

## 2015 Research Annual Report

# Otolaryngology

### RESEARCH AND TRAINING DETAILS



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Faculty	11
Joint Appointment Faculty	3
Research Students	2
Support Personnel	50
Peer Reviewed Publications	27

### CLINICAL ACTIVITIES AND TRAINING

Clinical Fellows	6
Inpatient Encounters	1,022
Outpatient Encounters	46,555

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## Research Highlights

### Alternative Procedure for Bilateral Vocal Cord Paralysis

**Dr. Michael Rutter** developed a new procedure for the treatment of infants with bilateral vocal cord paralysis. The endoscopic submucosal posterior cricoid split with bioabsorbable spacer can be performed as a minimally invasive

alternative to tracheotomy in patients with bilateral vocal cord paralysis.

## Aeris Balloon Catheter

**Dr. Michael Rutter**, working in conjunction with **Bryan Medical**, developed the aeris balloon dilation catheter. During a dilation procedure, the aeris balloon catheter solves the problem of slippage beyond the stenotic portion of the airway by utilizing a double balloon that inflates both superiorly and inferiorly to the lesion thus focusing the pressure where it needs to be. The result is a safer, timely and efficient way to perform airway dilations.

## Cincinnati Boys Choir

**Dr. Alessandro deAlarcon**, and the members of the **Voice Team**, engaged the **Cincinnati Boys Choir** in a long-term study analyzing voice and anatomical changes in choir members over their adolescence years. This unique study is one of the few in the country that deals with the arts. In addition to providing valuable scientific data, the hope is to also provide voice teachers, and coaches, with the tools they need to help young boys continue singing once their voice changes after puberty.

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## Division Publications

1. Baldassari CM, Alam L, Vigilar M, Benke J, Martin C, Ishman S. **Correlation between REM AHI and quality-of-life scores in children with sleep-disordered breathing**. *Otolaryngol Head Neck Surg*. 2014; 151:687-91.
2. Bergmark RW, Ishman SL, Scangas GA, Cunningham MJ, Sedaghat AR. **Insurance Status and Quality of Outpatient Care for Uncomplicated Acute Rhinosinusitis**. *JAMA Otolaryngol Head Neck Surg*. 2015; 141:505-11.
3. Boss EF, Benke JR, Tunkel DE, Ishman SL, Bridges JF, Kim JM. **Public insurance and timing of polysomnography and surgical care for children with sleep-disordered breathing**. *JAMA Otolaryngol Head Neck Surg*. 2015; 141:106-11.
4. Chatterjee D, Friedman N, Shott S, Mahmoud M. **Anesthetic dilemmas for dynamic evaluation of the pediatric upper airway**. *Semin Cardiothorac Vasc Anesth*. 2014; 18:371-8.
5. Cotton RT, deAlarcon A. **50 years ago in the Journal of Pediatrics: the problem of detubating an infant with a tracheostomy**. *J Pediatr*. 2014; 165:446.
6. Fleck RJ, Amin RS, Shott SR, Mahmoud MA. **MRI sleep studies: use of positive airway pressure support in patients with severe obstructive sleep apnea**. *Int J Pediatr Otorhinolaryngol*. 2014; 78:1163-6.
7. Garetz SL, Mitchell RB, Parker PD, Moore RH, Rosen CL, Giordani B, Muzumdar H, Paruthi S, Elden L, Willging P, Beebe DW, Marcus CL, Chervin RD, Redline S. **Quality of life and obstructive sleep apnea symptoms after pediatric adenotonsillectomy**. *Pediatrics*. 2015; 135:e477-86.
8. Gooi Z, Ishman SL, Bock JM, Blumin JH, Akst LM. **Laryngopharyngeal reflux: paradigms for evaluation, diagnosis, and treatment**. *Ann Otol Rhinol Laryngol*. 2014; 123:677-85.
9. Hart CK, de Alarcon A, Tabangin ME, Hamilton S, Rutter MJ, Pentiu SP, Garza JM. **Impedance probe testing prior to pediatric airway reconstruction**. *Ann Otol Rhinol Laryngol*. 2014; 123:641-6.
10. Hart CK, Rutter MJ. **Tracheobronchial Issues in Congenital Heart Disease**. *Semin Thorac Cardiovasc Surg Pediatr Card Surg Annu*. 2015; 18:57-61.
11. Ishman SL, Benke JR, Cohen AP, Stephen MJ, Ishii LE, Gourin CG. **Does surgery for obstructive sleep apnea improve depression and sleepiness?** *Laryngoscope*. 2014; 124:2829-36.

12. Ishman SL, Yang CJ, Cohen AP, Benke JR, Meinzen-Derr JK, Anderson RM, Madden ME, Tabangin ME. **Is the OSA-18 predictive of obstructive sleep apnea: Comparison to polysomnography.** *Laryngoscope*. 2015; 125:1491-5.
13. Katz ES, Moore RH, Rosen CL, Mitchell RB, Amin R, Arens R, Muzumdar H, Chervin RD, Marcus CL, Paruthi S, Willging P, Redline S. **Growth after adenotonsillectomy for obstructive sleep apnea: an RCT.** *Pediatrics*. 2014; 134:282-9.
14. Kimple AJ, Baldassari CM, Cohen AP, Landry A, Ishman SL. **Polysomnographic results of prone versus supine positioning in micrognathia.** *Int J Pediatr Otorhinolaryngol*. 2014; 78:2056-9.
15. Miller JW, Hart CK, Statile CJ. **Oesophageal perforation in a neonate during transoesophageal echocardiography for cardiac surgery.** *Cardiol Young*. 2015; 25:1015-8.
16. Myer CM, 3rd, Willging JP, Choo DI, Pensak ML. **Duty bound.** *Laryngoscope*. 2014; 124:1507-8.
17. Myer CMt, Johnson CM, Postma GN, Weinberger PM. **Comparison of tensile strength of fibrin glue and suture in microflap closure.** *Laryngoscope*. 2015; 125:167-70.
18. Nayak G, Varga L, Trincot C, Shahzad M, Friedman PL, Klimes I, Greinwald JH, Jr., Riazuddin SA, Masindova I, Profant M, Khan SN, Friedman TB, Ahmed ZM, Gasperikova D, Riazuddin S, Riazuddin S. **Molecular genetics of MARVELD2 and clinical phenotype in Pakistani and Slovak families segregating DFNB49 hearing loss.** *Hum Genet*. 2015; 134:423-37.
19. Orr JE, Ishman SL, Sarmiento KF. **Stimulating Progress in the Upper Airway.** *Sleep*. 2015; 38:851-2.
20. Osborn AJ, de Alarcon A, Tabangin ME, Miller CK, Cotton RT, Rutter MJ. **Swallowing function after laryngeal cleft repair: more than just fixing the cleft.** *Laryngoscope*. 2014; 124:1965-9.
21. Pique LM, Brennan ML, Davidson CJ, Schaefer F, Greinwald J, Jr., Schrijver I. **Mutation analysis of the SLC26A4, FOXI1 and KCNJ10 genes in individuals with congenital hearing loss.** *PeerJ*. 2014; 2:e384.
22. Prosser JD, Myer CM, 3rd. **Branchial cleft anomalies and thymic cysts.** *Otolaryngol Clin North Am*. 2015; 48:1-14.
23. Provenzano MJ, Choo DI. **What is the best method to treat CSF leaks following resection of an acoustic neuroma?** *Laryngoscope*. 2014; 124:2651-2.
24. Rutter MJ. **Congenital laryngeal anomalies.** *Braz J Otorhinolaryngol*. 2014; 80:533-9.
25. Sidell DR, Zacharias S, Balakrishnan K, Rutter MJ, de Alarcon A. **Surgical management of posterior glottic diastasis in children.** *Ann Otol Rhinol Laryngol*. 2015; 124:72-8.
26. Willging JP. **Obstructive sleep apnea.** *Adv Otorhinolaryngol*. 2015; 76:86-8.
27. Willging JP. **Persistent velopharyngeal insufficiency.** *Adv Otorhinolaryngol*. 2015; 76:81-5.

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## Faculty, Staff, and Trainees

### Faculty Members

**Daniel I. Choo, MD**, Professor  
Leadership Director, Department of Pediatric Otolaryngology

**Robin T. Cotton, MD**, Professor

**Leadership** Director, Aerodigestive and Sleep Center

**Alessandro deAlarcon, MD**, Associate Professor

**Leadership** Director, Voice Clinic

**John. H. Greinwald Jr., MD**, Professor

**Catherine Hart, MD**, Assistant Professor

**Stacey Ishman, MD, MPH**, Associate Professor

**Leadership** Surgical Director, Upper Airway Center

**Charles M. Myer III, MD**, Professor

**Leadership** Director, Pediatric Otolaryngology Residency Program

**Charles M. Myer IV, MD**, Assistant Professor

**Michael J. Rutter, MD**, Professor

**Sally R. Shott, MD**, Professor

**J. Paul Willging, MD**, Professor

**Leadership** Director, Pediatric Otolaryngology Fellowship Program

## Joint Appointment Faculty Members

**Dimitar Deliyiski, PhD**, Associate Professor (Communication Science Research Center)

**Research Interests** Communication Disorders

**Scott Holland, PhD**, Professor (Neuroimaging Research Consortium)

**Research Interests** Neuroimaging

**Jareen Meinzen-Derr, MPH, PhD**, Assistant Professor (Biostatistics & Epidemiology)

**Research Interests** Epidemiology

## Clinical Staff Members

- **Michael Bowen, PA-C, RN, MA**, Adult Airway

## Trainees

- **Michael Demarcantonio, MD**, PGYVII, Eastern Virginia Medical School
  - **David Smith, MD, PhD**, PGYVI, Johns Hopkins Hospital
  - **Niall Jefferson, MD FRACS**, PGYVI, New South Wales, Australia
  - **Drew Prosser, MD**, PGYVII, Georgia Regents in Augusta
  - **April Landry, MD**, PGYVII, Mayo Clinic-Phoenix
  - **Christina Yang, MD**, PGYII, Tulane University School of Medicine
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# Evidence-Based Decision Making Found Lacking in Sleep Apnea Management



Stacey Ishman, MD, MPH

Most care decisions for the management of obstructive sleep apnea (OSA) in children are based on widely varying clinical experience rather than being evidence-based, including when to refer patients for subspecialty clinic follow-up and when to order follow-up overnight-sleep studies, according to research led by members of the Division of Otolaryngology.

The research team presented new findings from an ongoing research effort at the Triological Society Combined Sections Meeting in San Diego in January 2015. One article based on the presented findings has been accepted for publication in *The Laryngoscope*, while another has been submitted to the journal *Otolaryngology — Head & Neck Surgery*.

In the initial, smaller study, Stacey Ishman, MD, MPH, led a team that examined 324 decisions on 58 patients made at clinics and care conferences over a one-week period. Subspecialists explained the basis of their decisions, which were then classified into 10 categories. The findings: only 34 percent of decisions were evidence-based, while 59 percent were non-evidence-based and 7 percent were based on parental preference. Providers were able to cite specific studies for less than 20 percent of their decisions.

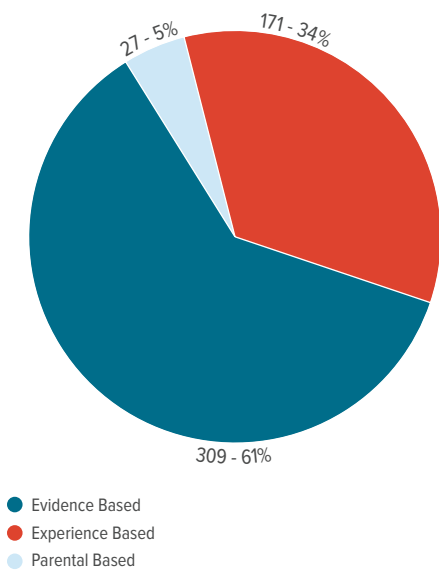
In a companion study for *The Laryngoscope*, the team analyzed these gaps over a two-month period. That study of 507 decisions found that the proportion of non-evidence-based decisions actually increased two percentage points from the shorter study, while parental-based decisions dropped by two percentage points.

The most common non-evidence-based decisions analyzed included the timing and appropriate subspecialty clinic follow-up location (38 percent), as well as indications for overnight-sleep studies (11 percent), especially in children at high-risk for persistent OSA such as those with Down syndrome or obesity. Additional gaps included the likelihood of OSA improvement from weight loss and the effectiveness of sleep surgical procedures.

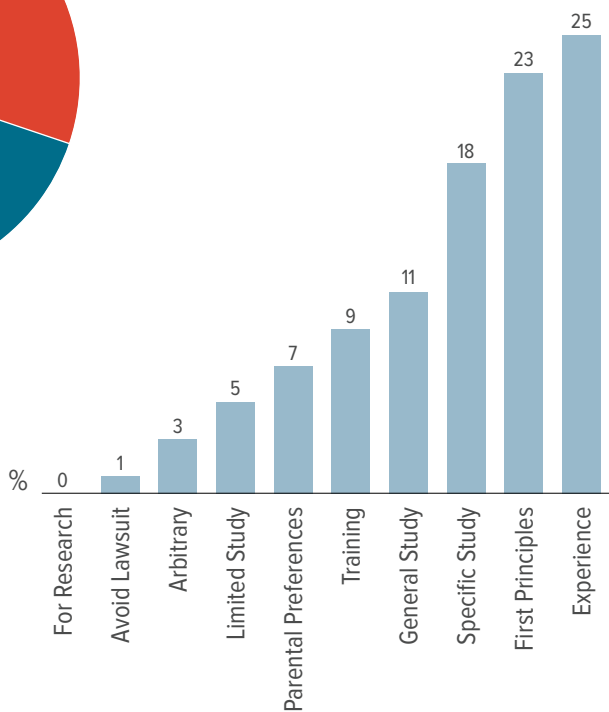
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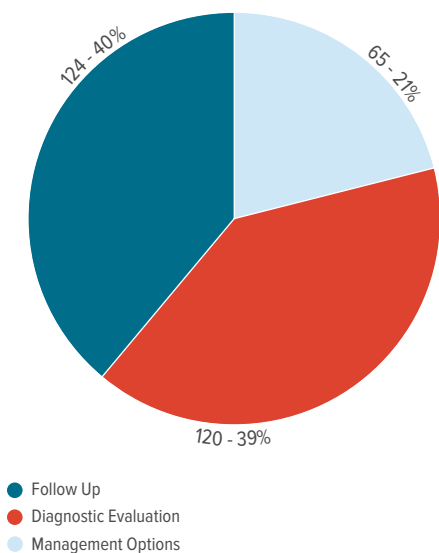
Decision-making by category



Factors that guided decisions



Nature of non-evidence-based decisions



In examining decisions by subspecialists treating children with obstructive sleep apnea (OSA), researchers found that most decisions were not evidence-based (top) and that physician experience was the most common factor in decision-making (above). The team analyzed the kinds of decisions that were not evidence-based (bottom) and learned that the overwhelming majority regarded follow-up options and diagnostic evaluations such as overnight sleep studies.