

HeadLines



JOHNS HOPKINS
MEDICINE

NEWS FROM JOHNS HOPKINS OTOLARYNGOLOGY-HEAD AND NECK SURGERY

FALL 2017



Saving a Life, and a Voice

Unique treatment for laryngeal dysplasia helps preserve voice quality after multiple surgeries.

John Frazer, a recent retiree who lives in Hobe Sound, Florida, has used his voice for public speaking ever since college. Through jobs ranging from a radio announcer to a management consultant to a charter boat captain, he's engaged countless listeners and clients. So, when he noticed that his voice began to sound hoarse, he sought out medical advice right away.

Then living in Antigua, he visited a local clinic. After a biopsy, a doctor there diagnosed him with laryngeal dysplasia, a condition in which cells on the surface of the voicebox develop a patina of precancerous cells that can progress toward cancer if they're not removed.

Frazer visited hospitals in London and North Carolina, receiving surgeries at both to remove this layer of cells. However, eventually doctors told him that there was nothing else they could do.

Because the dangerous cells kept returning, he'd need chemotherapy and radiation to prevent cancer, treatments that would inevitably take away his voice.

"It was devastating to hear that," Frazer remembers. "I'm a talkative and outgoing person, and it's the loneliest feeling in the world to think about losing my voice."

Seeking another opinion, Frazer met with Johns Hopkins otolaryngologist-head and neck surgeon **Lee Akst**, an expert in laryngeal dysplasia.

"For this condition," Akst says, "it's critical to balance preventing a progression toward cancer with helping patients keep their voices. Losing their voices isn't inevitable, and we've crafted unique protocols that can help many patients maintain voice quality over time."

After giving Frazer a stroboscopy, a video examination of the vocal cords that's only available at specialty centers such as Johns Hopkins, Akst confirmed that many other hospitals would recommend chemotherapy, radiation, or even removing the voicebox to prevent the precancerous cells from returning. But Akst had a different plan: He suggested a precise laser surgery that removes just the surface cells from the inner voice box, preventing

the formation of scar tissue that would harm voice quality.

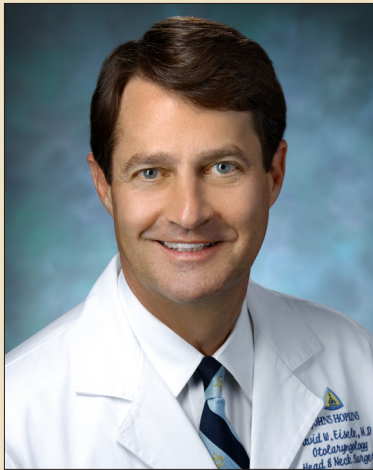
After giving patient John Frazer (right) a stroboscopy, Lee Akst suggested ongoing surgical treatments that would ultimately spare Frazer's voice.

After his initial surgery with Akst in September 2011, Frazer has returned more than a dozen times for subsequent surgeries, seeing Akst and his team every three to four months as his precancerous cells return. Frazer's case is unusual, Akst explains. Some patients with laryngeal dysplasia never have a relapse after treatment; others require follow-up treatments years later.

But Akst notes that even with his necessary and frequent retreatments, Frazer's voice has remained strong and steady. "Almost anywhere else I can imagine," Akst says, "a patient who's received this many operations on his voicebox wouldn't be speaking right now. It's a testament to our protocol that his voice hasn't been compromised."

Because of this success, Frazer says, he plans to continue returning to Johns Hopkins every few months for new treatments. "My voice has always been a large part of my life," he says, "and thanks to Dr. Akst, I get to keep it." ■

For information, call 443-287-2124.



We've long known that Johns Hopkins' Department of Otolaryngology-Head and Neck Surgery has the best reputation for our specialty, but it's always affirming to receive outside validation. In this year's *U.S. News and World Report's* Best Hospitals rankings, Johns Hopkins scored the top spot in Adult Ear, Nose, and Throat Hospitals out of more than 4,600 hospitals in the U.S. This issue of *HeadLines* showcases many reasons why we've again secured the top spot.

Our story at the bottom of this page celebrates a decade of diversity initiatives that we launched to expand the number of underrepresented minority and female faculty and trainees and equalize opportunities for all of our faculty members. This inclusive effort, led by our allergy and sinus expert Sandra Lin, has been so successful that other institutions across the country are now emulating it.

The articles on pages 1 and 3 highlight the outstanding care we deliver to our patients every day. Our department strives to deliver unique and innovative treatment options to patients, such as the repeat laser treatments that Lee Akst provides for laryngeal dysplasia that allow patients to keep their voices, as well as more commonplace solutions that can have a dramatic impact on our patients' lives, such as the hearing devices that Matt Stewart often prescribes.

Our department also provides superior training to the next generation of otolaryngologists-head and neck surgeons, who will go on to be the newest leaders in our field. This issue's Resident Spotlight feature, at the top of this page, highlights Theresa Guo, an outstanding clinician-scientist in her fifth year of residency at Johns Hopkins.

Each of the exceptional qualities exemplified in these articles have helped to boost our department into the top ranking and will serve our patients, faculty, and trainees far into the future.

David W. Eisele, M.D., F.A.C.S.

*Andelot Professor and Director
Otolaryngology-Head and Neck Surgery*

Resident Spotlight: Theresa Guo

Combining research and clinical care for head and neck cancers

Fifth year Johns Hopkins Department of Otolaryngology-Head and Neck Surgery resident **Theresa Guo** practically grew up in a hospital setting. The daughter of a radiologist, Guo and her sister made frequent visits to her mother's workplace, spending countless hours volunteering by pulling films for doctors from the medical library.

"I had a good idea of what medicine looked like because of my mom," Guo remembers.

When it came time to choose her own career, the answer was clear—she'd also be a doctor. But her specialty wasn't as readily apparent.

During medical school at the Cleveland Clinic Lerner College of Medicine, Guo developed an interest in oncology and the responsibilities and privileges of accompanying patients through their cancer journeys. But over a yearlong research program at the National Institutes of Health (NIH) and studying melanoma, she also realized that she was interested in laboratory work. Her clinical rotations sparked a further interest in being in the operating room.

She found the perfect fit for combining each of these passions in otolaryngology-head and neck surgery. When she entered her residency program at Johns Hopkins in 2012, Guo found an ideal mentor in Joseph Califano, a former Johns Hopkins clinician-scientist who both treats and researches head and neck cancers.

Knowing that she wanted to follow in her mentor's footsteps, Guo joined Califano's lab as a T32 resident, funded by a grant from the NIH's National Cancer Institute for up to three years of postdoctoral research training.



For two years, Guo worked in Califano's lab along with his colleagues, learning techniques ranging from those used in a wet lab to computational biology. "I've never seen anyone learn the same amount that she did in that same amount of time," says Daria Gaykalova, a Department of Otolaryngology-Head and Neck researcher who served as a co-mentor to Guo during her dedicated research time. "I've never seen anyone being as productive."

Guo and her colleagues worked together to better understand a phenomenon known as alternative splicing, in which the same gene can make various forms of a protein depending on how cells arrange the resulting nucleic acid that the gene codes for. She and her team discovered a particular splice variant, known as AKT3, which appears to play a significant role in advancing cancers caused by human papillomavirus.

Guo is currently back in clinical training, but she remains closely connected to the lab, a link she plans to maintain throughout her subsequent fellowship and eventual long-term career.

"Each one of these new things that we're trying to discover through our research represents a little more hope for patients," she says. "Everything we do creates a platform for other people to also discover things. Together, we'll eventually be able to develop cures." ■



Celebrating a Decade of Diversity and Inclusion

Over the past few decades, there's been a growing awareness throughout organizations of every kind that diversity and inclusion are beneficial in a multitude of ways: offering varied points of view for creative problem-solving and fostering deeper understanding to serve people of many backgrounds.

These ideas are particularly true in academic medicine, says Johns Hopkins otolaryngologist **Sandra Lin**. Studies have shown that patients can have better outcomes when treated with racially concordant physicians and that underrepresented minority (URM) faculty are more likely to work with underserved populations and can play

Uncovering a Wealth of Sounds

New hearing aids reveal missing world to Hopkins patient

When Jim Hagerty, a 58-year-old retiree from Westminster, Maryland, was a child, he had a series of painful ear infections. Doctors told his mother that these illnesses would almost certainly cause some permanent hearing loss. But as Hagerty grew into adulthood, he didn't notice any hearing differences. He passed school hearing tests with flying colors and had no trouble communicating with colleagues once he started an engineering job with the state of Maryland. The only clue that something might be amiss were results from a work health fair hearing test showing that he was missing some higher frequencies.

It was only when Hagerty began volunteering at a nearby elementary school that he noticed something

was wrong. He struggled with hearing the higher frequency of children's voices, leading to frustration on both ends.

"The kids were getting frustrated with me, and it was a big stumbling block to interacting with them," he says. "Out of wanting to continue volunteering, I decided to seek help."

That's when Hagerty made an appointment in July 2017 to see Johns Hopkins otolaryngologist-head and neck surgeon **Matt Stewart**. Initial hearing tests confirmed what Hagerty's health fair evaluation had shown more than two decades earlier: moderately severe sensorineural hearing loss in the upper frequencies.

Although Hagerty stayed active in his community despite his hearing loss, that's not the case for many hard-of-hearing patients, Stewart explains.

"Experiences with others can begin to contract because of the challenges of communicating verbally," he says. "People with hearing loss may stop initiating conversations because they know they'll have difficulty being understood, and others without hearing loss may stop reaching out because it's so hard to communicate that way."

To avoid future social limitations, Stewart discussed treatment options with Hagerty. Unlike other patients with different types of hearing loss, he was the perfect candidate for hearing aids. After a referral to Johns Hopkins audiologist **Steve Bowditch** to discuss different models, Hagerty returned for a second audiology appointment two weeks later to try out his new devices.

(continued on back page)



Through a carefully crafted, multidisciplinary treatment plan, otolaryngologist-head and neck surgeon Matt Stewart helped restore patient Jim Hagerty's hearing.

"PEOPLE WITH HEARING LOSS MAY STOP INITIATING CONVERSATIONS BECAUSE THEY KNOW THEY'LL HAVE DIFFICULTY BEING UNDERSTOOD, AND OTHERS WITHOUT HEARING LOSS MAY STOP REACHING OUT BECAUSE IT'S SO HARD TO COMMUNICATE THAT WAY."

—MATT STEWART

important roles in solving health disparities.

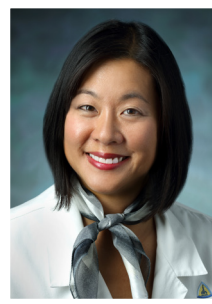
However, she says, academic medicine in general—and Johns Hopkins and its Department of Otolaryngology–Head and Neck Surgery in particular—still lagged in embracing diversity and inclusion. As recently as 2004, there was only one woman and one URM out of 17 clinical faculty, and only one woman and one URM out of nine basic science faculty. There were no women in leadership roles, or even past the rank of assistant professor. These female faculty earned as little as 88 percent of male colleagues salaries.

To help improve these numbers, Lin and her colleagues within the department convened a diversity and inclusion committee. After a daylong retreat, they developed a series of initiatives. These included plans to create a climate of diversity, aggressively recruit women and URM faculty, achieve parity of salary at rank regardless of gender or minority status, provide mentorship to women and URM faculty, and increase the pipeline of qualified women and URM candidates.

Over the next few years, these efforts paid off by 2014, the percentage of women clinical faculty increased from 5.8 percent to 23.7 percent; women

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—SANDRA LIN



basic science faculty increased from 11.1 percent to 37.5 percent. The number of women at associate professor rank increased from zero to eight. URM faculty increased from two to four; URM full professors increased in number from zero to one. Salary differences for female faculty were completely wiped out,

with no differences by rank and subspecialty training.

To diversify candidates for future faculty, the department instituted a clerkship for visiting URM medical students that pairs them with faculty mentors. So far, 27 students have come through this program, with three eventually matching at Hopkins as residents.

This year, the department will be celebrating a decade of implementing these initiatives and their results at its second annual Diversity Lecture in December.

Lin notes that other academic medical institutions are now emulating these efforts to expand diversity and inclusion within their own ranks.

"We're leaders in the field of otolaryngology–head and neck surgery, not only in teaching, research, and patient care, but also in diversity and inclusion," Lin says. "It's been a ripple effect. We are hopefully the pebble in the pond that will increase diversity and inclusion not just within our own institution but throughout the entire field." ■

For information, call 443-287-2124.

IDEAS AT WORK

Uncovering a Wealth of Sounds (continued from page 3)

Bowditch gave him a quick tutorial on the hearing aids customized for his high-frequency loss, then placed one in Hagerty's left ear, the one with the worst hearing. Suddenly, Hagerty was startled when Bowditch dropped a pen on his desk. Wearing both hearing aids, other sounds gradually emerged from all around him—fingers tapping on keyboards, his own footsteps, the crickets chirping around his country home. Since he hadn't heard these sounds for so long, Hagerty says, he'd forgotten that they exist.

"People compare this phenomenon to the *Wizard of Oz*," Bowditch says. "It's like starting in black and white and ending in color."

Hagerty is back volunteering for the school year and has surprised many students he'd previously met with his new and improved hearing.

"Everyone should get their hearing checked. I was able to get by, but think of all the things I missed," he says. "I'm grateful that I was able to get those back." ■

For information, call 443-287-2124.



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**Johns Hopkins Medicine
Marketing and Communications**
901 S. Bond St., Suite 550
Baltimore, MD 21231-3339

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Department of Otolaryngology–Head and Neck Surgery
David W. Eisele, M.D., F.A.C.S., Andelot Professor and Director
Donna S. Clare, CFRE, Director of Development

Marketing and Communications
Dalal Haldeman, M.B.A., Ph.D., senior vice president
Justin Kovalsky, managing editor
Christen Brownlee, writer
Rachel Sweeney, designer
Keith Weller, photographer

With questions or comments, contact:
jkovals1@jhmi.edu or 410-614-5044
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