



## Alan G. Cheng, MD

Edward C. and Amy H. Sewall Professor in the School of Medicine, Professor of Otolaryngology - Head & Neck Surgery (OHNS) and, by courtesy, of Pediatrics

Otolaryngology (Head and Neck Surgery)

 Curriculum Vitae available Online

### CLINICAL OFFICE (PRIMARY)

- **Stanford Ear Institute**

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Palo Alto, CA 94303

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### ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

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Administrator

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## Bio

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### BIO

Dr. Alan Cheng received his B.S. in Biomedical Engineering at the Johns Hopkins University, graduating Phi Beta Kappa and Tau Beta Pi. He then received his M.D. degree from the Albert Einstein College of Medicine and graduated with distinction in research in otobiology. Dr. Cheng pursued his residency training in Department of Otolaryngology-Head and Neck Surgery at University of Washington. During residency, he undertook a two-year NIH-sponsored research fellowship investigating mechanisms of hair cell degeneration. After residency he sought fellowship training in pediatric otolaryngology in Children's Hospital Boston, Harvard Medical School.

Alan Cheng joined the Department of Otolaryngology-Head and Neck Surgery at Stanford University as a surgeon-scientist in 2007. His clinical practice based at the Stanford Ear Institute and Lucile Packard Children's Hospital focuses on otologic diseases including congenital hearing loss and cochlear implantation, and chronic ear diseases in the pediatric population. In parallel, his research program focuses on inner ear hair cell development and regeneration. He has received funding from NIH, Department of Defense, the American Otological Society, and California Institute for Regenerative Medicine for this research endeavor.

### CLINICAL FOCUS

- Hearing loss
- Cholesteotoma
- Pediatric sinus disease
- Pediatric head and neck tumors
- Pediatric Otolaryngology

### ACADEMIC APPOINTMENTS

- Professor, Otolaryngology (Head and Neck Surgery)
- Professor (By courtesy), Pediatrics

- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

### **ADMINISTRATIVE APPOINTMENTS**

- Specialty Career Advisor, Otolaryngology, Office of Medical Student Affairs, (2020-2022)
- Chief, Division of Pediatric Otolaryngology, (2019- present)
- Director, Stanford clinician-scientist training program, (2016- present)

### **HONORS AND AWARDS**

- Association for Research in Otolaryngology Resident Travel Award, Association for Research in Otolaryngology (2001, 2002, 2005)
- Shiley Resident Research Award, American Academy of Otolaryngology-Head and Neck Surgery Foundation (2001)
- Percy Memorial Research Award, American Academy of Otolaryngology-Head and Neck Surgery Foundation (2008)
- American Otological Society Clinician-Scientist Award, American Otological Society (2008)
- Triological Society Career Development Award, Triological Society (2009)
- Herbert Silverstein Otolaryngology-Neurotology Award, American Academy of Otolaryngology-Head and Neck Surgery (2010)
- Akiko Yamazaki and Jerry Yang Faculty Scholar, Child Health Research Institute at Stanford (2011)
- Bass Society of Pediatric Scholars, Stanford Children's Health (2012)
- American Academy of Otolaryngology-HNS Foundation Honor award, American Academy of Otolaryngology-HNS Foundation (2013)
- Geraldine Dietz Fox Young Investigator Award, National Organization of Hearing Research/Johns Hopkins University (2015)

### **BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS**

- Chair, American Society of Pediatric Otolaryngologist Research Committee (2014 - 2016)
- Member, Association of Research in Otolaryngology Program Committee (2013 - 2020)
- Member, Hearing committee, American Academy of Otolaryngology-Head and Neck Surgery (2014 - 2017)
- Member, Provost's Advisory Committee on Postdoctoral Affairs (2012 - 2020)
- Member, Pediatric Education Committee, American Academy of Otolaryngology-Head and Neck Surgery (2014 - present)
- Member, CORE Grant study section, American Academy of Otolaryngology-HNS (2008 - present)

### **PROFESSIONAL EDUCATION**

- Medical Education: Albert Einstein Medical Center Dept of Obstetrics and Gynecology (1999) NY
- Board Certification: Pediatric Otolaryngology, American Board of Otolaryngology (2021)
- Internship: University of Washington Medical Center (2000) WA
- Fellowship: Children's Hospital Boston (2007) MA
- Board Certification: Otolaryngology, American Board of Otolaryngology (2007)
- Residency, University of Washington , Otolaryngology-HNS (2006)
- M.D., Albert Einstein , Medicine (1999)
- B.S., Johns Hopkins , Biomedical Engineering (1995)

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

The overarching goal of our research group is to restore/protect auditory function. The irreversible loss of mechanosensitive hair cells in the cochlea causes permanent hearing loss. Mammals lack the ability to spontaneously regenerate hair cells and restore hearing. Wnt signaling is a recurrent theme playing crucial roles in the development of multicellular organisms as well as tissue and cellular homeostasis including the maintenance of stem/progenitor cells. To understand how to regenerate the inner ear, our group has been studying Wnt-responsive progenitor cells in the mammalian cochlea. We take in vitro and in vivo approaches to study the behavior of these putative progenitor cells both during development and after damage in the mature animal. In particular, we are interested in how cell fate decision is made when these progenitor cells differentiate and how Wnt signaling (and other signals) directly and indirectly affects their decision. Techniques include genetic and pharmacologic manipulations, flow cytometry, cell and organotypic cultures, and confocal and time-lapse imaging, single cell and whole animal physiological testing.

A second direction of our laboratory is to understand how the aminoglycoside antibiotics enter the inner ear. These commonly prescribed antibiotics selectively damage inner ear hair cells leading to hearing loss. We are interested in understanding how it enters the blood-labyrinth barrier and its subsequent transport into hair cells. One main focus is to re-design aminoglycosides to preclude their entry into the inner ear.

## Teaching

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### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Rene Cai, Ippei Kishimoto, Roy Park, Yingkun Yang, Lingjun Zhang

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Neurosciences (Phd Program)
- Pediatric Otolaryngology (Fellowship Program)

## Publications

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### PUBLICATIONS

- **Crosstalk Signaling Between the Epithelial and Non-Epithelial Compartments of the Mouse Inner Ear.** *Journal of the Association for Research in Otolaryngology : JARO*  
David, A. P., Biswas, S., Soltis, M. P., Eltawil, Y., Zhou, R., Easow, S. A., Cheng, A. G., Heller, S., Jan, T. A.  
2025
- **Global prevalence of the mitochondrial MT-RNR1 A1555G variant in non-syndromic hearing loss: A systematic review and meta-analysis.** *Neuroscience*  
Han, B., Wang, W., Wu, H., Hu, J., Sun, L., Zhu, Y., Cheng, A. G., Sun, H.  
2025
- **Precise genetic control of ATOH1 enhances maturation of regenerated hair cells in the mature mouse utricle.** *Nature communications*  
Wang, T., Yang, T., Kedaigle, A., Pregemig, G., McCarthy, R., Holmes, B., Wu, X., Becker, L., Pan, N., So, K., Chen, L., He, J., Mahmoudi, et al  
2024; 15 (1): 9166
- **Central Hearing Loss in a Pediatric Patient.** *The Laryngoscope*  
Moon, P. K., Bloom, L., Tribble, M., Ling, A. H., Ahmad, I. N., Yeom, K., Cheng, A. G.  
2024
- **Single-cell transcriptomic atlas reveals increased regeneration in diseased human inner ear balance organs.** *Nature communications*

- Wang, T., Ling, A. H., Billings, S. E., Hosseini, D. K., Vaisbuch, Y., Kim, G. S., Atkinson, P. J., Sayyid, Z. N., Aaron, K. A., Wagh, D., Pham, N., Scheibinger, M., Zhou, et al  
2024; 15 (1): 4833
- **Microstructural Changes in the Brainstem Auditory Pathway in Children With Hearing Loss.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otolology and Neurotology*  
Moon, P. K., Ward, K. M., Din, T. F., Saki, S., Cheng, A. G., Yeom, K. W., Ahmad, I. N.  
2024; 45 (3): e170-e176
  - **Loss of Pax3 causes reduction of melanocytes in the developing mouse cochlea.** *Scientific reports*  
Udagawa, T., Takahashi, E., Tatsumi, N., Mutai, H., Saijo, H., Kondo, Y., Atkinson, P. J., Matsunaga, T., Yoshikawa, M., Kojima, H., Okabe, M., Cheng, A. G.  
2024; 14 (1): 2210
  - **Hair Cell Regeneration: From Animals to Humans.** *Clinical and experimental otorhinolaryngology*  
Choi, S. W., Abitbol, J., Cheng, A.  
2024
  - **Is Public Interest Associated with Real-World Management of Ankyloglossia?** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Naseem, D. F., Sheth, A. H., Cheng, A. G., Qian, Z. J.  
2024
  - **Selection of viral capsids and promoters affects the efficacy of rescue of Tmprss3-deficient cochlea.** *Molecular therapy. Methods & clinical development*  
Aaron, K. A., Pekrun, K., Atkinson, P. J., Billings, S. E., Abitbol, J. M., Lee, I. A., Eltawil, Y., Chen, Y. S., Dong, W., Nelson, R. F., Kay, M. A., Cheng, A. G.  
2023; 30: 413-428
  - **$\beta$ -Catenin transcriptional activity is required for establishment of inner pillar cell identity during cochlear development.** *PLoS genetics*  
Ebeid, M., Kishimoto, I., Roy, P., Zaidi, M. A., Cheng, A. G., Huh, S. H.  
2023; 19 (8): e1010925
  - **Assessment of drug permeability through an ex vivo porcine round window membrane model.** *iScience*  
Moatti, A., Silkstone, D., Martin, T., Abbey, K., Hutson, K. A., Fitzpatrick, D. C., Zdanski, C. J., Cheng, A. G., Ligler, F. S., Greenbaum, A.  
2023; 26 (6): 106789
  - **Ankyloglossia: Clinical and Sociodemographic Predictors of Diagnosis and Management in the United States, 2004 to 2019.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Wei, E. X., Meister, K. D., Balakrishnan, K., Cheng, A. G., Qian, Z. J.  
2023
  - **Prevalence of Cochlear Nerve Deficiency and Hearing Device Use in Children With Single-Sided Deafness** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*  
Ward, K. M., Coughran, A. J., Lee, M., Fitzgerald, M. B., Cheng, A. G., Chang, K. W., Ahmad, I. N.  
2023
  - **Prevalence of Cochlear Nerve Deficiency and Hearing Device Use in Children With Single-Sided Deafness.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Ward, K. M., Coughran, A. J., Lee, M., Fitzgerald, M. B., Cheng, A. G., Chang, K. W., Ahmad, I. N.  
2023
  - **The impact of targeted ablation of one row of outer hair cells and Deiters' cells on cochlear amplification.** *Journal of neurophysiology*  
Xia, A., Udagawa, T., Quinones, P. M., Atkinson, P. J., Applegate, B. E., Cheng, A. G., Oghalai, J. S.  
2022
  - **Ontogeny of cellular organization and LGR5 expression in porcine cochlea revealed using tissue clearing and 3D imaging.** *iScience*  
Moatti, A., Li, C., Sivadanam, S., Cai, Y., Ranta, J., Piedrahita, J. A., Cheng, A. G., Ligler, F. S., Greenbaum, A.  
2022; 25 (8): 104695
  - **Repair of surviving hair cells in the damaged mouse utricle.** *Proceedings of the National Academy of Sciences of the United States of America*

- Kim, G. S., Wang, T., Sayyid, Z. N., Fuhriman, J., Jones, S. M., Cheng, A. G.  
2022; 119 (15): e2116973119
- **Identifying targets to prevent aminoglycoside ototoxicity.** *Molecular and cellular neurosciences*  
Kim, J., Hemachandran, S., Cheng, A. G., Ricci, A. J.  
2022: 103722
  - **Use of Polysomnography and CPAP in Children Who Received Adenotonsillectomy, US 2004 to 2018.** *The Laryngoscope*  
Qian, Z. J., Howard, J. M., Cohen, S. M., Jin, M. C., Bhargava, S., Cheng, A. G., Valdez, T. A.  
2022
  - **Surgical Approach for Rapid and Minimally Traumatic Recovery of Human Inner Ear Tissues from Deceased Organ Donors.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Vaisbuch, Y., Hosseini, D. K., Wagner, A., Hirt, B., Mueller, M., Ponnusamy, R., Heller, S., Cheng, A. G., Lowenheim, H., Aaron, K. A.  
2022
  - **Infectious Complications Following Cochlear Implant: Risk Factors, Natural History, and Management Patterns.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Moon, P. K., Qian, Z. J., Ahmad, I. N., Stankovic, K. M., Chang, K. W., Cheng, A. G.  
2022: 1945998221082530
  - **Selection Criteria Optimal for Recovery of Inner Ear Tissues from Deceased Organ Donors.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Aaron, K. A., Hosseini, D. K., Vaisbuch, Y., Scheibinger, M., Grillet, N., Heller, S., Wang, T., Cheng, A. G.  
2022
  - **Lineage-tracing and translomic analysis of damage-inducible mitotic cochlear progenitors identifies candidate genes regulating regeneration.** *PLoS biology*  
Udagawa, T., Atkinson, P. J., Milon, B., Abitbol, J. M., Song, Y., Sperber, M., Huarcaya Najarro, E., Scheibinger, M., Elkon, R., Hertzano, R., Cheng, A. G.  
2021; 19 (11): e3001445
  - **MRI Correlates of Ototoxicity in the Auditory Pathway in Children Treated for Medulloblastoma.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Moon, P., Theruvath, J., Chang, J., Song, Y., Shpanskaya, K., Maleki, M., Cheng, A. G., Ahmad, I. N., Yeom, K. W.  
2021
  - **Comments on Use of Diagnostic Testing and Intervention for Sensorineural Hearing Loss in US Children-Reply.** *JAMA otolaryngology-- head & neck surgery*  
Qian, Z. J., Chang, K. W., Cheng, A. G.  
2021
  - **Trends and Healthcare Use Following Different Cholesteatoma Surgery Types in a National Cohort, 2003-2019.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otology and Neurotology*  
Qian, Z. J., Tran, E. D., Alyono, J. C., Cheng, A. G., Ahmad, I. N., Chang, K. W.  
2021
  - **Spatiotemporal dynamics of inner ear sensory and non-sensory cells revealed by single-cell transcriptomics.** *Cell reports*  
Jan, T. A., Eltawil, Y., Ling, A. H., Chen, L., Ellwanger, D. C., Heller, S., Cheng, A. G.  
2021; 36 (2): 109358
  - **Imaging alloreactive T cells provides early warning of organ transplant rejection.** *JCI insight*  
Hirai, T., Mayer, A. T., Nobashi, T. W., Lin, P., Xiao, Z., Udagawa, T., Seo, K., Simonetta, F., Baker, J., Cheng, A. G., Negrin, R. S., Gambhir, S. S.  
2021; 6 (13)
  - **Assessment of auditory and vestibular damage in a mouse model after single and triple blast exposures.** *Hearing research*  
Mao, B., Wang, Y., Balasubramanian, T., Urioste, R., Wafa, T., Fitzgerald, T. S., Haraczy, S. J., Edwards-Hollingsworth, K., Sayyid, Z. N., Wilder, D., Sajja, V. S., Wei, Y., Arun, et al  
2021; 407: 108292

- **Opposing effects of Wnt/beta-catenin signaling on epithelial and mesenchymal cell fate in the developing cochlea.** *Development (Cambridge, England)*  
Billings, S. E., Myers, N. M., Quiruz, L., Cheng, A. G.  
2021; 148 (11)
- **Editorial: Epidemiology and Genetics of Vestibular Disorders.** *Frontiers in neurology*  
Lopez-Escamez, J. A., Cheng, A. G., Grill, E., Liu, T.  
2021; 12: 743379
- **Gpr125 Marks Distinct Cochlear Cell Types and Is Dispensable for Cochlear Development and Hearing.** *Frontiers in cell and developmental biology*  
Sun, H., Wang, T., Atkinson, P. J., Billings, S. E., Dong, W., Cheng, A. G.  
2021; 9: 690955
- **Outpatient healthcare use and outcomes after pediatric tracheostomy.** *International journal of pediatric otorhinolaryngology*  
Qian, Z. J., Megwalu, U. C., Cheng, A. G., Balakrishnan, K.  
2021; 151: 110963
- **Use of Diagnostic Testing and Intervention for Sensorineural Hearing Loss in US Children From 2008 to 2018.** *JAMA otolaryngology-- head & neck surgery*  
Qian, Z. J., Chang, K. W., Ahmad, I. N., Tribble, M. S., Cheng, A. G.  
2020
- **Dissociating antibacterial from ototoxic effects of gentamicin C-subtypes.** *Proceedings of the National Academy of Sciences of the United States of America*  
O'Sullivan, M. E., Song, Y., Greenhouse, R., Lin, R., Perez, A., Atkinson, P. J., MacDonald, J. P., Siddiqui, Z., Lagasca, D., Comstock, K., Huth, M. E., Cheng, A. G., Ricci, et al  
2020
- **Opioid Prescribing Patterns Following Pediatric Tonsillectomy in the United States, 2009-2017.** *The Laryngoscope*  
Qian, Z. J., Alyono, J. C., Jin, M. C., Cooperman, S. P., Cheng, A. G., Balakrishnan, K.  
2020
- **Advances in Inner Ear Therapeutics for Hearing Loss in Children.** *Current otorhinolaryngology reports*  
Aaron, K. A., Kim, G. S., Cheng, A. G.  
2020; 8 (3): 285-294
- **Congenital Orocutaneous Fistula Associated With Ectopic Salivary Glands and Submandibular Gland Aplasia.** *The Laryngoscope*  
Trieu, V., Hosseini, D. K., Kim, G. S., Truong, M. T., Cheng, A. G.  
2020
- **Cerebral volume and diffusion MRI changes in children with sensorineural hearing loss.** *NeuroImage. Clinical*  
Moon, P. K., Qian, J. Z., McKenna, E. n., Xi, K. n., Rowe, N. C., Ng, N. N., Zheng, J. n., Tam, L. T., MacEachern, S. J., Ahmad, I. n., Cheng, A. G., Forkert, N. D., Yeom, et al  
2020; 27: 102328
- **Dual regulation of planar polarization by secreted Wnts and Vangl2 in the developing mouse cochlea.** *Development (Cambridge, England)*  
Huarcaya Najarro, E., Huang, J., Jacobo, A., Quiruz, L. A., Grillet, N., Cheng, A. G.  
2020
- **Congenital Hearing Loss Is Associated With a High Incidence of Central Nervous System Abnormalities.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otolology and Neurotology*  
Sayyid, Z. N., Boldt, B. n., Mokhtari, T. E., Schoppy, K. n., Yeom, K. W., Cheng, A. G.  
2020
- **Dual regulation of planar polarization by secreted Wnts and Vangl2 in the developing mouse cochlea.** *Development (Cambridge, England)*  
Huarcaya Najarro, E. n., Huang, J. n., Jacobo, A. n., Quiruz, L. A., Grillet, N. n., Cheng, A. G.  
2020
- **International Pediatric Otolaryngology Group (IPOG) Consensus Recommendations: Congenital Cholesteatoma.** *Otology & neurotology : official publication of the American Otological Society, American Neurotology Society [and] European Academy of Otolology and Neurotology*

- Denoyelle, F., Simon, F., Chang, K. W., Chan, K. H., Cheng, A. G., Cheng, A. T., Choo, D. I., Daniel, S. J., Farinetti, A., Garabedian, E., Greinwald, J. H., Hoff, S. R., Hone, et al  
2019
- **beta-Catenin is required for radial cell patterning and identity in the developing mouse cochlea.** *Proceedings of the National Academy of Sciences of the United States of America*  
Jansson, L., Ebeid, M., Shen, J. W., Mokhtari, T. E., Quiruz, L. A., Ornitz, D. M., Huh, S., Cheng, A. G.  
2019
  - **Atoh1 Directs Regeneration and Functional Recovery of the Mature Mouse Vestibular System.** *Cell reports*  
Sayyid, Z. N., Wang, T., Chen, L., Jones, S. M., Cheng, A. G.  
2019; 28 (2): 312
  - **Uncoordinated maturation of developing and regenerating postnatal mammalian vestibular hair cells.** *PLoS biology*  
Wang, T. n., Niwa, M. n., Sayyid, Z. N., Hosseini, D. K., Pham, N. n., Jones, S. M., Ricci, A. J., Cheng, A. G.  
2019; 17 (7): e3000326
  - **Direct cellular reprogramming and inner ear regeneration.** *Expert opinion on biological therapy*  
Atkinson, P. J., Kim, G. S., Cheng, A. G.  
2018
  - **Aminoglycoside ribosome interactions reveal novel conformational states at ambient temperature** *NUCLEIC ACIDS RESEARCH*  
O'Sullivan, M. E., Poitevin, F., Sierra, R. G., Gati, C., Dao, E., Rao, Y., Aksit, F., Ciftci, H., Corsepius, N., Greenhouse, R., Hayes, B., Hunter, M. S., Liang, et al  
2018; 46 (18): 9793–9804
  - **Aminoglycoside ribosome interactions reveal novel conformational states at ambient temperature.** *Nucleic acids research*  
O'Sullivan, M. E., Poitevin, F., Sierra, R. G., Gati, C., Dao, E. H., Rao, Y., Aksit, F., Ciftci, H., Corsepius, N., Greenhouse, R., Hayes, B., Hunter, M. S., Liang, et al  
2018
  - **Molecular therapy for genetic and degenerative vestibular disorders.** *Current opinion in otolaryngology & head and neck surgery*  
Sayyid, Z. N., Kim, G. S., Cheng, A. G.  
2018
  - **Sox2 haploinsufficiency primes regeneration and Wnt responsiveness in the mouse cochlea** *JOURNAL OF CLINICAL INVESTIGATION*  
Atkinson, P. J., Dong, Y., Gu, S., Liu, W., Najjarro, E., Udagawa, T., Cheng, A. G.  
2018; 128 (4): 1641–56
  - **Mind Your Ears: A New Antidote to Aminoglycoside Toxicity?** *JOURNAL OF MEDICINAL CHEMISTRY*  
O'Sullivan, M. E., Cheng, A. G.  
2018; 61 (1): 81–83
  - **Basilar Membrane Vibration After Targeted Removal of the Third Row of OHCs and Deiters Cells**  
Xia, A., Udagawa, T., Raphael, P. D., Cheng, A. G., Steele, C. R., Applegate, B. E., Oghalai, J. S., Bergevin, C., Puria, S.  
AMER INST PHYSICS.2018
  - **Towards the Prevention of Aminoglycoside-Related Hearing Loss.** *Frontiers in cellular neuroscience*  
O'Sullivan, M. E., Perez, A., Lin, R., Sajjadi, A., Ricci, A. J., Cheng, A. G.  
2017; 11: 325
  - **Towards the Prevention of Aminoglycoside-Related Hearing Loss** *Frontiers in Cellular Neuroscience*  
O'Sullivan, M. E., Perez, A., Lin, R., Ricci, A. J., Cheng, A. G.  
2017; 11: 325
  - **Profiling Specific Inner Ear Cell Types Using Cell Sorting Techniques.** *Methods in molecular biology (Clifton, N.J.)*  
Jan, T. A., Jansson, L., Atkinson, P. J., Wang, T., Cheng, A. G.  
2016; 1427: 431-445
  - **Intraoperative acupuncture for posttonsillectomy pain: A randomized, double-blind, placebo-controlled trial** *LARYNGOSCOPE*  
Tsao, G. J., Messner, A. H., Seybold, J., Sayyid, Z. N., Cheng, A. G., Golianu, B.



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- **Sensory hair cell development and regeneration: similarities and differences** *DEVELOPMENT*  
Atkinson, P. J., Najjarro, E. H., Sayyid, Z. N., Cheng, A. G.  
2015; 142 (9): 1561-1571
- **Intraoperative acupuncture for posttonsillectomy pain: A randomized, double-blind, placebo-controlled trial.** *The Laryngoscope*  
Tsao, G. J., Messner, A. H., Seybold, J., Sayyid, Z. N., Cheng, A. G., Golianu, B.  
2015
- **Making sense of Wnt signaling-linking hair cell regeneration to development** *FRONTIERS IN CELLULAR NEUROSCIENCE*  
Jansson, L., Kim, G. S., Cheng, A. G.  
2015; 9
- **Protein-engineered hydrogel encapsulation for 3-d culture of murine cochlea.** *Otology & neurotology*  
Chang, D. T., Chai, R., DiMarco, R., Heilshorn, S. C., Cheng, A. G.  
2015; 36 (3): 531-538
- **Designer aminoglycosides prevent cochlear hair cell loss and hearing loss.** *journal of clinical investigation*  
Huth, M. E., Han, K., Sotoudeh, K., Hsieh, Y., Effertz, T., Vu, A. A., Verhoeven, S., Hsieh, M. H., Greenhouse, R., Cheng, A. G., Ricci, A. J.  
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- **Lgr5+ cells regenerate hair cells via proliferation and direct transdifferentiation in damaged neonatal mouse utricle.** *Nature communications*  
Wang, T., Chai, R., Kim, G. S., Pham, N., Jansson, L., Nguyen, D., Kuo, B., May, L. A., Zuo, J., Cunningham, L. L., Cheng, A. G.  
2015; 6: 6613-?
- **Spontaneous hair cell regeneration in the neonatal mouse cochlea in vivo (vol 141, pg 816, 2014)** *DEVELOPMENT*  
Cox, B. C., Chai, R., Lenoir, A., Liu, Z., Zhang, L., Duc-Huy Nguyen, Chalasani, K., Steigelman, K. A., Fang, J., Rubel, E. W., Cheng, A. G., Zuo, J.  
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- **Spontaneous hair cell regeneration in the neonatal mouse cochlea in vivo** *DEVELOPMENT*  
Cox, B. C., Chai, R., Lenoir, A., Liu, Z., Zhang, L., Nguyen, D., Chalasani, K., Steigelman, K. A., Fang, J., Cheng, A. G., Zuo, J.  
2014; 141 (4): 816-829
- **Transient, afferent input-dependent, postnatal niche for neural progenitor cells in the cochlear nucleus (vol 110, pg 14456, 2013)** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Volkenstein, S., Oshima, K., Sinkkonen, S. T., Corrales, C., Most, S. P., Chai, R., Jan, T. A., van Amerongen, R., Cheng, A. G., Heller, S.  
2013; 110 (42): 17160
- **Transient, afferent input-dependent, postnatal niche for neural progenitor cells in the cochlear nucleus.** *Proceedings of the National Academy of Sciences of the United States of America*  
Volkenstein, S., Oshima, K., Sinkkonen, S. T., Corrales, C. E., Most, S. P., Chai, R., Jan, T. A., Cheng, A. G., Heller, S.  
2013; 110 (35): 14456-14461
- **Tympanic border cells are Wnt-responsive and can act as progenitors for postnatal mouse cochlear cells** *DEVELOPMENT*  
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