WHAT YOU OTO KNOW



Department of Otolaryngology -Head and Neck Surgery

WINTER 2024 VOL. 5, NO. 2

ALUMNI HIGHLIGHT

Catch up with one of our resident alum in our annual alumni highlight interview

DIVISION PEARLS

Learn what's new in each subspecialty in this annual review

RESEARCH

Stay up-to-date on all the research highlights in the department



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What You Oto Know Winter 2024 VOL. 5, NO. 2

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Stephen Oswald, M.ED

What You Oto Know is a biannual newsletter published by The University of Virginia Department of Otolaryngology-Head and Neck Surgery.

Please send questions, comments, and requests for hard copies to Stephen Oswald at: zrz2ht@uvahealth.org



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- UVA Health Main Hospital
- ENT Clinic at Fontaine
- Emily Couric Clinical Cancer Center
- Pediatric Otolaryngology Clinic at the Battle Building
- Charlottesville ENT Associates

Message From The Chair

STEPHEN S. PARK, MD

Greetings Friends, Colleagues, and Alumni.

Welcome to the winter newsletter for the '24 - '25 academic year. After the national IV fluid shortage that impacted all medical centers, our department is back to full stride with all elements of our program. The clinical activity within the department as well as the entire health system is at record breaking levels and allows us to care for an enormous number of patients in need. So many people are critical to making this happen and function in great synchrony to allow this large machine to operate smoothly. I often marvel at how many people must touch a single patient encounter and how well our Otolaryngology family functions. I could not be more proud.

In this issue, you will find a section describing our new and official Center for Smell & Taste Disorders. This is the creative product of Drs. Steve Munger and Jose Mattos. Like hearing loss or nasal obstruction, the gradual progression of loss of olfaction can be easily overlooked yet have a profound impact on quality of life. The new center will shine a light on this ubiquitous problem and aim to produce meaningful clinical research for it. I also found it particularly interesting to read the highlight of alumnus Steve Bakos and his comment that the resident retreat was one of the most meaningful and enjoyable times of residency. Creating a close friendship and supportive bond amongst the residents and fellows is a priority for us and leads to a better culture and learning environment. Kudos to Dr. Mattos, Dr. McGarey, and Steve Oswald!

Finally, please note two important dates. Our Fitz-Hugh Symposium this year is led by Drs. Delaney Carpenter and Eric Dowling Thursday June 26 - Friday 27 at the new Darden facility (The Forum) and will focus on H&N cancer and sleep surgery. Dr. Jose Zevallos, Chairman of Oto-HNS at the University of Pittsburg, is our guest of honor. Also, after wonderful careers here at UVA, we will be celebrating the retirement of Drs. George Hashisaki and Dan Landes on Saturday, October 4th.

I hope you enjoy catching up with the department through this newsletter. Stay safe and healthy.

As Always,

Mighn Park MA

Stephen S. Park

FACULTY



Daniel Landes, MD Associate Professor

General Otolaryngology

John Mason, MD Associate Professor



Delaney Carpenter, MD Assistant Professor

Head & Neck Oncologic & Microvascular Surgery



David Shonka Jr., MD Interim Division Director, Associate Professor



Katherine Fedder, MD Associate Professor



Jonathan Garneau, MD Assistant Professor



Eric Dowling, MD Assistant Professor

Pediatric Otolaryngology



William Brand, MD Division Director, Assistant Professor



Ariana Greenwell, MD Assistant Professor

Facial Plastic & Reconstructive Surgery



Stephen Park, MD, FACS Division Director, Department Chair, Professor



Sam Oyer, MD, FACS Associate Professor

FACULTY



Vanessa Torrecillas, MD Assistant Professor



Laryngology & Voice Care

James Daniero, MD, MS Division Director, Research Co-Director, Associate Professor



Patrick McGarey Jr., MD Assistant Program Director, Assistant Professor

Audiology/Vestibular & Balance Center



Lori Grove, PhD Division Director, Assistant Professor



Benjamin Lovin, MD Assistant Professor

Otology & Neurotology



George Hashisaki, MD Division Director, Associate Professor



Bradley Kesser, MD Department Vice-Chair, Professor

Research Faculty



Steven Munger, PhD Research Co-Director, Professor



Patrick Cottler, PhD Associate Professor

Rhinology & Endoscopic Sinus Surgery



Spencer Payne, MD Division Director, Professor



Jose Mattos, MD, MPH Program Director, Associate Professor

RESIDENTS & FELLOWS



PGY-4



Nelson Gruszczynski, MD



Kent Curran, MD



PGY-2



Benjamin Aunins, MD



Shaley Charous, MD



Nicole Senderovich, MD



Claudia Gutierrez, MD



Betsy Szeto, MD



Alexander Murr, MD



Aleeza Leder Macek, MD



William Stout, MD



Christopher Harryman, MD



Katherine Webb, MD



Jared Sperling, MD



Akshay Murthy, MD



Adelaide Zhao, MD



Facial Plastic & Reconstructive Surgery Fellow

Head & Neck Oncologic & Microvascular Surgery Fellow



Adam Thompson-Harvey, MD



Benjamin Brownlee, MD



Connor O'Meara, MD, PhD, FRACS

Improving Medical Education: Same Commitment, New Approaches

OTOLARYNGOLOGY DEPARTMENT

Residency Medical Education



Residency Program Director - Jose Mattos, MD, MPH (left), Assistant Program Director - Patrick McGarey, MD (middle), Residency Journal Club & Social Media Director -Vanessa Torrecillas, MD (riaht)

This academic year, the residency program made the decision to implement the new AAO-HNS Otolaryngology Core Curriculum (OCC). The OCC is a longitudinal two-year curriculum covering the foundations of Otolaryngology, ranging from medical knowledge to procedural knowledge to interpersonal communication. Replacing OTOSOURCE, the new curriculum uses a flipped classroom approach with residents learning the material the week prior and then leading an interactive discussion with physicians at grand rounds.



The new curriculum affords greater flexibility in aligning the learning activities with cadaver labs, skills training, visiting professors, journal club, and other training sessions. It also provides increased engagement and teaching opportunities for junior and senior residents who lead the grand rounds learning activity sessions. While still in the first year of its implementation, it has been well received by the residents and further improves our educational commitment to medical education.

Community Outreach Medical Education



Dr. Adam Thompson-Harvey (Neurotology Fellow)

As part of its commitment to the future of the specialty, the AAO-HNS supports aspiring otolaryngologists at every stage of their education journey. However, a key challenge remains figuring out how to inspire younger students to consider otolaryngology (and medicine) in the first place.

Last year, members of the AAO-HNS Diversity and Inclusion Committee and the American Neurotology Society took a proactive approach by visiting high school STEM classes during the 2023 Annual Meeting in the first event of a new program, "COOL-OTO" (Community Outreach Opportunities for Learning Otology and Otolaryngology) spearheaded by **Michael Hoa, MD** and **Stephanie Moody Antonio, MD**. The goal was simple, per Dr. Hoa, "To get physician volunteers interacting with high school students, getting them more interested in medicine broadly."

Dr. Thompson-Harvey, our Neurotology Fellow, helped to organize an outreach event at the Booker T. Washington High School in Miami as part of the AAO-HNSF Annual meeting. The event introduced students to the Otolaryngology specialty and what we do. The event was well-attended with students from other high schools in attendance as well.

> STEPHEN OSWALD, M.ED MEDICAL EDUCATION ADMINISTRATOR RESIDENCY PROGRAM COORDINATOR

Addressing Smell and Taste Disorders in the Community

OTOLARYNGOLOGY DEPARTMENT

The new Center for Smell & Taste Disorders



Jose Mattos, MD, MPH (left) and Steven Munger, PhD (right)

Having a smell or taste disorder can feel like being cut off from much of the world. Simple pleasures such as holiday celebrations, family meals, or the first days of Spring can be greatly diminished as foods become less palatable and a flower's aroma only a memory. For the tens of millions of Americans experiencing a smell or taste disorder, this diminished quality of life is often accompanied by numerous health issues, including increased incidence of depression and anxiety, greater frailty, and the inability to detect dangers such as fires, gas leaks, or spoiled food. In some cases, smell or taste disorders can be early warning signs of neurological diseases (such as Parkinson's disease. Alzheimer's disease. or multiple sclerosis), cancers, or sinonasal disease.

The Department of Otolaryngology-Head and Neck Surgery is launching a new initiative to better serve those impacted by these disorders. The UVA Center for Smell and Taste Disorders will bring together clinicians, scientists and educators from across the University with expertise in these areas.

Led by department faculty Steven D. Munger, PhD and Jose L. Mattos, MD, MPH, the new center has four mission areas. A dedicated clinic will provide expert diagnosis, treatment, and support for patients with absent, diminished, or altered smell or taste. Research supported by federal, industry, or foundation grants as well as by philanthropic gifts will advance our understanding of these senses and how to best treat disorders resulting from disease, damage, or even genetic differences. This cutting edge clinical and research environment will provide unique training for the next generation of otolaryngologists and scientists. Community engagement efforts with patient groups, relevant industries, and the general public will educate the world about smell, taste, and their impacts on health.

To learn more about this new center, or to find out how you can participate in our mission, please reach out to Dr. Munger (smunger@virginia.edu) or Dr. Mattos (JM6CB@uvahealth.org).

The Chemical Senses are Highlighted for Virginia Winemakers



Department faculty Steven Munger, PhD and Jose Mattos, MD, MPH, joined the Virginia Wineries Association at their annual meeting on November 9th to discuss the science of smell, taste, and flavor. Through platform talks and interactive demonstrations, Drs. Munger and Mattos, along with Winemakers Research Exchange enologist Dr. Joy Ting, talked about how we detect smells and tastes, how the brain creates the perception of flavor, and how individual differences in genetics, life experience, or chemosensory health can impact the way we perceive food or drink. Many in the audience were surprised to discover their own differences in smell or taste function. And of course, everyone was able to sample some of Virginia's finest wines!

> STEVEN MUNGER, PH.D PROFESSOR CO-DIRECTOR OF RESEARCH

Alumni Highlight RESIDENT ALUM: STEPHEN BAKOS, M.D., PH.D.



Ear, Nose & Throat of Fredericksburg

Stephen Bakos, M.D., Ph.D. began his medical career as an MD-PhD degree candidate at the Virginia Commonwealth University School of Medicine in Richmond, VA. Under the guidance of Dr. Richard Costanzo, Dr. Bakos focused on improving patients' recovery from traumatic anosmia (loss of smell). Following completion of his MD-PhD, he came here to UVA in 2012 for his Otolaryngology-Head and Neck Surgery residency. During residency, he participated in several research projects, published multiple research articles, and was awarded the top resident research award at the 40th annual Fitz-Hugh Symposium. He remains active in multiple organizations, including the Virginia Society of Otolaryngology and the American Academy of Otolaryngology. An advocate for his patients, he participates in health care policy at the federal and state levels and is Board Certified in Otolaryngology.

Q: Thank you so much for being our alumni highlight for this Winter Edition of the newsletter. We'd like to start by asking about your life, what are some of the highlights in of your life since you completed your residency?

A: I joined my current practice in 2017. Two years later I became chief of surgery for 4 years with one of our hospitals and currently serve on the board for the outpatient center. I am still involved in medical education/teaching and last year I was recognized as clinical faculty of the year for VCOM. It felt great to have a hand in inspiring the future generation of medical students.

I have also expanded my career in sleep medicine and partnered with Inspire where I received an award for physician excellence.



Q: And could you tell us a bit about you yourself currently: hobbies, interests, fun facts, etc.?

A: Fun facts... I have 3 boys. The oldest was born the day I started residency and our youngest was born just as I started at the Fredericksburg practice. I also do house calls which is great for checking in on patients for post-op or initial consults. And I still work with Dr. Daniero and stay engaged with the faculty at UVA.

As far as hobbies go, I am a super avid golfer, I enjoy visiting national parks with my family (20+ so far), and I am involved in real estate and business investing.

CONTINUED ON PAGE 10

Q: Can you tell us about current research/clinical interests?

A: Sleep medicine and leadership are my current clinical/professional interests. As part of Inspire's clinical leadership, I talk to practices about how to create successful Inspire programs. Private practice lends itself a lot of freedom of practice, so I like the wide breadth of ENT and the leadership aspect of medicine that I have been able to be involved with in recent years.

Q: What are your plans for the future, career and life?

A: Career wise, I obviously plan to continue private practice (15 years left) but after that, I'm not sure. I'm still really early in my career so I'm focused on good clinical care and ensuring that the practice is thriving and providing the best care for our community.

Dr. Bakos's Best of Charlottesville

Season Spring

Best Bite Bodo's Bagels

Activity Go watch the trains at the train station with my kids

View

View of the sunset from Monticello to downtown

Event

Going to Pavilion for concerts, especially for Hall & Oats

Q: Before we dive into your residency, what was your reason for choosing Otolaryngology as your specialty? Has that reason changed over the years?

A: I read Ashli's answer and it's great! But for me, I did an MD/Ph.D so I had a less traditional route. At the time, I was working with Richard Costanzo, Ph.D. and I really enjoyed the research we were doing so I was debating between Neurosurgery and ENT. I was talking to my wife, who is a nurse in cardiology, about the two options and she looked at me and firmly said "You're doing ENT". So initially, it was my wife and the research that pointed me towards ENT. Once I started exploring the field though, I loved it. It is such a great mix of the clinical and surgical aspects of medicine. It blends together the two things I love most about medicine, building longitudinal relationships with patients and performing surgeries that improve the patients' quality of life.

The reason I picked private practice specifically is because I love the entire field of ENT. Head and Neck, Laryngology, Rhinology, Neurotology/Otology, Facial Plastics and Reconstructive Surgery, and PEDS. I felt that for my career, private practice/general ENT was the right career for me as it would allow me to continue doing what I love.

As for what's changed, I think it's technology and innovation. There is a constant flow of new technology that is being integrated into the field of ENT and many amazingly innovative things we're coming up with to improve patient outcomes.

Q: How do you feel about your residency experience?

A: I look back on my training very fondly. If someone asked me if I would do it again, to a certain degree, I think I would. I love the comradery you create during residency, though I admit that it's hard to see from the weeds in the moment.

I think the UVA residency program is probably one of the best programs for learning how to treat your patient as a whole. There are so many clinical aspects to ENT and a lot of programs focus on the OR, but UVA prepares residents for all aspects of their career. They say that once you say no to a surgery, you'll never do the surgery again, but I graduated feeling comfortable and confident that I could do any surgery, from the bread and butter to the complicated.

CONTINUED ON PAGE 11

Q: Do you have a favorite memory from residency?

A: I have a few, but one memory in particular stands out. I was a PGY4 on call one weekend and Deepa Danan was the chief. We got a page during breakfast that a patient was hemorrhaging around their trach. The patient was bleeding profusely, coughing, and we were having difficulty securing the trach. Eventually, we had no choice but to go to the OR. We were still struggling with the trach though, so I just jumped on the bed for the best angle to hold the trach in place. We were rolling down the hallways to the OR, blood is spraying all over me, and it was just like something out of a TV show. Thankfully the patient was stabilized and made a full recovery.

The Resident Retreats were some of my favorite memories though! Going to the retreats with the residents and doing team building activities was so much fun. Getting to know everyone in a non-work environment away from the stressors and Charlottesville to participate in team building activities was a treat.

Q: Who was your favorite attending?

A: It's so hard to select an attending who is the most impactful. We learn so much from the unique ways they teach us. If I had to choose, I think Dr. H is who I come back to because he's the smartest man I've met in my entire life. He says things and I just think "how do you know that???". And he has the Hashisaki mind trick where he gets you to do what he wanted you to do without actually telling you how to do it. Initially, he can be intimidating because he's so confident and knowledgeable, but he's so laid back.

The other thing about Dr. H that makes him so impactful is his patience with residents in the operating room. In particular, I remember that he would always do his 3 no's as you're operating so you know if you're doing something wrong. I still hear him sometimes in my head guiding me or saying "No, don't do that".





Q: One last question, as an alumni of the residency program, do you have any advice for our current residents to make the most of their residency?

A: I would say that it's a couple of things. First, don't be afraid to ask questions. I always felt intimidated early on to ask questions, but the more questions you ask, the more engaged you are and the more you learn. Second, always be available to help out. You never know when something comes up that if you're available, you may learn something you wouldn't have if you weren't. Find opportunities to get involved and get the experience while you can.

Dr. Bakos received the Inspire Sleep Apnea Innovation Physician Excellence Award 2024

One of only 4 surgeons in Virginia and 100 in the US, Dr. Bakos was recognized for his outstanding outcomes for Inspire surgery. Dr. Bakos attributes this success to, "The leadership at Spotsylvania Regional Medical Center including David McKnight, Ryan DeWeese, Crystal Jernigan, Sarah Lawrence, my clinic staff, and my Inspire reps Jennifer Weiners and Luke Bellis helped me cultivate the program into what it is today".

Expanding our Aesthetic Skin Treatments: Introducing the Sciton Laser

DIVISION: FACIAL PLASTIC & RECONSTRUCTIVE SURGERY

We're thrilled to announce the addition of the Sciton Laser system to our Pantops clinic location, offering advanced, precision-based treatments to address a wide variety of skin concerns. This state-of-the-art technology combines multiple powerful modalities to rejuvenate and restore skin with minimal downtime. This technology will help us enhance our reconstructive and aesthetic results by targeting common skin issues including pigment changes, texture, tone, acne and surgical scars, fine lines, and even hair removal.



Figure 1: Patient example shown before (left) and 1 month after (right) one HALO laser treatment.

With this laser system we will offer three distinct treatments:

• **BBL (BroadBand Light):** BBL uses intense pulsed light to target pigmentation, redness, and vascular issues. It delivers light energy that is selectively absorbed by the skin's chromophores (melanin and hemoglobin) to improve skin tone, texture, and clarity by evening out discoloration in the skin. When used regularly, this treatment can help reverse some of the signs of aging related to sun damage.

- Profractional Laser: This fractional Erbium laser creates precise, micro injuries that target specific areas of the skin, promoting collagen remodeling and skin rejuvenation. It's highly effective for treating fine lines, wrinkles, acne scars, and surgical scars while minimizing downtime. Just a fraction of the skin surface is treated, allowing for rejuvenating effects, but getting patients back to everyday life within 5 days of treatment.
- HALO Laser: Combining both ablative and non-ablative wavelengths in a fractional pattern, Halo simultaneously targets surface imperfections and deeper skin layers. This dual approach addresses aging, pigmentation, and skin texture by removing damaged tissue and stimulating collagen growth. This treatment has even shorter downtime and less wound care than Profactional treatment, but maintains exceptional results.

The addition of this laser system nicely complements the rest of the office-based and surgical aesthetic procedures in our Facial Plastic Surgery Division. To learn more about these laser treatments or the rest of our aesthetic procedures scan the QR code below or visit <u>CosmeticUVA.com</u>.



SAM OYER, MD ASSOCIATE PROFESSOR

Biologics for Nasal Polyps: Who Really Needs These Medicines?

The advent of biologic therapies for chronic rhinosinusitis with nasal polyps (CRSwNP) poses both a blessing for patients with recalcitrant disease, and conundrum for the medical community. The first biologic drug to receive an indication for CRS with nasal polyps was dupilumab in 2019, followed by omalizumab in 2020, and mepolizumab in 2021. In this short time, these agents have revolutionized our approach to patients with severe disease. Prior to this, patients with recalcitrant disease had few options outside chronic oral corticosteroid use or multiple revision surgeries. However, this represents a small subgroup of patients with CRSwNP, yet we are seeing a staggeringly rapid rise in the prescriptions for these drugs in patients.



Biologics such as dupilumab, mepolizumab, and omalizumab, target specific inflammatory pathways involved in CRSwNP, particularly those driven by Type 2 inflammation. These medications inhibit key cytokines, including IL-4, IL-5, and IL-13, or IgE, thereby reducing inflammation and polyp growth. Biologics decrease nasal polyp scores, improve quality of life and olfaction, and reduce the need for oral corticosteroids and revision surgery. The cost of these medicines is significant, approximately \$30,000 per year in perpetuity. In short, they can work very well for some patients but are extremely expensive, so who should they be reserved for? There is no simple answer to this critical question, but consensus statements and management recommendations exist(1,2). In our practice, the first consideration is the status of other type 2 conditions, like asthma, eczema, or eosinophilic esophagitis which may also benefit from biologic therapy. All patients are counseled on the availability of biologics, and some patients simply prefer to avoid surgery at any cost, and for them biologics might be reasonable after comprehensive medical management. Beyond that, biologics are usually as a third-line therapy after medical management and at least one complete sinus surgery with maximal sinus marsupialization. The level of completeness of surgery is critical to allow for maximal medication access. Finally, it should be noted that while biologics work for many patients, sinus surgery has been shown to provide comparable or better levels of symptom control (2,3), and we have seen many patients who are started on biologic therapies who then go on to need salvage surgery.

The decision on when to start a biologic is always patient-centered and must involve indepth shared-decision making. For the right patient, these medicines can be life-changing, but they must be thoughtfully administered.

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> JOSE MATTOS, MD, MPH ASSOCIATE PROFESSOR RESIDENCY PROGRAM DIRECTOR

Neoadjuvant Immunotherapy for Advanced Cutaneous Squamous Cell Carcinoma

DIVISION: HEAD & NECK ONCOLOGIC & MICROVASCULAR SURGERY



Figure 1. Patient lesion prior to immunotherapy

Advanced cutaneous squamous cell carcinoma (cSCC) of the head and neck poses significant challenges due to its aggressive nature, potential invasion of critical structures, and propensity for metastasis. Historically, treatment relied on radical surgery with significant functional and cosmetic morbidity, often followed by radiotherapy, while chemotherapy has played only a minor role.

The recent advent of immunotherapy has revolutionized cSCC management for select advanced cases. Cemiplimab, a PD-1 inhibitor, blocks the PD-1/PD-L1 pathway, enhancing T-cell activity to target cancer cells. Clinical trials show cemiplimab achieves favorable response rates, with many patients experiencing durable tumor shrinkage and improved survival, particularly for those unsuitable for surgery or where surgery poses extensive morbidity or disfigurement.

In our practice, immunotherapy has transformed outcomes. The example shown here is a patient with a large fungating tumor involving the nasal sidewall and medial canthus. Initially this would have required extensive surgical resection and free flap reconstruction with partial orbital resection. Instead, we elected to treat with neoadjuvant immunotherapy. Remarkable tumor shrinkage allowed for limited surgical resection of the nasal dorsum (similar to a Mohs defect) that was reconstructed with a skin graft. Final pathology showed no residual carcinoma, indicating a complete treatment response.



Figure 2. The photo on the left indicates egression after one treatment cycle. The right photo indicates the lesion, demonstrating near full regression after completion of three cycles just prior to limited surgical resection.

Cemiplimab is generally well-tolerated, though immune-mediated side effects such as skin reactions, endocrinopathies, and colitis necessitate careful monitoring. This case exemplifies the growing role of immunotherapy in treating advanced cSCC, marking a pivotal shift in dermatologic oncology. Immunotherapy should be considered in the management of advanced cSCC (Stage III and IV) and is reshaping treatment paradigms for this challenging condition.

> JONATHAN GARNEAU, MD ASSISTANT PROFESSOR

Velopharyngeal Dysfunction in Head and Neck Cancer Survivors

DIVISION: LARYNGOLOGY & VOICE CARE

Velopharyngeal dysfunction (VPD) can significantly impair speech, swallowing, and quality of life. In head and neck cancer patients, it can arise from surgical resections, radiation therapy, or both, leading to reduced bulk and mobility of the musculature and inadequate closure of the velopharyngeal port. Here are some key insights into screening for VPD and a focus on the emerging role of pharyngeal augmentation for treatment.



Figure 1. Awake Posterior Pharyngeal Wall Augmentation for Velopharyngeal Dysfunction. Borrowed from Young, V.N., Rosen, C.A. (2024). Awake Posterior Pharyngeal Wall Augmentation for Velopharyngeal Insufficiency. In: Operative Techniques in Laryngology. Springer, Cham. <u>https://doi.org/10.1007/978-3-031-34354-4_63</u>

1. Recognizing VPD

- Clinical Signs:
 - Hypernasal speech
 - Articulation deficits or compensatory speech patterns
 - Nasal regurgitation of food/liquids
 - Swallowing difficulty

2. Diagnostic Approach

- Comprehensive Assessment:
 - Speech Language Pathology: Perceptual assessment of hypernasality, nasalance measurements, and clinical swallow evaluation.
 - Imaging: Flexible nasal endoscopy to assess anatomy and closure patterns; consider pharyngeal manometry, video fluoroscopic swallow study

3. Pharyngeal Augmentation: A Promising, Minimally Invasive Option

Traditional treatments like speech therapy, prosthetic devices (e.g., palatal obturators), and surgical corrections (e.g., pharyngeal flaps) can be undesirable for head and neck cancer survivors. Pharyngeal augmentation offers a promising, less invasive alternative.



Figure 2. Transnasal endoscopy view (left), pre-injection: Pre-Injection Velopharynx in Closed Phase, Attempting to Voice. Note wide gap on patient's left. Transnasal endoscopy view (right), post-injection: Velopharynx in Closed Phase. Note near complete-closure.

- How It Works:
 - Injectable materials (e.g., hyaluronic acid, calcium hydroxylapatite) are used to augment the posterior pharyngeal wall, improving closure.
 - Performed in clinic under local anesthesia, the procedure provides immediate improvement in speech resonance and nasality with minimal morbidity.

Outcomes:

- Patients with smaller velopharyngeal gaps and pliable tissues often experience the most significant symptom relief. Patients report improved speech and swallowing
 - as well as decreased nasal regurgitation.

Takeaway

VPD in head and neck cancer patients is challenging yet increasingly manageable. Pharyngeal augmentation is a minimally invasive solution bridging the gap between traditional therapies and invasive surgery which can significantly improve quality of life for this complex population.

VANESSA TORRECILLAS, MD ASSISTANT PROFESSOR

The acute medical and psychologic burden surrounding the diagnosis and treatment of head and neck cancer is more than enough for any one person. Unfortunately for some, this burden can become chronic from otologic sequelae of their cancer treatment. The most dreaded and treatment-resistant sequelae in the lateral skull base is temporal bone osteoradionecrosis (TBORN). Thankfully it is a rare entity, but its paucity similarly impedes insight into identifying optimal treatment methodology.



Figure 1. Osteoradionecrosis identified by the exposed bone in the ear canal.

TBORN has been categorized into localized and diffuse disease depending on its containment or extension outside of the ear canal/tympanic bone, respectively. In both cases, exposed bone in the ear canal is the hallmark sign. It is clear that this categorization dictates treatment success. Localized TBORN can often be treated with conservative measures, such as aural toilet and topical antibiotics, while diffuse TBORN necessitates surgical resection and reconstruction with healthy tissue. Despite this clear distinction, knowledge of patient factors impacting failure of conservative management and progression to diffuse disease are sparse in the literature.

A recent large review of TBORN patients evaluated this gap. The majority of identified cases were localized disease, and the authors noted that diabetes, periauricular skin malignancy, and use of three-dimensional conformal radiotherapy were risk factors for progression from localized to diffuse TBORN during follow up, which happened in 16% of cases. In hopes of preventing progression and need for large surgical resection in this at-risk population, adjuvant conservative measures aimed at microvascular disease have been proposed.

Borrowing from its success in the mandibular ORN literature, PENtoxifylline and TOcopherol (PENTO protocol) were recently evaluated as a conservative adjunct to localized TBORN management. Pentoxifylline exerts an anti-TNF alpha effect to inhibit inflammatory reactions and fibroblast proliferation, while tocopherol scavenges free radicals and inhibits procollagen gene formation. The combination ultimately inhibits radiation-induced fibrosis and osteolysis. A recent case series evaluated the efficacy of PENTO for localized TBORN and noted 60% of patients had improvement in symptoms and 80% had improvement in skin coverage of exposed bone. While it is difficult to know if these outcomes differ from spontaneous improvement with conservative management alone, the same large review noted a greater likelihood of successful conservative management with localized disease when PENTO was added to the regimen. The proposed dosage is 400mg of pentoxifylline BID and tocopherol (vitamin E) 600IU in the morning and 400IU in the evening. Given that the medications are inexpensive and appear well tolerated, inclusion of the PENTO protocol in conservative management for localized TBORN appears low risk and worthy of trial, hopefully representing a paradigm shift in the management of these patients.

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> BEN LOVIN, MD ASSISTANT PROFESSOR

DIVISION: PEDIATRIC OTOLARYNGOLOGY

Pediatric vocal fold paralysis (VFP) is a relatively common complication following cardiac surgery with some studies citing a rate of injury of up to 25%, for example, following patent ductus arteriosus (PDA) ligation. VFP can also be congenital or related to birth trauma. As in the adult counterpart, children with VFP can have dysphagia and bothersome dysphonia. Unlike in the adult population, surgical options for repair are limited. Injection laryngoplasty, which can be performed in awake adult patients in clinic, typically requires general anesthesia in pediatric patients. As it is only a temporary solution, many parents understandably avoid the recurrent anesthetics. More permanent interventions such as medialization laryngoplasty or type 1 thyroplasty, are typically avoided in the developing pediatric larynx with uncalcified cartilages.



Figure 1. Dr. Ariana Greenwell (left) and Dr. Vanessa Torrecillas (right) performing the first pediatric recurrent laryngeal nerve reinnervation surgery at UVA.(upper left) Debakey retracting omohyoid fascia; just superficial to carotid artery, anastomosis between left recurrent laryngeal nerve and descending branch of ansa cervicalis (upper right); Left ansa cervicalis, just superficial to carotid artery and jugular vein, with descending branch entering sternothyroid muscle (lower left); Retractor just lateral to carotid; kitner just medial to left RLN traveling within tracheoesophageal groove (lower right) In recent years, recurrent laryngeal nerve reinnervation has demonstrated promising results for pediatric patients with unilateral VFP. The operation is performed through a single 3cm horizontal neck incision at the level of the cricoid, just lateral to the midline. The descending branch of the ansa cervicalis is identified just deep to the omohyoid muscle. The recurrent laryngeal nerve is then identified in the tracheoesophageal groove as it travels superiorly towards the cricoarytenoid joint. It is divided close to this joint and anastomosed to the ansa cervicalis in a tension free manner. A vein graft can be used as a coupler to help prevent aberrant reinnervation.

Studies have shown success in voice outcomes in the pediatric population regardless of time since injury (1). Comparing reinnervation with simultaneous injection laryngoplasty to injection laryngoplasty alone demonstrates better voice outcomes and longer lasting benefits (2). We have begun offering reinnervation procedures to pediatric patients at UVA, working with our adult laryngology colleagues. At time of surgery, we also perform an injection laryngoplasty. The patient is monitored overnight given the airway intervention, and discharged the following morning.

References:

1. Smith, Marshall E., and Daniel R. Houtz. "Outcomes of laryngeal reinnervation for unilateral vocal fold paralysis in children: associations with age and time since injury." Annals of Otology, Rhinology & Laryngology 125.5 (2016): 433-438

2. Zur, Karen B., and Linda M. Carroll. "Recurrent laryngeal nerve reinnervation in children: acoustic and endoscopic characteristics pre-intervention and post-intervention. A comparison of treatment options." The Laryngoscope 125 (2015): S1-S15.

> ARIANA GREENWELL, MD ASSISTANT PROFESSOR

Improved Speech Understanding in Noise: Deep Neural Networks & Hearing Aids

DIVISION: AUDIOLOGY / VESTIBULAR & BALANCE CENTER



The ability to clearly understand speech in noise is the primary complaint of individuals with sensorineural hearing loss. The damage and destruction of outer and inner hair cells diminishes the quality and quantity of the neural code sent from the inner ear to the brain; as hearing loss progresses, the neural code degrades even further. In an attempt to compensate for the degraded neural code, the brain must expend more energy and effort to comprehend speech. The introduction of deep neural networks (DNNs) in hearing aids has shown notable potential to preserve speech and to remove noise without relying on traditional microphone directionality.

have the capability to identify and to separate multiple voices, allowing a hearing aid to select a primary voice to accentuate and secondary voices to decrease. In most hearing aids, the DNN is embedded in a single digital signal processing (DSP) chip. Recently, Phonak introduced the first hearing aid, the Audeo Sphere Infinio, which features two DSP chips working in parallel; the first chip provides the traditional signal processing and other functions of the hearing aids, whereas the second chip is a dedicated DNN system used simultaneously to amplify speech and to suppress noise. By providing enhanced speech clarity from any direction in any listening environment, DNN improves the transmission of the neural code for individuals with sensorineural hearing loss, making hearing and understanding of speech easier for the brain.



In general, DNNs are a subset of artificial intelligence (AI) that rapidly analyze and process huge data sets in a manner inspired by the human brain: DNNs constantly verify accuracy and make corrections. Specific to hearing aids, DNNs are able to enhance select sounds, specifically speech, while reducing other sounds; additionally, DNNs

MELISSA MCNICHOL, AU.D AUDIOLOGIST

Research Updates

Research Grant Recipients



The applications came in and we have selected this year's grant recipients:

The recipient of the Subinoy Das Otorhinolaryngology Innovation Grant is Chief Resident **Claudia Gutierrez, MD**. (left) for her proposal "Development of a Transoral Device for Respiratory Support of Minimally Sedated Patients".

The recipient of the Robert W. Cantrell, MD Research Grant is research fellow **Ryan Stepp**, (middle) for his proposal "Decellularized Porcine Dermal Hydrogel as a Biocompatible Bulking Agent for Enhancing Tissue Repair in Head and Neck Cancer Patients".

The recipient of the Paul A. Levine, MD Research Grant is research fellow **Noah Thornton** (right) for his proposal "Evaluation of Immunoglobulin Content and Specificity in Commercially Available Bovine Colostrum Supplements for Potential Use in Nasal Rinses".

Internal Research Funding

ROBERT W. CANTRELL MD, RESEARCH GRANT

This grant supports innovative basic science, translational and clinical research by residents and faculty OR worthy proposals that were not selected for funding by external mechanisms. One award cycle per year providing a grant up to \$8,000.

PAUL A. LEVINE, MD RESEARCH GRANT

This grant supports innovative basic science, translational and clinical research by residents and faculty OR worthy proposals that were not selected for funding by external mechanisms. One award cycle per year providing a grant up to \$8,000.

SUBINOY DAS OTORHINOLARYNGOLOGY INNOVATION GRANT PROGRAM

This grant fosters translational research partnerships linking medicine, law, regulatory governance, and business disciplines to provide immersive faculty and resident-driven product development experiences early in an Otolaryngologist's career. One award cycle per year providing 1 grant up to \$10,000 total.

The Miller Family Resident Education Fund

This grant supports higher training for residents and junior faculty in the area of Facial Plastic Surgery, especially facial trauma.

Research Updates

SAVE THE DATE: First Annual Research Symposium









Research Fellow Updates

The department will hold it's first annual research symposium on Wednesday, May 7, 2025, from 7:00 am - 1:30 pm (UVA location TBD). Our primary objective is to foster an environment of crossdisciplinary collaboration, creating opportunities for meaningful dialogue and potential research partnerships across our diverse specialty areas. This symposium represents a critical first step in building a comprehensive research ecosystem that bridges clinical insights with cutting-edge scientific investigation.

The program will feature research talks from department faculty and their UVA collaborators, a keynote address from Senior Associate Dean for Research Dr. Jeffrey Martens, and a workshop on research training programs. All are invited, and more details are to come!





Research Fellows Ryan Stepp, BS (left) and Noah Thornton, BS (right)

Research fellows Ryan Stepp and Noah Thornton wasted no time getting involved in research. Ryan and Noah have proven themselves to be incredibly diligent, attentive, and ambitious researchers who are actively supporting the projects of faculty and residents alike. It would take up too many pages to list every project that our research fellows are actively planning, designing, and proposing, but we wanted to recognize their accomplishments and efforts by listing a number of active research projects that they are involved in.

Active Research Projects:

Patient Augmented Reality and Vibratory Array (PARVA): A Clinical Pilot Study in Awake Laryngology Procedures

We have developed a novel augmented reality (AR) experience and wearable vibratory stimulation device to improve patient comfort and tolerance during in-office medical procedures, addressing a significant unmet need for non-pharmacologic solutions to anxiety and discomfort.

Using a trans-oral device for respiratory support of minimally sedated patients

We have developed a patented, 3D-printed adaptive airway device to optimize oxygen delivery during procedures under monitored anesthesia care (MAC). This innovative transoral design secures nasal cannula functionality while minimizing interference with the surgical field, addressing a critical need for efficiency and patient comfort in facial plastic surgeries.

Laryngoscopic Predictors of Intubation in Patients with Angioedema

This project examines the clinical factors driving airway intervention decisions in patients with angioedema, with the goal of enhancing intubation predictions and optimizing management strategies based on symptom severity and clinical presentation.

Research Fellow Update (cont.)

Impact of Cervical Osteophyte Level on Dysphagia-Related Symptom Severity

Our ongoing study investigates how the level of cervical osteophyte involvement impacts dysphagia symptoms, severity, and treatment outcomes, utilizing one of the largest datasets to date. This work aims to enhance clinical understanding and guide management strategies for osteophyte-related dysphagia.

Voice Rest and Injection Laryngoplasty: A Randomized Controlled Trial

This randomized controlled trial evaluates the impact of post-procedure vocal rest on voice outcomes following injection laryngoplasty for vocal fold paralysis, paresis, or atrophy. By comparing subjective and objective measures of voice quality and compliance across patients with and without vocal rest, the study aims to optimize post-procedure care and improve treatment outcomes.

Disparities in Non-Melanoma Head and Neck Cancer Diagnosis and Treatment

This retrospective study analyzes patients with non-melanoma head and neck cancers to examine patient presentation, delays in treatment, and treatment decisions, with a focus on understanding how social and demographic factors impact health equity in care delivery.

Nontuberculous Mycobacterial Cervical Lymphadenitis - Management of the nontender, violaceous neck mass in the pediatric population

This retrospective study aims to evaluate the diagnosis and management of nontuberculous mycobacteria (NTM) cervical lymphadenitis in pediatric patients by analyzing demographic, diagnostic, and treatment data. The findings will assess how diagnostic timing and treatment initiation impact patient outcomes.

Safety Profile in Hyaluronic Acid-Based Vocal Fold Injection Augmentation

We are conducting a multi-institutional retrospective study to assess complication rates and patterns associated with hyaluronic acid vocal fold injections, with a focus on identifying trends in inflammatory reactions and understanding current practices in the field. This project aims to provide a comprehensive evaluation of outcomes to better inform clinical decision-making.

A Prospective Comparison of Local Anesthesia Delivery Methods in Office-Based Steroid Injection for Subglottic Stenosis

This study aims to compare transcervical lidocaine injection and drip catheter lidocaine administration for in-office steroid injections in patients with subglottic stenosis (SCS). By evaluating patient comfort, anesthesia adequacy, adverse effects, and procedural efficiency, the research seeks to optimize anesthesia techniques, enhance patient experience, and refine clinical protocols for office-based laryngology.

Vocal Fold Injection Augmentation (VFIA) - A Landscape Review

We are conducting interviews with over 20 leading academic laryngologists to assess the current state of vocal fold injection augmentation (VFIA). This project aims to identify key challenges, understand material preferences, and evaluate procedural practices across the field.

Evaluation of Immunoglobulin Content and Specificity in Commercially Available Bovine Colostrum Supplements for Potential Use in Nasal Rinses

This project investigates the immunological content and pathogen specificity of commercially available bovine colostrum supplements, aiming to explore their potential as a therapeutic option for enhancing mucosal immunity in individuals with Common Variable Immunodeficiency (CVID). By identifying the presence and function of immunoglobulins in these supplements, the study could pave the way for innovative, non-invasive treatments for recurrent infections in immunocompromised patients.

Event and Conference Highlights

AAO-HNSF Conference and Alumni Reception



This year's AAO-HNSF conference was a great experience despite a hurricane taking place just a few miles away. Several faculty and residents attended, included PGY4 Katie Webb and for the second year in a row Chief Resident (PGY5) Claudia Gutierrez. We also got to see some familiar faces and recent resident alumni at the annual alumni reception in Miami, FL.

ENT Running Team at the Annual Bill Steers 5k



Staying healthy and active is one our top priorities in the department. This year, "The Running Noses" had a strong showing at the annual Bill Steers 5k with residents, attendings, research fellows, SLP's, and friends. Casey Resnick (SLP) won her age group and both Ben Aunins (PGY3) and Katie Webb (PGY4) got second in their age groups!

Department Holiday Party



This year's Otolaryngology Department Holiday Party was yet another wonderful experience. Faculty and staff from each division and location came together and celebrated another successful year. Dr. Park took time to make sure everyone knew how important their role is in providing the quality of care that we do. We feel honored and blessed to have such incredible individuals who have helped make the department what it is today.

Upcoming Events

49th Annual Fitz-Hugh Symposium

Registration is open for this year's Fitz-Hugh Symposium which is taking place at the Forum Hotel on June 26-27. For our 49th Annual Fitz-Hugh Symposium, we will be exploring general otolaryngology, head & neck cancer care, and sleep surgery. Scan the QR code on the right for more information, registration, and hotel reservations.











Upcoming Events

UVA Voice Center Hands-On Stroboscopy & Voice Course

Join us at the University of Virginia in beautiful Charlottesville for the UVA Voice Center's Stroboscopy & Voice Course. This two-day course will provide practical and hands-on education for speech-language pathologists and otolaryngologists in the performance and interpretation of laryngeal stroboscopy. Lectures will cover the principles of laryngeal function, fundamentals of laryngeal stroboscopy and interpretation, case studies and diagnostics, voice therapy techniques, and the Interdisciplinary clinic model.



UVA World Voice Day Celebration

At the UVA Voice Center, we strive to build awareness of vocal health and the solutions to voice problems that the UVA Voice Team can provide. The annual World Voice Day event provides singers who have gone through vocal rehabilitation with our Voice Team the opportunity to return to the stage after vocal injury. The date and location for this year's celebration are TBD but keep an eye out for our announcement. World Voice Day will be celebrated globally on April 16, 2025.



Past and Present

Facial Plastic Surgery - Past and Present

Dr. Park and Dr. Oyer met up with a few familiar faces at the AAFPRS Annual Meeting, several generations of UVA Facial Plastic and Reconstructive Surgery physicians still making an impact in the field.

(left to right; Tamer Ghanem, Catherine Meller, Will Dougherty, Harry Bartels, Stephen Park, Sam Oyer, Katherine Gossett, Scott Stephan, and Ed Farrior)



Neurotology - Past and Present

Dr. Kesser, Dr. Hashisaki, and Dr. Mason reunite with past fellows after last year's Fitz-Hugh Symposium. This photo represents over 27 years worth of Neurotology Fellowship training here at UVA.

(Back left to right; Daniel Morrison, Brian Nicholas, Adam Thompson-Harvey, Ted Imbery, and Geoffrey Casazza) (Front left to right; Jeff Kim, Brad Kesser, George Hashisaki, and John Mason)



Philanthropy & Thank You

Thank You, for Everything



Year over year, we strive to provide residents with resources, knowledge, skills, and experience needed to become not only successful surgeons, but award-winning healthcare providers for patients in their community. The donations that we have received over the last several decades have allowed our residents to become more involved in research and attend conferences, funded skills training and cadaver labs, and provided ample education resources at no financial burden to them. These opportunities and resources are invaluable to the residency education here in the department and are a part of what has made our program as strong as it is today. So, we would like to take a moment to recognize and thank everyone who has ever donated to the Resident Education Book Fund.

From the faculty and residents of the Department of Otolaryngology - Head and Neck Surgery,

Thank you

Philanthropy



A gift to the University of Virginia Department of Otolaryngology-Head and Neck Surgery Resident Education Fund exclusively supports resident education at different levels including books, conferences, etc.

Please consider supporting the next generation of Otolaryngologists. If you would like to make a philanthropic investment in UVA Oto-HNS you can visit our website, scan the QR code, or enter the link below and select "department funds".

https://www.uvamedalum.org/giving/

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OTOLARYNGOLOGY











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