

Arnaldo L. Rivera, M.D.

One Hospital Dr. MA314
Columbia, Missouri 65212
(573) 882-8173
riveraal@health.missouri.edu

Last updated: October 2023

Education

Fellowship, Neurotology, Northwestern University Hospital, Chicago, IL	2006-2008
Residency, Otolaryngology-Head and Neck Surgery, National Capital Consortium Washington DC	2002-2006
Internship, General Surgery, National Naval Medical Center, Bethesda, MD	1999-2000
M.D., University of Puerto Rico, San Juan, PR	1995-1999
B.S. in Biology, University of Puerto Rico, San Juan, PR	1984-1988

Current Position

Associate Professor of Clinical Otolaryngology Department of Otolaryngology-Head and Neck Surgery Medical Director, Hearing and Balance Center	2014-present
Adjunct Associate Professor Department of Neurosurgery University of Missouri Columbia, MO	2019-present

Military Professional Experience

<i>Retired Rank Captain</i>	
Senior Medical Officer, Navy Operational Support Center, St. Louis	2018-2023
Officer in Charge, DET E OSHU Camp LeJeune, NC	2018- 2023
Assistant Officer in Charge, DET E Camp LeJeune, NC	2016-2018
Neurotologist, U.S. Navy	2008-2014
Otolaryngologist, U.S. Navy	1999-2008

Certification and Licensure

Diplomate, American Board of Otolaryngology-Head and Neck Surgery	2007-present
Subspecialty of Neurotology, American Board of Otolaryngology-Head and Neck Surgery	2011-present
Missouri – active	2014-present
Illinois – active	2006-present
Indiana – active	2000-present

Honors and Awards

Navy Achievement Medal	2017
Joint Service Achievement Medal	2014
Army Achievement Medal	2012
Navy Commendation Medal	2011
Navy Commendation Medal	2009
Navy Achievement Medal	2002
Alpha Omega Alpha	1999

Professional Memberships and Activities

Member, Society of University Otolaryngologists	2019-Present
Member, Missouri Society of Otolaryngology	2014, 2018-present
Member Triological Society	2021-Present
Member, American Neurotology Society	2014-present
Member, American Academy of Otolaryngology-Head and Neck Surgery	2003-present
Member, Alpha Omega Alpha	1999-present

Committee Assignments and Administrative Services

Departmental

Director, Advanced Otology Fellowship	2019-Present
Associate Program Director, Otolaryngology-Head and Neck Surgery Residency	2011-2014

School of Medicine/Hospital

Member, Faculty Diversity Committee	2021-present
Member, University Physicians Quality Committee	2020-present
Member, Peer Review Committee, National Capital Consortium	2009-2014

National

Member, Otology & Neurotology Education Committee American Academy of Otolaryngology – Head and Neck Surgery	2022-2024
Member (permanent), U.S. Food and Drug Administration Ear, Nose & Throat Devices Panel of the Medical Devices Advisory Committee	2019-present
Medical Advisor, Red-2-Hear, LLC	2017-present
Member (ad hoc), U.S. Food and Drug Administration Ear, Nose & Throat Devices Panel of the Medical Devices Advisory Committee	2015-2019
Consultant, BOG Governance & Society Engagement Committee American Academy of Otolaryngology-Head and Neck Surgery	2017-2020
Member, ENT PA Education Task Force American Academy of Otolaryngology-Head and Neck Surgery	2016-2020

Educational Activities

Course Director, Temporal Bone Course, University of Missouri	2017, 2018
Faculty mentor of Resident trainees	2015-2017, 2019-present

Grants and Contract Awards

Sub Investigator, Opto-Electrical Cochlear Implant, NIH/NIDOCDC \$105,000
2021-2026

Principal Investigator, Middle fossa craniotomy for the repair of superior semicircular canal dehiscences.
July 2018-present

Principal Investigator, Pentoxifylline for the treatment of imbalance. University of Missouri Research
Board, \$16,000
2018-2022

Principal Investigator, Intratympanic Steroid Injection for Treatment of Idiopathic Facial Nerve Paralysis.
2017-2022

Principal Investigator, En Vivo Acoustics of Routine Aural Suctioning.
2016-present

Principal Investigator, Hearing results and post-surgical outcomes using amniotic membrane allograft versus fascia for tympanoplasty: A Randomized Prospective Trial. 2016-2021

Co-Investigator, Hybrid Cochlear Implants: Potential Candidates and Barriers to Implementation. Chart review study. The Interdisciplinary Center on Aging. 2016-present

Principal Investigator, Efficacy and Safety of AM-111 as Acute Sudden Sensorineural Hearing Loss Treatment (ASSENT). Auris Medical, Inc. \$68,550
2016-fall 2018

Principal Investigator, 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. Advanced Bionics, LLC. \$58,280
2016-fall 2019

Principal Investigator, A Prospective, Randomized, Double Blind, Placebo-Controlled, Multicenter, Phase 3 Efficacy and Safety Study of OTO-104 Given as a Single Intratympanic Injection in Subjects with Unilateral Meniere's Disease. Otonomy, Inc. \$63,340
2016-spring 2018

Principal Investigator, A 6-month, multicenter, Phase 3, Open-label extension safety study of OTO-104 given at 3-month intervals by intratympanic injection in subjects with Unilateral Meniere's disease. Otonomy, Inc. \$48,132
2016-spring 2018

Co-Investigator, Myringotomy punch for a more efficient, precise and safe eardrum perforation repair. Coulter. \$24,676
2016-spring 2018

Principal Investigator, Effect of Alternative Sensory Feedback on Balance. Innervo Technology, Inc. \$32,197
2016

Publications

Peer-Reviewed

1. Tan S, Radi R, Gaudier F, Evans RA, **Rivera AL**, Kirk KA, Parks DA. Physiologic levels of uric acid inhibit xanthine oxidase in human plasma. *Pediatr Res.* 1993;34(3):303-7.
2. Nieves-Cruz B, **Rivera AL**, Cifuentes J, Pataki G, Matalon S, Carlo WA, Tanswell AK, Freeman B. Clinical surfactant preparations mediate SOD and catalase uptake by type II cells and lung tissue. *Am J Physiol.* 1996; 270(4 pt 1): L659-67.
3. Gutierrez HH, Nieves B, Chumley P, **Rivera AL**, Freeman BA. Nitric oxide regulation of superoxide-dependent lung injury: oxidant-protective actions of endogenously produced and exogenously administered nitric oxide. *Free Radic Biol Med.* 1996; 21(1): 43-52.
4. Fishman, AJ, Moreno, LE, **Rivera AL**, Richter C. CO2 laser fiber soft cochleostomy: Development of a technique using human temporal bones and a guinea pig model. *Lasers Surg. Med.*, 2010. 42: 245-256. doi:10.1002/lsm.20902.
5. Sridhara SK, **Rivera AL**, Littlefield P. Tympanoplasty for blast-induced perforations: the Walter Reed experience. *Otolaryngol Head Neck Surg.* 2013 Jan;148(1):103-7.

6. Lanigan A, TompkinsAJ, **Rivera AL**. Unilateral Ear and Temporomandibular Joint Discomfort. *JAMA Otolaryngol Head Neck Surg*. 2014 Sep;140(9):873-874.
7. Erbele I, Bernstein J, Schuchman G, Brungart DS, **Rivera AL**. An initial experience of cochlear implantation for patients with single-sided deafness after prior osseointegrated hearing device. *Otol & Neurotol* 2015 Jan; 36(1):e24-e29.
8. Mikals SJ, Schuchman GI, Bernstein JG, **Rivera AL**. Cochlear implantation leading to successful stapedectomy in contralateral only-hearing ear. *Ear Nose Throat J*. 2015 March;94(3):105-107.
9. Bernstein J, Goupell M, Schuchman G, **Rivera AL**, Brungart D. Having Two Ears Facilitates the Perceptual Separation of Concurrent Talkers for Bilateral and Single-Sided Deaf Cochlear Implantees. *Ear Hear*. 2016 May-Jun; 37(3):289-302.
10. Newberry CI, Newby MD, Puricelli MD, **Rivera AL**. Delayed Surgical Intervention in the Management of Perilymphatic Fistula. *Flob J Oto*. 2016 June; 1(2) (ePub).
11. Puricelli MD, Gilley DR, Coberly JS, **Rivera AL**, Bien AG, Zitsch RP 3rd, Miller DC, Lin J. Malignant Peripheral Nerve Sheath Tumor of the Jugular Foramen. *Oto Neurotol*. 2016 Aug; 37(7):e247-9.
12. Puricelli MD, Newby MD, Fishman AJ, **Rivera AL**. The Petrosquamous Stalactite: Anatomic Characterization and Mastoid Surgical Implications. *Otolaryngol Head Neck Surg*. 2017 Mar; 156(3): 549-553.
13. Bernstein JG, Schuchman GI, **Rivera AL**. Head Shadow and Binaural Squelch for Unilaterally Deaf Cochlear Implantees. *Oto Neurotol*. 2017 Aug; 38(7): e195-e202.
14. Mierzwiński J, Van Den Heuvel E, Fishman AJ, **Rivera AL**, Haber K, Skrivan J. Application of “banana cochleostomy” and looped electrode insertion for cochlear implantation in children with common cavity malformation and cystic forms of cochlear hypoplasia. *Int J Pediatr Otorhinolaryngolog*. 2018 Sep; 112: 16-23.
15. Hoang S, Ortiz M, **Rivera AL**, Litofsky NS. Middle Cranial Fossa Approach to Repair Tegmen Defects with Autologous or Alloplastic Graft. *World Neurosurg*. 2018 Oct; 118:e10-e17.
16. Kennel CE, Cousins JP, **Rivera AL**. Easy Stapes Subluxation in 22q11.2 Deletion Syndrome: A Clinical Capsule and Literature Review. *Otol Neurotol*, 2019 Jul;40(6):e606-e611.
17. Kennel CE, Puricelli MD, **Rivera AL**. Surgically-Relevant Anatomy of the External Auditory Canal Bulge and Scutum. *Otol Neurotol*, 2019 Oct. 7. 40(10). doi: 10.1097 epub 1037-c1044.
18. Guillotte A, Zand A, Ortiz M, Gan Y, **Rivera AL**, Litofsky NS, Miller, DC.

<https://doi.org/10.1016/j.jocn.2020.04.029>
19. Akin R, Wentland C, Namin AW, **Rivera AL**. *Dermacentor variabilis*: An Unusual foreign boy of the external ear canal, *Science Direct*, 2020 Oct 15. <https://www.sciencedirect.com.proxy.mul.missouri.edu/science/article/pii/S2468548820300771>
20. Suliman A, Skubic M, Kurkowski S, Abbott C, **Rivera AL**. Prototype Hat as a Biofeedback System to Address Vestibular Balance Impairment, *IFMBE Proceedings: 8th European Medical and Biological Engineering Conference*, 2020 Nov. 20; 80: 984-993

21. Suliman A, Skubic M, Abbott C, **Rivera AL**, May J. Design of a Head-Worn Biofeedback System to Address Vestibular Balance Impairment, Proceedings of the 2021 Design of Medical Devices Conference, 2020 April 12; V001T14A005-1 – V001T14A005-6
22. Wentland C, Cousins J, May J, **Rivera AL**. “Dural contact to the malleus head in patients with superior semicircular canal dehiscence (SSCD): Case series and review of SSCD and tegmen defects”. *Annals of Otolaryngology, Rhinology, & Laryngology*. 2021 April. Online ahead of print. PMID: 33834872.
23. Bernstein JGW, Phatak SA, Schuchman GI, Stakhovskaya OA, **Rivera AL**, Brungart DS. “Single-Sided Deafness Cochlear Implant Sound-Localization Behavior with Multiple Concurrent Sources”. *Ear Hear*. 2021 Jul 26. doi: 10.1097/AUD.0000000000001089. Online ahead of print. PMID: 34320529
24. Wieser ME, Gilley DR, May JG, **Rivera AL**. “A rare case of middle ear glomangioma” *Sage Journals*. 2022 Jan 8. Doi: 10.1177/2050313X211070520
25. Yanez-Siller JC, Wentland C, Bowers K, Litofsky NS, Rivera AL. Squamous Cell Carcinoma of the Temporal Bone Arising from Cholesteatoma: A Case Report and Review of the Literature. *J Neurol Surg Rep*. 2022 Feb 8;83(1):e13-e18. doi: 10.1055/s-0041-1741069. PMID: 35155077; PMCID: PMC8824697.
26. Hilal F, Liaw J, Cousins JP, **Rivera AL**, Nada A. Autoincudotomy as an uncommon etiology of conductive hearing loss: Case report and review of literature, *Radiology Case Reports*, 2023 April. <https://www.sciencedirect.com/science/article/pii/S1930043322009773>

Book Chapters

Rivera AL. Otolgic and Temporal Bone Injuries, Triage and Management, Atlas of Oral and Maxillofacial Surgery Clinics of North America. March 2013

Rivera AL. Middle Ear Physiology for the Encyclopedia of Otolaryngology, Head and Neck Surgery by Springer. Encyclopedia of Otolaryngology, Head and Neck Surgery. Springer-Verlag, Berlin. 2013

Rivera AL. Middle Ear Anatomy for the Encyclopedia of Otolaryngology, Head and Neck Surgery by Springer. Encyclopedia of Otolaryngology, Head and Neck Surgery. Springer-Verlag, Berlin. 2013

Rivera AL. ENT chapter in 2015 Revised Medical Standards for employees of the New York City Transit Authority. December 2015

Mierzwinski J, Puricelli MD, Mukach MB, **Rivera AL**. Chapter 12: Principles of Cochlear Implant Imaging. Implantable Hearing Devices. San Diego, CA: Plural Publishing. May 2017

Baugh T, Puricelli MD, **Rivera AL**. Perilymphatic Gusher after Stapedotomy. In C. de Souza, S. Grewal (Eds). *Puzzling Cases in Otolaryngology*. Mumbai, India Tree Life Media. 2019

Bollinger S, Baugh TB, Puricelli MD, **Rivera AL**. Labyrinthine Fistula of the Lateral Semicircular Canal Due to Late Cholesteatoma Recurrence. In C. de Souza, S Grewal (Eds). *Puzzling Cases in Otolaryngology*. Mumbai, India Tree Life Media. 2019

Oral Presentations

National/International Meetings

Rivera, AL. Liaw, Jeffrey. Management of a Retained Shotgun Pellet in the Vestibule. American Neurotology Society, Nashville, TN. September 2023

Rivera, AL. Yanez-Siller, Juan C. Howe, Edmund. Liaw, Jeffrey. Torres, Michael Ortiz. The Crista Ovale A 'Key' Middle Cranial Fossa Landmark: A Morphometric Computer Tomographic Imaging Evaluation. North American Skull Base Society 32nd Annual Meeting. Tampa, FL. February 2023

Rivera, AL. May, Jason. Anterior Tympanomeatal Flap for Removal of Congenital Cholesteatoma. American Society of Pediatric Otolaryngology Annual Meeting. May 2022

Rivera, AL. Canal Wall Down Mastoidectomy: Decision Making and Technical Pearls. American Osteopathic Colleges of Ophthalmology and Otolaryngology – Head and Neck Surgery. San Juan, Puerto Rico. May 2022.

Rivera, AL. Challenging Cases in Stapes Surgery. American Osteopathic Colleges of Ophthalmology and Otolaryngology – Head and Neck Surgery. San Juan, Puerto Rico. May 2022.

Rivera, AL. Novel Treatments of Meniere's Disease. American Osteopathic Colleges of Ophthalmology and Otolaryngology – Head and Neck Surgery. San Juan, Puerto Rico. May 2022.

Rivera, AL. The best Offense is a Good Defense: Simultaneous Falcia Lata Free Flap with Cochlear Implantation after Prior Radical Tympanomastoidectomy. Triological Society Combined Sections Meeting. January 10, 2022

Rivera, AL. Kerr, John. Ear to Nose: Treating eustachian tube dysfunction with balloon dilation. SNOT Force alliance Webcast Series. July 28, 2021

Rivera, AL. The Advantage of Two Ears for Sound Localization and Understanding in Background Noise. Operational Medicine Symposium, Camp Lejeune, NC. June 2019

Bernstein JGW, Schuchman G, Stakhovskaya OA, **Rivera AL**, Brungart DS. The benefits of cochlear implants for single-sided deafness for sound localization with multiple concurrent sources. Lecture presentation. 5th Joint Meeting of the Acoustical Society of America and the Acoustical Society of Japan. Honolulu, Hawaii. November 29, 2016

Puricelli MD, Newby MD, Fishman AJ, **Rivera AL**. The Stalactite of Fishman: Anatomic Characterization and Mastoid Surgical Implications. AAO-HNS Annual Meeting, San Diego CA, September 21, 2016

Bernstein JGW, Schuchman G, **Rivera AL**, Brungart DS. Single-sided deafness: An initial examination of cochlear implants in the military. 13th International Conference on Cochlear Implants and Other Implantable Auditory Technologies, Munich, Germany, 18-21 Jun 2014.

Kepchar J, Bernstein J, **Rivera AL**. Improved Sound Localization Following Cochlear Implantation For Single-Sided Deafness: A Case Comparison, COSM spring meeting, Orlando, FL. 2013

Fishman AJ, Moreno LE, **Rivera AL**, Richter CP. Lasers: A tool for Soft Cochleostomies SPIE Photonics, San Francisco CA. January 24, 2010

Fishman AJ, Moreno LE, **Rivera AL**, Richter CP. CO₂Laser Fiber Soft Cochleostomy: Development of a Technique using Human Temporal Bones and a Guinea Pig Model, AAO-HNS Annual Meeting, San Diego, CA. October 7, 2009

Rivera AL, Battista R, Kumar A. Brain Metastases Mimicking Bilateral Vestibular Schwannomas. AAO-HNS Annual Meeting, Washington DC. 2007

Rivera AL, Littlefield P, Otting M, Battista R, Richter C. Intratympanic Acyclovir in the Gerbil. AAO-HNS Annual Meeting, Washington DC. 2007

Local/Regional Meetings

Panelist. McJunkin J, Isaacson B, **Rivera AL**, Dornhoffer J, VanNess M. Otology Panel: Pulsatile Tinnitus. Arkansas/Missouri Otolaryngology-Head and Neck Surgery Conference. Ridgedale, Missouri. October 5, 2019.

Panelist. Dornhoffer J, MD; Gardner W, MD, **Rivera AL**, MD; Cullen R, MD; Wick C, M. Panel on the Management of Difficult Ear Cases. The Arkansas/Missouri Otolaryngology- Head and Neck Surgery Conference. Ridgedale, Missouri. October 2017.

Invited Presentations

Presenter. **Rivera AL**. Rush University Medical Center Department of Otolaryngology-Head and Neck Surgery Teaching Day Program & Grand Rounds, Grand Rounds Presentation: Surgery in the Only Hearing Ear and Other Adventures. Chicago, IL. Feb. 8, 2019.

Panelist. Fishman, AJ, **Rivera AL**. Otolaryngology & Neurology CME. DuPage Hospital Department of Neuroscience. Invited faculty panel. Chicago, IL. December 2017.

Panelist. Fishman AJ, **Rivera AL**. Otolaryngologic and Neurological Causes of Common Complaints. Central DuPage Hospital Department of Neuroscience. Invited faculty panel. Chicago IL. December 2014.

Posters

National/International Meetings

Liaw, Jeffrey, Polanik, Mark, Yanez Siller, Juan Carlos, **Rivera AL**. Balloon Eustachian Tubeoplasty and CO2 Myringoplasty for Tympanic Membrane Atelectasis. AAO-HNSF, Nashville, TN. Sept 2023

Liaw, Jeffrey, Yanez Siller, Juan Carlos, Polanik, Mark, **Rivera AL**. CO2 Laser Ablation of a Tympanic Membrane hemangioma. AAO-HNSF, Nashville, TN. Sept 2023.

Sorensen, JA, Puricelli MD, **Rivera AL**. A Double Blind, Placebo Controlled, Randomized Trial of Pentoxifylline for Imbalance Secondary to Insufficient Microvascular Perfusion. 2020 Combined Otolaryngology Spring Meetings Virtual Poster Session: May 15 – June 15, 2020.

Kinealy BP, Namin, A, Zitsch RP, Rivera AL. "Intraoperative Radiography: An Overlooked Tool in Transoral Sialolith Excision" American Head and Neck Society 10th International Conference on Head and Neck Cancer, Chicago, IL, July 18-22, 2020, Abstract ID: 104483 accepted March 23, 2020. (Conference canceled)

Yanez-Siller JC, Wentland C, Litofsky N, **Rivera AL**. From Cholesteatoma to Squamous Cell Carcinoma of Temporal Bone. North American Skull Base Society Annual Meeting, San Antonio, TX. February 2020.

Kennel CE, Puricelli MD, **Rivera AL**. Surgical Anatomy of the Scutum and Implications for Stapedectomy, Atticotomy, and Endoscopic Ear Surgery. American Academy of Otolaryngology Annual Meeting, Atlanta, GA. October 2018

Abbott, CC, Erhardt BF, **Rivera AL**. Effect of a Novel Palatal Alternative Sensory Feedback Device on Postural Stability & Dynamic Balance: A Case Series. APTA CSM. New Orleans, LA. February 23, 2018

Tang H, Woodland M, Abbott C, **Rivera AL**. A Noninvasive Palatal Device for Vestibular Imbalance. AAO-HNS Annual Meeting, Chicago, IL. September 12, 2017

Erhardt, BF, Abbott, CC, **Rivera AL**. Vestibular Rehabilitation Utilizing a Novel Palatal Alternative Sensory Feedback Device. COSM, San Diego, CA. May 2017

Wiet RJ, Battista R, Wiet MR, Byrne R, **Rivera AL**, Little J. Rare Metastatic Lesions of the Internal Auditory Canal. COSM Annual Meeting, Chicago, IL. May 2016

Bernstein JGW, Goupell MJ, Iyer N, Schuchman GI, **Rivera AL**, Brungart DS. Binaural speech stream segregation for single-sided deaf and bilateral cochlear implantees. Conference on Implantable Auditory Prostheses, Tahoe City, CA. July 15, 2013

Bernstein JGW, Schuchman G, **Rivera AL**, Brungart DS. Benefits of cochlear implants for single-sided deafness in multisource environments. American Cochlear Implant Alliance, Washington, DC. October 25, 2013

Social Media

Cochlear Implants Open the World of Sound to Missouri Boy. MU Health Today. Vol 3, Issue 267. November 20, 2019

Protecting your hearing from fireworks and acoustic trauma. NBC. July, 2021

Chronic Otitis Externa. FLEX xCast on-demand Oto Education Podcast. November 9, 2022