Christine Schulz never visited England, but she speaks with the clipped inflection of a vaguely British accent. It’s not an affectation but, rather, the mystifying after-effect of an 18-hour surgery she endured in 2009 to remove about half her tongue due to a cancerous growth that had spread to her lymph nodes.

Surgeons used skin from her wrist and upper leg to re-create the missing portions of her tongue. Through long-term speech therapy, Schulz, 47, of Hollister, relearned how to eat and talk with her reconstructed tongue. If she sounds as if she’s from a different country, Schulz isn’t complaining.

“At the moment I woke up from surgery, I realized exactly what a huge deal it was,” she said, describing how she had an incision in her throat to allow her to breathe and was prohibited to speak in her earliest days of healing.

“Surprisingly, a high percentage of tongue cancers – 45 percent – is not related to the virus. The cause, we don’t know,” said Dr. Steven Wang, a head and neck surgeon at UCSF with expertise in microvascular reconstructive surgery.

Oral cancers, which include those of the mouth and tongue, are most common in men over 60 with a long history of smoking or chewing tobacco, often combined with heavy drinking.

But in recent years, a spike in the incidence of oral cancers is being attributed to human papilloma virus or HPV.

No Identifiable Cause
But Schulz’s cancer was neither HPV- nor tobacco-related. That puts her in a camp of fewer than 7 percent of all oral cancers that have no identifiable cause, according to the Oral Cancer Foundation, an advocacy group based in Newport Beach.

“I have a scar straight down the middle of my chin...and then there’s the way I talk. I walk around in the world differently, people look at me differently, and that takes some adjustment.”

—Christine Schulz
Message from the Chair

Advancing Our Goals

I am pleased to have been selected by Dean Hawgood to be the permanent Chair of the Department of Otolaryngology-Head and Neck Surgery at the University of California, San Francisco.

With this position comes abundant responsibility. I am aware of the footsteps in which I follow including those of Lewis Morrison, Frank Sooy, Roger Boles, Robert Schindler, and David Eisele. My goal will be to advance the Department's educational programs, research breadth, and clinical excellence. We will need to support the missions of the School and the Medical Center at a very challenging time for health care and science, and we are well equipped to do so.

We have an outstanding faculty already present with thought leaders and clinical leaders in every sub-specialty – Rhinology, Skull Base Surgery, Head and Neck Oncologic Surgery, Otology/Neurotology, Laryngology and Professional Voice Care, Head and Neck Endocrine Surgery, Facial Plastic and Reconstructive Surgery, Hospitalist Otolaryngology, and Pediatrics. I hope you will read a bit more in this Newsletter about our outstanding new faculty. Dylan Chan, MD, PhD joined our Pediatric group in August and Rahul Seth, MD joined our Facial Plastic and Reconstructive/Microvascular Practice in August. Mia Miller, MD, will join the Otology/Neurotology group in December.

Excellence in Education

The department has always focused on education and this concentration will continue with our new PGY-1 class, also profiled in this newsletter. Our resident team is spectacular.

Nationally, our current standing and excellence has been recognized. UCSF Medical Center continues as one of the nation's Top Hospitals, ranked 7th in the nation, and our department is ranked 12th for the 2013-2014 year by US News.

Looking Forward

My recruitment to the chair position brings targeted resources to the Department from the School of Medicine and the Medical Center. We will have an amazing opportunity to build our research programs and faculty, our clinical programs, and our education programs in meaningful ways. We will move into the new UCSF Benioff Children's Hospital and the new UCSF Cancer Center at Mission Bay in February, 2015. We plan on consolidating our Epstein Laboratories in new space on the Parnassus campus. We will expand our practices at Mt. Zion, and will look forward to the next stage of development for the Zion campus. We will occupy the new San Francisco General Hospital in 2016. As always, I remain grateful for the support of our many alumni, donors and friends who believe in our mission and share in our success.

Our hard working team deserves this opportunity to build and grow in service to scientific discovery, in service to excellence in patient care, and in service to educating the future clinicians, scientists, and leaders of Otolaryngology-Head and Neck Surgery. I am very excited about and grateful for the chance to help shape the future.

Warmly,
Andrew H. Murr, MD
Chairman
Professor of Clinical Otolaryngology-Head and Neck Surgery,
Roger Boles, MD Endowed Chair in Otolaryngology Education
Department of Otolaryngology-Head and Neck Surgery

Architectural rendering of UCSF Benioff Children’s Hospital and the new UCSF Cancer Center at Mission Bay, scheduled for completion in 2015. (Rendering courtesy of Stantec Architecture)
Approximately half of all children born with hearing loss have a genetic cause, with hearing aids and cochlear implantation being the only available treatment at present. There has been a long-term goal to treat hearing loss with gene therapy, but there have been numerous challenges and obstacles to overcome. The recent work of Lawrence R. Lustig, MD, Professor of Otolaryngology–Head and Neck Surgery and Director of UCSF’s Douglas Grant Cochlear Implant Center represents a major advance towards this goal, publishing the first study to demonstrate complete restoration of hearing using gene replacement in mice.

Published just last year, Dr. Lustig and his colleagues completed a study that describes an important step forward in gene therapy for hearing loss in mice. The study, *Restoration of Hearing in the VGLUT3 Knockout Mouse using Virally Mediated Gene Therapy*, published in the July 2012 edition of the journal *Neuron*, reported on a viral gene therapy in mice that succeeded in restoring normal hearing. VGLUT3 is a critical protein that allows hair cells of the inner ear to release the neurotransmitter glutamate, and transmit sound from the ear to the brain. Mice lacking VGLUT-3 are born deaf because the ear can no longer transmit the auditory signal from hair cells to the auditory nerve. Further, mutations in the VGLUT3 gene appear to be the cause of at least one form of genetic hearing loss in humans. In the study, these mice were treated with a non-pathologic virus that contained the missing gene coding for VGLUT3. The treatment allowed the hair cells to start making VGLUT3 again, and within two weeks of the gene delivery, hearing returned to normal levels. Further, the restoration of hearing lasted up to 1 year when treatment was given early enough. The work thus represents an important advance towards someday being able to treat human deafness using gene therapy.

**FIGURE A: Hearing Restoration in the VGLUT3 Knockout (KO) Mice**

Representative hearing (brainstem response) tracings from wild type (WT), KO and rescued KO mice following delivery of adenovirus with VGLUT3. Hearing in WT and rescued mice appear similar while KO mice show hearing responses. Rescued mice begin to show hearing recovery within 7 days of delivery with near normalization of hearing thresholds by 14 days post-delivery. Hearing recovery is seen with 2 different delivery methods (CO=cochleostomy and RWM=round window membrane).

**FIGURE B: VGLUT3 Inner Hair Cell Transfection: Early vs Late Delivery**

Viral delivery of VGLUT3 delivery is compared at P1-3 vs P10-12. Anti-Myo7a antibody (green-stains hair cells), and anti-VGLUT3 antibody (red-stains VGLUT3) are used for visualization. As expected, inner hair cells from WT mice show both anti-Myo7a and anti-VGLUT3 staining (row 1) whereas KO mice only show anti-Myo7a label (row 2). Delivery of virus via the RWM at P10-12 results in fewer IHCs expressing VGLUT3 (row 3), whereas similar doses of virus injected at P1-3 results in 100% of hair cells transfected in all animals (row 4).

(TC=tunnel of Corti, DC=Deiter's cells, OHC=outer hair cells, IHC=inner hair cells.)
New Faculty Join OHNS

Dylan K. Chan, MD, PhD

New faculty member Dylan K. Chan, MD, PhD joined the Department of Otolaryngology in August 2013. Dr. Chan received his PhD in Sensory Neuroscience from The Rockefeller University in New York in 2006. He earned his medical degree in 2007 from Weill Medical College of Cornell University, New York. From 2007-2012, Dr. Chan was a resident in Otolaryngology-Head and Neck Surgery at Stanford University, Stanford, CA. Following his 2012 residency graduation, Dr. Chan completed a one-year pediatric fellowship in the Division of Otolaryngology at Seattle Children’s Hospital, Seattle, WA.

Dr. Chan received a 2010 grant from the American Academy of Otolaryngology for his research on “Cochlear Stem-Cell Therapy for Mammalian Hair-Cell Regeneration”. At Stanford, Dr. Chan’s research studies included the analysis of genotype-phenotype correlation in GJB2 mutations, and research on the evaluation of outcomes after adjunctive surgery for obstructive sleep apnea in adenotonsillectomy failures. Dr. Chan is an author on 12 peer-reviewed publications.

Rahul Seth, MD

Rahul Seth, MD joined the Department of Otolaryngology–Head and Neck Surgery as an Assistant Professor in August 2013. Dr. Seth received his medical degree from the University of Rochester, NY in 2006. This was followed by a one-year internship in general surgery at the Cleveland Clinic in Ohio. Dr. Seth was a resident in Otolaryngology at the Cleveland Clinic from 2007-2012. He was selected as the Resident Colleague of the Year 2012. Dr. Seth had an appointment as Clinical Instructor of Surgery at the Cleveland Clinic’s Lerner College of Medicine of Case Western Reserve University from 2010-2012, followed by a facial plastic and reconstructive/microvascular surgery fellowship at the University of California, Los Angeles in 2012-13. Dr. Seth has been active in research, receiving several grants to further his work, including the grant “Advances in Otoscopy using L.A.S.E.R. Technology” from the Cleveland Clinic in 2010-2011 which supported the origination and patent application for a laser otoscope that determines the presence of abnormal fluid in the middle ear space via the refraction of laser light emitted on the ear drum. He is an author of over 20 peer-reviewed publications and 5 book chapters.

New Fellows & Residents

2013-2014 Fellows:

Gabriel J. Tsao, MD

Dr. Gabriel Tsao earned his BS in Molecular and Cell Biology/Immunology from the University of California, Berkeley, in 2001. He received his medical degree with a scholarly emphasis on Immunology from Stanford University School of Medicine in 2008. Dr. Tsao completed a four-year residency in Otolaryngology-Head and Neck Surgery, Stanford Hospital and Clinics in 2013. Dr. Tsao began his UCSF Otolaryngology–Head and Neck Surgical Oncology Fellowship in July 2013.

Sean Wang, MD

In 2003, Dr. Sean Wang earned a BS in Computer Science from Washington University in St. Louis. He received his medical degree in 2008 from the University of Texas Health and Science Center, in San Antonio. From 2008-2013 he was a resident in Otolaryngology–Head and Neck Surgery at the University of Texas Health and Science Center, San Antonio. In July 2013, Dr. Wang joined UCSF’s Otolaryngology-Head and Neck Surgery as a laryngology fellow.

Residency Class of 2018:

Aurash Sean Alemi, MD

In 2008, Dr. Alemi received a BA in Molecular and Cell Biology from the University of California, Berkeley. Dr. Alemi received a research scholarship from the American Otological Society and was a student researcher in the laboratory of Dr. Lawrence Lustig at UCSF in 2011-2012. He earned his medical degree in 2013 from the University of California, Irvine. In July 2013, Dr. Alemi entered the Otolaryngology residency program at UCSF.

Elizabeth Cedars, MD

Dr. Cedars earned her BS in Biology from Columbia College, New York, in 2007. She received her MD in 2013 from the University of California, San Francisco, where she has been a researcher in an ongoing Department of Otolaryngology-Head and Neck Surgery program.
In Memoriam

Elmer Owens, PhD

Dr. Elmer Owens, Professor Emeritus at the University of California, San Francisco passed away on April 23, 2013. After serving as a fighter pilot during WWII, Dr. Owens returned home to attend graduate school at Syracuse University in New York where he earned his masters and doctoral degrees in Speech Pathology and Audiology. He also worked with famed speech pathologist, Wendell Johnson, PhD, at the University of Iowa on the remediation of stuttering. Dr. Owens, with the support of otolaryngologist and UCSF Chancellor, Dr. Frank Sooy, was instrumental in developing the first audiology clinic at UCSF. He was also one of the original faculty members of the joint Speech and Hearing Sciences Doctoral Program between UCSF and UC Santa Barbara. Dr. Owens was part of the cochlear implant program team from its inception at the university. He developed methods and materials for determining implant candidacy, as well as the evaluation of speech understanding for pre- and post-implant patients. Dr. Owens was the lead author of the Minimal Auditory Capabilities (MAC) Battery, one of the first test batteries developed to test elements of speech understanding of cochlear implant recipients.

Dr. Owens published a book, a monograph, and a large number of articles related to his groundbreaking work with early cochlear implant patients. His unwavering interest in the investigation of speech understanding in deaf and hard of hearing patients led him to work with Dr. Earl Schubert of Stanford, to develop the California Consonant Test. He also published many articles on speech perception in both adults and children with hearing loss. In addition to his work with hearing loss, Dr. Owens, a stutterer since childhood, provided career-long therapy for patients of all ages with dysfluency.

Dr. Owens was not only a pioneer in the profession of communicative disorders, but he was also a generous teacher and mentor of young audiologists. He will be remembered for his consuming intellectual curiosity, his many contributions to his profession, and his great sense of humor.

A memorial service was held in May in San Francisco, CA.
and 3,700 women - and leads to some 2,000 annual deaths, according to the National Cancer Institute.

The disease makes up a significant portion of the 42,000 diagnoses of the broader category of oral cancers, which include the mouth cavity, lips and the oropharynx, or the part of the throat at the back of the mouth. Oral cancers combined kill about 8,000 each year.

While statistics show many cancer types leveling off or even decreasing in recent years, the incidence of oral cancer has increased, due in large part to HPV. Between 1988 and 2004, the percentage of HPV-related oropharynx cancers skyrocketed by 225 percent, according to a 2011 study published in the Journal of Clinical Oncology.

But that doesn’t explain the rise in oral cancers among patients with no known cause.

“It could be a genetic predisposition or it could be an outside source, a causal agent that hasn’t been discovered yet,” said Brian Hill, the Oral Cancer Foundation’s executive director.

Often Overlooked

Wang, who reconstructed Schulz’s tongue, said nonsmoking-related oral cancers tend to be less responsive to chemotherapy and radiation than HPV- and smoking-related tongue cancers. And often the symptoms are overlooked.

His latest research, to be published in the journal Otolaryngology - Head and Neck Surgery found that former or current smokers with a form or tongue cancer called squamous cell carcinoma had a better chance of surviving than patients with the same cancer who never smoked.

“People always notice the sore or the ulcer in the mouth, but they’re not thinking it’s cancer,” he said, “They’re thinking, ‘I’ve never smoked, I’m too young.’ And, unfortunately, their doctors are thinking the same thing.”

Because treatment is frequently delayed, Wang said nonsmokers with tongue cancer are more likely to have the disease treated aggressively, undergoing surgery to remove part or all of their tongue in addition to chemotherapy and radiation. Surgeons are able to reconstruct the tongue, typically using tissue from the forearm, and reconnect blood vessels, but they have yet to find a way to re-create the tongue’s function.

“The tongue is an incredibly complex organ,” Wang said. “The fine motor movements that contribute to speech and swallowing – to think we could do any kind of construction that could replicate that is not possible.”

For Schulz, what started as a bump in the back of her tongue that wouldn’t go away turned into a life-altering experience. Her marathon surgery and reconstruction was followed by chemotherapy, radiation and a year and a half of speech therapy.

“I have a scar straight down the middle of my chin,” she said, explaining how they had to reach the back of her mouth to remove the tumor. “I have another scar on my neck from where they took the lymph nodes, and then there’s the way I talk. I walk around in the world differently, people look at me differently, and that takes some adjustment.”
Hemming Fellowship Supports Excellence in Training

In 2004, Mr. Bryan Hemming made a decision to fund a lasting gift — the Bryan Hemming Head and Neck Cancer Endowed Fellowship — to support the training of promising young head and neck clinicians and researchers in UCSF’s Department of Otolaryngology-Head and Neck Surgery.

In the nine years since it was established, the Hemming Fellowship has benefited eight fellows with individualized, hands-on training in head and neck oncologic, endocrine, and skull base surgery. The list includes three current UCSF Otolaryngology-Head and Neck Surgery faculty: Ivan El-Sayed, MD, an associate professor and 2008-2009 Hemming Fellow; and William R. Ryan, MD, an assistant professor and 2010-2011 Hemming Fellow; and Young-wook Jun, PhD an assistant professor and 2012-2013 Hemming Fellow. It also includes current Hemming Fellow Gabriel Tsao, MD, who began his fellowship in June 2013.

Explaining why he established a fellowship to contribute to the training efforts at UCSF, Hemming is quick to comment on his own experience. After being diagnosed unexpectedly with a “virulent” cancer of the neck, his physician recommended that he come to UCSF for treatment. After successful neck surgery, it became Hemming’s passion to support cancer treatment. “Not everyone realizes that when they have pain in their neck it can end up being as serious as mine” notes Hemming. “As a result of my experience, my main interest now is cancer work.”

Reflecting on the legacy of training he has helped give to so many outstanding future leaders in head and neck cancer through the Hemming endowed fellowship, Hemming says that he is “very proud of it – anything that is an ongoing contribution towards expertise in cancer treatment is a wonderful idea”. Commenting on the endowment, Department Chair Andrew Murr notes “we are very grateful to Mr. Hemming for his vision and support – the enduring gift of the Hemming fellowship has truly been a gift for the future, as it continues to train upcoming leaders in this field.”

Recipients of the Bryan Hemming Endowed Fellowship in Head and Neck Cancer

| Young Oh, MD | 2003-2005 |
| Vivek Gurusdutt, MD | 2006-2008 |
| Ivan El-Sayed, MD | 2008-2009 |
| Ted Leem, MD | 2009-2010 |
| William Ryan, MD | 2010-2011 |
| Joshua Skolnick, MD | 2011-2012 |
| Young-wook Jun, PhD | 2012-2013 |
| Gabriel Tsao, MD | 2013-2014 |

Taking Longer to Eat

Eating is also a completely different experience. She can still taste things, but she had to relearn how to chew and swallow.

Most extremely sweet foods do not register on what’s left of her taste buds, although she loves chocolate more than ever. She avoids bread and crackers because she said breaded foods turn to cement in her mouth, and she finds salads just too much work.

“Putting food in my mouth still feels foreign,” she said, adding that it takes her a long time to eat. “I have to chew it. I have to have a thought about where it is inside my mouth and make sure it stays there, chew enough so I know I have to swallow and then I have to have water.”

But Schulz, an elementary school teacher who is married and has 10-year-old twin boys, has managed to adjust well to her new life.

She took a year off from teaching and then returned to her school in a part-time position she loves, teaching science to second-graders.

Schulz said she was overweight before her diagnosis, but she lost 65 pounds - too much weight - after the surgery. She is now at a healthy weight and exercises regularly.

She said she doesn’t mind if she occasionally has to repeat words to be understood and has a bit of an accent. “I’m often asked, ‘Are you British? Are you from Australia?’” she said. “They think I’m from somewhere else. That’s not too bad.”

— By Victoria Colliver; photos by James Tensuan; reprinted with the permission of the San Francisco Chronicle
News from the UCSF Department of Otolaryngology – Head and Neck Surgery

http://ohns.ucsf.edu

FALL 2013

HeadsUp!

Upcoming Events

UCSF Audiology Amplification Update XI
November 1-2, 2013
Holiday Inn Fisherman’s Wharf / San Francisco, California

UCSF Otolaryngology Update: 2013
November 7-9, 2013
Ritz Carlton Hotel / San Francisco, California

20th Annual Advances in Diagnosis and Treatment of Sleep Apnea and Snoring
February 14-15, 2014
Grand Hyatt / San Francisco, California

American College of Surgeons Thyroid and Parathyroid Ultrasound Skills-Oriented Course
February 15-16, 2014
Moana Surfrider / Honolulu, HI

Pacific Rim Otolaryngology Head and Neck Surgery Update Conference
February 15-18, 2014
Moana Surfrider / Honolulu, HI

For more information about events and continuing education offerings, please visit http://ohns.ucsf.edu and http://cme.ucsf.edu.