Award**
1-year \$25,000 CORE grant offered through the AAO-HNS: "In vitro and in vivo effects of HDAC inhibitors on vestibular schwannomas."
- 2008 **Kentucky State Otolaryngology Resident Research Award**
Test-Retest Reliability of VEMPS
- 2008 **The G. Slaughter Fitz-Hugh First Place Resident Research Award**
Long-term Hearing Results in Gamma Knife Radiosurgery for Acoustic Neuromas
- 2007 **University of Kentucky Department of Surgery Teaching Award**
Given by medical students for excellence in teaching
- 2007 **University of Kentucky Temporal Bone Lab Resident Award**
Given for excellence in resident temporal bone dissection
- 2006 **Kentucky State Otolaryngology Resident Research Award**
ABR and Behavioral Testing in Acoustic Neuroma Detection
- 2005 **University of Kentucky Temporal Bone Lab Resident Award**
Given for excellence in resident temporal bone dissection
- 2002 **Alpha Omega Alpha**
Beta of West Virginia, Marshall University School of Medicine
- 2001 **MS-II Academic Achievement Award**
Given to the second-year medical student with the highest GPA
- 2001 **Joan C. Edwards Scholarship**
Financial award given for academic excellence in medical school
- 2000 **MS-I Academic Achievement Award**
Given to the first-year medical student with the highest GPA

UNIVERSITY SERVICE

2018-Present	University of Kentucky Strategic Planning, Community Engagement Pillar Committee
2018-Present	University of Kentucky Clinical Research Support Office (CRSO)/CTMS Implementation Steering Committee
2018-Present	University of Kentucky Center for Health Equity Transformation (CHET), Founding Affiliate
2018-Present	University of Kentucky, Taskforce on Mentoring in the College of Medicine
2018-2020	University of Kentucky College of Medicine International Committee
2017	University of Kentucky CCTS TL1 Grant Review Committee
2017-2018	University of Kentucky College of Medicine International Committee, Guest member of the International Research Subcommittee
2017-Present	University of Kentucky BEST Program: Care Access & Practice Efficiency Implementation Team
2016-Present	University of Kentucky IRB Member
2016	University of Kentucky Associate Chief Medical Officer (Perioperative Services) Search Committee
2015-2018	University of Kentucky Department of Otolaryngology Grand Rounds, Course Director
2015	University of Kentucky CCTS KL2 Grant Review Committee
2014-2015	University of Kentucky CCTS TL1 Grant Review Committee
2014-Present	University of Kentucky Department of Otolaryngology Residency Research Committee
2013-Present	University of Kentucky Department of Otolaryngology Bi-Monthly Audiology and Otology Conference, Director

PROFESSIONAL ACTIVITY

2018 – Present	Triological Best Practice Committee , The Triological Society
2018 – Present	Editorial Board member , <i>Otology & Neurotology</i>
2018 – 2019	American Academy of Otolaryngology – Head and Neck Surgery Foundation, Clinical Practice Guidelines Committee Member, <i>Meniere’s Disease</i>

- 2017 – Present American Academy of Otolaryngology – Head and Neck Surgery Foundation, Otology CORE Grant Review Study Section member
- 2017 - Present **Systematic Review Committee**, *The Laryngoscope*
- 2017 American Neurotology Society, Fall Scientific Program, Session Co-moderator, “Technical Challenges in Cochlear Implantation.” 9/9/17
- 2017 **Consultant**, Stryker
- 2017 **CI2018 Abstract Reviewer**, American Cochlear Implant Alliance
- 2017-2020 **Scientific Program Committee Member**, American Neurotology Society
- 2017 **Consultant**, Oticon Medical
- 2016 **Visiting Professor**, University of Nairobi, Division of Otolaryngology, Nairobi, Kenya, October 9-16, 2016. Lectures given:
1. *Otologic Anatomy and Physiology*
2. *Diagnosis and management of chronic otitis media*
3. *Neuroradiology for the Otologist*
4. *Examination of the Dizzy Patient*
5. *Benign Pathology of the Lateral Skull Base*
6. *Research Design 101 for the Otolaryngologist*
- 2016 – Present **Socioeconomic and Grassroots Efforts Representative**, Kentucky, AAO-HNS Board of Governors,
- 2016 – 2018 **Hearing Committee Member**, American Academy of Otolaryngology – Head and Neck Surgery
- 2016 – 2018 **International Otolaryngology Committee Member**, American Academy of Otolaryngology – Head and Neck Surgery
- 2016 – 2021 **Socioeconomic Committee Member**, American Neurotology Society
- 2016 **Session Moderator**, CI2016 International Cochlear Implant Meeting, Toronto, Ontario, Canada, May 13, 2016.
- 2016 **Visiting Professor**, University of Nairobi, Division of Otolaryngology, Nairobi, Kenya, March 12-21, 2016. Lectures given:
1. *Otologic Anatomy and Physiology*
2. *Clinical Evaluation of the Otological Patient*
3. *Cholesteatoma and Chronic Otitis Media*
4. *Neuroradiology for the Otologist*
5. *Otology Oral Exam*
6. *Dealing with Suffering and Complications: A Moral Crisis for Clinicians*
7. *Advancing Your Career and Expanding Your Practice Through Health Disparities Research*

- 2015 – Present **Council Member**, Young American Neurotology Society Group
- 2015 **Ad hoc reviewer**, *American Journal of Public Health*
- 2015 **Visiting Professor**, University of Nairobi, Division of Otolaryngology, Nairobi, Kenya, October 2 – October 12. Lecture given:
Mastoidectomy and Tympanoplasty with OCR
- 2015-Present **Ad hoc reviewer**, *Ear and Hearing*
- 2015 **Visiting Professor**, University of Nairobi, Division of Otolaryngology, Nairobi, Kenya, March 14 – March 22. Lectures given:
1. *Auditory Anatomy and Physiology*
2. *Vestibular Anatomy and Physiology*
3. *Differential Diagnosis of the Dizzy Patient*
4. *Complications of Otitis Media*
5. *Tympanoplasty and Ossicular Chain Reconstruction*
6. *Radiographic Characteristics of Temporal Bone Lesions*
7. *Surgical Approaches in Chronic Otitis Media*
Kenyan ENT Society Meeting: *Work Life Balance: Is that even possible?*
University of Nairobi Department of Surgery Grand Rounds: *The Deaf Will Hear The Words: The Art of Cochlear Implantation*
- 2014-2016 **Consultant for the Humanitarian Efforts Committee**, American Academy of Otolaryngology – Head and Neck Surgery
- 2014 **Visiting Professor**, University of Nairobi, Division of Otolaryngology, Nairobi, Kenya, October 6-10, 2014. Lecture given:
Research Design 101: An Otolaryngologists Intro to Clinical Research
- 2014-present **Surgical Advisory Board**, Med El Corporation
- 2014 **Visiting Professor**, University of Nairobi, Division of Otolaryngology, Nairobi, Kenya, January 18-Feb 3, 2014. Lectures given:
1. *Auditory Anatomy, Embryology, and Physiology*
2. *The Vestibular System – Anatomy, Physiology, and Testing*
3. *Diagnosis and Management of Chronic Otitis Media*
4. *Cholesteatoma and the Art of Mastoidectomy*
5. *Temporal Bone Trauma and Associated Complications*
6. *Lesions of the Lateral Skull Base*
7. *Facial Nerve: Pathology and Management*
8. *Neuroradiology for the Hearing Specialist*
Kenyan ENT Society Meeting: *Cartilage Tympanoplasty: The Science and the Art*
- 2014-Present **Ad hoc reviewer**, *Annals of Otology, Rhinology, and Laryngology*
- 2013-Present **Ad hoc reviewer**, *American Journal of Emergency Medicine*

- 2013-Present **Ad hoc reviewer**, *Otology & Neurotology* Journal
- 2013 **Visiting Professor**, University of Nairobi, Division of Otolaryngology, Nairobi, Kenya, January 25-Feb 3, 2013. Lectures given:
1. *Mastoidectomy: Pearls and Pitfalls*
2. *Tympanoplasty: The Science and the Art*
3. *Management of Complications of Chronic Otitis Media*
4. *Management of Lateral Skull Base CSF Leaks*
Kenyan ENT Society Meeting: *Training Tomorrow's Cranial Base Surgeon*
- 2012-Present **Ad hoc reviewer**, *Laryngoscope* Journal
- 2012 **Visiting Professor**, University of Nairobi, Division of Otolaryngology, Nairobi, Kenya, January 21-30, 2012. Lectures given:
1. *Neuroradiology of the Lateral Skull Base*
2. *Vestibular Physiology and Testing*
3. *Approaches to the Lateral Skull Base*
4. *Temporal Bone Trauma.*
Kenyan ENT Society Meeting: *Vestibular Schwannomas: An Update and Future Options*
- 2011-Present **Board member**, Lexington Hearing and Speech Center, Lexington, KY
- 2010-Present **Ad hoc reviewer**, *Clinical Anatomy*
- 2008-Present **Ad hoc reviewer**, *Otolaryngology – Head and Neck Surgery* Journal
- 2007-2012 **Member of the Credentials and Membership Committee**, American Academy of Otolaryngology – Head and Neck Surgery,
- 2007-2009 **Member of the Hearing Aid Subcommittee**, American Academy of Otolaryngology – Head and Neck Surgery
- October 2008 **Team Member**, Project Ear Inc.,
Provided otologic surgical care on mission trips to the Dominican Republic
- January 2007 **Team Member**, Project Ear Inc.,
Provided otologic surgical care on mission trips to the Dominican Republic

ORAL PRESENTATIONS

- 2018 Neff R, Jicha G, Shinn J, **Bush M**, McNulty B. Neuropathological Findings of Dementia Associated with Hearing Loss. AAO-HNS Annual Meeting. Atlanta, GA. October 2018.
- 2018 Fletcher KT, Dicken FW, Adkins M, Cline T, McNulty B, Shinn J, **Bush M**. Comparison of In-Person versus Telemedicine Cochlear Implant Evaluations: A Pilot Study. AAO-HNS Annual Meeting. Atlanta, GA. October 2018.

- 2017 Fletcher KT, Liu T, Horrell Wolf EM, Muthoka M, **Bush M**. The Natural History and Rehabilitative Outcomes of Hearing Loss in Congenital Cytomegalovirus: A systematic review. Poster Highlights Session. 15th Symposium on Cochlear Implants in Children (CI2017). San Francisco, CA. July 27, 2017. **ACIA Scholarship Award**
- 2017 Creel L, Lester C, **Bush M**. Impact of Hospital Scheduling on Follow-Up Appointments After a Failed Newborn Hearing Screen. National EHDI Conference. February 27, 2017.
- 2016 **Bush M**, Noblitt B, Adkins M. Rehabilitation Barriers for Rural Pediatric Cochlear Implant Recipients. 14th International Conference on Cochlear Implants. Toronto, CA. May 13, 2016.
- 2016 Hixon B, Chan S, Shinn J, **Bush M**. Assessment of Rural Adult Hearing Health Disparities--Access to Care in Cochlear Implantation. 14th International Conference on Cochlear Implants. Toronto, CA. May 13, 2016.
- 2015 **Bush M**. Family Perceptions and Experiences with the Early Hearing Detection and Intervention System in Rural Communities. National EHDI Conference. March 10, 2015.
- 2014 **Bush M**. Surgical Survey on the Usability and Applicability of the HiFocus Mid Scala Electrode. 14th Annual Cochlear Implants in Children Conference. Nashville, TN. December 11, 2014.
- 2014 Elpers J, **Bush M**. Family Perceptions and Experiences with the Early Hearing Detection and Intervention System in Rural Communities. 14th Annual Cochlear Implants in Children Conference. Nashville, TN. December 13, 2014.
- 2014 **Bush M**. Targeting Regional Pediatric Congenital Hearing Loss Using a Spatial Scan Statistic. 14th Annual Cochlear Implants in Children Conference. Nashville, TN. December 13, 2014.
- 2014 Bush M, Hardin B, Rayle C, Lester C, Studts C, Shinn J. Rural Barriers to Early Diagnosis and Treatment of Infant Hearing Loss in Appalachia. American Otological Society Annual Meeting - COSM. May 17, 2014.
- 2013 **Bush M**, Pediatric Congenital Hearing Loss in Appalachia: Assessing and Addressing Diagnostic Delays. Kentucky Society of Otolaryngology Annual Meeting, University of Kentucky, Lexington, Kentucky. April 20, 2013.
- 2013 **Bush M**, Pediatric Congenital Hearing Loss in Appalachia: Assessing and Addressing Diagnostic Delays. 8th Annual CCTS Spring Conference University of Kentucky Center for Clinical and Translational Science, Lexington Convention Center, Lexington, Kentucky. April 8, 2013.
- 2013 Osetinsky M, Shinn J, Fardo, Gal TJ, Schoenberg N, **Bush M**. Congenital Sensorineural Hearing Loss in Appalachia. AOA Groves Memorial MD/PhD Program Student Research Symposium, University of Kentucky, Lexington, Kentucky. February 20, 2013.
- 2012 **Bush M**, Bridging the Gaps: Assessment of Appalachian Pediatric Hearing Loss. Twentieth Annual Department of Otolaryngology Saunders Symposium. The Ohio State University, Columbus, OH. June 22, 2012.
- 2012 Cipolla M, Iyer P, Dome C, Welling DB, **Bush M**. **Paul Holinger, MD Resident Research Award (Middle Section)**. Modification and

- Comparison of Minimally Invasive Cochleostomy Techniques: A Pilot Study. The Triological Society Combined Sections Meeting, Miami, FL. January 26, 2012.
- 2011 **Bush M**, AR42, A Novel Histone Deacetylase Inhibitor, as a Potential Therapy for Vestibular Schwannomas and Meningiomas. Nineteenth Annual Department of Otolaryngology Alumni Symposium. The Ohio State University, Columbus, OH. June 24, 2011.
- 2011 Burns S, Akhmametyeva E, Oblinger J, **Bush M**, Huang J, Senner V, Giovannini M, Chen CS, Jacob A, Welling DB, Chang LS. AR-42 and AR-12 Potently Inhibit the Growth of NF2-deficient Human Meningiomas. Childrens Tumor Foundation NF Conference. Jackson Hole, WY. June 14, 2011.
- 2011 **Bush M**, Oblinger J, Davletova S, Burns S, Chang LS, Welling DB, Jacob A. Treatment of Vestibular Schwannoma Cells with ErbB Inhibitors. Combined Otolaryngology Society Meeting (American Neurotology Society). Chicago, IL. April 30, 2011.
- 2010 Oblinger J, Lee T, Packer M, Huang J, **Bush M**, Kulp S, Chen CS, Giovannini M, Welling DB, Jacob A, Chang LS. HDAC42 and OSU-03012, Novel Small-Molecule Inhibitors for the Treatment of Vestibular Schwannomas. Children's Tumor Foundation NF Conference. Baltimore, MD. June 8, 2010.
- 2009 **Bush M**, Oblinger J, Kulp S, Chen CS, Jacob A, Chang LS, Welling DB. Novel Inhibitors of Vestibular Schwannomas and Meningiomas. American Academy of Otolaryngology – Head and Neck Surgery Annual Meeting. San Diego, CA. October 6, 2009.
- 2009 Oblinger J, **Bush M**, Kulp S, Chen CS, Jacob A, Chang LS, Welling DB. Radiosensitization of Vestibular Schwannomas by HDAC42. American Academy of Otolaryngology – Head and Neck Surgery Annual Meeting. San Diego, CA. October 6, 2009.
- 2008 **Bush M**, Jones R, Shinn J. Test-Retest Reliability of VEMPS. Kentucky Society of Otolaryngology Annual Meeting. Harrodsburg, KY April 18, 2008.
- 2008 **Bush M**, Shinn J, Young B, Jones R. Long-term Hearing Results in Gamma Knife Radiosurgery for Acoustic Neuromas. The Triological Society Southern Section Meeting, Naples, FL. January 10-12, 2008.
- 2007 **Bush M**, Shinn J, Young B, Jones R. Long-term Hearing Results in Gamma Knife Radiosurgery for Acoustic Neuromas. Kentucky Society of Otolaryngology Annual Meeting, Louisville, KY. May 18-19, 2007.
- 2006 **Bush M**, Jones R, Musiek F & Shinn J. Auditory Brainstem Response and Behavioral Testing in Acoustic Neuroma Detection, Kentucky Society of Otolaryngology Annual Meeting, Dale Hollow Lake Resort, KY. May 19-20, 2006
- 2006 Shinn J, **Bush M**. Current Trends in Electrophysiology. University of Connecticut 1st Annual Symposium on (C)APD. Storrs, CT.

POSTER PRESENTATIONS

- 2019 Van Horn A, Creel L, Hines A, Bush ML. Neonatal Abstinence Syndrome and Infant Hearing Assessment: A Kid's Inpatient Database (KID) Review. Triological Society Combined Sections

- Meeting. Coronado, CA. January 24-26, 2019. **Frances E. LeJeune Sr., MD Resident Research Award (Southern Section)**
- 2018 Alfonso KP, Dicken FW, Rojas Ramirez M, **Bush M**, Comer B. Factors Impacting Otolaryngology in Training (ITE) Scores. Triological Society Annual Meeting (COSM). National Harbor, MD. April 20, 2018.
- 2018 Trott S, Colgove N, Westgate P, **Bush M**, Iverson K. Nasal Endoscopy in Congenital Nasolacrimal Duct Obstruction: A Systematic Review. Annual American Society of Pediatric Otolaryngology Meeting (COSM). National Harbor, MD. April 20, 2018.
- 2017 Fletcher KT, Liu T, Horrell Wolf EM, Muthoka M, **Bush M**. The Natural History and Rehabilitative Outcomes of Hearing Loss in Congenital Cytomegalovirus: A systematic review. 15th Symposium on Cochlear Implants in Children (CI2017). San Francisco, CA. July 27, 2017.
- 2017 Bigler D, Pilar M, Merritt A, Jacobs J, **Bush M**, Studts C. Parental Psychosocial Barriers in Pediatric Hearing Healthcare: A Qualitative Analysis. 15th Symposium on Cochlear Implants in Children (CI2017). San Francisco, CA. July 27, 2017.
- 2017 Creel L, Jennings J, Lester C, **Bush M**. Impact of Hospital Scheduling on Follow-Up Appointments After a Failed Newborn Hearing Screen. AcademyHealth Annual Research Meeting, New Orleans, LA. June 25, 2017.
- 2017 Fiorillo C, Rashidi V, Westgate P, Jacobs J, Studts C, **Bush M**. Assessment of Behavioral Problems in Children with Hearing Loss. American Neurotology Society Annual Meeting (COSM). San Diego, CA. April 28-30, 2017. **President's Award, 1st Place, ANS Poster Sessions.**
- 2017 Fiorillo C, Hughes A, I-Chen C, Westgate P, Gal T, **Bush M**, Comer B. Factors Associated with Patient No-Show Rates in an Academic Otolaryngology Practice. Triological Society Combined Section Meeting. New Orleans, LA. January 19-22, 2017.
- 2016 Ritchie R, Alfonso K, Cheriyan M, **Bush M**, Jones R, Weihing J, Shinn J. Effect of Noise on Anesthesiologist Auditory Processing in the Operating Room. International Anesthesia Research Society Annual Meeting and International Science Symposium. San Francisco, CA. May 21-24, 2016.
- 2016 Chan S, Hixon B, Shinn J, **Bush M**. Hearing Loss in Rural Adults: A Geographic Comparison of Access to Care in Hearing Aid Recipients. American Otological Society Annual Meeting (COSM). Chicago, IL. May 20-21, 2016.
- 2016 Taylor Z, Anderson S, **Bush M**. Addressing Pediatric Hearing Loss Educational and Practice Gaps in Primary Care Providers. World Congress on Continuing Professional Development. San Diego, CA. March 17-19, 2016.
- 2016 Noblitt B, **Bush M**. Barriers and Outcomes of Cochlear Implantation Rehabilitation in Rural Appalachia. 15th Annual Early Hearing Detection and Intervention Meeting. San Diego, CA. March 13-15, 2016.
- 2016 Hixon B, Chan S, Shinn J, **Bush M**. Assessment of Rural Adult Hearing Health Disparities--Access to Care in Cochlear Implantation.

- Triological Society Combined Section Meeting. Miami, FL. January 22-24, 2016. **John E. Bordley, MD Resident Research Award (Southern Section).**
- 2015 **Bush M**, Christian J, Bianchi K, Lester C, Schoenberg N. Targeting Regional Pediatric Congenital Hearing Loss Using a Spatial Scan Statistic. National EHDI Meeting. Louisville, KY. March 9, 2015.
- 2014 Alexander D, Noblitt B, Lester C, Shinn J, **Bush M**. Rural Primary Care Provider Knowledge and Practice Patterns of Congenital Hearing Loss. Triological Society Annual Meeting - COSM. May 15-17, 2014.
- 2014 Noblitt B, Alexander D, Lester C, Shinn J, **Bush M**. Rural Primary Care Provider Knowledge and Practice Patterns of Congenital Hearing Loss. 9th Annual CCTS Spring Conference University of Kentucky Center for Clinical and Translational Science, Lexington Convention Center, Lexington, Kentucky. March 27, 2014.
- 2014 **Bush M**, Hardin B, Rayle C, Lester C, Studts C, Shinn J. Rural Barriers to Early Diagnosis and Treatment of Infant Hearing Loss in Appalachia. 9th Annual CCTS Spring Conference University of Kentucky Center for Clinical and Translational Science, Lexington Convention Center, Lexington, Kentucky. March 27, 2014.
- 2013 **Bush M**, Bianchi K, Lester C, Shinn J, Gal TJ, Fardo D, Schoenberg N. Diagnostic Disparities of Pediatric Congenital Hearing Loss in Appalachia. Translational Science 2013, Washington, DC. April 18, 2013.
- 2013 **Bush M**, Bianchi K, Osetinsky M, Shinn J. Bridging the Gap: Assessment of Hearing Healthcare Barriers in Appalachia. Early Detection Hearing and Intervention Annual Meeting, Glendale, AZ. April 15, 2013.
- 2013 Roberts D, **Bush M**, Jones R. Adult Progressive Sensorineural Hearing Loss: Is pre-operative imaging necessary prior to cochlear implantation. American Neurotology Society Annual Meeting – COSM. Orlando, FL. April 12, 2013
- 2013 **Bush M**, Bianchi K, Osetinsky M, Shinn J. Rural Pediatric Hearing Healthcare Disparity: Factors in Delayed Congenital Hearing Loss Diagnosis and Intervention. Triological Society Annual Meeting – COSM. Orlando, FL. April 12, 2013.
- 2013 **Bush M**, Burton M, Loan A, Shinn J. Timing Discrepancies of Early Intervention Hearing Services in Urban and Rural Cochlear Implant Recipients. American Otological Society Annual Meeting – COSM. Orlando, FL. April 12, 2013.
- 2013 Osetinsky M, Shinn J, Fardo, Gal TJ, Schoenberg N, **Bush M**. Congenital Sensorineural Hearing Loss in Appalachia. AOA Groves Memorial MD/PhD Program Student Research Symposium, University of Kentucky, Lexington, Kentucky. February 20, 2013.
- 2012 Burns S, Akhmametyeva E, Oblinger J, **Bush M**, Huang J, Qian A, Senner V, Chen CS, Jacob A, Welling DB, Chang LS. AR-42, a Novel Histone Deacetylase Inhibitor, Differentially Affects Cell-Cycle Progression of Meningeal and Meningioma Cells and Potentially Inhibits Tumor Growth in a Quantifiable NF2-deficient Benign Meningioma Model. The 2012 NF Conference, New Orleans, LA.
- 2012 Chang E, Bingchang C, Fornwalt B, **Bush M**, Gal T, Jones R, Shinn J. The Utility of Monothermal Caloric Testing in Screening for Vestibular

- Dysfunction. American Auditory Society Annual Meeting. March 2012. Scottsdale, AZ.
- 2012 Burns S, Akhmametyeva E, Oblinger Huang J, **Bush M**, Senner V, Chen CS, Jacob A, Welling DB, Chang LS. AR-42, a Novel Histone Deacetylase Inhibitor, Causes G2 Arrest in Meningioma Cells while Arresting Normal Meningeal Cells at G1 and Potently Inhibits Tumor Growth in a Quantifiable NF2-deficient Benign Meningioma Model. The 14th Ohio State University Comprehensive Cancer Center Annual Scientific Meeting, Columbus, OH.
- 2012 Burns S, Akhmametyeva E, Oblinger J, Huang J, **Bush M**, Senner V, Chen CS, Jacob A, Welling DB, Chang LS. AR-42, a Novel Histone Deacetylase Inhibitor, Causes G2 Arrest in Meningioma Cells while Arresting Normal Meningeal Cells at G1 and Potently Inhibits Tumor Growth in a Quantifiable NF2-deficient Benign Meningioma Model. The Research Institute at Nationwide Children's Hospital 2012 Research Week, Columbus, OH. The 2012 3rd Semi-Annual ONOC Meeting, Columbus, OH.
- 2012 Burns, S.S., E.A. Akhmametyeva, J.L. Oblinger, **M.L. Bush**, J. Huang, A. Qian, V. Senner, C.-S. Chen, A. Jacob, D.B. Welling, L.-S. Chang. 2012. AR-42, a Novel Histone Deacetylase Inhibitor, Differentially Affects Cell-Cycle Progression of Meningeal and Meningioma Cells and Potently Inhibits Tumor Growth in a Quantifiable NF2-deficient Benign Meningioma Model. The Research Institute at Nationwide Children's Hospital 2012 Research Week, Columbus, OH
- 2011 Walz P, **Bush M**, Robinett Z, Kirsch C, Welling DB. 3D Volumetric Conformal Analysis of Vestibular Schwannomas: Comparison of volumetric and linear measurements for estimation of sporadic vestibular schwannoma growth. American Academy of Otolaryngology – Head and Neck Surgery Annual Meeting, San Francisco, CA. September 11-14, 2011.
- 2011 **Bush M**, Bratasz A, Brendel V, Manning A, Oblinger J, Chang LS, Welling DB, Jacob A, Powell K. The Use of Magnetic Resonance Spectroscopy (MRS) in Monitoring Vestibular Schwannoma Growth and Treatment Effect. Childrens Tumor Foundation NF Conference. Jackson Hole, WY. June 11-14, 2011.
- 2011 **Bush M**, Oblinger J, Brendel V, Santarelli G, Huang J, Akhmametyeva E, Burns S, Wheeler, Davis J, Yates C, Chaudhury A, Kulp S, Chen C, Chang L, Welling D, Jacob A. AR42, A Novel Histone Deacetylase Inhibitor, as a Potential Therapy for Vestibular Schwannomas and Meningiomas. Childrens Tumor Foundation NF Conference. Jackson Hole, WY. June 11-14, 2011.
- 2011 **Bush M**, Oblinger J, Brendel V, Santarelli G, Huang J, Akhmametyeva E, Burns S, Wheeler, Davis J, Yates C, Chaudhury A, Kulp S, Chen C, Chang L, Welling D, Jacob A. AR42, A Novel Histone Deacetylase Inhibitor, as a Potential Therapy for Vestibular Schwannomas and Meningiomas. The Ohio State University Annual Research Day, Columbus, OH. April 7, 2011.
- 2011 **Bush M**, Oblinger J, Davletova S, Burns S, Chang LS, Welling DB, Jacob A. Treatment of Vestibular Schwannoma Cells with ErbB Inhibitors. The Ohio State University Annual Research Day, Columbus, OH. April 7, 2011.

- 2011 **Bush, M**, Oblinger J, Brendel V, Santarelli G, Huang J, Akhmametyeva E, Burns S, Wheeler, Davis J, Yates C, Chaudhury A, Kulp S, Chen C, Chang L, Welling D, Jacob A. AR42, A Novel Histone Deacetylase Inhibitor, as a Potential Therapy for Vestibular Schwannomas and Meningiomas. Nationwide Children's Hospital Research Institute Research Week Spring 2011.
- 2011 Burns S, Akhmametyeva E, Oblinger J, **Bush M**, Huang J, Senner V, Giovannini M, Chen CS, Jacob A, Welling DB, Chang LS. AR-42 and AR-12 Potently Inhibit the Growth of NF2-deficient Human Meningiomas. Nationwide Children's Hospital Research Institute Research Week. April 4-8, 2011.
- 2011 Burns S, Akhmametyeva E, Oblinger J, **Bush M**, Huang J, Senner V, Giovannini M, Chen CS, Jacob A, Welling DB, Chang LS. AR-42 and AR-12 Potently Inhibit the Growth of NF2-deficient Human Meningiomas. The Ohio State University Comprehensive Cancer Center Annual Conference. Columbus, Ohio. February 18, 2011.
- 2010 Hull B, **Bush M**, Yates C, Miles-Markley B, Chang LS, Welling DB. Assessment of Color Vision and Developmental Anomalies in Neurofibromatosis type 2 Patients. The Ohio State University Annual Research Day, Columbus, OH. April 8, 2010.
- 2010 Davis J, Burns S, **Bush M**, Welling DB, Chang LS. Establishment of Benign and Malignant *NF2*-Deficient Meningioma Mouse Models. The Ohio State University Annual Research Day, Columbus, OH. April 8, 2010.
- 2010 Oblinger J, Lee T, Packer M, Huang J, **Bush M**, Kulp S, Chen CS, Giovannini M, Welling DB, Jacob A, Chang LS. HDAC42 and OSU-03012, Novel Small-Molecule Inhibitors for the Treatment of Vestibular Schwannomas. The Ohio State University Comprehensive Cancer Center Annual Conference. Columbus, Ohio. February 19, 2010.
- 2010 Burns S, **Bush M**, Davis J, Welling DB, Chang LS. Intracranial Xenograft Models for Benign and Malignant *NF2*-Deficient Meningiomas. The Ohio State University Comprehensive Cancer Center Annual Conference. Columbus, Ohio. February 19, 2010.
- 2010 Oblinger J, Lee T, Packer M, Huang J, **Bush M**, Kulp S, Chen CS, Giovannini M, Welling DB, Jacob A, Chang LS. HDAC42 and OSU-03012, Novel Small-Molecule Inhibitors for the Treatment of Vestibular Schwannomas. Nationwide Children's Hospital Research Institute Research Week. Columbus, Ohio. April 7, 2010.
- 2010 Burns S, **Bush M**, Davis J, Welling DB, Chang LS. Intracranial Xenograft Models for Benign and Malignant *NF2*-Deficient Meningiomas. Nationwide Children's Hospital Research Institute Research Week. Columbus, Ohio. April 5, 2010.
- 2009 **Bush M**, Oblinger J, Burns S, Kulp S, Chen CS, Senner V, Jacob A, Welling DB, Chang LS. Preclinical Evaluation of HDAC Inhibitors and an EGFR Inhibitor on Vestibular Schwannoma and Meningioma. Childrens Tumor Foundation NF Conference. Portland, OR. June 13-16, 2009.
- 2009 **Bush M**, Burns S, Kulp S, Chen CS, Jacob A, Welling DB, Chang LS. Mutation Analysis and *In Vitro* HDAC Inhibitor Treatment of Benign Human Meningioma Cells. The Ohio State University Medical Center Research Day, Columbus, OH. April 3, 2009.

- 2007 **Bush M**, Jones R, Shinn J. Test-Retest Reliability of VEMPS. American Auditory Society Meeting, Scottsdale, AZ. March 4-7, 2007
- 2006 **Bush M**, Jones R, Musiek F & Shinn J. Auditory Brainstem Response and Behavioral Testing in Acoustic Neuroma Detection. American Auditory Society Meeting, Scottsdale, AZ. March 5-7, 2006

INVITED LECTURES

- 2016 **Bush M**. Family Medicine Residency Lecture: Hearing Loss Overview. Center for Excellence in Rural Health. Hazard, KY. August 17, 2016.
- 2016 **Bush M**, Barry P, Thomlinson B. "But He Wears Hearing Aids!" – A Primer on Meeting the Holistic Needs of Children who are Hard of Hearing." Systems of Care Academy. Lexington, KY. June 8, 2016. (Panel Discussion)
- 2016 Studts T, **Bush M**. Interdisciplinary Research with Children: Examples from Biomedical and Behavioral Studies. University of Kentucky CCTS Clinical Research Update. Lexington, KY. May 10, 2016.
- 2016 **Bush M**. Bridging the Gaps: Assessing and Addressing Hearing Health Disparities. Johns Hopkins University Center for Hearing and Balance Seminar Series. Baltimore, MD. April 7, 2016.
- 2015 **Bush M**. Hearing Loss and Cochlear Implantation. Kentucky Academy of Physicians Assistants. Lexington, KY. November 5, 2015.
- 2015 **Bush M**. Hearing Preservation in Cochlear Implantation. Hearing Loss Association of America, Kentucky Chapter Annual Meeting, Louisville, KY. September 12, 2015.
- 2015 **Bush M**. Diseases of Balance and Equilibrium. Hearing Loss Association of America, Kentucky Chapter Annual Meeting, Louisville, KY. September 12, 2015.
- 2015 **Bush M**. Family Perceptions and Experiences with the Early Hearing Detection and Intervention System in Rural Communities. National Center for Hearing Assessment and Management Webinar. August 11, 2015.
http://www.infanthearing.org/resources_home/events/family-perceptions.html
- 2015 **Bush M**. Bridging the Gaps: Assessing and Addressing Pediatric Rural Hearing Healthcare Disparities. Kentucky Academy of Audiology Annual Meeting, Lexington, KY. July 25, 2015.
- 2015 **Bush M**. Not a Second to Lose! The Race for Auditory Development. Lexington Hearing and Speech Center Little Peeps Symposium, Lexington, KY. April 18, 2015.
- 2015 **Bush M**. Resident Quiz Bowl. Kentucky Society of Otolaryngology Annual Meeting. Lexington, KY. April 18, 2015.
- 2015 **Bush M**. Hearing Preservation in Cochlear Implantation. Kentucky Speech and Hearing Association Annual Meeting, Lexington, KY. February 26, 2015.
- 2015 **Bush M**. Bridging the Gaps: Assessment of Rural Pediatric Hearing Health Disparities. American Academy of Audiology eAudiology session, February 11, 2015.

- 2014 **Bush M.** An Update On Infant Hearing Loss And Diagnostic Testing. Family Medicine Review, Lexington, KY. May 12, 2014.
- 2014 **Bush M.** Why Can't I Hear? An Overview of Hearing Loss Causes. Hearing Loss Association of Kentucky, Lexington Chapter, May 8, 2014.
- 2014 **Bush M.** Bridging the Gaps: Assessing and Addressing Rural Pediatric Hearing Health Disparities. Indiana University DeVault Research Symposium Keynote Speaker. March 12, 2014.
- 2013 **Bush M.** An Update On Infant Hearing Loss And Diagnostic Testing. Family Medicine Review, Lexington, KY. November 4, 2013.
- 2013 **Bush M.** An Expanding Gap: Addressing Rural Hearing Healthcare Disparities and Delays. University of Kentucky Department of Otolaryngology 25th Anniversary Alumni Symposium. October 19, 2013.
- 2013 **Bush M.** Hearing Preservation in Cochlear Implantation. Hearing Loss Association of America, Kentucky Chapter Annual Meeting, Louisville, KY. July 19, 2013.
- 2013 **Bush M.** Pediatric Congenital Hearing Loss in Appalachia: Assessing and Addressing Diagnostic Delays. Hearing Loss Association of America, Kentucky Chapter Annual Meeting, Louisville, KY. July 19, 2013.
- 2013 **Bush M.** A Pediatrician's Guide to Healthy Ears. Contemporary Pediatrics Conference. Marriott Griffin Gate Resort, Lexington, KY. May 18, 2013.
- 2013 **Bush M.** Hearing Preservation in Cochlear Implantation. Featured Session at the American Academy of Audiology AudiologyNOW! Annual Meeting, Anaheim, CA. April 6, 2013.
- 2013 **Bush M.** Hearing Preservation in Cochlear Implantation. American Academy of Audiology eAudiology Session. April 6, 2013.
- 2013 **Bush M.** Diagnostic and Therapeutic Inequities in Appalachian Pediatric Congenital Hearing Loss. Kentucky Speech and Hearing Association Annual Meeting, Lexington, KY. February 28, 2013.
- 2013 **Bush M.** Neuroradiology and Related Neuroanatomy for the Audiologist. American Academy of Audiology eAudiology session, February 12, 2013.
- 2012 **Bush M.** Breaking the Silence: An Overview of Cochlear Implantation. Hearing Loss Association of America, Kentucky (Bardstown) Chapter, October 22, 2012.
- 2012 **Bush M.** Evaluation of Dizziness in the Primary Care Setting. Kentucky Association of Physician Assistants Annual Meeting. Lexington, KY October 21, 2012.
- 2012 **Bush M.** Horizon of Hope: Addressing Audiologic Barriers in East Africa. Heuser Hearing Institute Grand Rounds, Louisville, KY. June 27, 2012.
- 2012 **Bush M.** Breaking the Silence: An Overview of Cochlear Implantation. Hearing Loss Association of Kentuckiana, Louisville Chapter, May 8, 2012.
- 2012 **Bush M.** ENT Through the Lifespan: Caring for the Ear from Cradle to Grave. The Kentucky Coalition of Nurse Practitioners and Nurse Widwives 24th Annual Conference. Louisville, KY. April 18, 2012.

- 2012 **Bush M.** Breaking the Silence: An Overview of Cochlear Implantation. Hearing Loss Association of America, Kentucky (Lexington) Chapter, March 1, 2012.
- 2012 **Bush M.** Neuroradiology and Related Neuroanatomy for the Audiologist. University of Louisville Division of Audiology Grand Rounds, February 20, 2012.
- 2011 **Bush M.** Pediatric Neuroradiology and Clinical Implications for the Pediatric Hearing Specialist. Ohio School Speech Pathology Educational Audiology Coalition Fall Conference, Columbus, OH. October 23, 2011.
- 2011 **Bush M.** Neuroradiology and Related 3D Neuroanatomy for the Audiologist. Alabama Academy of Audiology Annual Meeting, Sandestin, FL. October 1, 2011.
- 2011 **Bush M.** Pediatric Neuroradiology and Neuroanatomy for the Hearing Specialist. Heuser Hearing Institute Grand Rounds, Louisville, KY. September 14, 2011.
- 2011 **Bush M.** AR42, A Novel Histone Deacetylase Inhibitor, as a Potential Therapy for Vestibular Schwannomas and Meningiomas. The Ohio State University Annual Saunders Symposium, Columbus, OH. June 24, 2011.
- 2011 **Bush M.** Vestibular Schwannoma: Update on Current Therapies and Potential Future Options. Kentucky Society of Otolaryngology Annual Meeting, Lexington, KY, May 21, 2011.
- 2011 **Bush M, Musiek F.** Neuroradiology and Related 3D Neuroanatomy for the Audiologist. Featured Session at the American Academy of Audiology Annual Meeting, Chicago, IL. April 9, 2011.
- 2011 **Bush M.** Neuroradiology and Related Neuroanatomy for the Audiologist. Ohio Academy of Audiology Annual Meeting, Columbus, OH. February 19, 2011.
- 2010 **Bush M, Musiek F.** Neuroradiology and Related 3D Neuroanatomy for the Audiologist. Featured Session at the American Academy of Audiology Annual Meeting, San Diego, CA. April 16, 2010.
- 2009 **Bush M, Musiek F.** Neuroradiology and Related 3D Neuroanatomy for the Audiologist. Learning Lab at the American Academy of Audiology Annual Meeting, Dallas, TX. April 1, 2009.

UNIVERSITY CURRICULUM/LECTURES

- 2019 **Bush M.** Resident Core Curriculum: *Otology: Benign Temporal Bone Lesions*. University of Kentucky, Lexington, KY February 7, 2019.
- 2019 **Bush M.** Resident Core Curriculum: *Otology: Malignant Temporal Bone Lesions*. University of Kentucky, Lexington, KY February 14, 2019.
- 2019 **Bush M.** Resident Core Curriculum: *Otology: CPA Lesions*. University of Kentucky, Lexington, KY February 21, 2019.
- 2019 **Bush M.** Med 815 Introduction to Clinical Medicine. *Advancing Your Career and Expanding Your Practice through Health Disparities Research*. February 2019
- 2018 **Bush M.** Resident Core Curriculum: *Otology: Evaluation of the Dizzy Patient*. University of Kentucky, Lexington, KY December 12, 2018.

- 2018 **Bush M.** Med 815 Introduction to Clinical Medicine. *Advancing Your Career and Expanding Your Practice through Health Disparities Research*. July 2018
- 2017 **Bush M.** Med 815 Introduction to Clinical Medicine. *Advancing Your Career and Expanding Your Practice through Health Disparities Research*. July 17, 2017.
- 2017 **Bush M.** Resident Core Curriculum: *Otology: Vestibular physiology and of the dizzy patient*. University of Kentucky, Lexington, KY January 4, 2017.
- 2017 **Bush M.** Resident Core Curriculum: *Neurotology: Tumors of the Lateral Skull Base*. University of Kentucky, Lexington, KY February 1, 2017.
- 2017 **Bush M.** Resident Core Curriculum: *Neurotology: Malignant Lesions of the Temporal Bone*. University of Kentucky, Lexington, KY February 15, 2017.
- 2017 **Bush M.** Med 815 Introduction to Clinical Medicine. *Advancing Your Career and Expanding Your Practice through Health Disparities Research*. February 20, 2017.
- 2016 **Bush M.** Med 815 Introduction to Clinical Medicine. *Advancing Your Career and Expanding Your Practice through Health Disparities Research*. February 15, 2016.
- 2015 **Bush M.** Evaluation of Dizziness in the Primary Care Setting. University of Kentucky Department of Internal Medicine Resident Lecture Series. October 20, 2015.
- 2015 **Bush M, Course Director.** University of Kentucky Department of Otolaryngology – Head and Neck Surgery Grand Rounds Series. Ongoing lecture series given every 4th Wednesday of the Month.
- 2015 **Bush M.** Med 815 Introduction to Clinical Medicine. *Advancing Your Career and Expanding Your Practice through Health Disparities Research*. July 15, 2015.
- 2015 **Bush M.** Online Center for Hearing Health. CME modules for provider education. <http://www.cecentral.com/node/1169>
- 2015 **Bush M.** Med 815 Introduction to Clinical Medicine. *Advancing Your Career and Expanding Your Practice through Health Disparities Research*. April 6, 2015.
- 2015 **Bush M, Co-Course Director.** Resident Core Curriculum: *Otology, Neurotology and Cranial Base Surgery*. University of Kentucky, Lexington, KY. March, 2015.
- 2015 **Bush M.** Physiology of Equilibrium and Hearing. University of Kentucky Department of Neurology Resident Lecture Series. February 2, 2015.
- 2014 **Bush M.** *Work-Life Balance: Is that even possible?* Department of Otolaryngology Professionalism Lecture Series. University of Kentucky, Lexington, KY. November 5, 2014.
- 2014 **Bush M, Course Director.** Resident Core Curriculum: *Otolaryngologic Manifestations of Systemic Disease*. University of Kentucky, Lexington, KY
- 2014 **Bush M** and Valentino J. Congenital Hearing Loss. 1st year medical student Neuroanatomy/Neurophysiology Course. University of Kentucky, Lexington, KY. April 14-15, 2014.

- 2014 **Bush M.** *Research Design 102: Statistics for the Mathematically Challenged*. Department of Otolaryngology Lecture Series. University of Kentucky, Lexington, KY. March 5, 2014.
- 2014 **Bush M.** *Research Design 101: A Dummies Guide to Clinical Research*. Department of Otolaryngology Lecture Series. University of Kentucky, Lexington, KY. February 5, 2014.
- 2013-14 **Bush M.** *Clinical Otology: The Diagnosis and Management of Ear Disease*. 3rd year medical student lecture. University of Kentucky, Lexington, KY.
- 2013 **Bush M** and Valentino J. *Evaluation of the Vestibular Patient*. 1st year medical student Neuroanatomy/Neurophysiology Course. University of Kentucky, Lexington, KY. April 8, 2013.
- 2013 **Bush M.** Resident Core Curriculum: *Neurotology and Cranial Base Surgery: The Facial Nerve: The Mother of All Cranial Nerves*. University of Kentucky, Lexington, KY. March 27, 2013.
- 2013 **Bush M.** Resident Core Curriculum: *Neurotology and Cranial Base Surgery: Lesions of the Lateral Skull Base*. University of Kentucky, Lexington, KY. March 20, 2013.
- 2013 **Bush M.** Resident Core Curriculum: *Neurotology and Cranial Base Surgery: Cochlear Implantation*. University of Kentucky, Lexington, KY. March 13, 2013.
- 2013 **Bush M.** Resident Core Curriculum: *Neurotology and Cranial Base Surgery: Approaches to the Skull Base*. University of Kentucky, Lexington, KY. March 6, 2013.
- 2013 **Bush M, Course Director.** Resident Core Curriculum: *Neurotology and Cranial Base Surgery*. University of Kentucky, Lexington, KY. March, 2013.
- 2013 **Bush M.** Resident Core Curriculum: *Otology: Vestibular physiology and clinical evaluation and management of dizzy patients*. University of Kentucky, Lexington, KY January 9, 2013.
- 2012-13 **Bush M.** *Clinical Otology: The Diagnosis and Management of Ear Disease*. 3rd year medical student lecture. University of Kentucky, Lexington, KY.
- 2012 **Bush M.** *Management of Hearing Loss and Facial Nerve Injury in the Trauma Patient*. Inter-Disciplinary Trauma Conference, November 27, 2012.
- 2012 **Bush M, Course Director.** Resident Core Curriculum: *Oral Board Preparation*. University of Kentucky, Lexington, KY
- 2012 **Bush M.** *Neuroradiology and Clinical Implications for the Audiologist*. University of Louisville Division of Audiology Grand Rounds, Louisville, KY. February 20, 2012.
- 2011 **Bush M.** *Neuroradiology of the Temporal Bone*. University of Kentucky Department of Otolaryngology. Lexington, KY. February 17, 2012.
- 2011-12 **Bush M.** *Clinical Otology: The Diagnosis and Management of Ear Disease*. 3rd year medical student lecture. University of Kentucky, Lexington, KY.
- 2011 **Bush M, Course Director.** Resident Core Curriculum: *Otolaryngologic Manifestations of Systemic Disease*. University of Kentucky, Lexington, KY

- 2011 **Bush M.** *Otology/Neurology Resident Core Curriculum: Facial Nerve: Anatomy and Pathology.* Resident lecture. The Ohio State University, Columbus, OH.
- 2011 **Bush M.** *Clinical Otology: The Diagnosis and Management of Ear Disease.* 3rd year medical student lecture. The Ohio State University, Columbus, OH.
- 2010 **Bush M.** *Otology/Neurology Resident Core Curriculum: Otosclerosis.* Resident lecture. The Ohio State University, Columbus, OH.
- 2010 **Bush M.** *Otology/Neurology Resident Core Curriculum: Surgical Approaches to the Skull Base.* Resident lecture. The Ohio State University, Columbus, OH.
- 2010 **Bush M.** *Clinical Otology: The Diagnosis and Management of Ear Disease.* 3rd year medical student lecture. The Ohio State University, Columbus, OH.
- 2009 **Bush M.** *Clinical Otology: The Diagnosis and Management of Ear Disease.* 3rd year medical student lecture. The Ohio State University, Columbus, OH.
- 2009 **Bush M.** *Otology/Neurology Resident Core Curriculum: Temporal Bone Trauma.* Resident lecture. The Ohio State University, Columbus, OH.
- 2009 **Bush M.** *Basics of Temporal Bone Anatomy and Dissection.* Annual Resident Temporal Bone Course. The Ohio State University, Columbus, OH.

REGIONAL/NATIONAL COURSES

- 2018 **Bush M** (Panelist). I Hate My Hearing Aids: Other Options for Hearing Loss. Miniseminar. AAO-HNS Annual Meeting. Atlanta, GA. October 2018.
- 2018 **Bush M** (Moderator). Policy and Practice: How Changing Policy Affects Hearing Healthcare Delivery. Miniseminar. AAO-HNS Annual Meeting. Atlanta, GA. October 2018.
- 2018 Stryker ANS Neurotology Fellow Bootcamp. Salt Lake City, UT. May 18-20, 2018. Course Directors: **Matthew Bush** and Dan Zeitler.
- 2017 **Bush M** (Panelist). I Hate My Hearing Aids: Other Options for Hearing Loss. Miniseminar. AAO-HNS Annual Meeting. Chicago, IL. September 10, 2017.
- 2013 Stryker Resident Temporal Bone Surgical Dissection Course. University of Cincinnati, March 9, 2013. Co-Course Directors: Ravi Samy and **Matthew Bush**.

RESEARCH MENTORSHIP

- 2011-2015 **Medical Students:**
- Alex Hines 2017-present**
- Neonatal Abstinence Syndrome and Infant Hearing Assessment: A Kids' Inpatient Database (KID) Review
- Christopher Hayden 2018-present**
- Aberrant Facial Nerve Stimulation in Cochlear Implantation: A Systematic Review
 - **PSMRF Award Recipient (Mentor)**
- Anita Shanker 2016-present**

- *Helping Infants Get HEaring Resources*: The **HIGHER** Patient Navigator Trial
- No-show rates in a Pediatric Academic Audiology Practice
- **PSMRF Award Recipient (Co-mentor)**

Whitney Powell 2016-present

- Understanding Adult Perspectives Regarding Hearing Healthcare
- **PSMRF Award Recipient (Mentor)**

Weston Dicken 2017-present

- Validation of Remote Cochlear Implantation Candidacy Evaluations
- **PSMRF Award Recipient (Co-mentor)**

Dasha Kenlan 2016-2017

- Assessment of an International Otology Collaboration: Educational and Patient Outcomes

Tianshi (“Mike”) Liu 2016-2017

- Systematic review of the Effects of Cochlear Implants and adjunctive rehabilitation therapy on language perception and performance among Infants with Congenital CMV infection

Diana Bigler 2016-2018

- Assessment of disruptive behavioral problems in children with hearing loss
- Systematic Review of Disruptive Behavioral Problems Among Hearing Impaired Children
- **PSMRF Award Recipient (Mentor)**

Kayla Williams 2016-2018

- Understanding Adult Perspectives Regarding Hearing Healthcare

Julie Johnson 2015-2018

- Current Trends in Evaluation and Management of Acoustic Neuromas

Kristen Burke 2015-2018

- Systematic Review of Disruptive Behavioral Problems Among Hearing Impaired Children
- Validation of Remote Cochlear Implantation Candidacy Evaluations

Taylor Shackleford 2015-2018

- Systematic review of Patient Navigation for underserved and minority populations
- Promoting Early Diagnosis of Congenital Hearing Loss with Patient Navigation
- **PSMRF Award Recipient (Mentor)**

Vania Rashidi 2015-2018

- Assessment of disruptive behavioral problems in children with hearing loss
- **PSMRF Award Recipient (Mentor)**

Stevie Maxwell 2015-2017

- Assessment of long term outcomes for glomus jugulare patients tumors treated with gamma knife radiation

Stephen Chan 2014-2015

- Hearing health and healthcare disparities in adult patients

- **PSMRF Award Recipient (Mentor)**

Bryce Noblitt 2013-2015

- Analysis of cochlear implant rehabilitation barriers for rural pediatric cochlear implant recipients
- Physician attitudes regarding pediatric hearing loss in rural Kentucky
- Promoting Early Diagnosis of Congenital Hearing Loss with Patient Navigation

- **PSMRF Award Recipient (Mentor)**

Julia Elpers 2013-2014

- Parental attitudes and experiences regarding pediatric hearing loss in rural Kentucky

- **PSMRF Award Recipient (Mentor)**

David Alexander (MS3-4) 2012 – 2013

- Physician attitudes regarding pediatric hearing loss in rural Kentucky

Maribel Osetinsky (MS2-4) 2011 – 2013

- Investigation of delay of hearing healthcare for children with cochlear implants in Appalachia

- **PSMRF Award Recipient (Mentor)**

Kristin Bianchi (MS2-4) 2011 – 2013

- Investigation of diagnostic challenges for children with severe hearing loss in rural Kentucky
- Geospatial Scan Statistical Analysis of Patterns of Pediatric Hearing Loss in Kentucky

Ashley Loan (MS2-4) 2012-2013

- Investigation of hearing healthcare and rehabilitative services for children in Central Kentucky

William Dougherty (MS3-4) 2012-2013

- Assessment of vestibular rehabilitation practice patterns and availability of care
- A case-series review of pediatric autoimmune inner ear disease

Ashleigh Long (MS2-4) 2011-2013

- The clinical utility of magnetic spectroscopy in cerebellopontine angle tumors
- The range of subjective symptoms in patients with normal pure tone audiometry
- The Effect Operating Room Noise on Auditory Processing

Undergraduate Students:

Nicholas Laureano 2016

- Systematic Review of Disruptive Behavioral Problems Among Hearing Impaired Children

Chris Rayle 2012-2013

- Rural Barriers to Early Diagnosis and Treatment of Infant Hearing Loss in Appalachia.

Brandon Fornwalt 2011-2012

- Hot or Cold: Is Monothermal Caloric Testing Useful and Cost-Effective?

Residents:

Christopher Bingcang 2011-2012

- The utility of monothermal caloric testing in screening for vestibular dysfunction

Joshua Dixon 2011-2014

- The effect of middle ear effusion on cochlear implant function

German Fikhsann 2012 – 2015

- Preservation of low-frequency hearing in cochlear implantation

Justin Way 2012-2013

- Investigation of the effect of operating room noise on auditory processing

Deann Roberts 2012-2013

- The clinical utility and cost-effectiveness of pre-operative imaging studies in cochlear implantation

Brian Hixon 2014-2017

- Assessment of rural adult hearing healthcare disparities
- Systematic review of barriers to hearing healthcare

Caitlin Fiorillo 2014-2017

- Assessing and addressing disruptive behavioral problems in children with hearing loss

Kristan Alfonso 2014-2018

- Systematic Review of Disruptive Behavioral Problems Among Hearing Impaired Children

Kyle Fletcher 2015-Present

- Validation of Remote Cochlear Implantation Candidacy Evaluations
- Systematic review of the Effects of Cochlear Implants and adjunctive rehabilitation therapy on language perception and performance among Infants with Congenital CMV infection

Mark Ringstrom 2014-2017

- MRI spectroscopy in the evaluation of cranial base tumors

Andrew Ebelhar 2014-2017

- Preoperative Assessment of Round Window Anatomy for Cochlear Implantation with Intention of Hearing Preservation via Round Window Insertion

Mitch Dobberpuhl 2015-2017

- Current Trends in Evaluation and Management of Acoustic Neuromas

Mike Kaufman 2016-2017

- Systematic review of Patient Navigation for underserved and minority populations

Adam Van Horn 2017 – Present

- Neonatal abstinence syndrome (NAS) and Healthcare Utilization: A Systematic Review
- The Effect of NAS on Early Pediatric Hearing Loss Diagnosis and Intervention

Nicole Colgrove 2017 – Present

- Assessment of Physician Burnout in Otolaryngology Residents

Ryan Neff 2018 – Present

- Prevalence of Long term Opioid Usage follow Otologic Surgery

Audiology Doctoral Students:

Margaret Barnett (2015-2016)

- Perspectives of Primary Care Medical Providers Regarding Adult Hearing Healthcare in the Rural Context

Faculty:

Alexandra Kejner (2017-Present)

Mark Fritz (2017-Present)

Nikita Gupta (2017-Present)

Beth McNulty (2016-Present)

PEER REVIEWED PUBLICATIONS

Van Horn A, Powell W, Wisker A, Mahairas A, Creel L, **Bush ML**. Outpatient Healthcare Access and Utilization for Neonatal Abstinence Syndrome Children: A Systematic Review. (under review) 2019.

Powell W, Jacobs JA, Noble W, **Bush ML**, Snell-Rood C. Rural Adult Perspectives on Impact of Hearing Loss and Barriers to Care. *Journal of Community Health* (under review). 2019.

Fletcher KT, Dicken FW, Adkins MM, Cline TA, McNulty BN, Shinn JB, **Bush ML**. Audiology Telemedicine Evaluations: Potential Expanded Applications. *Otolaryngology – Head and Neck Surgery*. (in press) 2019.

Zeitler DM, **Bush ML**, Chen DA, Sweeney AD. Advances, Options, and Alternatives for Auditory Rehabilitation. *The Hearing Journal*. February 2019. 72(2): 8,9.

Bush ML. Behavioral Disorders in Children with Hearing Loss. *The Hearing Journal*. January 2019. 72(1): 34,35.

Bush ML, Sprang R. Management of Hearing Loss Through Telemedicine. *JAMA Otolaryngol Head Neck Surg*. 2019 Jan 10 (epub). PMID: 30629087

Bigler D, Burke K, Lauren N, Alfonso K, Jacobs J, **Bush ML**. Assessment and Treatment of Behavioral Disorders in Children with Hearing Loss: A Systematic Review. *Otolaryngology – Head and Neck Surgery*. 2018. (Sept 11) (epub). PMID: 30200810

Ringstrom M, Christian J, **Bush M**, Levy J, Huang B, Gal T. Travel distance: Impact on stage of presentation and treatment choices in head and neck cancer. *American Journal of Otolaryngology*, 2018. 39(5): 575-581. PMID: 30041985.

Fletcher KT, Wolf Horrell EM, Ayugi J, Irungu C, Muthoka M, Creel LM, Lester C, **Bush ML**. The Natural History and Rehabilitative Outcomes of Hearing Loss in Congenital Cytomegalovirus: A

Systematic Review. *Otology & Neurotology*. 2018. 39(7):854-864. PMID: 29912824.

Trott S, Cline T, Weihing J, Beshear D, **Bush M**, Shinn, J. Hormones and Hearing: Central Auditory Processing in Women. *Journal of the American Academy of Audiology*. 2018. (epub) PMID: 30461407

Noblitt B, Alfonso K, Adkins M, **Bush M**. Delivery of Rural Pediatric Cochlear Implant Rehabilitation and Access to Care Barriers. *Otology & Neurotology*. 2018. 39(5): e307-e313. PMID: 29649039.

Fiorillo C, Rashidi V, Westgate P, Jacobs J, **Bush M**, Studts C. Assessment of Behavioral Problems in Children with Hearing Loss. *Otology & Neurotology*. 2017. 38(10): 1456-1462. PMID: 28953604.

Bush M, Taylor Z, Noblitt B, Shackelford T, Gal T, Shinn J, Creel L, Lester C, Westgate P, Jacobs J, Studts C. Promotion of Early Pediatric Hearing Detection Through Patient Navigation: A Randomized Controlled Clinical Trial. *The Laryngoscope*. 127 Suppl 7: S1-S13. PMID: 28940335.

Fiorillo C, Hughes A, I-Chen C, Westgate P, Gal T, **Bush M**, Comer B. Factors Associated with Patient No-Show Rates in an Academic Otolaryngology Practice. *The Laryngoscope*. 2018. 128(3): 626-631. PMID: 28815608

Bush M, Kaufman M, McNulty B. Disparities in Access to Pediatric Hearing Health Care. *Curr Opin Otolaryngol Head Neck Surg*. 2017. 25(5): 359-364. PMID: 28665808

Bush M, Dobberpuhl MR, Maxwell S, Feddock J, St Clair W. In Response to Letter to the Editor Entitled, "Treatment Outcomes for Single Modality Management of Glomus Jugulare Tumors with Stereotactic Radiosurgery." *Otology & Neurotology*. 2017. 38(7):1062. PMID: 28570416

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CURRENT RESEARCH FUNDING

- 4/2019 – 3/2024 **Communities Helping the Hearing of Infants by Reaching Parents: The CHHIRP Navigator Trial (R01) (Under review)**
(\$3,302,244)
Role: PI
- 6/2018 – 5/2023 **NIH/NIDCD (R01 DC016957-01) (Studts, PI)**
Title: Behavioral Parent Training for Families with Deaf and Hard of Hearing Preschoolers (\$3,932,390)
Role: Co-investigator

PENDING RESEARCH FUNDING

None

COMPLETED RESEARCH FUNDING

- 8/2017 – 4/2019 **University of Kentucky Center for Health Services Research and CCTS Value of Innovation to Implementation Program (VI²P) (UL1TR000117)**
“Adaptation and Pilot Implementation of the Family Check-Up for Deaf and Hard of Hearing Children” (\$100,000)
Role: Co-PI
- 2/2016 – 2/2018 **Advanced Bionics Sponsored Clinical Trial**
Title: Implantation of the HiRes90K™ Advantage Cochlear Implant with HiFocus™ Mid-Scala and Development of a Combined Electric and Acoustic Stimulation Technology in Adults with Partial Deafness (\$97,939)
Role: PI
- 6/2017 – 6/2018 **University of Kentucky CCTS Pilot Award (UL1TR000117)**
“Hearing Rehabilitation and the Progression of Cognitive Decline in the Elderly” (\$25,000)
Role: Co-investigator
- 3/2015 – 3/2018 **NIH/NIDCD Career Development Award (1 K23 DC014074-01)**
“Promoting Early Diagnosis of Congenital Hearing Loss through Patient Navigation” (\$685,149)
Role: PI
- 2/2015 – 8/2016 **University of Kentucky CCTS Junior Investigator Pilot Award (UL1TR000117)**
“Assessing and Addressing Disruptive Behavioral Problems in Children with Hearing Loss” (\$25,000)
Role: Co-PI
- 8/2014 – 7/2016 **AAO-HNSF: Triological Society Career Development Award**
“Promoting Early Diagnosis of Congenital Hearing Loss through Patient Navigation” (\$40,000)
Role: PI
- 11/2012 – 11/2015 **NIH/NIDCD (1U24-DC012079-01) Resources for Mentorship of Clinician Scientists in Hearing and Balance Disorders**
Mentored research grant to support career development of early clinician scientists
- 7/2012 – 2/2015 **NIH KL2 Award (8 KL2 TR000116-02)**
“Bridging the Gaps: Assessment of Pediatric Hearing Loss in Appalachia”
- 10/2012 – 10/2014 **NIH Health Disparities Loan Repayment Award**
“Pediatric Hearing Loss in Rural Appalachia: Assessment of Successful Identification and Timely Intervention.”
- 7/2009 – 12/2010 **American Hearing Research Foundation Wiley H. Harrison Grant AAO-HNS CORE grant, Principal Investigator**
“*In vitro* and *in vivo* response to HDAC inhibitors by vestibular schwannomas” (\$25,000).

INTERNATIONAL HUMANITARIAN EFFORTS

Development of the *Sikiza Society*, an international academic collaboration between the University of Kentucky and the University of Nairobi: <http://www.entnet.org/content/humanitarian-efforts-map>

- Call of Duty: Personal, Professional Merits of Humanitarian Work. ENTtoday. June 5, 2016.
http://www.enttoday.org/article/call-duty-personal-professional-merits-humanitarian-work/?elq_mid=10215&elq_cid=3437612

CURRENT RESEARCH INTERESTS

- Rural Hearing Health Disparities
- Disruptive behavioral problems in Children with Hearing Loss
- Hearing Preservation in Cochlear Implantation
- MRI spectroscopy in cranial base tumors

CURRENT CLINICAL INTERESTS

- Adult and Pediatric Hearing Loss
- Acute and Chronic Ear Infections and Cholesteatoma
- Cochlear implantation
- Disease of balance and equilibrium
- Tumors of the lateral cranial base and stereotactic radiosurgery

MEDIA RELEASES

“Rural children face delays in diagnosis of congenital hearing loss.” Reuters Health News. November 21, 2013.
<http://www.thedoctorschannel.com/view/rural-children-face-delays-in-diagnosis-of-congenital-hearing-loss/>

“Prescribing Patterns for Otitis Media in Children.” Eastern Kentucky University Morning Edition, Radio Interview. February 26, 2013.

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http://www.eurekalert.org/pub_releases/2013-05/acos-bni051013.php

“Noise in the Operating Room.” BBC Radio Interview. May 13, 2013.

“UK Otolaryngologist Works to Address Rural Disparities of Pediatric Hearing Loss” UKNow University of Kentucky News. April 11, 2014.
<http://uknow.uky.edu/content/uk-otolaryngologist-works-address-rural-disparities-pediatric-hearing-loss>

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http://www.lanereport.com/30997/2014/04/ear-nose-and-throat-doctor-at-uk-aims-to-reduce-states-high-rate-of-hearing-loss-among-children/?utm_source=Faster%20Lane%20Newsletter&utm_medium=Email&utm_campaign=april-15-2014

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<http://uknow.uky.edu/content/interdisciplinary-study-behavioral-problems-children-hearing-loss-gains-ccts-funding>

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<http://uknow.uky.edu/content/music-their-ears-musicians-join-uk-patients-and-faculty-raise-awareness-pediatric-cochlear-i>

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Rural Access to Care and Telemedicine
https://www.youtube.com/watch?v=fDQpJtnI96g&index=14&list=PLT--N4wea5DIAN-7ePL477QMS_AYQ6Wd

Call of Duty: Personal, Professional Merits of Humanitarian Work. ENTtoday. June 5, 2016. http://www.enttoday.org/article/call-duty-personal-professional-merits-humanitarian-work/?elq_mid=10215&elq_cid=3437612

UK Surgeon-Researcher Works to Extend Cochlear Implant Program to Appalachia. UKNow University of Kentucky News. July 14, 2016.
<http://uknow.uky.edu/content/uk-surgeon-researcher-works-extend-cochlear-implant-program-appalachia>

Giving the Gift of Hearing, Here and Around the World.
<http://ukhealthcare.net/blog/making-the-rounds-with-dr-matthew-bush/>

Songs for Sound event benefits UK Cochlear Implant Program.
<http://ukhealthcare.net/blog/songs-for-sound-event-cochlear-implant/>

Bush Awarded Phi Kappa Phi Dissertation Fellowship

<https://uknow.uky.edu/uk-healthcare/bush-awarded-phi-kappa-phi-dissertation-fellowship>