

Curriculum Vitae

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Education

06/1992	B.S.	Physics	Massachusetts Institute of Technology, Cambridge, MA
06/1992	B.S.	Biology	Massachusetts Institute of Technology, Cambridge, MA
02/1998	Ph.D.	Speech and Hearing Bioscience and Technology (mentor: John J. Guinan, Jr, PhD)	MIT and Harvard-MIT Division of Health Sciences and Technology (HST)
06/1999	M.D. <i>magna cum laude</i>	Medicine	Harvard Medical School and Harvard-MIT Division of HST

Postdoctoral Training

03/98-06/99	Research Fellow	Cell Biology, Renal Unit (mentor: Dennis Brown, PhD) and Oto-immunohistochemistry Laboratory (mentor: Joe Adams, PhD)	Massachusetts General Hospital, Boston, MA Massachusetts Eye and Ear (MEE), Boston, MA
07/99-06/00	Intern	General Surgery	Massachusetts General Hospital, Boston, MA
07/00-06/06	Resident	Otolaryngology – Head and Neck Surgery	MEE, Boston, MA
07/00-06/06	Clinical Fellow	Otology and Laryngology	Harvard Medical School (HMS), Boston, MA
07/01-06/03	Postdoctoral Fellow	Molecular Neuroscience (mentor: Gabriel Corfas, PhD)	Howard Hughes Medical Institute and Children's

			Hospital, Boston, MA
07/06-06/08	Clinical Fellow	Neurotology – Skull Base Surgery (mentor: Michael McKenna, MD)	MEE and Harvard Medical School, Boston, MA
08/21-06/22	Executive Fellow	Stanford Leadership Academy	Stanford University
05/22-06/22	Executive Fellow	Program for Chairs of Clinical Services (Executive and Continuing Professional Education)	Harvard T.C. Chan School of Public Health
05/25-11/25	Fellow	Innovation Accelerator Program	Stanford Mussalem Center for Biodesign and Fogarty Innovation
Faculty Academic Appointments			
07/08-03/15	Assistant Professor	Otology and Laryngology	Harvard Medical School
07/08-07/14	Faculty	Division of Health Science and Technology	Harvard-MIT Program in Speech and Hearing Bioscience and Technology (SHBT)
08/14-06/21	Faculty	Division of Medical Sciences	Harvard-MIT Program in Speech and Hearing Bioscience and Technology (SHBT)
04/15-06/21	Associate Professor	Otology and Laryngology	Harvard Medical School
04/18-06/21	Faculty	Cross-departmental	Harvard Program in Therapeutic Science (HiTS)
09/17-06/21	Affiliated Faculty	Cross-departmental	Harvard Stem Cell Institute
06/21 – current	Bertarelli Foundation Professor (university tenure line)	Otolaryngology – Head and Neck Surgery	Stanford University School of Medicine
08/21 – current	Professor, by courtesy	Neurosurgery	Stanford University School of Medicine
05/22 – current	Affiliated Faculty	Cross-departmental	Wu Tsai Neuroscience Institute, Stanford University
05/22 – current	Affiliated Faculty	Interdisciplinary Biosciences Institute	Stanford Bio-X
05/22 – current	Affiliated Faculty	Cross-departmental	Molecular Imaging Program at Stanford

01/25 – current	Adjunct Professor	Department of Otorhinolaryngology	Medical University of Vienna, Austria
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Appointments at Hospitals/Affiliated Institutions

Past

07/08-07/11	Assistant	Otolaryngology	MEE
07/08-06/09	Clinical Associate	Surgery	Massachusetts General Hospital (MGH), Boston, MA
08/11-07/13	Assistant Surgeon	Otolaryngology	MEE
07/09-06/21	Clinical Associate	Otolaryngology	MGH
08/13-06/21	Associate Surgeon	Otolaryngology	MEE
2017-06/21	Sheldon and Dorothea Buckler Endowed Chair	Otolaryngology	MEE

Current

06/21-	Chief of Service Line	Otolaryngology – Head and Neck Surgery	Stanford Health Care
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Major Administrative Leadership Positions

At Harvard

2008-2021	Director, Molecular Neurotology and Biotechnology Laboratory	MEE
2010-2012	Co-director, Clinical Aspects of Speech and Hearing course	Harvard-MIT Division of HST
2013-2020	Director, Clinical Aspects of Speech and Hearing course	Harvard-MIT Division of HST and Harvard Division of Medical Sciences
2017	Co-organizer, Scientific Symposium celebrating 25 th anniversary of the Speech and Hearing Bioscience and Technology PhD Program	HMS, MIT
2018-2020	Chief, Division of Otology and Neurotology	MEE

At Stanford

2021– current	Chair, Department of Otolaryngology – Head and Neck Surgery	Stanford University School of Medicine
2021 – current	Executive Committee	Stanford University School of Medicine

2021 – current	Council of Clinical Chairs	Stanford University School of Medicine
2021 – current	Senior Advisory Committee, Wu-Tsai Neurosciences Institute	Stanford University
2022 – 2023	Co-chair, Search Committee for Department Chair of Neurology	Stanford University School of Medicine
2023	Group Lead, Integrated Strategic Plan Refresh Steering Committee	Stanford University School of Medicine
2023 – current	Ambulatory Network Governance	Stanford Healthcare
2023– 2025	Senator, Faculty Senate of the Academic Council	Stanford University
2023-2024	Task Force, Redesigning Cancer Research Translation	Stanford Medicine
2024 – current	Board Member	Stanford Medicine Partners
2024 – 2025	Co-chair, Search Committee for Department Chair of Radiology	Stanford University School of Medicine
2025	Strategic Growth Task Force	Stanford Health Care
2025	Search Committee, Senior Vice President for Cancer Services	Stanford Health Care
National		
2019	Co-chair, Workshop on Visualizing the Human Inner Ear	NIH – National Institute on Deafness and Other Communication Disorders
2020	Blue Ribbon Panel (External Review of NIDCD’s Intramural Program)	NIH – National Institute on Deafness and Other Communication Disorders
2020-2021	NIDCD Temporal Bone Experts Group	NIH – National Institute on Deafness and Other Communication Disorders
2021	Strategic Planning Panel	NIH – National Institute on Deafness and Other Communication Disorders
2023 –	Scientific Advisory Board	Dr. Richard J. Bellucci Translational Hearing Center, Creighton University
2023 –	Advisor	Rutgers Robert Wood Johnson Medical School Otolaryngology – Head and Neck Surgery Underrepresented Minority Mentorship Program (RROUMP)
2023–	Board of Trustees	The Virginia Merrill Bloedel Hearing

		Research Center, University of Washington
2024	External Reviewer of the Department of Otolaryngology	University of California Irwin
International 2019 – current	International Advisory Board	Interdisciplinary graduate school "Controlled release to the head and neck region - HeadCoRe" (funded by German Research Foundation), University of Halle, Germany
Committee Service		
At Harvard and MIT		
2004-2006	Education Committee, Department of Otology and Laryngology	HMS
2008-2009	Organizing Committee, 7 th Conference on Molecular Biology of Hearing and Deafness	HMS, the Deafness Research Foundation, the National Organization for Hearing Research, the University of California, San Diego, CA
2009-2014	Disclosure & Apology Consortium	HMS
2010-2021	PhD Oral Qualifying Examination Committee 2012, 2017	Harvard-MIT Division of HST; Speech and Hearing Biosciences and Technology Program Chair
2010-2013	PhD Thesis Committee	MIT Department of Electrical Engineering and Computer Science
2013	First-Round Search Committee for Director of Cochlear Implant Laboratory	MEE
2014	MEE/HMS Transition Member Team for new HMS Chief of Otology and Laryngology	MEE
2014	Biobanking Committee	MEE
2014	Undergraduate Honors Reader Thesis Committee	Harvard University
2015	Search Committee for Neural Regeneration Investigator	MEE
2015	Search Committee for Clinical Director of the Tinnitus Center	MEE
2015	Selection Committee, Helen Carr Peak Research Award for a PhD student	MEE and MIT (Research Laboratory of Electronics)
2015-2021	Subcommittee on Regeneration	HMS Center for Hereditary Deafness

2015-2021	Subcommittee on Gene Transfer	HMS Center for Hereditary Deafness
2016	Advisory Committee on Large Animal Translational Suite	MEE
2016-2017	Search Committee for Eaton Peabody Laboratory Principal Investigators	MEE
2017-2021	HST External Advisory Committee	Harvard-MIT Division of HST
2018	PhD Examination Committee	Harvard Biophysics Program
2018-2021	Advisory Committee, Creating Maps of Human Stem Cell-Derived and Endogenous Neurons and Glia	Harvard Stem Cell Institute Neuroscience Program
2018-2021	Program Evaluation Committee	Harvard Otolaryngology Residency
2008-2016, 2019-	Neurotology Fellowship Admissions Committee	Harvard Neurotology Fellowship Training Program
2019-2021	Executive Committee	Harvard SHBT Program
2020-2021	Steering Committee	2021 World Medical Innovation Forum Steering Committee, Mass General Brigham
At Stanford		
2021 – current	Member, Robotic Program	Stanford Health Care
2021 – current	Member, Residency Admissions Committee	Stanford Otolaryngology – Head and Neck Surgery
2021 – current	Member, Neurotology Fellowship Selection Committee	Stanford Otolaryngology – Head and Neck Surgery
2024	IP Ambient Monitoring Committee	Stanford Health Care
2023 – current	Member	Residency Scholarly Activity Committee
2021 – current	Member	Residency Evaluations Committee
2024 – current	Committee on Research	Stanford University
National		
2016 –	Pharmaceutical Interventions for Hearing Loss Working Group	Department of Defense Hearing Center of Excellence
2016-2020 -	Otic Database Subcommittee	Invited Member
2020 -	Patient Monitoring Subcommittee	

2018 – 2023	K08 External Advisory Committee	University of Miami Miller School of Medicine (K08 awardee Christine Dinh, MD)
2021 – current	Task Force for New Materials (for certification in otolaryngology – head and neck surgery)	American Academy of Otolaryngology – Head and Neck Surgery
2023 – current	Chair, Task Force on AI	American Academy of Otolaryngology – Head and Neck Surgery
2024 –current	Dissertation Committee Member	University of Texas Medical Branch, Graduate School of Biomedical Sciences, Microbiology & Immunology (Kirsten Littlefield, PhD candidate)

International

2014	PhD Thesis Examination Committee in Optical Engineering	École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
2019	PhD Thesis Examination Committee in Neuroprosthetics	École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
2019	PhD Thesis Examination Committee in Optical Engineering	École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
2020	Research Committee Member	Fondation Pour L’Audition, Paris, France
2020	PhD Thesis Examination Committee in Neurosurgery	University of Manchester, Manchester, UK

Professional Societies

1992-	Phi Beta Kappa	Elected Member
1992-	Sigma Xi (Scientific Honor Society of N. America)	Elected Member
1992	Sigma Pi Sigma (National Physics Honor Society)	Elected Member
1993-	Association for Research in Otolaryngology	Member
	2007-2010	Member, Physician Research Training Committee
	2011-2014	Member, Long Range Planning Committee
	2015	Member, Nominating Committee
	2017-2020	Member, Program Committee
	2020-2023	Member, Awards Committee
1999-	American Medical Association	Member

2000-	American Academy of Otolaryngology – Head and Neck Surgery 2015	Member Reviewer, Clinical Practice Guideline Update: Otitis Media with Effusion (OME)
	2015-2017	Member, International Otolaryngology Committee
	2016	Task Force, Selection of AAO-HNSF Nikhil J. Bhatt, MD International Public Service Award and Humanitarian Award
	2015-2019	Member, Implantable Hearing Devices Committee
	2024 – current	Hearing committee
2003-2005, 2022 –	Society of University Otolaryngologists	Member
2005 –	American College of Surgeons 2011-present	Member Elected Fellow
2005 –	Society for Neuroscience	Member
2006 – 2021	Harvard Neurodiscovery Center	Member
2006 –	The International Otopathology Society	Member
2006 –	American Neurotology Society 2012-present 2013-2016, 2023 – 2026 2015, 2018-2021	Member Elected Fellow Member, Education Committee Member, Research Committee
2008 –	American Auditory Society 2008-2016 2012-2013 2012-2014 2013-2014 2013-2014 2014-2015 2015-2016	Member Elected Member, Executive Board Member, Program Committee Member, Communications Committee President Elect Chair, Program Committee – Annual Meeting of the America NIH-NIDCD Auditory Society President Past President
2015 –	American Otological Society 2015-2017 2020-2022, 2025-2026 2023-2024 2024-2025	Elected Member Member, Program Advisory Committee Nominating Committee Program Advisory Committee Award of Merit Nominating Committee
2018 –	Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum 2025 - current	Elected Member Treasurer
2023 –	Otosclerosis Study Group 2024-2025	Elected Member Executive Council

	2025-2026 2026-2027	President Elect President (elected)
2019 –	Acoustic Neuroma Association (ANA)	Medical Advisory Board
2021 –	German Society of Otorhinolaryngology Head and Neck Surgery	Honorary Corresponding Member
2022 –	Politzer Society, International Society for Otologic Surgery and Science	Member, Executive Board
2022 –	Alpha Omega Alpha (Medical Honor Society)	Elected Member, Stanford Chapter

Grant Review Activities

2010, 2014, 2015	Action on Hearing Loss 2010 Action on Hearing Loss, International Project 2014, 2015	The Royal National Institute for Deaf People, United Kingdom Reviewer
2011	IDEA ² (Idea squared) 2011	Harvard-MIT Division of Health Sciences and Technology Reviewer
2012, 2013	Emerging Research Grants 2012, 2013	Hearing Health Foundation Reviewer
2013	Recombinant DNA Advisory Committee 2013	National Institutes of Health Reviewer
2014	Neurosciences 2014	Medical Research Council, United Kingdom (premier governmental agency in UK that funds high-impact research) Reviewer
2014	Neurofibromatosis Therapeutic Acceleration Program 2014	Johns Hopkins Reviewer
2014, 2015, 2016, 2018	Sensory Technology Small Business Study Section 2014, 2015, 2016, 2018	National Institute on Deafness and Other Communication Disorders Reviewer
2016	Grant Funding Program 2016	Translational Research Initiative Hearing Program (TRIH), United Kingdom Reviewer
2016	Curing Kids Foundation 2016	Massachusetts Eye and Ear Reviewer
2016, 2019	Grant Funding Program	Agir Pour L'Audition (Acting for Hearing),

	2016, 2019	Paris, France – French non-profit foundation Reviewer
2016, 2019	Board of Scientific Counselors	National Institute on Deafness and Other Communication Disorders (NIDCD)
	2016	Ad hoc Member
	2019	Ad hoc Member
2016	Grant Funding Program	Health Research Council of New Zealand (a crown agency of the New Zealand government)
	2016	Reviewer
2017	Special Emphasis Panel on Noise-Induced Synaptopathy in the Auditory System 2017	National Institute on Deafness and Other Reviewer Communications Disorders Reviewer
2020	Research Grant Award	American Neurotology Society
2021	Translational Applications	National Institute on Deafness and Other Communication Disorders
	2021	Reviewer
2021	U01 Clinical Trials in Communication Disorders 2021	National Institute on Deafness and Other Communication Disorders Chair
2022	Auditory System Study Section (AUD)	National Institute on Deafness and Other Communication Disorders Ad hoc reviewer
2023	Drug and Biologic Therapeutic Delivery Study Section (DBTD)	National Institutes of Health Reviewer
2024-2029	Auditory System Study Section (AUD)	National Institute on Deafness and Other Communication Disorders Standing member

Editorial Activities

Ad hoc Reviewer

New England Journal of Medicine

PNAS – Proceedings of the National Academy of Sciences

Cell Metabolism

Science Translational Medicine

Advanced Science

Journal of Clinical Investigation

JCI Insight
American Journal of Human Genetics
Human Molecular Genetics
PlosGenetics
Molecular Therapy
Stem Cell Reports
Molecular Neurobiology
JAMA Otolaryngology – Head and Neck Surgery
Journal of Neuroscience
Trends in Molecular Medicine
Human Mutation
PlosOne
Journal of Biomedical Optics
Biomedical Optics Express
Journal of Neurophysiology
Frontiers in Cellular Neuroscience
European Journal of Human Genetics
Hearing Research
JARO – Journal of the Association for Research in Otolaryngology
Laryngoscope
Audiology and Neurotology
Otolaryngology – Head and Neck Surgery
Neuroscience
BioMed Research International
Ear and Hearing
Clinical Neuropathology
Experimental Gerontology

Other Editorial Roles

2000-2007	Editorial Board	Newsletter “Connector”, Harvard-MIT Division of HST
2010-2011	Contributing Member	Faculty of 1000 – Otology section
2011-	Editorial Board	Otology and Neurotology
2017-	Editorial Board	Scientific Reports (a Nature online journal)
2018-	Editorial Board	Laryngoscope Investigative Otolaryngology

2019-	Associate Editor	Frontiers in Neurology, Neuro-otology
2019-2020	Guest Editor	Frontiers in Neurology, Neuro-otology Section, Special Issue on Third Window Syndrome
2020-2021	Guest Editor	Frontiers in Pharmacology, Special Issue on Drug Delivery to Ear
2023-2024	Guest Editor	Frontiers in Molecular Neuroscience, Special Issue on Hearing Loss and Inner Ear Malformations: Pathobiological Defects in Sensorineural Hearing Loss: From Identification to Rescue
2024-current	Editorial Board	Sensory Neuroscience

Honors and Prizes

1992	Association of MIT Alumnae (AMITA) annual award given to the outstanding senior woman for the highest degree of academic excellence and professional promise.
1994-1997	National Institutes of Health Fellowship in Speech and Hearing Sciences.
1995 – 1999	National Institutes of Health Medical Scientist Training Program.
1995,1998	Featured in annual Dean’s Report (for excellence in academics and research), Harvard Medical School.
1996-1997	Marvin Asnes Scholar in Health Sciences and Technology, MIT.
1997-1998	David and Beatrice Yamron Fellow in Health Sciences and Technology, Harvard Medical School.
1998	NATO Advanced Study Institute on Computational Hearing Travel Award.
1999	Henry Asbury Christian Award for outstanding performance in research and scholarly activities, Harvard Medical School.
2000, 2006	Association for Research in Otolaryngology (ARO) Resident Travel Award.
2005	Selected participant, course in Scientific Management, Burroughs Wellcome Fund and Howard Hughes Medical Institute.
2006	Patricia and Barry Yellen Young Investigator Award, MEE.
2010	Selected participant, course on Leadership Development for Physicians and Scientists, Harvard Medical School.
2011	Burt Evans Young Investigator Award from the National Organization for Hearing Research for dedicated commitment and excellence in the pursuit of otologic studies.

2014	Thomas A. McMahon Mentoring Award from Harvard-MIT Division of Health Sciences and Technology.
2015	Benjamins Prize from the Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum (the most authoritative international association of otorhinolaryngologists) for the best presentation at the annual meeting.
2015	Honorary Howard House, MD Lectureship for Advances in Otology, American Academy of Otolaryngology – Head and Neck Surgery.
2015	Neurofibromatosis Research Program (NFRP) featured New Investigator, Department of Defense.
2016	Honorary Lectureship as the invited US otologist at the VII International Otology and Neurotology Meeting in Medellin, Colombia.
2016	Chandler Visiting Professor and Distinguished Guest Judge, University of Miami Miller School of Medicine.
2016	Harvard Medical School nominee for the national Executive Leadership in Academic Medicine (ELAM) program (only two women are nominated from a competitive pool involving all Harvard-affiliated Hospitals, HMS basic science departments, Harvard T.H. Chan School of Public Health and Harvard Dental School).
2017	Inaugural incumbent, Sheldon and Dorothea Buckler Endowed Chair in Otolaryngology, MEE.
2018	Guest of Honor Lectureship, American Otological Society.
2018	Visiting Professor and Graduation speaker, London Health Sciences Centre, Western University Department of Otolaryngology – Head and Neck Surgery, Ontario, Canada
2018	Featured alumna invited talk, MIT Technology Day.
2021	John Niparko MD Memorial Lecture, American Cochlear Implant Alliance.
2021	Inaugural incumbent, Bertarelli Foundation Endowed Chair, Stanford University School of Medicine.
2022	H. Brian Neel, III, MD, PhD Distinguished Research Lecture, American Academy of Otolaryngology Head and Neck Surgery.
2022	Iee Ching Wu Anderson Women's Leadership Lecture, Johns Hopkins University.
2023	Featured distinguished alumna, 150 th anniversary of the Harvard Griffin Graduate School of Arts and Sciences.
2023	David E. Schuller, MD Graduation Lecturer, The Ohio State University College of Medicine.
2023	Honors Award for meritorious service and leadership, American Academy of Otolaryngology – Head and Neck Surgery
2024	Distinguished Lecturer in Translational Research in Otolaryngology, University of Texas, San

Antonio

2024	Distinguished alumna speaker, 200 th Anniversary of Massachusetts Eye and Ear
2024	Elected Member, National Academy of Medicine
2025	Graduation Speaker, Harvard Otolaryngology – Head and Neck Surgery
2025	Tauno Palva, MD Lecturer, University of Helsinki, Finland

Report of Funded and Unfunded Projects

Funding Information

Past

2001	Cellular basis of fluid and electrolyte transport in the middle ear and Eustachian tube National Organization for Hearing Research PI The major goal of this study was to determine whether the middle ear shares similar mechanisms of fluid and electrolyte regulation as the inner ear and kidney.
2001-2003	Cellular and molecular mechanisms of postnatal degeneration of the auditory nerve due to disrupted neuregulin-erbB signaling Howard Hughes Medical Institute PI The goal of this study was to combine molecular and electrophysiological approaches to define mechanisms of degeneration of the auditory nerve due to disrupted neuregulin signaling in the inner ear.
2001	Mechanisms of postnatal degeneration of the auditory nerve due to disrupted neuregulin-erbB signaling Charles A. King Trust Postdoctoral Research Fellowship, The Medical Foundation PI I declined this fellowship after receiving the postdoctoral fellowship from the Howard Hughes Medical Institute.
2004-2005	Understanding chronic sinusitis with gene expression profiling Foundation Research Endowment Grant, MEE PI The major goal of this study was to perform genome-wide transcriptional profiling of nasal polyps associated with chronic sinusitis and aspirin-sensitive asthma. The identified genes represent novel therapeutic targets for chronic sinusitis.
2004-2006	Transcriptional profiling of the otic capsule Burch-Safford Foundation, Inc, MEE PI The major goal of this study was to identify genetic mechanisms that distinguish the bone around the inner ear, i.e. the otic capsule, from other bones. This has implications for understanding hearing loss due to abnormal remodeling of the otic capsule.
2008-2010	Molecular mechanisms of noise-induced delayed primary auditory neuropathy

American Otologic Society

PI

The major goal of this study was to understand the mechanisms that underlie delayed, primary degeneration of the auditory nerve after exposure to noise levels that had traditionally been assumed to cause only temporary hearing loss.

2009-2011

Functional role and therapeutic implications of osteoprotegerin secretion by the auditory nerve
Massachusetts Life Sciences Center, New Investigator Grant

PI

The goal of this study was to investigate functional significance of our finding that the auditory nerve secretes a pro-survival molecule osteoprotegerin at extremely high levels, and to explore therapeutic implications of this finding.

2009-2014

Understanding noise-induced delayed primary degeneration of the auditory nerve

NIH – NIDCD K08 DC010419-01

PI

The goal of this study was to uncover mechanisms of primary degeneration of the auditory nerve after “temporary” noise-induced threshold shift. We identified immune molecules that mediate “hidden hearing loss”, a prevalent problem for which satisfactory treatments do not yet exist.

2010-2011

Proteomics of perilymph: A Window into Mechanisms of Noise-Induced Delayed Primary Degeneration of the Auditory Nerve

Eleanor and Miles Shore 50th Anniversary Fellowship, Program for Scholars in Medicine

PI

The goal of this study was to define how proteome of perilymph, the proximal fluid of the inner ear, changes as the auditory nerve degenerates after “temporary” noise induced trauma.

2011-2014

Optical imaging of the inner ear for diagnosis and therapy

Bertarelli Foundation

PI

The goal of this collaborative work with the co-PI, Dr. Demetri Psaltis (Swiss Federal Institute of Technology in Lausanne, School of Engineering), was to develop optical tools for imaging of cells inside the inner ear through the encasing bone, and without any exogenous dyes.

2012-2013

Hearing loss from a social and behavioral sciences perspective

Nancy Sayles Day Foundation

PI

The goal of this study was to analyze the types of strategies and scripts that adults with hearing loss use to either disclose their hearing loss or keep it invisible.

2013-2014

Seeing in new light: Quantitative polarized light microscopy of unstained pediatric human temporal bones

Curing Kids Foundation, MEE

PI

The goal of this study was to establish, for the first time, birefringent signatures of unstained sections of the human inner ear, thereby complementing information obtained from the traditionally stained sections, and enabling future noninvasive modalities for human inner ear imaging *in vivo*.

2013-2014

Auditory nerve protection: exploring novel molecules

Nancy Sayles Day Foundation

	PI The goal of this study was to characterize functional significance of <i>Gtf2ird1</i> for auditory nerve survival and function. We identified this gene through genome-wide transcriptional analyses of inner-ear tissues exposed to neuropathic noise levels.
2014-2015	Proteomics of secretions from human vestibular schwannomas stratified by hearing MEE Foundation PI The goal of this study was to elucidate differentially expressed proteins in secretions of human vestibular schwannomas that cause hearing loss compared to those that do not cause hearing loss.
2015-2016	An engineered platform that can be tested on humans for diagnosing and treating deafness Wyss Center Geneva, Switzerland PI along with Demetri Psaltis The goal of this study was to provide pre-clinical specifications (based on human cadaveric measurements) for a multi-mode fiber endoscope for intracochlear imaging via the external auditory canal.
2016-2017	Multimodal optical imager for inner ear hearing loss diagnosis NIH/NIDCD SBIR 1R43DC015414-01 Subaward PI; PI: Jesung Park at Physical Sciences, Inc. The goal of this project was to develop a clinical endoscope for intracochlear imaging using optical coherence tomography (OCT).
2014-2017	Preclinical validation of anti-nuclear factor kappa B therapy against vestibular schwannoma and neurofibromatosis type II Department of Defense W81XWH-14-1-0091 PI The goal of this study was to determine whether NFkB inhibition prevents proliferation and promotes death of primary vestibular schwannoma cells.
2015-2018	Advanced optical techniques for clinical diagnosis and therapy of hearing loss Bertarelli Foundation PI The goal of this collaborative work with the co-PI, Dr. Demetri Psaltis (Swiss Federal Institute of Technology in Lausanne, School of Engineering), was to explore advanced optical techniques to allow not only cellular, but also subcellular and metabolic imaging, through the intact cochlear bone, along the length of the cochlear spiral. • Coverage of this grant support by HMS in July 2018: https://hms.harvard.edu/news/tackling-sensory-disorders
2015-2018	Preclinical validation of novel fluorescently labelled compounds to treat neurodegenerative hearing loss Department of Defense W81XWH-15-1-0472 (MR141279) PI This goal of this study was to determine whether fluorescently labeled bisphosphonates promote synaptogenesis and neurogenesis.
2015-2021	Degeneration and regeneration of the auditory nerve Nancy Sayles Day Foundation PI

	The goal of this study was to test regenerative potential of novel molecules identified through transcriptional profiling of noise-induced primary auditory neuropathy.
2015-2021	Imaging tinnitus of cochlear origin Lauer Tinnitus Research Center PI The goal of this study was to define, based on cellular-level optical imaging, cochlear signatures of neurodegenerative “hidden” hearing loss that accompanies noise-induced tinnitus.
2016-2019	Combining anti-angiogenic therapy with immune therapy in NF2 schwannomas Department of Defense Collaborator; PI: Lei Xu The goal of this study was to combine anti-angiogenic and immune therapy to develop more effective treatments for vestibular schwannomas.
2016-2021	Personalized therapies for hearing loss Barnes Foundation PI The goal of this study was to reposition FDA-approved drugs for hearing loss by combining high-throughput transcriptional profiling of cochlear cells with chemical genomics.
2016-2020	Hearing loss: development of targeted therapies The Zwanziger Foundation PI The goal of this study was to use patient-derived auditory neurons for high-throughput screening of potential therapeutic compounds.
2019-2020	An All-solid Rechargeable Battery for a Fully Internal Cochlear Implant NIH SBIR Co-PI (PI: Yuzi Zhang, I) The goal of this project was to build an anatomically-sized, robust and durable implantable battery for a fully implantable cochlear implant. Such a battery will have application in other medical implants as well.
2020	Hearing Loss St. Vincent de Paul Foundation MPI The goal of this collaborative project with Dr. Bruce Ksander (MPI) was to develop a successful gene therapy to correct hearing loss based on epigenetic modification.
2016-2022	Mechanisms of sensorineural hearing loss: secreted factors NIH/ NIDCD-R01DC015824 PI The goal of this project was to define secreted mechanisms of sensorineural hearing loss due to vestibular schwannoma. Understanding these mechanisms has informed the search for new therapies, addressing a major unmet medical need of VS patients.
2020-2023	Reprogramming the tumor microenvironment to improve hearing and treatment efficacy in NF2 vestibular schwannomas Department of Defense W81XWH-20-1-0222 Co-PI. PI: Lei Xu The goal of this project was to examine the association between the expression of extracellular

matrix molecules, inflammation and hearing loss in human schwannoma tissue, and determine whether losartan improves hearing function in schwannoma models.

2018-2024	Endomicroscope for diagnosis and therapy of hearing loss WayVector, Inc. MPI The goal of this collaborative project with Dr. Gary Tearney (MPI at MGH) was to design and validate the first μ OCT endoscope for micron-scale intracochlear imaging in humans.
Current	
2017 – 2026	Prospective, randomized, placebo-controlled phase 2 trial of aspirin for vestibular schwannoma Department of Defense W81XWH-17-1-0644 (NF160065) PI The goal of this multi-institutional study is to test if systemic aspirin therapy prevents vestibular schwannoma (VS) growth and if changes in serum biomarkers predict and reflect response to aspirin treatment in VS.
2019 – 2026	Developing human models of hearing loss Remondi Foundation PI The goal of this project is to develop the first preclinical models of human hearing loss to accurately mimic the diseased state of the inner ear. Such models, based on induced pluripotent stem cells, will accelerate the development of pharmacologic and genetic treatments to protect and restore human hearing. I mentor 3 postdoctoral fellows contributing to this work.
2020 – 2025	Preclinical validation of photobiomodulation therapy for sensorineural hearing loss Project Geneva/ Uniformed Services University of the Health Sciences HU00011920056 MPI The goal of this collaborative project with Dr. Gary Tearney (MPI at MGH) is to determine whether and under what circumstances photobiomodulation therapy can rescue noise-induced cochlear synaptopathy and neuropathy. I mentor a post-doctoral fellow and a medical student contributing to this work.
2020 – 2025	Miniature Intracochlear Imaging Probe Based on Micro Optical Coherence Tomography for Cellular-Level Diagnosis and Therapy of Hearing Loss Department of Defense – W81XWH-20-1-0855 PI The goal of this collaborative project with Dr. Gary Tearney (MPI at MGH) is to develop and optimize a disposable μ OCT imaging probe and system that can be integrated with a cochlear implant electrode array. I mentor a post-doctoral fellow contributing to this work.
2022 – 2027	Human Inner Ear Cellular Atlas NIDCD U24 DC020857 MPI The goal of this collaborative project with Dr. Alan Cheng (MPI) is to build a molecular and optical cell atlas of the human inner ear as a resource for the scientific community to accelerate progress in discovering effective therapies for auditory and vestibular disorders. To achieve this objective, we are applying the latest molecular and optical imaging tools to live human inner ear tissues from organ donors, vestibular schwannoma patients, and rapid autopsy participants. I mentor a post-doctoral fellow contributing to this work.
2024 – 2025	Alzheimer's administrative supplement to U24 DC020857

The goal of this project is to extend Aim 2 of parent grant to conduct a multifaceted analysis of Alzheimer's Disease pathology in the human inner ear. I mentor a post-doctoral fellow contributing to this work.

- 2023 – 2028 AI-based genetic discovery for hearing loss
R01 DC021133
Co-Investigator. PI: Gary Peltz
The goal of this collaborative project with Dr. Gary Peltz (PI) is address age-related hearing loss by developing computational tools that will greatly accelerate the pace of genetic discovery for hearing loss and will characterize the mechanism by which genetic factors cause spontaneous hearing loss in multiple inbred mouse strains. I mentor a post-doctoral fellow contributing to this work.
- 2023 – 2028 Targeting HMGB1 to improve hearing and enhance therapy for vestibular schwannoma.
R01DC020724
MPI
The goal of this collaborative project with Dr. Lei Xu (MPI at MGH) is to provide pivotal insight into i) the role and mechanisms of HMGB1 in driving neuroinflammation in VS, ii) the treatment potential and the hearing response following HMGB1 blockade, and iii) the design of a future clinical trial for VS using a novel combination strategy of HMGB1 and EGFR blockade to concurrently control tumor growth and prevent VS-induced hearing loss. I mentor a post-doctoral fellow contributing to this work.
- 2023 – 2025 An optical agent to guide surgery and drug development for vestibular schwannoma
Innovative Medicines Accelerator: Experimental Human Biology, Stanford University
PI
The goal of this project is to develop techniques using fluorescently-labeled anti-EGFR antibodies to improve the ability of surgeons to safely and completely resect vestibular schwannoma (VS) tumors and simultaneously characterize and enable the development of safe and effective targeted therapeutic treatments for VS and NF2. I mentor a junior faculty member contributing to this work.
- 2025 – 2026 Temporal Trends in Plasma Biomarkers: Implications for Hearing and Tumor Progression in People with Vestibular Schwannoma
Children's Tumor Foundation
PI
The major goal of this project is to recruit patients with vestibular schwannoma (VS) and follow them during their course of treatment (whether or not they receive surgery) for up to 2 years to monitor changes in their hearing ability, VS tumor size, and the levels of candidate biomarkers. I mentor a research scientist contributing to this work.
- 2025 – 2029 Vestibular dysfunction in patients with sporadic vestibular schwannomas and NF2-related schwannomatosis
NIH R01
Co-Investigator. PI: Richard Lewis
The goal of this project is to expand on exciting preliminary results and develop the first prospective predictors of treatment outcomes in NF2/vestibular schwannoma (VS) based on longitudinal pretreatment measurements of physiologic, anatomic, biochemical/ molecular and genetic parameters. I mentor a research scientist contributing to this work.
- 2025 – 2029 Multimodality Micro-Optical Coherence Tomography for Imaging the Functional Microanatomy of the Human Cochlea

NIH R01DC022233-01

MPI

The goal of this collaborative project with MPH, Guillermo Tearney, is to address a critical unmet need for diagnosing human hearing loss on an individual patient basis by developing and validating a multimodality intracochlear imaging system and minimally invasive probe that can detect the presence of individual sensorineural cells in organ of Corti and quantifying their metabolic activity *in vitro* and *in vivo*. I mentor a postdoctoral fellow and a research scientist contributing to this work.

2025 – 2026

A novel method to reduce cerumen production
Stanford-Coulter Translational Research Program
PI

The goal of this collaborative project with a co-PI, Adam de la Zerda, is to address ceruminosis at its root cause. I mentor a post-doctoral fellow contributing to this work.

2025 – 2028

Identifying and overcoming roadblocks to hearing restoration using human induced pluripotent stem cells
California Institute for Regenerative Medicine DISC0-17674
PI

The goal of this collaborative project with a co-investigator, Stefan Heller, is to identify and overcome roadblocks to human hair cells regeneration by prompting post-mitotic supporting cells to re-enter the cell cycle. I mentor three postdoctoral fellows contributing to this work.

Training Grants and Mentored Trainee Grants

1975-2021

Training in Pharmacological Sciences
NIH NIGMS T32 GM007306
Faculty since 2018

The main goal was to train PhD students to rethink the basic and clinical science needed to discover, develop and deliver better drugs. My role was to mentor PhD students.

1992-2021

Training for Speech and Hearing Sciences
NIH NIDCD T32 DC 000038-22
Faculty 2008-2021

The main goal was to train PhD students in basic, translational and clinical research within auditory neuroscience and speech. My role was to mentor PhD students (four of my former PhD students were supported by this grant), direct a required course, and regularly lecture in other courses.

2014-2021

Massachusetts Eye and Ear Research Training Grant
NIH NIDCD T32DC000020-26
Faculty

The main goal was to train surgeon scientists in translational research and basic research with clinical implications. My role was to mentor residents in otolaryngology on a 7-year residency track, which includes two years of research.

2015

Effects of secreted factors from human vestibular schwannomas on hearing
American Academy of Otolaryngology – Head and Neck Surgery
My role was to mentor a Harvard otolaryngology resident, Taha Jan, MD, in validating candidate biomarkers of hearing loss associated with vestibular schwannomas identified through a proteomic analysis of tumor secretions.

2016

Tumor-penetrating delivery of nanoparticles to human vestibular schwannomas

- American Academy of Otolaryngology – Head and Neck Surgery
My role was to mentor a Harvard otolaryngology resident, Yin Ren, MD, PhD in integrating cancer nanotechnology for siRNA delivery with molecular analysis of hearing loss due to vestibular schwannoma.
- 2017 Visualizing sensorineural hearing loss by ultra-high resolution imaging of the cochlea *in vivo*
Bullock-Wellman postdoctoral fellowship
My role was to mentor a postdoctoral fellow, Gargi Sharma, PhD in developing and validating a miniature, flexible micro-optical coherence tomography imaging probe capable of imaging the cochlea at 2x2x1 μm (x,y,z) resolution in three dimensions.
- 2017-2021 Diagnostic and therapeutic optical imaging of the inner ear
National Defense Science and Engineering Graduate (NDSEG) Fellowship
My role was to mentor a Harvard PhD student, Janani Iyer, who studied the diagnostic and therapeutic potential of two-photon fluorescence and micro optical coherence tomography for sensorineural hearing loss.
- 2017 Periostin as a biomarker of chronic rhinosinusitis
American Academy of Otolaryngology – Head and Neck Surgery
My role was to co-mentor a Harvard otolaryngology resident, Ashton Lehmann, MD in testing whether periostin was a clinically relevant circulating molecular biomarker of endotypes of chronic rhinosinusitis.
- 2017 Patient-specific cellular models of NF2 for personalized therapy
Amelia Peabody Scholarship
My role was to mentor a Harvard PhD student, Jessica Sagers, in creating the first patient-specific cellular models of NF2 using pluripotent stem cell lines taken from individual NF2 patients.
- 2018-2019 Identification of novel small molecule inhibitors for human vestibular schwannoma and neurofibromatosis type 2
NIH F31
My role was to mentor a Harvard PhD student, Jessica Sagers, in designing a high throughput small-molecule screen to identify novel therapeutic targets for NF2.
- 2022 – 2027 Clinician Scientist Training Program at Stanford
NIH NIDCS R25
Faculty
The main goal is to train the next generation of physician scientists. My role is to mentor medical students and residents who are enrolled in this program.
- 2022 Panatimumab-IRDye800 to Fluorescently Detect Cholesteatoma in Surgical Resection
American Neurotology Society/ American Academy of Otolaryngology – Head and Neck Surgery Herbert Silverstein Otolaryngology/ Neurotology Research Award
My role was to mentor a Stanford neurotology fellow, Lindsay Scott Moore, MD in determining whether topical application of panatimumab-IRDye800 can safely and specifically fluorescently detect human cholesteatoma tissue.
- 2023-2025 AAV-mediated gene therapy to target vestibular schwannoma
American Society for Gene and Cell Therapy Career Development Award
My role was to mentor a Stanford neurotology Fellow, Lukas Landegger, MD, PhD, in identifying AAV serotypes that would be relevant for transducing vestibular schwannoma cells

for gene therapy

2025 Non-invasive quantification of fluorescent reporter in urine to assess tumor growth
 BioX Undergraduate Student Research Program Award
 My role was to mentor a Stanford undergraduate student, Brooke Ruszkiewicz, in developing a non-invasive method to monitor growth of Gaussia luciferase-transfected schwannoma cells *in vivo*.

Report of Local Teaching and Training

Teaching of Students in Courses

2005	Invited Lecturer on Otolaryngology as a Surgical Specialty – The Art and Science of Medicine, course # HST.S11 Undergraduate students	MIT 1 hour lecture
2006-2021	Invited Lecturer on the Development of the Head and Neck, and Surgical Repair of Congenital Anomalies of the Head and Neck – Human Functional Anatomy, course #HT010.0 1 st year medical and graduate students	HMS 2 hour lecture
2007-2021	Participating Faculty – Lab Visits, course #HST.791 1 st year PhD students in Speech and Hearing Biosciences and Technology	MEE 1 hour lecture and lab tour
2007-2021	Clinical Aspects of Speech and Hearing, course #HST.724/ SHBT 202 – Core Faculty 1 st and 2 nd year PhD students in Speech and Hearing Biosciences and Technology	Harvard-MIT Two 2 hour lectures, 3 hrs/wk of teaching in clinic & operating room for 14 wks, writing & grading of assignments/exams, coordinating faculty
2009	Molecular Biology of the Auditory System, course #HST.750 – Expression Microarrays Advanced PhD students in Speech and Hearing Biosciences and Technology	Harvard-MIT 2 hour lecture
2009	Molecular Biology of the Auditory System, course #HST.750 – Genomics and Proteomics Advanced PhD students in Speech and Hearing Biosciences and Technology	Harvard-MIT 2 hour lecture
2013-2021	Frontiers in Biomedical Engineering and Physics, course #HST.500 – Research vistas in Neurotology: from biological batteries to biomarkers Graduate students in Biomedical Engineering	Harvard-MIT 2 hour lecture

and Physics

2014	MIT Start6, EECS Workshop for Entrepreneurs and Innovators – Novel electrode for cochlear implants. Mentor to 2 postdoctoral fellows Engineering students and postdoctoral fellows	MIT 3 hours mentoring
2015	The World of Speech and Hearing – Surgeon Scientist’s Perspective on Neurotology: Challenges and Opportunities Undergraduate and graduate students	MIT 2 hours
2016	Medical Decision Analysis and Probabilistic Medical Inference #HST192 Mentored PhD student on his final project	Harvard-MIT 3 hours
2016, 2018	MIT-MGH Physician Shadow Program 6 MIT undergraduate pre-health students (3 in 2016, 3 in 2018)	MEE 4 hours in operating room x 3
2016	HST Introduction to the Profession of Physician Scientist – Core Faculty 1 st year MD students	Harvard-MIT Division of HST 2 hour journal club and discussion
2018	The Molecular Biology of Human Disease – Molecular Biology of Deafness: Challenges And Opportunities 1 st year MD-PhD students	Harvard-MIT Program Two 90 min lectures and discussion
2019	Careers in Medicine: Otologic Surgery and Auditory Neuroscience – Challenges and Opportunities Undergraduate students	MIT 2 hours
2020	HST 140 / BCMP 218: Molecular Medicine Medical and PhD students	Harvard-MIT Division of HST 2 hours
2021, 2023, 2024	OTOHNS 206: Augmenting Human Senses: Enhancing Perception with Technology and Bioscience Undergraduate and graduate students	Stanford 1 hour per lecture
2022, 2023	OTOHNS 200: Introduction to Otolaryngology – Head and Neck Surgery Medical Students	Stanford 1 hour per lecture

Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)

2006-2010	Complications of acute and chronic otitis media 2 nd year otolaryngology residents	MEE 1 hour lecture and 1 hour supervision of
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		resident teaching
2008-2011	Disorders of the external auditory canal All otolaryngology residents and fellows	MEE 1 hour lecture
2010	Mock Oral Boards: Otology Senior otolaryngology residents	MEE 7 hours of oral examination
2011	Sensorineural hearing loss All otolaryngology residents and fellows	MEE 2 one-hour lectures
2013	Genetics of hearing loss All otolaryngology residents and fellows	MEE 1 hour lecture and 1 hour study session with residents
2014	Temporal bone trauma All otolaryngology residents and fellows	MEE 1 hour lecture and 1 hour study session with residents
2015	Secreted molecules that control human hearing All otolaryngology residents and fellows	MEE 1 hour lecture and 1 hour study session with residents
2016	Cellular-level optical imaging of the inner ear for diagnosis and therapy of deafness All otolaryngology residents and fellows	MEE 1 hour lecture and 1 hour study session with residents
2017	Precision medicine for sensorineural hearing loss All otolaryngology residents and fellows	MEE 1 hour lecture and 1h study session with residents
2018	Cellular-level imaging and liquid biopsy of the inner ear to guide and monitor treatment All otolaryngology residents and fellows	MEE 1 hour lecture and 1 hour study session with residents
2019	Management of otologic cases: conductive and sensorineural hearing loss All otolaryngology residents and fellows	MEE Expert Panelist, 1 hour
2022	Management of Meniere's disease All otolaryngology residents and fellows	Stanford University School of Medicine 2 hour journal club
2023	The clinician scientist path All otolaryngology residents and medical students	Stanford University School of Medicine 1 hour lecture and discussion
2024	Chronic otitis media and cholesteatoma All otolaryngology residents and medical	Stanford University School of Medicine 1 hour lecture and discussion

students

Clinical Supervisory and Training Responsibilities

2006-2008	Fellow in Neurotology / MEE	Daily teaching of residents & medical students. Selected papers for and ran monthly journal club (12 hrs/month)
2006-2008	Instructor, Temporal Bone Dissection Laboratory / MEE	2 hrs per week for 12 months per year
2008-present	Surgical Attending, Otologic Neurotologic Surgery / MEE until 06/2021/ Stanford since 06/2021	6 hrs per week with residents and clinical fellows

Laboratory and Other Research Supervisory and Training Responsibilities

2008-current	At any given time I have had: • 1 undergraduate student/ MEE (until 06/2021) • 1-3 medical students/ MEE/ HMS (through 06/2021)/ Stanford (since 06/2021) • 2-5 PhD students/ MEE/ HMS (through 06/2021)/ Stanford (since 06/2021) • 2-8 postdoctoral fellows/ MEE/ HMS (through 06/2021)/ Stanford (since 06/2021) • 1-2 residents in otolaryngology/ MEE/ HMS(through 06/2021)/ Stanford (since 06/2021)	I have provided didactic teaching, instruction on responsible conduct of research, and mentorship 2-3 times per week and as needed for 3-6 months. I have provided didactic teaching on research questions and methodologies, supervision of experiments, close instruction on writing of first papers, and mentorship 2-3 times per week and as needed for 3-12 months per student. I have provided didactic teaching, instruction on the responsible conduct of research, help with writing of mentored research fellowship and scholarship applications, close instruction with writing of first research papers and often substantial rewriting of subsequent papers, and mentorship 2-3 times per week and as needed for 3-5 years per student. I have guided research, critically discussed data and manuscripts, reviewed multiple paper drafts before submission, helped write mentored research fellowship applications, and provided mentorship weekly & as needed for 1-3 years per fellow. I have guided research, discussed data, supervised paper writing, helped write mentored grant applications and provided mentorship 2-3 times per week and as needed for 6 months during the protected research block, then about 3 times per months for the following 2 years when the resident returns to clinical rotations.
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Formally Mentored Harvard Medical, Dental and Graduate Students

- 2009 – 2014 Andrew Lysaght, PhD / Senior Vice President and Head of Bioinformatics Services, Immuneering Company, Boston MA
Career stage: PhD student (Harvard-MIT Division of HST; graduated August 2014) and post doctoral fellow (August-October 2014). *Mentoring role:* research advisor. *Accomplishments:* Published ten papers (3 first-author papers, including a Nature Biotechnology paper featured on cover page, 3 second-author papers) based on mentored research.
- 2010 – 2011 Pratik Patel, MD (HMS class of 2014)/ Clinical Fellow in Cardiology, Stanford University, Stanford CA
Career stage: MD student. *Mentoring role:* research advisor. Pratik worked in my lab summer 2010 and continued throughout the academic year on developing a minimally manipulative primary culture of human Schwann and schwannoma cells. *Accomplishments:* One second-author paper published.
- 2010 – 2014 Sonam Dilwali, MD, PhD / Attending Neurologist, Kaiser Permanente, California
Career stage: PhD student (Harvard-MIT Division of HST). *Mentoring role:* research advisor. *Accomplishments:* Eleven papers published (6 first author, 3 second author) based on mentored research. Won multiple awards based on mentored research: 1) first place poster award, American College of Surgeons, Massachusetts Chapter annual meeting (2013), 2) second place poster award, Spring Meeting of the American Neurotology Society (2013), 3) Dallas Woman's Club Scholarship (2016).
- 2011 – 2012 Neil Kalwani, MD (HMS class of 2015)/ Instructor in Cardiovascular Medicine, Stanford, Palo Alto, CA
Career stage: MD student. *Mentoring role:* research advisor. Neil worked on characterizing birefringent characteristics of mouse unstained cochlear sections, and on characterizing auditory phenotype in FGF23 deficient mice. *Accomplishments:* One first author paper and one middle author paper published. Presented a poster at the annual meeting of the Association for Research in Otolaryngology.
- 2015 – 2019 Jessica Sagers, PhD / Head of Engagement, RH Capital Management, LCC, Boston, MA
Career stage: PhD student (Harvard Program in Speech and Hearing Bioscience and Technology). *Mentoring role:* research advisor. *Accomplishments:* Five first-author papers, two second-author papers and one middle-author paper published; one middle-author paper submitted. Won multiple awards based on mentored research: 1) NSF travel award to participate in 2016 conference "Listening into 2030", 2) 2017 Association for Research in Otolaryngology (ARO) Travel Award to present a poster at the annual meeting, 3) 2017 Amelia-Peabody Scholarship, 4) first prize for her 2017 poster presentation at the annual symposium of the Harvard Medical School Laboratory for Systems Pharmacology, held at Novartis Biomedical Institutes; 5) a Harvard Brain Institute young investigator grant to attend a Gordon conference on the auditory system in Rhode Island in 2018; 6) F31 fellowship from NIDCD (2018-2019); 7) a Harvard nominee to the Schmidt Science Fellows program; 8) 2019 ARO Travel Award to present a poster at the annual meeting.
- 2015 – 2021 Janani Iyer, PhD / Scientific Project Manager, PathAI
Career stage: Research assistant (2015), then PhD student in Speech and Hearing Bioscience and Technology, HMS (2016-2021). *Mentoring role:* research advisor. *Accomplishments:* Two first-author papers, two second-author paper and one middle-author paper published based on mentored work. One paper featured on cover page of Hearing Research. Won multiple awards based on mentored research: 1) National Defense Science and Engineering Graduate (NDSEG)

Fellowship (2017), 2) Association for Research in Otolaryngology Travel Award to present a talk at the annual meeting based on mentored research (2017), 3) Amelia Peabody Scholarship (2017).

Formally Mentored Stanford Medical and Graduate Students

- 2021 – 2024 Nirvikalpa Natarajan / Resident in Otolaryngology – Head and Neck Surgery, Beth Israel Deaconess Medical Center, Boston, MA
Career stage: MD student at Stanford. *Mentoring role:* research advisor. *Accomplishments:* Two first-author papers published based on mentored research.
- 2025 – current Beverly Jiali Fu
Career stage: MD student at Stanford. *Mentoring role:* research advisor. *Accomplishments:* One first-author paper in preparation.

Mentored Trainees and Faculty

- 2006 – 2008 Argyro Bizaki, MD, PhD / Attending Otolaryngologist, Jyväskylä Clinic, Finland
Career stage: Postdoctoral research fellow. *Mentoring role:* research advisor. *Accomplishments:* Published two papers based on mentored research.
- 2008 – 2009 Deborah Perez Fernandez, PhD / Licensing Manager, Rutgers University, NJ
Career stage: Postdoctoral research fellow. *Mentoring role:* research advisor. *Accomplishments:* Published one paper based on mentored research.
- 2008 – 2010 Michael Platt, MD, MSc / Associate Professor of Otolaryngology and Director of Otolaryngology Residency Program, Boston University, Boston MA
Career stage: Postdoctoral research fellow, assistant professor. *Mentoring role:* research advisor. *Accomplishments:* Published six papers (4 first author) based on mentored research. Received research Award from Boston University.
- 2008 – 2017 Shyan-Yuan Kao, PhD / Retired
Career stage: Postdoctoral research fellow, then instructor. *Mentoring role:* research advisor. *Accomplishments:* Published 11 papers (five first author; one of which was featured on cover page of *Neurobiology of Disease*) based on mentored research. Presented talks and posters at national meetings.
- 2009 George Scangas, MD / Assistant Professor of Otolaryngology – Head and Neck Surgery, Massachusetts Eye and Ear and HMS, Boston MA
Career stage: Medical student. *Mentoring role:* research advisor. *Accomplishments:* Clinical Neurosciences Track Summer Internship Award from the University of Pennsylvania. A second-author paper published based on mentored research.
- 2009 – 2013 Jane Bjerg Jensen, MD, PhD / Otorhinolaryngologist, Copenhagen, Denmark
Career stage: PhD student. *Mentoring role:* research advisor. *Accomplishments:* Three papers published (two first-author) based on mentored research. Received research award from Aase and Ejnar Danielsens Foundation.
- 2010 Martijn Briet, MD / Resident in Otolaryngology, UMC Utrecht, the Netherlands
Career stage: Medical student. *Mentoring role:* research advisor. *Accomplishments:* Two papers published (second author) based on mentored research.
- 2010 – 2011 Cheng-Ai Ong, MD / Head of Department of Otorhinolaryngology, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

- Career stage:* Postdoctoral research fellow, assistant professor. *Mentoring role:* research advisor. *Accomplishments:* Three papers published (one first author) based on mentored research.
- 2010 – 2012 Patrick Mercier, PhD / Professor, Electrical and Computer Engineering, UCSD, San Diego CA
Career stage: PhD student at MIT. *Mentoring role:* research co-mentor. *Accomplishments:* Published 4 papers (2 first author, including in *Nature Biotechnology*, which was featured on cover page) based on mentored work.
- 2010 – 2013 Daniel Roberts, MD, PhD / Associate Professor of Surgery, Division of Otolaryngology, University of Connecticut, Farmington CT
Career stage: Resident in otolaryngology, postdoctoral fellow. *Mentoring role:* research advisor. *Accomplishments:* Four papers published (one as first author) based on mentored research. Received travel award from and presented a poster at the annual meeting of the Association for Research in Otolaryngology.
- 2010 – 2013 Marcus Yip, PhD / Sensing Hardware Electrical Engineer, Apple, Cupertino CA
Career stage: PhD student at MIT. *Mentoring role:* research co-mentor. *Accomplishments:* Three first author papers published based on mentored work. The published papers received international media coverage.
- 2010 – 2014 Cherian Kandathil, MD / Clinical Research Fellow, Stanford, CA
Career stage: Postdoctoral research fellow. *Mentoring role:* research advisor. *Accomplishments:* Two first-author papers published based on mentored work.
- 2011 Georgios Stamatiou, MD, PhD / Otolaryngologist, Örebro University Hospital, Örebro, Sweden
Career stage: Resident in otolaryngology. *Mentoring role:* research advisor. *Accomplishments:* One first author paper published based on mentored work.
- 2011 – 2012 Eleni Asimacopoulos, MBBS, BSc / Pediatric Cardiologist, Boston Medical Center and Boston Children's Hospital, Boston, MA
Career stage: Postdoctoral research fellow. *Mentoring role:* research advisor. *Accomplishments:* One middle author paper published in *PNAS* based on mentored work.
- 2011 – 2012 Metin Ibrahimov, MD / Assistant Professor, Oxygen Hospital affiliated with Odlar Yurdu University, Baku, Azerbaijan
Career stage: Postdoctoral research fellow. *Mentoring role:* research advisor. *Accomplishments:* One middle author paper published based on mentored research.
- 2011 – 2014 Xin Yang, PhD / Global Product Manager, Thermo Fisher Scientific, Waltham MA
Career stage: PhD student at École Polytechnique Fédérale de Lausanne, Switzerland. *Mentoring role:* research co-mentor. *Accomplishments:* Two first-author papers published based on mentored research.
- 2012 Tjeerd Muurling, MD / Otolaryngologists, Leiden, the Netherlands
Career stage: Medical student. *Mentoring role:* research advisor. *Accomplishments:* One first-author paper published based on mentored work. Based on this paper, he received the prestigious Leiden University Medical Center Student Research Award.
- 2012 – 2013 Chen-Chi Wu, MD, PhD / Professor of Otolaryngology, National Taiwan University, Taipei, Taiwan
Career stage: Postdoctoral research fellow, assistant professor. *Mentoring role:* research

advisor. *Accomplishments*: One first-author paper published based on mentored work.

- 2012 – 2014 Jessica West, PhD / Postdoctoral Fellow in Sociology, Duke University
Career stage: Postbaccalaureate research fellow. *Mentoring role*: research advisor.
Accomplishments: One first-author paper published. Presented at national meetings and international meetings (Hearing Across Lifespan, HEAL 2016) based on mentored research.
- 2012 – 2014 Vitor Soares, MD, PhD / Assistant Professor, Universidade Estadual do Piauí
Teresina, Brazil and Attending Physician, Getulio Vargas Hospital, Piauí State University,
Teresina, Brazil
Career stage: Postdoctoral Fellow, HMS and PhD student, University of Brasília, Brazil.
Mentoring role: research advisor. *Accomplishments*: One first author, one second-author and two middle-author paper published based on mentored research.
- 2013 Jacob Low, MB ChB, MRes MRCS / Clinical Research Training Fellow, Cancer Research UK
Cambridge Institute, Cambridge, UK
Career stage: Medical student, University of Manchester, United Kingdom. *Mentoring role*:
research advisor. *Accomplishments*: One first-author and one second-author paper published
based on mentored work.
- 2013 – 2018 Lukas Landegger, MD, PhD / Assistant Professor of Otorhinolaryngology, Medical University
2024 – current of Vienna, Austria
Career stage: PhD student 2013-2017, then post-doctoral fellow 2017-2018. *Mentoring role*:
research advisor. *Accomplishments*: Eight first-author papers (one in *Nature Biotechnology*, one
in *Nature Protocols*, one in *Nature Communications*), five second-author papers and ten
middle-author papers published based on mentored research. Won numerous awards based on
mentored research: 1) a travel award from the Association for Research in Otolaryngology
(ARO) in 2015; 2) a prestigious Heinz Kurz poster prize at the Austrian otolaryngology
conference in 2015; 3) a meritorious abstract travel award from the American Society of Gene
and Cell Therapy in 2016; 4) Hansaton Science Prize from Austria in 2016; 5) Sanofi-sponsored
“Wilhelm Auerswald Preis” prize for the best dissertation at an Austrian medical university in
2017, 6) selected participant, Lindau Nobel Laureate Meeting 2018.
- 2014 Jung Eun Shin, MD / Professor of Otolaryngology, Konkuk University Hospital, Seoul, South
Korea
Career stage: Research fellow, HMS and associate professor of otolaryngology, Konkuk
University, South Korea. *Mentoring role*: research advisor. *Accomplishments*: One first-author
paper published based on mentored work.
- 2014 Peter Bowers, PhD / Acoustical Engineer, Bose Corporation, Boston MA
Career stage: Rotating PhD student, Harvard Speech and Hearing Bioscience and Technology
Program. *Mentoring role*: research advisor. *Accomplishments*: One first-author paper published
based on mentored work.
- 2014 – 2016 Takeshi Fujita, MD, PhD / Associate Professor of Otolaryngology- Head and Neck Surgery,
Kobe University Graduate School of Medicine, Osaka, Japan
Career stage: Postdoctoral fellow, HMS and assistant professor of otolaryngology, Kobe
University, Japan. *Mentoring role*: research advisor. *Accomplishments*: Two first-author paper,
two second-author and seven middle-author papers published based on mentored work.
- 2014 – 2016 Kyoko Fujita, MD/ Attending Neurologist, Hyogo Prefectural Kobe Children’s Hospital, Kobe,
Japan

	<i>Career stage:</i> Postdoctoral fellow, HMS and attending neurologist, Kobe, Japan. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One middle-author paper published based on mentored work.
2014 – 2016	Hsiao-Chun Lin, PhD / Research scientist, Taipei, Taiwan <i>Career stage:</i> Research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One first-author paper and one middle-author paper published based on mentored work.
2015 2022 – current	Shelley Batts, PhD / Medical Writer, Stanford, CA <i>Career stage:</i> Postdoctoral research fellow at Harvard (2015), scientific writer at Stanford (2022-current). <i>Mentoring role:</i> research advisor <i>Accomplishments:</i> Five papers published (one as first author) and one submitted based on mentored work.
2015	Jong Dae Lee, MD, PhD / Professor of Otorhinolaryngology, Soonchunhyang University College of Medicine, Bucheon, South Korea <i>Career stage:</i> Research fellow, HMS and associate professor, Soonchunhyang University College, South Korea. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One second-author paper published based on mentored work.
2015 – 2016	Alice Maxfield, MD / Assistant Professor in Otolaryngology Head and Neck Surgery, Brigham and Women's Hospital and HMS <i>Career stage:</i> Research fellow, HMS. <i>Mentoring role:</i> research co-advisor. <i>Accomplishments:</i> One first-author, one second-author paper published based on mentored work.
2015 – 2017	Taha Jan, MD / Assistant Professor, Vanderbilt University, Nashville, TN <i>Career stage:</i> Otolaryngology resident and research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Received CORE grant from the American Academy of Otolaryngology – Head and Neck Surgery based on mentored work. One first-author publication in preparation based on mentored work.
2015 – 2017	Mehmet Ilhan Sahin, MD, MS / Associate Professor of Otolaryngology, Erciyes University Medical School, Kayseri, Turkey <i>Career stage:</i> Postdoctoral Research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Two first-author papers, one second-author and three middle-author papers published based on mentored research.
2015 – 2019	Brian Lin, MD, MPH / Chief Medical Officer, Akouos Inc, Boston, MA <i>Career stage:</i> HMS otolaryngology resident and research fellow on NIH-T32 grant. <i>Mentoring role:</i> research co-advisor (with Gary Curhan, MD, DSc). <i>Accomplishments:</i> Five first-author papers published (one featured by the New York Times, Times). Won a Top Rated poster award at the 2016 American Academy of Otolaryngology – Head and Neck Surgery annual meeting.
2016	Ashton Lehmann, MD / Rhinologist and endoscopic skull base surgeon, Geisinger, Danaville, PA. Adjunct Assistant Professor, Vanderbilt University. <i>Career stage:</i> Resident in otolaryngology. <i>Mentoring role:</i> research co-advisor. <i>Accomplishments:</i> One first-author paper and one middle-author paper published based on mentored research. Won 2017 CORE grant from the American Academy of Otolaryngology based on mentored research.
2016 – 2017	Gargi Sharma, PhD / Optical scientist, Max Planck Institute for the Science of Light, Germany <i>Career stage:</i> Research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Won 2017 Bullock-Wellman postdoctoral fellowship based on mentored research.

2016 – 2018	Rebecca Lewis, AuD, PhD / Chief of Audiology and Assistant Professor of Otolaryngology – Head and Neck Surgery, University of California San Francisco, CA <i>Career stage:</i> Postdoctoral research fellow. <i>Mentoring role:</i> research advisor <i>Accomplishments:</i> One first-author paper and two middle-author papers published based on mentored research.
2016 – 2019	Yin Ren, MD, PhD / Assistant Professor of Otolaryngology – Head and Neck Surgery, Ohio State University <i>Career stage:</i> Resident in otolaryngology, HMS. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Seven first-author papers, one second-author paper published, one middle-author paper published based on mentored research. Won numerous awards based on mentored research: 1) Resident Research Grant Award from the New England Otolaryngological Society (2016), 2) CORE grant from the American Academy of Otolaryngology (2016), 3) First place poster award, Spring Meeting of the American Otological Society (2017), 4) Jeffrey Harris, MD, PhD Resident Research Award, HSM Department of Otolaryngology (2018). Selected oral abstract presentation, American Otological Society (2018).
2016 – 2020	Sachiyo Katsumi, MD, PhD / Otolaryngologist, Nagoya City University, Nagoya, Japan <i>Career stage:</i> Postdoctoral research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Two first-author papers and one middle-author paper published.
2016 – present	Sasa Vasilijic, PhD / Senior Research Scientist, Stanford, CA <i>Career stage:</i> Postdoctoral research fellow and visiting associate professor from Military Medical Academy at the University of Defense, Serbia. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Four first-author, nine middle-author and one last-author papers published based on mentored research. One first-author submitted based on mentored work. One first-author paper published in <i>Science Translational Medicine</i> was featured as an online rotator.
2017	Maura Eggink, MD / Resident in Otolaryngology, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands <i>Career stage:</i> Medical Student. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One second-author and one first-author paper published based on mentored research. She presented this work as selected oral abstract at Association for Research in Otolaryngology meeting in 2018, and won the Oticon Medical annual thesis prize in the Netherlands in 2018.
2017 – 2019	Samuel Early, MS / Resident in Otolaryngology – Head and Neck Surgery, University of California San Diego <i>Career stage:</i> Research fellow and medical student. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Three first-author papers and one middle-author paper published, one first-author paper submitted based on mentored research. He presented mentored work as a selected poster at American Otological Association meeting in 2017. Won second place poster award at the Children’s Tumor Foundation Clinical Science Poster Competition during the 2020 NF conference.
2017 – 2018	InSeok Moon, MD / Professor of Otorhinolaryngology, Yonsei University College of Medicine and Chair, Department of Otorhinlaryngology, Gagnam Severance Hospital, Seoul, Korea <i>Career stage:</i> Research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One second-author paper and two middle-authors paper published.
2018	Jeffrey Alido, PhD Student, Boston University Electrical and Computer Engineering Program <i>Career stage:</i> Undergraduate student at the University of California San Diego and awardee of a Harvard summer internship (funded through NSF REU Site in Biomaterials Research)

	Initiative Dedicated to Gateway Experiences: NSF DMR-1559890). <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Received NSF Graduate Research Fellowship Award.
2018 – 2019	Charlotte Rinnooy Kan / Intern in Cardiology, Dijklander Ziekenhuis, Hoorn, the Netherlands <i>Career stage:</i> Medical student. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One first-author paper published based on mentored research. Won second place poster award at the Children’s Tumor Foundation Clinical Science Poster Competition during the 2020 NF conference.
2018 – 2020	Hiroshi Hyakusoku, MD, PhD / Chief of Otorhinolaryngology, Yokosuka Kyosai Hospital, Japan <i>Career stage:</i> Post-doctoral fellow. <i>Mentoring role:</i> research advisor <i>Accomplishments:</i> One second-author and one middle-author paper published based on mentored research.
2018 – present	Minjin Jeong, PhD / Instructor, Stanford, CA <i>Career stage:</i> Postdoctoral fellow (until 03/23, then instructor). <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Two first-author papers and one middle-author paper published and two first-author papers submitted based on mentored research.
2018 – present	Dongjun Han, PhD / Postdoctoral Fellow, Stanford, CA <i>Career stage:</i> Postdoctoral fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One first-author paper and two second-author papers published based on mentored research. One first-author paper and one middle author paper submitted based on mentored research.
2018 – 2022	Richard Seist, MD, PhD / Postdoctoral Fellow, Washington University, St. Louis, MI <i>Career stage:</i> PhD student. <i>Mentoring role:</i> PhD research advisor. <i>Accomplishments:</i> Five first-author papers, one second-author paper and 6 middle-author papers published based on mentored research. Won honorable mention at Andrew Olsen Scientific Image Awards Contest organized by Wu Tsai Neurosciences Institute at Stanford University based on mentored research.
2018 – 2019	Krishna Bommakanti, BS / Resident in Otolaryngology – Head and Neck Surgery, University of California Los Angeles <i>Career stage:</i> Research fellow and medical student. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Three first-author paper published (one was featured on journal’s cover page) and one middle-author paper published based on mentored research. She presented mentored work as a selected poster at American Otological Association meeting in 2019.
2019 – 2020	Jens van der Valk, MD / Resident in Otolaryngology – Head and Neck Surgery, Den Haag, the Netherlands <i>Career stage:</i> Research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One first-author and one middle-author paper published.
2019 – 2020	Miodrag Stojkovic, DVM, PhD / Professor and Chair of Human Genetics, University of Kragujevac School of Medicine, Serbia <i>Career stage:</i> Visiting research scholar. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Three first-author papers and one last-author paper published.
2019 – 2020	Petra Stojkovic/ In vitro fertilization specialist, Hamburg, Germany <i>Career stage:</i> Visiting research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Two middle-author papers published based on mentored research.

2019 – 2021	Gabrielle Cahill, MD/ Resident in Otolaryngology – Head and Neck Surgery, UCLA, Los Angeles, CA <i>Career stage:</i> medical student, research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One first-author paper published.
2019 – 2020	Xiaojie Ma, MD, PhD / Otorhinolaryngologist, Qilu Hospital of Shandong University, China <i>Career stage:</i> research fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Three middle-author papers published.
2019 – 2021	Alyssa Brown, BS / Medical Student, Royal College of Surgeons, Dublin, Ireland <i>Career stage:</i> research technologist. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> Two first-author papers and four middle-author papers published based on mentored research.
2019 – 2021	Cynthia Moncada, BS / PhD Student, Harvard Program in Speech and Hearing Bioscience and Technology <i>Career stage:</i> research technologist. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> One middle-author paper published based on mentored research.
2019 – 2023	Fang Hou, PhD / Staff Vision System Engineer at Intuitive, San Francisco, California <i>Career stage:</i> postdoctoral fellow at Massachusetts General Hospital and Harvard Medical School. <i>Mentoring role:</i> research co-advisor. <i>Accomplishments:</i> Two patents filed based on mentored research.
2020 – 2021	Amer Mansour, BS / Medical Student, SUNY Upstate Medical University <i>Career stage:</i> research technician. <i>Mentoring role:</i> research advisor <i>Accomplishments:</i> Two middle-author papers published.
2020 – 2022	Masaharu Sakagami, MD, PhD / Assistant Professor of Otolaryngology, Nara Medical University, Nara, Japan <i>Career stage:</i> postdoctoral fellow and visiting assistant professor. <i>Mentoring role:</i> research advisor <i>Accomplishments:</i> One middle-author paper published and one middle-author paper submitted based on mentored research.
2021 – 2022	Varun Sagi, MD / Resident in Otolaryngology – Head and Neck Surgery, Stanford, CA <i>Career stage:</i> medical student and lab manager, <i>Mentoring role:</i> research advisor <i>Accomplishments:</i> One first-author paper, two second-author paper and three middle-author paper published.
2021 – 2024	Lindsay Scott More, MD / Assistant Professor of Otolaryngology – Head and Neck Surgery, Stanford University School of Medicine, Stanford, CA <i>Career stage:</i> Postdoctoral fellow. <i>Mentoring role:</i> research advisor. <i>Accomplishments:</i> two first-author papers published, one last-author paper submitted. Received CORE grant from the American Academy of Otolaryngology – Head and Neck Surgery, NIH Loan Repayment Grant and Tahbazof Scholarship based on mentored work.
2021 – 2022	Lino Bertagnoli, MD/ Consultant, Salzburg, Austria <i>Career stage:</i> medical student. <i>Mentoring role:</i> MD thesis research advisor. <i>Accomplishments:</i> one first-author paper published based on mentored research.
2022	Jip Mulders/ Resident in Otolaryngology – Head and Neck Surgery at Leiden University Medical Center, Leiden, the Netherlands <i>Career stage:</i> medical student at Leiden University Medical Center, Leiden, the Netherlands.

	Mentoring role: MD thesis research advisor. Accomplishments: one middle-author paper published based on mentored research.
2022 – current	Peter Kullar, MBBChir, MA, PhD/ Neurotology Fellow, University of Manchester, Manchester, England Career stage: postdoctoral fellow. Mentoring role: research advisor. Accomplishments: one first-author paper one second-author paper published based on mentored research.
2022 – 2023	Roy Ki Wan Park, MD/ Resident in Otolaryngology = Head and Neck Surgery, Stanford, CA Career stage: resident. Mentoring role: research advisor. Accomplishments: one first-author paper published based on mentored research.
2022 – 2023	Tina Munjal, MD/ Fellow in Neurotology – Skull Base Surgery, Massachusetts Eye and Ear, Boston MA Career stage: resident. Mentoring role: research advisor. Accomplishments: one first-author paper published based on mentored research.
2022 – 2023	Nikitha Kosaraju, MD/ Resident in Otolaryngology – Head and Neck Surgery, University of New Mexico Career stage: medical student. Mentoring role: research advisor. Accomplishments: two first-author papers published based on mentored work. Invited oral presentation at North American Skull Base Meeting in 2023 based on mentored work.
2022 – 2023	Charvi Malhotra, MD/ Resident in Anesthesiology, Case Western University Career stage: medical student. Mentoring role: research advisor. Accomplishments: two middle-author papers published based on mentored work.
2022 – 2023	Rohan Reddy/ Clinical Research Associate, Visby Medical, U California San Diego Career stage: post-baccalaureate researcher. Mentoring role: research advisor. Accomplishments: one middle-author paper published based on mentored work.
2022 – 2023	Stephen McInturff, PhD/ Research Scientist, Akouos, Boston, MA Career stage: postdoctoral fellow. Mentoring role: research advisor. Accomplishments: one first author paper in preparation based on mentored work.
2022 – 2024	Svetolik Spasic, MD, PhD/ Assistant Professor and Researcher, Institute for Pathophysiology “Ljubodrag Buba Mihailovic”, University of Belgrade, Serbia Career stage: postdoctoral fellow. Mentoring role: research advisor. Accomplishments: one first author paper published, one middle-author paper submitted based on mentored work.
2023 – 2024	Kuang-Chung Ting, MD, PhD/ Attending Physician, Taipei Veterans General Hospital, Taipei, Taiwan Career stage: postdoctoral fellow. Mentoring role: research advisor. Accomplishments: one middle-author paper published, one first-author paper in preparation based on mentored work.
2023 – current	Sophie Jang, MD, MPH/ Postdoctoral Fellow, Stanford, CA Career stage: postdoctoral fellow. Mentoring role: research advisor. Accomplishments: three first author papers in preparation based on mentored work.
2023 – current	Maja Djuriscic, PhD/ Senior Research Scientist, Stanford, CA Career stage: senior research scientist. Mentoring role: research advisor. Accomplishments: one middle-author paper under revision based on mentored work.

2024 – current	Sho Kurihara, MD, PhD/ Associate Professor, Department of Otorhinolaryngology – Head and Neck Surgery, Jikei University School of Medicine, Tokyo, Japan Career stage: Visiting Associate Professor. Mentoring role: research advisor. Accomplishments: one second-author paper published based on mentored research.
2024 – current	Hiroaki Mori, MD, PhD/ Postdoctoral fellow, Stanford and Assistant Professor of Otorhinolaryngology – Head and Neck Surgery, Kyoto Prefectural University of Medicine, Kyoto, Japan Career stage: postdoctoral fellow. Mentoring role: research advisor. Accomplishments: one second-author and one middle-author paper submitted based on mentored research.
2023 – 2024	Noel Ayoub, MD, MBA, Assistant Professor of Otolaryngology – Head and Neck Surgery, Stanford, CA Career stage: clinical fellow. Mentoring role: research advisor. Accomplishments: one first-author paper published.

Formal Teaching of Peers (e.g., CME and other continuing education courses)

No presentations below were sponsored by outside entities.

2010	Update in Otology and Otologic Surgery – The Role of Molecular Genetics in the Diagnosis and Management of Sensorineural Hearing Loss Harvard Medical School CME	Single Presentation Boston, MA
2015, 2016	MEE Temporal Bone Course – Current methods in cochlear implantation Harvard Medical School CME	Dissection instructor – Single Presentation twice/yr Boston, MA
2022	Stanford Otology Update Otologic Manifestations of SARS-CoV-2 Genomics in Otology Pathophysiology of vestibular schwannoma Cochlear implant challenges and frontiers Stanford School of Medicine CME	Four presentations Stanford, CA
2026 (scheduled)	Stanford Otology Update Cellular-level imaging of the human inner ear to guide therapy Leveraging human stem cells to tackle sensorineural hearing loss Frontiers in hearing restoration AI in otology Stanford School of Medicine CME	Stanford, CA

Local Invited Presentations (at Harvard and affiliated hospitals)

No presentations below were sponsored by outside entities.

2003	Mechanisms of neuronal survival in the mature inner ear / Research seminar
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Eaton Peabody Laboratory, MEE

- 2003 Can you hear me now? Mechanisms of neuronal survival in the mature inner ear / Research seminar
Division of Neuroscience, Children's Hospital, Boston
- 2004 Bones and neurons: remodeling and regeneration / Research seminar
Eaton Peabody Laboratory, MEE
- 2004 Survival of mature spiral ganglion neurons requires neuregulin-erbB signaling in the inner ear / Grand Rounds
Department of Otolaryngology, Children's Hospital, Boston
- 2005 So that all may hear: understanding and restoring hearing / Research seminar
Burch-Safford Foundation, MEE
- 2005 Ear: the beautiful / Grand Rounds
Division of Otolaryngology, Brigham and Women's Hospital, Boston
- 2006 Understanding the auditory nerve and its environment – a personal journey / Research seminar
Department of Otolaryngology and Division of Neuroscience, Children's Hospital, Boston
- 2006 A systems view of the auditory nerve and its environment / Invited presentation
Eaton Peabody Laboratory, MEE
- 2008 Why is a clinical course necessary in education of basic scientists? / Invited presentation
Harvard-MIT HST Graduate Committee
- 2008 Juggling scalpels and pipettes: from hearing research to ear surgery and back / Invited presentation
Harvard-MIT Division of Health Sciences and Technology
- 2008 Touching the nerve: the many faces of auditory neuroscience / Invited Grand Rounds
Department of Neurosurgery, Massachusetts General Hospital
- 2008 Emergent approaches to restoration of hearing: from genes to surgery / Invited presentation
Semi-Annual Meeting of the Trustees of the MEE and the Annual Meeting of the Medical Staff of the MEE
- 2009 A journey through hearing / Research seminar
Reproductive Endocrine Unit, Department of Medicine, Massachusetts General Hospital
- 2009 A personal journey through auditory neuroscience / Invited Grand Rounds
Department of Audiology, MEE
- 2009 Genetic determinants of hearing loss associated with vestibular schwannomas / Otology Grand Rounds
Department of Otolaryngology, MEE
- 2009 Hearing loss due to vestibular schwannomas / Otopathology Rounds
Department of Otolaryngology, MEE

- 2013 Mitochondrial hearing loss / Invited presenter and discussant
MitoCase Conference – multidisciplinary conference focused on mitochondrial disease, Massachusetts General Hospital
- 2013 Preventing sensorineural deafness with hHsp27 / Invited presentation
Program in Neurobiology at Boston Children’s Hospital
- 2013 Mechanisms of hearing loss due to vestibular schwannoma / Invited presentation
Festschrift in Honor of Professor Joseph B. Nadol, Jr., Boston, MA
- 2013 Novel approaches to diagnosis and therapy of sensorineural hearing loss / Invited presentation
First annual meeting of the Department of Otolaryngology and Laryngology at Harvard Medical School
- 2013 Journey of a surgeon scientist: juggling scalpels, pipettes and family / Invited Seminar
MD-PhD program at Harvard Medical School
- 2014 Journey through hearing: a nexus of surgery, science and technology / Invited presentation
Harvard-MIT Division of Health Sciences and Technology
- 2014 Auditory neuroscience: a nexus of surgery, science and technology / Keynote speaker
Annual meeting of the Harvard-MIT Program in Speech and Hearing Bioscience and Technology
- 2014 A 27 year old woman with aural pruritus and recurrent bleeding from the left ear / New England Journal of Medicine Clinicopathological Conference
Departments of Otolaryngology, Dermatology and Pathology, Massachusetts Eye and Ear
- 2014 Addressing sensorineural hearing loss with optics and ultra low power electronics / Invited presentation
Department of Otolaryngology and Communication Enhancement, Children’s Hospital
- 2014 Novel technologies for diagnosis and therapy of sensorineural hearing loss / Invited presentation
Molecular Biology of the Inner Ear Seminar Series, Harvard Medical School
- 2014 Hearing loss: diagnostic challenges and therapeutic opportunities / Invited presentation
Clinical Core Medical Talk Series, Wyss Institute, Boston
- 2014 Hearing restoration through neuroscience, biotechnology and surgery / Invited presentation
Harvard-MIT Division of HST Frontiers Seminar Series
- 2014 Salicylates are cytostatic against human vestibular schwannomas: Pre-clinical data that motivate a prospective clinical trial / Invited presentation
Harvard Neurofibromatosis 2 Consortium Seminar Series
- 2015 Update on model systems for NF2 / Invited presentation
Escaping the silo mentality: creating a joint vision for gene therapy in NF2 Symposium, Radcliffe Institute for Advanced Study, Harvard University
- 2015 Choosing model systems for preclinical development of gene therapy and deciding what would constitute a “go” signal as preclinical efficacy to move to clinical trial / Roundtable discussant
Escaping the silo mentality: creating a joint vision for gene therapy in NF2 Symposium, Radcliffe Institute for Advanced Study, Harvard University

- 2015 Vestibular schwannomas: mechanisms of tumor growth and hearing loss / Invited Presentation
Center for Human Genetic Research, MGH
- 2015 Clinical status of gene therapy for deafness / Invited Presentation
Harvard Center for Hereditary Deafness
- 2016 Secreted factor that control human hearing: insights from vestibular schwannoma / Invited Presentation
Massachusetts Eye and Ear Leadership Forum
- 2016 Harvard-MIT Division of Health Sciences and Technology: uniqueness and unity through diversity / Invited Presentation
Harvard Medical School
- 2016 Academic surgery: a view from the trenches / Invited presentation
Harvard-MIT Division of Health Sciences and Technology, MIT
- 2016 Demystifying sensorineural hearing loss: optical imaging and sensing of the inner ear / Invited Grand Rounds
Department of Audiology, MEE
- 2016 Toward personalized diagnosis and therapy of sensorineural hearing loss / Invited presenter
Massachusetts Eye and Ear Otolaryngology Retreat
- 2017 Molecular mechanisms of vestibular schwannoma-induced hearing loss / Invited presenter
Otopathology Conference, Massachusetts Eye and Ear
- 2017 Multi-centered clinical trials / Invited presenter
Harvard Otolaryngology Research Retreat, Massachusetts Eye and Ear
- 2017 Modern neurotology: A nexus of surgery, neuroscience and biotechnology / Invited presenter
cross-disciplinary Neuroscience Grand Rounds, Massachusetts General Hospital
- 2017 Hearing restoration: a new approach using an ancient virus / Invited presenter
Board of Trustees Meeting, Massachusetts Eye and Ear
- 2017 Toward personalized diagnosis and therapy of sensorineural hearing loss / Invited presenter
25th anniversary of Speech and Hearing Bioscience and Technology program, Massachusetts Eye and Ear
- 2017 Women in Otolaryngology / Invited panelist
The first symposium organized by Harvard Department of Otolaryngology to discuss the opportunities and challenges of being a woman in a historically male-dominated field, Massachusetts Eye and Ear
- 2018 Toward personalized diagnosis and therapy of sensorineural hearing loss / Invited presenter
First Annual MEE Joint Research Symposium, Departments of Otolaryngology and Ophthalmology
- 2018 Balancing research, surgery, and living a full life / Invited presenter
HMS Association of Women Surgeons

- 2018 Hearing loss: challenges and opportunities/ Invited talk
Eli and Edythe L. Broad Institute of MIT and Harvard
- 2018 Auditory deficits in mitochondrial disease / Invited presenter and discussant
MitoCase Conference – multidisciplinary conference focused on mitochondrial disease,
Massachusetts General Hospital.
- 2019 Cellular-level diagnosis of tinnitus/ Invited talk
Collaborative Auditory/ Vestibular Research Network (CAVRN) meeting, Department of
Defense Hearing Center of Excellence.
Massachusetts Eye and Ear.
- 2019 (Presentation #1) Latest advances and future direction in hearing augmentation/ Invited faculty
in the Frontiers panel. (Presentation #2) Targeted pharmacologic and genetic therapies for
vestibular schwannoma/ Invited faculty talk.
Brigham Skull base & Cerebrovascular surgery symposium, Brigham and Women's Hospital
- 2020 Sensorineural hearing loss: challenges and opportunities /Invited talk
Partners Innovation Fund, Partners Healthcare International, Mass General Brigham.

Local Invited Presentations (at Stanford and affiliated hospitals)

- 2021 Women in Medicine / Invited panelist
Stanford University School of Medicine.
- 2021 Toward cellular-level diagnosis and therapy of sensorineural hearing loss/ Invited talk
University Medical Physicians/ Stanford Healthcare
- 2021 Toward personalized diagnosis and therapy of sensorineural hearing loss: insights from human
tissue / Invited grand rounds
Department of Otolaryngology Head and Neck Surgery, Stanford University School of
Medicine.
- 2021 Losartan prevents tumor-induced hearing loss and augments radiation efficacy in NF2
schwannoma rodent models / Invited talk
Radiation Oncology Faculty Seminar Series, Stanford University School of Medicine.
- 2022 Vestibular schwannoma: challenges and opportunities/ Chalk talk
Department of Otolaryngology Head and Neck Surgery, Stanford University School of
Medicine.
- 2023 A multiscale framework for precision diagnosis and therapy of human sensorineural hearing
loss” / Invited talk
Distinguished Careers Institute (DCI) Salon Speakers Series, Stanford University
- 2024 Otolaryngology – head and neck surgery: an exciting specialty with deep roots and bright
future/ Invited presentation
Stanford Medicine Board of Trustees
- 2024 (Presentation #1) Rob Jackler – a pioneering surgeon, a visionary, and an architect
(Presentation #2) Precision Otology 2024

Celebration of Dr. Robert Jackler's career. Stanford University

2025 The only failure is the lesson not learned / Invited panelist
Department of Otolaryngology – Head and Neck Surgery Grand Rounds, Stanford University

Report of Regional, National and International Invited Teaching and Presentations

No presentations below were sponsored by outside entities.

Regional (in New England)

1998 Efferent effects on auditory nerve responses: inhibition at high sound levels and tail frequencies
/ Invited presentation
Department of Biomedical Engineering, Boston University

2013 Research vistas in neurotology: from biologic batteries to biomarkers / Invited presentation
Department of Biomedical Engineering, Boston University

2013 Energy extraction from and optical imaging of the inner ear: implications for diagnosis and
therapy of hearing loss / Invited presentation
Medical Electronic Device Realization Center Workshop, MIT

2013 Auditory neuroscience: a nexus of surgery and biotechnology / Distinguished speaker series
Institute for Medical Engineering and Science, MIT

2013 Intracranial and extracranial complications of chronic otitis media / Invited Presenter, Complex
("Scary") Otolaryngology Cases
Massachusetts Medical Society, Boston, MA

2016 Academic Neurotology – a personal journey / Invited presenter and panelist
Massachusetts Society of Otolaryngologists, Massachusetts Medical Society, Boston, MA

2018 Artificial intelligence and surgery: hearing loss and gain / Invited Talk as Featured Alumna
MIT Technology Day

- The talk was broadcasted across the world, and is available on YouTube:
<https://www.youtube.com/watch?v=Q0Ho98P8Zxk&t=285s&list=PLRw93HPD6NolA5gx5Mx8By2jrIoy1nyMn&index=6>
- The accompanying Q&A session is also available on You Tube:
<https://www.youtube.com/watch?v=sshZ7lvaQMo&index=7&list=PLRw93HPD6NolA5gx5Mx8By2jrIoy1nyMn>

2019 Drugs for sensorineural hearing loss: Insights from vestibular schwannoma and the good, the
bad and the ugly of inflammation / Invited Keynote Lecture
New England Otolaryngological Society, Boston, MA

2020 Virally-induced sensorineural hearing loss/ Invited talk
NIH NIAID U19 network meeting on viruses and stem cells, MIT and Whitehead Institute

Regional (in California)

2024 Forging a Unique Path: The Surgeon-Scientist's Adventure / Invited presentation
Center for Hearing Research, University of California Irvine

2024	Breaking barriers: multiscale strategies for precision diagnosis and therapy of human sensorineural hearing loss/ Grand Rounds Invited Speaker Department of Otolaryngology – Head and Neck Surgery. University of Los Angeles, CA.
National	
2002	Balancing professional obligations and family for young scientists / Invited panelist Howard Hughes Medical Institute, Chevy Chase, MD
2003	Survival of spiral ganglion neurons requires neuregulin-erbB receptor signaling in the inner ear / Research presentation Howard Hughes Medical Institute, Chevy Chase, MD
2006	Generation and regeneration of the auditory nerve / Invited presentation National Institutes of Health-National Institute on Deafness and other Communication Disorders, Bethesda, MD
2007	Cochlear implantation in children with congenital X-linked deafness / Selected oral abstract American Otological Society, Orlando, FL
2008	Touching the nerve: a surgeon's view of auditory neuroscience / Invited presentation Department of Otolaryngology, University of Michigan, Ann Arbor, MI
2008	Signals and systems: the many faces of auditory neuroscience / Invited presentation Department of Otolaryngology, Johns Hopkins University, Baltimore, MD
2009	Avoiding nervous breakdown: Studies in degeneration of the auditory nerve / Otolaryngology Grand Rounds Stanford University, Paolo Alto, CA
2011	Genetics, Genomics and Bioinformatics for Otolaryngologists / Head and Neck Surgery CME presentation American Academy of Otolaryngology, San Francisco, CA
2012	Translational neurotology: integrating research and clinical care / Invited mentoring presentation Annual meeting of the Association for Research in Otolaryngology, San Francisco, CA
2012	Hearing research at crossroads – new challenges and opportunities / Invited Young Investigator presentation Annual meeting of the American Auditory Society, Phoenix, AZ
2012	Directional Hearing / Session chair Annual meeting of the American Auditory Society, Phoenix, AZ
2013	NIH funding opportunities for young investigators / Session chair Annual meeting of the American Auditory Society, Phoenix, AZ
2013	Accessing the inner ear for diagnosis and therapy / Invited webinar Audiology Online
2013	Metabolomic analysis of pharmacotherapies for sensorineural hearing loss / Selected oral

abstract
American Otology Society, Orlando, FL

- 2013 Sensorineural hearing loss: novel tools for diagnosis and therapy / Otolaryngology, Neurology and Neurosurgery combined Grand Rounds
Mayo Clinic, Jacksonville, FL
- 2013 Pathobiology of vestibular schwannoma: clinical relevance of basic research / Invited presentation
Meeting of Jacksonville Otolaryngology Society, hosted by Mayo Clinic, FL
- 2013 Translational neurotology: a nexus of surgery and biotechnology / Otolaryngology Grand Rounds
University of Iowa, Iowa City, IA
- 2014 Pros and cons of being a clinician scientist / Invited presenter and co-chair of the mentoring session
Association for Research in Otolaryngology, San Diego, CA
- 2014 Quantitative polarized light microscopy of human cochlear sections / Selected oral abstract
Association for Research in Otolaryngology, San Diego, CA
- 2014 Inner ear drug delivery / Moderator of a special session
American Auditory Society, Phoenix, AZ
- 2014 Translational neurotology: a nexus of surgery, science and technology / Visiting Professor, and Otolaryngology Grand Rounds
Northwestern University, Feinberg School of Medicine, Chicago, IL
- 2014 Novel technologies for hearing restoration: from optics to ultra-low power electronics / Invited presentation
Etymotic Research, Inc, Chicago, IL
- 2014 Exploring salicylates as novel therapy for vestibular schwannoma and neurofibromatosis type II / Invited presentation
NIH-National Institute on Deafness and Other Communication Disorders, Bethesda, MD
- 2014 Mechanisms of hearing loss due to vestibular schwannoma / Invited presentation
2014 State of the Art for Neurofibromatosis type 2 conference, Boston, MA
- 2015 Surgeon scientist: challenges and opportunities / Invited presenter and chair of the mentoring session
Association for Research in Otolaryngology, Baltimore, MD
- 2015 Non-steroidal anti-inflammatory medications are cytostatic against human vestibular schwannoma / Selected oral abstract
Association for Research in Otolaryngology, Baltimore, MD
- 2015 Clinical auditory and vestibular sciences / Invited session chair
Association for Research in Otolaryngology, Baltimore, MD
- 2015 Translational neurotology: a nexus of surgery, science and technology / Visiting Professor, and

Otolaryngology Grand Rounds

The Feinstein Institute for Medical Research, Hofstra-North Shore LIJ School of Medicine,
New York City, NY

- 2015 Non-steroidal anti-inflammatory medications are cytostatic against human vestibular schwannoma: from clinic to target and back / Selected oral abstract
Children's Tumor Foundation, Monterey, CA
- 2015 Neurotology from bench to bedside: weaving surgery, neuroscience and biotechnology / Invited
Otolaryngology Grand Rounds
Medical University of South Carolina, Charleston, SC
- 2015 Molecules that control human hearing: insights from vestibular schwannoma / Invited
Otolaryngology Research Seminar
Medical University of South Carolina, Charleston, SC
- 2015 Modern otology: a nexus of surgery, neuroscience and biotechnology / Invited Howard P. House, MD Memorial Lecture for Advances in Otology
American Academy of Otolaryngology – Head and Neck Surgery, Dallas, TX
- Highlights of the presentation featured in ENTtoday, a publication of the Triological Society: <http://www.enttoday.org/article/neuroscience-biotechnology-combination-used-to-tackle-inner-ear-problems/?singlepage=1>
- 2015 Secreted factors from human vestibular schwannomas can cause cochlear damage / Invited Oral Abstract
Satellite Meeting of the American Academy of Otolaryngology – Head and Neck Surgery and the Middle Eastern Otorhinolaryngology Societies, Dallas, TX
- 2016 Age-related hearing loss / Session moderator
American Auditory Society Meeting, Phoenix, AZ
- 2016 Otology and Neurotology: from bedside to bench and back / Chandler Visiting Professor and Distinguished Guest Judge
Annual Resident/Fellow Research Presentation Day, Department of Otolaryngology, University of Miami Miller School of Medicine, Miami, FL
- 2016 Interface 2030 – Bioscience and Otologic Surgery at Crossroads / Invited talk
“Listening into 2030” invitational workshop sponsored by National Science Foundation, Google and Starkey Hearing Research Center, Berkeley, CA
- 2016 Vestibular schwannoma: from trench to bench and back / Invited talk
Department of Otolaryngology, Stanford School of Medicine, Palo Alto, CA
- 2017 Cellular-level optical imaging of the inner ear / Invited Talk
Ultimate Colorado Midwinter Meeting, Vail, CO
- 2017 Fully implantable cochlear implant: status and prospects / Invited Talk
Ultimate Colorado Midwinter Meeting, Vail, CO
- 2017 Achieving work life balance in academic otolaryngology / Invited Panelist
Women in Otolaryngology (WIO) Focus Group Combined Otolaryngology Spring Meetings, San Diego, CA

- 2017, 2018 (Presentation #1) What is actually going on in the cochlea? (Presentation #2) Pharmacologic treatment and pre-treatment for noise-induced hearing loss and tinnitus / “Quiet down! What noise is actually doing to us” miniseminar/ Elected talks
American Academy of Otolaryngology-Head and Neck Surgery, Chicago, IL (2017); Atlanta, GA (2018)
- 2018 Clinical Otolaryngology and Pathology / Moderator
Association for Research in Otolaryngology annual meeting, San Diego, CA
- 2018 A framework for personalized diagnosis and therapy of sensorineural hearing loss / Invited Guest of Honor lecture
American Otological Society Meeting, National Harbor, MD
- 2018 The evolution of biological therapies for the inner ear: revolutionary sensorineural hearing loss treatments / Invited talk
American Speech-Language-Hearing Association (ASHA), Boston, MA
- 2019 Intracochlear drug delivery and biomarkers / Invited Session Co-chair
Association for Research in Otolaryngology, Baltimore, MD
- 2019 Accelerating gene therapy research for neurofibromatosis type 2/ Invited Discussant, Forum of Thought Leaders in NF2
NF2 BioSolutions, Boston, MA
- 2019 Precision medicine for sensorineural hearing loss: cellular-level diagnosis and targeted therapies/ Visiting Professor Invited Grand Rounds
Department of Otolaryngology at Eastern Virginia Medical School and the Naval Medical Hospital, Portsmouth, VA.
- 2019 (Presentation #1) Inflammatory mediators secreted by vestibular schwannomas contribute to tumor-induced sensorineural hearing loss/ (Presentation #2) Current Prospective Clinical Trials for Vestibular Schwannomas/ Invited Speaker and Expert Panelist
8th Quadrennial Conference on Vestibular Schwannoma & Other Cerebellopontine Angle Tumors, Mayo Clinic, Rochester, MN.
- 2019 Cellular-level diagnosis of and target therapies for sensorineural hearing loss/ Visiting Professor Invited Grand Rounds
Department of Otolaryngology, University of Pittsburgh Medical Center, Pittsburgh, PA.
- 2019 (Presentation #1) How I do it: tympanoplasty techniques and grafts (Presentation #2) Endolymphatic sac surgery: controversy and new insight (Presentation #3) Surgical approaches to the petrous apex/ Invited Faculty
Temporal Bone Dissection Course, University of Pittsburgh Medical Center, Pittsburgh, PA.
- 2019 Frontiers in Neurotology panel: Genomics in Neurotology/ Invited Speaker and Panelist
American Neurotology Society, American Academy of Otolaryngology – Head and Neck Surgery. New Orleans, LA.
- 2019 Expert series: Avoiding complications in otologic surgery/ Selected speaker
American Academy of Otolaryngology – Head and Neck Surgery. New Orleans, LA.

- 2019 Expert series: New developments in neurofibromatosis type 2/ Selected speaker
American Academy of Otolaryngology – Head and Neck Surgery. New Orleans, LA.
- 2019 (Presentation #1) What can we see in the human inner ear? (Presentation #2) Clinical cases: major unmet medical need for high-resolution intracochlear and intralabyrinthine imaging/
Invited speaker and co-chair, Visualizing the Human Inner ear Workshop
National Institute on Deafness and Other Communication Disorders. Bethesda, MD.
- 2019 Cellular-level diagnosis and personalized therapy of sensorineural hearing loss/ Invited Keynote
Speaker, Research Symposium on Hearing
 - <https://www.asha.org/Research/Research-Symposium-on-Hearing/>
 - Accompanying ASHA Voices podcast: <https://blog.asha.org/asha-voices-a-podcast-series-from-the-asha-leader/>
 American Speech-Language Hearing Association (ASHA) Convention Research Symposium on Hearing, Orlando, FL.
- 2020 (Presentation #1) Pharmacologic therapies for vestibular schwannoma/ Invited faculty and moderator. (Presentation #2) Expert Debate: Medical advances in the management of skull base tumors – current and future therapies/ Invited faculty and panelist.
North American Skull Base Society Meeting, San Antonio, TX.
- 2020 Precision health opportunities in otolaryngology – head and neck surgery: diversity and convergence/ Invited Town Hall
Department of Otolaryngology – Head and Neck Surgery. Stanford University School of Medicine.
- 2020 Hidden hearing and tinnitus – emerging therapies/ Repositioning bisphosphonates for sensorineural hearing loss/ Panel Chair and Invited Faculty
New endoscopic technologies/ Cellular-level intracochlear imaging/ Panelist and Invited faculty.
Otology & Neurotology in the COVID-19 Era: International Virtual Bootcamp Course on Endoscopic and Exoscopic Ear and Lateral Skull Base Surgery, Boston, MA.
- 2020 Human sensorineural hearing loss: challenges and opportunities
Medical Scientist Training Program, Washington University School of Medicine, St. Louis MO.
- 2020 Vestibular schwannoma: molecular determinants of hearing loss/ Visiting Professor Grand Rounds
House Ear Clinic, Los Angeles, CA.
- 2021 Vestibular schwannomas: can molecular biomarkers influence the clinical outcome/ Invited Expert Talk
North American Skull Base Society.
- 2021 Cellular-level diagnosis and therapy of sensorineural hearing loss
Rutgers New Jersey School of Medicine, Department of Otolaryngology – Head and Neck Surgery Grand Rounds, Newark, NJ.
- 2021 Degeneration and regeneration of the inner ear: insights from cochlear implants/ Honored John Niparko Lecturer
American Cochlear Implant Alliance.

- 2021 Precision health opportunities in Otolaryngology – Head and Neck Surgery.
Stanford University School of Medicine, Department of Otolaryngology – Head and Neck Surgery Grand Rounds, Palo Alto, CA.
- 2021 (Presentation #1) Contemporary otology: A nexus of surgery, neuroscience and biotechnology.
(Presentation #2) Vestibular schwannoma: molecular determinants of hearing loss
Department of Otolaryngology – Head and Neck Surgery Grand Rounds. University of Texas Southwestern, Dallas, TX.
- 2021 Direct SARS CoV-2 infection of the human inner ear may underlie COVID-19-associated audiovestibular dysfunction / Selected oral abstract and panelist
American Neurotology Society, Zoom meeting
- 2021 Vestibular schwannoma: molecular determinants of hearing loss/ Selected oral presentation
American Academy of Otolaryngology – Head and Neck Surgery, Los Angeles, CA.
- 2021 NF2 novel therapies consortium/ Invited Discussant, Forum of Thought Leaders in NF2
NF2 BioSolutions, Boston, MA.
- 2022 Human sensorineural hearing loss: toward personalized diagnostics, prognostics and therapeutics/ Invited Talk
Auditory Systems Gordon Research Conference. Bryant University, Smithfield, RI.
- 2022 Academic Otolaryngology – Head and Neck Surgery: a way forward/ Iee Ching Wu Anderson
Women’s Leadership Lecture
<https://www.youtube.com/watch?v=mfCi315YDfw>
Department of Otolaryngology, Johns Hopkins University, Baltimore, MD.
- 2022 (Presentation #1) A multiscale framework for precision diagnosis and therapy of human sensorineural hearing loss/ H. Brian Neel, III, MD, PhD Distinguished Research Lecture
<https://www.youtube.com/watch?v=PtwWOf50uE>
(Presentation #2) Management of sudden sensorineural hearing loss in the era of COVID19 pandemic/ Panelist
(Presentation #3) Otology/ Neurotology: Roundtable with clinical experts/ Invited panelist
American Academy of Otolaryngology – Head and Neck Surgery, Philadelphia, PA.
- 2023 Using omics to uncover mechanisms at the bench: vestibular schwannoma/ Invited Oral Abstract in the symposium entitled, “Multiomic approaches to further the understanding of hearing loss and tinnitus: Integrating different omics data types to identify biomarkers, unravel causal pathways, and reveal treatment targets”
Association for Research in Otolaryngology, Orlando, FL
- 2023 Identification of immune-related candidate biomarkers in plasma of patients with sporadic vestibular schwannoma
Children’s Tumor Foundation, Phoenix, AZ.
- 2023 Precision diagnosis and therapy of human hearing loss: challenges and opportunities/ David E. Schuller Lecturer
31th Annual ENT Alumni Symposium, The Ohio State University College of Medicine, Columbus, OH.
- 2023 A multiscale framework for precision diagnosis and therapy of sensorineural hearing loss/

Distinguished Speaker
University of Southern California Segil Symposium on Hearing and Communication
Neuroscience, Los Angeles CA.

- 2024 Clinician Scientist Mentoring Session/ Invited Panelist
Pre-Association for Research in Otolaryngology Meeting webinar.
- 2024 (Presentation #1) A Convergent Framework for Precision Diagnosis and Therapy of Human Sensorineural Hearing Loss
(Presentation #2) Forging a Unique Path: The Clinician-Scientist's Adventure/
Distinguished Lectureship in Translational Research in Otolaryngology.
Department of Otolaryngology – Head and Neck Surgery. University of Texas, San Antonio, TX.
- 2024 High resolution imaging of human inner ear/ Invited oral abstract
Symposium: Advanced Imaging Methods and Applications for Inner Ear Studies
Association for Research in Otolaryngology meeting. Anaheim, CA.
- 2024 (Presentation #1) Adventurous Journey of the Surgeon Scientist/ Invited Grand Rounds Speaker
(Presentation #2) Precision Otology: The Convergence Approach/ Invited Speaker
Kresge Hearing Research Institute; Hearing, Balance, and Chemical Senses Program. University of Michigan. Ann Arbor, MI.
- 2024 (Presentation #1) Immune profiling of secreted factors from human vestibular schwannoma cells and tumor-associated macrophages / Honors Triologic Thesis presentation
(Presentation #2) Cutting closer to serene science: Tinnitus update 2024 / Invited expert presentation
(Presentation #3) Angiotensin receptor blockers prevent vestibular schwannoma-associated hearing loss/ Invited oral abstract.
Triological Society meeting. American Otological Society Meeting. American Neurotology Society Meeting. Chicago, IL.
- 2024 MEE at 200: Honoring the Past, Shaping the Future. Distinguished alumna speaker
200th Anniversary of Massachusetts Eye and Ear, Boston, MA.
- 2024 (Presentation #1) Revolutionizing neurotology: unleashing breakthroughs in clinical trials /
Panel moderator
(Presentation #2) Artificial Intelligence in Otolaryngology Education and Research: Paradigm Shift or Pandora's Box / Panelist
(Presentation #3) Artificial Intelligence Scientific Oral Sessions/ Moderator.
American Academy of Otolaryngology – Head and Neck Surgery Annual Meeting, Miami, FL.
- 2025 Stanford Initiative to Cure Hearing Loss / Invited Speaker
Hearing Therapeutics Virtual Summit. 2025.
- 2025 Otolaryngology – Head and Neck Surgery Training as Life's Grand Overture / Joseph B. Nadol Jr., MD Graduation Speaker
Department of Otolaryngology – Head and Neck Surgery. Harvard Medical School. Boston, MA
- 2025 (Presentation #1) Tinnitus Treatment Now and in the Future Invited Oral Abstract and Panelist
(Presentation #2) The Genetics of Otosclerosis

American Academy of Otolaryngology – Head and Neck Surgery Annual Meeting,
Indianapolis, IN.

- 2026 From the Hartland to Healing: Charting our Course in Otolaryngology – Head and Neck Surgery in the Land of Oz/ Graduation Speaker
Department of Otolaryngology – Head and Neck Surgery, University of Kansas, *Scheduled for June 2026.*

International

- 2011 Translational research challenges in neuroscience and neuroengineering / Panelist
Swiss Federal Institute of Technology in Lausanne, Switzerland
- 2011 Optical Imaging of the inner ear for diagnosis and therapy / Bertarelli program in Translational Neuroscience and Neuroengineering
Harvard Medical School – École Polytechnique Fédérale de Lausanne, Boston, MA
- 2012 Optical imaging of the inner ear for cellular diagnosis / Invited presentation
Department of Biomedical Sciences, University of Copenhagen, Denmark
- 2012 Research vistas in Neurotology – vestibular schwannomas and sensorineural hearing loss / Invited presentation
Departments of Otolaryngology and Neurology, University of Aarhus, Denmark
- 2012 Translational research in Neurotology: vestibular schwannomas and sensorineural hearing loss / Invited grand rounds
Department of Otolaryngology, University of Geneva, Switzerland
- 2012 Two photon microscopy of the mouse cochlea *in situ* for cellular diagnosis / Bertarelli program in Translational Neuroscience and Neuroengineering
Harvard Medical School – École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
- 2013 Treating deafness with better vision: cellular-level optical imaging of the inner ear / Invited presentation
Annual meeting of the American Association for the Advancement of Science, Boston, MA
- 2013 Energy extraction from and optical imaging of the inner ear / Invited presentation
Triennial meeting of the International Otopathology Society, Boston, MA
- 2013 Loss of osteoprotegerin expression in the inner ear causes degeneration of the cochlear nerve and sensorineural hearing loss / Invited Faculty
29th Meeting of the Politzer Society – international society for otologic surgery and science, Antalya, Turkey
- 2013 Treating deafness with ultra-low power electronics and optics / Invited presentation
Department of Electrical Engineering and Computer Science, University of Belgrade, Serbia
- 2014 Optical imaging of the inner ear: treating deafness with better vision / Bertarelli program in Translational Neuroscience and Neuroengineering
Harvard Medical School – École Polytechnique Fédérale de Lausanne, Boston, MA
- 2014 Fully implantable cochlear implants – status and prospects / Invited Faculty presentation
Middle East Update in Otolaryngology, Dubai, United Arab Emirates

- 2014 Mechanisms of hearing loss due to vestibular schwannoma: implications for diagnosis and therapy / Invited Faculty presentation
Middle East Update in Otolaryngology, Dubai, United Arab Emirates
- 2014 (Presentation #1) Imaging of the inner ear: CT, MRI and emerging optical technologies. (Presentation #2) Update on genetic hearing loss. (Presentation #3) Management of challenging acoustic neuromas / Invited Faculty presentations and expert panelist
Middle East Update in Otolaryngology, Dubai, United Arab Emirates
- 2014 Importance of binaural hearing / Panel Moderator
Middle East Update in Otolaryngology, Dubai, United Arab Emirates
- 2014 Sensorineural hearing loss due to otosclerosis: molecular insights and targeted therapy / Invited Faculty presentation and Invited Session Chair for “Cochlear otosclerosis”
3rd International Symposium on Otosclerosis and Stapes Surgery, Siofok, Hungary
- 2014 Translational neurotology: a nexus of surgery, neuroscience and biotechnology / Invited Grand Rounds
Department of Otolaryngology, University Hospital of Geneva, Switzerland
- 2015 Advanced optical techniques for clinical diagnosis and therapy of hearing loss / Invited talk
Wyss Center for Bio- and Neuroengineering, Geneva, Switzerland
- 2015 Transactivation of human osteoprotegerin promoter by GATA3: implications for treatment of sensorineural hearing loss / Selected oral abstract
Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum, San Francisco, CA
- The presentation was awarded Benjamins Prize for the best presentation at the annual meeting
- 2016 Optical diagnostics for hearing loss / Bertarelli Program in Translational Neuroscience and Neuroengineering Invited talk
Harvard- École Polytechnique Fédérale de Lausanne, Boston, US
- 2016 (Presentation #1) Treating deafness with better vision: cellular-level optical imaging of the inner ear. (Presentation #2) Fully implantable cochlear implants: status and prospects. (Presentation #3) Degeneration and regeneration of the inner ear. (Presentation #4) Molecular mechanism of hearing loss due to vestibular schwannoma: implication for diagnosis and treatment / Invited Visiting Professor talk
VII International Otology and Neurotology Meeting, Medellin, Colombia
- 2016 Extracellular vesicles mediate vestibular schwannomas-associated hearing loss / Selected oral abstract
Triennial meeting of the International Otopathology Society, Boston, MA, US
- 2016 Vestibular schwannoma: from bedside to bench and back / Invited keynote lecture
4th Yonsei Acoustic Tumor Symposium, Yonsei University Hospital, Seoul, South Korea
- 2016 Research vista in otology: from bench to trench / Invited Visiting Professor talk
Asan Medical Center, Department of Otolaryngology, Seoul, South Korea
- 2016 Extracellular vesicles derived from human vestibular schwannomas associated with poor

- hearing damage cochlear cells / Invited oral abstract
Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum, Bordeaux, France
- 2017 Seeing hearing loss / Bertarelli Program in Translational Neuroscience and Neuroengineering
Invited talk
Harvard- École Polytechnique Fédérale de Lausanne, Geneva, Switzerland
- 2017 Cellular-level imaging of the inner ear / Invited keynote lecture
International Federation of Oto-Rhino-Laryngological Societies (IFOS), Paris, France
- 2017 Vestibular schwannoma: from biology to clinical trials / Invited lecture
Shanghai Forum on the Frontier of Hearing Research, Jiao Tong University School of Medicine, Shanghai, China
- 2017 Cellular-level diagnosis and therapy of sensorineural hearing loss / Invited keynote lecture
Sensory Organs Research Meeting, Shanghai Medical College of Fudan University, Shanghai, China
- 2018 Imaging in Otology / Invited Faculty and Roundtable Discussant
31st Politzer Society Meeting, Las Palmas de Gran Canaria, Canary Islands, Spain
- 2018 Optical imaging of the inner ear for diagnosis and therapy of hearing loss / Bertarelli Program in Translational Neuroscience and Neuroengineering
Invited talk
Harvard- École Polytechnique Fédérale de Lausanne, Boston, MA
- 2018 Cellular-level diagnosis and personalized therapy of sensorineural hearing loss / Distinguished Visiting Professor and Judge of resident presentations
Annual Residents' Research Day, London Health Sciences Centre, Western University, Ontario, Canada
- 2018 (Presentation #1) Cellular-level diagnosis and personalized therapy of sensorineural hearing loss and vestibular schwannoma. (Presentation #2) Toward optical imaging of cells in the inner ear / Invited faculty presentations and expert panelist
Japanese Otological Society, Osaka, Japan.
- 2019 State-of-the-art mini symposium: Endoscopic-assisted dynamic imaging of the middle and inner ear for diagnosis and treatment / Session Chair
Optical imaging of the inner ear / Invited talk
World Congress on Endoscopic Ear Surgery, Boston, MA.
- 2019 Pharmacologic therapies for vestibular schwannoma: from basic science to clinical innovation / Selected oral abstract
Triennial meeting of the International Otopathology Society, Boston, MA, US
- 2019 (Presentation #1) Tympanoplasty techniques and grafts (Presentation #2) Vestibular surgery: endolymphatic sac surgery, labyrinthectomy and fistula repair (Presentation #3) Otological approaches to the petrous apex/ Invited Faculty – gave three lectures and participated in hands-on surgical demonstrations
Open Medical Institute, Medical Education Beyond Borders, A Program of the American Austrian Foundation, Seminar and Workshop on Temporal Bone Surgery, Salzburg, Austria.
- 2019 Cellular-level diagnosis and personalized therapy of sensorineural hearing loss and vestibular

schwannoma/ Selected Oral Abstract
Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum, Bern, Switzerland.

- 2019 Sensing in auditory neuroscience and neurotologic surgery / Keynote speaker
Institute of Electrical and Electronics Engineers (IEEE) Sensors Meeting, Montreal, Canada.
- 2021 (Presentation #1) Molecular pathobiology of vestibular schwannoma: implications for
treatment. (Moderator) Innovations in Otology/ Neurotology: How to make it happen?
German Society of Otorhinolaryngology – Head and Neck Surgery (DGHNO)
Berlin, Germany.
- 2021 Direct SARS CoV-2 infection of the human inner ear may underlie COVID-19-associated
audiovestibular dysfunction: basic mechanisms / Selected oral abstract
Prelude to ORLICA 2022 – XI ORL International Academic Conference. Italy.
- 2021 Toward personalized diagnosis and therapy of sensorineural hearing loss: insights from human
tissue/ Distinguished speaker
111th Annual Congress of the Taiwan Society of Otorhinolaryngology Head and Neck Surgery.
Taiwan.
- 2021 Frontiers in otology and neurotology inspired by cochlear implants
South African Cochlear Implant Group (SACIG). Cape Town, South Africa.
- 2021 Future of Otology and Audiology/ Invited panelist
Otology on the Nile, Cairo, Egypt.
- 2022 Direct SARS-CoV-2 infection of the inner ear may underlie COVID-19-associated
audiovestibular dysfunction/ Invited Talk
University of California Irvine- Asan Medical Center Otolaryngology Updates 2022
- 2022 Molecular mechanisms of audiovestibular dysfunction due to COVID-19 / Keynote speaker
Korean ENT Congress, Seoul, Korea.
- 2022 Gender gap and leadership/ Keynote speaker
Annual Congress of Japanese Society of Otorhinolaryngology – Head and Neck Surgery, Kobe,
Japan.
- 2022 Losartan prevents tumor-induced hearing loss and augments radiation efficacy in NF2
schwannoma rodent models/ Invited Oral Abstract
Annual meeting of the Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum, Santiago,
Chile
- 2022 (Presentation #1) Molecular mechanisms of COVID-19 associated audiovestibular dysfunction/
Keynote speaker
(Presentation #2) Cellular-level diagnosis and therapy of sensorineural hearing loss/ Keynote
speaker
(Presentation #3) Otology: what is coming next?/ Round Table discussant
52nd Brazilian Congress of Otorhinolaryngology and Facial Cervical Surgery, Porto Alegre,
Brazil.
- 2022 Optical imaging and liquid biopsy of the inner ear to guide treatment/ Keynote speaker
81st Annual Meeting of Japanese Society of Japan Society for Equilibrium Research – Head and

Neck Surgery, Nara, Japan.

- 2022 Precision diagnosis and therapy of human sensorineural hearing loss/ Invited speaker
Otology on the Nile, Cairo, Egypt.
- 2022 The inner ear and viruses: the good and the bad/ Keynote speaker
4th World Congress on Endoscopic Ear Surgery, Kyoto, Japan.
- 2023 Identification of immune-related candidate biomarkers in plasma of patients with sporadic vestibular schwannoma/ Invited oral poster
Inner ear basic research/ Session co-chair
Annual meeting of the Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum, Tokyo, Japan.
- 2024 Vestibular schwannoma: molecularly-informed therapies;
https://youtu.be/tyDglbuDeC8?list=PLSWR1ylG_6JZj8dGjABQF8a6MLk0C1EyT
Highlighted speaker
World Vestibular Schwannoma Awareness Day
- 2024 Rates of otologic symptom onset following COVID-19 vaccination: an institutional cohort study with high-dimensionality propensity score matching
Invited speaker
International Network of Special Immunization Services
- 2024 Human Otic Progenitor Cell Models of Congenital Hearing Loss by ZIKV and CMV/ Invited oral abstract
Hearing Genetics/ Session chair
Annual meeting of the Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum, Vienna, Austria.
- 2024 Toward cellular level diagnosis and therapy of human sensorineural hearing loss/
Reprogramming of the Auditory System Session/ Invited speaker
Auditory Horizons workshop on future of innovative therapies/ Fondation pour L'Audition, Paris, France.
- 2024 Precision otology: the convergence approach/ Keynote lecture
8th East Asian Symposium on Otology & 2024 Annual Meeting of Taiwan Academy Otology (EASO 2024), Taipei, Taiwan.
- 2024 Forging a distinctive journey: the clinician scientist's adventure
Cathay General Hospital, Taipei. Taiwan.
- 2025 The future of vestibular schwannoma management: insights from secreted molecules and tumor microenvironment/ Tom King Keynote Lecture
British Skull Base Society. Oxford, the United Kingdom.
- 2025 Vestibular schwannoma-induced hearing loss: the role of secreted molecules and tumor microenvironment/ Keynote Speaker
Dr. Peyalo Villar Puig Society Meeting, Mexican Board of Otolaryngology, Mexico.
- 2025 (Presentation #1) The future of otorhinolaryngology – head and neck surgery in the generative AI era / Keynote speaker
(Presentation #2) High resolution imaging of the human inner ear / Keynote speaker

Taiwanese Academy of Otolaryngology – Head and Neck Surgery, Taipei, Taiwan.

- 2025 Vestibular schwannoma-induced hearing loss: the role of secreted factors and tumor microenvironment/ Tauno Palva, MD Memorial Lecture
Finish Society of Ear Surgery and Department of Otolaryngology – Head and Neck Surgery, University of Helsinki, Finland.
- 2025 Genetic diagnosis and discovery enabled by large language models/ Invited oral abstract
Collegium Otorhinolaryngologicum Amicitiae Sacrum Annual Meeting, Stockholm, Sweden.
- 2025 Role of human induced pluripotent stem cells in human sensorineural hearing loss/ Invited speaker
Otology on the Nile, Annual Meeting of the Egyptian Otological Society.Cairo, Egypt.
Scheduled for December 2025.
- 2026 Transforming otolaryngology: the role of AI/ Invited speaker
EROC Global Forum, Dubai, United Arab Emirates
Scheduled for January 2026.
- 2026 Advancing the diagnosis and therapy of human sensorineural hearing loss: leveraging optical imaging and human stem cells/ Keynote speaker
Royal Society of Medicine meeting, London, UK
Scheduled for March2026.

Report of Clinical Activities and Innovations

Current Licensure and Board Certification

2006-present	Full License, Massachusetts
2007-present	Diplomate, American Board of Otolaryngology – Head and Neck Surgery
2010-present	Diplomate, Neurotology Board
2021-present	Full License, California

Practice Activities

2008-present	Otology and Neurotology outpatient clinic, adult and pediatric	MEE until 06/2021, Stanford since 8/2021	1 day per week
2008-present	Otology and Neurotology surgery, adult and pediatric	MEE until 06/2021, Stanford since 08/2021	1 day per week

I practice Otology and Neurotology – Skull Base Surgery. I joined Stanford University School of Medicine and Stanford Health Care in June 2021. Prior to that I served as the Chief of the Division of Otology and Neurology at MEE.

Working in a multidisciplinary, tertiary referral center, I care for patients with the highest level of clinical complexity. My patients have been presented in the New England Journal of Medicine, Washington Post (https://www.washingtonpost.com/national/health-science/she-had-a-loud-nonstop-crunching-noise-in-her-head-that-doctors-I-quiet/2018/08/17/7afdc19c-852d-11e8-8f6c-46cb43e3f306_story.html?utm_term=.84845ad49d93) and Boston Magazine. While most of my patients are local and regional, I also take care of patients nationally and internationally.

While at Harvard, I served as a consultant in Otology and Neurotology in the Center for Connected Health, the Telemedicine division of Partners HealthCare.

Surgeries that I perform include cochlear implantation, stapedotomy, tympanoplasty and mastoidectomy for chronic ear disease and complex cholesteatoma, ossicular chain reconstruction, temporal bone resection for tumors, labyrinthectomy, bone anchored hearing aid (BAHA) surgery, middle fossa craniotomy for repair of meningoencephaloceles of the temporal bone or superior semicircular canal dehiscence, resection of vestibular schwannoma (via translabyrinthine, middle fossa or suboccipital craniotomy).

Clinical Innovations

High-resolution imaging of the inner ear

Although the vast majority of sensorineural hearing loss (SNHL) can be traced to the inner ear, this organ has evaded cellular-level imaging in living humans because of its small size, complex three-dimensional anatomy, and encasement in the densest bone in the body, positioned deep in the base of the skull. We are developing optical tools for high-resolution imaging of cells in the inner ear to establish precise diagnosis and guide therapy, which is not yet possible clinically. Through collaboration with Dr. G. Tearney, we have demonstrated for the first time the feasibility of endomicroscopy of the human inner ear to image intracochlear microstructure using a micro-optical coherence tomography catheter (Ref#96, Iyer et al. 2021). We developed a refined successor of this novel device and are preparing an application for an Investigational New Device for human use, based on our conversations with the Food and Drug Administration. In parallel, we are working on the next-generation imaging probe based on dynamic micro optical coherence tomography (Ref#128, Schulz-Hildebrandt, Spasic et al. 2024).

To enable development of future methodologies for cellular-level imaging of the inner ear based on multi-photon microscopy, we have demonstrated that two photon fluorescence of the mouse (Ref#19, Yang et al. 2013) and human (Ref#95, Iyer et al. 2021) cochlea reveals organ of Corti cytoarchitecture, and that hair cells can be seen through laser-ablated cochlear bone (Ref#78, Romito et al, 2019). This has inspired our ongoing design of a flexible probe for multi-mode imaging of the interior of the human inner ear.

- Awarded patent “Tissue and cellular imaging” (**Stankovic KM**, Psaltis D, Yang X, Pu Y, Hsieh CL). Patent number: 10022042 (awarded in July 2018). The patent described how two photon microscopy can be applied to the intact cochlea to visualize intracochlear structures with high cellular resolution and without contrast dyes. This invention enables cellular-level imaging of the inner ear, which is not yet clinically possible.
- Filed patent “Optical proximity sensing system for atraumatic cochlear implant surgery” (Psalti D, **Stankovic KM**, Moser C, Pu Y). International Patent Publication number 20190111260 (April 2019). The patent describes a proximity sensor to be integrated into cochlear implants to avoid intracochlear trauma and the associated hearing loss during surgery.

- Filed patent “Endoscopic system to visually guide the delivery of therapeutic agents” (Moser C, **Stankovic KM**, Papageorgiou D, Descloux L, Psalti D). International Patent Application filed on Oct 1, 2015. The patent describes the endoscopic system aimed at precisely delivering a therapeutic agent to a cavity such as but not limited to the cochlea, the eye, teeth, cartilage. The endoscopic system has a means to provide high resolution optical images to help identify the exact location of delivery.
- Awarded patent “Device and method for increased light transmission through cochlear bone by laser ablation for *in situ* intracochlear imaging” (Psaltis D, **Stankovic KM**, Conkey DB, Romito M). Patent number 11116406 (awarded in September, 2021). The patent describes a method for imaging intracochlear microanatomy by ablating cochlear bone with laser.
- Filed patent “Design strategies for cochlear endoscope” (Psaltis D, Moser C, **Stankovic KM**, Laporte G, Staley J, Goy A, Conkey DB). International patent application filed on September 9, 2016. The patent describes the design of a cochlear endoscope to access the inner ear from the external auditory canal and image inside the cochlea.
- Filed patent “Systems and methods for micro-optical coherence tomography imaging of the cochlea” (**Stankovic KM**, Tearney G, Janani Iyer). US Patent Publication Number 20190029570 (January 2019). The patent describes a method for imaging intracochlear microanatomy, including nerve fiber bundles, using micro optical coherence tomography.
- Filed patent “An ultra-flexible miniature micro-optical coherence tomography catheter for endomicroscopy” (Tearney G, Hou F, **Stankovic KM**). The patent describes a miniature OCT catheter for endomicroscopy of small and/or anatomically complex structures such as the cochlea.

Identification of secreted factors that mediate hearing loss due to vestibular schwannoma

Vestibular schwannoma (VS) is an intracranial tumor and an important cause of human sensorineural hearing loss (SNHL). VS typically arises from Schwann cells of the vestibular nerves, yet 95% of patients present with SNHL. The conventional hypothesis that VSs cause SNHL by mechanical compression of the adjacent auditory nerve does not explain common clinical findings, such as that tumor size does not correlate with the severity of SNHL (Ref # 105, Brown et al. 2022). Our research has opened the field of systematic study of VS-secreted factors, and demonstrated that these factors contribute to VS-induced SNHL. In addition to discovering soluble VS-secreted molecules that correlate with hearing loss and can cause direct cochlear damage (Ref #42, Dilwali et al. 2015; Ref #21, Dilwali et al. 2013; Ref # 74, Sagers et al. 2019, Ref #85, Ren et al. 2020, Ref # 92, Wu et al. 2021; Ref #133, Vasiljic et al. 2025), we were the first to isolate extracellular vesicles from VS, demonstrate that they can deliver their damaging cargo to cochlear cells (Ref #49, Soares et al. 2016), and that the ototoxic cargo includes miR-431 (Ref#123, Fujita et al. 2023). Our research has impacted clinical counseling internationally because it provides a conceptual framework for understanding why some small VSs cause hearing loss and some large VSs do not. In the largest quantitative analysis of bilateral hearing in patients with unilateral VS, we demonstrated that VS patients have a long-term risk of hearing loss in the contralateral ear as well (Ref #86, Early et al. 2020). This finding also impacts

patient counseling while lending further support to the notion that tumor-secreted factors are involved in VS-associated hearing loss. Our recent analysis of VS-secreted molecules in patients with VS compared to unaffected controls identified a panel of 9 biomarkers with outstanding discriminatory ability for VS (Ref#119, Vasilijic et al. 2023).

- Awarded patent, “Methods of treating vestibular schwannoma and reducing hearing or neurite loss caused by vestibular schwannoma (**Stankovic KM**, Dilwali S). Patent number: 10010585 (awarded in July, 2018). The patent establishes tumor necrosis factor alpha (TNF α) as a secreted biomarker of hearing loss due to VS, and a therapeutic target as its inhibition in VS secretions alleviates cellular damage in organotypic cochlear cultures.
- Filed patent, [Plasma biomarkers of vestibular schwannoma](#)” (Vasilijic S, **Stankovic KM**) in 2023.

Role of anti-inflammatory medications in treatment of vestibular schwannoma

There are currently no drug therapies that are FDA-approved for VS and associated SNHL. We have focused on drug repositioning to rapidly identify cost-effective and safe therapies for VS. We identified pro-inflammatory pathways, orchestrated through a transcription factor nuclear factor-kappa B (NF-kB), as central players in VS pathobiology (Ref #38, Dilwali et al. 2015). We validated this bioinformatic finding in a simplified and robust tissue culture system (that we developed, Ref #29, Dilwali et al. 2014) for primary human VS and control Schwann cells. We demonstrated that NF-kB inhibition, including with a clinically-relevant NF-kB inhibitor curcumin, reduced VS cell proliferation and promoted cell death. This work builds on and provides independent validation for our previously published and subsequent finding that inflammation plays an important role in VS progression (Ref #26, Kandathil et al. 2014; Ref #34, Dilwali et al. 2015; Ref #51, Kandathil et al. 2016; Ref#119, Vasilijic et al. 2023; Ref#120, Stankovic et al. 2023). Our studies strongly motivate the ongoing, prospective, randomized, placebo-controlled phase II clinical trial of aspirin for vestibular schwannoma, which I initiated. This multi-center national trial involves MEE, Stanford, Mayo Clinic, U. of Iowa, U. of Utah, U of Miami and Barrow Neurologic Institute.

In the meantime, based on our work, guidelines from the Congress of Neurological Surgeons recommended administration of aspirin for VS patients who are undergoing tumor surveillance [Van Gompel NSY 2018]

In addition, our study demonstrating that losartan prevents tumor-induced hearing loss in rodent models of NF2 (Ref#92, Wu, Vasilijic et al. 2021) and that this observation holds in a retrospective clinical study (Ref #131, Early et al. 2024) have motivated the ongoing design of a multi-center prospective randomized clinical trial to determine whether losartan can prevent tumor-induced hearing loss in patients with NF2-associated and sporadic vestibular schwannomas. This prospective clinical study has been recommended for development by the NF2 Consortium.

Role of mifepristone in treatment of vestibular schwannoma

To discover a possible treatment for an important disease without FDA-approved pharmacologic therapies, we performed and validated the first application of algorithm-based drug repositioning in the field of otolaryngology (Ref # 67, Sagers et al. 2018). Specifically, we performed the largest meta-analysis of the VS transcriptome to identify a set of genes that are consistently and abnormally

expressed in this tumor when compared to control nerves. We compared this set against the known genetic effects of 1,155 FDA-approved drugs and identified mifepristone as the most appealing candidate compound. Mifepristone is currently approved for use in chemical abortion. After applying mifepristone to VS cells grown from donated patient tumor samples, we observed an 80% reduction in cellular proliferation. This work forms the basis of our filed patent disclosure, an IND application to the FDA (because this drug is tightly regulated for political reasons), and IRB approval of compassionate use of this drug by interested patients at our hospital.

- Patent, “Methods for treating vestibular schwannoma” (**Stankovic KM**, Sagers JE) filed on June 1, 2017. The patent describes mifepristone and related compounds as promising therapeutics for vestibular schwannoma.

Off-label use of zoledronate for treatment of sensorineural hearing loss

Currently there are no drugs FDA-approved for sensorineural hearing loss (SNHL). Our discovery that osteoprotegerin (OPG), a bone-related cytokine, is highly expressed (Ref # 12, Stankovic et al. 2010) and secreted by cochlear neurons (Ref #23; Kao et al. 2013), stimulated our research on whether drugs used to treat bone diseases can be repurposed for treatment of SNHL. We specifically focused on bisphosphonates, which are FDA-approved for treatment of osteoporosis, metastatic bone disease, and Paget’s disease. We discovered that OPG and a bisphosphonate, zoledronate, can rescue cochlear neuronal degeneration (Ref #23, Kao et al. 2013; Ref #83, Seist et al. 2020; Ref #88, Kao et al. 2021). Our results strongly motivate off-label use of zoledronate for SNHL and provide mechanistic insight into improved audiometric thresholds and word recognition in patients who receive zoledronate for off-label use in cochlear otosclerosis (Quesnel et al. 2012; Jan et al. 2017).

- Awarded patent, “Osteoprotegerin in neuroprotection.” (**Stankovic KM**, McKenna MJ, Kao SY, Edge A). Patent number: 9670288 (awarded in June 2017). The patent describes use of OPG and bisphosphonates for neurodegenerative hearing loss, and opens new pharmacologic strategies to treat neurodegeneration in general.

Liquid biopsy of human inner ear

Tissue biopsy of the tiny inner ear is impractical because it could cause irreversible hearing loss. While fluid volume in the human inner ear is small (about 150 μ l), my research has provided key building blocks for routine liquid biopsy of the human inner ear for personalized diagnosis and therapy of sensorineural hearing loss (SNHL). These building blocks include: (1) defining the proteome of human perilymph using modern mass spectrometry techniques (Ref #17, Lysaght et al. 2011), (2) defining the proteome of normal human perilymph and perilymph of patients with severe vestibular dysfunction (Ref # 76, Lin et al. 2019), (3) demonstrating the feasibility of identifying molecular markers of SNHL by sampling as little as 0.5 μ l of inner ear fluid (Ref # 77, Landegger et al. 2019), (4) developing a novel microneedle device for controlled and reliable biopsy of human inner ear (Ref #75, Early et al. 2019).

- Patent, “Method for sampling inner ear fluid” (Early S, **Stankovic KM**) filed on July 1, 2019. The patent describes a microneedle device with incorporated electrode for controlled and safe microliter aspiration of perilymph through the round window membrane.

Method for generating functional human spiral ganglion neurons

Treatment of SNHL represents a significant unmet medical need, as no drugs have been FDA approved specifically for SNH, and biological therapies are in their infancy, with only a few early-stage clinical trials. To overcome this bottleneck, we have focused on developing human cellular models of SNHL using induced pluripotent stem cells (iPSC). We have demonstrated the feasibility of using human iPSC and derived inner ear cells and organoids to uncover mechanisms of infectious hearing loss (Ref #99, Jeong et al. 2021; Ref #126, Harding et al. 2024), ototoxic hearing loss (Ref #129, Jeong et al. 2024), genetic hearing loss (Ref #134, Jeong et al. 2025) and environmental pollution (Ref #114, Stojkovic M et al. 2023). With an eye toward future cellular transplantation into the inner ear and high-throughput drug screens to treat primary auditory neuropathy, we have developed a protocol for the generation of human spiral ganglion neurons (manuscript submitted).

- Provisional patent, “Method for generating functional human spiral ganglion neurons” (Jeong M, **Stankovic KM**) filed on February 20, 2025. The patent describes a method for differentiation of human induced pluripotent stem cells into functional spiral ganglion neurons..

Report of Technological and Other Scientific Innovations

Novel devices for cochlear sensing and stimulation

- Awarded patent “Energy extraction” (**Stankovic KM**, Chandrakasan A, Mercier P, Bandyopadhyay S, Lysaght A). US patent number: 9369005 (awarded in June 2016). The patent describes a method to extract energy from a mammalian electrochemical potential. The extracted energy can be used for long-term autonomous sensing of molecular biomarkers *in vivo*.
- Awarded patent “Low power cochlear implants” (Yip M, Chandrakasan A, **Stankovic KM**). US patent number: 10022542 (awarded in July 2018). The patent describes a system-on-chip for a fully implantable (i.e. invisible) cochlear implant, which operates on < 1mW of power.

Novel biological therapies for sensorineural hearing loss

- Awarded patent “Materials and methods for delivering nucleic acids to cochlear and vestibular cells” (**Stankovic KM**, Vandenberghe L, Holt J, Geleoc G). Patent number 11167042 (awarded in November 2021). The patent describes intracochlear gene therapy based on Anc80, a synthetic ancient adeno associated virus. This viral vector is now used in a clinical trial of gene therapy for otoferlin gene-mediated hearing loss, sponsored by Akouos (NCT05821959)
- Filed patent “Fibroblast growth factor 2 (FGF2) for treatment of human sensorineural hearing loss” (**Stankovic KM**, Atai N, Welling DB). Publication number 20220226437 (July 2022). The patent describes a method of using FGF2 to treat subjects with hearing loss associated with impaired word recognition.

Methods for treating sinonasal polyps

- Awarded patent “Methods for treating polyps” (**Stankovic KM** and Metson R). US patent number: 9371528 (awarded in June 2016). The patent describes 5 novel diagnostic and therapeutic targets for chronic sinusitis and nasal polyps.

Method to study

- Filed provisional patent “[Deriving human induced pluripotent stem cells from](#)

environmental pollution

[pre-exposed fibroblasts](#)” (Stankovic KM, Stojkovic M, Stojkovic P) in 2022.

Report of Education of Patients and Service to the Community

No activities below were sponsored by outside entities.

Invited presentations

2007	Causes and treatments of hearing loss: from genes to surgery, Public Forum on Hearing and Hearing Loss, MEE
2008	Hearing loss: working towards a cure, Outreach presentation, MEE
2009	Functional significance and therapeutic implications of osteoprotegerin secretion by the cochlear nerve, Outreach presentation, MEE
2010	Hearing and hearing loss, Outreach presentation to 3 rd graders, Park Street School, Boston
2010	Scientific advances in hearing and hearing loss, Outreach presentation, annual meeting of the World Presidents Organization, MEE.
2011	Honey, I can't hear you!: Frontiers in auditory research and surgery, Friend Raiser for MEE, Nantucket, MA.
2013	Exploring physiological and technological limits: Thoughts on the future of cochlear implants, Invited presentation, Minuteman implant club, a non-profit cochlear implant support group for the New England area.
2013	Hearing restoration through novel technologies, President's lecture series, MEE.
2014	Rebuilding the inner ear: saving and restoring hearing, Friend- and Fund-Raiser for MEE, West Palm Beach and Boca Raton, FL.
2015	Optical imaging of the inner ear and a fully implantable cochlear implant, Invited presentation, Morningside Ventures, Boston MA.
2015	Frontiers of hearing research, Invited Speaker, Palm Beach Round Table's 83 rd Anniversary Season, Palm Beach, FL.
2015	Toward an endoscope for minimally invasive imaging of cochlear cells, Invited presentation, Media Roundtable Session at Campus Biotech, Geneva, Switzerland (attendees included editors of European Biotechnology, Trends in Medicine, BBC World Science, New Scientist, as well as science and health correspondents for The New York Times, The Sunday Times (UK), Le Temps and Radio Television Suisse).
2015	Fully implantable cochlear implant, Invited presentation, Bose Corporation, Framingham, MA
2015	Seeing tinnitus: cellular imaging of the inner ear in humans, Lauer Tinnitus Research Center, Boston, MA.
2015	Latest research in otology, Invited presentation and laboratory demonstration for MEE trustees,

MEE.

- 2015 Vestibular schwannoma (acoustic neuroma): mechanisms of hearing loss and tumor growth, Acoustic Neuroma Association (ANA) of New England, Boston, MA
- Recorded talk featured on ANA web site: <https://www.anausa.org/programs/support-groups/video-library>
- 2016 Progress on cellular-level imaging of the human cochlea, Lauer Tinnitus Research Center, Boston, MA.
- 2016 Cellular imaging of the inner ear in humans, Massachusetts Eye and Ear Foundation Outreach, Boston, MA.
- 2016 Seeing hearing loss, Bertarelli Foundation, featured in a promotional video on translational neuroscience and neuroengineering research.
- 2016 Hearing loss: New approaches to protecting and restoring hearing, MEE President's Lecture Series. <https://vimeo.com/189208814/39f6b91e27>
- 2017 Working toward protecting and restoring hearing, Friend- and Fund-Raiser for MEE, Naples FL.
- 2018 Repurposing drugs to prevent and treat hearing loss, Board of Trustees Meeting, Boston, MA.
- 2018 Personalized therapy for vestibular schwannoma. Acoustic Neuroma Association of New England, Boston, MA.
- Recorded talk featured on ANA web site: <https://www.anausa.org/programs/support-groups/video-library>
- 2019 How we hear and how we damage our hearing, Outreach presentation to 3rd graders, Park Street School, Boston, MA.
- 2023 Mechanisms of vestibular schwannoma-induced hearing loss. Invited presentation by NF2 patients. NF2 Patient Fare. Columbus, OH.

Podcasts

- July 2022 How We're Wired podcast produced by Fondation Bertarelli. Focus – Hearing Loss. Discussed common causes of hearing loss and the intricate technology we are developing to diagnose and treat hearing loss: <https://omny.fm/shows/how-we-re-wired/focus-hearing-loss>
- January 2025 This Week in Hearing podcast. **Stankovic KM** with Shari Eberts. Inside the Stanford Initiative to Cure Hearing Loss. <https://www.youtube.com/watch?v=5cNO-BupfBU>
- March 2025 The Future of Everything podcast from Stanford Engineering. **Stankovic KM** with Russ Altman. The future of hearing loss.. <https://www.youtube.com/watch?v=xGmGBFpmdhQ>
- October 2025 Huberman Lab podcast. **Stankovic KM** with Andrew Huberman. Protect and improve your hearing and brain health.. <https://www.youtube.com/watch?v=xGmGBFpmdhQ>

October 2025 The Naked Scientists podcast. **Stankovic KM** with Chris Smith. How can we treat hearing loss? <https://www.thenakedscientists.com/articles/interviews/how-can-we-treat-hearing-loss>

Educational videos for patients and media

Mar 2022 Is tinnitus a rare side effect of COVID vaccine? NBC News, <https://www.nbcnews.com/health/health-news/tinnitus-rare-side-effect-covid-vaccines-rcna20613>.

Apr 2023 New theories of the possible link between COVID shots and tinnitus are emerging. NBC News. <https://www.yahoo.com/news/theories-possible-between-covid-shots-110000663.html>

Nov 2024 Paul Simon's inside look at the Stanford Initiative to Cure Hearing Loss. CBS Mornings. <https://www.youtube.com/watch?v=TU2Nxdkp9VQ>

Nov 2024 Searching for a cure for hearing loss. 90 seconds with Lisa Kim <https://www.youtube.com/watch?v=FPDD4ey-gLo>

Nov 2024 Stanford's groundbreaking work to cure hearing loss. <https://www.youtube.com/watch?v=cBbow3KZ3AI>

Nov 2024 Diagnosing sensorineural hearing loss and options for treatment <https://www.youtube.com/watch?v=0-ircsoUGkY&t=1s>

Nov 2024 Ask me anything: what to know about hearing loss. Stanford Medicine News Center. <https://med.stanford.edu/news/insights/2024/11/ask-me-anything-what-to-know-about-hearing-loss.html>

Feb 2025 Stanford researchers assist Paul Simon's return to the stage. NBC Bay Area news <https://www.nbcbayarea.com/video/news/local/a-closer-look-stanford-researchers-help-paul-simon-perform-again/3797610/>

Sep 2025 Understanding cochlear implant treatment for sensorineural hearing loss at Stanford Health Care <https://www.youtube.com/watch?v=VpGMw5eF4I8>

Oct 2025 Hearing loss and recovery. Stanford Health Library. <https://www.youtube.com/watch?v=JddFcK0k364>

Press mentions

1. She had a loud, nonstop crunching noise in her head that doctors couldn't quiet. Washington Post. August 18, 2018. https://www.washingtonpost.com/national/health-science/she-had-a-loud-nonstop-crunching-noise-in-her-head-that-doctors-couldnt-quiet/2018/08/17/7afdc19c-852d-11e8-8f6c-46cb43e3f306_story.html
2. COVID can trigger tinnitus. Could the vaccines do the same?. National Geographic, February 10, 2023 <https://www.nationalgeographic.com/magazine/article/covid-vaccine-trigger-tinnitus>
3. Can a medical device restore your balance? Smithsonian magazine. July/ August 2025. <https://www.smithsonianmag.com/innovation/can-medical-device-restore-your-balance-180986804/>
4. Airplanes are loud and may damage your hearing. Here's what helps. Washington Post. July 14, 2025.

Activities

2008	Hosted a laboratory tour for members of the Amelia Peabody Foundation visiting MEE.
2009	Hosted a laboratory tour for members of Kellogg Foundation visiting MEE.
2010	Mentored an MIT graduate student in Science Writing (Joseph Benjamin Calamia) for 2 weeks. His description of one of my cochlear implant surgeries is a part of his masters thesis.
2011	Mentored a high school senior (Talar Kiladjian) from Dana Hall School, Wellesley, MA for two weeks while she shadowed me in clinic, operating room and laboratory.
2011	Educated a hearing impaired author (Gerald Shea of Paris, France who wrote “Song without Words”) for 3 hours on cochlear implantation in infants and children.
2012	Interviewed by MEE Public Relations department for promotional video on hearing research at MEE.
2013	Interviewed by MEE Public Relations department for promotional video on bold science at MEE.
2013	Invited panelist – Bold Science, Life-Changing Cures. Spring Meeting of the Board of Trustees, MEE.
2014	Three different research presentations to MEE donors and grateful patients.
2014	Interviewed (for 90 minutes) by Harvard Medical School media fellows (from Scientific American, New Scientist and Associated Press) on sensory biology and its promise for patients.
2015	Interviewed by MEE Public Relations department for a promotional video on bold science and life changing cures at MEE.
2015	Interviewed, as a featured alumna, by Harvard-MIT Division of Health Sciences and Technology (HST-London Society) for a promotional video on HST.
2019	Participated in TV commercial for MEE, which can be viewed on programs throughout Greater Boston such as Nova, Frontline and American Experience (WGBH) as well as WBZ-TV and WSBK News Programs: https://vimeo.com/380592174/d03b150794
2024	Presentation on the state of hearing research and Stanford Initiative to Cure Hearing Loss.

Recognition

2007-	America’s Top Physicians	Consumers’ Research Council of America
2011-	Who’s Who in Medicine and Healthcare	Marquis Who’s Who
2020, 2021	Boston’s Best Doctors https://www.bostonmagazine.com/2020/01/07	Boston Magazine

2022-current	Under my leadership, department ranked #1 in the country for ear, nose, and throat care twice in a row (2022-2024) and remained in top 5 since (ranked # 5 in 2024-2025 and #4 in 2025-2026)	US News and World Report
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Report of Scholarship

Peer-Reviewed Scholarship in print or other media

Research Investigations (* indicates my mentees)

1. **Stankovic KM**, Adams JC, Brown D. Immunolocalization of aquaporin CHIP in the guinea pig inner ear. *Am J Physiol (Cell)*. 1996;269:C1450-1456.
2. Guinan JJ Jr, **Stankovic KM**. Medial efferent inhibition produces largest equivalent attenuation at moderate to high sound levels in cat auditory-nerve fibers. *J Acoust Soc Am*. 1996;100:1680-1690.
3. **Stankovic KM**, Brown D, Alper SL, Adams JC. Localization of pH regulating proteins H⁺ATPase and Cl⁻/HCO₃⁻ exchanger in the guinea pig inner ear. *Hearing Research*. 1997;114:21-34.
4. **Stankovic KM**, Guinan JJ Jr. Medial efferent effects on auditory-nerve responses to tail-frequency tones I: Rate reduction. *J Acoust Soc Am*. 1999;106:857-869.
5. **Stankovic KM**, Guinan JJ Jr. Medial efferent effects on auditory-nerve responses to tail-frequency tones II: Alteration of phase. *J Acoust Soc Am*. 2000;108: 664-678.
6. **Stankovic KM**, Corfas G. Real-time quantitative RT-PCR for low-abundance transcripts in the inner ear: analysis of neurotrophic factor expression. *Hearing Research* 2003;185(1-2):97-108.
7. **Stankovic KM**, Rio C, Xia A, Sugawara M, Adams JC, Liberman MC, Corfas G. Survival of adult spiral ganglion neurons requires erbB receptor signaling in the inner ear. *J Neuroscience*. 2004;24(40):8651-61.
8. Sugawara M, Murtie JC, **Stankovic KM**, Liberman MC, Corfas G. Dynamic patterns of NT3 expression in the postnatal mouse inner ear. *J Comp Neurol*. 2007;501(1): 30-37.
9. **Stankovic KM**, Kristiansen AG, *Bizaki A, Lister M, Adams JC, McKenna MJ. Studies of otic capsule morphology and gene expression in the Mov13 mouse – an animal model of type I osteogenesis imperfecta. *Audiology & Neurotology*. 2007;12(5): 334-43.
10. **Stankovic KM**, Goldsztein G, Reh D, *Platt M, Metson R. Gene expression profiling of nasal polyps associated with chronic sinusitis and aspirin-sensitive asthma. *Laryngoscope* 2008;118(5): 881-9.
 - Featured on cover page.
11. **Stankovic KM**, Mrugala MM, Martuza, RL, Silver M, Betensky RA, Nadol, JB Jr., Stemmer-Rachamimov AO. Genetic determinants of hearing loss associated with vestibular schwannomas. *Otology and Neurotology*. 2009;30(5): 661-7.
 - Voted by The Hearing Journal one of the best papers of 2009 in the Vestibular Schwannoma category.

12. **Stankovic KM**, *Adachi O, Tsuji K, Kristiansen AG, Adams JC, Rosen V, McKenna MJ. Differences in gene expression between the otic capsule and other bones. *Hearing Research*. 2010;265 (1-2): 83-9.
 - Featured on cover page.
13. **Stankovic KM**, Hennessy AM, Herrmann B, Mankarious LA. Cochlear implantation in children with DFN3 congenital X-linked deafness due to novel mutations in POU3F4 gene. *Annals Otol Rhinol Laryngol*. 2010;119(12):815-822.
14. Gómez-Casati ME, Murtie JC, Rio C, **Stankovic K**, Liberman MC, Corfas G. Nonneuronal cells regulate synapse formation in the vestibular sensory epithelium via erbB-dependent BDNF expression. *Proc Natl Acad Sci U S A*. 2010;107(39):17005-10.
15. *Platt M, Soler Z, Metson R, **Stankovic KM**. Pathways analysis of molecular markers in chronic sinusitis with polyps, *Otolaryngol-Head & Neck Surg*. 2011;144(5):802-8.
16. *Platt M, Soler Z, *Kao SY, Metson R, **Stankovic KM**. Topographic gene expression in the sinonasal cavity of patients with chronic sinusitis with polyps. *Otolaryngol-Head & Neck Surg*. 2011;145(1):171-5.
17. *Lysaght A, *Kao SY, Paulo J, Merchant S, Steen H, **Stankovic KM**. Proteome of human perilymph. *J Proteome Research*. 2011;10(9):3845-51.
18. *Mercier P, *Lysaght A, Bandyopadhyay S, Chandrakasan AP, **Stankovic KM**. Energy extraction from the biologic battery in the inner ear. *Nature Biotechnology*. 2012;30(12): 1240-3.
 - Featured on cover page, received world-wide press coverage
 - Comment. Shepard K, Ito T, Griffith AJ. Extracting energy from the inner ear. (2012) *Nat Biotechnol* 30(12):1204-5.
 - Nature Press Office. Twin R. *Biotechnology: battery power from the ear*. (2012).
 - I was interviewed by the Wall Street Journal, Canadian Broadcasting Corporation, the Danish Broadcasting Corporation, Medtronic EUreka, Instituto Ciencia Hoje (Brazil), Horakustik (Germany), IEEE Spectrum. In addition, our findings were reported by Los Angeles Times, Discover Magazine, The Scientist, Massachusetts Society for Medical Research, Science News for Kids, Discovery News, Hearing Journal, Tech News Daily, New Scientist.
19. *Yang X, Pu Y, Hsieh CL, *Ong CA, Psaltis D, **Stankovic KM**. Two photon microscopy of the mouse cochlea in situ for cellular diagnosis. *J Biomedical Optics*. 2013;18(3): 31104.
20. *Kalwani NM, *Ong CA, *Lysaght A, Haward SJ, McKinley GH, **Stankovic KM**. Quantitative polarized light microscopy of unstained mammalian cochlear sections. *J Biomedical Optics*. 2013;18(2): 26021.
21. *Dilwali S, *Lysaght A, *Roberts D, Barker FG, McKenna MJ, **Stankovic KM**. Sporadic vestibular schwannomas associated with good hearing secrete higher levels of fibroblast growth factor 2 than those associated with poor hearing irrespective of tumor size. *Otology and Neurotology*. 2013;34(4):748-54.
22. *Stamatiou GA, **Stankovic KM**. A comprehensive network and pathway analysis of human deafness genes. *Otology and Neurotology* 2013; 34(5):961-70.
23. *Kao SY, Kempfle JS, *Jensen JB, *Perez-Fernandez D, *Lysaght A, Edge AS, **Stankovic KM**. Loss of osteoprotegerin expression in the inner ear causes degeneration of the cochlear nerve and sensorineural hearing loss. *Neurobiology of Disease*. April 2013 56C:25-33.
 - Featured on the cover page of August issue.
24. *Platt M, *Dilwali S, Elackatuu A, Parikh J, **Stankovic KM**. Mining immune epitopes in the inner ear.

Otolaryngology Head and Neck Surgery. 2014;150(3):460-463.

25. *Muurling T, **Stankovic KM**. Metabolomic and network analysis of pharmacotherapies for sensorineural hearing loss. *Otology and Neurotology* 2014; 35(1):1-6.
26. *Kandathil C, *Dilwali S, *Wu CC, *Ibrahimov M, McKenna M, Lee H, **Stankovic KM**. Aspirin intake correlates with halted growth of sporadic vestibular schwannoma in vivo. *Otology and Neurotology*. 2014;35(2):353-7.
 - Paper was highlighted on the MEE, HMS and Acoustic Neuroma Association web sites, and has received international media coverage.
27. *Mercier P, Bandyopadhyay S, *Lysaght A, **Stankovic KM**, Chandrakasan AP. A sub-nW 2.4 GHz transmitter for low data-rate sensing applications. *IEEE J of Solid-State Circuits*. 2014;49(7):1463-1474.
28. Robertson NG, O'Malley JT, *Ong AI, Giersch AB, Shen J, **Stankovic KM**, Morton CC. Cochlin in normal middle ear and abnormal middle ear deposits in DFNA9 and CochG88E/ G88E mice. *J. Assoc Res Otolaryngol*. 2014;15(6):961-74.
29. *Dilwali S, *Patel P, *Roberts DS, Basinsky GM, Harris GJ, Emerick KS, **Stankovic KM**. Primary culture of human Schwann and schwannoma cells: improved and simplified protocol. *Hearing Research*. 2014;315C:25-33.
30. Bandyopadhyay S, *Mercier PP, *Lysaght AC, **Stankovic KM**, Chandrakasan AP. A 1.1nW energy harvesting system with 544pW quiescent power for next generation implants. *IEEE J of Solid-State Circuits*. 2014;49(12):2812-2824.
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Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings

Abstracts (only those containing data not yet published in complete form):

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