

## Educational Objectives

- Understand the underlying cause of RRP
- Discuss various etiologies, comorbidities of vocal fold dysfunction in pediatric patients
- Identify medical and surgical options for gender-affirming voice care.
- Understand concordance rates in diagnosis and management provided between initial telemedicine visit and follow-up in-person visit with laryngoscopy exam for new patients with laryngology-related complaints
- Better understand voice handicap changes following cricotracheal resection
- Understand current grading and assessment of laryngotracheal stenosis
- Identify 2 hypothesized patient-reported barriers for poor attendance
- Describe how an open source computer vision tool may be applied to assess the anterior glottic angle for patients with bilateral vocal fold immobility
- Compare objective and subjective voice rest adherence.
- Discuss the functional mechanism underlying Semi-Occluded Vocal Tract Exercise (SOVTE) programs (i.e., back pressure) as well as list 1-2 clinical problems with existing programs in this context.
- To describe contemporary options for vocal fold injection medialization
- Describe potential perioperative risks associated with laryngeal framework surgery.
- Understand a novel method to collect patient-reported outcome measures
- Describe the shortcomings of current voice recognition systems when given input from dysphonic voices
- Identify that dyspnea is a common symptom in patients with unilateral vocal fold paralysis.
- Discuss the role for pepsin (independent of gastric acid) in reflux-attributed laryngeal symptoms and endoscopic findings refractory to PPI therapy
- Determine the effectiveness and reliability of voice analysis performed with surgical masks and respirators during the pandemic
- Explain the importance of mechanical forces in the vocal fold.
- Use a novel worksheet to diagnose the anatomic distribution of recurrent respiratory papillomatosis (RRP)
- Describe the use of each the VFSS, BE, and EM studies in the diagnostic protocol for esophageal structure and function.
- Define psychometric properties: reliability, validity, sensitivity to change, and responsiveness
- Understand a new surgical procedure
- describe appropriate instances for consideration of steroid treatment of performers
- Compare post-acute COVID-19 laryngeal diagnoses for patients who required intubation versus patients who had more mild disease
- apply patient reported outcome measures in assessing chronic refractory cough and laryngeal sensory dysfunction.
- Describe the Daily Phonotrauma Index and how it may estimate phonotraumatic voice use.
- Assess the primary efficacy outcomes of feminization laryngoplasty across this 17-year consecutive cohort
- Participants should be able to verbalize understanding of basic aerosol production measurement
- Appreciate the impact of the novel COVID-19 respiratory virus on mechanical ventilation protocols.
- Describe the vocal fold wound healing effects of AF in an animal model
- recognize that specific masks have minimal effect on most clinical acoustic variables
- Describe the theorized mechanism which supports the use of SLN block for treatment of refractory chronic cough.
- To determine if patients seek behavioral therapy for cough suppression
- Understand that voice therapy done on the basis of resonance, flow, prosody and timbre, can result in sustained patient satisfaction as well as sustained pitch elevation.
- Identify risk factors for posterior glottic stenosis
- Discuss the validity and reliability of commonly used outcome measures in chronic cough research and clinical practice.
- Describe feasibility of delivering behavioral cough suppression therapy via telepractice.
- The listener will describe patient satisfaction with voice teletherapy.
- identify resources for normative acoustic data using Praat algorithms.
- Identify patient reported outcome measures for voice, swallowing and upper airway therapy
- Differentiate the various vaping devices and the types of "juices" (chemicals) consumed.
- Understand options for diagnosis of cricopharyngeal dysfunction
- Understand the challenges and limitations of currently commonly-used outcome measurements for gender-affirming voice care, as well as the potential role of an AI-assisted measure in addressing these issues
- Define cough hypersensitivity syndrome

- discuss how the Revised Patterson Edema Scale may be used to reliably rate internal edema
- discuss the relationship between sites of laryngeal edema and swallowing
- Understand the physiology of particulate emissions during particular phonatory tasks
- Define aesthesiometer-based laryngopharyngeal sensation testing.
- describe the nature of functional dysphagia
- Understand prevalence of dysphagia in hospitalized COVID+ patients
- Have a better understanding of the timeline of recovery after COVID-19 infection
- Identify relationships between personality and speaking voice use in vocally healthy singers
- Understand the benefits of laryngeal reinnervation with regard to symptomatic improvement of dysphonia, dyspnea, and dysphagia
- Define "patient experience of a voice disorder."
- Describe the various ways ambulatory voice biofeedback can be provided to improve the immediate acquisition of modified voice use in daily life
- Define key concepts that are part of the Rehabilitation Treatment Specification System (RTSS, a formally developed procedure for specifying treatments) and the RTSS-Voice (i.e., standard, voice-specific terminology based on the RTSS).
- Accurately summarize the Psychobiological Framework of Voice and Stress
- Define communicative congruence and dysphoria
- Have a better understanding of the correlation between VHI and various acoustic measures.
- Understanding of injury models in primary vocal fold epithelial cell culture
- Describe why an automated informative frame selection model is useful for development of deep learning models for diagnosis of laryngeal lesions.
- Categorize the effect of the wound healing process in a rabbit model over time
- get familiar with the new topic
- Understand how EMST targets respiratory function in elderly adults
- Familiarize themselves with the types of questions asked on the TWVQ.
- Identify limitations in current methods used to assess muscle tension dysphonia.
- Describe the type of voice recording needed in voice analytics
- List common types of e-cigarettes
- Understand what pulmonary function parameters are used to track iSGS patients
- Identify common reasons some patients are unable to tolerate in-office KTP laser procedures of the larynx.
- List two distinct categories of phonotrauma
- Compare the presentation, disease course, and treatment of iSGS in non-Caucasian women to Caucasian women.
- Describe the importance of defining the human level performance of perceptually identifying laryngeal mass from voice in the context of developing a machine learning screening tool for laryngeal cancer.
- Learn previous immunotherapy approaches for RRP
- Discuss initial swallow outcomes in pediatric patients with vocal fold dysfunction and how these relate to etiology, comorbidity, laterality and severity..
- Acknowledge health disparities among transgender and gender non-conforming patients.
- Explore associated demographic and clinical factors with concordance rates in diagnosis and management provided between telemedicine and in-person visits with laryngoscopy
- Better understand perceptive changes to the voice following cricotracheal resection
- Understand general process of setting up, running, and interpreting a computational fluid dynamics simulation
- Report attendance, no-show, and cancellation differences between telepractice and in-person therapy
- Understand how AGA in BVFI compares with unilateral vocal fold immobility (UVFI) and normal larynges (NL) as measured by the deep learning computer vision tool
- Analyze the relationships between personality and motivation to adherence of voice rest recommendations.
- Compare distinct differences between PMVE™ and VFE, particularly as it relates to freedom of articulation in conversational voice or singing voice as well as the focus on progressive overload.
- To review early results and adverse events observed with a novel silk based filler material used for vocal fold injection
- Describe patient-specific and surgery-specific factors associated with peri-operative adverse events.
- Determine how response rate trends utilizing the smartphone application fluctuate within a heterogeneous patient population
- Understand broad principles of machine learning as it applies to voice recognition
- Discuss typical dyspnea index values that may occur in patients with unilateral vocal fold paralysis.
- Know which FDA-approved retroviral therapies for HIV bind to and inhibit pepsin, abrogating pepsin-mediated laryngeal inflammation and mucosal damage in vivo

- Discuss its routine applicability
- Understand the relevance of mechanically sensitive proteins in the vocal fold.
- Counsel patients regarding their odds of recurrence based on anatomic region of RRP
- Describe the correlation between VFSS and BE results relative to esophageal structure and function.
- Evaluate the psychometric properties of an ecological vocal effort scale
- Gain knowledge about airway management
- describe stroboscopic, acoustic/aerodynamic, and audio-perceptual outcomes following steroid treatment of performers, including adverse outcomes
- Summarize the available treatment options for patients with post-acute COVID-19 laryngeal injury and dysfunction
- understand pathophysiology of chronic refractory cough.
- Explain the relationship between the Daily Phonotrauma Index and self-reported vocal status ratings.
- Evaluate the revision and complication rate of feminization laryngoplasty over a prolonged follow-up period
- Participants should be able to verbalize difference in aerosol production in shorter versus longer scope exams
- Understand the role of early tracheostomy in overall survival of intubated patients with COVID-19 acute respiratory failure.
- Discuss vocal fold wound healing effects of AF versus HA
- understand the effect of using a face shield during measurement of clinical measures
- List common pharmacologic and non-pharmacologic treatments for chronic cough.
- To assess patient motivation for seeking cough suppressive therapy
- Know that using pitch and voice-related quality of life measures as our guide, we found that approximately 6 sessions of therapy over 3 months appears to provide trans women with sufficient guidance to implement sustainable behavioral voice change.
- Understand the timeline and potential role of early intervention in managing posterior glottic stenosis
- Understand the need for objective and subjective measures in tracking response to treatment in patients with cough hypersensitivity syndrome.
- Compare the efficacy of telepractice versus in-person delivery of behavioral cough suppression therapy.
- The listener will evaluate factors which may influence patient satisfaction with voice teletherapy.
- describe strategies for improving success with remote acoustic voice recording.
- Describe the relationships between the MoCA and therapy outcomes
- Summarize the results of this study and explain potential clinical, societal, and future research implications.
- Understand the incidence of coexisting esophageal pathology in patients with cricopharyngeal dysfunction
- Compare the performance of the AI model to expert and naive human listeners in recognizing voice gender
- Describe cough desensitization treatment
- describe strategies to use during endoscopic assessment to fully visualize the extent of edema in multiple structures
- identify important structures to impact of swallowing safety
- Understand the potential impact between particulate emission and communication drive
- Interpret the relationship between aesthesiometer force and the triggering threshold of the laryngeal adductor reflex.
- Discuss the role of SLP, laryngology, GI and Behavioral psychology in management of FD
- Understand demographics and potential risk factors for dysphagia in hospitalized COVID+ patients
- Appreciate differences of presenting symptoms between hospitalized and non-hospitalized COVID-19 survivors presenting to a Otolaryngology clinic
- Identify relationships between personality and speaking voice use in singers with vocal fold nodules
- Compare and contrast short-term versus long-term utility of laryngeal reinnervation
- Name three psychological constructs that may contribute to the experience of a voice disorder.
- Describe the various ways ambulatory voice biofeedback can be provided to improve longer-term retention of modified voice use in daily life
- Use the RTSS and RTSS-Voice to specify 4 evidence-based treatments and apply them to one's own clinical practice or research.
- Discuss how patients with MTD report higher levels of stress than patients with other voice disorders
- State how these proposed constructs do or do not fluctuate over time
- Describe which acoustic parameters best correlate with self-assessment of voice.
- Basic understanding of the methods to quantitatively evaluate injury in epithelial cell culture
- Understand the process for training and testing a deep learning classifier.
- Compare structural and electrical differences between healthy and injured tissue
- know the efficacy of the proposed treatment so far
- Understand the benefits of PhoRTE on voice outcomes
- Think critically about treatment modalities and how that interfaces with patients' responses on the TWVQ.

- Describe the history and clinical benefit of using ultrasound to measure thyrohyoid space.
- Understand the impact of incomplete labeling of data
- Justify need for animal models of e-cigarette exposure
- Describe the clinical improvements in SILSI treatment of iSGS
- Assess the safety of in-office KTP laser procedures by examining the large cohort and data set provided in this study.
- Describe the clinical correlates associated with the two types of phonotrauma
- Identify factors that distinguish disease characteristics between non-Caucasian vs Caucasian women.
- Understand how identification of laryngeal mass from voice is affected by clinician familiarity with laryngology and dysphonia.
- Recognize the role of therapeutic vaccines for RRP
- Discuss swallow prognosis in pediatric patients with vocal fold dysfunction and how this should guide work-up and management.
- Understand barriers to accessing and receiving gender-affirming professional voice services.
- Assess the reliability of telemedicine in providing empiric diagnosis and management for laryngology-related complaints when laryngoscopy needs to be delayed
- Better understand the expected pitch change in patients undergoing cricotracheal resection
- Cite the aerodynamic changes seen with increasing severity of stenosis
- Identify reasons that telepractice for therapy should be offered to patients
- Brainstorm on future applications of for this open-source, user-friendly tool, including objective evaluation of neurologic conditions of the larynx, glottis stenosis, and laryngeal reinnervation.
- Evaluate the factors above to maximize patient adherence to voice rest recommendations.
- List patient 1-3 populations contraindicated for PMVE use.
- To explain potential laryngeal tissue remodeling and long term benefits from the novel silk based filler material
- Understand the utility of large, standardized surgical databases in answering clinical research questions.
- Consider implementation of novel technologies to assess and track treatment courses for voice disorders
- Describe current research being conducted to improve patient access to these technologies
- Describe changes in dyspnea which occur following medialization.
- Be aware of the planned RCT using the FDA-approved oral formulation of Prezista for LPR and the benefits of reformulating this drug for local inhaled delivery to further improve outcomes and limit side effects.
- Decide to perform the voice analysis with a surgical mask or an FFP3 respirator, considering the clinically desired parameters
- Recognize the implications of the presence of TREK1 within the vibratory portion of the true vocal fold.
- Counsel patients regarding their odds of growth based on anatomic region of RRP
- Describe the limitations of each exam in the diagnostic process of esophageal structure and function.
- Determine differences in weeklong average vocal effort between patients and controls
- Increase choices in complex airway care
- compare patient-perceived functional assessment with assessment outcomes
- Describe the importance of early referral and laryngologic evaluation and/or intervention to interprofessional colleagues
- recognize the clinical application of supraglottic injection of botulinum toxin as a potential effective treatment method for laryngeal sensory dysfunction in chronic refractory cough.
- Summarize future directions in ambulatory voice monitoring using the Daily Phonotrauma Index as an objective voice measure.
- Review the operative technique of feminization laryngoplasty as a feminizing phonosurgical procedure
- Participants should be able to verbalize challenges to measuring aerosol production in a clinical environment
- Weigh the risks and benefits of aerosol generating procedures and standard mechanical ventilation protocol in the setting of highly infectious pathogens.
- Explain the benefit of future studies of vocal fold wound healing with AF
- be aware that resonance may be affected differently based on mask materials as seen by Formant frequencies
- Describe the advantages of bilateral SLN block in the management of patients with refractory chronic cough.
- To improve methods to assess candidacy and counsel patients regarding behavioral therapy
- Understand that it is difficult to determine a threshold for treatment success for trans women undergoing voice therapy, as pitch is not the sole determinant of gender perception.
- Describe the benefits of early compared to delayed intervention in posterior glottic stenosis
- Describe a new assessment for indirectly measuring cough sensitivity (Urge-to-Cough testing) and implications for research and clinical practice.
- Identify how telepractice can be used to increase patient assess to specialized SLP services.

- The listener will reflect on appropriate recommendations regarding therapy modality.
- understand considerations for implementing remote acoustic voice recording and analysis
- Explain how MCI may impact therapy outcomes and considerations moving forward
- Differentiate and describe the acoustic, pulmonary, and vascular measures used in this study and the significance of the outcome data on these systems.
- Explain the association between lower esophageal sphincter pathology and cricopharyngeal dysfunction
- Recognize the differential effects of using a low-quality/high-quantity and a high-quality/low-quantity dataset in training an AI model to identify voice gender
- Understand the theoretical rationale for cough desensitization treatment.
- understand the value of the Revised Patterson Edema Scale in multiple disciplines providing care to patients with head and neck cancer
- identify important structures to impact swallowing safety
- Appreciate various novel techniques in assessing particulate emissions during phonatory tasks
- Perform testing protocol to screen for hyposensitivity using aesthesiometers.
- Describe two techniques that may be used to directly treat FD
- Understand the impact of dysphagia on increased hospital stay, mortality and costs
- Counsel patients that certain symptoms such as cough can linger for an extended period of time after COVID-19 infection
- Apply knowledge of relationships between personality and voice use to clinical practice
- Recognize the long-term utility of laryngeal reinnervation
- Delineate three aspects of voice contributing to the experience of a voice impairment.
- Describe different ways to set up the biofeedback threshold in patients with phonotraumatic vocal fold lesions.
- Identify how the RTSS and RTSS-Voice can be used to support research design, clinical documentation of everyday patient care, and promote clinical reasoning.
- Report the five most commonly reported experienced stress symptoms from our current sample
- Discuss how these constructs might apply to patients with voice disorders
- Describe which acoustic parameter is best used for following medical versus surgical treatment plans.
- Critically evaluate roles of commonly used steroids on epithelial barrier integrity and wound healing
- Describe how informative frame classifiers and vocal fold lesion classifiers can improve access to laryngology care.
- Acquire a better understanding of steroid mechanisms of epithelial border control
- Understand the psychological background of the patients who present this illness
- Understand the combined effects of PhoRTE and EMST
- Increase awareness of the differences between behavioral and surgical modalities for voice feminization
- Reproduce the proposed ultrasound protocol during clinical voice evaluations.
- Describe the impact a successful analytics model can have on voice disorder screening
- Describe the early cellular effects of e-cigarettes in the larynx
- Describe the most common side-effects of SILSI in iSGS patients
- Identify patients who cannot tolerate in-office KTP laser procedures of the larynx and consider the use of diazepam to achieve procedure tolerability.
- Understand potential treatment implications from this nomenclature
- Initiate conversation to identify the factors that lead to underrepresentation of non-Caucasian women in the study of iSGS.
- Identify limitations and challenges of perceptually screening for laryngeal mass from voice, and how these deficiencies may be improved upon using machine learning.