

# Division of Pediatric Otolaryngology

DIVISION PROFILE	
Number of Faculty	9
Number of Fellows	
Clinical Fellows	4
Number of Graduate Students	2
Number of Other Students (full and part-time)	2
Number of Support Personnel	45
Annual Total Grant Support (direct)	\$666,059
Number of Peer Reviewed Publications	21
Patient Encounters	
Outpatient	42,190
Inpatient	871

## FACULTY LISTING

**Robin T. Cotton, MD**, Professor, Director, Division of Pediatric Otolaryngology-Head & Neck Surgery; Director, Aerodigestive and Sleep Center  
**Ellis M. Arjmand, MD, PhD**, Associate Professor, Director, Center for Hearing and Deafness Research  
**Daniel I. Choo, MD**, Associate Professor  
**Ravindhra G. Elluru, MD, PhD**, Assistant Professor  
**John H. Greinwald, MD**, Associate Professor, Director, Otolaryngology Research Committee  
**Charles M. Myer, III, MD**, Professor  
**Michael J. Rutter, MD**, Assistant Professor  
**Sally R. Shott, MD**, Associate Professor, Secretary, SENTAC 2003 -2006  
**Jay P. Willging, MD**, Professor, Director, Otolaryngology Residency Program; Director Interdisciplinary Feeding Team

## OVERVIEW

The Division of Pediatric Otolaryngology-Head & Neck Surgery is dedicated to improving the lives of infants, children, and young adults the world over by combining the latest in state of the art technology and facilities with unsurpassed knowledge of otolaryngology care. This synergy results in the best possible care for our children and leverages this division as a national and international referral center for complex otolaryngologic conditions. As a leader in pediatric otolaryngology, this division must focus their efforts on three key areas. First, we must meet the educational needs of our patients, their families and the community with regard to various otolaryngologic conditions and their treatments. Second, our faculty is strongly committed to training the next generation of otolaryngology physicians; to this end the department currently has four pediatric otolaryngology fellows in training and continues to provide many international physicians with observational rotations each year. The division also has four residents from the University of Cincinnati's Department of Otolaryngology who complete their pediatric otolaryngology rotations with us. Thirdly, through research and development, from both the bench top and the bedside, innovative and state-of-the-art standards for treatment and care are being investigated.

One of the goals of the research program continues to be providing residents and fellows with exposure to scientific methodologies and to provide them with an opportunity to apply these methodologies to specific scientific and/or clinical questions of interest. The division provides research projects as well as facilities and equipment to our trainees to add to their research experience during their six month research rotations.



*Left to Right: (1<sup>st</sup> row) S. Shott, R. Cotton, C. Myer, J.P. Willging, (2<sup>nd</sup> row) J. Greinwald, E. Arjmand, R. Elluru, M. Rutter, D. Choo,*

## HIGHLIGHTS

The division has successfully used pediatric nurse practitioners for several years in the outpatient arena. Building on this success, the division completed its first year of using PNP's to provide both inpatient and outpatient services. These individuals work as a team with the staff nurses, residents, fellows and faculty to provide an increased level of care to the patients. The level of communication between the service and other healthcare professionals participating in the care of the children has improved; evident in the amount of positive feedback given to the division director regarding the use of PNP's in the otolaryngology service and on the floor during daily rounds. Dr. Cotton is also heavily involved in the Clinical Service Improvement (CSI) initiatives for the outpatient services.

Laryngeal and tracheal anomalies continue to challenge pediatric otolaryngologists the world over. Dr. Robin Cotton is among the world's finest airway surgeons, having pioneered the techniques now generally accepted throughout the medical community. As such, the division receives many complex national and international referrals. Dr. Mike Rutter continues to assist Dr. Cotton in developing the airway practice nationally and internationally.

Building on initial research success that made him a Procter Scholar, Dr. Ravi Elluru successfully competed for his first NIH grant this year. The project, "Genetic Determinants of Respiratory Tract Cartilage" will look at the role of Sox 9 and Fibroblast Growth Factor 18, among other genes, in the developing respiratory tract. The work done here by Dr. Elluru is translational in nature as the discoveries made on the bench top could lead directly to the development of new diagnostic and treatment regimens for congenital and acquired lesions of the upper respiratory tract.

The goals for The Center for Hearing and Deafness Research (CHDR) are to improve the clinical care and quality of life of children with hearing impairment by providing optimal and innovative medical and surgical management, and to advance our understanding of the biological basis for normal hearing and deafness through cutting edge molecular research. The center has many components including the cochlear implantation team, microtia and aural atresia programs, molecular diagnostic lab, and the basic science research programs. The growth of CHDR has been steady, particularly since our physicians began to see patients at the Dayton Children's Hospital last year. In fact the growth of both clinical and research programs of CHDR was such that it became necessary to expand the center this year. The division welcomes Ellis

Arjmand, MD, PhD as the new director of CHDR beginning in July 2004. Dr. Arjmand will look to expand both the clinical and research programs within CHDR by recruiting a PhD researcher to independently pursue clinical audiology projects.

In recent years, this division has made a shift in our research philosophy to one that focuses on the involvement in translational research initiatives which focus on the meld of bench top research and clinical care. In addition to the divisional and NIH funded research that is ongoing, Dr. John Greinwald, Jr. and other CCHMC researchers were the recipients of the state sponsored Biomedical Research and Technology Transfer (BRTT) grant awarded by Governor Bob Taft. This BRTT grant looks to further the research started by Dr. Greinwald into the development, validation, and eventual marketing of a hearing loss gene chip. This chip technology will eventually allow mass screening of all known genetic abnormalities causing hearing loss. What once took time and many tests to accomplish will be identified with a single, cost-effective test.

Demonstrating his passion for process improvement, Dr. Paul Willging continues to monitor the PI initiatives of this division. Dr. Willging is also chair of the P2 Education Materials Task Force whose charge is to develop a hospital template for consistent educational materials for patients and families related to the perioperative process and surgical procedures. Additionally, the Residency Training Program, of which Dr. Willging is Director, was granted continued accreditation with ACGME.

Dr. Shott and Dr. Myer continue to provide the highest level of general pediatric otolaryngology care. Dr. Shott is committed to improving the care of Down syndrome patients and continues her research with aid from the Emily Hayes Down Syndrome Research Grant. Dr. Myer is actively involved in ongoing clinical trials research and works closely with drug and equipment vendors to supply the division with the latest innovative products.

## TRAINING

David White, MD	PGY-VI	Medical University of South Carolina
Karne Zur, MD	PGY-VI	Albert Einstein College of Medicine
Mark Boston, MD	PGY-VII	University of Arizona
Diego Preciado, MD	PGY-VII	University of Minnesota

## GRANTS, CONTRACTS AND INDUSTRY AGREEMENTS

Grant and Contract Awards	Annual Direct/Project Period Direct
Choo, D	
<b>Molecular Development of the Endolymphatic Duct and Sac</b>	
National Institutes of Health K08 DC 00193	04/02/01 – 03/31/06 \$153,393/\$576,875
Elluru, R	
<b>Genetic Determinants of Respiratory Tract Cartilage</b>	
National Institutes of Health K08 HD 045703	01/01/04 – 12/31/08 \$115,750/\$578,750
Greinwald, J	
<b>Identification and Characterization of the DFNB17 Gene</b>	
National Institutes of Health K08 DC 05424	05/15/02 – 04/30/07 \$176,662/\$886,817
<b>Biomedical Research and Technology Transfer CMC - Subproject</b>	
Ohio Department of Development	12/15/03 – 06/15/07 \$220,254
<b>Current Year Direct</b>	
	<b>\$666,059</b>

## Industry Contracts

<b>Current Year Direct Receipts</b>	<b>\$0</b>
<b>TOTAL</b>	<b>\$666,059</b>

## PUBLICATIONS

1. Chadwell JB, Halsted MJ, **Choo DI, Greinwald JH**, Benton C. The cochlear cleft. *AJNR Am J Neuroradiol* 2004;25(1):21-4.
2. Guo Y, Pilipenko V, Lim LH, Dou H, Johnson L, Srisailapathy CR, Ramesh A, **Choo DI, Smith RJ, Greinwald JH**. Refining the DFNB17 interval in consanguineous Indian families. *Mol Biol Rep* 2004;31(2):97-105.
3. Lim LH, Bradshaw JK, Guo Y, Pilipenko V, Madden C, Ingala D, Keddache M, **Choo DI, Wenstrup R, Greinwald JH, Jr.** Genotypic and phenotypic correlations of DFNB1-related hearing impairment in the Midwestern United States. *Arch Otolaryngol Head Neck Surg* 2003;129(8):836-40.
4. Lonser RR, Kim HJ, Butman JA, Vortmeyer AO, **Choo DI, Oldfield EH**. Tumors of the endolymphatic sac in von Hippel-Lindau disease. *N Engl J Med* 2004;350(24):2481-6.
5. Madden C, Halsted MJ, Hopkin RJ, **Choo DI, Benton C, Greinwald JH, Jr.** Temporal bone abnormalities associated with hearing loss in Waardenburg syndrome. *Laryngoscope* 2003;113(11):2035-41.
6. Pilipenko VV, Reece A, **Choo DI, Greinwald JH, Jr.** Genomic organization and expression analysis of the murine Fam3c gene. *Gene* 2004;335:159-68.
7. Miyamoto RC, **Cotton RT, Rope AF, Hopkin RJ, Cohen AP, Shott SR, Rutter MJ**. Association of anterior glottic webs with velocardiofacial syndrome (chromosome 22q11.2 deletion). *Otolaryngol Head Neck Surg* 2004;130(4):415-7.
8. Preciado D, **Cotton RT, Rutter MJ**. Single-stage tracheal resection for severe tracheal stenosis in older children. *Int J Pediatr Otorhinolaryngol* 2004;68(1):1-6.
9. **Elluru RG**, Whitsett JA. Potential role of Sox9 in patterning tracheal cartilage ring formation in an embryonic mouse model. *Arch Otolaryngol Head Neck Surg* 2004;130(6):732-6.
10. Madden C, Halsted M, Benton C, **Greinwald J, Choo D**. Enlarged vestibular aqueduct syndrome in the pediatric population. *Otol Neurotol* 2003;24(4):625-32.
11. Lim LH, Kumar M, **Myer CM, 3rd**. Head and neck trauma in hospitalized pediatric patients. *Otolaryngol Head Neck Surg* 2004;130(2):255-61.
12. **Myer CM, 3rd**. The evolution of otological therapy: from cumin to quinolones. *Ear Nose Throat J* 2004;83(1 Suppl):9-11.
13. **Myer CM, 3rd**. Trauma of the larynx and craniofacial structures: airway implications. *Paediatr Anaesth* 2004;14(1):103-6.
14. Boston M, **Rutter MJ**. Current airway management in craniofacial anomalies. *Curr Opin Otolaryngol Head Neck Surg* 2003;11(6):428-32.
15. **Rutter MJ, Cotton RT**. The use of posterior cricoid grafting in managing isolated posterior glottic stenosis in children. *Arch Otolaryngol Head Neck Surg* 2004;130(6):737-9.
16. **Rutter MJ, Willging JP, Cotton RT**. Nonoperative management of complete tracheal rings. *Arch Otolaryngol Head Neck Surg* 2004;130(4):450-2.
17. Heubi C, **Shott SR**. PANDAS: pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections--an uncommon, but important indication for tonsillectomy. *Int J Pediatr Otorhinolaryngol* 2003;67(8):837-40.

18. Lim LH, Hartnick CJ, **Willging JP**. A rare case of combined type I and II first branchial sinus. *J Pediatr Surg* 2003;38(10):E12-3.
19. Miller CK, **Willging JP**. Advances in the evaluation and management of pediatric dysphagia. *Curr Opin Otolaryngol Head Neck Surg* 2003;11(6):442-6.
20. Miller RS, **Willging JP**, **Rutter MJ**, Rookkapan K. Chronic esophageal foreign bodies in pediatric patients: a retrospective review. *Int J Pediatr Otorhinolaryngol* 2004;68(3):265-72.
21. **Willging JP**. Velopharyngeal insufficiency. *Curr Opin Otolaryngol Head Neck Surg* 2003;11(6):452-5.