

Curriculum Vitae
Hinrich Staecker MD PhD
Professor

Foreign Languages: German, French

PROFESSIONAL DEVELOPMENT

Undergraduate and Graduate Education

<u>Years (Inclusive)</u>	<u>Degree</u>	<u>Institution</u>
1983-1987	BA in Biology	The Johns Hopkins University
1987-1991	MD with Distinction in Research	Albert Einstein College of Medicine
1991-1995	PhD in Laboratory of Dr. G. Moonan: "The role of neurotrophic factors in the development, maintenance and regeneration of auditory neurons." Defended 12/1995 Summa cum laude	University of Liege, Liege, Belgium

Postgraduate Education

<u>Years (Inclusive)</u>	<u>Area of Study</u>	<u>Institution</u>
1991-1992	General Surgery Internship	Montefiore Medical Center/ Albert Einstein College of Medicine
1992-1993	Neuropathology Fellowship	Albert Einstein College of Medicine
1993-1997	Otolaryngology Residency	Montefiore Medical Center
1997-1999	Otology/ Neurotology Fellowship	Harvard Medical School/ Massachusetts Eye and Ear Infirmary

Academic and Professional Appointments and Activities

<u>Month and Year</u>	<u>Position</u>	<u>Institution</u>
7/1999-5/2003	Assistant Professor of Surgery	Division of Otolaryngology- Head and Neck Surgery, University of Maryland School of Medicine
4/2001-7/2005	Assistant Professor	Department of Anatomy and Neuroscience, University of

		Maryland School of Medicine
5/2003-7/2005	Associate Professor of Surgery	University of Maryland
7/2003-12/2004	Acting Chairman	Division of Otolaryngology- Head and Neck Surgery, University of Maryland
1/2005- Present	Associate Professor with Tenure	Department of Otolaryngology- Head and Neck Surgery, University of Kansas
1/2005- Present	Associate Professor	Department of Hearing and Speech University of Kansas
1/2005- Present	Associate Professor	Department of Neurosurgery University of Kansas
7/2009- Present	Professor	Department of Otolaryngology- Head and Neck Surgery, University of Kansas

Professional Registration/Licensure

<u>Year</u>	<u>State</u>
1992-1997	New York
2005- Present	Kansas
2005-Present	Missouri

Professional Certifications

<u>Date</u>	<u>Board</u>
4/1/1992	National Board of Medical Examiners
4/10/1998	American Board of Otolaryngology (Certificate No. 15672)
6/01/2005	Neurotology Board Certified (Certificate No. 15672) American Board of Otolaryngology

Professional Societies and Affiliations

<u>Date</u>	<u>Organization (including offices held)</u>
6/1998 to Present	American Academy of Otolaryngology- Head and Neck Surgery (Fellow)
6/1998 to Present	American Neurotological Society
6/1998 to Present	Association for Research in Otolaryngology

6/1998 to Present	Society for Inner Ear Biology
1/2008 to Present	Member, Smith Intellectual and Developmental Disabilities Research Center

Honors and Awards (honorary societies, research awards, teaching and other awards)

<u>Year</u>	<u>Award</u>
1987	Delta Phi Alpha Honors Society
4/1991	Alpha Omega Alpha
1993, 1994, 1995, 1996, 1997	Resident Travel Award, Association for Research in Otolaryngology
1997	Winner Resident Research Prize, New York Academy of Medicine
1997	Second Prize Resident Research Competition (Clinical)
2004	American Academy of Otolaryngology-Head and Neck Surgery Honor Award
6/2008	Resident Teaching Award Otolaryngology-Head and Neck Surgery Department University of Kansas Medical Center
2008	David S. and Marilyn M. Zamierowski Professorship in Skull Base Oncology University of Kansas School of Medicine

INSTITUTIONAL SERVICE

INTERNATIONAL COURSES AND PROGRAMS

University of Heidelberg, Germany

2005-Present Annual Temporal Bone Surgery Course (Faculty) 4-days: 2 hours didactic, 18 hours lab

NATIONAL COURSES AND PROGRAMS

American Association of Otolaryngology/ Head and Neck Surgery

2001-2005 Pharmacologic Management of Dizziness (Instructor)

University of Maryland

2002 Image Guided Surgery in Otolaryngology (Organizer) CME Course

University of Maryland College Park, Department of Biology

2002 Physiology of Hearing (Instructor) Graduate Course

Walter Reed Army Medical Center

2003 Middle Fossa Approaches (Instructor) Temporal Bone Course
2004 Tympanoplasty (Instructor) Temporal Bone Course

Medical College of Georgia

2008 Temporal Bone Dissection and Otology Update (Invited Faculty) CME Course

LOCAL COURSES AND PROGRAMS

University of Maryland

1999-2005	Introduction to Otolaryngology Lecture	3 times/year, 3 hours	3 rd , 4 th yr Medical Students
	Temporal Bone Dissection	Weekly/2 hours	Residents
	Gross Anatomy (Assistant Instructor)	4 hours/year	
	Ward Teaching Rounds	Weekly/1 hour	Residents
	Balance Journal Club	Weekly/2 hours	Medical Students, Audiologists, Residents

The University of Kansas School of Medicine, Otolaryngology Residency Program

2005- Present	Development of Molecular Therapeutics		
	Facial Nerve Decompression		
	Middle Fossa Approaches		
	Facial Nerve		
	Ear Anatomy		
	Basics of Vestibular Evaluation		
	Basic Vestibular Testing		
	Practical Anatomy and Physiology of the Vestibular System and the Ocular Motor System		

Instruction in Otology and Neurotology to Otolaryngology Chief Residents

- 4 months per resident

<u>Year</u>	<u>Student</u>
2005-2006	Dr. Christopher Larsen Dr. Oleg Militsakh
2006-2007	Dr. Luke Buchmann Dr. Jeremy Moore
2007-2008	Dr. Clinton Humphrey Dr. Jeffrey Jorgensen Dr. Joseph Ursick
2008-Present	Dr. Cristina Cabrera Dr. Peter Gochee Dr. Richard Wemer

Master's Theses and PhD Dissertations directed

<u>Year</u>	<u>Student Name</u>	<u>Thesis Title</u>	<u>Degree</u> Completed/In process
2004	Kristin Janke	Differentiating Migraines from Ménière's Disease	AuD/ Completed
2008	Hilary Turner	Cochlear Implant's Effect on the Vestibular Evoked Myogenic Potential	AuD/In Process

Supervision of Postdoctoral Fellows

<u>Year</u>	<u>Fellow Name</u>	<u>Area of Study</u>
2002-2004	Dr. Kim Baker	The Role of Mitochondria in Age-Related Hearing Loss
2003-2005	Dr. Mark Praetorius	Hearing Preservation in Gene Therapy
2006-2008	Dr. Suzanna Pfannenstiel	Developing a Mouse Model of Cochlear Implantation
2008- Present	Dr. Christina Schlecker	Delivery of Advanced Generation Adenovectors

Advising (Thesis or dissertation committees: student academic group/individual)

<u>Date</u>	<u>Student or group name</u>	<u>Type of Student/group</u>	<u>Thesis Title</u>
2007	Stig Åvall Severinsen Aarhus University Denmark	Invited PhD thesis reviewer and dissertation opponent	Stereological estimations in the utricular macula of vertebrates
2007-Present	Hope Karnes Nicely University of Kansas	PhD Thesis Committee Member	Central Nervous System Plasticity Following Afferent Denervation

Other teaching activities

<u>Date</u>	<u>Student or Group Name</u>	<u>Type of Student/Group</u>	<u>Teaching Function</u>
2000-2001	Dr. Julie Berry	Otolaryngology Resident	Advisor, clinical resident
2001	Emmerich Yoder	Medical Student	Advisor, clinical resident
2001-2002	Dr. Vasu Kakarlapudi	Otolaryngology Resident	Advisor, clinical resident
2001-2002	Dr. Mark Goto	Otolaryngology Resident	Advisor, gene therapy research
2003	Dr. Jim Lin	Otolaryngology Resident	Advisor, clinical resident
2003-2005	Dr. Katherine Do	Otolaryngology Resident	Advisor, clinical resident
2005-2008	Dr. Joseph Ursick	Otolaryngology Resident	Advisor, Tinnitus Clinical Resident
2007	Dr. Matthew Rendel	Neurosurgery Resident	Advisor, Clinical Research
2006- Present	Dr. Peter Gochee	Otolaryngology Resident	Advisor, Gene Therapy Resident
2008- Present	Peter Scaletty	Medical Student	Medical Student Preceptor
2008-Present	Tessa Rosenberg	Medical Student	Medical Student Preceptor

Educational Leadership

2007- Present Director of KU Temporal Bone Lab and Temporal Bone Surgery course

- Organized and renovated temporal bone anatomy lab.
- Received \$275,000 educational equipment grant from Stryker, Inc.

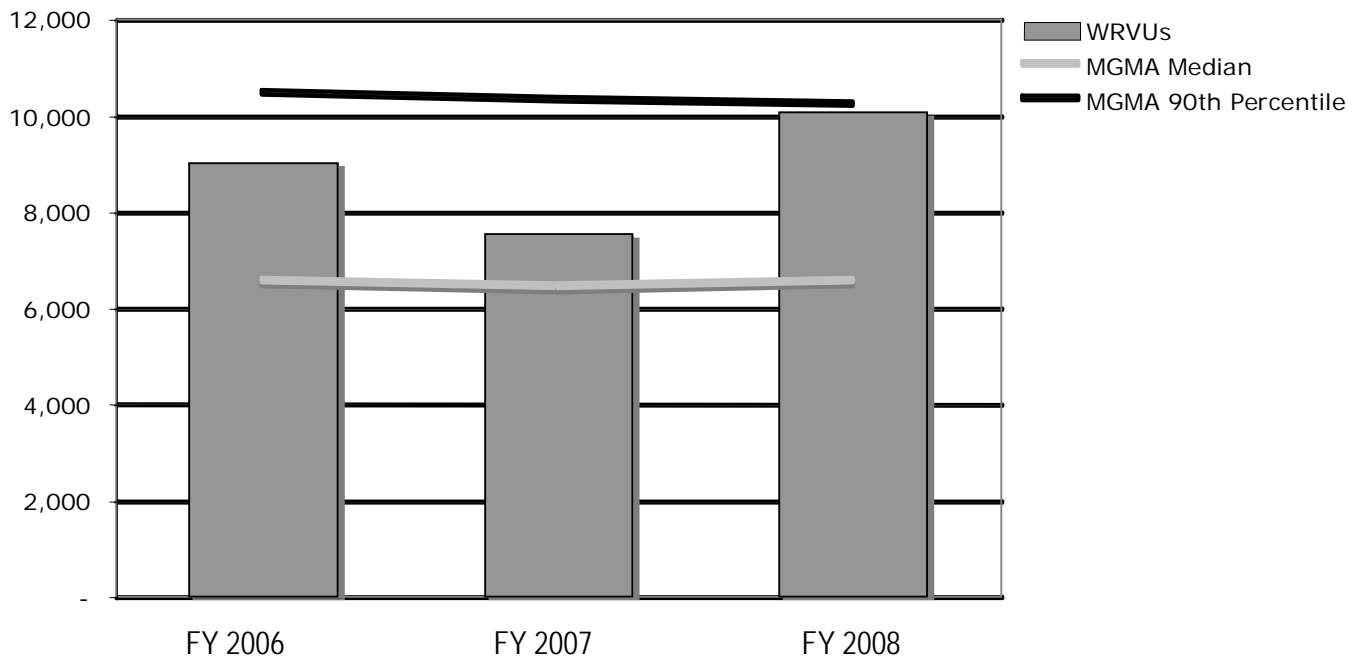
Clinical Activities

Active clinical practice focusing on otology, neurotology and skull base surgery.

Key Clinical Benchmarks:

- Organized Skull Base Surgery Team with Dr. Ania Pollack, establishing a busy surgical practice for acoustic neuromas and posterior fossa meningiomas
- Doubled the volume of KU's cochlear implant practice and established use of new device.
- Initiated multiple otology clinical trials.

Annualized Work RVUs



- FY 2006 to 2007: 25.5% growth in RVU
- FY 2007-2008: 33% growth in RVU. Data from VA clinic not included.
- Light gray line represents MGMA Median.
- Black line represents MGMA 90th Percentile.

Clinical Trials:

Completed Trials

2001-2003 Intratympanic delivery of steroids for sudden sensorineural hearing loss. (10 patient pilot study) Investigator initiated.

2002-2004 Prospective trial of round window catheter for delivery of drugs to the inner ear.

Investigator initiated

Current Trials

- 2006 - Present Otolitics METTM (Middle Ear Transducer TM) Fully Implantable Ossicular Stimulator
- Clinical trial of a totally implantable hearing aid system.
- Feb. 2007- Present MED-EL EAS™ (Electric-Acoustic System) using the Pulsar CI100 FLEXeas and the Duet® Speech Processor
- Clinical trial of novel cochlear implant system that preserves residual hearing.
- Mar. 2007- Present Inflammatory mediators in sudden sensorineural hearing loss and autoimmune hearing loss
- Nov. 2007- Present Cochlear implantation effect on the Vestibular Evoked Myogenic Potential (VEMP)
- Aug. 2008 - Present Vibrant Soundbridge as a treatment for conductive and mixed hearing losses, using direct round window cochlear stimulation

Local and National Service

- 1999-2005 **Director, Maryland Hearing and Balance Center**
- Established a state-of-the-art vestibular testing facility (Video ENG, VOR Testing, Posturography)
 - Established a cochlear implant program at The University of Maryland, which currently implants Nucleus and MED-EL devices.
 - Established multidisciplinary meetings with Neurology and Genetics
 - Established advanced protocols for VEMP testing, facial nerve testing, and stacked ABR
 - Growth of practice from no otologic surgery in 1999 to 200 cases per year and 5000 Otolaryngology/Neurotology patient visits per year by 2005.
 - Helped organize and run the Center for Skull Base Surgery, providing expertise in lateral approaches to the skull base and facial nerve trauma, 1999-2005.
- 2002-2005 **Member, Maryland State Board of Audiology, Speech Pathology and Hearing Aid Dispensers**
- Appointed by Governor P. Glendening to oversee licensing and training of audiologists.
- 2008- Present **Board Member, Hartley Family Center**
Educational program for hearing impaired infants and toddlers.

Academic Service

- 2000-2005 **Geriatrics Committee**
American Academy of Otolaryngology/Head and Neck Surgery
- Responsible for developing curriculum for improving the study and teaching of geriatric issues in otolaryngology.
- 2001-2005 **Institutional Bio-Safety Committee**
University of Maryland
- Oversight of experiments with biological agents.

- 2001- 2005 **Content Expert**
John Hartford Foundation
- Responsible for preparing an overview of the current state of knowledge of care of the elderly in otolaryngology for The American Academy of Geriatrics.
- 2002-2005 **MD PhD Advisory Committee**
University of Maryland
- Advisory committee for the MD PhD program.
- 2003-2004 **Certificate Program for Otolaryngology Personnel Committee**
American Academy of Otolaryngology/Head and Neck Surgery
- 2003- 2006 **Publication Committee**
Journal of the Association for Research in Otolaryngology
- 2003- Present **Ad Hoc Reviewer**
National Institute on Deafness and Other Communication Disorders
- Sept. 9-10, 2004 **Conference Representative of American Academy of Otolaryngology/ Head and Neck Surgery**
“Consensus Conference on Effective Interventions for Infants and Young Children with Hearing Loss”
- Production of consensus document for childhood hearing loss.
- 2005- Present **Scientific Advisory Committee**
American Tinnitus Association
- 2005- Present **Reviewer**
Royal National Institute for Deafness (UK)
- 2006- Present **Reviewer, Scientific Review Board**
Deafness Research Foundation
- Largest source of funding for hearing and balance research after the NIDCD.
- 2007 **Grant Reviewer**
National Organization for Hearing Research
- 2007 **Ad Hoc Reviewer, Neurological Sciences and Disorders**
National Institute of Health
- 2008- Present **MD PhD Advisory Committee**
The University of Kansas School of Medicine

EDITORIAL BOARDS

Associate Editor, *Acta Otolaryngologica*
Associate Editor, *ORL Journal (International Journal for Translational Research in Otolaryngology)*

REVIEWER

Acta Otolaryngologica
Archives of Otolaryngology
Audiology/Neurotology
Ear and Hearing
Hearing Research
Journal of Neuroscience
Laryngoscope

RESEARCH and SCHOLARLY ACTIVITIES:

Grants and contracts

Grants and contracts awarded:

<u>Principal Investigator</u>	<u>Investigators</u>	<u>Title of Grant</u>	<u>Funding Source</u>	<u>Total Direct Costs</u>	<u>Years</u>	<u>Status</u>
Yes	Staecker, H	The role of BDNF in auditory nerve development Grant #4-93017	Deafness Research Foundation	\$160,000.00	1993-1995	Completed
Yes	Staecker, H	Prevention of the loss of auditory neurons in a mouse model of presbycusis (C57Bl) strain by neurotrophin-3 (NT-3) administration to the inner ear via a viral vector (HSV nt3lac)	American Federation of Aging Research	\$75,000.00	1996	Completed
Yes	Staecker, H	Balance dysfunction in a mouse model of presbycusis	The National Organization for Hearing Research Foundation (NOHR)	\$15,000.00	1999	Completed
Yes	Staecker, H	The role of oxidative stress and neurotrophin deprivation in a mouse model of age-related hearing loss	American Hearing Research Foundation	\$25,000.00	1998	Completed
Yes	Staecker, H	Acetyl carnitine protects hair cells from cis-platin toxicity	Sigma Tau	\$15,000.00	2001	Completed
Yes	Staecker, H	Gene transfer of Ad/Math1 to regenerate vestibular hair cells	Genvec and Maryland Industrial Partnership Foundation	\$415,000.00	2002-2005	Completed

Yes/Co-PI	Staecker, H Brough, D	Restoration of vestibular hair cells induced by AdMath1 R41 DC 07772	NIH (NIDCD)	\$139,291.00	2004	Completed
Yes	Staecker, H	A mouse model of cochlear implantation	MED-EL Corp	\$140,000.00	2005-Present	Active
Yes	Staecker, H	The effect of cochlear electrical stimulation on a rat tinnitus model	Advanced Bionics	\$15,000.00	2007-2009	Active
Yes	Staecker, H	Development of atonal therapy for bilateral vestibular hypofunction R01 DC 008424	NIH (NIDCD)	\$1,250,000.00	2007-2012	Active

Grants and contracts submitted:

Principal Investigator	Investigators	Title of Grant	Funding Source	Direct Costs	Years	Status
Staecker, H	Durham, D Imig, T	Hair cell regeneration in a rat tinnitus model	Department of Defense	\$858, 090	July 2009-May 2012	Submitted

Scholarly Publications

Lefebvre PP, **Staecker H**, Weber T, Van De Water TR, Rogister B, Moonan G. TGFSS1 modulates bFGF receptor message expression in cultured adult auditory neurons. *Neuroreport*. 1991 Jun;2(6):305-8.

Frenz DA, Galinovic-Schwartz V, **Staecker H**, Van De Water TR. Transforming growth factor-beta. Paracrine mediator of otic capsule formation. *Ann NY Acad Sci*. 1991;630:253-5.

Lefebvre PP, Weber T, Rigo JM, **Staecker H**, Moonan G, Van De Water TR. Peripheral and central target-derived trophic factor(s) effect on auditory neurons. *Hearing Research*. 1992 Mar;58(2):185-92.

Lefebvre PP, Martin D, **Staecker H**, Weber TR, Moonan G, Van De Water TR. TGF beta 1 expression is initiated in adult auditory neurons by sectioning of the auditory nerve. *Neuroreport*. 1992 Apr;3(4): 295-8.

Lefebvre PP, Van De Water TR, **Staecker H**, Weber T, Galinovic-Schwartz V, Moonan G, Ruben RJ. Nerve growth factor stimulates neurite regeneration but not survival of adult auditory neurons in vitro. *Acta Otolaryngol*. 1992;112(2): 288-93.

Lefebvre PP, Malgrange B, **Staecker H**, Moonan G, Van De Water TR. Retinoic acid stimulates regeneration of mammalian auditory hair cells. *Science*. 1993 Apr 30;260(5108):692-5.

Lefebvre PP, **Staecker H**, Moonan G, Van De Water TR. Naftidrofuryl affects neurite regeneration by injured adult auditory neurons. *Acta Otolaryngol*. 1993 Jul;113(4):498-501.

Staecker H, Cammer M, Rubinstein R, Van De Water TR. A procedure for RT-PCR amplification of mRNAs on histological specimens. *Biotechniques*. 1994 Jan;16(1):76-80.

Vazquez E, Van De Water TR, Del Valle M, Vega, JA, **Staecker H**, Giráldez F, Represa J. Pattern of trk β protein-like immunoreactivity in vivo and the in vitro effects of brain-derived neurotrophic factor (BDNF) on developing cochlear and vestibular neurons. *Anat Embryol (Berl)*. 1994 Feb;189(2):157-67.

Lefebvre PP, Malgrange B, **Staecker H**, Moghadass M, Van De Water TR, Moonen G. Neurotrophins affect survival and neuritogenesis by adult injured auditory neurons in vitro. *Neuroreport*. 1994 Apr 14;5(8):865-8.

Staecker H, Van De Water TR. Molecular mechanisms of inner ear development. *Curr Opin in Otolaryngol Head Neck Surg*. 1995;3:308-14.

Staecker H, Lefebvre PP, Malgrange B, Moonen G, Van de Water TR. Regeneration and mammalian auditory hair cells. Response in: *Science*. 1995 Feb 3;267(5198):709-11.

Staecker H, Liu W, Hartnick C, Lefebvre PP, Malgrange B, Moonen G, Van De Water TR. NT-3 combined with CNTF promotes survival of neurons in modiolus-spiral ganglion explants. *Neuroreport*. 1995 Jul 31;6(11):1533-7.

Kopke R, **Staecker H**, Lefebvre PP, Malgrange B, Moonen G, Ruben RJ, Van De Water TR. The effect of neurotrophic factors on the inner ear: clinical implications. *Acta Otolaryngol*. 1996 Mar;116(2):248-52. Review.

Staecker H, Kopke R, Malgrange B, Lefebvre PP, Van De Water TR. NT-3 and/or BDNF therapy prevents loss of auditory neurons following loss of hair cells. *Neuroreport*. 1996 Mar 22;7(4):889-94.

Malgrange B, Lefebvre PP, Van De Water TR, **Staecker H**, Moonen G. Effects of neurotrophins on early auditory neurons in cell culture. *Neuroreport*. 1996 Mar 22;7(4):913-7.

Staecker H, Van De Water TR, Lefebvre PP, Liu W, Moghadassi M, Galinovic-Schwartz V, Malgrange B, Moonen G. NGF, BDNF and NT-3 play unique roles in the in vitro development and patterning of innervation of the mammalian inner ear. *Dev Brain Res*. 1996 Mar 29;92(1):49-60.

Staecker H, Galinovic-Schwartz V, Liu W, Lefebvre PP, Kopke R, Malgrange B, Moonen G, Van De Water TR. The role of neurotrophins in maturation and maintenance of postnatal auditory innervation. *Am J Otol*. 1996 May;17(3):486-92.

Hartnick C, **Staecker H**, Malgrange B, Lefebvre PP, Liu W, Moonen G, Van De Water TR. Neurotrophic effects of BDNF and CNTF, alone and in combination, on postnatal day 5 rat acoustic ganglion neurons. *J Neurobiol*. 1996 Jun;30(2):246-54.

Malgrange B, Lefebvre PP, Martin D, **Staecker H**, Van De Water TR, Moonen G. NT-3 has a tropic effect on process outgrowth by postnatal auditory neurones in vitro. *Neuroreport*. 1996 Nov 4;7(15-17):2495-9.

Gabaizadeh R, **Staecker H**, Liu W, Kopke R, Malgrange B, Lefebvre PP, Van De Water TR. Protection of both auditory hair cells and auditory neurons from cisplatin induced damage. *Acta Otolaryngol*. 1997 Mar;117(2):232-38.

Staecker H, Dazert S, Malgrange B, Lefebvre PP, Ryan A, Van De Water TR. Transforming growth factor alpha treatment alters intracellular calcium levels in hair cells and protects them from ototoxic damage in vitro. *Int J Neurosci*. 1997 Jul;15(4-5):553-62.

Staecker H, Dazert S, Malgrange B, Lefebvre PP, Ryan A, Van De Water TR. TGF alpha treatment alters intracellular CA⁺⁺ levels in hair cells and protects from ototoxic damage in vitro. *Int J Dev Neurosci*. 1997 Jul;15(4-5):553-62.

Gabaizadeh R, **Staecker H**, Liu W, Van De Water TR. BDNF protection of auditory neurons from cisplatin involves changes in intracellular levels of both reactive oxygen species and glutathione. *Brain Res Mol Brain Res*. 1997 Oct 15;50(1-2):71-8.

Feghali J, Lefebvre PP, **Staecker H**, Kopke R, Frenz D, Malgrange B, Liu W, Moonen G, Ruben RJ, Van De Water TR. Mammalian auditory hair cell regeneration/repair and protection: a review and future directions. *Ear Nose Throat J*. 1998 Apr;77(4):276, 280, 282-5. Review.

Staecker H, Gabaizadeh R, Federoff H, Van De Water TR. Brain-derived neurotrophic factor gene therapy prevents spiral ganglion degeneration after hair cell loss. *Otolaryngol Head Neck Surg*. 1998 Jul;119 (1):7-13.

Staecker H, Van De Water TR. Factors controlling hair-cell regeneration/repair in the inner ear. *Curr Opin Neurobiol*. 1998 Aug;8(4):480-7. Review.

Liu W, **Staecker H**, Stupak H, Malgrange B, Lefebvre PP, Van De Water TR. Caspase inhibitors prevent cisplatin-induced apoptosis of auditory sensory cells. *Neuroreport*. 1998 Aug 3;9(11):2609-14.

Staecker H, Nadol J, Ojeman R, McKenna M. Delayed intracranial abscess after acoustic neuroma surgery: a report of two cases. *Am J Otol*. 1999 May;20(3):369-72.

Wackym P, King W, Poe D, Meyer GA, Ojeman R, Barker F, Walsh P, **Staecker H**. Adjunctive use of endoscopy during acoustic neuroma surgery. *Laryngoscope*. 1999 Aug;109(8):1193-201.

Malgrange B, Rigo J, Van De Water TR, **Staecker H**, Moonen G, Lefebvre PP. Growth factor therapy to the damaged inner ear: clinical prospects. *Int J Pediatr Otorhinolaryngol*. 1999 Oct 5; 49 Suppl 1:S19-25. Review.

Staecker H, Chow H, Nadol J. Osteomyelitis, lateral sinus thrombosis and temporal lobe infarction caused by infection of a percutaneous cochlear implant. *Am J Otol*. 1999 Nov;20(6):726-8.

Staecker H, Merchant S. Temporal bone pathology case of the month. Congenital fixation of the incus. *Am J Otol*. 2000 Jan;21(1):137-8.

Nadol J, **Staecker H**, Gliklich R. Outcomes assessment for chronic otitis media: the Chronic Ear Survey. *Laryngoscope*. 2000 Mar;110 (3 Pt 3):32-5.

Schönberger J, Levy H, Grünig E, Sangwatanaroj S, Fatkin D, MacRae C, **Staecker H**, Halpin C, Eavey R, Philbin E, Katus H, Seidman J, Seidman C. Dilated cardiomyopathy and sensorineural hearing loss: a heritable syndrome that maps to 6q23-24. *Circulation*. 2000 Apr 18;101(15):1812-8.

Huang T, Cheng AG, Stupak H, Liu W, Kim A, **Staecker H**, Lefebvre PP, Malgrange B, Kopke R, Moonen G, Van De Water TR. Oxidative stress-induced apoptosis of cochlear sensory cells: otoprotective strategies. *Int J Dev Neurosci*. 2000 Apr-Jun;18(2-3):259-70. Review.

Staecker H, Nadol J, Ojeman R, Ronner S, McKenna M. Hearing preservation in acoustic neuroma surgery: middle fossa versus retrosigmoid approach. *Am J Otol*. 2000 May;21(3):399-404.

Staecker H, Li D, O'Malley B, Van De Water TR. Gene expression in the mammalian cochlea: a study of multiple vector systems. *Acta Otolaryngol*. 2001 Jan;121(2):157-63.

Staecker H, Zheng Q, Van De Water TR. Oxidative stress in aging in the C57B16/J mouse cochlea. *Acta Otolaryngol*. 2001 Sept;121(6):666-72.

Staecker H, O'Malley B, Eisenberg H, Yoder BE. Use of the LandmarX™ surgical navigation system in lateral skull base and temporal bone surgery. *Skull Base*. 2001 Nov;11(40):245-55.

Fantry L, **Staecker H**. Vertigo and abacavir. *AIDS Patient Care STDS*. 2002 Jan;16(1):5-7.

Lefebvre PP, **Staecker H**, Van De Water TR, Moonen G, Malgrange B. Pharmacologic treatment of inner ear: from basic science to the patient. *Acta Otorhinolaryngol Belg*. 2002;56(1):45-9. Review.

Lefebvre PP, **Staecker H**, Van De Water TR, Moonen G, Malgrange B. Microperfusion of the inner ear. *Acta Otorhinolaryngol Belg*. 2002;56(4):365-8. Review.

Lefebvre PP, Malgrange B, Lallemand F, **Staecker H**, Moonen G, Van De Water TR. Mechanisms of cell death in the injured auditory system: otoprotective strategies. *Audiol Neurootol*. 2002 May-Jun;7(3):165-70.

Staecker H, Lefebvre PP. Autoimmune sensorineural hearing loss improved by tumor necrosis factor-alpha blockade: a case report. *Acta Otolaryngol*. 2002 Sep;122(6):684-7.

Lefebvre PP, **Staecker H**. Steroid perfusion of the inner ear for sudden sensorineural hearing loss after failure of conventional therapy: a pilot study. *Acta Oto-Laryngologica*. 2002 Oct;122(7):698-702.

Berry J, Gold S, Frederick EA, Gray W, **Staecker H**. Patient-based outcomes in patients with primary tinnitus undergoing tinnitus retraining therapy. *Arch Otolaryngol Head Neck Surg*. 2002 Oct;128(10):1153-7.

Scarpidis U, Madnani D, Shoemaker C, Fletcher C, Kojima K, Eshraghi AA, **Staecker H**, Lefebvre PP, Malgrange B, Balkany TJ, Van De Water TR. Arrest of apoptosis in auditory neurons: implications for sensorineural preservation in cochlear implantation. *Otol Neurotol*. 2003 May;24(3):409-17.

Kakarlapudi V, Sawyer R, **Staecker H**. The effect of diabetes on sensorineural hearing loss. *Otol Neurotol*. 2003 May;24(3):382-6. Review.

Lee DJ, Westra W, **Staecker H**, Long D, Niparko J, Slattery W. Clinical and histopathologic features of recurrent vestibular schwannoma (acoustic neuroma) after stereotactic radiosurgery. *Otol Neurotol*. 2003 Jul;24(4):650-60; discussion 660. Review.

Praetorius M, Baker K, Weich C, Plinkert P, **Staecker H**. Hearing preservation after inner ear gene therapy: the effect of vector and surgical approach. *ORL J Otorhinolaryngol Relat Spec*. 2003 Jul-Aug;65(4):211-4.

Berry J, O'Malley B, Humphries S, **Staecker H**. Making image guidance work: understanding control of accuracy. *Ann Otol Rhinol Laryngol*. 2003 Aug;112(8):689-92.

Van De Water TR, Lallemand F, Eshraghi AA, Ahsan S, He J, Guzman J, Polak M, Malgrange B, Lefebvre PP, **Staecker H**, Balkany TJ. Caspases, the enemy within, and their role in oxidative stress-induced apoptosis of inner ear sensory cells. *Otol Neurotol*. 2004 Jul;25(4):627-32. Review.

Rodrigues M, O'Malley B, **Staecker H**, Tamargo R. Extended pericranial flap and bone graft reconstruction in anterior skull base surgery. *Otolaryngol Head Neck Surg*. 2004 Jul;131(1):69-76.

Do K, Baker K, Praetorius M, **Staecker H**. A mouse model of implantation trauma. *International Congress Series* 2004; 1273:167-170.

Staecker H, Brough D, Praetorius M, Baker K. Drug delivery to the inner ear using gene therapy. *Otolaryngol Clin North Am*. 2004 Oct;37(5):1091-108. Review.

Maiorana C, **Staecker H**. Advances in inner ear gene therapy: exploring cochlear protection and regeneration. *Curr Opin Otolaryngol Head Neck Surg*. 2005 Oct;13(5) 308-312.

Staecker H. Broadening the spectrum of treatment options for SNHL. *Arch Otolaryngol Head Neck Surg*. 2005 Aug;131(8)734. Review.

Van Wijk F, **Staecker H**, Keithley E, Lefebvre PP. Local perfusion of necrosis factor alpha blocker infliximab to the inner ear improves autoimmune neurosensory hearing loss. *Audiol Neurootol*. 2006;11(6):357-365.

Staecker H, Easton D, Mackowiak P. The last myrmidon: The life, legacy, and fatal ear disorder of Heinrich Schliemann. *Pharos Alpha Omega Alpha Honor Med Soc*. 2006 Spring;69(2):12-8.

Praetorius M, **Staecker H**. [ASA and the inner ear: An old acquaintance in a new light.] *HNO*. 2006 Sep;54(9):667-9. Review. German.

Lin J. **Staecker H**. Nonorganic hearing loss. *Semin Neurol*. 2006;26(3):321-30.

Staecker H, Liu W, Malgrange B, Lefebvre PP, Van De Water TR. Vector-mediated delivery of bcl-2 prevents degeneration of auditory hair cells and neuroma after injury. *ORL J Otorhinolaryngol Relat Spec*. 2007;69(1)43-50.

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Staecker H, Praetorius M, Baker K, Brough D. Vestibular hair cell regeneration and restoration of balance function induced by math1 gene transfer. *Otol Neurotol*. 2007 Feb;28(2):223-31.

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Praetorius M, Brunner C, Lehnert B, Klingmann C, Schmidt H, **Staecker H**, Schick B. Transsynaptic delivery of nanoparticles to the central auditory nervous system. *Acta Otolaryngol*. 2007 May;127(5):486-90.

Van Wijck F, **Staecker H**, Lefebvre PP. Topical steroid therapy using the Silverstein Microwick™ in sudden sensorineural hearing loss after failure of conventional treatment. *Acta Otolaryngol*. 2007 Oct;127(10):1012-7.

Praetorius M, Pfannenstiel S, Klingmann C, Baumann I, Plinkert P, **Staecker H**. [Expression patterns of non-viral transfection with GFP in the organ of Corti in vitro and in vivo. Gene therapy of the inner ear with non-viral vectors.] *HNO*. 2008 May;56(5):524-9. German.

Lin J, **Staecker H**, Jafri MS. Optical coherence tomography imaging of the inner ear: a feasibility study with implications for cochlear implantation. *Ann Otol Rhinol Laryngol*. 2008 May;117(5):341-6.

Pfannenstiel S, Praetorius M, Plinkert P, Brough D, **Staecker H**. Bcl-2 gene therapy prevents aminoglycoside-induced degeneration of auditory and vestibular hair cells. *Audiology and Neurotology*. In Press

Manuscripts submitted but not yet accepted:

Praetorius M, Brough D, Hsu C, Plinkert P, **Staecker H**. Adenoviral vectors for improved gene delivery to the inner ear. Submitted to *Hearing Research*.

Invited or non-peer-reviewed articles or reviews:

Van De Water TR, **Staecker H**, Ernfors P, Moonen G, Lefebvre PP. Neurotrophic factors as pharmacologic agents for the treatment of injured auditory neurons. *Ciba Foud Symp*.1996;196:149-62; discussion 162-6. Review.

Books and book chapters:

Van De Water TR, Frenz D, Giraldez F, Represa J, **Staecker H**, Lefebvre PP, Moonen G. Growth factors and development of the stato-acoustic system. In: *Development of Auditory and Vestibular System 2nd Edition*. Ed. Romand R. and Varela-Nieto I. San Diego CA:Elsevier Academic Press 1992.1-32.

Van De Water TR, **Staecker H**, Apfel S, Lefebvre PP. Regeneration of the Auditory Nerve: The role of neurotrophic factors. In: *Clinical Aspects of Hearing (Springer Handbook of Auditory Research Vol. 7)*. Eds. Van De Water TR, Popper AN and Fay RR. New York: Springer 1995. 41-85.

Lefebvre PP, Frenz D, **Staecker H**, Represa J, Malgrange B, Ruben R, Moonen G, Van De Water TR. Retinoic acid: a primary morphogen that affects both the differentiation and regeneration of mammalian auditory cells. In: *Auditory System Plasticity and Regeneration*. Eds. Salvi R and Henderson D. New York:Thieme Medical Publishers 1996.1-12.

Van De Water TR, **Staecker H**, Halterman M, Federoff H. Gene therapy in the inner ear: mechanisms and clinical implications. In: *Ototoxicity: Basic Science and Clinical Applications*. Eds. Henderson D, Salvi R, Quaranta A, McFadden S and Burkard R. New York: New York Academy of Sciences 1999. 345-60.

Staecker H, Van De Water TR. Regeneration-repair and protection in the inner ear: implications for cochlear implantation. In: *Cochlear Implants*. Eds. Waltzman S and Cohen N. New York: Thieme Medical Publishers 2000.17-29.

Staecker H, McKenna M. An overview of tumor biology. In: *Tumors of the Ear and Temporal Bone*. Eds. Jackler R and Driscoll C. Philadelphia PA: Lippincott Williams and Wilkins 2000.1-19.

Staecker H, Stuart A, Van De Water TR. The role of neurotrophic factors in the development and maintenance of innervation in the mouse inner ear. In: *Handbook of Mouse Auditory Research: From Behavior to Molecular Biology*. Ed. Willott J. Tampa FL: CRC Press 2001. 157-170.

Van De Water TR, Kojima K, Tateya I, Ito J, Malgrange B, Lefebvre PP, **Staecker H**, Mehler M. Stem cell biology of the inner ear and potential therapeutic applications. In: *Adult Stem Cells*. Ed. Turksen K. Totowa NJ: Humana Press 2004. 269-288.

O'Malley B, Li D, **Staecker H**. Fundamentals of molecular biology and gene therapy. In: *Cummings Otolaryngology: Head and Neck Surgery*. Eds. Cummings C et al. Philadelphia PA: Elsevier Mosby 2005. 382-384.

Staecker H. Introduction to geriatric otolaryngology. In: *Geriatric Otolaryngology*. Eds. Calhoun K and Eibling D. New York: Taylor & Francis 2006. 25-37.

Staecker H, Gochee P, Ferraro J, Storms R. An overview of the treatment of hearing loss. In: *The Senses: A Comprehensive Reference*. Ed. Dallos P. San Diego CA: Elsevier, Inc. 2007. 447-467.

Presentations and posters

Poster presentations at national and international meetings:

Baker K and **Staecker H**. Accumulation of mitochondrial DNA mutations in the aging rat ear. American Academy of Otolaryngology- Head and Neck Surgery Annual Meeting, Orlando FL, Sept. 23, 2003.

Lin J and **Staecker H**. A mouse model of cisplatin ototoxicity. Academy of Otolaryngology- Head and Neck Surgery Annual Meeting, Orlando FL, Sept. 23, 2003.

Brough D, Praetorius M, Hsu C and **Staecker H**. Mechanisms of adenovirus vector gene delivery to the inner ear. Association for Research in Otolaryngology Mid-Winter Meeting, New Daytona FL, Feb. 24, 2004.

Van De Water T, Ahsan S, Baker K, Hong Mou C, He J, Eshraghi A, Guzman J, **Staecker H** and Balkany T. mRNAs that encode for members of the MAPK/JNK cell death signal pathway are expressed in the organ of Corti, stria vascularis/spiral ligament, and spiral ganglion tissues of laboratory. Association for Research in Otolaryngology Mid-Winter Meeting, New Daytona FL, Feb. 24, 2004.

Luebke A, Amalfitano A, Muzyczka N, Breakefield X, Davidson B, Holt J, Kelley M, **Staecker H** and Lalwani A. Virally-mediated gene transfer: from virology to practice. Association for Research in Otolaryngology Mid-Winter Meeting, New Daytona FL, Feb. 24, 2004.

Staecker H, Praetorius M, Baker K and Brough D. Vestibular hair cell regeneration and re-establishment of balance function induced by math1 gene transfer. Association for Research in Otolaryngology Mid-Winter Meeting, Daytona FL, Feb. 24, 2004.

Brough D, Praetorius M, Hsu C, Baker K and **Staecker H**. Mechanisms of adenoviral gene delivery in the inner ear. American Society for Gene Therapy Annual Meeting, Minneapolis MN, June 3, 2004.

Lin J and **Staecker H**. The image-guided approach to the antrum for cochlear implantation. American Academy of Otolaryngology- Head and Neck Surgery Annual Meeting, New York NY, Sept. 21, 2004.

Staecker H, Do K and Jafri S. Optical coherence tomography: temporal bone applications. American Academy of Otolaryngology- Head and Neck Surgery Annual Meeting, New York NY, Sept. 21, 2004.

Tran M and **Staecker H**. Assessing accuracy using different image guidance registration methods. American Academy of Otolaryngology- Head and Neck Surgery Annual Meeting, New York NY, Sept. 21, 2004.

Praetorius M, Baker K, Schick B, Plinkert P and **Staecker H**. Experiences with delivery approaches to the rat cochlea. Association for Research in Otolaryngology Mid-Winter Meeting, New Orleans LA, Feb. 20, 2005.

Staecker H, Praetorius M, Hsu C and Brough D. Adenoviral mediated gene delivery occurs through atypical tropism in the inner ear. Association for Research in Otolaryngology Mid-Winter Meeting, New Orleans LA, Feb. 20, 2005.

Staecker H, Praetorius M, Baker M and Brough D. Vestibular hair cell regeneration and restoration of balance function induced by math1 gene transfer. American Neurotological Society Annual Fall Meeting, Los Angeles CA, Sept. 24, 2005.

Staecker H, Praetorius M, Hsu C and Brough D. Strategies to limit host responses against adenovector mediated inner ear gene transfer. Association for Research in Otolaryngology Mid-Winter Meeting, Baltimore MD, Feb. 6, 2006.

Staecker H, Gold S and Formby C. Auditory system gain and the treatment of tinnitus in implant patients. Ninth International Conference on Cochlear Implants and Related Sciences, Vienna, Austria, June 15, 2006.

Staecker H. Food for hearing: intracochlear drug/gene delivery mechanism. A.G. Bell Association for the Deaf and Hard of Hearing Research Symposium, Pittsburgh PA, June 26, 2006.

Baker K, Chi H, Brough D, Praetorius M and **Staecker H**. The effect of age of injury on the efficacy of math1 mediated hair cell restoration in vitro. Association for Research in Otolaryngology Mid-Winter Meeting, Denver CO, Feb. 13, 2007.

Pfannenstiel S, Praetorius M, Plinkert P and **Staecker H**. Adenovector mediated delivery of bcl-2 in a mouse model of aminoglycoside ototoxicity. Association for Research in Otolaryngology, Denver CO, Feb. 14, 2007.

Ursick J, Durham D, **Staecker H**, Lefebvre PP, Schoenen J, Scholsem M and Imig T. Effect of vagal nerve stimulation on a rat tinnitus model. Association for Research in Otolaryngology, Denver CO, Feb. 14, 2007.

Gochee P, Pfannenstiel S, Durham D and **Staecker H**. Characterization of mouse utricle and saccule binding epitopes by m13 phage panning. Association for Research in Otolaryngology, Denver CO, Feb. 11, 2007.

Staecker H, Praetorius M, Hsu C, Baker K, Plinkert P and Brough D. Promoter control of gene expression in adenovectors delivered to the vestibular system. American Society for Gene Therapy Annual Meeting, Seattle WA, June 1, 2007.

Staecker H, Pfannenstiel S, Brough D and Praetorius M. Dynamics of vestibular hair cell regeneration and re-innervation. Association for Research in Otolaryngology Mid-Winter Meeting, Phoenix AZ, Feb. 19, 2008.

Pfannenstiel S, Praetorius M, Plinkert P, Brough D and **Staecker H**. Bcl-2 prevents hearing loss in a mouse model of sound trauma. Association for Research in Otolaryngology Mid-Winter Meeting, Phoenix AZ, Feb. 19, 2008.

Staecker H, Toepfer S, Ursick J and Niehues N. The effect of electrode insertion depth on hearing preservation outcomes. Tenth International Conference on Cochlear Implants and Other Implantable Auditory Technologies, April 12, 2008.

Invited seminars at other universities:

The Frederic Lyon Research Seminar, Liege, Belgium, 3/20/1993.

Neuropathology Seminar: *Three neurotrophins play unique roles in the development of the inner ear*, 4/17/1993.

Mechanisms of sensory regeneration, Charlotte, Virginia, 1994.

French Society for Neuro-Otology: *Otoprotection: strategies and clinical implications*, 1997.

American College of Surgeons, Bronx Chapter: *Gene therapy: the role of the surgeon*, 1997.

New York ENT Basic Science Course: *Development of the ear*, 1998.

New York Academy of Medicine, *Brain-derived neurotrophic factor gene therapy prevents degeneration of spiral ganglion neurons in a mouse model of aminoglycoside ototoxicity*, 1998.

George Washington University Department Otolaryngology: *Management of Tinnitus*, 1999.

Royal Belgian Society for Ear, Nose, Throat, Head and Neck Surgery Annual Meeting: *Gene therapy: theories and applications in otolaryngology*, 2001.

Interdisciplinary Problem Solving in Cranio-Maxillofacial/Navigational Surgery, ACMF: *Image guidance in skull base surgery*, 2002.

Cherry Blossom Conference, American Academy of Otolaryngology, Contemporary Management of Sensorineural Hearing Loss: *Round window membrane: anatomy, physiology and pathology*, 2002.

Neurodegeneration Focus Group: *Oxidative stress in the inner ear: development of an in vitro model*, 2002.

Maryland Society for Otolaryngology: *Application of outcomes measurement in the treatment of tinnitus*, 2002.

University of Maryland Program in Neuroscience: *Frontiers in sensory biology: translation to therapy*, and *Hair cell regeneration: from bench to bedside?* 2002.

Department of Otolaryngology, University of Miami, Grand Rounds: *Aging in the auditory system: development of preventative strategies*, 2002.

Department of Otolaryngology, Cornell University, Grand Rounds, 7/17-18/2002.

Inner Ear Biology Meeting, *Applications of gene therapy to auditory system research*, 2002.

Department of Neurology, University of Maryland, *Evaluation of vestibular disorders*, 2003.

Frankfurt Hearing Preservation Workshop, *Use of gene therapy to improve auditory neuron survival*, 2003.

Department of Pediatrics, University of Maryland, Grand Rounds, *Treatment of children with sensorineural hearing loss*, 2004.

Self Help for the Hard of Hearing National Meeting, *Molecular biology of hearing disorders*, 2004.

Hear Now Long Island, *Understanding and treating pediatric sensorineural hearing loss*, 2004.

Dallas Hearing Preservation Workshop, *Molecular strategies for hearing preservation with cochlear implantation*, 2004.

NIDCD Intramural Program, *Applying adenovectors for inner ear disease*, 2005.

NIDCD Workshop on Molecular and Stem Cell Therapy: *Math1 delivery for vestibular hair cell regeneration*, 2005.

Department Otolaryngology, Johns Hopkins University, Grand Rounds, *Targeting adenovectors to the inner ear*, 2005.

Warsaw Hearing Preservation Workshop, *Array analysis of cochlear injury*, 2005.

Kansas Society of Ophthalmology and Otolaryngology Annual Meeting, *Advances in the diagnosis and treatment of sensorineural hearing loss*, 2006.

Department of Audiology and Speech, University of Kansas Grand Rounds, *Developing treatment for sensorineural hearing loss*, 2006.

Department of Otolaryngology, Washington University, Grand Rounds, *Developing molecular therapies for inner ear disease*, 2006.

Department of Physiology, University of Kansas, *Developing gene therapy for the inner ear*, 2006.

Kansas Acoustic Neuroma Society, *Update in the treatment of acoustic neuroma*, 2006.

AG Bell Society, *Developing molecular therapies for sensorineural hearing loss*, 2006.

Boys Town Hearing Research Laboratories and Creighton University, *Molecular therapy and cochlear implantation*, 2007.

Cochlear Implant 2007, Guest Lecturer, *Cochlear implantation and molecular therapy*, 2007.

Hearing Preservation Workshop 2007, Antwerp, Belgium, *Mouse models of cochlear implantation: implications for hearing preservation surgery*, 2007.

Association for Research in Otolaryngology Mini-Course, *A sudden sensorineural hearing loss*, 2008.

Conference on Cell Replacement in the Inner Ear, *Vestibular system reconstruction*, sponsored by the NIDCD and The Deafness Research Foundation, 2008

Kansas City Ophthalmology and Otolaryngology Annual Meeting, *Implants for hearing loss: the future of otology*, 2008.

Department of Pediatrics, Children's Mercy Hospital, Kansas City, *Basics of hearing and audiology*, 2008.

Department of Audiology and Speech, Molecular Biology and Genetics Course, *Introduction to gene and molecular therapy*, 2008.

Midwest Ear Institute, *Molecular therapy for hearing loss: implications for bilateral implantation*, 2008

Kansas Speech and Hearing Association Annual Meeting: Invited speaker "Update on Sensorineural Hearing Loss" 2008

American Academy Otolaryngology Head and Neck Surgery Annual Meeting: Guest Lecturer in AAO/NNS Translational Research Program 2008

Medical college of Wisconsin Grand Rounds "Developments in Cochlear Implantation" 2008

Organizer and Speaker "Hearing Preservation Workshop VII" Kansas City Kansas.

Patents

- Drug delivery to the inner ear and methods of using same
US Patent
Filed July 21, 2004
- Peptide targeting of inner ear cells
Pending
Filed 2007